Concern: [Seq#1]

Comments supporting project. [ID#1]
Response: [Seq#1]

Thank you for your comment. [ID#1]
Associated Comments: [Seq#1]
We vigorously support the USFS Mission Restoration Project as described. This seems the best option to preserve forest health and mitigate wildfire in the Twisp River drainage. [1-1]

I am in favor of proposed action (Alternative 2) for the Mission project. [3-1]

As a landowner in Alder Creek bordering National Forest and State land, I am in total support of the Mission Restoration Project. [5-1]

I encourage the project to move forward at the fastest pace possible to prevent more fires [5-4]

The Mission Restoration Project is an important project for several reasons, including forest health, wildfire protection, and Forest Service credibility with the public. The hundreds of pages of EA documentation give attention to many important issues, and many of the issues appear to be looked at with quite a bit of detail. [6-1]

Although I do not look forward to the logging and burning activity that will be part of the Mission Restoration Project I do support it. I live on the forest boundary on the Buttermilk side and therefore I am much more familiar with that area of the project. I see large areas of very dense vegetation, mistletoe and dead ladder fuels. Buried in that are large Ponderosa pines, an important species in this naturally dry forest, that are unlikely to survive a wild fire in these conditions, in spite of their amazing adaptability. Reducing that unhealthy volume of vegetation in a controlled, industrial way appears to me to be the only way we can reduce the chances of severe, destructive fire that will be a much greater threat to homes and fire fighters and will take much longer for the habitat to recover. [8-1]

Concern: [Seq#2]

The Economic Report states that "Funding for the different non-timber projects, including non-commercial thinning, road closing, culverts, and beaver habitat, can come from a variety of different sources such as appropriations, stewardship receipts, or through partnerships with public and private collaborates." It would be worthwhile to add monitoring to this list of non-timber economics as well. In the past, the funding of important non-timber projects has too often been proposed but not accomplished [ID#2]

Response: [Seq#2]

Any monitoring included in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring, the Decision Maker is agreeing to complete if the associated activity is completed. As an example Design Feature 10, "Project actions that would operate outside the limits of the road prism require the cleaning of all heavy equipment prior to entering National Forest System lands" would require inspection of that equipment for invasive species plant parts by an appropriate person prior to entering National Forest System land. On equipment associated with timber harvest this is normally done by the Sale Administrator or Harvest Inspector. [ID#2]

Associated Comments: [Seq#2]

The Economic Report states that "Funding for the different non-timber projects, including non-commercial thinning, road closing, culverts, and beaver habitat, can come from a variety of different sources such as appropriations, stewardship receipts, or through partnerships with public and private collaborates." It would be worthwhile to add monitoring to this list of non-timber economics as well. In the past, the funding of important non-timber projects has too often been proposed but not accomplished. [6-4]

Concern: [Seq#3]

Put the "aquatics" section in the Table of Contents [ID#3]

Response: [Seq#3]

Because of the overlap between the environmental effects for Hydrology and Aquatics on this project, the two resource areas combined to write a combined "Existing Condition and Environmental Consequences" section titled Water Resources to eliminate duplication. [ID#3]

Associated Comments: [Seq#3]

Put the "aquatics" section in the Table of Contents. [9-1]

Concern: [Seq#4]

The bulleted items below describes a few of the NEPA process tricks that the agency teaches its employees. I bet you thought you were correctly complying with NEPA didn't you? Ask yourself what motivates the USFS to twist that process. [ID#4]

Response: [Seq#4]

This paper is not specific to the Mission Restoration Project and makes general statements about past management and not specific comments about this proposed project. Much of this document is quotations from individual people about nature, trees, wilderness, etc. and is not specific to any particular project bu8t addresses Forest management in a very general way. [ID#4]

Associated Comments: [Seq#4]

The bulleted items below describe a few of the NEPA process tricks that the agency teaches its employees. I'll bet you thought you were correctly complying with NEPA didn't you? Ask yourself what motivates the USFS to twist the process. [4-1]

Concern: [Seq#5]

On February 17, 2017, you requested the date of the legal notice published for the Mission Restoration project. You noted that the Forest Service must give the public fair notice and that you felt the FS must publish a new legal ad that clearly shows a date, in order to comply with the "within 4 calendar days" requirement.

The IDT leader, Meg Trebon, responded on February 21, 2017 to your inquiry by stating: "*The legal ad was published Jan. 31, 2017. The 30-day comment period ends March 2, 2017*." You responded by stating you did not feel she was the authority for that information and that was not what the legal ad showed. This seems to contradict your original email asking for the information, which was clearly addressed to Ms. Trebon and states the date of the legal notice published was "*not clear at all*." this is the notation that was posted. It shows WW for The Wenatchee World and the year (2017). The month is not clear if it is a 0 or a 1 over the zero. The day 31 is clearly visible. [ID#6]

Response: [Seq#5]

The legal notice announcing the start of the comment period on the draft environmental assessment for the Mission Restoration project was published in The Wenatchee World on January 31, 2017. The notice was uploaded onto the project website at https://www.fs.usda.gov/project/?project=49201 on the same date, as noted by the date stamp adjacent to the legal notice: (Mission Legal Ad Comment Period (PDF 150kb) *01-31-2017*).

To further assure you the date was in fact 2017-01-31, we have posted the affidavit from The Wenatchee World that provides additional documentation of the publication date of the legal notice on the project website.
http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/104067_FSPLT3_3951367.pdf

You received notification via email on January 25, 2017 that the draft EA was available for public access through the project website, allowing for additional review time beyond the comment period, and informing you that the legal notice would be published in The Wenatchee World. You received a second email notification on February 1, 2017 that the legal notice had been published, starting the 30-day public comment period.

In researching your concerns, I find that the legal notice was published in the newspaper of record on January 31, 2017 and it was posted the same day on the project website (as indicated by the date stamp adjacent to the legal notice and hand written on the legal notice). In addition, the affidavit that we posted to our website on February 21, 2017, clearly indicates the date of publication, providing commenters ample time to comment by the end of the comment period. Consequently, those wishing to comment within the 30 day comment period may do so.

Because of issues related to complying with the requirements of the 2012 Planning Rule, a Revised Preliminary EA was prepared and sent to the public in June 2017 giving another opportunity to comment on the Preliminary EA. [ID#6]

Associated Comments: [Seq#5]

Ps, Ms. Trebon: As you might have guessed, I'm trying to determine the date comments are due. And the regulations say I can't rely upon any source other than the legal notice itself, which is wide open to interpretation as I explained. Jeff Juel On 2/17/2017 11:44 AM, Jeff Juel wrote: Ms. Trebon, I'm trying to determine the date of the legal notice published on the project website. It's not clear at all. Here's the "date" on the notice: The regulations at 36 CFR § 218.24 under "Notification of opportunity to comment on proposed projects and activities" states at (c)(3): Within 4 calendar days of the date of publication of the legal notice in the newspaper of record or, when applicable, the Federal Register, a digital image of the legal notice or Federal Register publication, or the exact text of the notice, must be made available on the Web. Such postings must clearly indicate the date the notice was published in the newspaper of record or Federal Register, and the name of the publication. (Emphasis added.) The legal ad on the website does not clearly indicate the date the notice was published in the newspaper of record, so it is not in compliance with the regulations. This is a huge project with only a 30-day comment period. The Forest Service must give the public fair notice. The FS must publish a new legal ad that clearly shows a date, in order to comply with the "within 4 calendar days" requirement. Thank you for your prompt attention to this matter. [12-1]

Concern: [Seq#6]

The Mission proposal is definitely a challenge, to the Methow Valley Ranger District, the Collaborative group, and the local public. Let us all rise to the challenge. Thank you for the opportunity to make public comment on public national forest issues.

[[ID#7]
Response: [Seq#6]

No further response required. This project has been somewhat of a challenge. [ID#7]
Associated Comments: [Seq#6]
The Mission proposal is definitely a challenge, to the Methow Valley Ranger District, the Collaborative group, and the local public. Let us all rise to the challenge. Thank you for the opportunity to make public comment on public national forest issues. [6-8]

Concern: [Seq#7]

You propose to apply a potentially lethal chemical, glyphosate, to public land where families recreate and children play. I suggest you read the information authored by independent scientists below. [ID#8]
Response: [Seq#7]

This project does not authorize the application of herbicides to the project area. Invasive species treatments are authorized in the project area under existing, approved, NEPA documents, including the Forest-wide Site Specific Invasive Plant Management EIS. [ID#8]
Associated Comments: [Seq#7]
Glyphosate 1. [2-13]

Concern: [Seq#8]

This attachment contains approximately 21 photos of previous forest clearcuts located in the Western United States. It makes no difference when or where the photos were taken. Most National Forest timber employees still think logging represents professional forest management. [ID#9]
Response: [Seq#8]

None of the photos shown are located on northeastern Washington National Forests. Most photos shown are located in western Washington and western Oregon and/or are in timber stands that are not typical of the project area. This project is mostly thinning from underneath where the overstory is left on site. Approximately 59 acres of commercial timber harvest in this 1861 acre harvest project is proposed to be Variable Retention Regeneration Thin and post-harvest tree planting. The remaining acres would be mostly harvested from underneath with natural regeneration. This prescription retains forest patches, tree clumps, and individual trees for structural and biological diversity on the landscape. All trees larger than 24" dbh and all trees 21 - 24" dbh with an estimated age of 150 years and older

would be retained. The treatment objective includes retention of at least 15% of the forested area associated with each treatment unit. [ID#9]

Associated Comments: [Seq#8]

Opposing View Attachment 26 - Pictures of National Forest clearcuts located in the Western United States. [2-12]

Concern: [Seq#9]

I object to logging around Lookout Mountain or Black Pine Lake. [ID#10]

Response: [Seq#9]

No treatments are planned within about 1.2 miles of Lookout Mountain and those treatments are overstory thinning with piling and burning and non-commercial ladder fuel reduction thinning with piling and burning. The only treatment around Black Pine Lake would be aspen treatments with piling and underburning and/or non-commercial ladder fuel reduction thinning with piling and burning. Thank you for your comment and concern. [ID#10]

Associated Comments: [Seq#9]

I object to logging around Look Out Mountain or Black Pine Lake. These destinations offer hikes, boating, fishing and camping opportunities for locals and tourists. The Methow depends on tourism for a healthy economy. Who will desire to go to these places when the forest is stripped of its spirit by mechanization? [48-15]

Concern: [Seq#10]

The scale of the project is quite large and has the potential of being very devastating to our wilderness and roadless areas. [ID#11]

Response: [Seq#10]

Thank you for your concern and comment. Less than 2 acres of treatment is proposed in an Inventoried Roadless Area and that is to build a hand fire line and understory burn the area. This is proposed so the fire line for the understory burn can be on a ridgetop instead of side hill below the ridgetop. The ridgetop fire line is easier to defend. Presently proposed commercial and non-commercial treatments are in areas with an existing road system. [ID#11]

Associated Comments: [Seq#10]

The scale of this project is quite large and has the potential of being very devastating to our wilderness and road-less areas. I am against any new road building or heavy equipment logging. [54-1]

Concern: [Seq#11]

Opposing View Attachment 1 - Quotes authored by Ph.D. Scientists [ID#12]
Response: [Seq#11]

These statements in Attachment 1 will be addressed in a table outside of CARA in District files called Opposing Views. [ID#12]
Associated Comments: [Seq#11]
Opposing View Attachment 1 - Quotes authored by Ph.D. Scientists [2-10]

Concern: [Seq#12]

Roads damage the proper ecological functioning of the natural resources in a forest [ID#13]
Response: [Seq#12]

These comments in Attachment 4 will be addressed as if they were a separate letter (#80) in the CARA database.

This document included 57 "Opposing View" quotes with links to documents supporting the quotes: these documents are provided in support of Mr. Artley's assertion that "Roads severely damage the proper ecological functioning of the natural resources in a forest". Some of the sources constitute general scientific research, some are opinion pieces, some are comment letters to other projects, newspaper articles, or blogs.

These 57 references generally address the general ecological effects of roads, including sedimentation, interruption in surface and ground water flow, concentration of flows/runoff, soil compaction, wildlife and aquatic habitat fragmentation and associated wildlife edge effects, and the creation of barriers to overland dispersal of various terrestrial species. The effects disclosed by or discussed in the cited sources are generally consistent with the potential effects of roads that are disclosed and discussed in the Mission Restoration Project preliminary EAs and Resource specific reports.

The Mission Restoration Project does not propose the construction of any new permanent roads. The project does include construction of temporary roads, the reconstruction of existing roads, the change in Management Levels of roads, incorporating some current non-system roads in the road system, and the decommissioning of roads. These discussions of changes in the road system and effects of roads are scattered throughout most of the EA, appendices to the EA, and Resource reports.

The science presented in these citations does not provide new or additional information that is inconsistent with or that refutes science used in the preparation of the Mission Restoration Environmental Assessment. [ID#13]

Associated Comments: [Seq#12]

Opposing View Attachment 4 -Roads Damage the Proper Ecological Functioning of the Natural Resources in a Forest. [2-11]

Concern: [Seq#14]

AFRC suggests minimizing the operating restrictions placed on this project. With the urgency to get acres treated it would be unwise to burden the purchaser with short operating windows that may prevent or prohibit the project from being completed in a timely manner. Some AFRC members have stressed that a heavy component of winter logging can exclude bidders due to seasonal highway [ID#15]

Response: [Seq#14]

Please see Design Feature 38 in Appendix D. The winter harvest can be waived if logging systems meet soil management objects for those units. [ID#15]

Associated Comments: [Seq#14]

AFRC suggests minimizing the operating restrictions placed on this project. With the urgency to get acres treated it would be unwise to burden the purchaser with short operating windows that may prevent or prohibit the project from being completed in a timely manner. Some AFRC members have stressed that a heavy component of winter logging can exclude bidders due to seasonal highway closures. [14-11]

Concern: [Seq#15]

I'm writing in support of Alternative 3, which I believe offers a valuable opportunity to increase overall project benefits.

The USFS and USGS have documented use of both Buttermilk and Libby creek watersheds by steelhead (ESA listed threatened), spring Chinook (ESA listed endangered), and bull trout (ESA listed threatened),

as well as resident rainbow and cutthroat trout. The USFS has a public responsibility to support healthy aquatic systems, and decreasing the number of stream crossings, the density of upland and riparian roads, and further reducing sedimentation through rock armoring of steep roads and fords will provide significant improvements to critical aquatic habitat. Road decommissioning under Alternative Three will also reduce open roads in habitat for imperiled terrestrial species, such as spotted owl, lynx, and other sensitive bird and rodent species.

With the Mission project, the USFS set a goal of moving towards a more holistic method of forest management. I believe Alternative 3 offers the greatest opportunity to make meaningful strides towards that goal [ID#16]

Response: [Seq#15]

Thank you for your comment. No further response required. [ID#16]

Associated Comments: [Seq#15]

I'm writing in support of Alternative 3, which I believe offers a valuable opportunity to increase overall project benefits. The USFS and USGS have documented use of both Buttermilk and Libby creek watersheds by steelhead (ESA listed threatened), spring Chinook (ESA listed endangered), and bull trout (ESA listed threatened), as well as resident rainbow and cutthroat trout. The USFS has a public responsibility to support healthy aquatic systems, and decreasing the number of stream crossings, the density of upland and riparian roads, and further reducing sedimentation through rock armoring of steep roads and fords will provide significant improvements to critical aquatic habitat. Road decommissioning under Alternative Three will also reduce open roads in habitat for imperiled terrestrial species, such as spotted owl, lynx, and other sensitive bird and rodent species. With the Mission project, the USFS set a goal of moving towards a more holistic method of forest management. I believe Alternative 3 offers the greatest opportunity to make meaningful strides towards that goal. [15-1]

Concern: [Seq#16]

This correspondence is in response to the preliminary Environmental Assessment of the Mission Restoration Project. After attending several public meetings and reading through the descriptions of the 3 alternatives, we are in support of Alternative 2, the Forest Service's proposed action. [ID#17]

Response: [Seq#16]

Thank you for your comment. No further response required. [ID#17]

Associated Comments: [Seq#16]

This correspondence is in response to the preliminary Environmental Assessment of the Mission

Restoration Project. After attending several public meetings and reading through the descriptions of the 3 alternatives, we are in support of Alternative 2, the Forest Service's proposed action. [16-1]

Concern: [Seq#17]

Roads provide dispersal of exotic [plant] species via three mechanisms: providing habitat by altering conditions, making invasion more likely by stressing or removing native species, and allowing easier movement by wild or human factors." (p. 24, ibid.) Additionally, the authors state, roads produce continuous sedimentation flows with resultant impact on aquatic ecosystems. [ID#18]

Response: [Seq#17]

As this comment is addressing "temporary roads" the response will be in that context. The respondent's comment and literature reference is appreciated. The Invasive Plant section will be updated in the final EA to include the following: Roads promote introduction and spread of invasive plants via three mechanisms: providing habitat by altering conditions; making invasion more likely by stressing or removing native species; and providing movement corridors (Trombulak and Frissell 2000). Alternatives 2 and 3 would disturb 33.6 and 56.2 miles, respectively, of roads by decommissioning. This includes the decommissioning of 1.2 miles (9 segments) of temporary road. This Temporary construction would intersect less than .1 miles of exiting invasive plant populations, which is all diffuse knapweed. If soil BMPs/design criteria are followed, there would be sufficient ground cover to minimize soil erosion and promote native plant growth by seeding and slashing (see soils section). Also, public access would not be permitted on temporary roads, so they would not function as dispersal corridors by non-project vehicles. (EA chapter 3, Invasive Species section 3.11) [ID#18]

Associated Comments: [Seq#17]

Roads provide dispersal of exotic [plant] species via three mechanisms: providing habitat by altering conditions, making invasion more likely by stressing or removing native species, and allowing easier movement by wild or human factors." (p. 24, ibid.) Additionally, the authors state, roads produce continuous sedimentation flows with resultant impact on aquatic ecosystems. [47-20]

Concern: [Seq#18]

There is no Old Growth Inventory for the forest which you propose to log. How can these old giants be protected without a completely transparent inventory mapped out for all to see? This inventory must be made before proceeding with a guaranteed monitoring system in place.

61-2 A new inventory of old-growth trees should be prepared before further planning proceeds. [ID#19]
Response: [Seq#18]

The first statement is incorrect for the project area. Air photo interpretation was completed and individual stands labelled with a set of attributes. One of the attributes is stand structure. The Old Forest Multi-story (OFMS) and Old Forest Single-story (OFSS) classifications refer to old growth structures. This has been completed for both watersheds, and a subset of these have been field-verified. The project silviculturist determined that these stands are not "Forest Plan" old growth, in other words, they don't meet all the criteria specified in the Okanogan National Forest Land and Resource Management Plan (which includes an acreage minimum, snag and down wood levels, canopy closure, and a large tree per acres standard). However, they are a good indication of large tree habitat (old growth) across the project area.

One focus of the project is to maintain and restore large tree habitat. Forest structures with a high proportion of large overstory trees currently are present at very low levels compared to estimated historic conditions (OFMS) or not present at all (OFSS) in the Libby Creek drainage. Portions of the project area are susceptible to dwarf mistletoe infection, defoliating insects, and bark beetle attacks due to vegetation composition and structure changes from historical conditions. The risk of crown fire initiation and spread and associated fire effects are greater than historical conditions, due to increased tree density and development of forest stands with multiple and closed canopy layers across the landscape. Vegetation in the project area is susceptible to increased frequency and severity of natural disturbances (including insects, disease, and fire) associated with warmer, drier climate.

Alternatives 2 and 3 treat approximately 300 acres which would reduce the acres of high and moderate vulnerability to Douglas-fir beetles and treat acres vulnerable to Douglas-fir dwarf mistletoe. The planned treatments would maintain or promote medium and/or large trees on nearly 14% of the landscape.

Large trees will be protected by:

- Trees 21 inches DBH and larger with an estimated age of 150 years or greater (based on criteria described in Van Pelt 2008) would be retained. Trees 21 to 24 inches DBH with an estimated age of less than 150 years would occasionally be harvested to release a larger (more preferred species) tree, reduce dwarf mistletoe infection, or reduce conifer encroachment in aspen stands when consistent with treatment objectives.
- Removing smaller trees that act as ladder fuels, which allows fire to move from the ground to tree canopy.

- Reducing competition from smaller trees which compete for soil nutrients and water, increasing the risk of large tree mortality caused by bark beetle attacks. Increased stand density and inter-tree competition also reduces the likelihood of larger medium size trees from developing into large trees.

[ID#19]

Associated Comments: [Seq#18]

There is no Old Growth Inventory for the forest which you propose to log. How can these old giants be protected without a completely transparent inventory mapped out for all to see? This inventory must be made before proceeding with a guaranteed monitoring system in place. [48-16]

I am concerned about the wildlife that makes these watersheds their home. How can they survive this lengthy, loud, disturbing process, known to us as the Mission Restoration Project, while their habitat is being decimated? With an individuals, clumps and openings mosaic model, where in the forest will the mule and white tail deer, wolf, cougar, bear, bob cat, moose, squirrels, rodents, raptors, song birds, reptiles, amphibians and invertebrates eat, sleep, hide, procreate, give birth and rear young? After fifteen years of prescribed burning what will be left to forage and will some animals suffocate due to the smoke? Since large mammals require dense thickets and some small ones like the pine marten also, where will they go when their habitat is removed? This project's restoration goals, coupled with the amendments, are more threatening to wildlife habitat than if the USFS did nothing to help. [48-22]

There is no Old Growth Inventory for the forest which you propose to log. How can these old giants be protected without a completely transparent inventory mapped out for all to see? This inventory must be made before proceeding with a guaranteed monitoring system in place. [51-39]

Large Trees/ Old Growth Inventory The EA vegetation appendix claims that there are no forest patches with large overstory trees in the Libby Creek landscape (>25" DBH). Where is the evidence for this statement? The Forest Service should conduct a large tree/old growth inventory to assess the actual conditions on the ground; relying on aerial photographs would not dependably identify trees of this size. Also of concern, with the proposed logging component of the MRP, is whether all of the large trees would be marked by the FS, or whether harvest would be left to equipment operator's discretion. [69-13]

Concern: [Seq#19]

"I am all for repair of the West Fork Buttermilk bridge to provide access to the Scaffold trail. However, please provide a realistic assessment of when and if that would happen. I see that none of the

treatments beyond this bridge are commercial thins, which to me means no revenue generated, so how would you pay for repair of the bridge? Please don't string the public along with the promise of replacing this bridge if it probably won't happen." [ID#20]

Response: [Seq#19]

This is addressed in a several locations: The bridge replacement is described in Chapter 2 in the proposed action. It is also described in Chapter 3.8 Transportation section under the effects analysis stating "The bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced in a manner following best management practices. This replacement would occur at a future date when adequate funds become available." Although the EA doesn't specifically say where and when the funds become available, it is appropriate to analyze the need and effects of a project prior to obligating or seeking funds for it. The EA states it in a fashion to allow adequate funding sources (ex: grants, partnerships) to be utilized at times when sufficient funding is available. It is addressed in Chapter 3 resources Existing Condition and Environmental Consequences Sections. [ID#20]

Associated Comments: [Seq#19]

I am all for repair of the West Fork Buttermilk bridge to provide access to the Scaffold trail. However, please provide a realistic assessment of when and if that would happen. I see that none of the treatments beyond this bridge are commercial thins, which to me means no revenue generated, so how would you pay for repair of the bridge? Please don't string the public along with the promise of replacing this bridge if it probably won't happen. [7-4]

Concern: [Seq#20]

"

I object to the proposal of logging trucks on Libby Creek and Black Pine Lake Roads for safety reasons. First, there has already been one life lost on Libby Creek due to a logging truck accident. Black Pine is steep, narrow, rutted and has washed out and been closed in recent years. How would locals and tourists be safe with logging trucks barreling down on them?

" [ID#21]

Response: [Seq#20]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding

expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction. [ID#21]

Associated Comments: [Seq#20]

I object to the proposal of logging trucks on Libby Creek and Black Pine Lake Roads for safety reasons. First, there has already been one life lost on Libby Creek due to a logging truck accident. Black Pine is steep, narrow, rutted and has washed out and been closed in recent years. How would locals and tourists be safe with logging trucks barreling down on them? [48-20]

Concern: [Seq#21]

"

I do have a concern of all the roads that are to be decommissioned. In 60 to 80 years more thinning will likely need to be done again and if the present roads are totally destroyed the expense of rebuilding will be cost prohibitive. I would recommend any roads that are abandoned be blocked for vehicle use but left for future management of the Forest. I understand also that once roads are removed the Forest Service can't build new roads so abandonment would mean, no longer can any thinning (especially commercial) take place indefinitely." [ID#23]

Response: [Seq#21]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the

Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA. [ID#23]

Associated Comments: [Seq#21]

I do have a concern of all the roads that are to be decommissioned. In 60 to 80 years more thinning will likely need to be done again and if the present roads are totally destroyed the expense of rebuilding will be cost prohibitive. I would recommend any roads that are abandoned be blocked for vehicle use but left for future management of the Forest. I understand also that once roads are removed the Forest Service can't build new roads so abandonment would mean, no longer can any thinning (especially commercial) take place indefinitely. [5-3]

Concern: [Seq#22]

In an effort to improve project economics, AFRC recommends tractor logging as much of the project area as possible. Improvements in ground skidding techniques such as the ability to operate on steeper slopes with lower ground pressures make this mode of harvesting very economical and leaves a light footprint on the land. AFRC suggests requesting a Forest Plan Amendment for using ground based equipment on slopes over 35%. We also suggest the soil scientists look at current studies where this type of equipment has been used and the damage to the resource is minimal. [ID#24]

Response: [Seq#22]

Thank you for the comment. Please see the response to Concern/Response 15.

Please see Design Feature 38 in Appendix D. The winter harvest can be waived if logging systems meet soil management objects for those units. [ID#24]

Associated Comments: [Seq#22]

In an effort to improve project economics, AFRC recommends tractor logging as much of the project area as possible. Improvements in ground skidding techniques such as the ability to operate on steeper slopes with lower ground pressures make this mode of harvesting very economical and leaves a light footprint on the land. AFRC suggests requesting a Forest Plan Amendment for using ground based equipment on slopes over 35%. We also suggest the soil scientists look at current studies where this type of equipment has been used and the damage to the resource is minimal. [14-12]

Concern: [Seq#23]

With respect to "temporary roads", the term itself is misleading, for temporary roads carry with them many of the same impacts upon the environment as regular roads. Any road, especially those which are traveled on by heavy equipment are subject to soil compaction. For a detailed discussion of this, I would refer you to the paper Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities by Stephen C. Trombulak, Ph.D. and Christopher A. Frissell, Ph.D. Dept of Biology, Middlebury College (Middlebury VT), in Conservation Biology, pp.18-30; Vol. 14, No. 1, February 2000. Some excerpts:. [ID#25]

Response: [Seq#23]

Please see Design Features 39, 47, and 62 for temp road mitigation. [ID#25]

Associated Comments: [Seq#23]

With respect to "temporary roads", the term itself is misleading, for temporary roads carry with them many of the same impacts upon the environment as regular roads. Any road, especially those which are traveled on by heavy equipment are subject to soil compaction. For a detailed discussion of this, I would refer you to the paper Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities by Stephen C. Trombulak, Ph.D. and Christopher A. Frissell, Ph.D. Dept of Biology, Middlebury College (Middlebury VT), in Conservation Biology, pp.18-30; Vol. 14, No. 1, February 2000. Some excerpts: [47-17]

Concern: [Seq#24]

A road transforms the physical conditions on and adjacent to it, creating edge effects with consequences that extend beyond the time of the road's construction. At least eight physical characteristics of the environment are altered by roads: soil density, temperature, soil water content, light, dust, surface water flow, pattern of run-off, and sedimentation. Long-term use of roads leads to soil compaction that persists even after use is discontinued. Soil density on closed forest roads continues to increase, particularly during winter months. Increased soil density can persist for decades: logging skid trails in northeastern California over 40 years old have soil that is 20% more compacted [ID#26]

Response: [Seq#24]

Please see Design Features 39, 47, and 62 for temp road mitigation. [ID#26]

Associated Comments: [Seq#24]

"A road transforms the physical conditions on and adjacent to it, creating edge effects with consequences that extend beyond the time of the road's construction. At least eight physical characteristics of the environment are altered by roads: soil density, temperature, soil water content, light, dust, surface water flow, pattern of run-off, and sedimentation. Long-term use of roads leads to soil compaction that persists even after use is discontinued. Soil density on closed forest roads continues to increase, particularly during winter months. Increased soil density can persist for decades: logging skid trails in northeastern California over 40 years old have soil that is 20% more compacted [47-18]

Concern: [Seq#25]

The stated need to treat soil compaction from previous management activities suggests that a significant problem exists; that is not clear at all from inspection of the proposed treatment areas, or from evidence presented in the EA. [ID#27]

Response: [Seq#25]

Please see the Soil Scientist project record for data sheets, pictures, and in-depth report of concerns you mention about existing soil conditions. [ID#27]

Associated Comments: [Seq#25]

The stated need to treat soil compaction from previous management activities suggests that a significant problem exists; that is not clear at all from inspection of the proposed treatment areas, or from evidence presented in the EA. [49-10]

Concern: [Seq#26]

The proposed use of the subsoiler to address soil compaction suggests using a controversial, invasive technology to address a problem that is not clearly documented. A mistake in timing, or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear presence of surface runoff caused by compaction in the planned treatment areas, other than the roads themselves. Closing the main roads that traverse these units, and using the subsoiler on them would be the only meaningful utilization of this approach [ID#28]

Response: [Seq#26]

The use of the Excavator Bucket Subsoiler (EBS) is not controversial and is widely accepted among academics, researchers, and land managers as one of the best ways to alleviate soil compaction without removing the surface organic and plant development and maintains soil horizonation and subsurface rocks and roots in place without brining them to the surface. [ID#28]

Associated Comments: [Seq#26]

The proposed use of the subsoiler to address soil compaction suggests using a controversial, invasive technology to address a problem that is not clearly documented. A mistake in timing, or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear presence of surface runoff caused by compaction in the planned treatment areas, other than the roads themselves. Closing the main roads that traverse these units, and using the subsoiler on them would be the only

meaningful utilization of this approach. [49-12]

Concern: [Seq#27]

"Please leave at least 4 feet wide portion open along the existing old road that connects a cutoff from Libby Creek Road to Buttermilk road. This old road has been used for many, many years by local snowmobiles, and cattle permittees and the berms o.k" [ID#29]

Response: [Seq#27]

This concern has been met in the proposed action. An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations by resources (ex: range, silviculture, timber, aquatics, soils, wildlife, invasive-weeds, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The summary is recorded in Appendix B of the Engineering Resources Report. Appendix B displays administrative access for the grazing permittees, resulting from inputs and request from the rangeland management specialist who participate in the TAP. Reviewing Appendix B, the 4300200 road provides for Administrative access labeled as Management Level (ML) 2A in the table. There was a small fragment that was determined for Decommissioning (D) not needed for this access. Recreation also participated in the interdisciplinary meetings, and that input was also considered for this road and associated spurs. [ID#29]

Associated Comments: [Seq#27]

Please leave at least 4 feet wide portion open along the existing old road that connects a cutoff from Libby Creek Road to Buttermilk road. This old road has been used for many, many years by local snowmobiles, and cattle permittees and the berms o.k. [13-1]

Concern: [Seq#28]

"AFRC questions the need to decommission 38 miles of road in this project. These roads provide access to private lands, recreation, commodity removal, fire protection, and many other uses. The cost of decommissioning these roads would be very high and will greatly take away from the overall economics of this project. Once a road is fully decommissioned, it takes considerable effort to restore access to the

area. AFRC respectfully requests that the Forest reanalyze what roads need decommissioning, and perhaps the Forest Service could simply place the roads in storage.

Subpart A of the Travel Management Rule requires the Forest Service to "identify the minimum road system needed for safe and efficient travel and for administration,

utilization

, and protection of National Forest System lands." 36 C.F.R. § 212.5(b)(1) (emphasis added). This means the road system must address "the needs of recreation as well as forest administration, fire protection, and other national forest purposes. . . ."

Ctr. for Sierra Nevada Conservation v. U.S. Forest Serv.

, 832 F. Supp.2d 1138, 1156 (E.D. Cal. 2011). The proposal to decommission so many road miles unnecessarily and improperly degrades access to this area of the Forest, and would designate a minimum road system in the project area that is not sufficient" [ID#30]

Response: [Seq#28]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations

made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#30]

Associated Comments: [Seq#28]

1. AFRC questions the need to decommission 38 miles of road in this project. These roads provide access to private lands, recreation, commodity removal, fire protection, and many other uses. The cost of decommissioning these roads would be very high and will greatly take away from the overall economics of this project. Once a road is fully decommissioned, it takes considerable effort to restore access to the area. AFRC respectfully requests that the Forest reanalyze what roads need decommissioning, and perhaps the Forest Service could simply place the roads in storage. Subpart A of the Travel Management Rule requires the Forest Service to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands." 36 C.F.R. § 212.5(b)(1) (emphasis added). This means the road system must address "the needs of recreation as well as forest administration, fire protection, and other national forest purposes. . . ." Ctr. for Sierra Nevada Conservation v. U.S. Forest Serv., 832 F. Supp.2d 1138, 1156 (E.D. Cal. 2011). The proposal to decommission so many road miles unnecessarily and improperly degrades access to this area of the Forest, and would designate a minimum road system in the project area that is not sufficient. [14-7]

Concern: [Seq#29]

"

Additionally, while AFRC does not favor either Alternative 2 or Alternative 3 in their present form, Alternative 3 would not replace the bridge over West Buttermilk Creek and we believe that bridge should be replaced for access in the future." [ID#31]

Response: [Seq#29]

Thank you for supporting the proposed action. Replacing the bridge is addressed in a several locations: Chapter 2 in the proposed action, in Chapter 3.8 Transportation section under the effects analysis stating "The bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced in a manner following best management practices. This replacement would occur at a future date when adequate funds become available." Other resources address it in each respective effects analysis sections of Chapter 3. It was considered while conducting the Travel Analysis Process (TAP), documented in the Engineering Resources Report. [ID#31]

Associated Comments: [Seq#29]

Additionally, while AFRC does not favor either Alternative 2 or Alternative 3 in their present form, Alternative 3 would not replace the bridge over West Buttermilk Creek and we believe that bridge should be replaced for access in the future. [14-8]

Concern: [Seq#30]

"

I am concerned about heavy machinery and logging trucks going up and down our rural roads. Not only effecting our quality of life, but, as stated above, having negative effects on aquatic life and other wildlife." [ID#32]

Response: [Seq#30]

See response to Concern/Response 21.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

Also, the Travel Analysis Process (TAP) was conducted in an interdisciplinary team which incorporated inputs from "aquatic" and "wildlife" resources. See response to 5-3.

Effects of the alternatives are described in Chapter 3, sections of "Water Resources" and "Wildlife": 3.3 and 3.7 respectively. [ID#32]

Associated Comments: [Seq#30]

I am concerned about heavy machinery and logging trucks going up and down our rural roads. Not only effecting our quality of life, but, as stated above, having negative effects on aquatic life and other wildlife. [17-4]

Concern: [Seq#31]

"

We favor Alternative 2 partly to accommodate the rebuilding of the bridge across the West Fork of Buttermilk Creek. This access has been unavailable for several years and provides a desirable approach to a great recreational area" [ID#33]
Response: [Seq#31]

See response to Concern/Response 31.

Thank you for supporting the proposed action. Replacing the bridge is addressed in a several locations: Chapter 2 in the proposed action, in Chapter 3.8 Transportation section under the effects analysis stating "The bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced in a manner following best management practices. This replacement would occur at a future date when adequate funds become available." Other resources address it in each respective effects analysis sections of Chapter 3. It was considered while conducting the Travel Analysis Process (TAP), documented in the Engineering Resources Report. [ID#33]
Associated Comments: [Seq#31]
We favor Alternative 2 partly to accommodate the rebuilding of the bridge across the West Fork of Buttermilk Creek. This access has been unavailable for several years and provides a desirable approach to a great recreational area [16-3]

Concern: [Seq#32]

"

Addressing the rock slide areas on Black Pine Lake Rd that are routinely only open to one way traffic due to the slides is not addressed.

[...]" [ID#34]
Response: [Seq#32]

See response to Concern/Response 21 on safety, maintenance, log haul and road jurisdiction notes.

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient

travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

See response to Concern/Response 33 on the TAP process, resources considered, interdisciplinary process and requirement to follow 36CFR212.5.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#34]

Associated Comments: [Seq#32]

The extreme expense of the infrastructure required to make Libby Creek Rd and Black Pine Lake Rd safely passable for thousands of trips by logging trucks for 12 months per year, and safe for those who reside on these roads or those who otherwise use these roads is ignored and not part of the proposal. [42-5]

Concern: [Seq#33]

'

ANY improvement to the rock slide areas on Black Pine Lake Rd would be a major undertaking unless millions of yards of shale were scooped out of the upper sides of the slide and allowed to fall directly into Libby Creek. WITH NO ENVIRONMENTAL IMPACT STATEMENT? Ridiculous" [ID#35]
Response: [Seq#33]

See Concern/Response 34 which addressed your previous statement.

Re: addressing road maintenance and areas of road damage (area letter referenced rock slide) See Engineering Resources Report Appendix A for description of road maintenance levels (ML), refer to Concern/Response 21.

Re: 2nd comment saying "WITH NO ENVIROMENTAL IMPACT STATEMENT? Ridiculous." Chapter 1 of the EA describes how the project fits within the bounds of an Environmental Assessment. [ID#35]
Associated Comments: [Seq#33]
Addressing the rock slide areas on Black Pine Lake Rd that are routinely only open to one way traffic due to the slides is not addressed....ANY improvement to the rock slide areas on Black Pine Lake Rd would be a major undertaking unless millions of yards of shale were scooped out of the upper sides of the slide and allowed to fall directly into Libby Creek. WITH NO ENVIRONMENTAL IMPACT STATEMENT? Ridiculous. [42-6]

Concern: [Seq#34]

"

As loggers harvest their trees, they have to move to other areas of the forests. At the timber companies' request the federal government has, until recently, extended the roads to facilitate their work. The result of this continuing process is an enormous network of roads. As one forest service employee has noted, "There are 380,000 miles of roads in the national forests. That's enough road to circle the world 15 times." In theory the loggers pay for these roads through a royalty on the trees they harvest, but it is more likely that the costs of building and maintaining the roads far exceeds the royalty income. (Source: Advocacy and Public Policymaking, Pennsylvania State University.) According to members of its own staff, the USFS is the number-one road builder, carving more than 340,000 miles of logging roads in the woods in the last half-century alone. (Timothy Egan: New York Times, 03/04/90). As of 2012, Washington State alone possessed approximately 22,000 miles of USFS-built roads which represents more than three times the sum total of state, interstate, and U.S. highways." [ID#36]
Response: [Seq#34]

Thank you for your comment.

Refer to responses to Concern/Responses 23 and 30.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

This has been addressed in the Engineering Resources Report, the TAP, and the Engineering Resources analysis file for the project. It is also addressed in the EA in respective locations described in the previous responses. [ID#36]

Associated Comments: [Seq#34]

As loggers harvest their trees, they have to move to other areas of the forests. At the timber companies' request the federal government has, until recently, extended the roads to facilitate their work. The result of this continuing process is an enormous network of roads. As one forest service employee has noted, "There are 380,000 miles of roads in the national forests. That's enough road to circle the world 15 times." In theory the loggers pay for these roads through a royalty on the trees they harvest, but it is more likely that the costs of building and maintaining the roads far exceeds the royalty income. (Source: Advocacy and Public Policymaking, Pennsylvania State University.) According to members of its own staff, the USFS is the number-one road builder, carving more than 340,000 miles of logging roads in the woods in the last half-century alone. (Timothy Egan: New York Times, 03/04/90). As of 2012, Washington State alone possessed approximately 22,000 miles of USFS-built roads which represents

more than three times the sum total of state, interstate, and U.S. highways. [47-12]

Concern: [Seq#35]

"

While, road decommissioning is touted as part of the current restoration proposal, there are in fact, multiple impactful road activities planned and the "purpose and need" for such is primarily determined by logging activities: "The roads and their miles [approximately 55.72 mi.] for both Alternative 2 & 3 are the same for log haul. Therefore, both the direct and indirect effects of Alternative 3 would be the same as discussed in Alternative 2 regarding timber harvest activities…" (p. 217 in Mission Restoration Preliminary Environmental Assessment Okanogan-Wenatchee National Forest-MVRD). The proposal also identifies that "…some currently closed NFS roads and unauthorized roads would no removal be opened and maintenance and/or reconstruction activities would occur. Short temporary roads would be constructed for use during vegetation management activities and decommissioned after use." (p. 214, ibid.) Alternative 1-no action on the transportation system, discusses it's impact which, as expected, " ...results in high sediment delivery from open roads and no removal or treatment of road stream crossings…because the current road maintenance funding levels are lower than needed to maintain all existing roads…with no foreseeable funding to make the necessary repairs." (p. 213 ibid.) So herein lies an unmanageable conundrum. The USFS is proposing to allow heavy mechanized logging operations, to be accessed by roads which are already compromised and pose great risk to the aquatic environment. If no logging is performed there is limited or no funding to maintain or repair existing roads. If logging is permitted, with its resultant high-impact, from where will the funding materialize? This does not appear to be described in the proposal; it is not apparent that the USFS has committed to do anything restorative to its roads after the timber harvest occurs. It seems highly unlikely that following a commercial timber operation that the logging companies would fund the necessary ongoing repair and maintenance" [ID#37]

Response: [Seq#35]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original

2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

Road decommissioning was analyzed and compared between alternatives and is described in the Engineering Resources Report. Descriptions of Decommissioning is described in Appendix C of the Engineering Resources Report. Appendix A of the Engineering Resources Report addresses the differences between closed, decommissioned, and temporary roads by definition.

Difference between the initial Existing Condition roads open/ closed versus the Post Project open/closed and decommissioned roads is displayed in the effects analysis tables of the Engineering Resources Report, Chapter 3.8 of the EA. In agreement also, is that there is no difference between alternative 2 and alternative 3 proposed timber units, therefore no difference in the haul routes needed. However, analysis displays road status for haul as prior to "post Project" road status. Refer to Engineering Resource Report Appendix B, which displays by route number, the current ML by alternative 2 or 3, the post project MLs.

Regarding the claim that "it seem highly unlikely that following a commercial timber …. Would fund the necessary ongoing repair and maintenance." Repair and maintenance of roads used for timber haul during operations are addressed in contract. Requirements for maintenance, safety and repair are addressed in the timber sale contract. See also response to 48-20. [ID#37]

Associated Comments: [Seq#35]

While, road decommissioning is touted as part of the current restoration proposal, there are in fact, multiple impactful road activities planned and the "purpose and need" for such is primarily determined by logging activities: "The roads and their miles [approximately 55.72 mi.] for both Alternative 2 & 3 are the same for log haul. Therefore, both the direct and indirect effects of Alternative 3 would be the same as discussed in Alternative 2 regarding timber harvest activities…" (p. 217 in Mission Restoration Preliminary Environmental Assessment Okanogan-Wenatchee National Forest-MVRD). The proposal also identifies that "…some currently closed NFS roads and unauthorized roads would no removal be opened and maintenance and/or reconstruction activities would occur. Short temporary roads would be constructed for use during vegetation management activities and decommissioned after use." (p. 214, ibid.) Alternative 1-no action on the transportation system, discusses it's impact which, as expected, " ...results in high sediment delivery from open roads and no removal or treatment of road stream crossings…because the current road maintenance funding levels are lower than needed to maintain all

existing roads…with no foreseeable funding to make the necessary repairs." (p. 213 ibid.) So herein lies an unmanageable conundrum. The USFS is proposing to allow heavy mechanized logging operations, to be accessed by roads which are already compromised and pose great risk to the aquatic environment. If no logging is performed there is limited or no funding to maintain or repair existing roads. If logging is permitted, with its resultant high-impact, from where will the funding materialize? This does not appear to be described in the proposal; it is not apparent that the USFS has committed to do anything restorative to its roads after the timber harvest occurs. It seems highly unlikely that following a commercial timber operation that the logging companies would fund the necessary ongoing repair and maintenance. [47-16]

Concern: [Seq#36]

"

What is of concern is the duration of time which any of the "temporary" roads or "re-opened roads" will be in use. After the timeline for the use of such roads (which is not addressed in the proposal) will they be closed forever or used again for more "treatments" in the foreseeable future? Will the roads be reclaimed? How would the USFS define reclamation? Will the road beds be ripped-up; will the slopes be restored; will stream channels be reconstructed; will the native vegetation be restored? Such processes would represent the restoration required. In the absence of these actions roads would be present, whether they are referred to as "temporary" or otherwise. And, again, from what source is the funding for this originating? And, at any rate, that sounds like a lot of work for a subsoiler to accomplish (and, besides which, subsoiling will not accomplish the entire endeavor). Sensitive habitats simply cannot be further exposed to the impacts associated with more heavy transportation. My best recommendation is that you seek the funds necessary to decommission a vast stretch of the roads and not use them again. This would be the most restorative thing that the USFS could do.

" [ID#38]

Response: [Seq#36]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original

2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

See definition of Temporary roads in Appendix A of the Engineering Resources Report (or Appendix B of the EA) as "A road necessary of emergency operations or authorized by contract, permit… Note that these roads are on the landscape for a relatively short and defined period of time… with a specific project… typically not open to the public."

They are also addressed Design Features/BMPS/ Mitigation measures section of the Engineering Resources Report to minimize soil impacts and in Appendix D of the EA. The effects analysis sections by the action alternatives state in Engineering Resources Report "Short temporary roads would be constructed for use during vegetation management activities and decommissioned after use."

Roads reopened in use will be addressed by the contract provisions of the "vegetation management" or timber sale contract. If additional vegetation management activities occur post timber sale actions, then refer the Appendix B list of "post project" ML. [ID#38]

Associated Comments: [Seq#36]

What is of concern is the duration of time which any of the "temporary" roads or "re-opened roads" will be in use. After the timeline for the use of such roads (which is not addressed in the proposal) will they be closed forever or used again for more "treatments" in the foreseeable future? Will the roads be reclaimed? How would the USFS define reclamation? Will the road beds be ripped-up; will the slopes be restored; will stream channels be reconstructed; will the native vegetation be restored? Such processes would represent the restoration required. In the absence of these actions roads would be present, whether they are referred to as "temporary" or otherwise. And, again, from what source is the funding for this originating? And, at any rate, that sounds like a lot of work for a subsoiler to accomplish (and, besides which, subsoiling will not accomplish the entire endeavor). Sensitive habitats simply cannot be further exposed to the impacts associated with more heavy transportation. My best recommendation is that you seek the funds necessary to decommission a vast stretch of the roads and not use them again. This would be the most restorative thing that the USFS could do. [47-21]

Concern: [Seq#37]

"and risking human safety on Libby Creek and Black Pine Lake Roads by logging trucks, with only consideration for short term goals, is disregarding present quality of life for this watershed." [ID#39]
Response: [Seq#37]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

[ID#39]
Associated Comments: [Seq#37]
and risking human safety on Libby Creek and Black Pine Lake Roads by logging trucks, with only consideration for short term goals, is disregarding present quality of life for this watershed. [48-12]

Concern: [Seq#38]

"

A number of residents along the primary log hauling route for the Libby Creek drainage have expressed safety concerns about year round log truck traffic, over a period of years, on narrow, increasingly populated and trafficked roads, where ice, heavy dust, and blind corners are the normal state of affairs. The FS claims that CB radios will allow residents to safely navigate the major hazard of industrial logging traffic. However, CB radios are installed in only a tiny number of cars; the likelihood of the majority of drivers on these roads using them is equally tiny. In addition, the FS disavows any responsibility for accidents that could occur on the county portion of the roads, though the risks the project presents on them are obvious. Public safety should not be compromised so that private parties can profit financially." [ID#40]
Response: [Seq#38]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

[ID#40]

Associated Comments: [Seq#38]

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Concern: [Seq#39]

"

The Methow Valley Snowmobile Association has reviewed the Mission Restoration Project. We are concerned about the closure of the 4300-200 road. This route has been used for years by MVSA members, local Cattle Ranchers, Bikers and Equestrian users. We would like to suggest that a 6 foot opening be allowed for all of the above users. Four feet was talked about in previous discussions with the Forest Service. For winter use a four foot wide path does not work. The path is reduced in the winter due to snow loaded vegetation on the side. Having this access from Libby Creek Road to Buttermilk Road allows many users use the Forest throughout the year. Thank you for your understanding and consideration." [ID#41]

Response: [Seq#39]

This concern has been met in the proposed action. An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations by resources (ex: range, silviculture, timber, aquatics, soils, wildlife, invasive-weeds, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The summary is recorded in Appendix B of the Engineering Resources Report. Appendix B displays administrative access for the grazing permittees, resulting from inputs and request from the rangeland management specialist who participate in the TAP. Reviewing Appendix B, the 4300200 road provides for Administrative access labeled as Management Level (ML) 2A in the table. There was a small fragment that was determined for Decommissioning (D) not needed for this access. Recreation also participated in the interdisciplinary meetings, and that input was also considered for this road and associated spurs.

[ID#41]

Associated Comments: [Seq#39]

The Methow Valley Snowmobile Association has reviewed the Mission Restoration Project. We are concerned about the closure of the 4300-200 road. This route has been used for years by MVSA members, local Cattle Ranchers, Bikers and Equestrian users. We would like to suggest that a 6 foot opening be allowed for all of the above users. Four feet was talked about in previous discussions with the Forest Service. For winter use a four foot wide path does not work. The path is reduced in the winter due to snow loaded vegetation on the side. Having this access from Libby Creek Road to Buttermilk Road allows many users use the Forest throughout the year. Thank you for your understanding and consideration. [57-1]

Concern: [Seq#40]

As part of decommissioning roads, we recommend that you include treatments to eliminate established invasive plant species. It may save future disturbances and reduce the overall cost of treatments. [ID#42]

Response: [Seq#40]

The New Invader weed sites within the Mission Analysis Area would be prioritized and treated with herbicide as authorized by the existing Integrated Weed Management decisions. Not all weed sites would be treated. Priority sites that would be treated include weed populations on roads proposed for decommissioning and roads proposed for closure. The Okanogan-Wenatchee National Forest. Forest-wide Site Specific Invasive Plant Treatment EIS was completed during the summer of 2017 and all weed treatments would be authorized under this decision and prior decisions. This is discussed in the draft preliminary EA on page number 266. [ID#42]

Associated Comments: [Seq#40]

As part of decommissioning roads, we recommend that you include treatments to eliminate established invasive plant species. It may save future disturbances and reduce the overall cost of treatments. [33-9]

Concern: [Seq#41]

Although some of the attention to weed detail in the EA is appreciated, I have concern that some words seem just words. Even though the draft EA states, "Overall weed cover would remain relatively low", Mission soil disturbances from logging as well as opening up the forest cover will allow increased cattle "distribution" and access and will be expected to increase invasive weeds. [ID#43]

Response: [Seq#41]

Despite the relatively large number of cattle that are brought in from areas outside the Mission Analysis Area, extensive weed surveys in recent years have not detected any of the weed species listed as Potential Invaders and most invasive populations are along roads, not in the general forest where cattle graze. Areas of heavily disturbed soils would be seeded, including landings and main skid trails. This would reduce soil erosion potential and area for weeds to become established. The combination of design features to minimize ground disturbances during summer operations and optional winter logging over snow would greatly reduce soil disturbance and prevent the spread or establishment of new weed populations. Ongoing integrated weed management work would add to the design criteria to reduce the spread and new introductions of invasive plants within th eproject area. See EA page numbers: 261, 266, 267. [ID#43]

Associated Comments: [Seq#41]

Although some of the attention to weed detail in the EA is appreciated, I have concern that some of the words seem just words. Even though the draft EA states, "Overall weed cover would remain relatively low", Mission soil disturbances from logging as well as opening up the forest cover will allow increased cattle "distribution" and access and will be expected to increase invasive weeds : [6-9]

Concern: [Seq#42]

I have been in areas of the Mission proposal in the past and also did visit parts of the Libby Creek portion at the end of September 2015. The parts that I visited appeared sadly over-grazed, for height remaining of forage, for ground compaction and disturbance, and for populations of invasive weeds. [ID#44]

Response: [Seq#42]

The Lookout Mountain allotments has many designated monitoring areas (DMAs) across the allotments for monitoring forage utilization. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the

project area have been meeting allowable use standards over the past 10 years with few exceptions. 2015 was one of the driest years on record and may have exacerbated the appearance of overgrazing in the localized high use areas. Refer to draft EA page number 236. [ID#44]

Associated Comments: [Seq#42]

I have been in areas of the Mission proposal in the past and also did visit parts of the Libby Creek portion at the end of September 2015. The parts that I visited appeared sadly over-grazed, for height of remaining forage, for ground compaction and disturbance, and for populations of invasive weeds. [6-6]

Concern: [Seq#43]

Although I have interest in support for local ranching, ongoing improvements in range management on these public lands must continue to move toward better landscape conditions. The EA does give attention to the need for riparian protection, buffer and barriers, range riders and so forth, and that there is "currently a need to reduce the level of livestock use in some riparian areas." Follow through on this EA attention is what is needed of course, from both the Forest Service and any involved rancher. [ID#45]

Response: [Seq#43]

Specific features, including Best Management Practices, are incorporated into the design of the Action Alternatives to prevent potential resource impacts. These criteria are an integral part of the proposed actions and the effects analyses presented in Chapter 3 are based on these measures being implemented. [ID#45]

Associated Comments: [Seq#43]

Although I have interest in support for local ranching, ongoing improvements in range management on these public lands must continue to move toward better landscape conditions. The EA does give attention to the need for riparian protection, buffers and barriers, range riders and so forth, and that there is "currently a need to reduce level of livestock use in some riparian areas." Following through on this EA attention is what is needed of course, from both the Forest Service and any involved rancher. [6-7]

Concern: [Seq#44]

Water Quality: Livestock grazing is identified as a factor limiting water quality within the project area: "Riparian roads and livestock grazing are chronic sources of erosion and sediment delivery," (Hydrologic/Aquatic Resources Report, page 12), but its analysis is omitted by the EA due to its coverage under the 2011 Grazing Allotment Management Plan (USDA 2011). The Collaborative understands the Forest Service's need to prevent overlap with previous NEPA analysis and decisions. However, precedent has been set within the OWNF for projects to address resource protection/enhancement needs

associated with other uses (e.g., livestock fencing, Tonasket District, North Fork Mill Project A to Z, 2015). Because livestock-related impacts to water quality within the project area have been identified as a significant limiting factor, we strongly recommend using the opportunity presented by the Mission Restoration Project to address this issue. Specific livestock allotment improvements to consider in the Mission Restoration Project include a need to maintain existing fencing, modify some existing fencing and install some additional fencing to meet the intent of the riparian management objectives for the Lookout Mountain Allotment plan. The upland water trough located off Road 4300400 is in need of repair. Cattle can get under the fence and are trampling the springs. Also, this enclosure should be increased in size downslope to protect the intermittent stream banks and springs. From this enclosure and following the abandoned road bed down slope toward the Buttermilk Creek bridge, there is a sizable area of springs and seeps (maybe 5 acres) that are heavily impacted by cattle. This area should have additional investigation and based upon the investigation; fencing may be needed to protect the riparian area. The fencing following Road 4300215 crosses a small creek and riparian area. Rather than follow the road, the fencing should be relocated upslope to protect the riparian area currently outside the enclosure. Note: The road inventory work previously submitted by the NCWFHC included pictures and descriptions of these areas. [ID#46]

Response: [Seq#44]

The specific livestock allotment improvements that you have recommended would be evaluated and any needed changes would be made under the direction of recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision. The management changes you have recommended are outside the scope of the Mission Restoration Project. The direction found in the AMP should give adequate direction in identifying and mitigating any specific livestock grazing impacts that are limiting water quality. [ID#46]

Associated Comments: [Seq#44]

* Water Quality: Livestock grazing is identified as factor limiting water quality within the project area: “Riparian roads and livestock grazing are chronic sources of erosion and sediment delivery,” (Hydrologic/Aquatic Resources Report, p. 12), but its analysis is omitted by the EA due to its coverage under the 2011 Grazing Allotment Management Plan (USDA 2011). The Collaborative understands the Forest Service’s need to prevent overlap with previous NEPA analyses and decisions. However, precedent has been set within the OWNF for projects to address resource protection/enhancement needs associated with other uses (e.g., livestock fencing, Tonasket District, North Fork Mill Project A to Z, 2015). Because livestock-related impacts to water quality within the project area have been identified as a significant limiting factor, we strongly recommend using the opportunity presented by the Mission Restoration Project to address this issue. Specific livestock allotment improvements to consider in the Mission Restoration Project include a need to maintain existing fencing, modify some existing fencing and install some additional fencing to meet the intent of the riparian management objectives for the Lookout Mountain Allotment plan: o The upland water trough located off Road 4300400 is in need of repair. Cattle can get under the fence and are trampling the springs. Also, this enclosure should be increased in size downslope to protect the intermittent stream banks and springs. o From this enclosure and following the abandoned road bed down slope toward the Buttermilk Creek Bridge, there is a sizable area of springs and seeps (maybe 5 acres) that are heavily impacted by cattle. This area should have additional investigation and based upon the investigation; fencing may be needed to protect the riparian area. o The fencing following Road 4300215 crosses a small creek and riparian area. Rather than

follow the road, the fencing should be relocated upslope to protect the riparian area currently outside the enclosure. Note: The road inventory work previously submitted by the NCWFHC includes pictures and descriptions of these areas. [33-5]

Concern: [Seq#45]

The cost to the ranchers per AUM has recently (2017) decreased to $1.87 (the equivalent of getting forage for less than $4/ton) This subsidy results in a deficit of approximately $2500,000,000 each year. This ongoing policy fails our public lands and ignores the tenet of responsible stewardship. It simply does not make sense to rent out our public lands to ranchers for below-market prices to prop up a waning and non-sustainable beef industry which degrades soil health, water, wildlife habitat, and the overall health of the land. Cattle are often much larger now (and gain weight faster) than when the AUM baselines were established, so a 1200 - 1500 lb. cow with a 500 lb. calf is being charged almost nothing. The AUM is based on a 1,000 lb. monthly unit. Unless this is accounted for, it's easy to overstock, which means these cattle are eating more and creating more environmental impacts than the same number would have a generation ago. Those impacts include things of interest to all citizens, and include water quality, soil and vegetation health and transitions, widespread dispersal of know environmental toxins through manure, and even the imposition of more numerous salt and modern composite blocks, some of which artificially attract wildlife. Can you sincerely profess to have a goal of ecosystem health while disregarding and disavowing the impact of cattle allotments? Ignoring the reality of this issue, refusing to put it on the table for discussion will surely not make it go away. Neither historical precedent, nor the political influence of industry lobbyists serve as justification for continuing a practice which results in massive fiscal deficits and has been demonstrated as having deleterious repercussions upon the landscape. [ID#47]

Response: [Seq#45]

This comment is an opinion and is outside the scope of the Mission Restoration Project. [ID#47]

Associated Comments: [Seq#45]

The cost to the ranchers per AUM has recently (2017) decreased to $1.87 (the equivalent of getting forage for less than $4/ton). This subsidy results in a deficit of approximately $250,000,000 each year. This ongoing policy fails our public lands and ignores the tenet of responsible stewardship. It simply does not make sense to rent out our public lands to ranchers for below-market prices to prop up a waning and non-sustainable beef industry which degrades soil health, water, wildlife habitat, and the overall health of the land. Cattle are often much larger now (and gain weight faster) than when the AUM baselines were established, so a 1200-1500 lb. cow with a 500 lb. calf is being charged almost nothing. The AUM is based on a 1,000 lb. monthly unit. Unless this is accounted for, it's easy to overstock, which means those cattle are eating more and creating more environmental impacts than the same number would have a generation ago. Those impacts include things of interest to all citizens, and include water quality, soil and vegetation health and transitions, widespread dispersal of known environmental toxins through manure, and even the imposition of more numerous salt and modern composite blocks, some of which artificially attract wildlife. Can you sincerely profess to have a goal of ecosystem health while

disregarding and disavowing the impact of cattle allotments? Ignoring the reality of this issue, refusing to put it on the table for discussion will surely not make it go away. Neither historical precedent, nor the political influence of industry lobbyists serves as justification for continuing a practice which results in massive fiscal deficits and has been demonstrated as having deleterious repercussions upon the landscape. [47-10]

Concern: [Seq#46]

Here within the Libby Creek watershed, the USFS has demonstrated that is is incapable of monitoring the grazing allotment permits which it grants. This is evidenced most recently during the 2016 season when cattle were still ranging, both on public and private lands, at least two months beyond the designated time period. Residents were obligated to take it upon themselves to notify the USFS and the ranchers more than once. I personally witnessed cows walking into Libby Creek and walking through my garden, my yard, and adjacent to my domestic water source. Ultimately, it was us-the residents-who had to show the ranchers where to find their cows as they sat in their trucks scratching their heads. Not only does this not bode well with respect to the practice of grazing allotments upon sensitive wild land areas, it does nothing to instill confidence that an under-funded, understaffed USFS can come close to monitoring and performing the necessary follow-up to this ambitious restoration plan of landscape proportions. The practice of grazing allotments must be re-visited. It is unrealistic to speak of "restoration" while continuing damaging practices which harken back to the values of the "old west". [ID#48]

Response: [Seq#46]

This comment is an opinion. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Draft EA page number 24. [ID#48]

Associated Comments: [Seq#46]

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[47-11]

Concern: [Seq#47]

Cattle grazing plays too big a part in causing the unhealthy forest for me to leave out the topic. If it is not addressed the forest will not be restorable and the USFS will not reach its goal of forest health and resilience. Fire regimes have changed in the west to favor livestock production including fire suppression to reduce loss of forage; increase of foraging increases tree seedling density; both of which increase unhealthy stands increasing the susceptibility to fire-prone stands. When cows wander into the creeks, they compact the moist soils, increase soil erosion and sediment and pollute the water and degrade the riparian zone. Cows spread exotic plants which will, by USFS plan, then result in herbicidal spraying because so many plants are toxic to cows. I am curios-how is it that a destructive practice such as the grazing of cattle in the forest is perpetuated as there is so little economic gains and so much contraindication? [ID#49]

Response: [Seq#47]

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Associated Comments: [Seq#47]

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Concern: [Seq#48]

I support Alternative 1, the no action alternative. I cannot support Alternative #2 or #3 in their entirety because of the commercial logging component, so I would have to opt for #1/No Action. [ID#50]

Response: [Seq#48]

Thank you for your comment. No response is necessary. [ID#50]

Associated Comments: [Seq#48]

I support no action on the proposed Mission Project until a plan that truly protects the habitat can be created [17-6]

I support alternative one, no action is needed. [19-1]

I support the no action alternative. [20-1]

I support alternative 1, no action alternative [21-1]

I support alternative 1, the no action alternative. [23-1]

I support alternative 1, the no action alternative [24-1]

I support alternative 1, the no action alternative [25-1]

I support alternative 1, the no action alternative. This ecosystem is vital to the local species that live there and absolutely should not be used for logging purposes. [26-1]

I support alternative 1, the no action alternative [28-1]

I support Alternative 1, the no action alternative. [29-1]

I firmly support Alternative 1, the no action alternative. [31-1]

I support Alternative 1, the no action alternative [32-1]

I support alternative 1, the no action alternative [34-1]

I support alternative 1, the no action alternative [38-1]

I support alternative 1, the no action alternative. [39-1]

I support alternative 1, the no action alternative [40-1]

I support alternative 1, the no action alternative [41-1]

I support alternative 1, the no action alternative [44-1]

Of the extremely limited choices, I support Alternative 1. [45-1]

I support alternative 1, the no action alternative [46-1]

In sum, I can only support Alternative 1, No Action. Some of my reasons are expressed in what follows. [47-23]

I cannot support Alternative #2 or #3 in their entirety because of the commercial logging component, so I would have to opt for #1/No Action. Trees sequester carbon, give us the air we breathe and hold the earth in place with their roots. Is it really in the forest's best interest that we carve it up attempting to recreate someone's mythically perfect time of the 1930's? ICO is a relatively new untried theory-Derek Churchill himself acknowledged this at a public meeting in Twisp (Sept. 2015). I am opposed to having the Methow be the "guinea pig" for this strategy. [48-3]

I cannot support Alternative #2 or #3 in their entirety because of the commercial logging component, so I would have to opt for #1/No Action. [51-3]

I am writing to comment on the proposed Mission Restoration Project. I am opposed to the Mission Restoration Project (hereafter “Mission Project”) as presented in the scoping document. [52-1]

I support alternative 1, the no action alternative. [53-1]

I support alternative one (1); no action. [55-1]

I support alternative one (1); no action. [56-1]

I support Alternative #1-No Action. [61-1]

Again, given the current EA, the only acceptable option for the Mission Project is the no-action alternative. [73-7]

Concern: [Seq#50]

More acres should be actively treated during this entry to protect existing stands from wildfire, improve forest health and enhance other resources. [ID#52]

Response: [Seq#50]

The Mission Restoration Project includes 10,968 acres of active vegetation and/or fuels management together (Preliminary EA page 30). For both Libby Creek and Buttermilk Creek, each patch on these landscapes was looked at regarding the need for treatment in order to meet the Purpose and Need for the these watersheds. Given the full range of Purpose and Need as well as Forest Plan Standards and Guidelines and economics, the Mission IDT believe that they have diligently identified every economic and ecologically responsible opportunity to apply vegetation and fuels treatment to the landscapes.

[ID#52]
Associated Comments: [Seq#50]
Wildfire exclusion through fire prevention efforts and modern suppression activities have resulted in excessive fuel accumulation and overstocked stands in the project area, making fuels reduction appropriate, necessary, and urgent. In addition, habitat for some species such as the northern spotted owl and deer and elk is either lacking or needs enhancement. Further justification for treating more of this landscape is demonstrated by the 2014-2015 fire season which was catastrophic in regards to acres burnt and resources lost in north-central Washington. Many stands in the project area are in need of treatment due to infestations of dwarf mistletoe and Douglas-fir bark beetles. With these facts in mind AFRC believes more acres should be actively treated during this entry to protect existing stands from wildfire, improve forest health and enhance other resources. [14-2]

Concern: [Seq#51]

This comment questioned the proposal to place wood into Buttermilk Creek, stating wood is not the primary influence for fish habitat. [ID#53]
Response: [Seq#51]

The Aquatic and Hydrologic section under Appendix D describes the water resources monitoring plan. Cobbles and boulders are key habitat forming elements in the Buttermilk Creek drainage as is large wood. Proposed treatment reaches are within gradient ranges where wood is effective in forming pools and gravel bars. [ID#53]
Associated Comments: [Seq#51]
AS far as the fish habitat improvements, is there a plan for monitoring the effectiveness? My familiarity with Buttermilk Creek is that much of it is boulder-dominated and confined; not the type of channel where LWD is the primary influence on habitat. [7-3]

Concern: [Seq#54]

The concern was for the Mission Project to consider the report titled "The Conservation of Aquatic and Fishery Resources in the Pacific Northwest: Implications of New Science for Aquatic Conservation Strategy [ACS] of the Northwest Forest Plan" and specifically, the statements made on page 13. [ID#58]
Response: [Seq#54]

We reviewed the CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy (ACS) of the Northwest Forest Plan by Frissell et al. (2014). This paper reviews recent science regarding the effectiveness of the ACS in relation to recent federal agency proposals (not the Forest Service) to reduce protective provisions. Frissell et al. argue that some of the ACS protection measures are inadequate and need strengthened rather than reduced. This project would not reduce protection measures in the ACS.

The ACS allows for vegetation treatments within Riparian Reserves (RR) in order to maintain and restore riparian conditions. The purpose of the proposed RR vegetation treatments are defined in the EA Chapter 1: Purpose and Need section. The goal is to increase RR stand resiliency to natural disturbances and to restore vegetation species composition and structure. The Mission Project Team understands and acknowledges the concerns detailed in the Frissell report. Treatments were designed to minimize impacts to aquatic and riparian resources and to protect aquatic habitat conditions. EA section 2.4 defines the design criteria for treatments in RRs, which include using 'no treatment' buffers along streams within the RRs, not cutting deciduous trees or shrubs, no riparian road construction, winter harvest conditions in most areas, using slash mats to walk skidders on, and no mechanical fuels treatments. [ID#58]

Associated Comments: [Seq#54]

I am also concerned about the greater wildlife impact this mission will have. I am especially concerned for aquatic life. (See CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan FINAL REPORT by Frissell, et al.) [17-2]

The scoping document should describe standards and guidelines in language of the Aquatic Conservation Strategy (ACS). Under the Aquatic Conservation Strategy, Riparian Reserves are used to maintain and restore riparian structures and functions of intermittent streams, confer benefits to riparian-dependent and associated species other than fish, enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and provide for greater connectivity of the watershed. The Riparian Reserves will also serve as connectivity corridors among the Late-Successional Reserves. [18-35]

Please see the attached research "CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan". [29-35]

The Report titled "The Conservation of Aquatic and Fishery Resources in the Pacific Northwest: Implications of New Science for Aquatic Conservation Strategy of the Northwest Forest Plan" concluded thus on page 13: Thinning and fuels reduction by means of mechanized equipment or for commercial log removal purposes should be generally prohib- ited in Riparian Reserves and Key Watersheds. Any thinning or fuels treatment that does occur as a restorative treatment in Riparian Reserves (e.g., to remove non-native tree species from a site) should retain all downed wood debris on the ground. Thinning projects that involve road and landing (including those deemed “tempo- rary”) construction and/or reconstruction of road segments that have undergone significant recovery through non-use should also be prohib- ited, due to their long term impacts on critical watershed elements and

processes. [52-3]

I recently came across a USFS literature review "CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan". The cited research should be included as "best available science" and indicates that the only MRP activity prioritized to occur with available funding would be detrimental to aquatic conditions, fire risk, and habitat of ESA- listed animals. [63-5]

Concern: [Seq#55]

Comments are concerned about the potential for increased sediment from the project treatments. [ID#59]

Response: [Seq#55]

Anticipated sediment effects from Mission Project were analyzed and disclosed under the water resources section of the EA. Design criteria such as rock armoring perennial stream crossings prior to log haul and not hauling in heavy rain events would limit surface erosion to minor levels. Applying no-harvest treatment buffers in Riparian Reserves and winter logging operations would mitigate and substantially reduce the potential for sediment delivery to streams from timber harvest. Aquatic and watershed restoration treatments are proposed within perennial streams that will result in short-term turbidity; however, they will result in long-term positive effects to habitat conditions like improved fish access, spawning and rearing habitat, improved base flows, and reduced chronic sediment point sources.

[ID#59]

Associated Comments: [Seq#55]

Do not create any new sediment and reduce sediment from the project area since it is harmful to aquatic species. Alternative 1, No Action, would not create any new sediment from proposed project activities. Alternatives 2 and 3 are designed to decrease sediment to area streams over the long-term.(p.24) [Alternatives 2 and 3 would “create new sediment” in streams presently impacted with high sediment levels further threatening ESA-listed salmonid habitat spawning and rearing conditions.] [11-21]

In addition, the erosion and sediment that would be caused by traffic and road improvement would impact aquatic health with the road just above the creek. [48-21]

Concern: [Seq#56]

These commenters called out two roads that have active slumps/slides that need geological investigations before road changes or removal occurs or else they will be problematic and pose risk to aquatic and other natural resources. [ID#60]

Response: [Seq#56]

The roads that the commenter is concerned about are proposed for decommissioning (417) and hydrologic closure (480). Prior to any road decommissioning or closure, the sites are assessed by Forest Service specialists including hydrologists and engineers. We will take note of your concerns and the sites will be assessed for soil stability risks. Decommissioning and closures will be planned in such a way that no further maintenance would be needed. Thank you for your input. [ID#60]

Associated Comments: [Seq#56]

Located on roads to be decommissioned are a slump and a slide that should have additional geological investigation before these roads are closed. Additional measures may need to be incorporated into the decommission design. This may prevent future problems and avoids opening and closing decommissioned roads if additional work is required. The slide actively flowing into East Buttermilk Creek is on Road 4300417. This slide appears to have been treated in the past, but there are surface indicators showing the slide remains in an active state. The slump is located on Road 4300480. It is in the early stages and there are surface indicators of slumping and wasting that indicate more activity may occur. Notes and pictures of these two problem areas are contained in the road inventory work submitted by the NCWFHC. [33-8]

Concern: [Seq#57]

This commenter suggests the statement about roads and trails having minimal impact on water quality, quantity, flow regimes, and wildlife is inconsistent with road impacts found in best available science. [ID#61]

Response: [Seq#57]

This statement describes the project's 'desired condition' for the future road network in the Mission Project area. The Mission Project Team acknowledges the extensive studies and science on the negative impacts roads have on stream systems and wildlife. Proposed changes to the road network would disconnect several roads from the stream network and from disrupting riparian function, resulting in a more stable and lower impact road network. [ID#61]

Associated Comments: [Seq#57]

NFS roads and trails have minimal impact on water quality, water quantity, flow regimes, and on wildlife.(p.19) [Best available science does not suggest this result regarding the adverse impacts of fire

or transportation associated with commercial logging.] [11-7]

Concern: [Seq#58]

This comment believes that the proposed actions would significantly alter fish habitat and should not be considered restoration activities. This letter cites a report from NOAA that discusses land management practices and the negative impacts to stream habitat.

[ID#62]
Response: [Seq#58]

Past logging practices applied little or no protection along streams that significantly altered fish habitat across the western United States. The report cited in this comment (NOAA 2014) is referring to historic land management practices that did significantly degrade stream habitat and water quality. Current land management practices, such as the Northwest Forest Plan, provide much greater protection for activities like logging and forest road construction on National Forest land and the State Forest Practices Act does the same on State and private lands. For example, management direction under the Aquatic Conservation Strategy includes Riparian Reserves, Key Watershed designation, and Watershed Analyses that require actions to maintain or restore aquatic and riparian resources. The watersheds that are part of the Mission Restoration project and still experiencing the effects from previous road construction and logging and this project proposes to help alleviate these impacts by decommissioning roads and planning harvest activities in such a way as to prevent riparian and stream habitats. Additionally, the proposals for culvert replacement, beaver enhancement sites, and large wood habitat enhancement are activities that will directly improve stream habitat in a measurable way. [ID#62]
Associated Comments: [Seq#58]
Supervisor Williams, after reading your pre-decisional EA its clear you reject the following scientific advice. I will expect your final EA to contain science authored by respectable scientists not connected with the USDA that refutes the quote below published by the NOAA fisheries Office of Protect Resources. Nobody in their right mind would believe an action that "significantly alters fish habitat quantity" is a "restoration" project as you say. Please explain why NOAA should not be trusted. "Land use activities associated with logging, road construction, urban development, mining, agriculture, and recreation have significantly altered fish habitat quantity and quality. Associated impacts of these activities include: alteration of streambanks and channel morphology; alteration of ambient stream water temperatures; degradation of water quality; reduction in available food supply; elimination of spawning and rearing habitat; fragmentation of available habitats; elimination of downstream recruitment of spawning gravels and large woody debris; removal of riparian vegetation resulting in increased stream bank erosion; and increased sedimentation input into spawning and rearing areas resulting in the loss of channel complexity, pool habitat, suitable gravel substrate, and large woody debris." Pacific Salmonids: Major Threats and Impacts Published by NOAA fisheries Office of Protect Resources, May 15, 2014 http://www.nmfs.noaa.gov/pr/species/fish/salmon.html [2-6]

Concern: [Seq#59]

This commenter states the Upper Columbia River Spring Chinook are endangered and at high risk of extinction and implies the Mission Project should not impact UCR because of their tenuous status. [ID#63]

Response: [Seq#59]

Two key elements in developing the Mission timber harvest, fuels treatments, and their associated road actions was to design in such a way that the short-term impacts from treatments were reduced to insignificant levels and they would provide some benefit to riparian function in the long term. See the Design Criteria in the EA in Section 2.4 and Appendix D for details. The aquatic and watershed treatments would restore important functions that would contribute the recovery of UCR. [ID#63]

Associated Comments: [Seq#59]

A NOAA Fisheries five year status review completed last year found that upper Columbia River spring chinook are at high risk of extinction, even after a recovery plan was put into place in 2007. Because of this extinction risk, the Fish and Wildlife Committee of the Northwest Power and Conservation Council at its Portland meeting Tuesday, February 14, agreed to ask the Independent Scientific Advisory Committee to review the status and the efforts to recover the upper Columbia River spring chinook evolutionary significant unit (ESU), which was listed as endangered under the federal Endangered Species Act March 24, 1999. The ESU includes three populations – the Wenatchee, Entiat, and Methow subbasins – and one extinct population in the Okanogan subbasin. [11-11]

Concern: [Seq#60]

The comment states the Mission Project should enhance degraded watershed conditions without any negative impacts to fish, wildlife, and other resource values. No disturbances should occur. [ID#64]

Response: [Seq#60]

There are a suite of treatments proposed across the project area that would enhance fish, wildlife, and other resource values. Several areas currently functioning at risk will be allowed to improve passively while other areas warrant active restoration treatments. Some restoration treatments result in short-term impacts to resources, but then provide long-term benefits. The project was designed to provide minimize short-term impacts to aquatic habitat. Design criteria, listed in EA Section 2.4 and Appendix D, describe measures that would reduce short-term impacts from most actions including timber harvest, fuels reduction, and log hauling to insignificant levels. Some of the purely aquatic restoration treatments would result in greater temporary impacts due to their locations within streams.

Best management practices would minimize impacts and no irreversible impacts would occur. Once condition stabilize, these aquatic treatments would result in substantial local enhancements that would contribute to at risk fish recovery. [ID#64]

Associated Comments: [Seq#60]

Let the project area recover naturally; eliminate new disturbance. Selection of this alternative would not meet the Purpose and Need statements for this project.(p.24) [The purpose and need should include enhancement of watershed function without degradation of fish and wildlife habitat or the values of other area residents.] [11-24]

Okanogan Forest Plan Fisheries (USDA Forest Service 1989a pg 4-30-32): 3-1 Maintain or enhance biological, chemical, and physical qualities of forest fish habitats. 3-2 Rehabilitate fish habitats where past management activities have adversely affected their ability to support fish populations. Those fish habitats identified as having impacts from management activities shall be managed to show an upward trend with at least a 5 percent increase in condition per year until objectives for the habitat are met.(Restoration Aquatics Hydrology Resource Report , p.4) ["Fine sediment within the Libby Creek drainage is Functioning At Risk and below desired levels for fish production."(pp.57-58) The Standards and Guidelines provide for a 5% increase in condition each year they do not accommodate even a short-term annual increase in sedimentation which would be the best outcome predicted by these planned activities.] [11-59]

Third, the EA states that conditions such as stream sediment levels are already improving on their own, but that the Mission Project will improve things better and faster. Assuming the long term effect of the project actually would be positive (which I do not believe), this seems like a tortoise and the hare situation. What makes you believe that a slower, natural improvement in conditions will actually produce fewer results in the end than a speedy operation that takes many steps backwards before moving forwards? [29-15]

Concern: [Seq#61]

The commenter does not agree that timber harvest and the accompanying road construction can provide ecological benefits and provides several attachments with many articles and literature supporting his position. [ID#65]

Response: [Seq#61]

One of the referenced attachments (#21) was not included with the comment letter. After having read the other three attachments (#1, #4 and #26) there appears to be no new, peer reviewed science being presented. Most of the articles are individual responses (opinions) to non-peer reviewed literature. This material is informative, but not policy setting. There is no construction of permanent roads and only 1.2 miles of temporary road construction. The action alternatives would decommission 33.6 and 56.2 miles of road in alternatives 2 and 3 respectively (Preliminary EA page 31). Specific responses to Attachment #1 are included in the project record. Response to Attachment #4 are addressed under Letter 80, but

this attachment provides no new or additional information from what was considered in the EA or that is inconsistent with or that refutes science used in the preparation of the Mission Restoration project. Attachment #26 is aerial photos of past clearcut units, all most all not on the Okanogan-Wenatchee Forest. No photos are of the type of treatments proposed in this project. [ID#65]

Associated Comments: [Seq#61]

After reading the Attachment #21 to these comments any intelligent, unbiased human being would conclude the proposed Mission timber sale "restores" nothing but the purchaser's financial bottom line. I cannot believe there are still USFS employees who really believe commercial timber sales "restore" anything. You know "restoration project" is the new USFS buzzword for timber sale. It seems that someone on the Okanogan-Wenatchee National Forest would have known Webster's definition of "restoration" before they incorrectly use the term in this public document. Who are you people? People who aren't driven to comply with the agency's timber agenda understand the tragic ecological impacts of logging especially after reading Opposing Views Attachments #1and #4 and viewing the photos in Attachment #26. Those with the courage to read these attachments with an open mind will understand the Mission timber sale does not "restore" anything according to the real definitions of "restore" shown below Webster - "to bring back to or put back into a former or original state" American Heritage - "To bring back to an original or normal condition: restore a building; restored the patient to health." Collins - "to return (something, esp a work of art or building) to an original or former condition" Ask yourself how plundering the forest's natural resources with noisy skidders and tractors weighing 17 tons with spinning wheels and tracks creates a healthier forest. Indeed, the USFS uses the term "restore" and "restoration" to trick and deceive the public into believing timber sales are ecologically friendly. An agency that uses these slimy tactics (and agency employees who assist) does not serve anyone or anything but their self interest. Do you really want to be apart of this? A few of you know exactly what's happening but your job pays too well. Here's a little history on "restoration projects." The public's opposition to timber sales and commercially logging their national forests had been steadily increasing. In the fall of 2008 Chief Kimbell took action hoping to regain agency credibility. She knew she must never take action to really reduce the adverse impact of logging so she chose deception to maintain agency timber goals as part of her attempt to placate and pacify the public. She issued verbal direction to the Regional Foresters to phase out the use of the terms "timber sale" and "logging" in documents that might be read by the public. "Timber sale" was to be replaced with "restoration project" and "logging" was to be replaced by "treatment." USFS line-officers are taught to say and do anything to serve-up volume to their corporate masters. The well meaning members of this IDT know they must play the game and be "team players" to maintain their promotion opportunities in the timber dominated agency. Perhaps by now a few IDT members know they are selling their good names. [2-4]

Concern: [Seq#62]

The USDA Office of Inspector General concludes that commercial timber sales are not restoration projects. To wit:

"We concluded that commercial timber sales do not meet the criteria for forest restoration." (Pg. 11)

Long, Richard D., U.S. Department of Agriculture Office of Inspector General

Western Region Audit Report: Forest Service National Fire Plan Implementation"

Report No. 08601-26-SF, November 2001.

http://www.usda.gov/oig/webdocs/08601-26-SF.pdf

Supervisor Williams, why do you disagree with the OIG by referring to your Mission timber sale as a "restoration" project? [ID#67]
Response: [Seq#62]

This reference is taken out of context. The page referenced in the OIG report addresses post-fire salvage. The Mission Restoration Project does not include any post-fire salvage. [ID#67]
Associated Comments: [Seq#62]
The USDA Office of Inspector General concludes that commercial timber sales are not restoration projects. To wit: "We concluded that commercial timber sales do not meet the criteria for forest restoration." (Pg. 11) Long, Richard D., U.S. Department of Agriculture Office of Inspector General "Western Region Audit Report: Forest Service National Fire Plan Implementation" Report No. 08601-26-SF, November 2001. http://www.usda.gov/oig/webdocs/08601-26-SF.pdf Supervisor Williams, why do you disagree with the OIG by referring to your Mission timber sale as a "restoration" project? [2-5]

Concern: [Seq#63]

Commenter requests that the FS refute a statement made by Arthur Partridge, Ph.D that was testimony in a conference with Senator Torricelli in 1998. [ID#68]
Response: [Seq#63]

Dr Partridge presents no science to refute. He is merely presenting his opinion. [ID#68]
Associated Comments: [Seq#63]
Supervisor Williams, after reading your pre-decisional EA its clear you reject the following scientific advice. I will expect your final EA to contain science authored by respectable scientists not connected with the USDA that refutes the quote below written by Dr. Arthur Partridge. Clearly, an action that "destroys soil, watersheds and biodiversity of native forests" is not a "restoration" project as you say. "Forests are structured systems of many life forms interacting in intricate ways and disturbances are essential to their functioning. It's not fire, disease, fungi, bacteria and insects that are threatening

the well being of forests. Disease, fire, windthrow, and other disturbances are a natural part of the forest ecosystem and assist in dynamic processes such as succession that are essential to long term ecosystem maintenance. The real threat facing forests are excessive logging, clearcutting and roadbuilding that homogenize and destroy soil, watersheds and biodiversity of native forests." Partridge, Arthur Ph.D., professor emeritus, University of Idaho Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm [2-7]

Concern: [Seq#64]

Commenter is concerned that the ecological cost of logging outweighs the value of the timber harvested and presents an article from 2002 to support his position. [ID#69]

Response: [Seq#64]

The article presented is an opinion piece and is also dated. It is acknowledged that national policies in regard to management of the National Forests have shifted greatly over the years, and that earlier practices often had undesirable, unintended consequences. New ecologically oriented policies emerged during the planning stages for this project. The Okanogan-Wenatchee Forest Restoration Strategy (USDA-FS-2012) was considered in the design of this project (EA page 421) [ID#69]

Associated Comments: [Seq#64]

Supervisor Williams, after reading your pre-decisional EA its clear you reject the following scientific advice. I will expect your final EA to contain science authored by respectable scientists not connected with the USDA that refutes the quote below written by Drs. Ehrlich, Foster and Raven. An action that "damages watersheds, destroy wildlife habitat and imperil plant and animal species" is not a "restoration" project as you say. "For much of the past century the Forest Service, entrusted as the institutional steward of our National Forests, focused its management on an industrial-scale logging program. The result of the massive logging and road construction program was to damage watersheds, destroy wildlife habitat and imperil plant and animal species." "The continued logging of our National Forests also wastes American tax dollars and diminishes the possibilities of future economic benefits. The Forest Service lost $2 billion dollars on the commercial logging program between 1992-1997. Annually, timber produces roughly $4 billion while recreation, fish and wildlife, clean water, and unroaded areas provide a combined total of $224 billion to the American economy. Forests purify our drinking water - 60 million Americans get their drinking water from National Forests. When the dramatic values of ecological goods and services are taken into account, it is clear that protecting National Forests creates more economic benefits than continued logging." Ehrlich, Anne Ph.D., David Foster Ph.D. and Peter Raven Ph.D. 2002 "Scientists Seek Logging Ban on U.S.-Owned Land" New York Times, April 15, 2002 http://www.nativeforest.org/campaigns/public_lands/stb_5_30_02.htm [2-8]

Concern: [Seq#65]

There is a concern that the FS will not be able to achieve the attainment of both historical and future stand conditions through logging. Harvest activities are responsible for the current problems and can not be part of the solution. [ID#70]

Response: [Seq#65]

Not all of the effects of previous management are from commercial logging. There are also landscape departures caused from not allowing fire or encouraging fire (as did native American peoples) on the landscape, which resulted in too many multistoried stands as compared to historical conditions. Not all logging has the same effects. Under current regulations and the use of the best management practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events. There is no other way to achieve that result that is as safe, responsible and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103). [ID#70]

Associated Comments: [Seq#65]

The need for aquatic and soil restoration treatments was based on field verification of impacts from past forest management practices. A purpose of this project is to restore and maintain aquatic and hydrologic processes impacted by management, improve habitat for Threatened and Endangered aquatic species, and increase watershed resiliency to existing and anticipated disturbances. A purpose of this project is to restore soil-related processes and functions where past management practices have created detrimental effects. A purpose of this project is to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease, and wildfire events. (pp.12-13) [This is contradicted by a stated goal of returning the stands to what they were preEuropean settlement. Best science will not support commercial logging obtaining both historical and future stand conditions. Forest management plans call for continuation of activities that resulted in the impacts noted, therefore the treatments planned should not be expected to remedy the existing problems (see Mission Aquatics Assessment Support Project FINAL REPORT, January 2016).] [11-3]

How can the Mission Restoration Project, with a stated primary goal of ecosystem restoration, hope to restore the health of the forest and aquatic ecosystems using the same human activities that have created the current problems? [51-25]

Concern: [Seq#66]

The commenter requests an explanation of how both the historic and future conditions can be met by planned commercial activity and beef production. [ID#71]

Response: [Seq#66]

Neither beef production nor livestock management are activities planned in the Mission Restoration Project. The target range (Desired Range of Variability) and rationale for each of the metrics (resource indicator) for landscape and forest restoration shown in the vegetation portion of the EA is found in the EA on page 103. How the planned vegetation management activities meet (or not) the target range, which is the overlaps of the Historical Range of Variability and the Future Range of Variability, is presented in the Vegetation portion of the EA starting on page 123 and concluding on page 135 of the preliminary EA [ID#71]

Associated Comments: [Seq#66]

Key components of the composition, structure, and pattern of forest vegetation are within either the Historic Range of Variability (HRV), the Future Range of Variability (FRV), or moving towards them.(p.18) [An explanation of how both the historic (preEuropean settlement) and future (considering climate change) forest stand conditions can be met by planned project actions and management activities (i.e., commercial logging and beef production)should be included.] [11-6]

Concern: [Seq#67]

There is concern that large diameter trees (over 19 inches at DBH) are being included in the sale because of economics and that their value to the ecosystem outweigh the inherent value of the trees.

There is also a concern that the preferred species composition for the future stands is capricious. [ID#72]

Response: [Seq#67]

All trees greater than 24 inches would remain. Although the harvest of 19-24 inch trees has not been excluded from the project, the intent of this concern would be addressed because only trees that are both younger than 150 years and less than 24 inches in diameter would be considered for harvest and even then only occasional trees between 21 and 24 inches would be harvested. Under most situations, conifers would be thinned from below, retaining trees among the largest, most vigorous, and most preferred conifer species present to meet treatment objectives (page 305 Preliminary EA). The effects of the proposed action alternatives on large and medium sized trees is shown on pages 124-125 of the preliminary EA.

Preferred species for restoration are the ones that are most resilient to both fire and insects. Fire resilience among trees over 10 inches DBH are found in ponderosa pine, western larch and Douglas-fir. The thinner barked Engelmann spruce, lodgepole pine and subalpine fir are very susceptible to the cambium layer being damaged by fire, which usually results in mortality with even moderate flame lengths. Western larch is the most resistant to bark beetles, while ponderosa pine and western larch are the most resistant to defoliators. Douglas-fir is very vulnerable to defoliators. So, these three species are the preferred species when treating in hot-dry, warm-dry and cool-dry sites where frequent, low impact

fire has historically been found. Among these three, Douglas-fir is the least desirable due to it's vulnerability to defoliation and western larch is not present in the Libby Creek and Buttermilk Creek subwatersheds. In the more mesic and cooler sites, susceptibility to defoliation is the bigger factor. Subalpine fir is much more vulnerable to defoliation than Engelmann spruce and lodgepole pine. All of the thin barked species are vulnerable to bark beetles, but lodgepole pine is vulnerable at an earlier age than the other two species. [ID#72]

Associated Comments: [Seq#67]

Do not cut trees greater than 19” diameter at breast height (dbh). Limiting harvest to trees less than 18 inches DBH would not provide a cost-effective method to accomplish proposed vegetation management treatment objectives including: maintenance and restoration of large trees, reduction of conifer encroachment to promote aspen, dwarf mistletoe reduction, and promotion of preferred conifer species in treated areas.(p.25) [The inclusion of trees larger than 19” dbh and restricting logging to easy access areas adjacent to existing and planned opening of roads recovering from past commercial logging makes this planned project profitable to the proponent members of the collaborative. Large trees need to be left standing for their inherent values (that will maintain them, only time will restore them). Environmental conditions will determine which species will thrive in “treated” areas, not the preference of forestry computer modelers.] [11-25]

The inclusion of trees larger than 19" dbh and restricting logging to easy access areas adjacent to existing and planned opening of roads recovered from past commercial logging makes this planned project profitable to the proponent members of the collaborative. Large trees need to be left standing for their inherent values (that will maintain them, only time will restore them). Environmental conditions will determine which species will thrive in "treated" areas, not the preference of forestry computer modelers. [68-136]

"No large trees would be harvested. Some of the medium sized trees would be harvested…" (124.) What is a "large tree" and what is a "medium sized tree"? What does "some" mean, quantitatively speaking (using numbers)? The EA should document the standards to allow the public to interpret this vaguely stated intent. [72-85]

16. We would hope that the removal of large trees, greater than 18" dbh, would be kept to a minimum, as these trees ultimately will form stands that resemble historic conditions. [78-47]

Concern: [Seq#68]

The composition of forest stands is dependent on environmental conditions (ie. soil, exposure, moisture), not "desire" and the best way to maintain the large trees in a stand is to not harvest them. [ID#73]

Response: [Seq#68]

Preferred species for restoration are the ones that are most resilient to both fire and insects. Fire resilience among trees over 10 inches DBH are found in ponderosa pine, western larch and Douglas-fir. The thinner barked Engelmann spruce, lodgepole pine and subalpine fir are very susceptible to the cambium layer being damaged by fire, which usually results in mortality with even moderate flame lengths. Western larch is the most resistant to bark beetles, while ponderosa pine and western larch are the most resistant to defoliators. Douglas-fir is very vulnerable to defoliators. So, these three species are the preferred species when treating in hot-dry, warm-dry and cool-dry sites where frequent, low impact fire has historically been found. Among these three, Douglas-fir is the least desirable due to it's vulnerability to defoliation and western larch is not present in the Libby Creek and Buttermilk Creek subwatersheds. In the more mesic and cooler sites, susceptibility to defoliation is the bigger factor. Subalpine fir is much more vulnerable to defoliation than Engelmann spruce and lodgepole pine. All of the thin barked species are vulnerable to bark beetles, but lodgepole pine is vulnerable at an earlier age than the other two species.

Environmental conditions are the determinant factor in species presence and persistence. However, besides soil, exposure and water, disturbance patterns also greatly effect stand composition. Restoration of historical stand composition is achieved By removing non-fire resistant species from a frequent fire landscape.

The relatively rare times when trees between 19 and 24 inches would be harvested would be to release and maintain aspen and even larger and older conifer trees or to remove dwarf mistletoe infected trees that put neighboring trees at risk to the same disease and the fire which could use the mistletoe broom as a ladder into the tree canopy of older and larger trees (EA pages 305-314) . [ID#73]

Associated Comments: [Seq#68]

2.1.1 Pacific Biodiversity Institute Alternative: Pacific Biodiversity Institute (PBI) staff proposed an alternative calling for limiting the amount and pace of restoration treatments; increasing the amount of thinning and/or prescribed fire in the WUI and in the shrub-steppe environment in Libby Creek; thinning plantations to wide spacing; limiting thinning to hand-thinning and only up to 6” DBH; and fully developing and funding a monitoring program prior to project implementation. “elements of their alternative were considered but eliminated from further study in part because of IDT concerns” Hand-thinning only to 6” DBH would not achieve restoration objectives to achieve the desired amount and distribution of dry and moist forest stand structures, would have minimal effect in maintaining existing large trees in both watersheds, and would not promote development of additional large trees in Libby Creek watershed.(p.27) [The composition of forest stands is dependent on environmental conditions (i.e., soil, exposure, moisture) not “desire”. Not cutting existing larger trees would definitely have a maximum effect in maintaining them.] [11-27]

Concern: [Seq#69]

There is a concern that the FS is not intensively managing land allocated to timber and range resources (MA-25) and that more stands should be regenerated, which would provide habitat for elk and deer herds. [ID#74]

Response: [Seq#69]

Steep slopes along with poor volume and poor access are the main reasons why timber harvest opportunities are somewhat limited. 55 percent of Buttermilk Creek and 60 percent of Libby Creek are too steep for ground based operations and much of that, due to past highgrading, has too low a volume and value to make cable or helicopter harvesting viable even for clearcut treatments, especially when road access is poor or non-existent.

In Buttermilk watershed, Stand Initiation structure is already above the desired range of condition for Dry Forest. According to EMDS, most of the need/opportunity for Stand Initiation is in the Moist Forest Type, the moist forest is not well accessed or is in riparian areas. Elk and their habitat are not managed on the Okanogan National Forest. While deer are managed on the ONF, stand initiation structure is not their critical habitat (see EA pages 180-181 for effects to deer and deer habitat). [ID#74]

Associated Comments: [Seq#69]

AFRC is particularly disappointed that the Forest Service is only considering commercial harvest on 1,952 acres (3.9%) of the 50,200 acre project area. We believe there is more opportunity for treatments during this entry. In the project area, 60% of the land is designated as Matrix. Further, 10,979 acres (30% of the project area) is in Management Area 14-Matrix. The goal in this land allocation is to intensively manage the timber and range resources using both even-aged and uneven-aged silvicultural practices. As stated in your plan, MA25-19F specifies that stands with high level of dwarf mistletoe or root rot shall receive the highest priority for silvicultural treatment. In addition, there are 12,486 acres within Management Area 25 that have range and forest improvement as its goal. Despite this clear direction, the Forest is only planning on treating 3,566 acres in this category, most of which is non-commercial. Finally, AFRC would like to see some regeneration harvests on these acres rather than thinning from below while leaving all trees 25” and larger. Regeneration harvests will not only reduce fuel loading and remove heavily diseased stands, it also will provide for early seral stages of vegetation that is needed for elk and deer herds in the area. [14-3]

Concern: [Seq#70]

There is concern that Late Seral Reserves (LSR) are not being aggressively treated to protect and maintain Northern Spotted Owl Habitat and that more riparian treatments should be considered. [ID#75]

Response: [Seq#70]

Of the mentioned 2,445 acres of LSR 1,068 acres are in an Inventoried Roadless Area. Of the remaining 1,377 acres only 577 acres have any kind of road access. Of that 577 acres only 60 acres were dry forest type that had been recognized as departed. The team found that most of the 577 acres that is accessible currently meets desired condition for Northern Spotted Owl habitat such that there was, therefore, no reason for harvest treatment**.**

Riparian management zones have been identified for harvest treatment where treatment can result in beneficial effects. [ID#75]

Associated Comments: [Seq#70]

There are 2,445 acres of LSR that should be treated to promote the development of older stand characteristics. However, the Forest Service's proposal would only treat 116 of those acres. Riparian Areas make up 5,837 acres in the project area. Riparian areas were particularly devastated during the past series of wildfires and need treatment. AFRC strongly encourages you to significantly increase the acres commercially treated when you develop your final project in these areas. This is not only the right thing to do for the Forest, but is also a more efficient use of the Forest Service's resources, consistent with the Chief's direction to increase pace and scale of forest management activities. It has also been documented by many that most of the wood that naturally recruits to streams comes from within the first 65 feet of the stream channel (Murphy and Koski, 1989; McDade et al. 1990. Johnson et al. 2011). So if this is where the LWD is coming from then thinning in this region would likely accelerate its creation. Treatments also protect riparian stands from catastrophic wildfire loss, setting back LWD for decades. We encourage the Forest to design riparian thinning treatments on this project in ways that foster positive changes to large wood supplies that would result in measurable changes. [14-4]

Concern: [Seq#71]

The commenter would like to see more acres treated for forest restoration and do more work on the acres treated in order to make the project economically and ecologically viable. [ID#76]

Response: [Seq#71]

In both Libby Creek and Buttermilk Creek, each patch on these landscapes was looked at regarding the need for treatment in order to meet the Purpose and Need for the these watersheds. Given the full range of Purpose and Need as well as Forest Plan Standards and Guidelines and economics, the Mission IDT believe that they have diligently identified every economic and/or ecologically responsible opportunity to apply treatment, including harvesting, to the landscapes. [ID#76]

Associated Comments: [Seq#71]

In closing, AFRC believes there are many more opportunities for forest restoration and other resource benefits than the Forest has currently outlined for the Mission Restoration Project. AFRC suggests treating more acres, doing more work on the acres being treated, and working across a variety of age classes to benefit wildlife and forest diversity to help make this a more economically and ecologically viable project. [14-16]

Concern: [Seq#72]

There is a concern that the net acres of commercial mechanical treatment is low compared to the opportunities identified in the initial landscape evaluation. [ID#77]
Response: [Seq#72]

In both Libby Creek and Buttermilk Creek, each patch on these landscapes was looked at regarding the need for treatment in order to meet the Purpose and Need for the these watersheds. Given the full range of Purpose and Need as well as Forest Plan Standards and Guidelines and economics, the Mission IDT believe that they have diligently identified every economic and/or ecologically responsible opportunity to apply harvest treatment to the landscapes. It is possible that with the objective of expediting the project proposal and project analysis processes that an occasional opportunity was either missed or misidentified (ie ladder fuels reduction verses timber harvest). However, it must be recognized that when a landscape evaluation is prepared by someone who has little or no local knowledge of stand conditions, local forest plans or background in working with local oversight agencies that there would be considerable differences between the opportunities identified in the coarse filter of landscape evaluation and the site specific project proposal. [ID#77]
Associated Comments: [Seq#72]
Having engaged closely in project development through the EMDS process that led to a landscape evaluation through this EA, we note that the original acreage proposed for commercial mechanical treatment has been reduced substantially (5000 acres to 1952 acres). We realize that the Forest Restoration Strategy lays out a process where the landscape evaluation is only a starting framework to inform the actions proposed in an actual project proposal through NEPA, and that multiple barriers including access and slope restrict the acres that can be treated. In the final EA and our ongoing discussions with your district we would like demonstration of action in the alternatives to clearly follow from the landscape evaluation produced by EMDS analysis and when there are deviations from that proposal, provide a rationale. EMDS identified a desired future condition that would thin several thousand more acres commercially over the preferred Alt 2. These unit prescriptions were changed to ladder fuel reduction and prescribed fire and some had access limitations and steep slopes, but the project timeline and staff availability may also have been limiting. Due to the heavy investment in the landscape evaluation process, it is important that we clearly track and understand where and why deviations from landscape evaluation to proposed action occur to both inform our engagement and find areas where we can more strategically collaborate on solutions. [33-6]

Concern: [Seq#73]

Timber harvest to meet departures is not as good of an option as "No Action" because nature will address the departures eventually. [ID#78]
Response: [Seq#73]

The team considered an alternative that does not include timber harvest, but was not fully developed (see Preliminary EA, page 28). The effects of No Action are addressed throughout the EA and are

compared to the effects of Alternatives Two and Three (see EA pages 36-44). Because fuel levels are so much higher than that of historical conditions, unplanned fire (results of No Action) would have much more negative effect on upland and riparian forest habitat as well as to neighboring lands and property than the planned activity (see EA pages 150-170). While some aspects of natural fire in this landscape would be beneficial, there would be many components of the stated Purpose and Need, late and old structure development being just one example, that would not be achieved within a reasonable period of time, but instead would take hundreds of years to establish after the expected uncharacteristic wildfire kills the existing late and old structure in the analysis area (Preliminary EA, pages 120-121). [ID#78]

Associated Comments: [Seq#73]

The Mission Restoration Project is heavily/exclusively supported by the proponents of logging (what the USFS refers to as "thinning"). Members of the NCWFHC include representatives of the timber industry and scientists paid by the USFS, all of whom primarily see timber extraction as the only viable means to address forest health. They seek to persuade us that the mechanical harvesting of trees differs little from the thinning which occurs in the forest when there is fire. But there is, of course, a difference. In the wake of fire, dead trees remain in the forest, where they continue to play a vital role. They are not hauled-off. The snags, fallen trees, mineral rich ash, and even the heat and smoke generated by fire are beneficial for forest health. In contrast, logging operations can introduce exotic weeds, outsider insects, and tree diseases into the area from logging equipment, while also compacting soil and increasing erosion and sedimentation. As long as there remains a construct that fire is "bad", combined with the use of such loaded and manipulative terms such as "catastrophic fire" and " megafire", people will overlook some of the important ecological roles which fire fulfills. The ways of nature, even if we fail to fully comprehend and appreciate them, have evolved for millions of years and are better equipped to manage without the hand of man-the newcomer on the planetary scene. Even in the face of anthropogenic changes, it is optimum to allow the earth to heal itself. I recognize that this is an inconvenient truth, yet I fail to see how human interlopers have improved upon nature. It is also unfortunate the extent to which the natural world is treated as a commodity and viewed with an eye for that which can be extracted from it in the quest of more stuff and a greasy buck. [47-7]

Concern: [Seq#74]

There would be support for non-mechanized, low-tech handwork with the exclusion of herbicide treatments. There is a concern regarding how many acres of fuel treatment would involve heavy equipment and how resulting damage would be repaired. [ID#79]

Response: [Seq#74]

The analysis of an alternative that does not contain commercial harvest activity was considered but not analyzed fully because it would not meet the Purpose and Need for the project (see page 30 of the Preliminary EA). Most of the fuel treatment of the planned non-commercial activity would not be accompanied with heavy machinery (machine piling as much as 1,177 acres out of the planned 6,131 acres - page 314 of the Preliminary EA). By following the design criteria designed to avoid sensitive soils

and the use of best management practices the resulting impacts to soils would be consistent with the Okanogan National Forest Land and Resource Management plan and there would be no expected need to repair damage created by heavy equipment used to implement the project (Preliminary EA Pages 97, 101, and 353-361).

Neither of the action alternative include herbicide treatment. [ID#79]

Associated Comments: [Seq#74]

I would consider non-commercial thinning a possibility were the emphasis placed on non-mechanized, low-tech handwork with the exclusion of herbicides and the addition of planting native plant seeds on all bare soils created by this project. Will heavy equipment be used on these 8,304 acres? From what source would funds come to repair them afterwards? Are they earmarked and currently guaranteed? [48-19]

I would consider non-commercial thinning a possibility were the emphasis placed on non-mechanized, low-tech handwork with the exclusion of herbicides and the addition of planting native plant seeds on all bare soils created by this project. [51-46]

Concern: [Seq#75]

There is a concern that there is an overdependence on computer modeling, using old aerial photographs and climate change. There is a question that this modeling could result in valid diagnoses and prescription for landscape restoration especially if logging is used to implement that project. Logging appears to be the main impetus for this project. There is a concern that other values (like aquatic resources) are not taken into account when creating the proposed action. [ID#80]

Response: [Seq#75]

The proposed project starts with the opportunities identified in the coarse filter landscape evaluation using modeling developed from new, peer reviewed science (Ecosystem Management Decision Support) and passes those opportunities through the filter of standards, laws and policy constraints applicable to the project area as well as identified Purpose and Needs. After that site specific identification and analyses of a proposed treatment takes place. The models used for climate change assumptions in this assessment and their accuracy are found in the Okanogan-Wenatchee Restoration Strategy (USDA-FS 2012). The likely results of a warmer and drier future climate on forest vegetation are also found in the above peer reviewed document.

Timber value derived from commercial harvest activity is usually sufficient to provide for the cost of removing surplus trees from the stand as well as for much of the post-harvest activities. Commercial harvesting has been identified as one of the tools that can help meet the vegetation based Purpose and Need for the project, along with noncommercial thinning and underburning (see EA page 28 for why it was necessary to include this tool in both of the action alternatives). Commercial harvest treatments, while certainly not without impact (shown throughout the EA), has not been found to result in significant (in the NEPA sense of the word) effects when appropriate BMPs are employed. [ID#80]

Associated Comments: [Seq#75]
The MRP has remained remarkably consistent in its character since its early form in the landscape analysis and treatment proposal commissioned and paid for by the NCWFHC and prepared by Derek Churchill. Churchill's study focused solely on stand composition; additional analysis like aquatics would be added in later, and would not change the essential design. Essentially, Churchill's analysis and the subsequent MRP EA share similar assumptions, namely, that 1) the study of historical aerial photos from the 1930s, combined with the use of computer modeling, can provide a plan for an engineered forest with an ideal stand composition; 2) since naturally ignited wildfires will be suppressed in almost all cases for the forseeable future, the way to achieve this plan is largely through the use of large scale, industrial logging and commercial sale of forest products. (While both the collaborative and the Forest Service studiously avoid the use of the term "logging" and instead refer to commercial thinning of the overstory, for the purposes of these comments they will be considered identical). This commercial logging is the essential core of the MRP, and the only part of the project currently funded; 3) Logging technology has advanced to where there will be no significant impacts from its use in the MRP; 4) Climate change can be accurately modeled and its impact on the long-term outcome of the MRP accurately predicted; [49-4]

The MRP has remained remarkably consistent in its character since its early form in the landscape analysis and treatment proposal commissioned and paid for by the NCWFHC and prepared by Derek Churchill. Churchill's study focused solely on stand composition; additional analysis like aquatics would be added in later, and would not change the essential design. Essentially, Churchill's analysis and the subsequent MRP EA share similar assumptions, namely, that 1) the study of historical aerial photos from the 1930s, combined with the use of computer modeling, can provide a plan for an engineered forest with an ideal stand composition; 2) since naturally ignited wildfires will be suppressed in almost all cases for the forseeable future, the way to achieve this plan is largely through the use of large scale, industrial logging and commercial sale of forest products. (While both the collaborative and the Forest Service studiously avoid the use of the term "logging" and instead refer to commercial thinning of the overstory, for the purposes of these comments they will be considered identical). This commercial logging is the essential core of the MRP, and the only part of the project currently funded; 3) Logging technology has advanced to where there will be no significant impacts from its use in the MRP; 4) Climate change can be accurately modeled and its impact on the long-term outcome of the MRP accurately predicted; 5) Vegetative engineering of the project area is more valuable and more in the public's interest than conserving and protecting portions of it as wildlands. Nowhere are these assumptions clearly stated in the EA. [69-9]

Concern: [Seq#76]

The commenter questions the veracity of the statement in the EA that says that there are no forest patches with large overstory trees in the Libby Creek landscape. It is suggested that an inventory of late and old structure be done. There is also concern that the cutting of large trees may be left to equipment operator discretion. [ID#81]

Response: [Seq#76]

The IDT is aware that there are individual Large (>25 inches DBH) trees found throughout the project area. However, there is a difference between occasional large trees and an area that is categorized as "Old Forest Multi-Story" or "Large". The acreage of stands that meet the definition of "Large" trees (at least 20% crown cover of trees 25 inches DBH or larger) is found on EA pages 110-112.

Within Libby Creek watershed, there is one patch that just barely meets the definition of Old Forest Structure (with rounding) of 10 acres or more in size of contiguous forest where trees greater than 25 inches DBH larger make up at least 30 percent of the canopy. This patch is 9.56 acres in size and makes up 0.04 percent of the landscape (Page 115 of Preliminary EA).

Air photo interpretation was completed and individual stands labelled with a set of attributes prior to project initiation. One of the attributes is stand structure. The Old Forest Multi-story and Old Forest Single-story classifications refer to old growth structures. This has been completed for both watersheds, and a subset of these have been field-verified. The project silviculturist determined that these stands are not "Forest Plan" old growth, in other words, they don't meet all the criteria specified in the Okanogan National Forest Land and Resource Management Plan (which includes an acreage minimum, snag and down wood levels, canopy closure, and a large tree per acres standard). However, they are a good indication of large tree habitat (old growth) across the project area.

As one of the objectives for the Mission Restoration Project is to maintain and promote late and old structure, a patch with less than the requisite old and large trees to be called Old Forest would still be treated the same (large and old trees protected from harvest and released from competition and ladder fuels that put it at risk) as if it were identified as Old Forest, regardless of actual status. Therefore, there is no need to conduct any additional inventory of Old Forest structure.

Large diameter trees could be identified by FS employees or contractors, but the final mark or treatment would be approved by FS personnel. The removal of trees 21 inches and larger would not be common and would only happen if the tree is less than 24 inches DBH, is less than 150 years of age **and** which would release an even larger tree, release aspen or remove a source of dwarf mistletoe to a stand relatively free of that pathogen (Preliminary EA page 305).

[ID#81]

Associated Comments: [Seq#76]

The EA vegetation appendix claims that there are no forest patches with large overstory trees in the Libby Creek landscape (>25" DBH). Where is the evidence for this statement? The Forest Service should conduct a large tree/old growth inventory to assess the actual conditions on the ground; relying on aerial photographs would not dependably identify trees of this size. Also of concern, with the proposed logging component of the MRP, is whether all of the large trees would be marked by the FS, or whether harvest would be left to equipment operator's discretion. [49-13]

The EA vegetation appendix claims that there are no forest patches with large overstory trees (>25" DBH) in the Libby Creek landscape. The Forest Service should conduct a large tree/old growth inventory

to assess the actual conditions on the ground; relying on aerial photographs does not dependably identify trees of this size. The [63-38]

Need for current old growth inventory There exists a need for a current old growth inventory conducted within the parameters of the proposed Mission Project. As described in Appendix A: Proposed Thinning and Prescribed Fire Treatments, MISSION RESTORATION PRELIMINARY ENVIRONMENTAL ASSESSMENT OKANOGAN-WENATCHEE NATIONAL FOREST - METHOW VALLEY RANGER DISTRICT JANUARY 2017, p. 305: a. All trees greater than 24 inches DBH would be retained b. Trees 21 inches DBH and larger with an estimated age of 150 years or greater (based on criteria described in Van Pelt 2008) would be retained. c. Trees 21 to 24 inches DBH with an estimated age of less than 150 years would ?occasionally be harvested to release a larger (more preferred species) tree... [65-7]

From Vegetation Appendix "Forest patches with large overstory trees and medium size understory trees currently are not present in the Libby Creek landscape." This is not true. I walk by trees bigger than 25 dbh (with trees smaller than 16 dbh) all the time. Also, the FS definition of large overstory trees is questionable. [68-101]

The EA at 23 states, "photo analysis and field review have clarified that Forest Plan Old Growth does not exist in any proposed thinning or prescribed fire treatment unit." What is the definition of Forest Plan Old Growth that applies to this portion of the Okanogan-Wenatchee NF, and how does it align with ecological definitions? [72-132]

Concern: [Seq#77]

The proposed removal of overstory trees should be identified as an economic decision, rather than a scientific one. [ID#82]

Response: [Seq#77]

The occasional removal of trees over 19 inches DBH is for restoration purposes (Preliminary EA page 305). Removing the undesirable trees through harvesting is free while girdling them is a cost. Larger diameter trees are more valuable to the logger because it is less expensive per volume to yard and transport than for multiple smaller trees adding up to the same volume. Currently, there is no premium paid for larger diameter trees on Forest Service contracts. Trees of all diameters less than 24 inches trees would not be identified for removal because of harvest or sale economics, but instead those decisions would be based on whether their removal or retention contribute to the objectives for the stand. [ID#82]

Associated Comments: [Seq#77]

The proposed removal of overstory trees should be identified as an economic decision, rather than a scientific one. [49-14]

proposed removal of overstory trees should be identified as an economic decision, rather than a

scientific one. Conservation NW expressed concern regarding the large overstory trees referred to above stating that it is "even more important that old trees not be harvested, even if they are not large, because these carry the genes for longevity that are the basis for old growth". [63-39]

The proposed removal of overstory trees should be identified as an economic decision, rather than a scientific one. [69-14]

Concern: [Seq#78]

There is a concern that timber marking has already been started and that the boundaries of harvest units previously laid out and marked for a timber sale that was never sold are unduly influencing the location of harvest units in this project. [ID#83]

Response: [Seq#78]

This project includes stands that had been prepared for a previous timber sale that was never sold, so tree marking paint is still visible from that project. These units would need to be marked with another color for this project. Flagging and boundary tags have been placed during the reconnaissance and field verification of harvest units planned in the Mission Restoration Project. Most of this work did take place before scoping. Although the previous unit boundaries did not automatically influence the location of the boundaries for Mission Restoration Project harvest units, some boundaries would be the same, such as at the foot of slopes, adjacent to riparian management zones, or along a road or forest boundary. The district has started to mark as the comments to the preliminary EA are being addressed. Trees marked with orange paint would stay. [ID#83]

Associated Comments: [Seq#78]

The Forest Service began marking units for commercial sale even before the scoping process was begun. The district ranger and ID team leader were contacted, and expressed no concern about the early flagging. Much of the flagging was done along boundaries of the previous HEFRA timber sale that was scheduled in the analysis area, then not completed. Obviously those boundaries have not been influenced by any analysis in the EA. [49-19]

Much of the flagging was done along boundaries of the previous HEFRA timber sale scheduled in the analysis area several years ago. Obviously those boundaries had not been influenced by any analysis in the EA. [63-30]

The Forest Service began marking units for commercial sale even before the scoping process was begun. The district ranger and ID team leader were contacted, and expressed no concern about the early flagging. Much of the flagging was done along boundaries of the previous HEFRA timber sale that was scheduled in the analysis area, then not completed. Obviously those boundaries have not been influenced by any analysis in the EA. [69-24]

Concern: [Seq#79]

In order to protect old growth and overstory trees and the plants and animals that depend on that habitat, the project should be scaled back to 100 acres or less so that monitoring could verify that mitigation measures, contract provisions and contract administration are sufficient for protecting these features. [ID#84]

Response: [Seq#79]

The Methow Valley Ranger District has many years of previous experience in designing timber harvest and fuels management projects in landscapes that include large trees. Ongoing monitoring has provided the opportunity to make adjustments to planning, contracts and contract administration for restoration projects. Appendix D of the Preliminary EA includes the planned monitoring for Mission Restoration Project. [ID#84]

Associated Comments: [Seq#79]

The protection measures in place to maintain healthy old-growth and cover story trees is critical. This areas has many animal and plant species which rely on the existing habitat to survive. I believe the project should be scaled back to one area (100 acres or less), on a trial basis to show that the contractors will do as written in your protection and mitigation plans. We need to protect these watersheds, drainage's, habitat,and riparian areas that are needed for all species to survive. [54-2]

Concern: [Seq#80]

There is a concern that although the EA now says that there is no need for a Forest Plan amendment for the harvest of old growth that old growth stands would be impacted by removal of presently marked trees. [ID#85]

Response: [Seq#80]

Old Growth is defined by the Okanogan National Forest Land Resource Management Plan (Forest Plan) as a stand 30 acres in size or larger that has, among other components, at least an average of 15 trees per acre that have diameters of 18 inches or more at breast height. Upon close examination and field verification, there are no stands meeting this definition included in the Mission Restoration project. Any tree paint on large diameter trees at the time of this comment had nothing to do with the implementation of this project. How and why trees over 18 inches DBH would be affected is shown on pages 305-311 in the Preliminary EA. The effects of the alternatives on Old Forest structure and patches of large and medium trees are found on pages 120-121 and 123-125. These effects have been found to be consistent with the Forest Plan and Northwest Forest Plan (Pages 134-135 in the Preliminary EA). [ID#85]

Associated Comments: [Seq#80]
Consider an alternative that requires no Forest Plan amendments. This is an Alternative Considered but Eliminated from Detailed Study, section 2.1 because it would not meet several of the Purpose and Need statements. Several of the proposed Forest Plan amendments listed in the initial scoping letter have been determined as not necessary including: 1) Commercial harvest of Forest Plan Old Growth; and 2) Exceeding Forest Plan sediment standards in fish spawning streams.(p.24) [Old growth stands would be impacted by removal of presently marked trees and there is no question regarding the need to avoid increased sediment in streams used by listed salmonids for spawning and rearing fry.] [11-20]

Concern: [Seq#81]

The designation of desired conditions was constructed with the primary consideration being the benefit of commercial timber and livestock interests with little consideration for long term benefits to existing resident life forms or enhance watershed function. Timber extraction is not synonymous with forest restoration. [ID#86]
Response: [Seq#81]

This is an opinion. The Purpose and Need of the project does not include benefitting commercial logging interests. Commercial logging and wood manufacturing interests are represented in the North Central Washington Forest Health Collaborative, with whom the ranger district is collaborating on this project, along with representatives of many other interests and resources. Commercial harvest is a prescribed and expected activity within Management area 25 and allowed in Management Areas 5, 14 and 26 (EA page 16). The Preliminary EA explains on page 28 why three out of the seven Purpose and Needs for the Mission Restoration Project couldn't be attained without harvest treatment.

Range improvement or management was not identified as a purpose and need although it is part of management direction for Management Area 25 (Preliminary EA page 15) and it was a point of concern expressed by Okanogan County Commissioners (EA page 21).

Besides commercial harvest, both action alternatives based on the Preliminary EA included 8,298 acres of non-commercial thinning treatments, 10,968 acres of prescribed fire, 468 acres of soil restoration, replacing 23 culverts, enhancing 6 sites for beaver habitat, replacing one bridge, enhancing 8.2 miles of fish bearing streams with coarse woody debris enhancement, armoring 33 stream crossings, hardening 4 stream crossings, and decommissioning 33.6 miles of roads (56.2 in Alternative 3).

[ID#86]
Associated Comments: [Seq#81]
Only complete hand-thinning of small diameter trees. Thinning only small-diameter trees would not move the existing stand structure towards desire conditions.(p.23) [The designation of desired conditions was constructed with the primary consideration being the benefit commercial timber and

livestock interests with little consideration for long term benefits to existing resident life forms and enhanced watershed function.] [11-19]

* Timber extraction is not synonymous with forest restoration. Does the FS change the definition of words purposely to mislead the public? [67-34]

Concern: [Seq#82]

Alternative 3 is preferred over Alternative 2, but Alternative 1 is preferred for many more reasons as presented earlier. [ID#87]
Response: [Seq#82]

Thank you for your comment. Previous comments have been addressed elsewhere. [ID#87]
Associated Comments: [Seq#82]
Summary of effects on Western Gray Squirrels: Alternative 2 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing. Effects would occur on 10,256 acres, about 30% of the project area. Post-project, open road mileage would increase, increasing risk of mortality from vehicle strikes. (p.198) 3.7.4.4 Alternative 3 – Effects Unique to Alternative 3 These actions would have a net beneficial effect for wildlife. Fewer roads mean less access for firewood harvest, hunting, trapping, poaching and collecting, reduced avoidance of suitable habitat and less disturbance from motorized vehicles and human presence. As vegetation returns to the roadbed, additional forage and cover would be produced. Short-term disturbance would occur during decommissioning and road construction.(p.202) [Alt.3 is preferred over Alt. 2, but Alt. 1 is preferred for many more reasons as presented earlier.] [11-70]

Concern: [Seq#83]

No part of the proposed action should take place until all funding is available. It is especially a concern that road decommissioning take place before commercial harvest commences. [ID#88]
Response: [Seq#83]

This comment was initially presented during scoping of the proposed action and was addressed in the Preliminary EA in Chapter 1 (page 25). The Methow Valley Ranger District has consistently received funding for decommissioning roads that have been identified for closure through Roads Analysis, been analyzed for effects, and are included in a Decision Notice for closure. Neither road density analysis for wildlife nor sediment delivery analysis have shown the need for a phased approach to implementation

of any of the proposed activities. [ID#88]
Associated Comments: [Seq#83]
Do not implement the project until funding for road decommissioning and maintenance has been secured or develop a plan to prioritize/phase project implementation and road decommissioning (i.e. no commercial activities in Phase 2 would take place until high-priority road decommissioning in Phase 1 had taken place). Road closure and decommissioning would be spread out over the period of the project or after completion of the project depending on where and when funding is available. The IDT Fish Biologist and Hydrologist would determine which roads are the highest priority for closure first, which may depend on the type of funding available.(p.25) [This is why the project planning should not include initiation of activities until all necessary funding is allocated.] [11-26]

Concern: [Seq#84]

The Mission Project should not be initiated until all project costs are assured. It is assumed that the concern is regarding not initiating harvest treatment until all the other costs for vegetation management is covered. [ID#89]
Response: [Seq#84]

Harvest treatment is among the first activities planned for the Mission Restoration Project. Either through stewardship projects or through trust funds collected by the timber sale, the next phase of vegetation activity takes place (brush disposal, site preparation for regeneration and planting). The scope and cost of this post-sale work is determined as the timber sale is planned and appraised. In order for the planned harvest treatment to go forward there has to be either expected value from the timber, retained receipts from previous stewardship projects or appropriated dollars to cover those costs prior to advertising the sale. Other vegetation treatment projects (not associated with the commercial harvest), stream enhancement projects and road management (decommissioning) would depend on the availability of appropriated dollars.

Rock armoring for 6 stream crossings is the only mitigation required prior to timber harvest activity. That expense would be covered by the value of the timber sale. See figures 129 and page 294 of the preliminary EA. [ID#89]
Associated Comments: [Seq#84]
3.14 Economics The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Economic Resources Report by M. Isaak (2016). Costs for all projects are approximate and will need to be assessed during the implementation stage of this Environmental Analysis. Timber sale brush disposal treatment plan costs on the Methow Valley Ranger District typically average $110 per acre as part of the timber sale. Essential reforestation collection (SAI-KV) agreement costs typically average $800 per acre of regeneration harvest treatment. Non-Timber Sale Project Costs: The proposed action requires a level of investment that may not be possible within current or expected levels of appropriations.(pp.290-291) [Discussions above state that without logging the larger trees

other “restoration” benefits cannot be achieved, however here we learn that appropriations for non-logging projects may not be available. The Mission Project should not be initiated until all project costs are assured. Post-costs for the commercial logging activity will be about $1,776,000 ($910/acre x 1,952 acres).] [11-78]

Concern: [Seq#85]

Cost for logging the 6,300 MBF would be $890,000 and post logging costs $1,776,000;

all logging related costs would total $2,666,000.

The difference between estimated timber value and associated cost is $64,000, which is not an adequate margin to justify anticipating the commercial logging contributing to other non-logging project costs [ID#90]

Response: [Seq#85]

The logging and post logging costs mentioned in the comment do not come from the Preliminary EA. The $64,000 mentioned above refers to the cost of reforestation, which is included in the cost of logging operations (Preliminary EA page 294).

Figure 132 in the Preliminary EA should show the Resource Indicator as "Residual Value After Timber Sale Related Costs". Later, the EA correctly says say that the sale would have $310,000 that could be used to supplement or support other planned projects. [ID#90]

Associated Comments: [Seq#85]

It is expected that approximately 6,300 MBF (thousand board feet), or 12,600 CCF (hundred cubic feet) would be harvested by ground based and skyline based felling and yarding equipment. Mobilization and logging costs for the ground based are estimated to be $136/MBF and $223/MBF for the skyline portion of the timber sale. Ground based equipment could be used to log 1,833 acres and the other 119 acres could be harvested by the use of a standing skyline system. June 2016 log prices for delivered Douglas-fir are $380.85/MBF, harvesting 7 to 23.9 inch DBH trees would generate $2.73 million in timber value at the mill.(p.294) [Cost for logging the 6,300 MBF would be $890,000 and post logging costs $1,776,000; all logging related costs would total $2,666,000. The difference between estimated timber value and associated cost is $64,000, which is not an adequate margin to justify anticipating the commercial logging contributing to other non-logging project costs (see Fig.2).] [11-79]

Concern: [Seq#86]

Timber harvest is sometimes appropriate. [ID#92]
Response: [Seq#86]

Thank you for your comment. Without some types of fuels treatments besides ladder fuel reduction and broadcast burning it is difficult reduce fire hazards. [ID#92]
Associated Comments: [Seq#86]
Also, some commentators seem to imply that the reliance on commercial timber activities somehow taints the integrity of this project. To the extent that these activities are carried out in a careful and environmentally responsible way (including as much over-snow logging as possible), I strongly disagree with this position. Timber harvest is an appropriate and sometimes necessary part of the mix. [64-2]

Concern: [Seq#87]

There is a concern that not enough value is generated from timber harvest to cover the other restoration need cost and that more acres should be treated and higher volumes per acre should be harvested. [ID#93]
Response: [Seq#87]

Although Congress intended, with the creation of the Sale Area Improvement Trust fund and the Stewardship Authority, for timber value to help pay for restoration activity, it never suggested that all of the work would be done with timber receipts, hence the authority for Integrated Resource Service Contracts and ongoing appropriation of funding for restoration projects.

Although the district recognizes that timber value can help pay for landscape restoration, the intent of the IDT and direction from the line officer is to find the correct balance of the positive and negative effects of harvest activity. While leaving lower stocking and harvesting larger trees could help pay for more treatment, it would come at a cost to other resources.

It should be noted that increasing the footprint of harvest activity that would require road construction and/or more expensive harvest systems would not increase the expected revenues from the timber sale.

[ID#93]
Associated Comments: [Seq#87]
1. The two tables below show the value of the timber to be harvested compared to the amount of planned restoration work needed in the project. Recieipts from timber sales will yield $310,000 while restoration needs are $2,110,000 under Alternative 2. AFRC is baffled as to why a project is planned that only yields 15% of the revenues needed to do the restoration work. The Forest must look at commercially treating more of the project area to increase the needed revenues for restoration. The Forest can't count on partners to help do this work as you mention in your document. [14-14]

Concern: [Seq#88]

Economic and community benefits from forest restoration are important, as well as the ability to generate resources to ensure implementation of the complete final decision including both the commercial and non-commercial components [ID#94]

Response: [Seq#88]

The economic benefits of each of the alternatives are shown on pages 293-295. Additional information, including the protection of market value resources, prior investments, job creation and cost benefit ratios is available in the Economics specialist report for Mission Restoration Project Environmental assessment. [ID#94]

Associated Comments: [Seq#88]

Economic and community benefits from forest restoration are important to our collaborative, as well as the ability to generate resources to ensure implementation of the complete final decision including both the commercial and non-commercial components. [33-10]

Concern: [Seq#89]

There is a concern that timber harvested will be shipped out of the county and that the jobs created would not benefit the local community. [ID#95]

Response: [Seq#89]

Because it is not known which companies would be contracted to do the harvesting and the other restoration work, it is impossible to talk specifically to the economic benefit to the Methow Valley. The Economics report for the Mission restoration Project does discuss protection of Existing Market Value Resources ($4.6 million within 1 mile of the project area boundary) and the protection of prior investments, which do directly impact residents and business owners in the Methow. It also discusses how 82.7 jobs would be created from restoration projects within the local community (North-Central Washington), which includes the Methow Valley, on pages 4 and 5. [ID#95]

Associated Comments: [Seq#89]

I sit here with 10 pounds of paper on my lap, notes from two years of meetings with the North Central WA Forest Health Collaborative, the Methow Valley Ranger District, Trout Unlimited and Libby Creek Watershed Association; published letters to the editor; and USFS brochures and handouts about the Mission Restoration Project. I have invested a lot of time and energy to study this proposal. I am weighed down and my head is swimming, trying to make sense of all this information and on top of that is a 400-plus page Environmental Assessment. It is proposed to extract 6.3 million board feet of "merchantable timber" from Libby Creek and Buttermilk watersheds. These logs will be going down the

highway to someplace far away, no benefit to valley employment, and no guarantee to pay for the other restorations proposed which will be on hold for lack of funds. [48-2]

Concern: [Seq#90]

CEQ regulations define an environmental assessment as a concise public document. A 424 page document I do not consider concise. A document intended for public consumption would be more user-friendly if it contained an index and a level of transparency. [ID#96]
Response: [Seq#90]

Thank you for your comment. Under the restoration strategy the effects of proposed project can become more complicated and more difficult to explain the effects from the different elements of the project. The body of the environmental assessment is approximately 300 pages long with appendices adding the additional 125 pages. As we try to look at larger planning areas, the length of the document has also seemed to have increased. It is not required/proposed to prepare an Index for this project, which is a requirement of an EIS [ID#96]
Associated Comments: [Seq#90]
"The Council on Environmental Quality regulations define an environmental assessment as a concise public document that includes brief discussions of the need for the proposal, of alternatives to the proposal, of environmental impacts of the proposed action…" [From MISSION RESTORATION PRELIMINARY ENVIRONMENTAL ASSESSMENT OKANOGAN-WENATCHEE NATIONAL FOREST - METHOW VALLEY RANGER DISTRICT JANUARY 2017, Chapter 1: Purpose and Need 1.1 Introduction, p.10] [65-1]

With all due respect, I do not consider a 424 page document to be concise. Furthermore, a document intended for public consumption would be more user-friendly, e.g., containing an easily referenced index and a level of transparency which provides accessibility to all. [65-2]

Concern: [Seq#91]

Field review, professional expertise, public input, and several analysis methods were used by interdisciplinary team (IDT) members to assess current conditions, determine needed changes, and evaluate effects of proposed treatments." (p. 12, ibid [ID#97]
Response: [Seq#91]

Thank you for your comment. All of these methods were used. [ID#97]
Associated Comments: [Seq#91]
Field review, professional expertise, public input, and several analysis methods were used by interdisciplinary team (IDT) members to assess current conditions, determine needed changes, and evaluate effects of proposed treatments." (p. 12, ibid) [65-5]

Concern: [Seq#92]

Poem [ID#98]
Response: [Seq#92]

Thank you for your thoughts on the Mission project. I am reading this as a call to action and not "official" comments for the Mission project; based on the format and content. You obviously took some time to compose it and I spent the time to read through it thoughtfully.

I believe we agree on the changes that we see happening in our environment. However, it seems we fundamentally disagree on how to approach the change, in a way that minimizes current and future consequences. You would have us do nothing, except perhaps remove the cattle grazing. I see a need for active management where we can make a positive difference. Please do not think my motivation nor the proposed action is based on money. While your comments imply such, our goal has been to focus on restoration efforts. [ID#98]
Associated Comments: [Seq#92]
Methow Valley Ranger District-I Beseech you to listen! WAKE UP! This is an emergency. You can do your part to help save the planet before it's too late here in the Methow or you can contribute to the problem that takes us all down. The poles are melting. Polar Bears cannot swim forever. People living on islands are losing their homeland, their way of life. Drought, pestilence and starvation are spreading and increasing exponentially. Hurricanes, tornadoes, earthquakes, wildfires, floods, tsunamis- speeding up, exacerbated, increasing unpredictably, anthropogenically intensified. Save the planet or lose it. Save it! Don't shave it! Faulty policies i.e., cattle allotments, fire suppression, logging and roads have brought us to this troubled time. Like a movie set in a wild west motion picture- all front and no back, live for today, to Hell with tomorrow. But what about the next seven generations? What about your responsibility to the land and the people, safety and preservation? Don't trade in our forest for a fast buck! You can't eat money, nor breathe it, fish can't swim in it, wildlife can't run through it. Will nature be reduced to a story of the past like the dinosaurs? It is not too late. You can still help save our valley and the whole west by not promoting ICO. Look at the REAL latest best available science. Don't invest your efforts into crashing crushing carnage ravaging ruination. Deposit your vested interest in this paradise. Don't let this juggernaut go any further! Let go of your "alternate reality", the distorted vocabulary that turns a good word like collaborative into a club for environmental degradation. A good word like resilience in the hands of a logging company laying waste to the landscape. Just be transparent honest and real. Everyone makes mistakes. Admit yours. Change your ways. Don't allow the forest to be chewed up by feller bunchers till there's nothing left but toothpicks. Because that's

when the BoogeyMan-Catastrophic Fire will come to take us and all of our stuff away. Imagine Lookout Mountain gazing upon a sea of trees or a sea of ash. Choose life: consciously evolving respect for the earth's own restorative wisdom. [71-1]

Concern: [Seq#93]

Artley Comments [ID#99]
Response: [Seq#93]

These comments are being addressed outside of the CARA framework in separate spreadsheets for the different attachments. Attachment #1 is being addressed through a document outside of CARA do to the size of the response document. Attachment #4, in an above response and as responses to Letter 8. The science presented in Attachment 4 does not provide new or additional information, or information that is inconsistent with or that refutes science used in the preparation of the Mission Restoration Project. The aerial photos of clearcuts are mostly not for the project area, and do not represent most treatments proposed in this project. These are all addressed elsewhere, also. [ID#99]
Associated Comments: [Seq#93]
Please read what scientists think about your claim that logging restores the forest. Opposing Views Attachment #21 is quite clear. At the end of these comments you will find Opposing Views Attachments #1 and #4. They contain quotes by several hundred Ph.D. independent scientists not affiliated with the USDA. They are experts in their fields. They describe in detail how logging and road construction harms and sometimes destroys the following natural resources so important to the proper functioning of the forest ecosystem. Respected scientists show time and again that the following resources will be plundered and rendered nonfunctional by logging activities. Once again, who do you serve when you claim logging restores these resources … the public or corporate America? * aquatic ecosystems * wildlife and fish habitat * recreation, tourism and scenery * water quality * native plants Who are you to reject this science? Accumulating volume and spending all your NFTM allocation this FY simply isn't worth the natural resource damage you will inflict. How can you possibly claim this timber sale is a "restoration project?" Request for changes to be made to the final NEPA document: Eliminate "Restoration" from the sale name and eliminate the word "restore" from the text of the final EA. Failure to do so will violate: 18 USC § 1519 and the public trust. 40 CFR § 1500.1(b) because actions were not taken to protect, restore, and enhance the environment, and 40 CFR 1500.2(f) because actions were not taken to avoid or minimize any possible adverse effects of their actions on the quality of the human environment. 18 U.S.C. § 1001 (a)(3) because you knowingly and willfully "relied on false writing or document" inconsistent with the science conclusions of scores of independent Ph.D. scientists "knowing the same to contain any materially false, fictitious, or fraudulent statement or entry." [2-9]

Concern: [Seq#94]

However, through its practice of seeking the "best available science" from a limited pool of one-sided research, the USFS demonstrates poor scientific integrity, fails to even make a pretense of balanced research, and does not act in god faith in serving the public. [ID#100]
Response: [Seq#94]

The Forest Service is completing this project under the peer reviewed Restoration Strategy, using the peer reviewed EMDS model. Much of your comment letter does not provide any "best available science" to support your conclusions. Peer reviewed research that we used is documented/cited in the document. When presented with other research we have reviewed it for its applicability to this project. Much of what was presented is opinions, newspaper commentaries, online postings, research for other regions of the U.S. such as California and Southwest Oregon, [ID#100]
Associated Comments: [Seq#94]
If I go to a Ford dealership, the salesman will want to sell me a Ford, not a Toyota. Similarly, if one wishes to justify the extraction of timber, one will find a Ph.D. whom views this as standard operating procedure for "forest health". However, through its practice of seeking the "best available science" from a limited pool of one-sided research, the USFS demonstrates poor scientific integrity, fails to even make a pretense of balanced research, and does not act in good faith in serving the public. [65-6]

Concern: [Seq#95]

Created 6 comments and numbered them that Mr. Artley wants us to response to.. [ID#101]
Response: [Seq#95]

The identified comments are responded to, where appropriate, in this Concern/Response database. Attachment #1 is responded to in a database in project records because of the size and character of the responses. [ID#101]
Associated Comments: [Seq#95]
This comment letter contains 6 clearly labeled comments. I will expect 6 responses. I would like you to provide meaningful responses to my comments, so I labeled and numbered them so you would not overlook or miss them. They are indented and numbered using the word Comment # that's bold, in 11-pitch font and underlined. [2-1]

Concern: [Seq#96]

I sincerely hope that, like many land owners in the valley who will have to deal with the consequences of the decisions made regarding the Mission Project, you will choose not to proceed with the present proposed actions and that, instead, you will reformulate a plan based on both modern independent research and traditional wisdom in which short term strategies are in line with the stated long-term goals of restoring our forests to their natural resilience. [ID#102]
Response: [Seq#96]

Our proposal is based on modern independent research and conventional wisdom. Short term strategies are in line with the stated long-term goals of restoring our forests to their natural resilience. No modern independent research presented in your comments seems to disagree with this. [ID#102]
Associated Comments: [Seq#96]
I sincerely hope that, like many land owners in the valley who will have to deal with the consequences of the decisions made regarding the Mission Project, you will choose not to proceed with the present proposed actions and that, instead, you will reformulate a plan based on both modern independent research and traditional wisdom in which short term strategies are in line with the stated long-term goals of restoring our forests to their natural resilience. [62-8]

Concern: [Seq#97]

The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concern most cited in scoping comments-- that the commercial timber harvest should be reconsidered. I am fully aware that various individuals, independent organizations, and institutions, many comprised of scientists regarded as experts in their fields, have submitted alternate ideas to the USFS. Yet there is no evidence suggesting that these have been given any level of consideration. [ID#104]
Response: [Seq#97]

The Interdisciplinary Team has reviewed every comment that we received during scoping and on the preliminary EAs and incorporated changes needed based on those comments in the final document. That information is included in our review of comments, either here in CARA, in a database of scoping comments, and responses to comments, such as Attachment #1 from Dick Artley in project records. [ID#104]
Associated Comments: [Seq#97]
The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concern most cited in scoping comments-- that the commercial timber harvest should be reconsidered. [49-20]

And, honestly, I fail to see the extent to which you have incorporated any public input since the inception of the proposal beginning with the scoping period. I am fully aware that various individuals, independent organizations, and institutions, many comprised of scientists regarded as experts in their

fields, have submitted alternate ideas to the USFS. Yet there is no evidence suggesting that these have been given any level of consideration. [65-3]

Concern: [Seq#98]

comment:11-30

This project proposal includes project-specific, non-significant, temporary amendments to Forest Plan Standards and Guidelines to achieve objectives related to soil protection and forest health. In this project, winter operations would require snowplowing Forest Road 43 and

winter access on deer winter range, which would require amending Standards and Guidelines

. The following road shall not be snowplowed and shall be closed to motorized wheeled vehicles from Dec.1 to Apr 1: Forest Road 43 from the junction with Forest Road 4300300 to the junction with Forest Road 4340."

Amending these S&Gs would provide for snowplowing up to 16 miles of Forest Road 43 that accesses proposed winter harvest units

for the purpose of implementing the Mission Restoration Project.

Winter harvest could occur on 5% (557 acres) of deer winter range in the Libby Creek block

in the project area. Harvest would occur along the drainage bottoms in five areas: Smith Canyon, Elderberry Creek, Chicamun Creek, Mission Creek, and Hornet Draw. It should be noted that the

Libby Creek block has private residences in the area,

so access to deer winter range is ongoing during the winter months. (pp.31-33) [

Winter commercial logging in these areas would require amendments to the Forest Plan designed to protect the interests of wintering mule deer, as well as the presence of people.

These areas are utilized by large groups of mule deer which forage on shrubs in open terrain between forested areas they use for cover. They should continue to be protected by the Standards and Guidelines of the Forest Plan. As noted there are family residences in these areas that utilize the area and existing roads for access to recreation and for survival (i.e., travel for employment, medical, educational, and logistical needs). Their

use of roads proposed for use on snow and ice by heavy equipment for winter commercial logging would threaten their activities and lives if existing Standards and Guidelines were amended.]

Concern is mule deer and Forest Plan Amendments [ID#105]
Response: [Seq#98]

See responses in Concern/Response 23, 32, and 21 previously. Additionally, analysis of resource effects are described in the EA, chapter 3.

Effects to Mule Deer and winter cover are discussed in the Preliminary EA at. p.155 and the Specialist Report (updated May 2017) p. 59, and repeated below, in part. EA Winter Range for Mule Deer:

Silvicultural and fuels treatments: There are approximately 1,022 acres in harvest units and 3,231 acres of ladder fuel reduction treatments that would occur on deer winter ranges. Approximately 557 acres, in 12 units would be logged during the winter.

The proposed action would reduce thermal cover and increase forage for mule deer. The table below displays the cover remaining after treatments, and was modeled assuming that the harvest treatments would remove all thermal cover within the unit. The assumption for the LFR units (outside of the harvest areas) was that approximately ½ of the seedling/sapling and post/pole-size component within the unit would be removed in the ladder fuel reduction treatments.

Figure 76. Estimated Post-treatment Thermal Cover, before mitigation

Alternative 2

Management Area

Winter thermal cover

Snow-intercept thermal cover

total

acres

%

acres

%

acres

%

MA-14

2,611

24%

1,054

10%

3,665

33%

MA-26

200

17%

185

16%

385

33%

The total cover remaining across the winter range would be approximately 33% in each management area. To mitigate cover post-treatment levels below Forest Plan standards, and to provide for adequate cover distribution across the project area (and to increase diversity and provide connectivity and habitat elements for other wildlife species), each ladder fuel reduction unit would leave 20% of the area untreated, in patches from 0.1 acre to multiple acres in size.

The canopy reduction from harvest and fuel treatments would result in an increase in forage species. Underburning would also result in increases in availability and palatability of forage species, as the older woody vegetation is burned and new vegetation growth is stimulated. However, it is important that patches of dense cover of at least 0.1 acres be retained to provide hiding cover for mule deer (Germaine et al. 2004).

Disturbance could occur as a result of winter logging, and deer may be temporarily displaced from the area being logged. The Forest winter range is higher elevation than the more heavily used areas on private land that are lower elevation and have less snow. Winter logging standards call for frozen ground and a minimum snowpack of 8" of compacted snow, to protect soils. By the time this amount of snow has accumulated, deer have often moved to lower elevations where food is more available. Anecdotal information suggests that deer may remain in units being logged in the winter to forage on lichens and fir needles from logged trees.

Road actions: Approximately 0.3 miles of temporary road would be constructed in winter range, open for logging use, then decommissioned. This would result in minor loss of vegetation for the short-term (less than 5 acres) until the vegetation regrows. Shrub species that may provide browse for deer may grow back within 5 years of decommissioning. Approximately 0.03 mile of closed road would reopen to general use on winter range, however the roads would still be closed by conditions during the winter period.

Decommissioning of currently open roads would occur on 2.2 miles. In the short and longer term, decommissioning of open roads would reduce access disturbance to deer, mortality from collisions,

hunting and poaching and avoidance of habitat. Eventually, vegetation would regrow and provide additional browse.

Other actions: Other proposed projects would cause short-term, temporary disturbance to deer during project implementation, but involve only minor vegetation change. No measurable changes to cover or forage for deer are expected.

Overall, considering all project components, there would be moderate (occurring on 8% of the winter range) short- to long-term beneficial effects on winter range for mule deer. Forage would be increased in the short and longer term, and would become more palatable and nutritious, and treatments would maintain and restore stand structure, composition, and arrangement that would be less susceptible to stand-replacing wildfires that could extensively damage and reduce vegetation (including thermal cover) on the landscape. Adequate cover would remain on more than 33% of the winter range. Road decommissioning on winter range would be a minor, long-term beneficial effect (updated Wildlife Report at p.53).

Specialist Report:

The Mission project includes one Forest Plan amendment, which would allow reduction of cover in deer winter range to fall below 40% (25% winter thermal cover and 15% snow-intercept thermal cover), to a minimum of 33% of the winter range area. Mitigation measures would actually result in more of the area remaining as cover. These measures include riparian reserves, retaining 15-20% of the area in unthinned patches of trees ranging from 0.1 to multiple acres in fuels units and some unthinned areas in pre-commercial thinning units, and retaining complex patches, clumps and gaps in harvest units (Preliminary EA Appendix at p.366-367).

Since the time that the Forest Plan was written, studies have found that thermal cover is not as critical as forage quality and quantity for winter survival of ungulates (Forest Restoration Strategy, 2012). Specific proportions such as the 40% cover level required by the Forest Plan are not supported by more recent research, which has generally found that while cover is needed where security is low and where snow levels are high, deer use appears to be more strongly influenced by forage availability than a trade-off between forage and cover (Cook et al. 2005, Coulombe et al. 2011, Masse and Cote, 2009). The amendment would allow a reduction of thermal cover by 7% below the Forest Plan requirement of 40% while increasing forage availability in forested stands. At least 33% of the area would remain in well-distributed thermal cover.

The winter range is 24% of the total project area and contains 52% of the harvest treatments, 39% of the stand-alone understory treatments, and 59% of the LFR treatments. The amendment, which would relax cover standards (which are considered outdated science), concerns winter cover only. In winter range **cover***, 942 acres of harvest (48% of total harvest), 2,238 acres (27%) of stand-alone understory treatments including 2,105 acres (33%) of LFR treatments would occur. Post-project, thermal cover would remain across more than 33% of the winter range.*

The amendment to deer cover standards would allow standards to fall below 25% winter thermal cover and 15% snow-intercept thermal cover. Without the amendment, the ladder-fuel reduction treatment in MA 26, which would affect approximately 19 acres of winter thermal cover by reducing the overall

canopy closure would not be possible because the MA 26 block has only 35% in cover currently, thus does not meet the standards.

In MA 14, approximately 516 acres of winter thermal, and 813 acres of snow-intercept thermal cover could be changed to a non-cover condition before cover standards would fall below forest plan standards. So, this amendment would allow treatment of an additional 134 acres of winter thermal and 593 acres of snow-intercept thermal cover in MA 14, for a total of 746 acres of thinning in winter range that would reduce cover below Forest Plan Standards and Guideline and require an amendment.

The amendment would result in:

- *a minor short-term reduction of cover on an additional MAXIMUM of 19 acres of MA 26 and 727 acres in MA 14 because these acres would not provide cover for the short-term,*
- *a minor short-term positive effect because the stands would provide additional forage, have a reduced risk of loss from wildfire, insects and disease, and*
- *a minor, medium to long-term benefit as reduced tree competition allows for development of larger trees that are able to provide snow interception and thermal cover.*

[ID#105]

Associated Comments: [Seq#98]

This project proposal includes project-specific, non-significant, temporary amendments to Forest Plan Standards and Guidelines to achieve objectives related to soil protection and forest health. In this project, winter operations would require snowplowing Forest Road 43 and winter access on deer winter range, which would require amending Standards and Guidelines. The following road shall not be snowplowed and shall be closed to motorized wheeled vehicles from Dec.1 to Apr 1: Forest Road 43 from the junction with Forest Road 4300300 to the junction with Forest Road 4340." Amending these S&Gs would provide for snowplowing up to 16 miles of Forest Road 43 that accesses proposed winter harvest units for the purpose of implementing the Mission Restoration Project. Winter harvest could occur on 5% (557 acres) of deer winter range in the Libby Creek block in the project area. Harvest would occur along the drainage bottoms in five areas: Smith Canyon, Elderberry Creek, Chicamun Creek, Mission Creek, and Hornet Draw. It should be noted that the Libby Creek block has private residences in the area, so access to deer winter range is ongoing during the winter months. (pp.31-33) [Winter commercial logging in these areas would require amendments to the Forest Plan designed to protect the interests of wintering mule deer, as well as the presence of people. These areas are utilized by large groups of mule deer which forage on shrubs in open terrain between forested areas they use for cover. They should continue to be protected by the Standards and Guidelines of the Forest Plan. As noted there are family residences in these areas that utilize the area and existing roads for access to recreation and for survival (i.e., travel for employment, medical, educational, and logistical needs). Their use of roads proposed for use on snow and ice by heavy equipment for winter commercial logging would threaten their activities and lives if existing Standards and Guidelines were amended.] [11-30]

Concern: [Seq#99]

"

The current transportation system is modified to provide for long-term sustainable resource management, safe recreation use, reduced maintenance costs, and reduced impacts on aquatic habitat, wildlife habitat, and hydrological function.(p.19) [Planned project and management activities involving new and reopened roads, potentially increased commercial livestock, ground and vegetation disturbance associated with logging as well as transport of commercial logs cannot be expected to provide safe public use or improve watershed functions that affect ecological conditions." [ID#106]
Response: [Seq#99]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

Effects of road changes on wildlife and wildlife habitats are disclosed in the Wildlife section of the Preliminary EA at 3.7 p. 128-166, and repeated below, in part.

Alternative 2 Effects of Road Actions

Spotted Owls

No temporary roads would be built in suitable NRF habitat. Several closed roads (ML 1) would be opened. While 2.4 miles would be opened, only 0.5 would be open to public use. The remainder would be open to administrative use, which is infrequent. Decommissioning of closed and open roads, opening of closed roads for administrative use, and changes in maintenance levels would occur, and could result in short-term disturbance to owls. There would be mixed effects to owls- a short-term minor adverse effect could occur during road actions (decommissioning, opening, closing), a moderate intensity, long-term benefit would occur, as decommissioned roads would eventually re-vegetate, possibly providing additional owl habitat in 20 years or more.

Minor vegetation changes could occur as a result of the decommissioning or reopening, if small trees and shrubs are removed on the road bed.

Surveys have been completed and no responses were elicited from spotted owls.

Lynx and Critical Habitat

Road construction and decommissioning: No temporary road construction is proposed in the LAUs. Other road actions are proposed in alternative 2, and would result in temporary noise and human presence in the short-term, during implementation. Disturbance could occur, but lynx do not appear to be particularly sensitive to human presence (Staples 1995; Mowat et al. 2000), nor to avoid roads (Ruggiero et al.1999; McKelvey et al. 2000; Ruediger et al. 2000; Kolbe et al. 2007; Squires et al. 2010). Squires et al. (2010) reported that lynx denned further from roads than random expectation but did not think that was related to human disturbance, but rather related to fewer roads in the mature forests.

Roads are a source of mortality for lynx (Ferreras et al. 1991; Kramer-Schadt et al. 2004). Lynx are also vulnerable to overexploitation from trapping (Bailey 1936). Access for trapping is increased by the presence of roads and trails. However, lynx are a threatened species, and no legal trapping is allowed.

The only road actions would occur in the lynx habitat within the LAUs are decommissioning of already closed roads. These actions would result in reduced potential for disturbance to lynx prey.

Road actions in Critical Habitat: Approximately 0.04 miles of temporary road would be built in critical habitat, and result in a minor amount of vegetation loss. Approximately 0.3 miles of open road and 6.6 miles of closed road would be decommissioned. No closed roads would be opened. These actions would have minimal effects on vegetation, depending on how long the roads have been closed and other factors. Decommissioned roads may revegetate in the long-term to provide some habitat for lynx or their prey.

Goshawks

Road actions: Approximately 0.2 miles of temporary road would be built in goshawk habitat. This could remove a small amount of habitat, a maximum of 0.7 acre, if all the area is timbered. Approximately 34% of the analysis area would still be habitat. Public access would not be permitted on temporary roads, so they would not increase access for falconers. Other road actions would not produce measurable change in vegetation. Decommissioning of currently open roads would occur on 1.6 miles in goshawk habitat, which would access for falconers. However, 1.9 miles of closed road would be reopened for public use, so a net increase in access of 0.3 miles would occur.

Gray Flycatcher

Road actions: There would be a net increase of 1.2 miles of open roads during project implementation, and 6.1 miles post-project in this habitat type, which could affect flycatchers.

White-headed Woodpecker

Road Actions: Opening of 2.4 miles of currently closed roads in potential habitat would lead to snag loss on as much as 116 acres. This would reduce nesting and foraging habitat for white-headed woodpeckers. Approximately 2.2 miles of currently open roads would be decommissioned, which would offset the potential snag loss on a maximum of 107 acres.

Gray Squirrels

Road actions: Approximately 1.2 miles of temporary road would be opened for logging use and could result in additional mortality from vehicle strikes due to logging traffic. Temporary road construction would result in a maximum loss of vegetation of 4.1 acres, which would reduce availability of cover and potential for arboreal travel. Post-harvest, open road decommissioning would occur on 2.2 miles in western gray squirrel habitat. However, other road changes would result in a net increase of 6.2 miles of open roads in this habitat post-project including 2.4 miles of currently closed road that would be opened to general use.

Winter Range Habitat

Road actions: Approximately 1.2 miles of temporary road would be constructed in winter range, open for logging use, then decommissioned. This would result in minor loss of vegetation for the short-term (less than 5 acres) until the vegetation regrows. Shrub species that may provide browse for deer may grow back within 5 years of decommissioning. Approximately 0.03 mile of closed road would reopen to general use on winter range, however the roads would still be closed by conditions during the winter period.

Decommissioning of currently open roads would occur on 2.2 miles. In the short and longer term, decommissioning of open roads would reduce access disturbance to deer, mortality from collisions, hunting and poaching and avoidance of habitat. Eventually, vegetation would regrow and provide additional browse.

Cumulative Effects

Past actions have resulted in denser forest conditions, with fewer snags and large trees, and increased access to the project area.

The Travel Management decision will reduce access by motorized vehicles and the associated disturbance and habitat avoidance.

The following indicators would have a measurable change in cumulative effects:

Spotted owls and goshawks: On-going firewood cutting is reducing snags that provide nesting structures and habitat for prey for both owls and goshawks. Proposed road decommissioning will reduce this effect. The cumulative effect is that the area is less suitable for owls, but probably neutral for goshawks, since abundant dense habitat will remain.

Landbirds: Snag levels have been reduced by firewood cutting. Loss of snags and large trees and denser, more uniform forest structure has reduced habitat quality for flammulated owls and chipping sparrows. The proposed actions would open the stands on about 39% of the project area, counteracting this effect on 8,426 acres. This would improve habitat for chipping sparrows and flammulated owls. However, a net increase in open roads would occur, and result in additional snag loss. Travel management does not affect snag levels and firewood cutting, thus there is no overlap in effects for snag-associated species. Travel management could improve riparian habitats, by closing them to off-road motorized use.

Alternative 3

Across the analysis area, the following road actions would occur in Alternative 3:

- Temporary road construction 1.2 miles

- Decommissioning of open roads 6.1 miles
- Decommissioning of closed roads 51.0 miles

These actions would have a net beneficial effect for wildlife. Fewer roads mean less access for firewood harvest, hunting, trapping, poaching and collecting, reduced avoidance of suitable habitat and less disturbance from motorized vehicles and human presence. As vegetation returns to the roadbed, additional forage and cover would be produced. Short-term disturbance would occur during decommissioning and road construction. Road construction would remove 4.1 acres of habitat across the project area.

In general, Alternative 3 would have more beneficial effects to wildlife in the long-term than Alternative 2. The wildlife resource indicators that would change for Alternative 3 are discussed below.

Figure 78. Resource Indicators and Measures for Alternative 3 (Road actions only)

Resource Element

Resource Indicator

Measure

Alternative 3

Habitat for threatened species- spotted owls, lynx, and Critical Habitat (CH) for lynx.

Suitable Spotted Owl Habitat (late old successional habitat)

Open roads in NRF

12.7 post-project

Suitable Lynx habitat in LAUs

Open roads in habitat- mi.

2.6 mi. post-project

Critical Habitat for lynx

Open roads in habitat

9.8 miles post-project

Habitat for sensitive/focal species- goshawk, gray flycatcher, white-headed woodpecker and western gray squirrel.

Suitable habitat- goshawks

Open roads in habitat

28.0 post-project

Suitable habitat- gray flycatcher, white-headed woodpecker, and western gray squirrel

Open roads in habitat

34.5 post-project

Habitat for MIS, winter range, mule deer

Winter range

Open roads in habitat

12.2 post-project

Spotted Owl No temporary roads would be built in suitable (NRF) habitat. Approximately 1.4 miles of roads would be decommissioned in suitable habitat, which could result in short-term disturbance to owls. Only one segment is a currently open road, 0.03 miles. The other roads are closed and in various stages of revegetation. Approximately 0.9 miles of closed road would be reopened for administrative access, which is generally infrequent. Habitat concentrations have been surveyed, with no responses from spotted owls. It is unlikely that the analysis area has sufficient habitat to support owls currently. A long-term benefit would occur, as decommissioned **roads would eventually revegetate, possibly providing additional foraging habitat in 20 years or more.**

Lynx and Critical Habitat

No temporary roads would be constructed in lynx habitat. Approximately 0.6 mile of closed road would be reopened for public use, and 1.5 miles for administrative use. Approximately 2.6 miles of currently closed roads would be decommissioned with implementation of Alternative 3. This would probably have a minimal effect on lynx, as they are not particularly disturbed by human presence, are not hunted or

trapped (since they are a sensitive species) and with one exception near Buttermilk Butte, these roads are not likely to receive much OHV use due to vegetation, length, and lack of interesting destination. In the long term, decommissioned roads will revegetate, producing forage and cover for prey species. This would be a minor effect on about 9 acres, from about 5 years after decommissioning, if roads are not already vegetated and will be ripped or subsoiled, to 30 or 40 years or more, when tree species would grow out of reach by hares.

Temporary avoidance of the sites could occur during implementation.

In critical habitat, 0.04 miles of temporary road would be constructed, and 1.6 miles of open road would be decommissioned. Temporary road construction would remove less than 1 acre of habitat. Decommissioning would result in revegetation over time, which could provide more cover and forage for hares and other prey on less than 6 acres. This is a minor effect covering only 0.05% of the critical habitat. No closed roads would be reopened.

Northern Goshawks

Open roads provide access for falconers, which may result in loss of nestlings. Alternative 3 would decommission 4.1 miles of currently open road, which would make access more difficult.

Gray flycatchers

Open roads may affect gray flycatchers. However, no specific information was found on the response of gray flycatchers to roads. Noise effects have been documented, but at much higher levels than would occur with use of forest roads.

Overall, considering all project components, there would be minor, negative, short-term effects to gray flycatcher habitat due to activity disturbance, minor amounts of shrub loss, and increased road densities during the project. There would be a long-term, moderate, beneficial effect on 9% of the habitat, due to creation of more open habitat types and reduced fuel loadings/fire risk, and a possible minor adverse effect due to increases in open roads.

Alternative 3 may adversely impact individuals, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing.

Western Gray Squirrel

Approximately 1.2 miles of temporary road would be constructed in habitat for gray squirrels, open for logging use, then decommissioned. This would result in increased potential for squirrel mortality from vehicle strikes and a minor loss of vegetation for the short-term (less than 5 acres) until the vegetation regrows. Shrub species that may provide cover or forage may grow back within 5 years of decommissioning.

Decommissioning of currently open roads would occur on 6.1 miles. In the short and longer term, decommissioning of open roads would reduce access and disturbance to squirrels, mortality from vehicle strikes, and avoidance of habitat. Eventually, vegetation would regrow and provide additional cover and forage. Disturbance to squirrels and avoidance of habitat could occur during decommissioning, but would be temporary and short-term. Approximately 0.1 mile of currently closed

road would be opened, which would result in vehicle traffic and potential loss of squirrels through vehicle strikes.

Winter Range for Mule Deer

Approximately 1.2 miles of temporary road would be constructed in winter range, opened for logging use, and then decommissioned. This would result in minor loss of vegetation for the short-term (less than 5 acres) until the vegetation regrows. Shrub species that may provide browse for deer may grow back within 5 years of decommissioning. Deer may be displaced during use of the temporary roads. However, logging would occur in a limited area at any one time, and road use would be short-term. This would mitigate effects to deer.

Decommissioning of currently open roads would occur on 6.1 miles. In the short and longer term, decommissioning of open roads would reduce disturbance to deer, mortality from collisions, hunting and poaching and avoidance of habitat. Eventually, vegetation would regrow and provide additional browse. Disturbance to deer and avoidance of habitat could occur during decommissioning, but would be temporary and short-term.

Approximately 0.3 miles of closed road would be reopened, and could result in disturbance, displacement, access for hunting and potential for collisions with deer.

Cumulative Effects

There would be no additional cumulative effects for Alternative 3. Refer to Alternative 2 for a description of potential cumulative effects for the proposed actions. [ID#106]

Associated Comments: [Seq#99]

The current transportation system is modified to provide for long-term sustainable resource management, safe recreation use, reduced maintenance costs, and reduced impacts on aquatic habitat, wildlife habitat, and hydrological function.(p.19) [Planned project and management activities involving new and reopened roads, potentially increased commercial livestock, ground and vegetation disturbance associated with logging as well as transport of commercial logs cannot be expected to provide safe public use or improve watershed functions that affect ecological conditions.] [11-9]

Concern: [Seq#100]

"The EA does not prevent a detailed analysis of the conditions of the roads proposed for decommissioning. We are concerned because we've observed with projects on other national forests the FS inflates the restoration value of road decommissioning in cases where the roads pose little or no risk of watershed damage because they are essentially naturally recovered" [ID#107]

Response: [Seq#100]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3

roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#107]

Associated Comments: [Seq#100]

The EA does not prevent a detailed analysis of the conditions of the roads proposed for decommissioning. We are concerned because we've observed with projects on other national forests the FS inflates the restoration value of road decommissioning in cases where the roads pose little or no risk of watershed damage because they are essentially naturally recovered. [37-1]

Concern: [Seq#101]

Restoration Project is inadequate as it neglects any consideration of potential impacts to cultural resources posed by the project. We therefore request that a revised EA be prepared that assesses the direct, indirect, and cumulative effects on cultural resources of implementing the proposed action. [ID#108]

Response: [Seq#101]

The Mission Project does consider the impact on historic and cultural resources. Impacts are displayed on page 299. A cultural resource survey was completed in 2016. The survey met the requirements of Section 106 of the NHPA of 1996. No sites or isolates eligible for the National Register were discovered within proposed treatment areas. The Washington State Department of Archaeology and Historic Preservation (SHPO) concurred with the Determination of "No Historic Properties Affected. There is a proposed mitigation measure (#61) that"(. . .if cultural resources are discovered as a result of project activity, all work in the vicinity of the discovery would cease until assessment by a cultural resource specialists." [ID#108]

Associated Comments: [Seq#101]

These comments are being submitted on behalf of the Confederated Tribes of the Colville Reservation (CCT) Tribal Historic Preservation Officer (THPO), Guy Moura. The preliminary Environmental Assessment for the Mission Restoration Project is inadequate as it neglects any consideration of potential impacts to cultural resources posed by the project. We therefore request that a revised EA be prepared that assesses the direct, indirect, and cumulative effects on cultural resources of implementing the proposed action. [10-1]

Concern: [Seq#102]

Please analyze the impacts upon the human inhabitants of the Buttermilk, Libby Creek, and Gold Creek (including the Middle Fork) communities. [ID#109]

Response: [Seq#102]

Libby Creek is mostly accessed by County Roads, roads 1049 and 1051 and Forest Roads 4300 and 4300100. The other locations are accessed mostly by National Forest System roads including 4300, 4340, 4340100 off County Road 1034. Some of the effects on local residents are discussed on pages 297 & 298 of the preliminary EA in Section 3.15.6. There would be limited health and safety hazards to the general public from the project. None are unusual or unique. Nearby residents could be exposed to smoke during prescribed fire operations. All burning will be done under Washington State Smoke Management

Requirements designed to maintain air quality within federal Clean Air Act standards. Proposed treatments will use design criteria, mitigation, and monitoring to maintain Clean Water Act standards. Residents could encounter logging traffic. Most Forest Service logging roads, except main haul routes such as Forest Roads 4300, 4330, and 4340 will remain closed to the general public to minimize traffic conflicts. Log hauling and heavy equipment moving during weekends and holidays is generally prohibited without prior approval from the Forest Service, beginning Memorial Day weekend through Labor Day weekend and also during the general rifle deer hunting season. The safety of the area would be beneficially improved by the reduction of fuels creating safe escape routes, and an increased ability to protect private homes and structures in the area. [ID#109]

Associated Comments: [Seq#102]

I have not had time to comment upon human impacts. The impacts of this sale could extend into Gold Creek, where my property is. Please analyze the impacts upon the human inhabitants of the Buttermilk, Libby Creek, and Gold Creek (including the Middle Fork) communities. [70-18]

Concern: [Seq#103]

I am concerned about public safety with logging trucks traveling on snowy roads in the winter. What if a resident of Libby Creek is hit by a logging truck that spins out? Will that be "non-significant"? This is a matter of public safety. [ID#110]

Response: [Seq#103]

Libby Creek is mostly accessed by County Roads, roads 1049 and 1051 and Forest Roads 4300 and 4300100. Some of the transportation effects on local residents are discussed on pages 297 & 298 of the preliminary EA in Section 3.15.6. There would be limited health and safety hazards to the general public from the project. None are unusual or unique. Residents could encounter logging traffic on County Roads 1049 and 1051 but the Forest Service has no control on the use of County Roads. Most Forest Service logging roads, except main haul routes such as Forest Roads 4300 in the Libby Creek area will remain closed to the general public to minimize traffic conflicts. Log hauling and heavy equipment moving during weekends and holidays is generally prohibited without prior approval from the Forest Service, beginning Memorial Day weekend through Labor Day weekend and also during the general rifle deer hunting season. The safety of the area would be beneficially improved by the reduction of fuels creating safe escape routes, and an increased ability to protect private homes and structures in the area. [ID#110]

Associated Comments: [Seq#103]

I am concerned about public safety with logging trucks traveling on snowy roads in the winter. What if a resident of Libby Creek is hit by a logging truck that spins out? Will that be "non-significant"? This is a matter of public safety. [29-31]

Concern: [Seq#104]

and damage to archaeological resources. [ID#112]
Response: [Seq#104]

A cultural resource survey was completed in 2016 under supervision of the project archaeologist (see page 306 & 307). The survey met the requirements of Section 106 of the National Historic Preservation Act of 1966. No sites or isolates eligible for the National Register of Historic Places were discovered within proposed treatment areas. The Washington State Department of Archaeology and Historic Preservation concurred with the Determination of "No Historic Properties Affected" on September 29, 2016. [ID#112]
Associated Comments: [Seq#104]
and damage to archaeological resources. [27-28]

Concern: [Seq#105]

"To address its unsustainable and deteriorating road system, the Forest Service promulgated the Roads Rule (referred to as "subpart A") in 2001. 66 Fed. Reg. 3206 (Jan. 12, 2001); 36 C.F.R. part 212, subpart A. The Roads Rule created two important obligations for the agency. One obligation is to identify unneeded roads to prioritize for decommissioning or to be considered for other uses. 36

C.F.R. § 212.5(b)(2). Another obligation is to identify the minimum road system needed for safe and efficient travel and for the protection, management, and use of National Forest system lands.

Id.

§ 212.5(b)(1). We urge the Forest Service to carefully evaluate the proposed Mission Restoration Project and each of the alternatives through this lens." [ID#113]
Response: [Seq#105]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding

expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#113]

Associated Comments: [Seq#105]

To address its unsustainable and deteriorating road system, the Forest Service promulgated the Roads Rule (referred to as "subpart A") in 2001. 66 Fed. Reg. 3206 (Jan. 12, 2001); 36 C.F.R. part 212, subpart A. The Roads Rule created two important obligations for the agency. One obligation is to identify unneeded roads to prioritize for decommissioning or to be considered for other uses. 36C.F.R. § 212.5(b)(2). Another obligation is to identify the minimum road system needed for safe and efficient travel and for the protection, management, and use of National Forest system lands. Id. § 212.5(b)(1). We urge the Forest Service to carefully evaluate the proposed Mission Restoration Project and each of the alternatives through this lens. [27-2]

Concern: [Seq#106]

"The Forest Service states that it used the Travel Analysis Process guidance from Chapter 20 of the Travel Planning Handbook (FSH 7709.55, USDA Forest Service 2009; 36 C.F.R. Part 212.5, Subpart A) to conduct a travel analysis for all roads in the project area. Draft EA at 18 (Mission Travel Analysis Report). *See also* Mission Restoration Project Transportation Resources Report by C. Bauman (2016). Draft EA at 209. We were unable to access the "Specialists Road Ratings" link because it fails to load." [ID#114]
Response: [Seq#106]

A TAP was conducted per FSH and 36 CFR 212.5 Subpart A.

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant

to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning

You were unable to access the "Specialists Road Ratings" link because it was loaded as a tabbed excel spreadsheet and needed to be .PDFed before being loaded for public view and download. That has hopefully been fully corrected. [ID#114]

Associated Comments: [Seq#106]

The Forest Service states that it used the Travel Analysis Process guidance from Chapter 20 of the Travel Planning Handbook (FSH 7709.55, USDA Forest Service 2009; 36 C.F.R. Part 212.5, SubpartA) to conduct a travel analysis for all roads in the project area. Draft EA at 18 (Mission Travel Analysis Report). See also Mission Restoration Project Transportation Resources Report by C. Bauman (2016). Draft EA at 209. We were unable to access the "Specialists Road Ratings" link because it fails to load. [27-6]

Concern: [Seq#107]

"As part of its analysis of the Mission Restoration Project under NEPA, the Forest Service must consider the Okanogan Wenatchee's Travel Analysis Report.

Direction from the Forest Service's Washington Office required all forests to submit travel analysis reports by the end of FY 2015. We applaud the Okanogan-Wenatchee National Forest for finalizing its travel analysis report in July 2015. *See* Attachment A. Even more important, however, is the next step under subpart A—consider the recommendations from the travel analysis report to identify the minimum road system2 and identify unneeded roads for decommissioning. Given the Mission Restoration Project is considering changes to a large number of miles of roads, and given its large geographic scale, this is precisely the type of project to complete the next step.3" [ID#115]

Response: [Seq#107]

This was done.

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget

constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning [ID#115]

Associated Comments: [Seq#107]

2. As part of its analysis of the Mission Restoration Project under NEPA, the Forest Service must consider the Okanogan Wenatchee's Travel Analysis Report. Direction from the Forest Service's Washington Office required all forests to submit travel analysis reports by the end of FY 2015.1 We applaud the Okanogan-Wenatchee National Forest for finalizing its travel analysis report in July 2015. See Attachment A. Even more important, however, is the next step under subpart A—consider the recommendations from the travel analysis report to identify the minimum road system2 and identify

unneeded roads for decommissioning. Given the Mission Restoration Project is considering changes to a large number of miles of roads, and given its large geographic scale, this is precisely the type of project to complete the next step.3 [27-7]

Concern: [Seq#108]

"The Forest Service should include the risk and benefit analysis from the travel analysis report for each road segment in Figure 136 in Appendix B. This would allow the public to see how the recommendations from the travel analysis report for each road segment compare with the proposed actions under Alternatives 2 and 3. Without this information, the public cannot meaningfully comment on the proposed road treatments and the analysis is inconsistent with subpart A" [ID#116]
Response: [Seq#108]

A TAP was conducted per FSH and 36 CFR 212.5 Subpart A.

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original

2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

We tried loading the risk analysis on the public website for the project, but because it was a tabbed ecel spreadsheet, it did not load correctly. It was reloaded as a ".pdf" file and should now be available for public viewing. This is the first step of the TAP process and is done in a multi-disciplinary view. The Interdisciplinary team gets together and uses this process to come up with a final recommendation in an interdisciplinary process and that is what is included in Appendix B. [ID#116]

Associated Comments: [Seq#108]

The Forest Service should include the risk and benefit analysis from the travel analysis report for each road segment in Figure 136 in Appendix B. This would allow the public to see how the recommendations from the travel analysis report for each road segment compare with the proposed actions under Alternatives 2 and 3. Without this information, the public cannot meaningfully comment on the proposed road treatments and the analysis is inconsistent with subpart A. [27-8]

Concern: [Seq#109]

"The Forest Service mentions the minimum road system in its analysis, but fails to assess whether the proposed changes to the road system meet the factors defining a minimum road system. *See, e.g.*, EA at 40-41. In Appendix B, the Forest Service states that the IDT considered "whether there may be potential need for future access to an area accessed by a road" and in those cases determined it was better to store the road than to decommission it. This approach is flawed, as it sets no timeline for determining that need. A road with potential access needs 10, 50, or even 100 years in the future should not be identified as "needed" and therefore prioritized for closure rather than decommissioning" [ID#117]

Response: [Seq#109]

A TAP was conducted per FSH and 36 CFR 212.5 Subpart A.

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

The team considered potential future need and roads not needed for some period of time were closed, made ML-1 or if the only need was for administrative use, made a ML-2A (an open road that is only available for administrative uses such as to treat a noxious weed infestation or to access range, or other,

improvements. [ID#117]

Associated Comments: [Seq#109]

The Forest Service mentions the minimum road system in its analysis, but fails to assess whether the proposed changes to the road system meet the factors defining a minimum road system. See, e.g., EA at 40-41. In Appendix B, the Forest Service states that the IDT considered "whether there may be potential need for future access to an area accessed by a road" and in those cases determined it was better to store the road than to decommission it. This approach is flawed, as it sets no timeline for determining that need. A road with potential access needs 10, 50, or even 100 years in the future should not be identified as "needed" and therefore prioritized for closure rather than decommissioning. [27-11]

Concern: [Seq#110]

"The forest's approach also fails to apply the factors defining a minimum road system when it identified which roads to keep on the system (presumably, "needed" roads) and which roads to take off of the system (presumably, "unneeded" roads). Pursuant the Forest Service's own rules, the forest must consider whether the resulting road system is needed to,

inter alia

, reflect long term funding expectations and minimize adverse environmental impacts" [ID#118]

Response: [Seq#110]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the

TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

Two factors considered were funding expectations and environmental impacts, but the interdisciplinary team also needed to consider future need and current permitted access. [ID#118]

Associated Comments: [Seq#110]

The forest's approach also fails to apply the factors defining a minimum road system when it identified which roads to keep on the system (presumably, "needed" roads) and which roads to take off of the system (presumably, "unneeded" roads). Pursuant the Forest Service's own rules, the forest must consider whether the resulting road system is needed to, inter alia, reflect long term funding expectations and minimize adverse environmental impacts. [27-12]

Concern: [Seq#111]

"As noted above, in assessing specific road segments, the Forest Service should also consider the risks and benefits of each road as analyzed in the travel analysis report, and whether the proposed road management measures are consistent with the recommendations from the travel analysis report. To the extent that the final decision in this project differs from what is recommended in the travel analysis report, the Forest Service must explain that inconsistency. *See, e.g.*, *Smiley v. Citibank*, 517 U.S. 735 (1996) ("Sudden and unexplained change . . . or change that does not take account of legitimate reliance

on prior interpretation . . . may be 'arbitrary, capricious [or] an abuse of discretion") (internal citations omitted)." [ID#119]

Response: [Seq#111]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially

those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

The risks and benefits of each road was considered in an interdisciplinary fashion at an Interdisciplinary meeting for the TAP process concerning all resource concerns and not just single resource concerns. Road management in the EA is consistent with the TAP analysis summarized in the Transportation report, with a few minor adjustments in the Draft Decision to maintain a road at a lower standard. [ID#119]

Associated Comments: [Seq#111]

As noted above, in assessing specific road segments, the Forest Service should also consider the risks and benefits of each road as analyzed in the travel analysis report, and whether the proposed road management measures are consistent with the recommendations from the travel analysis report. To the extent that the final decision in this project differs from what is recommended in the travel analysis report, the Forest Service must explain that inconsistency. See, e.g., Smiley v. Citibank, 517 U.S. 735 (1996) ("Sudden and unexplained change . . . or change that does not take account of legitimate reliance on prior interpretation . . . may be 'arbitrary, capricious [or] an abuse of discretion") (internal citations omitted). [27-13]

Concern: [Seq#112]

"The analysis states that roads may be closed (changed to ML 1) if the forest determines "it will not be needed for access to meet management objectives for one year or longer. Closing NFS roads reduces the potential environmental impacts and maintenance costs of the road." Draft EA at 209. While we agree that in some cases closing designated roads will decrease the likelihood of catastrophic failure and potential adverse effects to water quality and aquatic habitat, the Forest Service should not rely on road closures as a proxy for decommissioning roads. Indeed, the Forest Service Manual directs forests to prioritize decommissioning unneeded roads. FSM 7703.12(5) (Road Management) ("Give priority to . . . decommissioning unneeded roads, or, where appropriate, converting them to less costly and more environmentally beneficial uses.")." [ID#120]

Response: [Seq#112]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section,

safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

Unneeded roads are proposed for decommissioning and roads that will not be needed for a longer period of time were converted to less costly and more environmentally beneficial uses, ML-1. [ID#120]

Associated Comments: [Seq#112]

The analysis states that roads may be closed (changed to ML 1) if the forest determines "it will not be needed for access to meet management objectives for one year or longer. Closing NFS roads reduces the potential environmental impacts and maintenance costs of the road." Draft EA at 209. While we agree that in some cases closing designated roads will decrease the likelihood of catastrophic failure and potential adverse effects to water quality and aquatic habitat, the Forest Service should not rely on road closures as a proxy for decommissioning roads. Indeed, the Forest Service Manual directs forests to prioritize decommissioning unneeded roads. FSM 7703.12(5) (Road Management) ("Give priority to . . . decommissioning unneeded roads, or, where appropriate, converting them to less costly and more environmentally beneficial uses."). [27-15]

Concern: [Seq#113]

"Under Alternative 2, the Forest Service proposes to add 3.6 miles of unauthorized roads to the road system. *See* Draft EA at 31 (0.7 miles would become part of the open road system, 2.7 miles would be added to the system as closed, and 0.2 miles would be added to the system as closed with administrative access). Alternative 3 would add 2.7 miles of unauthorized roads to the road system.

Unauthorized roads were omitted from the Okanogan-Wenatchee's travel analysis report, and there is a dearth of information provided to the public regarding the project-specific travel analysis to inform us about the risks and benefits of these particular roads. These non-system roads should be appropriately treated to address or prevent any long-term aquatic risks through decommissioning. We are also concerned that this approach of formalizing unauthorized roads into the road system will serve as a perverse incentive for user-built routes. We understand it is an ongoing challenge for the Forest Service to monitor motorized access across the forest. But we do not understand why unlawful actions would be condoned. In the very least, the Forest Service should provide specific justification for adding these unauthorized roads to the road system." [ID#121]

Response: [Seq#113]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001

Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

The Okanogan-Wenatchee travel analysis report only looked at roads that were on the System (ML-1 to 5) and not roads that were listed as unauthorized. The Mission Restoration Project looked at all roads that existed on the ground and are making a NEPA decision on their management. Many of these unauthorized roads were roads previously used for resource management but for some reason were not added to, or were previously dropped, from the road system for various reasons. [ID#121]

Associated Comments: [Seq#113]

Under Alternative 2, the Forest Service proposes to add 3.6 miles of unauthorized roads to the road system. See Draft EA at 31 (0.7 miles would become part of the open road system, 2.7 miles would be added to the system as closed, and 0.2 miles would be added to the system as closed with administrative access). Alternative 3 would add 2.7 miles of unauthorized roads to the road system. Unauthorized roads were omitted from the Okanogan-Wenatchee's travel analysis report, and there is a dearth of information provided to the public regarding the project-specific travel analysis to inform us about the risks and benefits of these particular roads. These non-system roads should be appropriately treated to address or prevent any long-term aquatic risks through decommissioning. We are also concerned that this approach of formalizing unauthorized roads into the road system will serve as a perverse incentive for user-built routes. We understand it is an ongoing challenge for the Forest Service to monitor motorized access across the forest. But we do not understand why unlawful actions would be condoned. In the very least, the Forest Service should provide specific justification for adding these unauthorized roads to the road system. [27-17]

Concern: [Seq#114]

"The Forest Service should clearly articulate the statement of purpose to include its duty to identify the minimum road system, and provide support for the claimed need. In general, we support the Forest Service's statement of purpose and need for this project. But the statement could be improved in the following two ways. First, the Forest Service should explicitly refer to its duties under subpart A in its statement of purpose and need related to the transportation system. Applicable statutory and regulatory requirements should shape a project's statement of purpose and need. When the agency takes an action "pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS." Westlands Water Dist. v. U.S. Dept. of Interior, 376 F.3d 853, 866 (9th Cir. 2004). Under subpart A of its travel rule, the Forest Service has a substantive duty to address its over-sized road system. See 36 C.F.R. § 212.5. This underlying substantive duty must inform the scope of, and be included in, the agency's NEPA analysis. After more than 15 years since finalizing the subpart A rules, the Forest Service can no longer delay in addressing this duty. Here, the agency lists seven statements of purpose and need, several of which relate to the forest road system. See draft EA at 12-15 (P & N #1, noting a need to "restore and maintain aquatic and hydrologic processes impacted by management due to, inter alia, "[s]everal roads add sediment, increase the drainage network, block fish migration, and reduce woody debris recruitment in the project area"); (P & N #7, stating "A purpose of this project is to provide the road system needed for safe and efficient travel, administration, public use, and protection of natural resources on National Forest System (NFS) lands."). These statements are great because they do highlight the forest's need to address the forest road system. We suggest improving the statements by explicitly stating the need to identify and implement the minimum roadsystem, and to identify unneeded roads to prioritize for decommissioning or to be considered for other uses per 36 C.F.R. § 212.5." " [ID#122]
Response: [Seq#114]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/

recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

The project addresses the need to restore and maintain aquatic and hydrologic processes through changes in road management including decommissioning and closing roads (34.8/33.6 miles of road closure/road decommissioning in Alternative 2 and 33.8/56.2 in Alternative 3), 6 beaver habitat enhancement sites, a reduction in road-stream crossings (6/9), 8.3 miles of stream channel complexity improvements, 5.6 miles of increased fish access to potential habitat, and 8 aquatic organism passage pipes installed.

[ID#122]

Associated Comments: [Seq#114]

7. The Forest Service should clearly articulate the statement of purpose to include its duty to identify the minimum road system, and provide support for the claimed need. In general, we support the Forest Service's statement of purpose and need for this project. But the statement could be improved in the following two ways. First, the Forest Service should explicitly refer to its duties under subpart A in its statement of purpose and need related to the transportation system. Applicable statutory and regulatory requirements should shape a project's statement of purpose and need. When the agency takes an action "pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS." Westlands Water Dist. v. U.S. Dept. of Interior, 376 F.3d 853, 866 (9th Cir. 2004). Under subpart A of its travel rule, the Forest Service has a substantive duty to address its over-sized road system. See 36 C.F.R. § 212.5. This underlying substantive duty must inform the scope of, and be included in, the agency's NEPA analysis. After more than 15 years since finalizing the subpart A rules, the Forest Service can no longer delay in addressing this duty. Here, the agency lists seven statements of purpose and need, several of which relate to the forest road system. See draft EA at 12-15 (P & N #1, noting a need to "restore and maintain

aquatic and hydrologic processes impacted by management due to, inter alia, "[s]everal roads add sediment, increase the drainage network, block fish migration, and reduce woody debris recruitment in the project area"); (P & N #7, stating "A purpose of this project is to provide the road system needed for safe and efficient travel, administration, public use, and protection of natural resources on National Forest System (NFS) lands."). These statements are great because they do highlight the forest's need to address the forest road system. We suggest improving the statements by explicitly stating the need to identify and implement the minimum road system, and to identify unneeded roads to prioritize for decommissioning or to be considered for other uses per 36 C.F.R. § 212.5. [27-20]

Concern: [Seq#115]

"To identify the minimum road system, the Forest Service must consider whether each road segment the agency decides to maintain on the system is needed to meet certain factors outlined in the agency's own regulation.4 Consider whether the road system is needed to" [ID#123]

Response: [Seq#115]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001

Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#123]

Associated Comments: [Seq#115]

To identify the minimum road system, the Forest Service must consider whether each road segment the agency decides to maintain on the system is needed to meet certain factors outlined in the agency's own regulation.4 Consider whether the road system is needed to: [27-38]

Concern: [Seq#116]

"Prioritize unneeded roads for decommissioning or other uses rather than closure.

Subpart A of the Forest Service's own travel rules require it to identify unneeded roads to prioritize for decommissioning or to be considered for other uses. 36 C.F.R. § 212.5(b)(2).5 *See also Center for Sierra Nevada v. U.S. Forest Service*, 832 F. Supp. 2d 1138, 1155 (E.D. Cal. 2011) ("The court agrees that during the Subpart A analysis the Forest Service will need to evaluate all roads, including any roads previously designated as open under subpart B, for decommissioning."). A decision to decommission roads must also be based on the Okanogan-Wenatchee's travel analysis report. 36 C.F.R. § 212.5(b)(2) (requiring decisions about which roads are needed to be based on "a science- based roads analysis at the appropriate scale")." [ID#124]

Response: [Seq#116]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/

recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#124]

Associated Comments: [Seq#116]

4. Prioritize unneeded roads for decommissioning or other uses rather than closure. Subpart A of the Forest Service's own travel rules require it to identify unneeded roads to prioritize for decommissioning or to be considered for other uses. 36 C.F.R. § 212.5(b)(2).5 See also Center for Sierra Nevada v. U.S. Forest Service, 832 F. Supp. 2d 1138, 1155 (E.D. Cal. 2011) ("The court agrees that during the Subpart A analysis the Forest Service will need to evaluate all roads, including any roads previously designated as open under subpart B, for decommissioning."). A decision to decommission roads must also be based on the Okanogan-Wenatchee's travel analysis report. 36C.F.R. § 212.5(b)(2) (requiring decisions about which roads are needed to be based on "a science- based roads analysis at the appropriate scale."). 5 36 C.F.R. § 212.1 (defining a road as "[a] motor vehicle travelway over 50 inches wide, unless designated and managed as a trail."). Here, under Alternative 2 the Forest Service identifies approximately 34.8 miles of road to close after implementation of the project, 13.1 miles to close with administrative access, and approximately 33.6 miles to decommission. Based on current natural resource conditions, assessed risks from the existing road network, road densities across the landscape, the agency's limited resources, and long-term funding expectations, additional road decommissioning is warranted. [27-14]

Concern: [Seq#117]

I believe that this project warrants a full EIS rather than an Environmental Assessment, as the impacts are vast and require more consideration than the EA can provide. [ID#125]
Response: [Seq#117]

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to Buck EA, South Summit II, Light, and Annie which did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made.

Based on the effects analysis determined in the Preliminary EA, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where he proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct several hundred feet of hand fireline in an IRA and burn about 2 acres in the IRA to a more defensible burn boundary. This use will not substantially alter the IRA. [ID#125]
Associated Comments: [Seq#117]
Finally, AFRC believes that analyzing this project using an Environmental Analysis is adequate since no significant negative impacts were found to occur on the landscape during operations, rather the actions will improve forest health and benefit other resources as well as reducing the threat of catastrophic wildfire to the Forest and to adjacent land owners. [14-15]

I believe an EIS should be completed to evaluate these effects. [29-18]

The Forest Service is avoiding due process by not completing an EIS for this project. [29-39]

Contrary to any reasonable standard no environmental impact statement has been done. For a project that will impact our area for YEARS. [42-1]

Given that the environmental impacts of this project are too detrimental to proceed, an Environmental Impact Statement should be initiated. How is it possible to have faith in the USFS when the prior instituted rules are broken/changed/amended for the convenience of the proposed projects? The ends

justify the means is not a philosophy to be proud of. As a government agency, to maintain and proceed by those standards and guidelines to which you espouse would elevate you to a level worthy of respect. Surely those rules and regulations were created in the spirit of doing the right thing in the interest of our public lands. When rescinded, even temporarily, the compromise is detrimental and the results are not guaranteed to be brief in nature. No man, nor computer projection, can accurately forecast the net outcome. [48-10]

EIS should be required A number of factors point to the need for a more careful review of the project than this EA provides; an EIS is called for. These factors include the large size of the analysis area (approx 50,000 acres); time span for the project (very difficult to determine from the document; the Forest Service (FS) has indicated it could easily span greater than a decade); involvement of profit-driven organizations in the design, data collection and analysis via the North Central Washington Forest Health Collaborative (NCWFHC); the OWNF's stated goal of using this project as a pilot for additional similar projects; the use of proprietary "black box" EMDS software in determining the desired stand composition whose algorithms and modeling the public has no ability to examine; the presence of listed and endangered species in the area, and in affected streams; the request for amendments to be made to the Forest Plan; and highly limited climate change modeling, that uses a single conservative model that does not produce a range of possible outcomes. [49-2]

Given that the environmental impacts of this project are too detrimental to proceed, an Environmental Impact Statement should be initiated. [51-28]

Given the environmental sensitivity of the habitat under consideration for this project and the presence of endangered species including grey wolf and 3 ESA listed salmonids, an Environmental Impact Statement should be a requirement. [61-3]

Donna Bresnahan, a long-time Libby Creek resident, offered the following: "This project requires a full EIS. The impacts would be significant and are not fully represented in this EA, especially regarding ESA listed species. It is significant that the Forest did not post this as an "issue" from scoping comments. Also, a 50,000 acre project area of this nature will have significant impacts. The EIS is necessary in order to allow more full public involvement and to provide a greater suite of alternatives." [63-14]

The fact that there is no EIS when one is clearly needed; the fact that the Forest Service cannot even begin to adequately maintain its network of 22,000 miles of roads in Washington State (and apparently had not the foresight to anticipate this reality as it continued to build roads); the fact that there is only very vague mention by the Methow Valley District Ranger, when pressed, of any funding for follow-up and monitoring of the process and the after-effects of the proposed MRP is illustrative of why it would be reckless to go forward with this proposal. Furthermore, it is quite apparent that the only proposed action which is actually funded at the outset of the project is that of private, commercial logging. The actual "restorative" components are predicated only upon future and non-specific funding, presumably by private backers. Frankly, such an amorphous commitment is inadequate for a project which, in name, asserts itself as a restoration project. [65-15]

* The Mission Restoration Project requires a full EIS. The proposed impacts on the forest ecosystem are

too complex, too large and far-reaching to be covered by a mere EA. [67-17]

EIS should be required A number of factors point to the need for a more careful review of the project than this EA provides; an EIS is called for. These factors include the large size of the analysis area (approx 50,000 acres); time span for the project (very difficult to determine from the document; the Forest Service (FS) has indicated it could easily span greater than a decade); involvement of profit-driven organizations in the design, data collection and analysis via the North Central Washington Forest Health Collaborative (NCWFHC); the OWNF's stated goal of using this project as a pilot for additional similar projects; the use of proprietary "black box" EMDS software in determining the desired stand composition whose algorithms and modeling the public has no ability to examine; the presence of listed and endangered species in the area, and in affected streams; the request for amendments to be made to the Forest Plan; and highly limited climate change modeling, that uses a single conservative model that does not produce a range of possible outcomes. [69-4]

NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT I believe that this EA should be replaced by an Environmental Impact statement that takes advantage of the debates now occurring due to recent wildfires and the results of these fires, along with the increased research and analysis that is now possible. The sense of urgency surrounding this EA may not actually be realistic. It may be more effective to carefully plan stages followed by periods of latency and analysis of each stage before moving forward - using the data to modify subsequent planned actions. An EIS could further this process by incorporating more of the recent data and literature on the subject, along with scientific analysis that is now possible due to significantly burned areas of the recent past. I believe it is a mistake to move forward with unnecessary haste. The Mission EA may be implementing a hybrid, reactionary management scheme which continues to attempt replacing wildland fire with logging and burning, but ignores conducting the necessary analyses of cumulative, forestwide impacts. An EIS should be done in order to correct this situation [70-6]

Thank you for this opportunity to comment. Please take the time to make this analysis meaningful to the future and complete. Do an EIS including many of the missing elements that are so important to the response to our future. [70-17]

I am writing to you regarding the Environmental Assessment for the proposed Mission Project timber sale in the Libby/Buttermilk area. I believe that this project warrants a full EIS rather than an Environmental Assessment, as the impacts are vast and require more consideration than the EA can provide. [73-1]

I believe that any choice besides Alternative 1 requires a full Environmental Impact Statement....The issues of aquatics combined with all the other threatened and endangered species within the proposed project area should be enough in itself to require an EIS. [79-1]

Concern: [Seq#118]

"The Okanogan-Wenatchee National Forest knows this. In its travel analysis report finalized in July 2015, the agency did an analysis of the benefits, risks and costs of the 7,948 miles of system roads cutting across the forest.

See

Attachment A. The forest would need about $158 million to bring the entire road system back up to standard, and about $10.2 million per year to keep the current road system fully maintained to standard.

Id.

at 24. But on average, the forest receives only $1.8 million per year—about 18% of the funding necessary to address the estimated annual maintenance costs.

Id.

We applaud the forest for addressing this issue in projects like the Mission Restoration Project, as it is a crucial step towards creating a financially and economically sustainable future forest.

We are very encouraged to see the Forest Service considering the road system on a watershed scale as part of the Mission Restoration Project. We strongly support the agency's thoughtful, strategic approach to improving public access to the forest, reducing negative impacts from forest roads to water quality and aquatic habitats, and improving watersheds and forest resiliency." [ID#126]

Response: [Seq#118]

Thank you for your supportive response. [ID#126]

Associated Comments: [Seq#118]

The Okanogan-Wenatchee National Forest knows this. In its travel analysis report finalized in July 2015, the agency did an analysis of the benefits, risks and costs of the 7,948 miles of system roads cutting across the forest. See Attachment A. The forest would need about $158 million to bring the entire road system back up to standard, and about $10.2 million per year to keep the current road system fully maintained to standard. Id. at 24. But on average, the forest receives only $1.8 million per year—about 18% of the funding necessary to address the estimated annual maintenance costs. Id. We applaud the forest for addressing this issue in projects like the Mission Restoration Project, as it is a crucial step towards creating a financially and economically sustainable future forest. We are very encouraged to see the Forest Service considering the road system on a watershed scale as part of the Mission Restoration Project. We strongly support the agency's thoughtful, strategic approach to improving public access to the forest, reducing negative impacts from forest roads to water quality and aquatic habitats, and improving watersheds and forest resiliency. [27-4]

Concern: [Seq#119]

"The Forest Service faces many challenges with its vastly oversized, under-maintained, and unaffordable road system. The impacts from roads to water, fish, wildlife, and ecosystems are tremendous and well documented in scientific literature. The Okanogan-Wenatchee National Forest is no exception, with 7,948 miles of system roads, the required maintenance of which exceeds annual maintenance costs. *See* Okanogan-Wenatchee National Forest, Forestwide Travel Analysis Report (Attachment A), page 11; Draft EA at 213 ("current road maintenance funding levels are lower than needed to maintain all the existing roads") " [ID#127]

Response: [Seq#119]

Thank you for your supportive response for travel analysis. This project completed travel analysis for the project area with approximately 28.7 miles maintained for passenger car use. Alternative 2 proposes 34.8/33.6 miles of road closures/road decommissioning, with Alternative 3 proposing 33.8/56.2 miles of road closures/road decommissioning. [ID#127]

Associated Comments: [Seq#119]

The Forest Service faces many challenges with its vastly oversized, under-maintained, and unaffordable road system. The impacts from roads to water, fish, wildlife, and ecosystems are tremendous and well documented in scientific literature. The Okanogan-Wenatchee National Forest is no exception, with 7,948 miles of system roads, the required maintenance of which exceeds annual maintenance costs. See Okanogan-Wenatchee National Forest, Forestwide Travel Analysis Report (Attachment A), page 11; Draft EA at 213 ("current road maintenance funding levels are lower than needed to maintain all the existing roads"). [27-9]

Concern: [Seq#120]

"As forest road users and conservationists, we understand that a strategic reduction in road miles does not necessarily equate to a loss of access. Some roads are already functionally closed, either due to washouts, lack of use, or natural vegetation growth. Other roads receive limited use and are costly to maintain. Resources can be better spent on roads providing significant access than to spread resources thinly to all roads. This is why Guardians supports the road system changes proposed under Alternative 3, which includes a greater number of road miles to decommission." [ID#128]

Response: [Seq#120]

Thank you for your supportive response to Alternative 3. Based on the Draft Decision, Alternative 2 is proposed to be selected with minor changes to the proposed road system. [ID#128]

Associated Comments: [Seq#120]

As forest road users and conservationists, we understand that a strategic reduction in road miles does not necessarily equate to a loss of access. Some roads are already functionally closed, either due to washouts, lack of use, or natural vegetation growth. Other roads receive limited use and are costly to

maintain. Resources can be better spent on roads providing significant access than to spread resources thinly to all roads. This is why Guardians supports the road system changes proposed under Alternative 3, which includes a greater number of road miles to decommission. [27-16]

Concern: [Seq#121]

Commenter does not agree that "dramatic increases in timber harvest, grazing and roadbuilding" provide landscape restoration and argues that the No Action alternative be selected. [ID#129]
Response: [Seq#121]

The landscape diagnosis, proposed landscape prescriptions and harvest treatments are supported by the "Okanogan-Wenatchee Forest Restoration Strategy" (2012a) (preliminary EA pages 102-159).

Both Alternatives Two and Three include 1.2 miles of temporary roads and would decommission 33.6 and 56.2 miles respectively (preliminary EA pages 31-32). Cattle grazing is not included in any of the proposed alternatives. The effects of the proposed activity on range is found on pages 239-252. [ID#129]
Associated Comments: [Seq#121]
I would like to note that the proposed actions in this area are falsely labelled "Restoration." Dramatic increases in timber harvest, grazing, and roadbuilding are not what the word restoration means. In fact, the restoration of the area brought about by Mother Nature with no human intervention would result in far faster and more complete restoration of this compromised area than any of the proposed options, except for the no-action alternative. I thus urge you to select the no action alternative. [73-2]

Concern: [Seq#123]

The ends do not justify the means. [ID#131]
Response: [Seq#123]

Thank you for your comments. [ID#131]
Associated Comments: [Seq#123]
* The ends do not justify the means. [67-46]

Concern: [Seq#124]

We also recommend that you employ an editor to help organize and clarify some of the opaquer portions of the document. [ID#132]
Response: [Seq#124]

We employed a writer-editor who is a fisheries biologist to help clarify portions of the document. Most of the work she completed was later reviewed by another individual. We hope the document is much clearer and follows a more consistent format. Between the Revised Preliminary EA and the final EA, resources specialists tried to clarify their resource reports included in the project record and their sections of the EA. Between the Revised EA and the final EA another editor was employed to try and complete further clarification. [ID#132]
Associated Comments: [Seq#124]
We also recommend that you employ an editor to help organize and clarify some of the opaquer portions of the document. [78-17]

Concern: [Seq#125]

Writing a coherent executive summary would provide the public and FS staff alike with a concise distillation of what actions and outcomes are being proposed and how these actions tie in with resource "purpose and needs". [ID#133]
Response: [Seq#125]

The interdisciplinary team will consider this the next time that we get together, but I do not know if we will do this since a summary is not required in an Environmental Assessment. A summary is required in an EIS. Figure 11 of the Revised Preliminary EA provides a "Comparison of Alternatives by Resource Indicator, (pages 30 - 38) which provides somewhat of a numerical summary of the Environmental Assessment. Most resource sections of Chapter 3 provide a "Summary of Effects" for that resource such as Figure 39 (Water Resources) [page 78], Figure 46 (Soils) [pages 97 & 98], and Figure 54 (Vegetation) [page 130]. The Interdisciplinary team made the decision to not prepare a separate Summary of the EA document. [ID#133]
Associated Comments: [Seq#125]
Writing a coherent executive summary would provide the public and FS staff alike with a concise distillation of what actions and outcomes are being proposed and how these actions tie in with resource "purpose and needs". [78-16]

Concern: [Seq#126]

More public involvement is needed [ID#134]
Response: [Seq#126]

Quite a bit of public involvement was completed for this project. This is displayed in section 1.5 Consultation and Public Involvement, pages 20 -22 of the Preliminary EA (January 2017) and pages 12 & 13 in the Revised Preliminary EA (June 2017).

A government-to-government consultation letter was mailed to the Business Council Chairperson on the Colville Reservation, the Chairman of the Yakama Nation, and their staff on April 20, 2016.

Prior to the initiation of the Mission Restoration NEPA analysis, the North Central Washington Forest Health Collaborative and the Forest Service partnered regarding how they could help support the mutual goal of increasing the pace of forest restoration across the landscape.

The District sent a scoping letter to the public, interested agencies, interested organizations, and adjacent landowners on April 28, 2016. detailing proposed management activities on 50,200 acres. The letter included a request for comments and an invitation to participate in a public information meeting about the project. A public information meeting was held on May 23, 2016.

A news release seeking comments on the project was sent to the Forest's mailing lists for public information contacts (newspapers and radio stations) on May 2, 2016. A news release inviting the public to the open house on May 23rd and extending the comment period until June 10th.

A meeting was held on July 2016 with the Pacific Diversity Institute staff to discuss their proposed alternative, which resulted in modifying the project to increase treatments in the Wildland/Urban Interface.

Comments from the Methow Valley Citizens Council, NCWFHC, and others were used to develop a second action alternative that placed more emphasis on aquatic restoration through decommissioning of additional roads.

A scoping letter was mailed to the Okanogan County Commissioners on April 20, 2016, and a briefing with the County Commissioners took place on July 13, 2016.

Informal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service is underway.

A field trip to the project area was held in May 2016 with Dr. Amy Snover, director of the University of Washington's Climate Impacts Group, Her input included support for considering forecasted climate change impacts when considering the desired future condition of the project area.

The Preliminary EA was release for public comment on January 31, 2017 and extend through April 1, 2017. Comments were received from approximately 78 individuals, groups, and organizations. A public meeting, information session, was held on February 8, 2017.

The Revised Preliminary EA was released for public comment on June 29, 2017 (email notification to project mailing list) and in the Newspaper of Record, the Wenatchee World, on June 30, 2017.

Additional public involvement is proposed with the released of the final EA and draft Decision Notice proposed in early 2018.

[ID#134]
Associated Comments: [Seq#126]
More public involvement is needed [67-18]

Concern: [Seq#127]

Release of the EA at the end of January precludes field visits due to deep snow. The review period should be extended into, at least, May. [ID#135]
Response: [Seq#127]

Under the 218 regulations, comment periods can not be extend. An additional comment period can be held, Scoping for this project started on April 28, 2016 and included a Vicinity Map, a Proposed Vegetation and Fuels Treatment Map, and a Proposed Transportation Changes and Soil Treatment Map. The proposed scoping letters and attached maps should have provided adequate, current information that would have allowed an individual to visit the proposed project and looked at proposed actions during the summer of 2016.

The Preliminary EA was released for comment in January 2017 and the comment period extended to April 1, 2017. The Revised Preliminary EA was released for comment on June 30, 2017 and extended to the end of July 2017. [ID#135]
Associated Comments: [Seq#127]
10. Release of the EA at the end of January precludes field visits due to deep snow. The review period should be extended into, at least, May. [78-33]

Concern: [Seq#128]

]

The EA states that one goal is to "restore soil-related processes and functions" where past management practices have created detrimental effects, such as soil compaction and erosion. Please provide more information on how an overall improvement is possible when proposed timber harvest will result in new soil compaction and other detrimental effects. [ID#136]

Response: [Seq#128]

The EA states that one goal is to "restore soil-related processes and functions" where past management practices have created detrimental effects: This statement refers to the soil restoration units that currently have soil compaction above management standards. For proposed activities soil BMPs are used to minimize the footprint from project work. Please see the soil report for the full suite of soil BMPs. [ID#136]

Associated Comments: [Seq#128]

The EA states that one goal is to "restore soil-related processes and functions" where past management practices have created detrimental effects, such as soil compaction and erosion. Please provide more information on how an overall improvement is possible when proposed timber harvest will result in new soil compaction and other detrimental effects. [29-23]

Concern: [Seq#129]

While decommissioning of roads sounds admirable, if you actually look at the roads on the ground I think you will find that many are not contributing any measurable amount of sediment or altering the hydrology in any significant way. Furthermore, you do not analyze the effect of decommissioning roads on current recreational uses, such as ORV, mountain bike, hunting access, etc. One road in particular (4300645) is high up on the hillside, nowhere near a stream, has no erosional problems, and provides a great "crossover" route between the Buttermilk & Newby Creek drainages. I use this frequently on my mountain bike, and see evidence of ORV use as well. To decommission the road you would not be reducing sediment delivery or anything else, just claiming a target and taking one more recreational route away. I request that you more carefully analyze each road proposed to be decommissioned - is it actually delivering sediment to a fish-bearing stream, is it actually altering runoff, and is there evidence of existing uses that would be eliminated if the road is obliterated? While road obliteration sounds great and makes everybody feel good, the reality on the ground is sometimes more of a mess than the existing road that is already partially revegetated, with a singletrack path barely visible through the brush. [ID#138]

Response: [Seq#129]

A thorough analysis of the transportation system was completed for the EA. Aquatic concerns are only one aspect of the transportation analysis. Cost of maintenance, is the road needed for future access, are other roads available that get to similar locations are a few examples of other concerns. The USFS is mandated to reduce the size of its road network to reduce annual costs for maintenance.

Forest Road 4300645 is proposed to be managed for administrative access (ML-2A) which will allow the road to brush in so it is not drivable by a standard vehicle but is available for other uses (refer t page 343 of the Revised Preliminary EA). [ID#138]

Associated Comments: [Seq#129]

While decommissioning of roads sounds admirable, if you actually look at the roads on the ground I think you will find that many are not contributing any measurable amount of sediment or altering the hydrology in any significant way. Furthermore, you do not analyze the effect of decommissioning roads on current recreational uses, such as ORV, mountain bike, hunting access, etc. One road in particular (4300645) is high up on the hillside, nowhere near a stream, has no erosional problems, and provides a great "crossover" route between the Buttermilk & Newby Creek drainages. I use this frequently on my mountain bike, and see evidence of ORV use as well. To decommission the road you would not be reducing sediment delivery or anything else, just claiming a target and taking one more recreational route away. I request that you more carefully analyze each road proposed to be decommissioned - is it actually delivering sediment to a fish-bearing stream, is it actually altering runoff, and is there evidence of existing uses that would be eliminated if the road is obliterated? While road obliteration sounds great and makes everybody feel good, the reality on the ground is sometimes more of a mess than the existing road that is already partially revegetated, with a singletrack path barely visible through the brush. [7-1]

Concern: [Seq#130]

In closing, we appreciate the holistic approach that the Okanogan-Wenatchee National Forest has taken in this area, along with the strong emphasis on aquatic health. Tied to this approach is the need to address the Forest Service's current road system, which is over-sized and unaffordable.

Identifying a sustainable road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, enhance recreation, and lower operating expenses.

[ID#139]

Response: [Seq#130]

Thank you for your comment and support.

A TAP was conducted per FSH and 36 CFR 212.5 Subpart A.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/

recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning [ID#139]

Associated Comments: [Seq#130]

In closing, we appreciate the holistic approach that the Okanogan-Wenatchee National Forest has taken in this area, along with the strong emphasis on aquatic health. Tied to this approach is the need to address the Forest Service's current road system, which is over-sized and unaffordable.Identifying a sustainable road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, enhance recreation, and lower operating expenses. [27-37]

Concern: [Seq#131]

We strongly support Alternative 3's increased scale of aquatic restoration, with greater emphasis on road closures and decommissioning. In our scoping comment, we noted that road density is one of the most prominent sources of adverse environmental impacts on the Forest. Roads contribute significant amounts of sediment to streams, as well as providing access that leads to fish and wildlife habitat degradation, among many other consequences.

[[ID#140]

Response: [Seq#131]

Thank you for your comment and support. In the Draft Decision Notice which is proposed for release in early 2018, the preferred alternative is Alternative 2 with a few minor changes proposed to the road system. [ID#140]

Associated Comments: [Seq#131]

We strongly support Alternative 3's increased scale of aquatic restoration, with greater emphasis on road closures and decommissioning. In our scoping comment, we noted that road density is one of the most prominent sources of adverse environmental impacts on the Forest. Roads contribute significant amounts of sediment to streams, as well as providing access that leads to fish and wildlife habitat degradation, among many other consequences. [30-7]

Concern: [Seq#132]

Overall, our collaborative is extremely supportive of the Mission Restoration Project and appreciative of the work the Methow Valley Ranger District (MVRD) has conducted to date using the Forest Restoration Strategy and integration of feedback to develop an integrated approach to aquatic and terrestrial restoration in the project landscape. We truly appreciate the commitment to aquatic ecosystem restoration that we so strongly highlighted a need for in our collaborative scoping comments, including the careful consideration given to water quality improvement, improved fish passage, and innovative restoration approaches, such as beaver habitat enhancement [ID#141]

Response: [Seq#132]

Thank you for your comment and support. [ID#141]

Associated Comments: [Seq#132]

Overall, our collaborative is extremely supportive of the Mission Restoration Project and appreciative of the work the Methow Valley Ranger District (MVRD) has conducted to date using the Forest Restoration Strategy and integration of feedback to develop an integrated approach to aquatic and terrestrial restoration in the project landscape. We truly appreciate the commitment to aquatic ecosystem restoration that we so strongly highlighted a need for in our collaborative scoping comments, including the careful consideration given to water quality improvement, improved fish passage, and innovative restoration approaches, such as beaver habitat enhancement. [33-1]

Concern: [Seq#133]

Water Quantity: This Resource Element is identified as a key limiting factor in the project area: "Summer base flows are reduced from water withdrawals from private irrigation ditches and water transmission lines," (Hydrologic/Aquatic Resources Report, p. 13). However, the subsequent analysis of water quantity in the EA does not take water withdrawals into consideration: "Water rights are a legal issue outside of the scope of this project," (Hydrologic/Aquatic Resources Report, p. 38). The only water quantity resource indicator analyzed in the project, Beaver Habitat, while certainly important does not adequately capture the full spectrum of issues impacting water quantity within the two project watersheds. The Collaborative recommends MVRD analyze the broader suite of limiting factors affecting water quantity within the project watersheds in order to maintain consistency with the whole watershed restoration approach defined in the Restoration Strategy.

[[ID#142]
Response: [Seq#133]

The comment noted that water withdrawals and water rights are complicated legal issues that require legal representation and thus we decided not to be included in this project. Irrigation withdrawal was not dismissed as a limiting factor, it was deemed to be outside the scope of this project. It can be revisited in the future as a stand alone issue.

Thinning trees, lowering road density, upsizing culverts, BEAs, etc. all improve water quantity and quality. They were addressed in a qualitative manner because measuring actual water quantity improvement is a serious challenge. [ID#142]
Associated Comments: [Seq#133]
Water Quantity: This Resource Element is identified as a key limiting factor in the project area: “Summer base flows are reduced from water withdrawals from private irrigation ditches and water transmission lines,” (Hydrologic/Aquatic Resources Report, p. 13). However, the subsequent analysis of water quantity in the EA does not take water withdrawals into consideration: “Water rights are a legal issue outside of the scope of this project,” (Hydrologic/Aquatic Resources Report, p. 38). The only water quantity resource indicator analyzed in the project, Beaver Habitat, while certainly important does not adequately capture the full spectrum of issues impacting water quantity within the two project watersheds. The Collaborative recommends MVRD analyze the broader suite of limiting factors affecting water quantity within the project watersheds in order to maintain consistency with the whole watershed restoration approach defined in the Restoration Strategy. [33-3]

Concern: [Seq#134]

]

In addition, the Collaborative would appreciate a more detailed treatment description and discussion of the scientific basis for proposed riparian thinning treatments for the purpose of improving water quantity. While it is briefly mentioned in the EA and Hydrologic/Aquatic Resources Report, this approach to instream flow improvements is new to a number of Collaborative members, and we would greatly

appreciate a more detailed discussion [ID#143]
Response: [Seq#134]

The riparian treatments are designed to create and enhance beaver forage, specifically opening up the conifer canopy to allow for more abundant hardwood species along intermittent streams. The treatments themselves will have an immeasurable improvement for water quantity, but are designed to create beaver habitat. Fencing, dropping trees in the channel, riparian thinning and the construction of BDAs are all a part of the Beaver Enhancement Areas (BEAs). Water quantity improvements will occur if and when more beaver become established within the perennial and intermittent streams in the project area.

See resource indicator Beaver Habitat in Draft EA, Ch. 3, pg. 32. [ID#143]
Associated Comments: [Seq#134]
In addition, the Collaborative would appreciate a more detailed treatment description and discussion of the scientific basis for proposed riparian thinning treatments for the purpose of improving water quantity. While it is briefly mentioned in the EA and Hydrologic/Aquatic Resources Report, this approach to instream flow improvements is new to a number of Collaborative members, and we would greatly appreciate a more detailed discussion. [33-4]

Concern: [Seq#135]

Scale of Analysis and Watershed Hierarchy: The 25,500-acre Buttermilk and 23,500-acre Libby Creek sub-watersheds are within the Twisp River and Lower Methow River watersheds in the Methow River sub-basin. The temporal scale for effects analysis is 30 years--the time it is estimated to take for morphological improvements in stream channel variables from upland treatments to be measureable.(p.48) [This information indicates that determining the benefit of how actively altering a stream channel as a "restoration" action can best be determined several decades after that action. This

supports a more conservative management approach such as eliminating management induced problems (i.e., logging and livestock grazing). [ID#144]
Response: [Seq#135]

A thorough effects analysis for all proposed project actions was conducted in Section 3.3 Water Resources. Thank you for your comment. [ID#144]
Associated Comments: [Seq#135]
Scale of Analysis and Watershed Hierarchy: The 25,500-acre Buttermilk and 23,500-acre Libby Creek sub-watersheds are within the Twisp River and Lower Methow River watersheds in the Methow River sub-basin. The temporal scale for effects analysis is 30 years--the time it is estimated to take for

morphological improvements in stream channel variables from upland treatments to be measureable.(p.48) [This information indicates that determining the benefit of how actively altering a stream channel as a “restoration” action can best be determined several decades after that action. This supports a more conservative management approach such as eliminating management induced problems (i.e., logging and livestock grazing).] [11-42]

Concern: [Seq#136]

3.3.4 Environmental Consequences 3.3.4.1 Considered, but not Analyzed in Detail (see Fig.25) Peak flow is a water quality issue. This project will not impact water yield in any measurable way from vegetation cover removal.

Riparian Harvest, beaver introduction and increases in drainage network from roads

will be discussed as it pertains to water yield

. Temperature is a water quality issue. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature. Thinning treatments would stay outside of the inner buffers of RRs and retain adequate vegetation to provide shade. Prescribed fire treatments in RRs would be designed to retain adequate vegetation to avoid impacting shade. (p.66)

[

Only "peak flow" has been considered as a water quality issue, although

changes in seasonal flow and both low and high flows are important to fish production and must be considered. Stream temperature is affected by stream depth which varies with flow variations that should be expected to be impacted by the opening of forest canopy on hillsides as well as in riparian zones. Those consequences must be analyzed.

]

[[ID#145]
Response: [Seq#136]

Thank you for your comment. Figure 25 in the Preliminary EA on pages 65 & 66 and Figure 26 in the Revised Preliminary EA on pages 60 & 61 detail a response to your comments and why "water quantity", "water quality (temperature)" and "livestock grazing" were not carried forward. [ID#145]
Associated Comments: [Seq#136]
3.3.4 Environmental Consequences 3.3.4.1 Considered, but not Analyzed in Detail (see Fig.25) Peak

flow is a water quality issue. This project will not impact water yield in any measurable way from vegetation cover removal. Riparian Harvest, beaver introduction and increases in drainage network from roads will be discussed as it pertains to water yield. Temperature is a water quality issue. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature. Thinning treatments would stay outside of the inner buffers of RRs and retain adequate vegetation to provide shade. Prescribed fire treatments in RRs would be designed to retain adequate vegetation to avoid impacting shade. (p.66) [Only "peak flow" has been considered as a water quality issue, although changes in seasonal flow and both low and high flows are important to fish production and must be considered. Stream temperature is affected by stream depth which varies with flow variations that should be expected to be impacted by the opening of forest canopy on hillsides as well as in riparian zones. Those consequences must be analyzed.] [11-49]

Concern: [Seq#137]

Resource Indicator: Ground Cover Ground cover within the RRs and upper watersheds would remain at existing levels, effectively trapping and filtering sediment under existing conditions

where vegetation and topography exclude livestock.

Taking no action would have beneficial, long-term

, negligible effects to riparian cover and water resources.

[Management actions, other than logging and cattle grazing, have been and should continue to take place for the benefit of ground cover without the planned commercial logging of Alt. 2 or 3. [ID#146]

Response: [Seq#137]

Thank you for comment. [ID#146]

Associated Comments: [Seq#137]

Resource Indicator: Ground Cover Ground cover within the RRs and upper watersheds would remain at existing levels, effectively trapping and filtering sediment under existing conditions where vegetation and topography exclude livestock. Taking no action would have beneficial, long-term, negligible effects to riparian cover and water resources. [Management actions, other than logging and cattle grazing, have been and should continue to take place for the benefit of ground cover without the planned commercial logging of Alt. 2 or 3.] [11-50]

Concern: [Seq#138]

Resource Indicator: Beaver Habitat The lack of enhancements that create suitable beaver habitat would have adverse, longer-term, minor effects on the potential for beaver reintroduction

. Wetlands associated with beavers would not be created

to form natural water storage features that would supplement summer and fall base flows, which would continue to diminish due to irrigation and domestic water withdrawals in Buttermilk and Libby Creek.

At-risk aquatic species in the project area would continue to have reduced habitat, lower quality refugia from warm water and predators, and more competition for space during summer and fall months

.(p.67) [To reach this conclusion it has to be assumed that without initiating the commercial logging of Alt. 2 or 3 the existing beaver reintroduction project would be terminated. There is no basis for that conclusion. [ID#147]

Response: [Seq#138]

The comment addresses the no action alternative of the resource indicator Beaver Habitat. Commercial logging of conifers along intermittent streams to increase beaver forage is part of Alts 2 and 3. This is discussed in the effects analysis. Construction of 6 Beaver Dam Analogs (BDAs) is proposed in Alternatives 2 and 3. The BDAs could be built under a previous NEPA decision even if the No Action Alternative was selected. [ID#147]

Associated Comments: [Seq#138]

Resource Indicator: Beaver Habitat The lack of enhancements that create suitable beaver habitat would have adverse, longer-term, minor effects on the potential for beaver reintroduction. Wetlands associated with beavers would not be created to form natural water storage features that would supplement summer and fall base flows, which would continue to diminish due to irrigation and domestic water withdrawals in Buttermilk and Libby Creek. At-risk aquatic species in the project area would continue to have reduced habitat, lower quality refugia from warm water and predators, and more competition for space during summer and fall months.(p.67) [To reach this conclusion it has to be assumed that without initiating the commercial logging of Alt. 2 or 3 the existing beaver reintroduction project would be terminated. There is no basis for that conclusion.] [11-51]

Concern: [Seq#139]

Ground Cover Proposed activities would

cause a temporary increase in approximately 102 acres of bare soil over the life of this project.

Temporary roads created to facilitate commercial thinning activities would create an additional ~3 acres of bare soil, with limited impacts to aquatic habitat due to Best Management Practices (BMPs) and temporary road locations that would minimize the delivery of sediment to any stream channels (including no new stream crossings and avoidance of RRs). (p.74) The

increase in bare soil would be temporary, taking approximately one to three years before vegetation re-established enough to effectively cover exposed soil and prevent surface erosion

. but the

duration would be long-term

as defined.(p.75) [The projection that [has] 1,952 acres of commercial logging, 8,304 acres of non-commercial thinning, 468 acres of sub-soiling, and 10,968 acres of prescribed burn would

create only a temporary increase of 102 acres of bare soil (disturbance of ground cover) and would not result in significant soil erosion, is beyond unbelievable

(see Fig.6, p.30 for disturbance acres). [ID#148]
Response: [Seq#139]

Thank you for your comment. See Appendix D for BMPs and Design Criteria pertaining to erosion control.

See Page 5 of Aquatic/hydro Resource Report in Project Files.

Water (USDA Forest Service 1989a pg 4-45-46):

13-2 All State of Washington (Washington Administrate Code, Chapters 173-201 and 202) through planning, application, and monitoring of Best Management Practices (BMPs) in conformance with the Clean Water Act, regulations, and Federal guidance issued.

13-3 In cooperation with Washington State, the Forest shall use the following process;

- Select and design BMPs based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for those waters potentially impacted.
- Implement and enforce BMPs.
- Monitor to ensure that practices are correctly applied as designed.
- Monitor to determine the effeteness of practices in meeting design expectations and in attaining water quality standards.
- Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMPs do not perform as expected.
- Adjust BMP design standards and application when It is found that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. Evaluate the appropriateness of water quality criteria for reasonably assuring protection of beneficial uses. Consider recommending adjustment of water quality standards. [ID#148]

Associated Comments: [Seq#139]

Ground Cover Proposed activities would cause a temporary increase in approximately 102 acres of bare soil over the life of this project. Temporary roads created to facilitate commercial thinning activities would create an additional ~3 acres of bare soil, with limited impacts to aquatic habitat due to Best Management Practices (BMPs) and temporary road locations that would minimize the delivery of sediment to any stream channels (including no new stream crossings and avoidance of RRs). (p.74) The increase in bare soil would be temporary, taking approximately one to three years before vegetation re-established enough to effectively cover exposed soil and prevent surface erosion. but the duration would be long-term as defined.(p.75) [The projection that 1,952 acres of commercial logging, 8,304 acres of non-commercial thinning, 468 acres of sub-soiling, and 10,968 acres of prescribed burn would create only a temporary increase of 102 acres of bare soil (disturbance of ground cover) and would not result in significant soil erosion, is beyond unbelievable (see Fig.6, p.30 for disturbance acres). [11-54]

Concern: [Seq#140]

The State of Washington has designated the streams draining National Forest System Lands

to the Columbia, Okanogan, and

Methow River watershed as Antidegradation Segments

. This indicates that the existing water quality is better than the established standards for the designated beneficial uses. Water quality is required by state regulation to be maintained at this level.

State antidegradation rules require that water quality not be lowered to any measurable extent.

Even where measurable lowering of water quality is being prevented,

antidegradation rules require that no

activity

cause or contribute to a violation of the numeric turbidity criteria

or harm the existing or

designated uses established in the state standards for the specific water bodies

. Classification and designation of water quality uses and standards for the area encompassed by the project area is extracted from the State of Washington ?Use designations - Fresh Waters ?(WAC173-201-600) (Washington 2011).

Waters within the analysis area are protected for the uses of salmonid spawning, rearing, and migration

; primary contact recreation; domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values .(Restoration Aquatics Hydrology Resource Report, pp.8-9) [This also indicates that

these waters cannot be submitted to the adverse affects of the project activities. [ID#149]
Response: [Seq#140]

The project addresses all regulations pertaining to water quality and degradation. See Appendix G. for the Regulatory Framework. See Page 5 of Aquatic/hydro Resource Report.

Water (USDA Forest Service 1989a pg 4-45-46):

13-2 All State of Washington (Washington Administrate Code, Chapters 173-201 and 202) through planning, application, and monitoring of Best Management Practices (BMPs) in conformance with the Clean Water Act, regulations, and Federal guidance issued.

13-3 In cooperation with Washington State, the Forest shall use the following process;

- Select and design BMPs based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for those waters potentially impacted.
- Implement and enforce BMPs.
- Monitor to ensure that practices are correctly applied as designed.
- Monitor to determine the effeteness of practices in meeting design expectations and in attaining water quality standards.
- Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMPs do not perform as expected.
- Adjust BMP design standards and application when It is found that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. Evaluate the appropriateness of water quality criteria for reasonably assuring protection of beneficial uses. Consider recommending adjustment of water quality standards.

[ID#149]
Associated Comments: [Seq#140]
The State of Washington has designated the streams draining National Forest System Lands to the Columbia, Okanogan, and Methow River watershed as Antidegradation Segments. This indicates that the existing water quality is better than the established standards for the designated beneficial uses. Water quality is required by state regulation to be maintained at this level. State antidegradation rules require that water quality not be lowered to any measurable extent. Even where measurable lowering of water quality is being prevented, antidegradation rules require that no activity cause or contribute to a violation of the numeric turbidity criteria or harm the existing or designated uses established in the state standards for the specific water bodies. Classification and designation of water quality uses and standards for the area encompassed by the project area is extracted from the State of Washington ?Use designations – Fresh Waters ?(WAC173-201-600) (Washington 2011). Waters within the analysis area are protected for the uses of salmonid spawning, rearing, and migration; primary contact recreation;

domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values .(Restoration Aquatics Hydrology Resource Report, pp.8-9) [This also indicates that these waters cannot be submitted to the adverse affects of the project activities.] [11-62]

Concern: [Seq#141]

3.4.4 Environmental Consequences 3.4.4.1 Considered, but not Analyzed in Detail

Soil Water Holding Capacity Lacked time and funding for accurate analysis

. Analyzed current conditions for potential conditions through comparable studies.(Fig. 41, p.93) ["Analyzed current conditions", but resources inadequate for

"accurate analysis"? [ID#150]
Response: [Seq#141]

The soil water holding capacity is based on many factors including soil type and porosity. I did field surveys that looked at compaction as a surrogate for soil water holding capacity, but I was unable to send soil samples to a lab to get accurate numbers on porosity, permanent wilting point, ect. [ID#150]
Associated Comments: [Seq#141]
3.4.4 Environmental Consequences 3.4.4.1 Considered, but not Analyzed in Detail Soil Water Holding Capacity Lacked time and funding for accurate analysis. Analyzed current conditions for potential conditions through comparable studies.(Fig. 41, p.93) [“Analyzed current conditions”, but resources inadequate for “accurate analysis”?] [11-63]

Concern: [Seq#142]

The analysis also states that the road assessment procedure developed for the draft Okanogan-Wenatchee Whole Watershed Restoration Procedures (WWRP; USDA 2015) was used to identify potential road-stream impacts and roads or groups of roads to remove or hydrologically close to benefit hydrologic processes. Draft EA at 49. That assessment delineated eighteen catchments in the Buttermilk and twenty-six in the Libby Creek sub-watersheds. Draft EA at 49. The information in the Engineering Resource Report (Nov. 22, 2016) appears to mirror the information in the draft EA. None of these documents consider or apply the information from the 2015 travel analysis report (Attachment A). [ID#151]

Response: [Seq#142]

A minimum roads analysis was completed for this project by the ID team. Aquatics is only one of many concerns regarding the transportation network and roads analysis is an Interdisciplinary process that looks at impacts to all resources in coming to a decision for road treatments.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#151]

Associated Comments: [Seq#142]

The analysis also states that the road assessment procedure developed for the draft Okanogan-Wenatchee Whole Watershed Restoration Procedures (WWRP; USDA 2015) was used to identify potential road-stream impacts and roads or groups of roads to remove or hydrologically close to benefit hydrologic processes. Draft EA at 49. That assessment delineated eighteen catchments in the Buttermilk and twenty-six in the Libby Creek sub-watersheds. Draft EA at 49. The information in the Engineering Resource Report (Nov. 22, 2016) appears to mirror the information in the draft EA. None of these documents consider or apply the information from the 2015 travel analysis report (Attachment A). [27-5]

Concern: [Seq#143]

Climate change is also expected to lead to more extreme weather events, resulting in increased flood severity, more frequent landslides, altered hydrographs, and changes in erosion and sedimentation rates and delivery processes. Many National Forest roads are poorly located and designed to be temporarily on the landscape, making them particularly vulnerable to these climate alterations. Even those designed for storms and water flows typical of past decades may fail under future weather scenarios, further exacerbating adverse ecological impacts, public safety concerns, and maintenance needs. The Forest Service should analyze in detail the impact of climate change on forest roads and forest resources. [ID#152]

Response: [Seq#143]

Upsizing culverts, decommissioning and storing roads, constructing fords, armoring stream crossings and putting in AOP structures all make the road network more resilient to anticipated climate change impacts. Anticipated impacts from climate change were incorporated in the project and are part of the purpose and need for action, see Section 1.3.1. [ID#152]

Associated Comments: [Seq#143]

Climate change is also expected to lead to more extreme weather events, resulting in increased flood severity, more frequent landslides, altered hydrographs, and changes in erosion and sedimentation rates and delivery processes. Many National Forest roads are poorly located and designed to be temporarily on the landscape, making them particularly vulnerable to these climate alterations. Even those designed for storms and water flows typical of past decades may fail under future weather scenarios, further exacerbating adverse ecological impacts, public safety concerns, and maintenance needs. The Forest Service should analyze in detail the impact of climate change on forest roads and forest resources. [27-30]

Concern: [Seq#144]

Roads directly change the hydrology of slopes and stream channels, resulting in alteration of surface-water habitats that are often detrimental to native biota. Roads intercept shallow groundwater paths, diverting the water along the roadway and routing it efficiently to surface-water systems at stream crossings….Changes in the routing of shallow groundwater and surface flow may cause unusually high concentrations of runoff on hillslopes that can trigger erosion through channel downcutting, new gully or channel head initiation, or slumping and debris flows. Once such processes occur, they can adversely affect fishes and other biota far downstream for long periods of time. Roads have been responsible for the majority of hill slope failures and gully erosion in most steep, forested landscapes subject to logging activity. Because most of these more catastrophic responses are triggered by the

response of roads during infrequent, intense storm events, lag times of many years or decades pass before the full effects of road construction are realized. (pp. 21 & 22, ibid.)… [ID#153]
Response: [Seq#144]

Thank you for comment. The Mission Restoration Project proposes no construction of system roads in the project. Effects of roads on interception of groundwater is fully discussed in Section 3.3, Water Resources of Chapter 3 of the EA. During field recon for this project, mostly only minor slumping was found. The science presented does not provide new or additional information that was inconsistent with or that refuted science used in the preparation of the Mission Restoration Project. [ID#153]
Associated Comments: [Seq#144]
Roads directly change the hydrology of slopes and stream channels, resulting in alteration of surface-water habitats that are often detrimental to native biota. Roads intercept shallow groundwater paths, diverting the water along the roadway and routing it efficiently to surface-water systems at stream crossings….Changes in the routing of shallow groundwater and surface flow may cause unusually high concentrations of runoff on hillslopes that can trigger erosion through channel downcutting, new gully or channel head initiation, or slumping and debris flows. Once such processes occur, they can adversely affect fishes and other biota far downstream for long periods of time. Roads have been responsible for the majority of hill slope failures and gully erosion in most steep, forested landscapes subject to logging activity. Because most of these more catastrophic responses are triggered by the response of roads during infrequent, intense storm events, lag times of many years or decades pass before the full effects of road construction are realized. (pp. 21 & 22, ibid.)… [47-19]

Concern: [Seq#145]

Aquatic Habitat and Species Assessment: In 2010, all National Forests implemented the Watershed Condition Framework (WCF) process, which is a rapid evaluation process that assess sub-watershed (Libby Creek and Buttermilk Creek) conditions based on land use, roads is similar in intent to that of Watershed Analysis (NWFP 1994). Watershed condition is determined based on the health of hydrologic and soil function in the watershed indicated by physical (water quality and quantity, in-stream habitat, soil productivity, roads and trails, etc.) and biological characteristics (populations and conditions of desired fisheries and impacts of non-native species).(p.51)

Past management practices

, including fire suppression

, changed forest vegetation structure, overstory and understory species composition, and spatial patterns in comparison to historical conditions in riparian areas within the project area

. (p.54) [

The results of eliminating management activities that resulted in environmental degradation within these watersheds should be determined before renewing those activities

with a commercial logging operation and the potential for increases in commercial livestock grazing. [ID#154]

Response: [Seq#145]

Thank you for comment. The existing condition is described throughout the EA. The purpose and need for action supports the proposed action. [ID#154]

Associated Comments: [Seq#145]

Aquatic Habitat and Species Assessment: In 2010, all National Forests implemented the Watershed Condition Framework (WCF) process, which is a rapid evaluation process that assess sub-watershed (Libby Creek and Buttermilk Creek) conditions based on land use, roads is similar in intent to that of Watershed Analysis (NWFP 1994). Watershed condition is determined based on the health of hydrologic and soil function in the watershed indicated by physical (water quality and quantity, in-stream habitat, soil productivity, roads and trails, etc.) and biological characteristics (populations and conditions of desired fisheries and impacts of non-native species).(p.51) Past management practices, including fire suppression, changed forest vegetation structure, overstory and understory species composition, and spatial patterns in comparison to historical conditions in riparian areas within the project area. (p.54) [The results of eliminating management activities that resulted in environmental degradation within these watersheds should be determined before renewing those activities with a commercial logging operation and the potential for increases in commercial livestock grazing.] [11-43]

Concern: [Seq#146]

Page 29 of the EA states that Alternative 1 would mean "beaver habitat and large woody debris habitats would not be enhanced". This is false and illogical. The Forest Service already has an existing program to enhance beaver habitat. Why would that end if the Mission Project does not move forward? [ID#155]

Response: [Seq#146]

The forest has a beaver release program. Fencing, BDAs, riparian harvest to promote beaver forage, dropping trees in BDAs all need coverage through NEPA for them to occur. [ID#155]

Associated Comments: [Seq#146]

Page 29 of the EA states that Alternative 1 would mean "beaver habitat and large woody debris habitats would not be enhanced". This is false and illogical. The Forest Service already has an existing program to enhance beaver habitat. Why would that end if the Mission Project does not move forward? [29-21]

Concern: [Seq#147]

I am concerned about the effects of machinery on soil runoff into streams as well as loss of habitat. [ID#156]
Response: [Seq#147]

Please see Appendix D. for design features and BMPs to address erosion and soil runoff concerns. Based on the effects write-up in Section 3.3, Water Resources of Chapter 3, soil runoff is not expected to be a concern. . [ID#156]
Associated Comments: [Seq#147]
I am concerned about the effects of machinery on soil runoff into streams as well as loss of habitat. [29-17]

Concern: [Seq#148]

"The USFS is amending their rules and regulations to make it A-OK for log trucks to drive through the creeks for the next 5, 10 or 16 years (the timeline is not made clear.)" [ID#157]
Response: [Seq#148]

There is no proposal in this analysis which is permitting log trucks to drive through creeks. Alternative 3 is proposing to create four hardened stream crossings in headwater streams where the culvert will be pulled and the stream crossing rocked allowing passenger vehicles to drive through the stream. This is being done to make sure the culvert does not plug and then blow-out.

Under Alternative 2, 6 stream crossings will be rock armored to decrease the possibility of sediment running down the road and entering the stream before timber harvest. If outside or stewardship funding is available, up to 27 additional stream crossings would be rock armored. 33 stream crossing are proposed to be rock under Alternative 3 prior to timber harvest. [ID#157]
Associated Comments: [Seq#148]
The USFS is amending their rules and regulations to make it A-OK for log trucks to drive through the creeks for the next 5, 10 or 16 years (the timeline is not made clear.) [67-7]

Concern: [Seq#149]

"Reducing road density and increasing core areas should be a high priority in scheduling road decommissioning" [ID#158]
Response: [Seq#149]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#158]
Associated Comments: [Seq#149]
Reducing road density and increasing core areas should be a high priority in scheduling road decommissioning. [30-13]

Concern: [Seq#150]

"Not replacing the bridge, and not re-opening the road leading to the former bridge, would save money that could be better spent on active road decommissioning." [ID#159]
Response: [Seq#150]

See responses to 7-4, 5-3 and 14-7

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

This is addressed in a several locations: The bridge replacement is described in Chapter 2 in the proposed action. It is also described in Chapter 3.8 Transportation section under the effects analysis stating "The bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced in a manner following best management practices. This replacement would occur at a future date when adequate funds become available." Although the EA doesn't specifically say where and when the funds become available, it is appropriate to analyze the need and effects of a project prior to obligating or seeking funds for it. The EA states it in a fashion to allow adequate funding sources (ex: grants, partnerships) to be utilized at times when sufficient funding is available. It is addressed in Chapter 3 resources Existing Condition and Environmental Consequences Sections. [ID#159]
Associated Comments: [Seq#150]
Not replacing the bridge, and not re-opening the road leading to the former bridge, would save money

that could be better spent on active road decommissioning. [30-16]

Concern: [Seq#151]

"Securing funding for road decommissioning should be a high priority." [ID#160]
Response: [Seq#151]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

The Methow Valley Ranger District has generally been very successful in securing funding to close roads through internal funding, from outside funding, or possibly from stewardship funding generated by the timber sale. [ID#160]
Associated Comments: [Seq#151]
Securing funding for road decommissioning should be a high priority. [30-17]

Concern: [Seq#152]

"We appreciate the recognition of unauthorized roads in the project analysis, and the recommendation to reduce the size and impact of the transportation network with both ecological and economic benefits. The environmental analysis should address what roads will be upgraded and used during project implementation (and duration of time for those changes) as well as what roads will be available for immediate restoration and maintenance improvement actions" [ID#161]

Response: [Seq#152]

Thank you for your supportive comment.

This is addressed in the P & N; Chapter 3 in Section 3.8, Transportation; n the Engineering Resources Report in project files, and in Appendix B of the Environmental Assessment. [ID#161]

Associated Comments: [Seq#152]

We appreciate the recognition of unauthorized roads in the project analysis, and the recommendation to reduce the size and impact of the transportation network with both ecological and economic benefits. The environmental analysis should address what roads will be upgraded and used during project implementation (and duration of time for those changes) as well as what roads will be available for immediate restoration and maintenance improvement actions. [18-37]

Concern: [Seq#153]

"Logging roads are an invitation to poaching and off-road vehicles."

[ID#162]

Response: [Seq#153]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001

Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

Effects of roads on wildlife species are disclosed in the Wildlife section of the Preliminary EA at p.128-166. While it is true that poaching is facilitated by roads (all roads, and trails, not just logging roads), illegal activities are outside the scope of this project. Poaching is acknowledged as an effect of roads for goshawks (Preliminary EA at p.151), wolves and grizzly bears (draft Biological Assessment), lynx (Preliminary EA at p. 147).

The travel management decision, expected to be signed in late 2017, or early 2018, is a cumulative effect for both alternatives 2 and 3, and would close the Forest to off-road motorized use. This is disclosed on page 158 of the Preliminary EA and in the Specialist Report, in project files, at p.47-51 and 56 to 58. [ID#162]

Associated Comments: [Seq#153]

Logging roads are an invitation to poaching and off-road vehicles. [51-19]

Concern: [Seq#154]

"[...]

With regard to road decommissioning, Alternative 3 is far more responsive to our concerns than is Alternative 2." [ID#163]

Response: [Seq#154]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

For additional clarity, analysis of alternatives re: roads is described in Chapter 3.8, Transportation in the Environmental Assessment (EA), Appendix B of the EA, and Engineering Resources report in project files. [ID#163]

Associated Comments: [Seq#154]

· Need for prioritization of, and assurance of funding for, road decommissioning and maintenance...With regard to road decommissioning, Alternative 3 is far more responsive to our concerns than is Alternative 2. [30-10]

Concern: [Seq#155]

"What will it cost the FS to make the roads log-truck ready for timber extraction? And who will pay for it" [ID#164]

Response: [Seq#155]

The specific roads and costs for logging operations are addressed in the timber sale contract and paid for in that operation.

The cost of road maintenance and reconstruction cost was estimated to be $144,210 ($23/mbf) and is based on recent timber sale appraised cost data. The cost of rocking the roads prior to haul is estimated at $27,000. The cost of building temporary roads is estimated at $250 ($.04/mbf). This data is found in the project files supporting the Economics specialist report for the Mission Restoration Project. [ID#164]

Associated Comments: [Seq#155]

* What will it cost the FS to make the roads log-truck ready for timber extraction? And who will pay for it? [67-33]

Concern: [Seq#156]

"How will dust abatement and log truck safety be managed, given it was a high priority in the earlier Libby sale proposal of ca. 2008?" [ID#165]

Response: [Seq#156]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul is not allowed on weekends and holidays (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

[ID#165]

Associated Comments: [Seq#156]

How will dust abatement and log truck safety be managed, given it was a high priority in the earlier Libby sale proposal of ca. 2008? [18-33]

Concern: [Seq#157]

"

Another issue of grave importance to me is the impact to human safety on Libby Creek Road. While this road is sufficient to the needs of its residents, it does not seem adequately safe to add a decade of year round logging into the mix. One Libby Creek resident was already killed in an accident involving a logging truck. This road is narrow and has blind corners; it requires a bit of luck and prayer, logging trucks could push the odds against us. Please do further study and environmental assessment of the ways this hazard can be mitigated. It is unjustly cavalier to ignore and disregard the safety of local residents." [ID#166]

Response: [Seq#157]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul is not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction. Most ML-2 roads, when haul is taking place, will be closed to public use to reduce conflicts between logging trucks and the public.

The Libby Creek Road accident referred to was not on National Forest System roads, but located on an Okanogan County road.

[ID#166]

Associated Comments: [Seq#157]

Another issue of grave importance to me is the impact to human safety on Libby Creek Road. While this road is sufficient to the needs of its residents, it does not seem adequately safe to add a decade of year round logging into the mix. One Libby Creek resident was already killed in an accident involving a logging truck. This road is narrow and has blind corners; it requires a bit of luck and prayer, logging trucks could push the odds against us. Please do further study and environmental assessment of the ways this hazard can be mitigated. It is unjustly cavalier to ignore and disregard the safety of local residents. [79-5]

Concern: [Seq#158]

of forb and graminoid species.

Early successional species favored by disturbance would be maintained or increase in the analysis area.(p.228)

Spatial and Temporal Context for Effects Analysis The spatial boundaries for analyzing the cumulative effects to botanical resources are within the boundaries defined by the analysis area.

The temporal boundaries 20 years into the future, the period of post-treatment understory vegetation response

. Of the list of past, present and reasonably foreseeable future

activities

, those that

are pertinent to the analysis

of cumulative effects to botanical resources

include ongoing cattle grazing

, recreation uses (including legal and illegal OHV use, snowmobiling, dispersed and developed camping, and sightseeing), firewood cutting, fire suppression, and

ongoing weed control

.(p.229) [The thinning referred to includes commercial logging of millions of board feet of larger trees which would

block natural plant succession now occurring

.

This "restoration" action leads to secondary succession "favored by disturbance".

That condition can only be maintained by repeated disturbance. The result is similar to cultivating a pasture and produces "transitional forage" which was the original goal of the Mission Project. A Revised Allotment Management Plan (2008) for the Libby Creek Cattle Grazing Allotment proposed this action. The result would provide for maintaining or increasing the existing number of permitted cattle on the Libby Creek project area.

This EA includes the presence of permitted cattle as a contributing factor in stream bank erosion and sediment deposition in Libby Creek, a designated "critical habitat" where stream sediment has been listed as an "at risk" factor for the production of ESA-listed salmonids

. [ID#168]
Response: [Seq#158]

Neither the current Lookout Mountain AMP nor this project [Mission Restoration project] would provide for an increase in livestock numbers. There will not be an increase in AUMs (Animal Unit Months) permitted to graze. 3.10.4.3 Alternative 2 and 3, Draft EA page number: 242. The impacts of livestock grazing on riparian and stream habitat relative to the Mission project is considered. Riparian monitoring has been conducted to quantify livestock impacts and is discussed under the heading, *Grazing allotment within the project area*. Also the impacts of the project on riparian and stream habitat are discussed under the heading, *Resource Indicator: Change in openings or routes providing cattle access to riparian areas.* 3.10.3 Affected Environment, 3.10.4 Environmental Consequences, Draft EA page numbers 237, 243-245 [ID#168]
Associated Comments: [Seq#158]
of forb and graminoid species. Early successional species favored by disturbance would be maintained or increase in the analysis area.(p.228) Spatial and Temporal Context for Effects Analysis The spatial boundaries for analyzing the cumulative effects to botanical resources are within the boundaries defined by the analysis area. The temporal boundaries 20 years into the future, the period of post-treatment understory vegetation response. Of the list of past, present and reasonably foreseeable future activities, those that are pertinent to the analysis of cumulative effects to botanical resources include ongoing cattle grazing, recreation uses (including legal and illegal OHV use, snowmobiling, dispersed and developed camping, and sightseeing), firewood cutting, fire suppression, and ongoing weed control.(p.229) [The thinning referred to includes commercial logging of millions of board feet of larger trees which would block natural plant succession now occurring. This “restoration” action leads to secondary succession “favored by disturbance”. That condition can only be maintained by repeated disturbance. The result is similar to cultivating a pasture and produces “transitional forage” which was the original goal of the Mission Project. A Revised Allotment Management Plan (2008) for the Libby Creek Cattle Grazing Allotment proposed this action. The result would provide for maintaining or increasing the existing number of permitted cattle on the Libby Creek project area. This EA includes the presence of permitted cattle as a contributing factor in stream bank erosion and sediment deposition in Libby Creek, a designated “critical habitat” where stream sediment has been listed as an “at risk” factor for the production of ESA-listed salmonids.] [11-72]

Concern: [Seq#159]

We noted that at least two ESA-listed species with habitat in the Libby and Buttermilk Creek areas -- the gray wolf and the grizzly bear -- are negatively impacted by road densities greater than 1 mile of open roads per square mile. We support the increase in "core" area (habitat greater than 500 meters from roads) of both Alternatives 2 and 3. [ID#169]
Response: [Seq#159]

Thank you for your comment. Both alternatives 2 and 3 propose numerous miles of road closures and decommissioning . Alternative 2 proposes 34.8 /33.6 miles of road closures/road decommissioning. Alternative 3 proposes 33.8/56.2 miles of road closures/road decommissioning (Revised Preliminary EA page 38). [ID#169]

Associated Comments: [Seq#159]

In our scoping letter, we noted that at least two ESA-listed species with habitat in the Libby and Buttermilk Creek areas -- the gray wolf and the grizzly bear -- are negatively impacted by road densities greater than 1 mile of open roads per square mile. We support the increase in "core" area (habitat greater than 500 meters from roads) of both Alternatives 2 and 3. [30-12]

Concern: [Seq#160]

A recognition that landscape restoration is needed and that there is an intention to remain engaged in the NEPA process. [ID#170]

Response: [Seq#160]

Thank you for your participation in the NEPA process. Your concern for the health of the landscape is appreciated. [ID#170]

Associated Comments: [Seq#160]

We appreciate the opportunity to comment on this project during its development as we believe that there is a clear need for ecological restoration in these watersheds that will benefit fish and wildlife as well as the human communities in the area. We look forward to continued engagement with your district as this project proposal moves forward through both one-on-one interactions between our organization and your district, as well as through the North Central Washington Forest Health Collaborative. [18-47]

I submit the following comments on the Mission Restoration Project Preliminary Environmental Analysis (EA) planned within the Libby Creek and Buttermilk Creek sub- watersheds on behalf of Conservation Northwest. We appreciate the opportunity to comment on this project during its development as we believe that there is a clear need for ecological restoration in these watersheds that will benefit fish and wildlife as well as the human communities in the area. We support the Purpose and Need statements in the scoping proposal that identifies the need for ecological restoration of aquatic and terrestrial systems in the project area, as well as reduction of fuels in the Wildland Urban Interface and creation of a sustainable transportation network. [18-48]

Concern: [Seq#161]

The 1989 Forest Plan Management Zones used a broad brush that did not follow watershed boundaries and does not accurately reflect timber resources. [ID#171]
Response: [Seq#161]

This is an opinion and addresses an issue beyond the scope of this EA. [ID#171]
Associated Comments: [Seq#161]
The 1989 Forest Plan Management Zones used a broad brush that did not follow watershed boundaries and does not accurately reflect timber resources. For instance Figure 4 in the EA shows a MA25 (Intensive Timber Management) adjacent to MA14 (Deer Winter Range - Wood Fiber Production) covering an area that is mostly open shrub- steppe incapable of producing fiber or timber (Figure 1). Those management zones were developed with timber production in mind, and do not reflect reality on the ground.... Figure 1. 1989 Management Zones overlaid on aerial view of Mission Project area. [18-51]

Concern: [Seq#162]

Expressed support of the use of the Okanogan-Wenatchee Forest Restoration Strategy. [ID#172]
Response: [Seq#162]

Thank you for your support for the Okanogan-Wenatchee Forest Restoration Strategy. [ID#172]
Associated Comments: [Seq#162]
The 2012 WONF Restoration Strategy is an improvement over the 1989 Okanogan Plan through its watershed approach, analysis at the landscape- level and management of fire regime condition classes. [18-52]

Concern: [Seq#163]

We value the EMDS process as a consistent approach to ecosystem management, but ultimately we rely heavily on the actual reconnaissance of field crews, biologists and ecologists, particularly for wildlife that may not be directly observed or for the management of remote high elevation habitats. Therefore, we appreciate the nuanced discussion of the EMDS model given at the top of the EA, p. 19 in discussing high elevation habitats and lynx in particular. This suggests that while it is possible that lynx might benefit from reducing area and patch size in the subalpine fir types, there are likely other important factors besides infrequent fire (intervals > 300 years) that determine patch size and shape in glaciated boreal forests. [ID#173]
Response: [Seq#163]

Thank you for your support for the EMDS process. The FS does apply on the ground information gathered during reconnaissance to inform the proposed action.

There is no discussion on preliminary EA page 19 regarding lynx habitat or high elevation habitat. The page 19 that is being referred to is Derek Churchill's Mission Report dated July 2015.

The EA does not make any suggestion or inference regarding patch size in the subalpine fir types. [ID#173]

Associated Comments: [Seq#163]

We value the EMDS process as a consistent approach to ecosystem management, but ultimately we rely heavily on the actual reconnaissance of field crews, biologists and ecologists, particularly for wildlife that may not be directly observed or for the management of remote high elevation habitats. Therefore, we appreciate the nuanced discussion of the EMDS model given at the top of the EA, p. 19 in discussing high elevation habitats and lynx in particular. This suggests that while it is possible that lynx might benefit from reducing area and patch size in the subalpine fir types, there are likely other important factors besides infrequent fire (intervals > 300 years) that determine patch size and shape in glaciated boreal forests. [18-81]

Concern: [Seq#164]

The vegetation analysis and wildlife analysis address habitat and "old growth" connectivity for the northern spotted owl. Both Alternatives 2 and 3 are consistent with the Northwest Forest Plan (NWFP). The NWFP requires maintenance of Late Successional Reserves and managing matrix habitat. Matrix habitat requires retaining 15% of the area associated with each cutting unit for green tree and snag retention, and generally 70% of the total area to be retained should be aggregates of moderate to larger size trees, with the remainder as dispersed structures. Patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees and hard snags occurring in the unit. Riparian reserves are also part of the connectivity network and the reports describe retention and management of these areas to provide habitat connectivity.

[comment end] [ID#174]

Response: [Seq#164]

Thanks for input! [ID#174]

Associated Comments: [Seq#164]

The vegetation analysis and wildlife analysis address habitat and "old growth" connectivity for the northern spotted owl. Both Alternatives 2 and 3 are consistent with the Northwest Forest Plan (NWFP). The NWFP requires maintenance of Late Successional Reserves and managing matrix habitat. Matrix habitat requires retaining 15% of the area associated with each cutting unit for green tree and snag retention, and generally 70% of the total area to be retained should be aggregates of moderate to larger

size trees, with the remainder as dispersed structures. Patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees and hard snags occurring in the unit. Riparian reserves are also part of the connectivity network and the reports describe retention and management of these areas to provide habitat connectivity. [30-5]

Concern: [Seq#165]

Attempting to correct the ill-health of the forest with the same methods that caused the ill-health most likely will not restore the health of the forest. [ID#175]
Response: [Seq#165]

Not all of the effects of previous management are from commercial logging. There are also landscape departures caused from not allowing fire or from not encouraging fire (as did native American peoples) on the landscape, which resulted in too many multistoried stands as compared to historical conditions. Not all logging has the same effects. Under current regulations and the use of the best management practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events. There is no other way to achieve that result that is as safe, responsible and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103). [ID#175]
Associated Comments: [Seq#165]
* Attempting to correct the ill-health of the forest with the same methods that caused the ill-health most likely will not restore the health of the forest. [67-29]

The conditions referenced as causes of the project areas ecosystem ill-health are primarily from past management and human intervention. More intervention of an industrial nature, on a landscape level, is not in the public interest. [68-4]

Concern: [Seq#166]

Recreation is a larger contributor to the economy than timber sales. [ID#176]
Response: [Seq#166]

The commenter does not provide literature to support this position. Analysis showed that the project would have long-term, beneficial, moderate effects and would met the visual quality objectives for the area (page 277 of the EA).

Given that there is also an economic benefit of harvesting, it would appear that the project improves the recreation values in the area as well as provides timber value from harvesting. [ID#176]
Associated Comments: [Seq#166]
* Recreation is a larger contributor to the economy than timber sales. [67-36]

Concern: [Seq#167]

The location and plant association of old growth stands needs to be provided for the proposed Old Growth amendment to be acceptable. Old growth locations need to cover the entire project area to meet connectivity requirements under the Northwest Forest Plan. A blanket amendment is too broad without these locations and forest type. Restoration of old growth in riparian reserves should be different, both in purpose as well as in practice, from old growth in uplands [ID#177]
Response: [Seq#167]

A proposal to amend the Forest Plan standards and guidelines for Old Growth management was included in the public scoping letter for Mission but was not carried forward in either Preliminary EAs.

Air photo interpretation was completed and individual stands labelled with a set of attributes prior to project initiation. One of the attributes is stand structure. The Old Forest Multi-story and Old Forest Single-story classifications refer to old growth structures. This has been completed for both watersheds, and a subset of these have been field-verified. The project silviculturist determined that these stands are not "Forest Plan" old growth, in other words, they don't meet all the criteria specified in the Okanogan National Forest Land and Resource Management Plan (which includes an acreage minimum, snag and down wood levels, canopy closure, and a large tree per acres standard). However, they are a good indication of large tree habitat (old growth) across the project area.

The preliminary EA for the Mission Restoration project does not include an amendment for activity within Forest Plan Old Growth. The effects on old forest structure and large trees is found in the preliminary EA for Mission Restoration Project on pages 123-125 and 194.

[ID#177]
Associated Comments: [Seq#167]
Amendment on Old Growth protection and Fire and Fuels (p. 6). The location and plant association of old growth stands needs to be provided for this amendment to be acceptable. Old growth locations need to cover the entire project area to meet connectivity requirements under the Northwest Forest Plan. A blanket amendment is too broad without these locations and forest type. Restoration of old growth in riparian reserves should be different, both in purpose as well as in practice, from old growth in uplands. [18-39]

Concern: [Seq#168]

The maintenance of a healthy and resilient timber industry should be included as one of the purpose and need statements. [ID#178]

Response: [Seq#168]

Although maintaining a healthy and resilient timber industry was not identified as a purpose and need for this project, the expected harvest volume is included in the EA. The effects on employment in the timber industry is shown in the economics report for this project. Now that the units are laid out, it expected the timber volume from the sale could be as high as 50% greater than what is displayed. [ID#178]

Associated Comments: [Seq#168]

AFRC submitted comments on the scoping notice on this project on June 16, 2016. In those comments, AFRC supported the purpose and need for this project but also recommended that an additional purpose and need be added to the project which would be to contribute to the maintenance of the local milling infrastructure and result in the enhancement of the economies of the surrounding communities and counties. We are very disappointed that this purpose and need was not included in the preliminary Environmental Assessment. The forest products infrastructure located in and around the Okanogan-Wenatchee Forest, as well as the rural communities where they are located, should be a priority when planning any project that will yield commercial products. Most of the restoration work needed in this project area cannot be completed without a healthy and resilient logging and forest products industry. [14-1]

Concern: [Seq#169]

As an alternative why not put off the commercial logging portion of the proposed action and obtain funding for and implement some portion of the other restoration treatments. This alternative would kick-start some key restoration processes and build broader public support and confidence for future landscape scale restoration projects. [ID#179]

Response: [Seq#169]

An alternative was considered that did not include timber harvest. It was determined that this alternative would not meet 3 out of the 7 Purpose and Needs. See preliminary EA page 28. Analyzing a project that includes timber harvest is very time consuming and expensive. Including timber harvest in the preferred alternative in this Environmental Assessment, instead of putting that analysis off to a future date, would be the best use of limited government funds.

Some portions of the restoration process, outside commercial timber harvest, may commence once the Decision is signed. The District is in discussions about possible funding for certain proposed activities. Other restoration projects will likely be funded from Stewardship receipts generated from the

commercial timber sale. An estimated $300,000+ of stewardship receipts are expected to be generated. [ID#179]

Associated Comments: [Seq#169]

As an alternative why not put off the commercial logging portion of the proposed action and obtain funding for and implement some portion of the other restoration treatments. This alternative would kick-start some key restoration processes and build broader public support and confidence for future landscape scale restoration projects. [78-25]

Concern: [Seq#170]

The scoping document indicated there are some basic misunderstandings about the ecology of mesic and wet forests. [ID#180]

Response: [Seq#170]

The comment is in response to the public scoping letter and not to the Mission EA. This comment did not come during the opportunity to respond to the proposed action (Scoping) therefore, it is not addressed in Figure 5 of the preliminary EA. As there does not appear to be any concern regarding mesic and moist forest discussion in the EA, the comment is moot. [ID#180]

Associated Comments: [Seq#170]

The scoping document indicated there are some basic misunderstandings about the ecology of mesic and wet forests. Plant associations in wet areas are determined by tolerance to moisture and are therefore not moisture limited. Dry forest plant associations are determined more by shade tolerance and moisture deficits. Also the fire regime of moist and wet forest plant associations is different in due to microclimate conditions, preference for species with thin bark, and different fuel levels. Riparian areas have a higher natural abundance of coarse woody debris that is necessary for proper function and condition of aquatic systems. [18-36]

Concern: [Seq#171]

The magnitude and location of avalanches, snowpack and talus fields creates a unique landscape pattern in glaciated valleys, that may not be comparable with other EMDS reference stands that experienced different or no glaciation events, or that have a different snowpack ecosystem. [ID#181]

Response: [Seq#171]

The comment is correct in that comparison watersheds used for developing historical ranges of variation do have differences in many respects. However, it should be noted that Libby Creek watershed is one of the watersheds used to determine the reference conditions for the Environmental Region used in this

analysis. [ID#181]
Associated Comments: [Seq#171]
E MDS structural classification The magnitude and location of avalanches, snowpack and talus fields creates a unique landscape pattern in glaciated valleys, that may not be comparable with other EMDS reference stands that experienced different or no glaciation events, or that have a different snowpack ecosystem. As an example of how Libby and Buttermilk watersheds differ from other reference watersheds further west of the Chelan Sawtooth crest based on similar elevations, consider that along the easternmost Chelan- Sawtooth mountains, timberline is 1,000 – 2,000 feet higher than on the Cascade Crest, an artifact of the higher base elevation of interior mountains. As another example, consider that for whatever reason, rocky ground and open shrub- steppe may be inherently higher or lower than reference watersheds, and EMDS should have a way to segregate those landscape features when comparing watersheds. [18-84]

Concern: [Seq#172]

The Mission Restoration Project prioritizes the commercial logging aspect of the project but that is upside-down thinking. [ID#182]
Response: [Seq#172]

The Mission Restoration Project EA does not identify timber harvest as a priority project. It does, however, recognize that 3 out of the 7 Purpose and Needs would not be met without it (preliminary EA page 28). Much of the effects analysis in the preliminary Mission EA is dedicated to address the effects of timber harvest because that activity creates the biggest vegetation changes, which are needed to address the departure from the historical and future range of variability. [ID#182]
Associated Comments: [Seq#172]
The Mission Restoration Project prioritizes the commercial logging aspect of the project but that is upside-down thinking. [51-21]

Concern: [Seq#173]

ANALYSIS OF NEED FOR THIS SALE: What tools besides the the Ecosystem Management Decision Support (EMDS) modeling tool (Hessburg 2013) were used to establish the need for this sale? An EIS would give a chance to utlize more than one study to establish the need. Has it been considered that the Forest Service's strategy to move towards desired future vegetation conditions focuses on achieving static conditions rather than considering the natural dynamic characteristics of ecosystems? [ID#183]
Response: [Seq#173]

EMDS was used to identify the landscape vegetation departures, which are three of the seven Purpose and Needs identified in the preliminary EA (pages 12-14). Additional data was collected while field verifying the treatment areas. Besides EMDS, the Okanogan NF Land Resource Management Plan and Northwest Forest Plan standards and guidelines for each management area were used to also identify need for treatment and parameters for that treatment.

The Historic Range of Variability (HRV) and Future Range of Variability (FRV) is not a static number, but is based on a range of conditions, data.

An EIS is needed when there is a determination of Significant Effects. No such finding was determined by the preliminary Mission Forest Restoration environmental assessment (preliminary EA pages 84-88, 102, 134, 167-170, 209, 219, 231-232, 252, 269-270, 280-281, and 295-299) [ID#183]

Associated Comments: [Seq#173]

ANALYSIS OF NEED FOR THIS SALE: What tools besides the the Ecosystem Management Decision Support (EMDS) modeling tool (Hessburg 2013) were used to establish the need for this sale? An EIS would give a chance to utlize more than one study to establish the need. Has it been considered that the fort service's FS's strategy to move towards desired future vegetation conditions focuses on achieving static conditions rather than considering the natural dynamic characteristics of ecosystems? [70-12]

Concern: [Seq#174]

The output and fundamental assumptions from the decision support tool used in this analysis (i.e. EMDS) has not been made available to the public. It would be helpful to better understand the project if some detail on those assumptions and outputs could be included in the supporting documents for this EA. [ID#184]

Response: [Seq#174]

Pertinent components of the departure analysis are shown in the Vegetation and Fuels sections of the EA. To include the full set of data within the EA would add many more pages to an already very large document such that the complete departure analysis for Libby Creek and Buttermilk Creek watershed is found within the project files.

Many of the assumptions and the results of the analysis are contained in project records. For the Collaborative, Derek provided examples of the results of the modeling at a meeting open to the public in the Methow Valley . [ID#184]

Associated Comments: [Seq#174]

5. The output and fundamental assumptions from the decision support tool used in this analysis (i.e. EMDS) has not been made available to the public. It would be helpful to better understand the project if some detail on those assumptions and outputs could be included in the supporting documents for this EA. [78-26]

Concern: [Seq#175]

Concern for the lack of long-term monitoring necessary to evaluate the effectiveness of the project. The planned logging areas are in critical watersheds and the need for independent researchers not funded by the logging industry to do a complete Environmental Impact Statement is more than necessary [ID#185]

Response: [Seq#175]

Planned monitoring is included in Appendix D of the EA. A monitoring report for the entire Forest should be completed in 2018 or 2019 as part of moving to the 2012 Planning Rule.

The aerial photo interpretation and initial departure analysis was conducted by Forest Service personnel, who are funded solely by Congressionally apportioned money. Derek Churchill was funded by the North Central Washington Forest Health Collaborative to help interpret the data and highlight some needs for treatment. The collaborative is made up of many stakeholders including groups from the environmental community as well as from the timber industry.

An EIS is needed when there is a determination of Significant Effects. No such finding was determined by the preliminary Mission Forest Restoration environmental assessment (preliminary EA pages 84-88, 102, 134, 167-170, 209, 219, 231-232, 252, 269-270, 280-281, and 295-299). [ID#185]

Associated Comments: [Seq#175]

as well as the lack of long-term monitoring necessary to evaluate the effectiveness of the project. The planned logging areas are in critical watersheds and the need for independent researchers not funded by the logging industry to do a complete Environmental Impact Statement is more than necessary [62-4]

Concern: [Seq#176]

How could the profit on the timber extraction possibly outweigh the damage done to the planet?

[[ID#186]

Response: [Seq#176]

The planned harvest treatments, while planned to be economic as whole, are not intended to provide a profit. Instead harvesting is a tool with which to meet multiple Purpose and Needs that are addressed by changing forest structure and by reducing stocking and fuel levels.

Section 3.15.4 of the Environmental Assessment addresses climate change.

The Union of Concerned Scientists report (Boucher and Ferretti-Gallon, 2015 noted deforestation/forest degradation as a major source of greenhouse gas emissions. Although this science is not presented in a formally peer-reviewed scientific journal, it is consistent with the information presented in the EA analysis.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%); and forestry and other land uses [mostly deforestation] (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades). [ID#186]

Associated Comments: [Seq#176]

How could the profit on the timber extraction possibly outweigh the damage done to the planet? [67-21]

Concern: [Seq#177]

In the MV News article, Jeff Juel opposes man-made restoration, stating the "ecosystems are largely defined by natural processes." We have lots of areas around the Methow Valley where natural processes are allowed to occur, they are called Wilderness. I agree natural processes are important; however, management practices over the past 100 years have caused conditions in our forest to be far from natural. The treatments proposed under the Mission Project will move forest conditions far closer to what they were like 100 years ago. [ID#187]
Response: [Seq#177]

Your support is appreciated. [ID#187]
Associated Comments: [Seq#177]
In the MV News article, Jeff Juel opposes man-made restoration, stating the "ecosystems are largely defined by natural processes." We have lots of areas around the Methow Valley where natural processes are allowed to occur, they are called Wilderness. I agree natural processes are important; however, management practices over the past 100 years have caused conditions in our forest to be far from natural. The treatments proposed under the Mission Project will move forest conditions far closer to what they were like 100 years ago. [75-4]

Concern: [Seq#178]

How did the EMDS process influence the proposed action and did the adjustments that were made reduce the ability to meet Purpose and Need? [ID#188]
Response: [Seq#178]

EMDS was initiated and processed by the Forest and was based purely on aerial photointerpretation. A sampling of the patches took place that was performed by a combination of FS personnel and members or contractors of the North Central Washington Forest Health Collaborative (NCWFHC), which was used to make adjustments to the photo-interpretation work that was performed by Derek Churchill, who was contracted by NCWFHC. Mr. Churchill also re-ran the EMDS model on the updated data set and then developed landscape prescriptions and a preliminary proposed action based on the observed departures to the historical and/or expected future ranges of variability.

The district silviculturist took this result and used the field data that was collected to make adjustments to the proposed action, taking into account slope, road access, volume per acre, tree diameters, Okanogan LRMP and the ability of the stand to meet the purpose and need. Many acres did get dropped from the preliminary proposed action developed by Mr. Churchill.

If the district could actually treat the 9,338 acres originally identified by Mr. Churchill, more progress could be made towards addressing the departures identified in the Purpose and Needs. In Mr. Churchill's update to the opportunities represented in the two watershed, dated February, 2016. only

2,203 acres remained as potential harvest treatment areas after applying known constraints and field data. After further field verification, 1,952 acres of harvest treatment were included within the proposed action in the Preliminary and Revised Preliminary Environmental Assessment. Treatments will be slightly modified in the Final EA due to additional on the ground work and layout of the units Most of the remaining acres identified for harvest treatment in Mr. Churchill's 2016 update would still be treated but to a lesser degree with shorter duration of effects. The effects of the proposed vegetation treatments are shown in the Vegetation and Fire/Fuels sections of the EA. [ID#188]

Associated Comments: [Seq#178]

We would appreciate a clear description of how the use of EMDS and the analysis by Derek Churchill was incorporated or not in unit design following operational level review by the ID Team specialists to design the actual project from the EMDS prescriptions. We understand that the landscape prescription derived using EMDS is refined as the project is developed, but seek to understand the rationale for the changes and if the changes alter your ability to meet the Purpose and Need in any way. [18-10]

Concern: [Seq#179]

How have past management practices such as logging and wildfire suppression changed the needs of the forest ecology? [ID#189]

Response: [Seq#179]

The effects of past management practices and the resulting departures are found in the Affected Environment section of the Effects to Vegetation and Effects to Fire and Fuels portions of the EA (preliminary EA pages 108-114 and 142-143). [ID#189]

Associated Comments: [Seq#179]

How have past management practices such as logging and wildfire suppression changed the needs of the forest ecology? [29-27]

Concern: [Seq#180]

The ecological difference between mechanized thinning and natural fire is that with mechanized thinning the trees are removed from the forest but with fire the ash is left behind providing nutrients for the forest for decades. [ID#190]

Response: [Seq#180]

The analysis shown in the Mission EA shows that "natural" fire would be uncharacteristically intense due to departures in tree density and species as well as an ingrowth of understory trees that were not typically found in great quantities on the landscape (preliminary EA pages 142-152). The effects of the expected uncharacteristic fires on trees is found on pages 120-121 of the preliminary EA. Fire severity exceeding the historic range could have detrimental effects on soil productivity and health through the oxidation and loss of soil organic matter and associated soil biota, as well as through accelerated rates of erosion (preliminary EA page 95)

The effects of the action alternatives do include the removal of biomass (organic nutrients), but unlike the expected results of wild fire in Alternative One, leave LIVE trees that can either immediately meet or in the near future meet habitat needs (preliminary EA page 123-125 and 155-159). By following design criteria, Alternatives Two and Three would continue the long-term, beneficial and nutrient cycling found throughout the project area (preliminary EA pages 101-102) [ID#190]

Associated Comments: [Seq#180]

The ecological difference between mechanized thinning and natural fire is that with mechanized thinning the trees are removed from the forest but with fire the ash is left behind providing nutrients for the forest for decades. [51-16]

Concern: [Seq#181]

The Mission Restoration Project is a short sighted plan to extract the trees with no funding for the restorations promised and no effective adaptive management plan in place to assess the project's outcomes over time. [ID#191]

Response: [Seq#181]

The EA states in many places that project work would take place as funding becomes available. The district has traditionally been able to receive funding for most of the aquatic resource improvement projects including road decommissioning, culvert replacement, rock armoring, coarse woody debris enhancement and stream crossing improvements. Specialists expect that there would be funding available for beaver enhancement and soil restoration projects as well. Fuel reduction projects have been historically funded at 1,000-2,000 acres per year in the Methow Valley Ranger District.

Adaptive management is usually used when there are portions of a project with uncertain results. The Methow Valley Ranger District has considerable experience in implementing timber harvest and fuels reduction projects, such that there is little uncertainty regarding expected results in the projects proposed in the Mission Restoration Project and thus there is no need for adaptive management in the Mission project. The planned monitoring is found in Appendix D of the preliminary EA. If monitoring is listed in Appendix D, there is an expectation that it will be completed. Under the 2012 Planning Rule, the Forest will be producing a monitoring report every 2 - 3 years. [ID#191]

Associated Comments: [Seq#181]

* The Mission Restoration Project is a short sighted plan to extract the trees with no funding for the restorations promised and no effective adaptive management plan in place to assess the project's

outcomes over time. [67-16]

Concern: [Seq#182]

The proposed action reduced the commercial treatment acreage in the project area from the landscape prescription prepared by Derek Churchill by around a 1000 acres compared, and increased the amount of ladder fuel treatments. The rationale we understood for commercial treatment on these acres was a need to reduce canopy cover in addition to ladder fuels, offering longer term benefits to the project. [ID#192]

Response: [Seq#182]

The EA includes 1,952 acres of harvest treatment in the Preliminary and Revised Preliminary environmental Assessment, while the report created by Derek Churchill for the Northwest Washington Forest Health Collaborative dated February 8, 2016 states that 2,203 acres should be available for harvest. The rationale for treating these acres with both commercial and noncommercial treatments (remove smaller diameter trees) is to increase intensity and duration of treatments for addressing vegetation departures on the Buttermilk and Libby landscapes (Purpose and Need #3, 4 and 6 of preliminary EA, pages 13-14) by reducing stocking in both the understory and overstory (see preliminary EA page 123-127 for intensity and duration of treatment on vegetation and 155-158 for intensity and duration of effects on crown fire risk and fire behavior). The final EA will include fewer acres of commercial harvest treatment than the Preliminary EA. [ID#192]

Associated Comments: [Seq#182]

o The proposed action reduced the commercial treatment acreage in the project area from the landscape prescription prepared by Derek Churchill by around a 1000 acres compared, and increased the amount of ladder fuel treatments. The rationale we understood for commercial treatment on these acres was a need to reduce canopy cover in addition to ladder fuels, offering longer term benefits to the project. [18-11]

Concern: [Seq#183]

The landscape prescription specifically addressed treatments in stands with Dwarf Mistletoe. Since treatments in such stands may have different prescriptions, this should be addressed in the EA. [ID#193]

Response: [Seq#183]

The stands that were specifically identified for dwarf mistletoe reduction are found on page 303 of the preliminary EA (284 acres) and the prescription for these treatment areas is found on pages 308-309. Dwarf mistletoe infection would be addressed to some level within the other harvest units in that the

largest and most vigorous trees would remain (preliminary EA page 305). the effects to dwarf-mistletoe by alternatives Two and Three are found on page 126-127 with context provided on pages 106 and 122-123 of the preliminary EA. [ID#193]

Associated Comments: [Seq#183]

o The landscape prescription specifically addressed treatments in stands with Dwarf Mistletoe. Since treatments in such stands may have different prescriptions, this should be addressed in the EA. [18-13]

Concern: [Seq#184]

The EA states (p. 14), "Large trees will not be harvested." Because large trees were historically overharvested, this should apply across all units, not just to late or old forest habitats. However, it even more important that old trees not be harvested, even if they are not large, because these carry the genes for longevity that are the basis for old growth. [ID#194]

Response: [Seq#184]

There is no mention of large trees in the preliminary EA on page 14. There is no place in the preliminary EA that says "Large trees will not be harvested". On page 305 of the preliminary EA it says that "All trees greater than 24 inches diameter at breast height (DBH) would be retained". It goes on to say that Trees 21 inches DBH and larger with an estimated age of 150 years or greater (based on criteria described in Van Pelt 2008) would be retained. Trees 21 to 24 inches DBH with an estimated age of less than 150 years would occasionally be harvested to release a larger (more preferred species) tree. reduce dwarf mistletoe infection, or reduce conifer encroachment in aspen stands (except in areas with field verified old forest multistory structure located in unit 21) when consistent with treatment objectives."

The effects to large trees is found on pages 124-126 and context provided on pages 110-112 and 120-121 of the preliminary EA. [ID#194]

Associated Comments: [Seq#184]

The EA states (p. 14), “Large trees will not be harvested.” Because large trees were historically overharvested, this should apply across all units, not just to late or old forest habitats. However, it even more important that old trees not be harvested, even if they are not large, because these carry the genes for longevity that are the basis for old growth. [18-78]

Concern: [Seq#185]

I am opposed to using ICO because it is new and unproven. [ID#195]

Response: [Seq#185]

ICO only addresses the pattern of leaving trees within a treatment unit and it does not effect the objective or the quality of the trees left. The default marking guide usually is based on only trees per acre or basal area which tends to leave trees evenly spaced apart, which is not natural. The ICO marking is intended to mimic the vegetation patterns found historically. It would result in the same number of trees per acre but the trees would be left in a combination of clumps and individuals (see preliminary EA pages 306-310).

ICO guidelines were developed in 2012 by Derek Churchill together with several others, including Jerry Franklin, one of the foremost experts in Forest Ecology and Management. It has been utilized in many forests in the Pacific Northwest over the last 4-5 years. Although using this approach is not essential to meeting the identified Purpose and Needs it is considered an important component to restoring historical patterns of vegetation on the landscape. [ID#195]

Associated Comments: [Seq#185]

ICO is a relatively new untried theory-Derek Churchill himself acknowledged this at a public meeting in Twisp (Sept. 2015). I am opposed to having the Methow be the "guinea pig" for this strategy. [51-5]

plans to use ICO, which is an untested theoretical computer generated model to be applied to the forest, [67-41]

Concern: [Seq#186]

Government to government consultation - Efforts to conduct consultation with affected treaty Indian nations appears to have been minimal. We would recommend a more concerted effort other than sending letters, given the government to government status of the tribes and their interest in the ecological outcome of the project. In this case it appears that the tribes were unaware of the negative impacts the planned project activities would have with regard to their fish and wildlife concerns (i.e., grey wolf, spring Chinook salmon, steelhead, bull trout, and plans for the reintroduced coho salmon) and consultations should be reinitiated. [ID#196]

Response: [Seq#186]

Federal agencies have a duty to consult, coordinate, and communicate with American Indian Tribes. A government-to-government consultation letter was mailed to the Business Council Chairman of the Confederated Tribes of the Colville Reservation, the Chairman of the Yakama Nation, and their staff on April 20, 2016. Information on how to access the preliminary Environmental Assessment or copies of the Preliminary Environmental Assessment was also sent to the Tribal governments for comment in January 2017. Both Tribes have also been involved since the start of this project as members of the North Central Washington Forest Health Collaborative. Discussions have also taken place with Tribal staffs on proposed aquatic restoration projects within this proposal. [ID#196]

Associated Comments: [Seq#186]

1.5 Consultation and Public Involvement 1.5.1 Tribal Involvement No comments or concerns were expressed by either tribe with respect to this project.(p.20) [In this case it appears that the tribes were

unaware of the negative impacts the planned project activities would have with regard to their fish and wildlife concerns (i.e., grey wolf, spring Chinook salmon, steelhead, bull trout, and plans for the reintroduced coho salmon) and consultations should be reinitiated.] [11-14]

7. Government consultation - Efforts to conduct consultation with affected treaty Indian nations appears to have been minimal. We would recommend a more concerted effort other than sending letters, given the government to government status of the tribes and their interest in the ecological outcome of the project. [78-28]

Concern: [Seq#187]

It is hoped that these hundreds of pages of EA documentation will be more than just words, that an overview toward genuine forest health and restoration will be the objective and the outcome for the Mission proposal. On this very large, landscape scale project, the Methow Valley Ranger District has the opportunity to implement and improve the better forestry that has been completed on smaller projects around the district in recent years. [ID#197]
Response: [Seq#187]

Thank you for your comment. The Forest Service is planning that this project will move the forest towards genuine forest health and restoration. That is the objective of this project. [ID#197]
Associated Comments: [Seq#187]
It is hoped that these hundreds of pages of EA documentation will be more than just words, that an overview toward genuine forest health and restoration will be the objective and the outcome for the Mission proposal. On this very large, landscape scale project, the Methow Valley Ranger District has the opportunity to implement and improve the better forestry that has been completed on smaller projects around the district in recent years. [6-2]

Concern: [Seq#188]

The Alternative 2 Proposed Action addresses prioritizing treatment areas that are "closest to wildland urban interface, to emergency egress routes, and to strategic units for modifying fire behavior at the landscape level." Also included are "Treatments that could be implemented with little or no cost, or which would generate funds which can be used for other treatments." Sounds like a good start. [ID#198]
Response: [Seq#188]

Thank you for your comment. Those are the objectives that we are trying to meet. The project has been modified from its initial proposal to better address prioritizing treatment areas that are "closest to

wildland urban interface and emergency egress routes. [ID#198]

Associated Comments: [Seq#188]

The Alternative 2 Proposed Action addresses prioritizing treatment areas that are "closest to wildland urban interface, to emergency egress routes, and to strategic units for modifying fire behavior at the landscape level." Also included are "Treatments that could be implemented with little or no cost, or which would generate funds which can be used for other treatments." Sounds like a good start. [6-3]

Concern: [Seq#189]

Only one alternative to intensive commercial winter logging is offered. Alternative 1 with no action or commercial winter logging. Alternative 2 and 3 are not identical with regard to environmental impact. Of the 50,000 acre project area 3,656 acres would be "treated". [ID#200]

Response: [Seq#189]

Vegetation treatments are similar in Alternatives 2 and 3. Alternative 1 is the "No Action" alternative that would continue existing management practices. Alternative 3 was added after scoping to address the concern expressed during scoping of the need to complete more aquatic restoration in this project. Besides these alternatives that were fully analyzed, the Interdisciplinary Team considered but eliminated 4 other alternatives, Section 2.1. These included consideration of an alternative from Pacific Biodiversity Institute and other scoping comments calling for limiting the scope and scale of restoration treatments and increasing the amount of non-commercial thinning and fuels treatments; an alternative to not close additional roads and to adopt all unauthorized roads into the National Forest System; an alternative that included no commercial timber harvest which would include only non-commercial thinning and fuels treatment; and an alternative where no Forest Plan amendments would be considered.

The scope of the proposed project is approximately 8,304 acres of non-commercial thinning, 1,952 acres of commercial thinning, 10,968 acres of fuels treatments, and other projects such as soil restoration, culvert replacement, beaver enhancement, bridge replacement, rock armoring of up to 33 stream crossings, coarse woody debris enhancement on up to 8 miles of stream channels, hardening up to 4 stream fords, and travel system management. These numbers may change slightly in the final EA and Decision Notice as additional field work has been completed.

[ID#200]

Associated Comments: [Seq#189]

2.6 Comparison of Alternatives Figure 10 displays the resource indicators used by the IDT to analyze the effects of No Action, the Proposed Action (Alternative 2), and Alternative 3 (see Fig. 10).(pp. 34-43). [Only one alternative to intensive commercial winter logging is offered. Alternative 1 with no action or commercial winter logging. Alternative 2 and 3 are not identical with regard to environmental impact. Of the 50,000 acre project area 3,656 acres would be “treated”. [11-33]

Concern: [Seq#190]

Chapter 3 presents information about current resource conditions, and the direct, indirect and cumulative effects of implementing the proposed action. (pp.44-299) The length and redundancy of this chapter is not meant to result in public comments. [ID#201]
Response: [Seq#190]

The length of Chapter 3 is to try and provide resource impact information in a format that is more understandable by the public, and to highlight the information that is important and eliminate issues which are not important to understanding project effects. Because this is a restoration project, discussion of effects is somewhat more complicated, thus longer. Thank you for your comment. [ID#201]
Associated Comments: [Seq#190]
Chapter 3: Existing Condition and Environmental Consequences This chapter presents information about current resource conditions, and the direct, indirect and cumulative effects of implementing the proposed action. (pp.44-299) [The length and redundancy of this chapter is not meant to result in public comments.] [11-35]

Concern: [Seq#191]

The Interdisciplinary Team identified past, present, and reasonably foreseeable future actions that might have cumulative impacts with the proposed actions. Logging and permitted grazing of cattle have been identified to be responsible for residual impacts in regard to this project. [ID#202]
Response: [Seq#191]

The Interdisciplinary Team has identified past, present, and reasonably foreseeable future actions that might have cumulative impacts with the proposed actions early in the analysis process to try and identify residual impacts in regard to this project. Thank you for your comment. [ID#202]
Associated Comments: [Seq#191]
3.1.1. Past, Present, and Reasonably Foreseeable Future Actions The interdisciplinary team (IDT) identified past, present, and reasonably foreseeable future actions that might have cumulative impacts with the proposed actions early in the analysis process. Current conditions have been impacted by innumerable actions over the last century and beyond, and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Past and on-going actions affecting resources may be described as part of the existing condition information for specific resources later in this chapter.(p.44) [The past and continuing effects of logging and permitted grazing of cattle have been identified to be responsible for residual impacts in USFS documents and special reports being considered with regard to this project.] [11-36]

Concern: [Seq#192]

Increases in miles of accessible fish stream habitat, road decommissioning, and other soil and aquatic habitat should be made without regard to the alternative; they are not dependent on commercial logging. [ID#203]

Response: [Seq#192]

Section 2.2.4, Action Alternative Treatment Summaries, displays the differences in soil, transportation and aquatic habitat treatments. Why Alternative 2 and 3 differ in terms of some of these treatments is to display effects to other resources from some of these proposed treatments. The differences in treatments in replacing the West Fork Buttermilk bridge is because of the proposed road closings in Alternative 3 for this area. These same road closings, bridge replacement effect recreation and other access, and proposed vegetation and fire/fuels treatments in this area in the future. Replacing 4 culverts with hardened fords may have some aquatic benefits, but it may negatively impact transportation access such as access by lowboys carrying equipment for future land management. Decommissioning roads may have negative effects on future vegetation, recreation, range, and fuels treatments. This is displayed in Chapter 3 of the Environmental Assessment, particularly Sections 3.5, 3.6, 3.10, and 3.12. [ID#203]

Associated Comments: [Seq#192]

Aquatic Habitat Fish distribution Increase in miles of accessible fish stream habitat 5.6 miles. About 35 miles of roads would be decommissioned, prioritizing riparian roads. At the subwatershed scale, road density would decrease 18 % (from 1.3 mi/mi2 to 1.1 mi/mi2) in Buttermilk Creek and by 28% (2.1 mi/mi2 to 1.5 mi/mi2) in Libby Creek. Chronic sediment delivery would decrease across the project area with the greatest reduction in Libby Creek. (pp.68-69) [These improvements can, and should, be made without regard to the alternative; they are not dependent on commercial logging.] [11-53]

Concern: [Seq#193]

Restoring habitat connectivity by removing barriers to fish passage at eight sites would allow fish access to about six miles of quality spawning and rearing habitat. The increase in fish access would have a moderate, beneficial, long-term effect on local fish distribution and fish production because more fish habitat would be available for spawning and rearing, resulting in an increase of fish production in these areas at the sub-watershed scale and directly contributing to the recovery of at-risk ESA-listed fish species. This improvement can, and should, be made without regard to the alternative; it is not dependent on commercial logging. [ID#204]

Response: [Seq#193]

As displayed in Figure 26 in Section 3.3.4.3.1, there is no difference between the alternatives. Both alternatives would increase the miles of accessible stream habitat by 5.6 miles. [ID#204]

Associated Comments: [Seq#193]
Fish Distribution Restoring habitat connectivity by removing barriers to fish passage at eight sites would allow fish access to about six miles of quality spawning and rearing habitat. The increase in fish access would have a moderate, beneficial, long-term effect on local fish distribution and fish production because more fish habitat would be available for spawning and rearing, resulting in an increase of fish production in these areas at the sub-watershed scale and directly contributing to the recovery of at-risk ESA-listed fish species. (p.76) [This improvement can, and should, be made without regard to the alternative; it is not dependent on commercial logging, which would have negative impacts.] [11-57]

Concern: [Seq#194]

This production of understory vegetation, "transitional forage", was an initial goal of the Mission Project. [ID#205]
Response: [Seq#194]

This production of understory vegetation, "transitional forage", is an effect of the proposed vegetation and fuels treatments in the Mission Project. It is not a goal of the project. The project includes a mitigation measure that even though some additional transitional forage is being created, additional grazing is not going to be permitted. [ID#205]
Associated Comments: [Seq#194]
3.9 Botany The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Botany Resources Report by K. Baraibar (2016). 3.9.1 Methodology The resource elements, indicators, and measures used to analyze and compare potential effects of the Mission Restoration on botanical resources are shown in Figure 91. Change in amount and diversity of understory vegetation Acres of forest canopy opened. (p.220) [This production of understory vegetation, “transitional forage”, was an initial goal of the Mission Project.] [11-71]

Concern: [Seq#195]

A No Action Alternative would have a long term, moderate, adverse effect on understory vegetation by decreasing plant vigor and diversity. This is a natural result of secondary succession on disturbed areas, which moves the plant community to the climax stage. [ID#206]
Response: [Seq#195]

Thank you for your comment. Secondary succession on disturbed areas moves the plant community towards the climax stage, which decreases plant vigor of some species and changes plant diversity.

[ID#206]
Associated Comments: [Seq#195]
3.9.4.4 Summary of Effects A No Action Alternative would have a long term, moderate, adverse effect on understory vegetation by decreasing plant vigor and diversity. (p.230) [This is a natural result of secondary succession on disturbed areas, which moves the plant community to the climax stage.] [11-73]

Concern: [Seq#196]

3.7 Wildlife The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Wildlife Resources Report by A. Glidden (2016.) 3.7.1 Methodology The wildlife resource indicators used for analyzing the impact of the proposed alternatives are displayed in Figure 65.(p.171) This is mostly birds, although lynx, grey squirrels, and mule deer are also included. The most notable exception would be the ESA-listed gray wolf that occupies the project area. [ID#207]
Response: [Seq#196]

Thank you for your comment. The gray wolf is discussed in the project Wildlife Report, in project files and on the Forest Website. It was a resource considered, but not analyzed in detail since disturbance and vegetation changes from treatments would not be expected to negatively affect wolves, although wolves and their prey may be temporarily displaced during activities. [ID#207]
Associated Comments: [Seq#196]
3.7 Wildlife The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Wildlife Resources Report by A. Glidden (2016.) 3.7.1 Methodology The wildlife resource indicators used for analyzing the impact of the proposed alternatives are displayed in Figure 65.(p.171) [This is mostly birds, although lynx, grey squirrels, and mule deer are also included. The most notable exception would be the ESA-listed gray wolf that occupies the project area.] [11-80]

Concern: [Seq#197]

We appreciate attention to see that equipment used for harvest and treatment on grounds beyond existing road prisms needs to be cleaned to be noxious weed-free before coming into or leaving the area [ID#208]
Response: [Seq#197]

Thank you for your comment. This project is designed to try and avoid spreading invasive species. This is a Design Criteria for most vegetation management projects. [ID#208]

Associated Comments: [Seq#197]

We appreciate attention to see that equipment used for harvest and treatment on grounds beyond existing road prisms needs to be cleaned to be noxious weed-free before coming into or leaving the area. [18-28]

Concern: [Seq#198]

We favor Alternative 3 (with some modifications) because of its greater emphasis on road closures with multiple benefits, It increases the amount of road decommissioning, creation of hardened fords, and rock armoring, and does not entail replacing the bridge across West Fork Buttermilk Creek." [ID#209]

Response: [Seq#198]

Thank you for your comment. Alternative 3 will decommission about 22.6 miles of additional roads, about 8.3 miles of this is from reducing administrative access. Total rock armoring proposed does not vary by alternative though the source of funding to complete this project is proposed to be different. In Alternative 2 on 6 crossing will require armoring before log haul, while in Alternative 3, 33 crossing will require armoring prior to haul. [ID#209]

Associated Comments: [Seq#198]

We favor Alternative 3 (with some modifications) because of its greater emphasis on road closures with multiple benefits (EA p. 68), “Alternative 3 increases the amount of road decommissioning, creation of hardened fords, and rock armoring, and does not entail replacing the bridge across West Fork Buttermilk Creek.” [18-75]

Concern: [Seq#199]

We support the Forest Service's efforts to create a resilient future road network. We support ecosystem restoration and applaud the Forest Service's efforts here to address many of the factors that continue to degrade the project area. Specifically, we strongly support the agency's proposal to complete soil restoration treatments, 23 culvert replacements, beaver habitat enhancement, woody debris enhancement, road improvements, and road decommissioning. [ID#210]

Response: [Seq#199]

Thank you for your comment. Soil restoration, beaver habitat enhancements, coarse woody debris enhancement, and culvert replacements are similar between alternatives 2 and 3. Road treatments, rock armoring, and hardening fords differ by action alternative or the source funding the treatments.

[ID#210]
Associated Comments: [Seq#199]
We support the Forest Service's efforts to create a resilient future road network. We support ecosystem restoration and applaud the Forest Service's efforts here to address many of the factors that continue to degrade the project area. Specifically, we strongly support the agency's proposal to complete soil restoration treatments, 23 culvert replacements, beaver habitat enhancement, woody debris enhancement, road improvements, and road decommissioning. [27-1]

Concern: [Seq#200]

Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, ensure reliable recreational access, and operate within budgetary constraints. And it is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and drastically declining funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and(3) it's a win for the public because removing unneeded roads.. [ID#211]
Response: [Seq#200]

Thank you for your comment. Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake and each restoration project looks at this through the TAP process. [ID#211]
Associated Comments: [Seq#200]
Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, ensure reliable recreational access, and operate within budgetary constraints. And it is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and drastically declining funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and(3) it's a win for the public because removing unneeded roads from the landscape allows the agency to focus its limited resources on the roads we all use, improving public access across the forest and helping ensure roads withstand strong storms. [27-3]

Concern: [Seq#201]

One 303(d) listed site exists in the Lower Methow River Watershed downstream of the project area. The Methow River near the confluence with the Columbia River is listed as impaired for pH and water

temperature. Both the Buttermilk and Libby Creek drainages contain federally endangered Upper Columbia River Spring-run Chinook, threatened Upper Columbia River steelhead, and threatened bull trout. Buttermilk Creek is designated critical habitat for Spring Chinook, summer steelhead, and bull trout. Libby Creek is designated critical habitat for summer steelhead. [ID#212]
Response: [Seq#201]

Thank you for your comment. This project is designed to not negatively impact the Lower Methow River or adversely effect the 303 (d) listing. Many project features are designed to improve stream habitat including for Threatened and Endangered species and critical habitat (refer to Section 3.3, Water Resources, particularly pages 77 - 84.

See Appendix D for BMPs and Design Criteria pertaining to erosion control.

See Page 5 of Aquatic/hydro Resource Report in Project Files.

Water (USDA Forest Service 1989a pg 4-45-46):

13-2 All State of Washington (Washington Administrate Code, Chapters 173-201 and 202) through planning, application, and monitoring of Best Management Practices (BMPs) in conformance with the Clean Water Act, regulations, and Federal guidance issued.

13-3 In cooperation with Washington State, the Forest shall use the following process;

- Select and design BMPs based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for those waters potentially impacted.
- Implement and enforce BMPs.
- Monitor to ensure that practices are correctly applied as designed.
- Monitor to determine the effeteness of practices in meeting design expectations and in attaining water quality standards.
- Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMPs do not perform as expected.
- Adjust BMP design standards and application when It is found that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. Evaluate the appropriateness of water quality criteria for reasonably assuring protection of beneficial uses. Consider recommending adjustment of water quality standards.

[ID#212]
Associated Comments: [Seq#201]
One 303(d) listed site exists in the Lower Methow River Watershed downstream of the project area. Draft EA at 55. The Methow River near the confluence with the Columbia River is listed as impaired for pH and water temperature. Id. Both the Buttermilk and Libby Creek drainages contain federally endangered Upper Columbia River Spring-run Chinook, threatened Upper Columbia River steelhead, and threatened bull trout. Draft EA at 55-56. Buttermilk Creek is designated critical habitat for Spring Chinook, summer steelhead, and bull trout. Draft EA at 55. Libby Creek is designated critical habitat for

summer steelhead. Id. [27-34]

Concern: [Seq#202]

For these reasons, the Mission Restoration Project must not move forward. [ID#213]
Response: [Seq#202]

Thank you for your comments. Refer to the responses for comments 29-36, 37, 38, and 39 to address your concerns.

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to Buck EA, South Summit II, Light, and Annie which did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made.

Based on the effects analysis determined in the Preliminary EA, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where he proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct several hundred feet of hand fireline in an IRA and burn about 2 acres in the IRA to a more defensible burn boundary. This use will not substantially alter the IRA.

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and

Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands.

The Forest Service is not violating the Forest Plan and the things it was set up to protect. The Okanogan Forest Plan has been amended more than 58 times since it was written. This project is following the 2012 Planning Rule direction for amending a land management plan. A Plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for change, and should be used to keep plans current and help units adapt to new information or changing conditions. The responsible official has the discretion to determine whether and how to amend the plan and to determine the scope and scale of any amendment (refer to sections 219.13, Plan amendment and administrative changes of CFR 36 Part 219). [ID#213]

Associated Comments: [Seq#202]

For these reasons, the Mission Restoration Project must not move forward. [29-40]

Concern: [Seq#203]

We assume that loss of bitterbrush following prescribed fire in shrub-steppe is the primary concern about this treatment. Research has shown, however, that bitterbrush can re-sprout -perhaps as much as 25%.1 Cooler surface fire temperatures are particularly desirable for bitterbrush re-sprouting. [ID#214]

Response: [Seq#203]

Thank you for your comment.

We are concerned about several factors including the spread of invasive species, the effects on wildlife forage, and fire/fuels effects on rates of potential spread during a wildfire. Based on scoping comments we did include increased treatments in this habitat near private land that was not in the original project proposal. In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2014 and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time may not be ripe for additional treatments in this habitat within the next decade. That this potential treatment should be considered then when we can better assess the effects of such a treatment. [ID#214]

Associated Comments: [Seq#203]

We assume that loss of bitterbrush following prescribed fire in shrub-steppe is the primary concern about this treatment. Research has shown, however, that bitterbrush can resprout -perhaps as much as 25%.1 Cooler surface fire temperatures are particularly desirable for bitterbrush resprouting. [30-23]

Concern: [Seq#204]

Species management guidelines typically identify livestock as the number one impact on Sensitive plants. How is this being addressed in the EA? [ID#215]
Response: [Seq#204]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision. This plan provides for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. See the Botany Resources Report; *Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis in project files.* [ID#215]
Associated Comments: [Seq#204]
Sensitive plant impacts should be taken from species management guidelines, which typically identify livestock as a number one impact. [18-26]

Concern: [Seq#205]

Several high elevation plant species in this project area are likely to experience a trend toward uplisting due to climate change and associated impacts, including whitebark pine, Lyall's larch, snow Douglasia, Tweedy's willow, several species of moonwort (

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, that has been associated with high elevation seeps), and other sensitive plants.

Document likely trends in this EA so that they can be addressed when future funding becomes available. [ID#216]

Response: [Seq#205]

This report is only required to analyze the effects to species on the Region 6 Regional Forester and OR/WA State Director Special Status Species List and the 2003 Survey and Manage List.

Effects to whitebark pine is addressed in the **Considered But Not Analyzed In Detail** section of the Botany Resources Report.

Analyzing trends of high elevation plant species that are not being affected by project activities, is outside the scope of this analysis.

[ID#216]

Associated Comments: [Seq#205]

Several high elevation plant species in this project area are likely to experience a trend toward uplisting due to climate change and associated impacts, including whitebark pine, Lyall's larch, snow Douglasia, Tweedy's willow, several species of moonwort (Botrychium spp. including B. ascendens, that has been associated with high elevation seeps), and other sensitive plants. We encourage you to document likely trends in the EA while the opportunity is available, so that we have an opportunity to address them when future funding becomes available. [18-83]

Concern: [Seq#206]

As we stated in our June 1, 2016, letter regarding scoping, we believe that thoughtful, landscape-scale ecosystem restoration, with goals and methods based on best available science, should be a high priority for the Okanogan-Wenatchee National Forest. We continue to support the concept of a comprehensive plan to address several issues and needs at the landscape scale, and we continue to support the purpose and need of the Mission Project insofar as it is directed at restoring and maintaining ecosystem function over time. [ID#217]

Response: [Seq#206]

Thank you for your comment. The Forest Service believes that the Mission Restoration Project will help to create a strong community and protect the natural environmental and rural character of Okanogan County. The Forest Service believes that this project is a thoughtful, landscape-scale ecosystem restoration project, with goals and methods based on best available science. [ID#217]

Associated Comments: [Seq#206]

Thank you for the opportunity to comment on the Draft Environmental Assessment for the proposed

Mission Restoration Project on the Methow Valley Ranger District. The mission of the Methow Valley Citizens Council (MVCC) is to raise a strong community voice for protection of the Methow Valley's natural environmental and rural character. As we stated in our June 1, 2016, letter regarding scoping for the proposed Mission Project, we believe that thoughtful, landscape-scale ecosystem restoration, with goals and methods based on best available science, should be a high priority for the Okanogan-Wenatchee National Forest. We continue to support the concept of a comprehensive plan to address several issues and needs at the landscape scale, and we continue to support the purpose and need of the Mission Project insofar as it is directed at restoring and maintaining ecosystem function over time. [30-26]

Concern: [Seq#207]

I speak to you from my heart, to keep the wild alive and well in our valley and on our earth. I believe that all perspectives are needed at this table and I hope that they will all be truly valued and considered with an open mind. As human beings let's accept that we cannot control everything and see that our attempts too often fail. Let's be humble rather than full of hubris. Within the realm of the wild is a rich complexity of interconnected biodiversity. No one is in charge because we all own the public lands and have a voice. We must work together to come to the best conclusions before taking action. [ID#218]

Response: [Seq#207]

Thank you for your thoughtful comment. [ID#218]

Associated Comments: [Seq#207]

I speak to you, the USFS, from my heart, to keep the wild alive and well in our valley and on our earth. I believe that all perspectives are needed at this table and I hope that they will all be truly valued and considered with an open mind. It is a dangerous view to wear the blinders that see the earth only as a thing to domesticate for the benefit of humans disregarding harm and suffering for the rest of the creatures, lands and waters. As human beings let's accept that we cannot control everything and see that our attempts too often fail. Let's be humble rather than full of hubris. Within the realm of the wild is a rich complexity of interconnected biodiversity. Broken, it comes unravelled and us with it. To trade in the wild for a "working landscape" the heart and soul is squeezed out of the land. But it doesn't have to be all or nothing. I would have us do less, live lighter on the earth, leave a smaller human footprint and be deeply thoughtful when making changes. No one is in charge because we all own the public lands and have a voice. We must work together to come to the best conclusions before taking action. [48-1]

I speak to you, the USFS, from my heart, to keep the wild alive and well in our valley and on our earth. I believe that all perspectives are needed at this table and I hope that they will all be truly valued and considered with an open mind. It is a dangerous view to wear the blinders that see the earth only as a thing to domesticate for the benefit of humans disregarding harm and suffering for the rest of the creatures, lands and waters. As human beings let's accept that we cannot control everything and see that our attempts too often fail. Let's be humble rather than full of hubris. Within the realm of the wild is a rich complexity of interconnected biodiversity. Broken, it comes unravelled and us with it. To trade

in the wild for a "working landscape" the heart and soul is squeezed out of the land. But it doesn't have to be all or nothing. I would have us do less, live lighter on the earth, leave a smaller human footprint and be deeply thoughtful when making changes. No one is in charge because we all own the public lands and have a voice. We must work together to come to the best conclusions before taking action. [51-1]

Concern: [Seq#208]

As human beings we cannot improve upon the earth's natural systems. The past is gone, and only by keen observation will you see the graceful unfolding of what will be. I only hope, for all of our sakes-human, mammal, fish, bird, plant-life and this habitat which holds us all-that we humans can together, the USFS and the landowners of these watersheds alike, differentiate between an unprecedented experiment designed in a computer lab the true brilliance and longevity of our planet earth. [ID#219]

Response: [Seq#208]

Thank you for your thoughtful comment. The Forest Service tries to manage the land for multiple uses for all residents of Okanogan County, the State of Washington, and of the United States. [ID#219]

Associated Comments: [Seq#208]

As human beings we cannot improve upon the earth's natural systems. You cannot go to the forest as if it were a restaurant and order up your favorite time period. The past is gone, and only by keen observation will you see the graceful unfolding of what will be. I only hope, for all of our sakes-human, mammal, fish, bird, plant-life and this habitat which holds us all-that we humans can together: the USFS and the landowners of these watersheds alike, differentiate between an unprecedented experiment designed in a computer lab by fallible human beings and the true brilliance and longevity of our planet earth. Let's not be the first ill-advised casualties under the Mission Restoration proposal only to set this erroneous precedent for more watersheds. [48-24]

As human beings we cannot improve upon the earth's natural systems. You cannot go to the forest as if it were a restaurant and order up your favorite time period. The past is gone, and only by keen observation will you see the graceful unfolding of what will be. I only hope, for all of our sakes-human, mammal, fish, bird, plant-life and this habitat which holds us all-that we humans can together: the USFS and the landowners of these watersheds alike, differentiate between an unprecedented experiment designed in a computer lab by fallible human beings and the true brilliance and longevity of our planet earth. Let's not be the first ill-advised casualties under the Mission Restoration proposal only to set this erroneous precedent for more watersheds. [51-59]

Concern: [Seq#209]

My confidence in the USFS's managements abilities is called into question due to the cows and the logging and the fire suppression. The stewardship of the forest is an awesome responsibility that must be carried out with the highest ethics and skill to be of the most benefit to the forest and to the most people. [ID#220]
Response: [Seq#209]

Thank you for your comment. The stewardship of the forest is a responsibility that the Forest Service carries out with the highest ethics and skill to be of the most benefit to the forest and to the most people. [ID#220]
Associated Comments: [Seq#209]
My confidence in the USFS's managements abilities is called into question due to the cows and the logging and the fire suppression. The stewardship of the forest is an awesome responsibility that must be carried out with the highest ethics and skill to be of the most benefit to the forest and to the most people. [51-24]

Concern: [Seq#210]

As for those who would take the whole world To tinker as they see fit, I observe that they never succeed: For the world is a sacred vessel Not made to be altered by man. The tinker will spoil it; Usurpers will lose it. (Lao -Tzu, 6th century BC) [ID#221]
Response: [Seq#210]

Thank you for your quote. [ID#221]
Associated Comments: [Seq#210]
As for those who would take the whole world To tinker as they see fit, I observe that they never succeed: For the world is a sacred vessel Not made to be altered by man. The tinker will spoil it; Usurpers will lose it. (Lao -Tzu, 6th century BC) [51-60]

Concern: [Seq#211]

We have chosen to live in this valley surrounded by forest. That makes each homeowner responsible for making their properties fire-defensible. No firefighter should lose their life to defend a property that isn't fire-wised sufficiently. Life is more precious than property. [ID#222]
Response: [Seq#211]

Thank you for your comment. Each homeowner needs to incorporate measures in their construction and maintenance of their lands to make their properties more fire-defensible. [ID#222]
Associated Comments: [Seq#211]
We have chosen to live in this valley surrounded by forest. That makes each homeowner responsible for making their properties fire-defensible. No firefighter should lose their life to defend a property that isn't fire-wised sufficiently. Life is more precious than property. [51-34]

Concern: [Seq#212]

I welcome the opportunity to submit a second set of comments to the above identified EA. I appreciate your recognition of problems with the notification and timing of the earlier comment period. The opportunity to read the excellent comments of others allows me to submit my support for many of their observations. The present comments are meant to supplement not to replace my earlier comments. The previous comments were directed at specific statements in the Preliminary EA. The following comments are more directed at the substance of the proposed Mission Restoration Project, the EA, and their development. [ID#223]
Response: [Seq#212]

Thank you for your comments. [ID#223]
Associated Comments: [Seq#212]
I welcome the opportunity to submit a second set of comments to the above identified EA. I appreciate your recognition of problems with the notification and timing of the earlier comment period. The opportunity to read the excellent comments of others allows me to submit my support for many of their observations. The present comments are meant to supplement not to replace my earlier comments. The previous comments were directed at specific statements in the Preliminary EA. The following comments are more directed at the substance of the proposed Mission Restoration Project, the EA, and their development. [63-1]

Concern: [Seq#213]

* The more man manages the more he has to manage. [ID#224]
Response: [Seq#213]

Thank you for your thought. [ID#224]
Associated Comments: [Seq#213]
* The more man manages the more he has to manage. [67-2]

Concern: [Seq#214]

When the spirit and awesome beauty have been eradicated by people that don't value these things but are just looking to deliver the goods for cash, who will want to drive over the mountains to contribute to the Methow's economy? And how will we, the land holders, feel living with the devastation? What will we tell our children? [ID#225]

Response: [Seq#214]

Thank you for your comment. This project is not believed to eliminate the spirit or destroy the awesome beauty of the project area. Most proposed commercial timber harvest treatments are thinning from below so a timber canopy will remain after treatment. Fuel treatments are designed to potentially reduced the number of trees killed from future wildfires.

Some of the benchmarks of the Okanogan economy compared to the U.S. as a whole:

Population grew by 5.0% versus 14.5% for the U.S.;

Employment grew by 8.9% versus 17.1% for the U.S.

Average earnings/job is $39,377 versus $58,372 for the U.S.

Percent of Personal Income in non-labor 49.2% versus 36.8% for the U.S.

Percent of government jobs 21.2% for Okanogan County versus 12.5% for the U.S.

[ID#225]

Associated Comments: [Seq#214]

When the spirit and awesome beauty have been eradicated by people that don't value these things but are just looking to deliver the goods for cash, who will want to drive over the mountains to contribute to the Methow's economy? And how will we, the landholders, feel living with the devastation? What will we tell our children? [67-15]

Concern: [Seq#215]

I am a believer in prescribed burning as one mitigation for the excessive fire prevention that has occurred over the past decades. From what I have read, it is clear that many who have more scientific training and background than I do have already commented upon this plan. I commend the Forest Service for an attempt to mitigate for management policies over the past decade that have contributed to a less resilient ecosystem in part of the Methow Valley Ranger District. [ID#226]

Response: [Seq#215]

Thank you for your comments. Our observations during the 2014 and 2015 wildfires seasons has been that treatments similar to those proposed in this project have modified fire behavior. An example of that is along Okanogan County Road 3785 on the Tonasket Ranger District in the vicinity of Lyman Lake during the North Star Fire and in other locations in the Methow Valley during the 2014 fires. [ID#226]

Associated Comments: [Seq#215]

I am a resident of the Methow Valley and own property on the Gold Creek drainage, adjacent to Libby Creek. I worked in fire prevention for the forest service and began prescribed burning in the early 80's on the crews. I am a believer in prescribed burning as one mitigation for the excessive fire prevention that has occurred over the past decades. From what I have read, it is clear that many who have more scientific training and background than I do have already commented upon this plan. My own comment evolves from training in biology and fire, observations of many wildfires as a fire lookout, and simply as an observant resident of the area for over 40 years. I commend the Forest Service for an attempt to mitigate for management policies over the past decade that have contributed to a less resilient ecosystem in part of the Methow Valley Ranger District. [70-1]

Concern: [Seq#216]

I sent the attached letter to the Methow Valley News for publication. The letter outlines why I am in full support of the Mission Forest Restoration Project. In my opinion, the vast majority of the folks living and visiting in this valley support the project. Unfortunately, there is organized, very vocal opposition by the people who live in one o fthe watersheds, who do not want to deal with timber trucks in "their" Forest. [ID#228]

Response: [Seq#216]

Thank you for your comments on this project. This project may generate 1,950 - 2,250 log truck loads of logs based on the currently estimated total volume of about 9MMBF. [ID#228]

Associated Comments: [Seq#216]

I sent the attached letter to the Methow Valley News for publication. The letter outlines why I am in full support of the Mission Forest Restoration Project. In my opinion, the vast majority of the folks living and visiting in this valley support the project. Unfortunately, there is organized, very vocal opposition by the people who live in one o fthe watersheds, who do not want to deal with timber trucks in "their" Forest. [75-1]

Concern: [Seq#217]

There will soon be more important battles to wage over the future of our forests than fighting a relatively benign timber/restoration project in a segment of our forest designated for timber management and protection against wildfires. My fear is that shutting down worthy projects like the

Mission Project will cause a severe over-reaction from our current Administration, which wants to limit regulation and increase land use such as mining and larger-scale timber harvesting on public lands. [ID#229]

Response: [Seq#217]

Thank you for your comment in the newspaper. [ID#229]

Associated Comments: [Seq#217]

In my opinion, there will soon be more important battles to wage over the future of our forests than fighting a relatively benign timber/restoration project in a segment of our forest designated for timber management and protection against wildfires (Wildland Urban Interface). My fear is that shutting down worthy projects like the Mission Project will cause a severe over-reaction from our current Administration, which wants to limit regulation and increase land use such as mining and larger-scale timber harvesting on public lands. Please send a letter in support of the Mission Project to Michael Williams, Forest Supervisor, c/o Meg Trebon, Methow Valley Ranger District, 24 West Chewuch Road, Winthrop, WA 98862. [75-5]

Concern: [Seq#218]

Over the past 100 years or so, management practices conducted in the Forest by land management agencies, including the US Forest Service, have created a situation where much of our Forest is over-stocked with small diameter trees. The combination of unhealthy forests and climate change has recently caused several massive wildfire events in the Methow Valley. I was a recent casualty as my home burned completely to the ground during the Carlton Complex Fire in 2014. [ID#230]

Response: [Seq#218]

Thank you for your comment. We are sorry about the loss of your home. The Forest Service through understory thinning in certain locations is trying to change over-stocked stands with small diameter trees. According to the insurance industry, fires before the current management of fires; the largest fires were larger than fires of today. [ID#230]

Associated Comments: [Seq#218]

I am writing to voice my support for the Mission Forest Restoration Project. Over the past 100 years or so, management practices conducted in the Forest by land management agencies, including the US Forest Service, have created a situation where much of our Forest is over-stocked with small diameter trees. The combination of unhealthy forests and climate change has recently caused several massive wildfire events in the Methow Valley. I was a recent casualty as my home burned completely to the ground during the Carlton Complex Fire in 2014. [76-1]

Concern: [Seq#219]

The Eastern Washington ecosystem is a fire-dependent ecosystem. Long before there was logging, fire prevention, or any significant alteration of the ecosystem by the white man, ships that sailed off the coast of Washington regularly guided themselves in by the enormous columns of huge fires burning within the interior of the Pacific Northwest. So rather than prevention of the natural and biologically essential phenomenon of wildfire, we need to be learning how to live with wildfire rather than merely preventing it. [ID#231]

Response: [Seq#219]

Thank you for your comment. Much of the Eastern Washington ecosystem is fire-dependent from frequent low-intensity wildfires. Some statistics from the insurance industry support your comment that fires before current fire management, over 100 years ago, may have been larger in size than current fires. [ID#231]

Associated Comments: [Seq#219]

HISTORY It is a well-known fact of science that the eastern Washington ecosystem is a fire-dependent ecosystem. It is a well-known fact of history that long before there was logging, fire prevention, or any significant alteration of the ecosystem by the white man, ships that sailed off the coast of Washington regularly guided themselves in by the enormous columns of huge fires burning within the interior of the Pacific Northwest. So rather than prevention of the natural and biologically essential phenomenon of wildfire, we need to be learning how to live with wildfire rather than merely preventing it. As I read, I am not clear that this is the purpose of this EA. [70-4]

Concern: [Seq#220]

In June of last year, PBI submitted comments on the scoping document for this project. As we stated in those comments, we generally support the concept of the Mission Restoration Project as it addresses a number of legacy management issues and ecological needs at the landscape scale long neglected in management of this area. [ID#232]

Response: [Seq#220]

Thank you for your comments. Forest Service staff met with Pacific Biodiversity Institute (PBI) representatives on July 11, 2016 to discuss the intent and specifics of there alternative. This is documented in an Alternative considered but Eliminated in Section 2.1 on page 27 of the Preliminary EA. [ID#232]

Associated Comments: [Seq#220]

These comments are being submitted in response to the release of the Draft Environmental Assessment (EA) at the end of January of this year. In June of last year, PBI submitted comments on the scoping document for this same project. As we stated in those comments, we generally support the concept of the Mission Restoration Project as it addresses a number of legacy management issues and ecological

needs at the landscape scale long neglected in management of this area. [78-1]

Concern: [Seq#221]

For the record, we offered up our vision of how the P&N's should be ordered in descending order of importance, as shown below. · Reduce Wildfire Hazards near Homes and Private Property · Maintain Habitat and Refugia for Wildlife · Maintain and Improve Hydrologic Function and Aquatic Habitat · Reduce the Environmental Impact of the Transportation System · Protect Sensitive Plants and Unique Habitats · Maintain Vegetative Community Diversity, Composition and Structure · Maintain and Restore Soil Productivity [ID#233]

Response: [Seq#221]

Thank you for your comment. The Forest Service listed in Section 1.3, Purpose and Need, the needs that were discovered that influenced the purposes of this project on pages 12 - 14 of the EA. These were not listed in a particular order. [ID#233]

Associated Comments: [Seq#221]

For the record, we offered up our vision of how the P&N's should be ordered in descending order of importance, as shown below. · Reduce Wildfire Hazards near Homes and Private Property · Maintain Habitat and Refugia for Wildlife · Maintain and Improve Hydrologic Function and Aquatic Habitat · Reduce the Environmental Impact of the Transportation System · Protect Sensitive Plants and Unique Habitats · Maintain Vegetative Community Diversity, Composition and Structure · Maintain and Restore Soil Productivity [78-8]

Concern: [Seq#222]

However, none of the prioritized goals we stated in our scoping comments and list above will be clearly met by the proposed action in the Mission Project. [ID#234]

Response: [Seq#222]

Thank you for your comments. Based on our July 2016 meeting to better understand your proposed alternative, we fully considered your proposed alternative in Section 2.1.1. This alternative was to limit the amount and pace of restoration treatments; increasing the amount of non-commercial thinning and/or prescribed fire in the WUI and the shrub-steppe environment in Libby Creek, etc. The Interdisciplinary Team reviewed and discussed the results of that meeting. The IDT modified the thinning and prescribed fire proposed in Alternatives 2 and 3 by adding 125 acres of additional treatments in the WUI, where feasible. Reasons other elements of the PBI alternative was eliminated in displayed in Section 2.1.1. [ID#234]

Associated Comments: [Seq#222]
However, none of the prioritized goals we stated in our scoping comments and list above will be clearly met by the proposed action in the Mission Project. [78-9]

Concern: [Seq#223]

I have included statements from the EA with page numbers followed by my comments in brackets. Those comments should be taken in to consideration and questions dealt with before the final draft and finding to support an Alternative Selection or a refusal to move on with an essential Environmental Impact Statement. [ID#235]
Response: [Seq#223]

Thank you for referencing the specific section of the document that you are commenting on. All comments received during designated comment periods are being reviewed and responded to between the preliminary and final Environmental Assessment. All comments received during scoping are also being reviewed with many responded either in project records or in CARA. The Interdisciplinary Team is believed to have spend over a 1000 hours reviewed and responding to comments on this project. [ID#235]
Associated Comments: [Seq#223]
I have included statements from the EA with page numbers followed by my comments in brackets. Those comments should be taken in to consideration and questions dealt with before the final draft and finding to support an Alternative Selection or a refusal to move on with an essential Environmental Impact Statement. [11-1]

Concern: [Seq#224]

I am completely opposed to amendments being made to the Forest Plan's Standards and Guidelines for the Mission Restoration Project. Undue adverse impacts occur when wildlife foraging and winter thermal cover and habitat are encroached upon; the aquatic ecosystem is threatened with high sediment counts and survival of ESA listed salmonids are placed in jeopardy. No amendments should be made without prioritizing health and safety of people and wildlife over economic gain. [ID#236]
Response: [Seq#224]

Thank you for your comment. Refer to Section 2.3, Forest Plan Amendments. The objective of the one remaining amendment is related to survival of deer through the winter, and forest health. Winter harvest could occur on about 5% (557 acres) of deer winter range. Winter harvest is proposed in five drainages. It is likely that only one area would be operational at any time. Adjacent undisturbed areas

are available for animals to use. Previous experience in the area has demonstrated that deer may not be displaced from an area. Previous research has indicated that forage is generally more important than winter thermal cover. If the deer enter the winter season health, they tend to have better survival rates.

One method to protect sensitive soils from compaction, rutting, displacement or other disturbances is to operate during the winter when the ground is frozen and snow-covered. To implement winter operations would require snowplowing of portions of Forest Road 43 and allowing motorized access on area roads to proposed winter harvest units. Plowing on Forest Road 43 could preclude snowmobiling on portions of different roads for up to 3 seasons. Groomed snowmobile routes are available in adjacent locations to provide continued opportunities for this activity. Winter harvest could occur on 5% (557 acres) of deer winter range. Winter harvest is proposed in four drainages. It is likely that only one area would be operational at any time. Adjacent undisturbed areas are available for animals to use. Previous experience in the area has demonstrated that deer may not be displaced from an area during harvest. [ID#236]

Associated Comments: [Seq#224]

I am completely opposed to amendments being made to the Forest Plan's Standards and Guidelines for the Mission Restoration Project. That these guidelines are being proposed to be amended until the project is complete in 2033 is unconscionable. Undue adverse impacts occur when wildlife foraging and winter thermal cover and habitat are encroached upon; the aquatic ecosystem is threatened with high sediment counts and survival of ESA listed salmonids are placed in jeopardy;...No amendments should be made without prioritizing health and safety of people and wildlife over economic gain. [48-11]

Concern: [Seq#225]

This NCWFHC was disproportionally representative of individuals and organizations concerned with commercial profits from forest use. The affected publics were kept unaware of developing plans and had no role in their development. Potentially inappropriate, or illegal, collaborative involvement The project appears to have been initiated by the NCWFHC, or through its offices (for example, I attended a NCWFHC meeting where District Ranger Michael Liu asked the collaborative to draft a purpose and need statement). The involvement of the NCWFHC, in effect privatizing portions of the planning and implementation of management activity on federal lands, should be carefully scrutinized. Among other things, the NCWFHC aims to greatly streamline the environmental review process for large projects like the MRP, and to facilitate the commercial extraction of resources from public lands, neither of which may be in the public interest. [ID#237]

Response: [Seq#225]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and

Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands. [ID#237]

Associated Comments: [Seq#225]

1.5.2 North Central Washington Forest Health Collaborative Involvement (NCWFHC) Prior to initiation of the Mission Restoration NEPA analysis, the NCWFHC partnered with the Methow Valley Ranger District during its early assessment phase.(p.20) [This NCWFHC was disproportionally representative of individuals and organizations concerned with commercial profits from forest use. The affected publics were kept unaware of developing plans and had no role in their development.] [11-15]

In my comments on the MPSN I asked for transparency and information on the role of the North Central Washington Forest Health Collaborative in this decision making process. It is unacceptable to me that there are individuals in the Collaborative who have made an impact on decision making about this project and have a vested interested in a certain outcome (money from timber sales). Individuals with something to gain from one outcome over another cannot be objective in their recommendations for forest management. [29-28]

The project has been set up by those with personal gains from timber sales. [29-37]

Potentially inappropriate, or illegal, collaborative involvement The project appears to have been initiated by the NCWFHC, or through its offices (for example, I attended a NCWFHC meeting where District Ranger Michael Liu asked the collaborative to draft a purpose and need statement). The involvement of the NCWFHC, in effect privatizing portions of the planning and implementation of management activity on federal lands, should be carefully scrutinized. Among other things, the NCWFHC aims to greatly streamline the environmental review process for large projects like the MRP, and to facilitate the commercial extraction of resources from public lands, neither of which may be in the public interest. [49-3]

Chris Frue, a Libby Creek resident, has expressed concern that the project appears to have been initiated by a number of individuals with potentially conflicting financial interests meeting with District Ranger Michael Liu who had requested the formation of the collaborative to draft a purpose and need statement. The involvement of the NCWFHC appears to have privatized portions of the planning and implementation of a management activity on federal lands. The NCWFHC has urged the Forest to shorten the environmental review process for large projects like the MRP, and to facilitate the commercial extraction of resources from public lands, neither of which is in the public interest. [63-15]

having received the MRP from the North Central Washington Forest Health Collaborative which was composed of an unlikely enough group of organizations-a Chairman who had been employed for 20 years by one of the timber companies also on the collaborative; "conservation" groups-which may have betrayed their original principals for reason of expedience and 2 timber companies [67-44]

Concern: [Seq#226]

The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concern most cited in scoping comments-- that the commercial timber harvest should be reconsidered [ID#238]
Response: [Seq#226]

Both meetings were held as public information meetings where resource specialists from the District tried to address specific request questions. They were not meetings to take public comments but to address specific resource concerns. Staff at both meetings tried to answer specific resource related questions asked of them and not at the meeting to debate members of the public. [ID#238]
Associated Comments: [Seq#226]
The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concern most cited in scoping comments-- that the commercial timber harvest should be reconsidered. [69-25]

Concern: [Seq#227]

Several assertions made by opponents of the Mission Forest Restoration Project in an article published in the Methow Valley News are, misleading and deserve a response. The first assertion states that "commercial logging is the essential core of the Mission Restoration Project." While a total of 1,952 acres of commercial thinning are proposed in the 50,200 acre project area, many more treatments are also proposed, including 8,304 acres of non-commercial thinning, 10,968 acres of prescribed fire, 468 acres of soil restoration, 23 culvert replacements, woody debris stream enhancement, beaver habitat enhancement, and the closing/decommissioning of many miles of roads. The project is far more than just a commercial timber sale and will greatly benefit the ecosystems for a large number of wildlife species. [ID#239]
Response: [Seq#227]

Commercial timber management is proposed on about 4% of the planning area. Fuels treatment is proposed on about 22% of the planning area. As stated there is many projects to improve aquatic habitat also included in the project. If this project was just timber harvest, the harvest prescriptions would be much different so that a greater portion of the volume would be removed. On most silvicultural prescriptions, about 75% of the commercial timber volume is being left on site. [ID#239]
Associated Comments: [Seq#227]
Several assertions made by opponents of the Mission Forest Restoration Project in an article published in the MV News on 03-08-17 are, in my opinion, misleading and deserve a response. The first assertion, made by Chris Frue, states that "commercial logging is the essential core of the Mission Restoration

Project." While a total of 1,952 acres of commercial thinning are proposed in the 50,200 acre project area, many more treatments are also proposed, including 8,304 acres of non-commercial thinning, 10,968 acres of prescribed fire, 468 acres of soil restoration, 23 culvert replacements, woody debris stream enhancement, beaver habitat enhancement, and the closing/decommissioning of many miles of roads. The project is far more than just a commercial timber sale and, in my opinion, will greatly benefit the ecosystems for a large number of wildlife species. [75-2]

Concern: [Seq#228]

According to the adaptive management cycle the four steps are: plan/act/monitor/and evaluate. I see the plan, though I question its merit; the actions are yet to be taken but there are no visible means by which to pay for the monitoring and evaluation. I object to proceeding without all four steps in place. Anything less would be simply muddling through which is not a scientific manner in which to move forward. Experimenting on 50,400 acres is irresponsible. [ID#240]

Response: [Seq#228]

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management. Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010 with many of these still available on-line. [ID#240]

Associated Comments: [Seq#228]

Explain how this plan comports with the "adaptive management" requirement of the guidance document [9-2]

Speaking of monitoring-are there funds set aside to monitor the entire project and do follow up? If not it is not appropriate to plunge in. [48-17]

According to the adaptive management cycle the four steps are: plan/act/monitor/and evaluate. I see the plan, though I question its merit; the actions are yet to be taken but there are no visible means by which to pay for the monitoring and evaluation. I object to proceeding without all four steps in place. Anything less would be simply muddling through which is not a scientific manner in which to move forward. Experimenting on 50,400 acres is irresponsible. [51-58]

MVCC stated that another of their most significant concerns was the "Need for a fully-funded monitoring and adaptive management plan consistent with the Forest Restoration Strategy". The comments of Donna Bresnahan (LCWA) elaborates on this need: "According to the Forest Service Manual, Ecological Restoration and Resilience, a restoration project must include adaptive management. See Principles #4: "Adaptive management, monitoring, and evaluation are essential to ecological restoration." The EA fails to convey how this project follows adaptive management. It fails to explain how monitoring and evaluation would actually happen. [63-90]

Adaptive Ecosystem Management Adaptive Ecosystem Management, according to the Okanogan-Wenatchee National Forest Restoration Strategy 2012, guides the USFS at several levels. Adaptive management, "involves a coordinated relationship between initial planning, monitoring, evaluation, and adjustment." [Dean Apostol, Restoring the Pacific Northwest, p. 24] "…the Wenatchee National Forest Late Successional Reserve Assessment includes a chapter (Chapter IX) on monitoring and adaptive management and states, "There is a direct relationship between monitoring and the ability to carry out adaptive management. Information gained by monitoring should help to validate the appropriateness of management actions and provide insights into course corrections should they be needed". [Okanogan-Wenatchee National Forest Restoration Strategy 2012, p. 59]. "Monitoring should be conducted more frequently early in the restoration process. In the early years, frequent monitoring allows identification and rectification of problems before they become unmanageable…The absolute frequency and intensity of the monitoring program needed for each restored ecosystem differ and should be developed early in the restoration planning process so that adequate resources are allocated to this part of the restoration project." [D. Polster, et. al, Restoring the Pacific Northwest, p. 386.] Yet, in spite of such recommendations, the EA does not identify or specify how it plans to monitor, evaluate, or adjust/adapt even as the USFS policy directs that these be implemented in order to ensure ecological restoration. In addition, the ways in which funding for such intensive monitoring will be obtained are not disclosed, though the reality that the agency is cash-strapped for such activities has been made public by the FS in public meetings on multiple occasions. This further undermines, and provides evidence of, the inability of the agency to adhere to the adaptive management guidelines as appropriate and mandated. [65-11]

and an adaptive management plan is aligned with the Forest Restoration Strategy. [67-38]

Adaptive management is based on monitoring that is sufficiently sensitive to detect relevant ecological changes. In addition, the success of adaptive management depends on the accuracy and credibility of information obtained through inventories and monitoring. [68-8]

Adaptive management, monitoring, and evaluation are essential to ecological restoration." [68-16]

Monitoring/Adaptive Management The monitoring proposed for the MRP is implementation monitoring; no planned, funded evaluation of whether the project is meeting it's goals or having unplanned impacts is planned. Modifying the project based on its effectiveness (or lack thereof), and it's undesired impacts, is not proposed. Adaptive management, a stated goal of the OWNF, is not being meaningfully implemented in this project. [69-15]

The Draft EA provides essentially no provision for development and implementation of an integrated monitoring program, nor any component for using an adaptive ecosystem management approach, as required by OWNF restoration strategy document (2010). See quote below: A monitoring plan should be drafted by the FRS Team, other OWNF employees, and collaborators as soon as possible. It should address implementation, effectiveness, and validation monitoring. A monitoring plans should include: (1) refinement and specification of qualitative objectives; (2) use of consistent, harmonized and available methods; and (3) clear priorities for obtaining data at relevant scales. [78-11]

As we pointed out in our initial scoping comments, it is incumbent upon this EA to reflect a robust program of adaptive ecosystem management by describing how the proposed actions will change key resource components, how those changes will be monitored over time, and what future actions will change as a result of insights gained from the monitoring of outcomes. The draft EA does not fulfill this expectation. [78-12]

Concern: [Seq#229]

The continued practice of permitting grazing allotments on USFS-managed lands represents another example wherein the so-called best available science, utilized by the Forest Service in justifying and continuing certain established practices, is merely a selective science which ignores significant contributing factors to climate change. In consort with landscape-scale mechanized logging and its myriad disruptive practices, there is nothing restorative about this proposal. It is crucial for the USFS, once and for all, to acknowledge, analyze, and disseminate the true impact of cattle grazing on public lands. For to do otherwise, casts suspicion that there is favoritism to the cattle ranchers and specifically in the area in the Methow Valley under consideration (which in the Libby-Buttermilk watersheds basically consists of two families). That this oversight can actually contribute to environmental degradation, climate change, and promote the introduction of exotic plants (which can be more fire-prone than native plants), demonstrates a bias toward the interest of cattle ranchers over the general public.

"It is becoming clear that meat and dairy products are the foods carrying the greatest environmental burden, accounting for approximately half of food-generated GHG emissions (European Commission, 2006; Jan Kramer et al., 1999) and indeed 18% of global GHG emissions (FAO, 2006). However, global consumption of livestock products is growing. Demand for meat and milk is set to double (FAO, 2006) by 2050." [p.491 in Livestock-related greenhouse gas emissions: impacts and options for policy makers, Tara Garnett, Ph.D., Food Climate Research Network, Centre for Environmental Strategy University of Surrey, UK in: Environmental Science & Policy 12 (2009) 491-503.]

"The implications are serious. A global temperature rise of 2 degrees C above pre-industrial levels, delivers the probability of 'dangerous climate change' (Schellnhuber et al., 2006). To keep below this potentially dangerous tipping point, global GHG emissions need to be reduced by at least 50% and as much as 85% on year 2000 levels (IPCC, 2007)."

"…when land is overgrazed the combination of vegetative loss and soil trampling can lead to soil carbon losses and the release of CO2 (Abril and Bucher, 2001; Abril et al., 2005). Overgrazing is a significant concern in the developing world and it has been estimated that 20% of land globally is degraded-up to 73% in drylands (FAO, 2006)." [ibid.,p. 496]

"…manure emits N2O and CH4 as it breaks down in the soil. Manure-derived emissions contribute to more than 5% of total anthropogenic GHG emissions, with N2O the main culprit."(FAO, 2006) [ibid., p.497] [ID#241]

Response: [Seq#229]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed in the Draft Preliminary EA Range section 3.10 (Chapter 3) and in Appendix D (Design Criteria). Draft EA Chapter 1, Figure 5. Mission Restoration Project Issues, Page 24. [ID#241]

Associated Comments: [Seq#229]

The continued practice of permitting grazing allotments on USFS-managed lands represents another example wherein the so-called best available science, utilized by the Forest Service in justifying and continuing certain established practices, is merely a selective science which ignores significant

contributing factors to climate change. In consort with landscape-scale mechanized logging and its myriad disruptive practices, there is nothing restorative about this proposal. It is crucial for the USFS, once and for all, to acknowledge, analyze, and disseminate the true impact of cattle grazing on public lands. For to do otherwise, casts suspicion that there is favoritism to the cattle ranchers and specifically in the area in the Methow Valley under consideration (which in the Libby-Buttermilk watersheds basically consists of two families). That this oversight can actually contribute to environmental degradation, climate change, and promote the introduction of exotic plants (which can be more fire-prone than native plants), demonstrates a bias toward the interest of cattle ranchers over the general public. "It is becoming clear that meat and dairy products are the foods carrying the greatest environmental burden, accounting for approximately half of food-generated GHG emissions (European Commission, 2006; Jan Kramer et al., 1999) and indeed 18% of global GHG emissions (FAO, 2006). However, global consumption of livestock products is growing. Demand for meat and milk is set to double (FAO, 2006) by 2050." [p.491 in Livestock-related greenhouse gas emissions: impacts and options for policy makers, Tara Garnett, Ph.D., Food Climate Research Network, Centre for Environmental Strategy University of Surrey, UK in: Environmental Science & Policy 12 (2009) 491-503.] "The implications are serious. A global temperature rise of 2 degrees C above pre-industrial levels, delivers the probability of 'dangerous climate change' (Schellnhuber et al., 2006). To keep below this potentially dangerous tipping point, global GHG emissions need to be reduced by at least 50% and as much as 85% on year 2000 levels (IPCC, 2007)." "…when land is overgrazed the combination of vegetative loss and soil trampling can lead to soil carbon losses and the release of CO2 (Abril and Bucher, 2001; Abril et al., 2005). Overgrazing is a significant concern in the developing world and it has been estimated that 20% of land globally is degraded-up to 73% in drylands (FAO, 2006)." [ibid.,p. 496] "…manure emits N2O and CH4 as it breaks down in the soil. Manure-derived emissions contribute to more than 5% of total anthropogenic GHG emissions, with N2O the main culprit."(FAO, 2006) [ibid., p.497] [65-12]

Concern: [Seq#230]

In your Mission Restoration Project Summary: Draft Environmental Assessment (Feb. 2017), you have voiced that you are not going to revisit previous decisions such as cattle grazing. As unwanted and uncomfortable as this topic may be, and with precedents dating back to the white settlement of the region, this is an area of significant concern and is highly relevant to the conversation. To omit it is to proceed with blinders while maintaining historical and misguided practices of commercial exploitation upon our public lands. Any valid Environmental Assessment or Environmental Impact Statement would surely take livestock grazing into account, for it plays a very significant role in forest degradation, fire frequency, and fire severity [ID#242]

Response: [Seq#230]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a

comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed through annual meetings with the permittee(s). Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. (Draft EA Chapter 1, Figure 5. Mission Restoration Project Issues, Page 24) Any impacts from treatments proposed by this project on current range management practices are discussed in Section 3.10, Range (Chapter 3) and in Appendix D (Design Features, Best Management Practices, Mitigation, Monitoring). [ID#242]

Associated Comments: [Seq#230]

In your Mission Restoration Project Summary: Draft Environmental Assessment (Feb. 2017), you have voiced that you are not going to revisit previous decisions such as cattle grazing. As unwanted and uncomfortable as this topic may be, and with precedents dating back to the white settlement of the region, this is an area of significant concern and is highly relevant to the conversation. To omit it is to proceed with blinders while maintaining historical and misguided practices of commercial exploitation upon our public lands. Any valid Environmental Assessment or Environmental Impact Statement would surely take livestock grazing into account, for it plays a very significant role in forest degradation, fire frequency, and fire severity. [47-9]

Concern: [Seq#231]

This letter is the same as letter 47. [ID#243]

Response: [Seq#231]

Since this letter is the same as letter 47, comments are addressed from that letter only. [ID#243]

Associated Comments: [Seq#231]

Comments on the proposed Mission Restoration Project/Preliminary Environmental Assessment and Forest Plan Amendments Okanogan-Wenatchee National Forests, Methow Valley Ranger District [50-1]

Concern: [Seq#232]

This letter is a duplicate from Donna Pema Bresnahan.

. [ID#244]

Response: [Seq#232]

Since this letter is a duplicate from Donna Pema Bresnahan and that letter is addressed elsewhere. [ID#244]

Associated Comments: [Seq#232]

Due to confusion about the notice publication date and when the 30 day comment period ends, I am sending these comments today, March 1. I had intended to include more references and would have sent this tomorrow, but I am now scrambling to get this submitted in case the March 2 deadline given to me by the ID team leader is incorrect. [43-1]

Concern: [Seq#233]

I would prefer to be motivated by the truth and the valley's best interests rather than by fear. We need to have more transparent discussion before this project is instituted. [ID#247]
Response: [Seq#233]

This project was originally initiated in 2012, before the fires of 2014 and 2015. The Forest Service has made an effort to include the local residents, community, Okanogan County, and the State of Washington in discussions about this project. We have also received comments from out of state organizations. Thank you for your comment. [ID#247]
Associated Comments: [Seq#233]
I would prefer to be motivated by the truth and the valley's best interests rather than by fear. We need to have more transparent discussion before this project is instituted. [51-27]

Concern: [Seq#234]

I am nagged by an underlying perception that much of the impetus behind this project may be a premature response to the intense wildfires we have just experienced in the past several years and as perhaps a hastily done analysis of the true consequences of this project in order to demonstrate to the public that the USFS is responding to the recent and tragic fire situation and to take advantage of timing that minimizes objections because recent tragedies are fresh in the memories of the public. [ID#248]
Response: [Seq#234]

Thank you for your comment. The Forest Service started working on this project in 2012, before the wildfires of 2014 and 2015. Many of the technics proposed to be used in this project have been used on other, similar projects for a number of years on the North Zone of the Okanogan-Wenatchee National Forest and on other Districts on the Forest. Much of the vegetation management portion of this project is somewhat based on the work that was completed for the Eastside Interior Columbia Basin Ecosystem Management Project Draft Environment Impact Statement which started more than 20 years ago, and the associated reports completed in 1993 and 1994. [ID#248]
Associated Comments: [Seq#234]
However, in reviewing what I have had time to review, I am nagged by an underlying perception that

much of the impetus behind this project may be a premature response to the intense wildfires we have just experienced in the past several years and a perhaps hastily done analysis of the true consequences of this project in order to demonstrate to the public that the USFS is responding to the recent and tragic fire situation and to take advantage of timing that minimizes objections because recent tragedies are fresh in the memories of the public. [70-3]

Concern: [Seq#235]

I would like to point out the following: After some delay, the Preliminary EA was finally released on February 1st, 2017. Then, a week later, the USFS hosted a public meeting about the project in Twisp WA. The deadline for submitting comments comes a mere 22 days after that meeting. The document, as you're aware, is hundreds of pages long and no suitable summary is provided, which could potentially render the document more user-friendly, especially in view of the compressed time period for public comment. On top of that, the current snowy conditions prevent survey/research trips to the vast majority of the areas under consideration. Now, as I revise my comments (March 1, 2017) there has again surfaced confusing and contradictory information coming from the MVRD and the ID Team lead about the actual deadline. Is it March 1, is it March 2, is there a new 30-day period which commences…when??? Since I have yet to see any official written documentation/clarification from the USFS/MVRD regarding a possible change, I will submit my comments tonight. If there is a new comment period, I will likely submit further comments. [ID#249]

Response: [Seq#235]

A second opportunity to comment was provided so between the two comment periods individuals had most of the months of February and March to provide their comments. A Summary is a document that is required to be provided in an EIS and not in an EA. Figure 10, starting on page 35, provides a Comparison of the Alternatives by Resource Indicator which is somewhat of a summary of actions proposed in the EA in one location. The Appendices to the document also acts as a summary of proposed treatments included Appendix A, Proposed Thinning and Prescribed Fire Treatments; Appendix B, Transportation Definition and Proposed Changes; Appendix C, Proposed Soils, Road, Stream, and Beaver Habitat Treatments; Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring; Appendix F, Project Maps; and Appendix G, Regulatory Framework.

The public meeting was held soon after release of the EA to give individuals a short period to look at the EA and time to ask questions about the project from Forest Service employees and to prepare comments on the document before comments were due. [ID#249]

Associated Comments: [Seq#235]

I welcome the opportunity to respond to the above identified EA. Before I do so, however, I would like to point out the following: After some delay, the Preliminary EA was finally released on February 1st, 2017. Then, a week later, the USFS hosted a public meeting about the project in Twisp WA. The deadline for submitting comments comes a mere 22 days after that meeting. The document, as you're aware, is hundreds of pages long and no suitable summary is provided, which could potentially render the

document more user-friendly, especially in view of the compressed time period for public comment. On top of that, the current snowy conditions prevent survey/research trips to the vast majority of the areas under consideration. Now, as I revise my comments (March 1, 2017) there has again surfaced confusing and contradictory information coming from the MVRD and the ID Team lead about the actual deadline. Is it March 1, is it March 2, is there a new 30-day period which commences…when??? Since I have yet to see any official written documentation/clarification from the USFS/MVRD regarding a possible change, I will submit my comments tonight. If there is a new comment period, I will likely submit further comments. [47-1]

Concern: [Seq#236]

I object to the proposal of logging trucks on Libby Creek and Black Pine Lake Roads for safety reasons. First, there has already been one life lost on Libby Creek due to a logging truck accident. Black Pine is steep, narrow, rutted and has washed out and been closed in recent years. How would locals and tourists be safe with logging trucks barreling down on them? [ID#250]

Response: [Seq#236]

The Forest Service has no control on use of County Roads by logging trucks. Main Forest Service roads will be posted to indicate logging traffic on them when harvest operations are taking place. Feeder Forest roads will be either posted or closed to public traffic during times when harvest operations are taking place. When winter logging and hauling operations are taking place, the portion of Forest Road 43 that is seeing this traffic is proposed to be closed to public access. Most roads on the proposed haul route will either receive maintenance or reconstruction; a minimum of blading is gravel surfaced. [ID#250]

Associated Comments: [Seq#236]

I object to the proposal of logging trucks on Libby Creek and Black Pine Lake Roads for safety reasons. First, there has already been one life lost on Libby Creek due to a logging truck accident. Black Pine is steep, narrow, rutted and has washed out and been closed in recent years. How would locals and tourists be safe with logging trucks barreling down on them? [51-49]

Concern: [Seq#237]

"The No Action Alternative (Alternative 1) would continue to have long-term, adverse, moderate Impacts on soil erosion and mass wasting in the project area, and there would continue to be long-term, adverse, major impacts on soil compaction in the identified areas. Alternative 1 would continue the long-term, beneficial, impacts on soil organic matter, coarse woody debris and nutrient cycling found throughout the project area. (p.94)" This conclusion continues to be based on the projected absence of any Forest corrective management action without a commercial logging project, although recognizing

the beneficial effects of doing nothing. [ID#251]
Response: [Seq#237]

The statement copied from the EA talks abut the beneficial effects on soil organic matter and nutrient cycling from allowing standing trees to shed needles and fine branches and the decomposition of those and dead wood over time. It is also talking about the erosion and mass wasting potential following a severe fire would be major and the adverse effects from past activities on 14 units and that the No Action alternative would do nothing to reduce the long-term legacy compaction found in the project area. The comment is not directly related to commercial logging on this project but to the completion of reclamation projects that are separate from the commercial vegetation and fuels treatments. [ID#251]
Associated Comments: [Seq#237]
3.4.4.2 Alternative 1 The No Action Alternative (Alternative 1) would continue to have long-term, adverse, moderate Impacts on soil erosion and mass wasting in the project area, and there would continue to be long-term, adverse, major impacts on soil compaction in the identified areas. Alternative 1 would continue the long-term, beneficial, impacts on soil organic matter, coarse woody debris and nutrient cycling found throughout the project area. (p.94) [This conclusion continues to be based on the projected absence of any Forest corrective management action without a commercial logging project, although recognizing the beneficial effects of doing nothing.] [11-64]

Concern: [Seq#238]

2.1.4 No Forest Plan Amendments Required The IDT considered this alternative but decided to not fully develop it because many of the objectives of the project would be compromised to the point of being not implementable or ineffective in order to attain complete compliance with the Forest Plan. These amendments along with reasonable design criteria, best management practices, mitigation, and monitoring, allow for implementing the action alternatives with no significant impacts to wildlife, aquatics, or recreation.(p.28) The Forest Plan allows no degradation of habitat and associated values. This project as planned cannot proceed within existing Forest Plan restrictions (i.e., see Mission Aquatics Assessment Support Project FINAL REPORT, January 2016). [ID#252]
Response: [Seq#238]

In the final Environmental Assessment, only one proposed Forest Plan amendments is proposed to reduce deer winter range in Management Areas 14 and 26 to below Forest Plan Standards and Guidelines.

Since the Forest Plan was written, studies have found that winter thermal cover is not as critical as forage quality and quantity for winter survival of deer. Studies offer strong evidence that the influence of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence to deer. There is a tradeoff between providing dense forest cover and providing improved forage resources, Dense forest cover is needed where security is low or where snow accumulations are factors limiting animal performance. This project would increase forage on more than 2,000 acres of

winter range, and move habitat conditions closer to historical characteristics that developed under natural disturbance regimes.

Removing ladder fuels and thinning stands from below would decrease crown fire potential and move fire effects towards more characteristic disturbance regimes. [ID#252]

Associated Comments: [Seq#238]

2.1.4 No Forest Plan Amendments Required The IDT considered this alternative but decided to not fully develop it because many of the objectives of the project would be compromised to the point of being not implementable or ineffective in order to attain complete compliance with the Forest Plan. These amendments along with reasonable design criteria, best management practices, mitigation, and monitoring, allow for implementing the action alternatives with no significant impacts to wildlife, aquatics, or recreation.(p.28) [The Forest Plan allows no degradation of habitat and associated values. This project as planned cannot proceed within existing Forest Plan restrictions (i.e., see Mission Aquatics Assessment Support Project FINAL REPORT, January 2016).] [11-28]

Concern: [Seq#239]

In the Management Direction Section of the EA, p. 14, it would be appropriate to refer to the restoration strategy that is current direction for this Forest. Instead, the EA uses 1989 Forest Plan maps that predate the roadless area revision, the restoration strategy, the merger with the Wenatchee National Forest and the Northwest Forest Plan (EA Figure 4). [ID#253]

Response: [Seq#239]

The restoration strategy is Forest Service guidance, some best management practices and was developed without NEPA compliance. The Forest Plan is management direction that we are required to follow, unless amended. There has been no roadless area boundary revision since RARE I and RARE II, and the Forest Plan was written. When Forest Plan revision was being considered, there were some proposals for changes to Inventoried Roadless Areas but none of these were implemented. Management Direction in the EA considers direction from the Northwest Forest Plan. The joining of the Forests has not changed any management direction on this portion of the Forest. The implementing of PAFISH in February 1995, amended the Forest Plan by implementing Interim Strategies for Managing Anadromous Fish-producing Watershed. [ID#253]

Associated Comments: [Seq#239]

In the Management Direction Section of the EA, p. 14, it would be appropriate to refer to the restoration strategy that is current direction for this Forest. Instead, the EA uses 1989 Forest Plan maps that predate the roadless area revision, the restoration strategy, the merger with the Wenatchee National Forest and the Northwest Forest Plan (EA Figure 4). [18-49]

Concern: [Seq#240]

This letter has been combined with letter 72 since they are similar. [ID#254]
Response: [Seq#240]

This letter has been combined with letter 72 into one letter which will be responded to under letter 72. [ID#254]
Associated Comments: [Seq#240]
Hello, attached are comments on the Mission Restoration Project draft Environmental Assessment, on behalf of WildLands Defense, Alliance for the Wild [36-1]

Concern: [Seq#241]

The project appears to have been initiated by the NCWFHC, or through its offices (for example, I attended a NCWFHC meeting where District Ranger Michael Liu asked the collaborative to draft a purpose and need statement). The involvement of the NCWFHC, in effect privatizing portions of the planning and implementation of management activity on federal lands, should be carefully scrutinized. Among other things, the NCWFHC aims to greatly streamline the environmental review process for large projects like the MRP, and to facilitate the commercial extraction of resources from public lands, neither of which may be in the public interest. [ID#255]
Response: [Seq#241]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative. The collaborative is not privatizing portions of the planning and implementation of management activity on federal lands. One of the collaborative's goals is increase the pace of restoration. This same goal is held by the Forest Service and the Washington Department of Natural Resources. [ID#255]
Associated Comments: [Seq#241]
Potentially inappropriate, or illegal, collaborative involvement The project appears to have been initiated by the NCWFHC, or through its offices (for example, I attended a NCWFHC meeting where District Ranger Michael Liu asked the collaborative to draft a purpose and need statement). The involvement of the NCWFHC, in effect privatizing portions of the planning and implementation of

management activity on federal lands, should be carefully scrutinized. Among other things, the NCWFHC aims to greatly streamline the environmental review process for large projects like the MRP, and to facilitate the commercial extraction of resources from public lands, neither of which may be in the public interest. [69-5]

Concern: [Seq#242]

I appreciate the opportunity to provide comments on the draft Mission Restoration Project Environmental Assessment (EA), on behalf of WildLands Defense, Alliance for the Wild Rockies (AWR), Conservation Congress and the Upper Columbia Group of the Sierra Club. [ID#256]
Response: [Seq#242]

Thank you for your comments. [ID#256]
Associated Comments: [Seq#242]
I appreciate the opportunity to provide comments on the draft Mission Restoration Project Environmental Assessment (EA), on behalf of WildLands Defense, Alliance for the Wild Rockies (AWR), Conservation Congress and the Upper Columbia Group of the Sierra Club. [72-1]

Concern: [Seq#243]

We commend the Forest Service (FS) for proposing to decommission 33.6 miles of miles of road (56.2 miles with Alternative 3). However, even Alternative 3 (emphasis to "Increase scale of aquatic/hydrologic restoration") is still too skewed toward "restoring" vegetation conditions rather than healing an overly roaded landscape. But we begin by identifying scientific support for minimizing the road system. [ID#257]
Response: [Seq#243]

Thank you for your comment. The project area is allocated for multiple use. Most uses require some level of roads. See Section 3.8, Transportation for background information on the amount of roads in the project area. currently all Management Areas are below Forest Plan Standards and Guidelines for road density by substantial amounts and will remain there during project activities.. [ID#257]
Associated Comments: [Seq#243]
We commend the Forest Service (FS) for proposing to decommission 33.6 miles of miles of road (56.2 miles with Alternative 3). However, even Alternative 3 (emphasis to "Increase scale of aquatic/hydrologic restoration") is still too skewed toward "restoring" vegetation conditions rather than healing an overly roaded landscape. But we begin by identifying scientific support for minimizing the road system. [72-2]

Concern: [Seq#244]

The release of the of the over 400 page Mission Restoration Project EA, with a 30 day window for the public to comment on it, by its size and approach makes intelligent public review of its findings difficult or impossible for those not being paid professionally to do so. There is no executive summary to simplify the process of understanding its salient points, or clearly laid out time line for its execution. The EA is being released at a time when the project area is covered with snow and field verification of its findings difficult within the 30 day response time. [ID#258]

Response: [Seq#244]

The law only allows a 30 day comment period for an Environmental Assessment. A second opportunity to comment was provided so between the two comment periods individuals had most of the months of February and March to provide their comments. A Summary is a document that is required to be provided in an EIS and not in an EA. Figure 10, starting on page 35, provides a Comparison of the Alternatives by Resource Indicator which is a summary of actions proposed in the EA in one location. Also the Appendices provide a summary of proposed activities.

A public meeting was held soon after release of the EA to give individuals a short period to look at the EA and time to ask questions about the project from Forest Service employees and to prepare comments on the document before they were due. [ID#258]

Associated Comments: [Seq#244]

The release of the of the over 400 page Mission Restoration Project (hereafter referred to as the "MRP") EA, with a 30 day window for the public to comment on it, by its size and approach makes intelligent public review of its findings difficult or impossible for those not being paid professionally to do so. There is no executive summary to simplify the process of understanding its salient points, or clearly laid out time line for its execution (is there a timeline included at all? I did not see it). The EA is being released at a time when the project area is covered with snow and field verification of its findings difficult within the 30 day response time. [49-1]

Document/time frame limitations The release of the of the over 400 page Mission Restoration Project (hereafter referred to as the "MRP") EA, with a 30 day window for the public to comment on it, by its size and approach makes intelligent public review of its findings difficult or impossible for those not being paid professionally to do so. There is no executive summary to simplify the process of understanding its salient points, or clearly laid out time line for its execution (is there a timeline included at all? I did not see it). The EA is being released at a time when the project area is covered with snow and field verification of its findings difficult within the 30 day response time. [69-3]

Concern: [Seq#245]

Treatments in shrub-steppe were eliminated from consideration because it would increase the potential for the spread of invasive plants. Won't proposed treatments in forested acres also increase the potential for the spread of invasive plants?

[ID#259]
Response: [Seq#245]

Conditions within forested and shrub steppe habitats are different; shrub steppe communities have more sun exposure, are hotter and drier than forested habitats and may have more bare ground available. These conditions are more favorable to the spread and establishment of invasive and weedy plants, such as knapweed. Post-treatment canopies in forested areas will still provide degrees of shade to the understory, which can provide enough cover to out compete invasive and weedy plants. Furthermore, the residual post-treatment understory vegetation in forest areas will provide more competion for invasive plants than that of a shrub-steppe environment. Post prescribed fire treatments in shrub steppe would leave more bare ground where invasive plants could establish.

In addition, project activities within forested habitats that could lead to the potential for invasive plant spread and establishment are mitigated by winter logging, operating over slash mats during summer logging and small-scale post-disturbance seeding. Mitigations for the potential spread and establishment of invasive plants in shrub-steppe, where prescribed burning is the treatments, may involve broad scale seeding. This mitigation on a broad scale treatment of burning in shrub steppe may not be as effective in mitigating for invasive plants or cheatgrass.

[ID#259]
Associated Comments: [Seq#245]
The Draft EA states that treatments in the shrub-steppe were eliminated from consideration because they would increase the potential for spread of invasive plants. We are puzzled by this reasoning, since the proposed treatment of the 10,000+ forested acres, across both watersheds, will also increase the potential for spread of invasive plants. [30-21]

Concern: [Seq#246]

Figure 5 shows that West Fork Buttermilk Creek has what appears to be an overabundance of large patches of monotonous Young Forest Multistory vegetation (YFM; lime green and light green). In order to test whether this structural class was indeed overly abundant, the structure classes and aerial view of the West Fork Buttermilk road system was re- evaluated with aerial images (Figure 6).

Figure 6. Aerial view of vegetation of West Fork Buttermilk Creek (satellite image). (1) overstory removal open conifer; (2) overstory removal open conifer grass understory; (3) Old growth Douglas fir; (4) Partial cut old growth DF; (5) old growth DF, partial cutting; (6) old growth DF with small sub fir on ridgeline; (7) aspen- DF mix; (8) Aspen stand; (9) LOSS(?) without significant spruce budworm; (10) mt sagebrush meadow aspen complex; (11) LOSS? or SECC with significant spruce budworm; (12) mountain sagebrush meadow in draw; (13) old growth DF; (14) PSME/CARU grassland; (15) old growth DF.

Figure 6 demonstrates that the YFM structural class is considerably fragmented, and in addition, some of the connecting forests are thin corridors that are functionally unconnected, in contrast with the EMDS results in Figure 5. In addition, the two largest stands of YFM are in the final stages of significant spruce budworm event, that is fragmenting both stands into different structural types.

Remotely sensed data, even when done by trained photo- interpreters, is a good way of getting rapid assessments and laying broad plans, but there should be on- the ground final validation before management begins.

[comment end]

[ID#260]
Response: [Seq#246]

The smallest sized shape of like forest structure and species composition (patch) that can be addressed and analyzed at the watershed level, using EMDS, is 10 acres in size. The examples provided by the commenter show that the commenter is concerned about the correct classification of multiple patches smaller than 10 acres. When limited to 10 acres as a minimum patch then the photo-interpreter needs to apply the predominant classification to a recognizable pattern of heterogeneity. The final EA will provide more detail regarding patch classification.

The commenter uses an acronym "LOSS" or Late and Old Single Story structure that pertains to a different stand structure classification system (Regional Foresters Amendment #2) that applies to forest not under the Pacific Northwest Plan. The definition of LOSS for forestland under the Okanogan National Forest LRMP is 8 trees or more per acre of trees 21 inches DBH or larger for areas 3 acres or larger. That is distinct from Old Forest (OF) that was used in the analysis in the Interior "Columbia Basin Ecosystem Management Project Draft EIS" (May 1997), which is the basis for departure analysis in EMDS, which is loosely defined as a patch that has 30 percent or more of canopy cover made up of trees greater than or equal to 25 inches DBH. The final EA will include definitions of each of the forest structure types.
[ID#260]
Associated Comments: [Seq#246]
Figure 5 shows that West Fork Buttermilk Creek has what appear to be an overabundance of large patches of monotonous Y oung Forest Multistory vegetation (YFM; lime green and light green). In order to test whether this structural class was indeed overly abundant, the structure classes and aerial view of

the West Fork Buttermilk road system was re- evaluated with aerial images (Figure 6). Figure 5. EMDS map of West Fork Buttermilk Creek showing apparent large patches of YFM vegetation. Figure 6. Aerial view of vegetation of West Fork Buttermilk Creek (satellite image). (1) overstory removal open conifer; (2) overstory removal open conifer grass understory; (3) Old growth Douglas fir; (4) Partial cut old growth DF; (5) old growth DF, partial cutting; (6) old growth DF with small sub fir on ridgeline; (7) aspen- DF mix; (8) Aspen stand; (9) LOSS(?) without significant spruce budworm; (10) mt sagebrush meadow aspen complex; (11) LOSS? or SECC with significant spruce budworm; (12) mountain sagebrush meadow in draw; (13) old growth DF; (14) PSME/CARU grassland; (15) old growth DF. Figure 6 demonstrates that the YFM structural class is considerably fragmented, and in addition, some of the connecting forests are thin corridors that are functionally unconnected, in contrast with the EMDS results in Figure 5. In addition, the two largest stands of YFM are in the final stages of significant spruce budworm event, that is fragmenting both stands into different structural types. Remotely sensed data, even when done by trained photo- interpreters, is a good way of getting rapid assessments and laying broad plans, but there should be on- the ground final validation before management begins. [18-86]

Concern: [Seq#247]

The EA states the current decline in ecosystem health and resilience is partially caused by past vegetation management practices, including logging. Explain how the currently proposed timber harvest will have a different effect. [ID#261]

Response: [Seq#247]

Logging practices in the past focused on removing large diameter timber and left trees that were incapable of responding to release and would not meet current management objectives for the area. Often times diseased and damaged understory trees were left on the landscape instead of being removed. Fire suppression was also a type of management that led to departures in fuel levels on the landscape.

Under current regulations and the use of the best management practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events as well as set the stage for future prescribed fire. There is no other way to achieve that result that is as safe, responsible and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103). [ID#261]

Associated Comments: [Seq#247]

The EA states the current decline in ecosystem health and resilience is partially caused by past vegetation management practices, including logging. Explain how the currently proposed timber harvest will have a different effect. [29-12]

Concern: [Seq#248]

This leads to a greater problem throughout the entire EA, which is an overall attitude of all or nothing. Taking care of forest ecology in this area does not require logging millions of board feet. You could still do necessary maintenance and correction of damage resulting from past or existing management decisions without logging. They do not have to go together. [ID#262]

Response: [Seq#248]

The effectiveness and duration of the effects of the vegetation management with timber harvest and without harvest on stand structure is shown on pages 123-127 of the Preliminary EA. The effectiveness and duration of the effect of the vegetation management with timber harvest and with harvest on Crown Fire Risk is found on page 155 of the Preliminary EA. To summarize the difference, reducing stocking in the overstory doubles the duration of the effect for many positive structural changes on the landscape,; actually decreases vulnerability ratings to dwarf mistletoe and Douglas-fir bark beetles; as well as doubles the duration of effect for risk to crown fire.

Of the 10,256 acre foot print of planned treatment only 1,952 acres would be treated with timber harvest activity; based on Preliminary EA. Without the ability to harvest, 1,952 acres of the most vulnerable and critical in stands in respect to WUI and infrastructure would be only partially treated. The effects of not treating the overstory is shown of pages 155 an 158 of the preliminary EA.

[ID#262]

Associated Comments: [Seq#248]

This leads to a greater problem throughout the entire EA, which is an overall attitude of all or nothing. Taking care of forest ecology in this area does not require logging millions of board feet. You could still do necessary maintenance and correction of damage resulting from past or existing management decisions without logging. They do not have to go together. [29-22]

Concern: [Seq#249]

No coherent explanation of the lack of integration of cattle grazing into the "interdisciplinary" analysis, or purpose and need statement, is offered. Grazing is a significant factor in forest health, and its negative impacts documented in depth.

[[ID#263]
Response: [Seq#249]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. (Draft EA Chapter 1, Figure 5. Mission Restoration Project Issues, Page 24) Any impacts from treatments proposed by this project on current range management practices are discussed in Section 3.10,Range of Chapter 3 and in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring. [ID#263]
Associated Comments: [Seq#249]
No coherent explanation of the lack of integration of cattle grazing into the "interdisciplinary" analysis, or purpose and need statement, is offered. Grazing is a significant factor in forest health, and its negative impacts documented in depth. [49-8]

Concern: [Seq#250]

Disturbing soil is like inviting non-native species to a birthday party.

All the activities that are within the scope of the MRP-50,200 acres-will disturb soil in one way or another. What is the plan to ameliorate this extensive anthropogenic predicament?

[[ID#264]
Response: [Seq#250]

Areas of heavily disturbed soils (including landings, main skid trails, decommissioned temporary roads, and constructed road cut and fill slopes) would be reseeded. The Rangeland Management Specialists, Invasive Plant Specialist, and Botany Specialist would determine the appropriate seed mix, application rates, locations and time of seeding to meet erosion control and invasive plant competition objectives. (Appendix D)

Native seed would be the first choice in revegetation in areas where the objective is to restore the site to the landscape setting, such as decommissioned roads. Non-native seed may be used to help prevent the establishment of invasive species, in permanently altered plant communities, and in situations where locally collected native seed is not available (USDA Forest Service 2005). Use of non-native seed should be considered an interim non-persistent measure designed to aid the re-establishment of native plants. (Appendix D)

The soil restoration treatments overlap with some dense diffuse knapweed populations, primarily in Chicamun and Ben Canyons. The dense populations are all in forest openings, typically associated with roadsides, with few to no knapweed plants in the forested understory. The dense patches are very obvious and all populations would be pretreated where present within soil restoration treatments areas. The plants would be treated prior to seed production and would greatly limit the potential of spread. It is not anticipated that the seeds in the soil seedbank would attach to the subsoiler. The seeds would slide past along with the soil. A negligible amount of soil would attach to the subsoiler. New germination created by the soil disturbance would be post treated. A short-term, negligible, adverse impact is expected. (EA Page 262 in Invasive Plant Species section 3.11) [ID#264]

Associated Comments: [Seq#250]

* Disturbing soil is like inviting non-native species to a birthday party. All the activities that are within the scope of the MRP-50,200 acres-will disturb soil in one way or another. What is the plan to ameliorate this extensive anthropogenic predicament? [67-27]

Concern: [Seq#251]

13. Soils - Project implementation would create an additional 220 acres of disturbed soils as well as 51 acres of bare soils. How will these impacts be mitigated and evaluated over time to ensure effectiveness of treatments to prevent the spread of exotic plant species? Figure 137 (p. 338) of Appendix C. list ~ 468 acres that will be treated with the subsoiler to break up compacted soils. [ID#265]

Response: [Seq#251]

Areas of heavily disturbed soils (including landings, main skid trails, decommissioned temporary roads, and constructed road cut and fill slopes) would be reseeded. The Rangeland Management Specialists, Invasive Plant Specialist, and Botany Specialist would determine the appropriate seed mix, application rates, locations and time of seeding to meet erosion control and invasive plant competition objectives. (Appendix D)

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anticipated that the seeds in the soil seedbank would attach to the subsoiler. The seeds would slide past along with the soil. A negligible amount of soil would attach to the subsoiler. New germination created by the soil disturbance would be post treated. A short-term, negligible, adverse impact is expected. (Draft EA Invasive Species section 3.11, page 262) [ID#265]

Associated Comments: [Seq#251]

13. Soils - Project implementation would create an additional 220 acres of disturbed soils as well as 51 acres of bare soils. How will these impacts be mitigated and evaluated over time to ensure effectiveness of treatments to prevent the spread of exotic plant species? Figure 137 (p. 338) of Appendix C. list ~ 468 acres that will be treated with the subsoiler to break up compacted soils. [78-38]

Concern: [Seq#252]

Continuing the forest degrading practices of cattle allotments, fire suppression and logging-the antithesis of restoring resiliency [ID#266]

Response: [Seq#252]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. (Draft EA Figure 5. Mission Restoration Project Issues. Page 24.) Any impacts from treatments proposed by this project on current range management practices are discussed in Section 3.10, Range, of Chapter 3 and in Appendix D (Design features, Best Management Practices, Mitigation, and Monitoring). [ID#266]

Associated Comments: [Seq#252]

continuing the forest degrading practices of cattle allotments, fire suppression and logging-the antithesis of restoring resiliency; [67-43]

Concern: [Seq#253]

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis Past Actions: Roads were constructed in conjunction with intensive logging activity that started in the 1950s and ended in the 1990s. The current grazing allotment boundaries were established in response to the

development of these roads and the transitory range created by timber harvest and opening of the canopy. This future action would help maintain a sustained yield of desirable forage plants and would reduce the spread of invasive plants from livestock grazing.

Noxious weed treatments would continue and would help to increase the amount of forage available to cattle

.

Noxious weed treatments would continue and would help to restore native plant communities in riparian areas.

Controlling weeds would allow the establishment and

sustainability of desirable plants

and reduce the potential of spread from livestock grazing. (p.248-249) [

Maintaining cattle grazing in these watersheds will continue their introduction and spread of invasive plants/weeds, especially in canyon bottoms and riparian zones

where they seek green forage and loaf. There will be a

continued use of toxic chemicals in those areas where flow of water will carry them to critical habitats of ESA-listed salmonids

. Repeated use of herbicides cannot be expected to "help to restore native plant communities

". "Restoration" of these watersheds should be focused on critical habitats for resident species not on increasing summer forage to fatten commercial cattle.

]

[[ID#267]
Response: [Seq#253]

This is an opinion. Despite the relatively large number of cattle that are brought in from areas outside the Mission Analysis Area, extensive weed surveys in recent years have not detected any of the weed species listed as Potential Invaders and most invasive populations are along roads, not in the general forest where cattle graze (Draft EA page 266). Areas of heavily disturbed soils would be seeded, including landings and main skid trails. This would reduce soil erosion potential and area for weeds to become established. The combination of design features to minimize ground disturbance during summer operations and optional winter logging over snow would greatly reduce soil disturbance and prevent spread or establishment of new weed populations (Draft EA page 261). Ongoing integrated weed management work would add to the design criteria to reduce the spread and new introductions of invasive plants within the project area (Draft EA page 267).

Prior to 2017, only the Buttermilk and Twisp river portion of the project area are covered under the 2000 Weed EA and no herbicide treatment was located within the Libby watershed. Bio control agents have been well established on diffuse knapweed in the Libby Creek area. (Draft EA page 257) The

Okanogan-Wenatchee NF Forest-wide Site-Specific Invasive Plant Treatment EIS is now being implemented (2017), which authorized the treatment of currently existing invasive species across the Okanogan-Wenatchee NF. Priorities for treatment and selection of treatment methods would be consistent with those described in the R6 2005 FEIS. (Draft EA page 266) All herbicide treatments would be conducted in strict accordance to the Oka-Wen EIS. Currently (2017) only manual treatments have been used in the Libby watershed. This Environmental Assessment does not authorize any noxious weed treatments. All treatments are being authorized under previously completed NEPA documents. [ID#267]

Associated Comments: [Seq#253]

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis Past Actions: Roads were constructed in conjunction with intensive logging activity that started in the 1950s and ended in the 1990s. The current grazing allotment boundaries were established in response to the development of these roads and the transitory range created by timber harvest and opening of the canopy. This future action would help maintain a sustained yield of desirable forage plants and would reduce the spread of invasive plants from livestock grazing. Noxious weed treatments would continue and would help to increase the amount of forage available to cattle. Noxious weed treatments would continue and would help to restore native plant communities in riparian areas. Controlling weeds would allow the establishment and sustainability of desirable plants and reduce the potential of spread from livestock grazing. (p.248-249) [Maintaining cattle grazing in these watersheds will continue their introduction and spread of invasive plants/weeds, especially in canyon bottoms and riparian zones where they seek green forage and loaf. There will be a continued use of toxic chemicals in those areas where flow of water will carry them to critical habitats of ESA-listed salmonids. Repeated use of herbicides cannot be expected to “help to restore native plant communities”. “Restoration” of these watersheds should be focused on critical habitats for resident species not on increasing summer forage to fatten commercial cattle.] [11-77]

Concern: [Seq#254]

We would support grass and herb seeding of bare ground if it uses 100% certified noxious weed-free native species.

[[ID#268]

Response: [Seq#254]

Native seed would be the first choice in revegetation in areas where the objective is to restore the site to the landscape setting, such as decommissioned roads. Non-native seed may be used to help prevent the establishment of invasive species, in permanently altered plant communities, and in situations where locally collected native seed is not available (USDA Forest Service 2005). Use of non-native seed should be considered an interim non-persistent measure designed to aid the re-establishment of native plants. (Appendix D) [ID#268]

Associated Comments: [Seq#254]
We would support grass and herb seeding of bare ground if it uses 100% certified noxious weed-free native species. [18-29]

Concern: [Seq#255]

Herbicides do not have an ethical place in forest management.

Herbicides are carcinogenic to humans. Chemicals placed on the earth find their way into the aquifer. Monsanto, the creator of glysophate, has gotten a lot of negative press lately. Their practice of hiring PhDs to sign research statements ghostwritten by Monsanto about safety of products is under investigation. [NY Times 3.14.17.] [ID#269]
Response: [Seq#255]

Opinion, This is outside the scope of the Mission Restoration project which does not authorized any noxious weed treatments. All noxious weed treatments will be done under previous NEPA decisions. [ID#269]
Associated Comments: [Seq#255]
* Herbicides do not have an ethical place in forest management. Herbicides are carcinogenic to humans. Chemicals placed on the earth find their way into the aquifer. Monsanto, the creator of glysophate, has gotten a lot of negative press lately. Their practice of hiring PhDs to sign research statements ghostwritten by Monsanto about safety of products is under investigation. [NY Times 3.14.17.] [67-28]

Concern: [Seq#256]

Noxious weeds species thrive in disturbed soils in this area. How will these treated areas be re-vegetated and monitored to limit the spread of invasive plants? The EA does not adequately address this adverse impact.

[[ID#270]
Response: [Seq#256]

Areas of heavily disturbed soils (including landings, main skid trails, decommissioned temporary roads, and constructed road cut and fill slopes) would be reseeded. The Rangeland Management Specialists,

Invasive Plant Specialist, and Botany Specialist would determine the appropriate seed mix, application rates, locations and time of seeding to meet erosion control and invasive plant competition objectives.

Native seed would be the first choice in revegetation in areas where the objective is to restore the site to the landscape setting, such as decommissioned roads. Non-native seed may be used to help prevent the establishment of invasive species, in permanently altered plant communities, and in situations where locally collected native seed is not available (USDA Forest Service 2005). Use of non-native seed should be considered an interim non-persistent measure designed to aid the re-establishment of native plants. (Appendix D) [ID#270]

Associated Comments: [Seq#256]

Noxious weeds species thrive in disturbed soils in this area. How will these treated areas be re-vegetated and monitored to limit the spread of invasive plants? The EA does not adequately address this adverse impact. [78-39]

Concern: [Seq#257]

Consider whether thinning will adversely impact livestock access to sensitive areas. [ID#271]

Response: [Seq#257]

Cattle access to aspen stands is discussed in the Range Section 3.10 on Draft EA page 242 and changes in openings or routes providing cattle access to riparian areas are discussed in the Range Section 3.10 on Draft EA pages 243-244. [ID#271]

Associated Comments: [Seq#257]

Consider whether thinning will adversely impact livestock access to sensitive areas. [18-23]

Concern: [Seq#258]

Management Direction Endangered Species Act, Clean Water Act, Clean Air Act, National Forest Management Act Executive Orders 11990 and 11988 (protection of wetlands and floodplains) The 1995 Twisp River Watershed Analysis, the 1995 Libby Creek Watershed Analysis, and the 1999 Lower Methow Watershed Analysis, which evaluated historical and current conditions and listed recommendations for further management actions. 1.4.3 Relationship to Other Plans and Policies (p.18) [The Revised Allotment Management Plan (Libby Creek) developed in 2008 called for a "Mission Project" commercial logging action to increase "transitional forage", which would allow permittee commercial livestock AUMs to increase to earlier allowed levels, should be considered here.] [ID#272]

Response: [Seq#258]

Neither the current Lookout Mountain AMP nor this project [Mission Restoration project] would provide for an increase in livestock numbers. There will not be an increase in AUMs (Animal Unit Months) permitted to graze. (EA page number: 242) [ID#272]

Associated Comments: [Seq#258]

1.4.1 Management Direction Endangered Species Act, Clean Water Act, Clean Air Act, National Forest Management Act Executive Orders 11990 and 11988 (protection of wetlands and floodplains) The 1995 Twisp River Watershed Analysis, the 1995 Libby Creek Watershed Analysis, and the 1999 Lower Methow Watershed Analysis, which evaluated historical and current conditions and listed recommendations for further management actions. 1.4.3 Relationship to Other Plans and Policies (p.18) [The Revised Allotment Management Plan (Libby Creek) developed in 2008 called for a “Mission Project” commercial logging action to increase “transitional forage”, which would allow permittee commercial livestock AUMs to increase to earlier allowed levels, should be considered here.] [11-5]

Concern: [Seq#259]

Eliminate and/or reduce grazing. Do not allow the project to create more grazing impacts. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but

there is no proposal to increase permitted numbers

on the grazing allotment within the project area. (p.24) [This Plan did not consider changes in conditions between 2011 and 2017, nor the planned cumulative impacts of logging activities on the 50,000 acre project area

. At this time

"there is no proposal to increase permitted numbers", however this was the original (2008) justification for a "Mission Project" and that impact on riparian and stream habitat should be considered. LLBNP SIR 2014 includes additional information on this allotment. There is r

ecognition that overgrazing in Elderberry could "adversely impact" downstream "critical habitat" of steelhead spawners. [ID#273]

Response: [Seq#259]

The impacts of livestock grazing on riparian and stream habitat relative to the Mission project is considered. Riparian monitoring has been conducted to quantify livestock impacts and is discussed under the heading, *Grazing allotment within the project area*. Also the impacts of the project on riparian and stream habitat are discussed under the heading, *Resource Indicator: Change in openings or routes providing cattle access to riparian areas.* In Environmental Consequences, EA pages 237, 243-245. [ID#273]

Associated Comments: [Seq#259]

Eliminate and/or reduce grazing. Do not allow the project to create more grazing impacts. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area. (p.24) [This Plan did not consider changes in conditions between 2011 and 2017, nor the planned cumulative impacts of logging activities on the 50,000 acre project area. At this time “there is no proposal to increase permitted numbers”, however this was the original (2008) justification for a “Mission Project” and that impact on riparian and stream habitat should be considered. LLBNP SIR 2014 includes additional information on this allotment. There is recognition that overgrazing in Elderberry could "adversely impact" downstream "critical habitat" of steelhead spawners. [11-22]

Concern: [Seq#260]

Beaver Habitat enhancement would include riparian fencing to keep cattle out of wet meadows while beavers establish themselves.(p.75) [The Mission pond and meadow have been fenced for about 10 years without nearby releases of beaver recolonizing the pond. The area continues to be disturbed by grazing commercial livestock.] [ID#274]

Response: [Seq#260]

End of season monitoring shows that there has been some cattle entry to Mission Pond and meadows, but impacts are very light. The cover photo is an example of conditions inside the Black Pine Beaver Pond exclosure where cattle have been excluded effectively for many years. Draft EA page number: 1 [ID#274]

Associated Comments: [Seq#260]

Beaver Habitat enhancement would include riparian fencing to keep cattle out of wet meadows while beavers establish themselves.(p.75) [The Mission pond and meadow have been fenced for about 10 years without nearby releases of beaver recolonizing the pond. The area continues to be disturbed by grazing commercial livestock.] [11-55]

Concern: [Seq#261]

3.1.1.2 Present and On-going Actions A portion of the Lookout Mountain grazing allotment is located within the project area. An Environmental Assessment and decision for the revision of the Allotment Management Plan (AMP) for this allotment was completed in 2011.(p.45) [The portion referred to is most (43,000 acres) of the project area. The results of impacts since 2011 must be considered together with on-going actions.

[ID#275]

Response: [Seq#261]

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237. [ID#275]

Associated Comments: [Seq#261]

3.1.1.2 Present and On-going Actions A portion of the Lookout Mountain grazing allotment is located within the project area. An Environmental Assessment and decision for the revision of the Allotment Management Plan (AMP) for this allotment was completed in 2011.(p.45) [The portion referred to is most (43,000 acres) of the project area. The results of impacts since 2011 must be considered together with on-going actions.] [11-37]

Concern: [Seq#262]

3.10 Range

The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project

Range Resource Report by L. D. McFetridge (2016) The resource elements, indicators, and measures used to analyze and compare potential effects of the Mission Restoration on range resources are shown in Figure 96. Forage Availability Understory Forage Production Acres of forest canopy opened, improved cattle distribution Key issue:

Proposed thinning treatments will effect cattle grazing.

Reduced Cattle Access to Transitory Range Miles of access lost Key Issue:

Proposed transportation changes will negatively affect range management access. Thinning treatments would open the canopy and create a long term increase in forage production

and soil disturbance caused by the thinning and soil treatment activities would create a short term reduction in forage.

The combination of opening the dense forest canopy and decommissioning roads leading to the riparian areas would change livestock access.

(pp.232-233) [This information confirms that actions planned under Alternatives 2 or 3 would increase forage for cattle.

The statement that transportation changes would negatively affect cattle access to that increased forage and riparian areas is unbelievable

. It suggests that cattle are not attracted to and will not walk to areas with green forage and water.]

[ID#276]

Response: [Seq#262]

The "Range management access" that would be negatively affected by proposed transportation changes is described on page 238 of the EA as "roads providing needed access by both the Forest Service and permittee to administer and manage the allotment". Nowhere in the Range section does it suggest that range management access is only in the context of livestock access. The combination of opening the dense forest canopy and decommissioning roads leading to the riparian areas would reduce livestock access to riparian areas. After road decommissioning, access on roads that previously provided routes to foraging areas through rough, steep, or densely forested terrain may be limited to the extent of making that forage unavailable. Affected Environment, Draft EA page number: 238 [ID#276]

Associated Comments: [Seq#262]

3.10 Range The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Range Resource Report by L. D. McFetridge (2016) The resource elements, indicators, and measures used to analyze and compare potential effects of the Mission Restoration on range resources are shown in Figure 96. Forage Availability Understory Forage Production Acres of forest canopy opened, improved cattle distribution Key issue: Proposed thinning treatments will effect cattle grazing. Reduced Cattle Access to Transitory Range Miles of access lost Key Issue: Proposed transportation changes will negatively affect range management access. Thinning treatments would open the canopy and create a long term increase in forage production and soil disturbance caused by the thinning and soil treatment activities would create a short term reduction in forage. The combination of opening the dense forest

canopy and decommissioning roads leading to the riparian areas would change livestock access.(pp.232-233) [This information confirms that actions planned under Alternatives 2 or 3 would increase forage for cattle. The statement that transportation changes would negatively affect cattle access to that increased forage and riparian areas is unbelievable. It suggests that cattle are not attracted to and will not walk to areas with green forage and water.] [11-74]

Concern: [Seq#263]

Resource Indicator: Forage Availability - Understory Forage Production

The primary forage type within A large portion of the Lookout Mountain grazing allotment is located within the Analysis Area. The allotment is transitory range (a temporary increase in available forage due to past timber harvest).

A large portion of the Lookout Mountain grazing allotment is located within the Analysis Area. The permitted use in the allotment is displayed in Figure 98.

The size of the allotment is 45,394 acres, for 230 cow/calf pairs, from 5/16 - 9/30, 1127 head months, and 1488 AUMs.

There are riparian areas on the Lookout Mountain allotment within the project area

where past management (prior to 2010) may have adversely affected ESA listed fish. There are several areas that did not meet Aquatic Conservation Strategy Objectives

(ACSO). The

current Allotment Management Plan (AMP) is designed to improve resource conditions

in these areas to eliminated impacts that retard or prevent attainment of the objectives. During summer

, livestock tend to be attracted to riparian zones

due to water availability; higher concentrations of nutritious, palatable forage; and, if trees or shrubs are part of the system, preferable thermal conditions (Leonard et al. 1997).

Cattle generally prefer grasses and forbs

to woody vegetation, at least when the herbaceous vegetation is green.(pp.233-237)

Actual use on Lookout Mtn allotment in 2016 was 698 head months.

2017 is still not quite settled out, but it will be 1036 hm or less. We did a production study in 2014 and dropped numbers from 1344 to 1036 hm. (Supplemental Information Report) [

The importance of "transitional forage", its temporary nature following timber harvest, and its attractiveness to cattle is confirmed.

These were the initial reasons for a Mission Project. It should be noted that the 50,000 acre planned project area just covers the 43,394 acre allotment area. The "restoration" concept, with a large commercial logging and thinning operation on about 10,000 acres, was initiated as an attractive inducement. The permitted grazing period is from 5/16 to 9/30, although cattle have often been reported by Libby Creek Watershed Association members to be on the area for months after that "leave" date. It should also be noted that the actual use is not included in the EA when the design of the current AMP is mentioned. The 2013 AMP called for "not to exceed" 1,774 AUMs. The actual use takes into consideration current conditions, but does not exclude the option to increase cattle numbers to the permitted use when additional "transitional forage" becomes available.

The EA indicates that the permit allows 1127 head months; however, the Supplemental Information Report indicates that in 2014 the AMP was reduced from 1344 to 1036 hm and actual use in 2016 to 698 hm

. This apparently reflects

a steady historical reduction in permitted cattle

within the planned project area. Cattle grazing permits were first issued for the Libby Creek watershed in 1912; between 1916 and 1924 600 cow/calf pair grazed from 4/16 to 11/15. Between 1927 and 1950 the season was reduced to 5/1 to 10/31 with 430 pair. From 1951 to 1962 there was further reduction to 5/16 to 10/15 with 318 pair. The allotment had 13 different permittees from 1941 to 1960; by 1976 there was only 1 permit. In 2016 there continued to be a single permittee. This history suggests the watershed was consistently overgrazed and lost its economic value for the production of beef

. The 2011 Draft EA for AMP Revision

included the following language: "Much of the lands within these allotments "are forested and do not provide a substantial amount of forage for livestock. The majority of forage is in old clear cuts, wildfires, south facing slopes, meadows, and along roads. Parameters such as gradient, valley form, geologic substrate, vegetative structure, and forage availability can greatly influence livestock movement, use patterns, and distribution." "The primary forage type within the allotment is transitory range (a temporary increase in available forage due to past timber harvest)." "The high elevation portions of the allotment are considered secondary range (range that livestock will not use until other areas are heavily utilized) due to dense timber stands, accessibility, distance to water, and/or steep slopes." "For this analysis, capable acres are those less than ½ mile from water, less than 60% tree canopy cover, and slope less than 60%. ---unsuitable areas are where fences have restricted cattle access and placement of cattle within these areas would likely result in cattle drift onto Federally listed fish habitat." "The two permits on the Libby allotment are to graze 84 pair from 5/16 to 9/30 in the Chicamun and Mission pastures and 83 pair during that period in the Smith and Alder pastures

."

"The cattle prefer the small pockets of forage in the canyon bottom which are "utilized to a level of 80% in an adjacent to loafing areas".

"In the Mission unit the canyon bottoms receive high use with the level of use decreasing rapidly away from the road.

Mission Pond has received high use and cattle trails are in the creek bottoms with browsed shrubs and bank trampling.

Two upland monitoring areas show a 40% level of use.""

"--water access and steep topography can result in virtually unavoidable concentration of animals."

"These infrequent hot spots occur in spite of Forest Service range managers and permittees effort to implement best management practices---.""

Fuel "treatments" are planned for the Little Bridge Creek and Mission units in the next few years to benefit cattle grazing by increasing "transitory" range and improving distribution. Prescribed burns enhance forage production

, but grazing rotation patterns may need to be adjusted to allow revegetation without grazing.

The Mission project also calls for commercial timber harvest and other timber "activities". "

Allotment lands contain designated critical habitat and federally endangered Chinook, threatened steelhead and bull trout. All occur in the Libby allotment and the proposed action, Alternative 2, creates the potential for direct effects to individual juvenile, subadult, and adult fish, as well as to eggs in the redds.

NMFS designated the lower mile of Libby Creek as steelhead critical habitat

. All three of these fishes are management indicator species for the Okanogan National Forest. The westslope cutthroat trout is a Forest Service Regionally Sensitive Species and another management indicator species found in Libby Creek."

"Fine sediment levels are high in the lower reaches of Libby Creek, on National Forest." Fine sediment levels are "functioning at risk" in Poorman Creek and Libby Creek."

"Restoration of degraded riparian ecosystems is of great importance for the recovery of declining and endangered stocks of Columbia River salmonids as well as riparian-obligate wildlife species." "After two years in the absence of livestock, significant increases in height, crown area, crown volume, stem diameter and biomass were measured both outside and inside of the exclosures." "Although light seasonal livestock grazing in some systems may be compatible with some objectives, complete protection during the first 5-10 years of recovery offers the greatest likelihood of successful restoration." (Case, R.L. And J.B. Kauffman. 1997. Wild ungulate influences on the recovery of willows, black cottonwood and thin-leaf alder following cessation of cattle grazing in Northeastern Oregon. Northwest Science 71(2): 115-126.]

[[ID#277]
Response: [Seq#263]

Neither the current Lookout Mountain AMP nor this project [Mission Restoration project] would provide for an increase in livestock numbers. There will not be an increase in AUMs (Animal Unit Months)

permitted to graze. Range section 3.10.4.3 Alternative 2 and 3, Draft EA page number 242. [ID#277]
Associated Comments: [Seq#263]
Resource Indicator: Forage Availability – Understory Forage Production The primary forage type within A large portion of the Lookout Mountain grazing allotment is located within the Analysis Area. The allotment is transitory range (a temporary increase in available forage due to past timber harvest). A large portion of the Lookout Mountain grazing allotment is located within the Analysis Area. The permitted use in the allotment is displayed in Figure 98. The size of the allotment is 45,394 acres, for 230 cow/calf pairs, from 5/16 - 9/30, 1127 head months, and 1488 AUMs. There are riparian areas on the Lookout Mountain allotment within the project area where past management (prior to 2010) may have adversely affected ESA listed fish. There are several areas that did not meet Aquatic Conservation Strategy Objectives (ACSO). The current Allotment Management Plan (AMP) is designed to improve resource conditions in these areas to eliminated impacts that retard or prevent attainment of the objectives. During summer, livestock tend to be attracted to riparian zones due to water availability; higher concentrations of nutritious, palatable forage; and, if trees or shrubs are part of the system, preferable thermal conditions (Leonard et al. 1997). Cattle generally prefer grasses and forbs to woody vegetation, at least when the herbaceous vegetation is green.(pp.233-237) Actual use on Lookout Mtn allotment in 2016 was 698 head months. 2017 is still not quite settled out, but it will be 1036 hm or less. We did a production study in 2014 and dropped numbers from 1344 to 1036 hm. (Supplemental Information Report, p. ?) [The importance of "transitional forage", its temporary nature following timber harvest, and its attractiveness to cattle is confirmed. These were the initial reasons for a Mission Project. It should be noted that the 50,000 acre planned project area just covers the 43,394 acre allotment area. The "restoration" concept, with a large commercial logging and thinning operation on about 10,000 acres, was initiated as an attractive inducement. The permitted grazing period is from 5/16 to 9/30, although cattle have often been reported by Libby Creek Watershed Association members to be on the area for months after that "leave" date. It should also be noted that the actual use is not included in the EA when the design of the current AMP is mentioned. The 2013 AMP called for "not to exceed" 1,774 AUMs. The actual use takes into consideration current conditions, but does not exclude the option to increase cattle numbers to the permitted use when additional "transitional forage" becomes available. The EA indicates that the permit allows 1127 head months; however, the Supplemental Information Report indicates that in 2014 the AMP was reduced from 1344 to 1036 hm and actual use in 2016 to 698 hm. This apparently reflects a steady historical reduction in permitted cattle within the planned project area. Cattle grazing permits were first issued for the Libby Creek watershed in 1912; between 1916 and 1924 600 cow/calf pair grazed from 4/16 to 11/15. Between 1927 and 1950 the season was reduced to 5/1 to 10/31 with 430 pair. From 1951 to 1962 there was further reduction to 5/16 to 10/15 with 318 pair. The allotment had 13 different permittees from 1941 to 1960; by 1976 there was only 1 permit. In 2016 there continued to be a single permittee. This history suggests the watershed was consistently overgrazed and lost its economic value for the production of beef. The 2011 Draft EA for AMP Revision included the following language: "Much of the lands within these allotments "are forested and do not provide a substantial amount of forage for livestock. The majority of forage is in old clear cuts, wildfires, south facing slopes, meadows, and along roads. Parameters such as gradient, valley form, geologic substrate, vegetative structure, and forage availability can greatly influence livestock movement, use patterns, and distribution." "The primary forage type within the allotment is transitory range (a temporary increase in available forage due to past timber harvest)." "The high elevation portions of the allotment are considered secondary range (range that livestock will not use

until other areas are heavily utilized) due to dense timber stands, accessibility, distance to water, and/or steep slopes." "For this analysis, capable acres are those less than ½ mile from water, less than 60% tree canopy cover, and slope less than 60%. ---unsuitable areas are where fences have restricted cattle access and placement of cattle within these areas would likely result in cattle drift onto Federally listed fish habitat." "The two permits on the Libby allotment are to graze 84 pair from 5/16 to 9/30 in the Chicamun and Mission pastures and 83 pair during that period in the Smith and Alder pastures." "The cattle prefer the small pockets of forage in the canyon bottom which are "utilized to a level of 80% in an adjacent to loafing areas". "In the Mission unit the canyon bottoms receive high use with the level of use decreasing rapidly away from the road. Mission Pond has received high use and cattle trails are in the creek bottoms with browsed shrubs and bank trampling. Two upland monitoring areas show a 40% level of use."" "--water access and steep topography can result in virtually unavoidable concentration of animals." "These infrequent hot spots occur in spite of Forest Service range managers and permittees effort to implement best management practices---."" Fuel "treatments" are planned for the Little Bridge Creek and Mission units in the next few years to benefit cattle grazing by increasing "transitory" range and improving distribution. Prescribed burns enhance forage production, but grazing rotation patterns may need to be adjusted to allow revegetation without grazing. The Mission project also calls for commercial timber harvest and other timber "activities". "Allotment lands contain designated critical habitat and federally endangered Chinook, threatened steelhead and bull trout. All occur in the Libby allotment and the proposed action, Alternative 2, creates the potential for direct effects to individual juvenile, subadult, and adult fish, as well as to eggs in the redds. NMFS designated the lower mile of Libby Creek as steelhead critical habitat. All three of these fishes are management indicator species for the Okanogan National Forest. The westslope cutthroat trout is a Forest Service Regionally Sensitive Species and another management indicator species found in Libby Creek." "Fine sediment levels are high in the lower reaches of Libby Creek, on National Forest." Fine sediment levels are "functioning at risk" in Poorman Creek and Libby Creek." "Restoration of degraded riparian ecosystems is of great importance for the recovery of declining and endangered stocks of Columbia River salmonids as well as riparian-obligate wildlife species." "After two years in the absence of livestock, significant increases in height, crown area, crown volume, stem diameter and biomass were measured both outside and inside of the exclosures." "Although light seasonal livestock grazing in some systems may be compatible with some objectives, complete protection during the first 5-10 years of recovery offers the greatest likelihood of successful restoration." (Case, R.L. And J.B. Kauffman. 1997. Wild ungulate influences on the recovery of willows, black cottonwood and thin-leaf alder following cessation of cattle grazing in Northeastern Oregon. Northwest Science 71(2): 115-126.] [11-75]

Concern: [Seq#264]

3.10.4 Environmental Consequences

There are a total of 1933 acres of commercial thinning units within the affected grazing allotment

. The effect of increased plant productivity is an increase in forage and browse that is available for grazing by permitted livestock.

Neither the current Lookout Mountain AMP nor this project would provide for an increase in livestock numbers.

There will not be an increase in AUMs (Animal Unit Months)

permitted to graze. Grazing use levels across the project area are currently less than when the 2011 grazing analysis was completed and are meeting allowable use standards.(pp.240-242)

[Increase in forage is generally accompanied by increased levels of commercial livestock grazing. In this allotment it may be used to encourage the one remaining permittee to not abandon the allotment.

]

[ID#278]

Response: [Seq#264]

Opinion. This is outside the scope of this project.

Neither the current Lookout Mountain AMP nor this project [Mission Restoration project] would provide for an increase in livestock numbers. There will not be an increase in AUMs (Animal Unit Months) permitted to graze. Range section 3.10.4.3 Alternative 2 and 3, Draft EA page number 242. [ID#278]

Associated Comments: [Seq#264]

3.10.4 Environmental Consequences There are a total of 1933 acres of commercial thinning units within the affected grazing allotment. The effect of increased plant productivity is an increase in forage and browse that is available for grazing by permitted livestock. Neither the current Lookout Mountain AMP nor this project would provide for an increase in livestock numbers. There will not be an increase in AUMs (Animal Unit Months) permitted to graze. Grazing use levels across the project area are currently less than when the 2011 grazing analysis was completed and are meeting allowable use standards.(pp.240-242) [Increase in forage is generally accompanied by increased levels of commercial livestock grazing. In this allotment it may be used to encourage the one remaining permittee to not abandon the allotment.] [11-76]

Concern: [Seq#265]

I realize that eliminating or reducing cattle grazing in the area is beyond the scope of this project. However, that does not justify an exclusion of any and all considerations regarding cattle grazing from the decision making process. The proposed actions are not going to exist in an isolated bubble from cattle grazing. What will be the cumulative effects of logging, soil compaction, soil disturbance and

erosion, habitat disturbance COMBINED with the fact that cattle will be grazing in these areas? Has this even been studied at all?

[ID#279]
Response: [Seq#265]

The cumulative effects of the Mission project combined with livestock grazing are summarized in the Range section *3.10.4.5 Summary of Effects.* Specifically, the effects of the proposed "logging" on livestock grazing are discussed in section *3.10.4 Environmental Consequences.* Grazing impacts under both the no-action and the action alternatives are analyzed. The interdisciplinary team identified all resource indicators pertinent to the cumulative effects of grazing and project activities. The analysis concluded that management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. Draft EA page number: 250-252, 239-244 [ID#279]
Associated Comments: [Seq#265]
I realize that eliminating or reducing cattle grazing in the area is beyond the scope of this project. However, that does not justify an exclusion of any and all considerations regarding cattle grazing from the decision making process. The proposed actions are not going to exist in an isolated bubble from cattle grazing. What will be the cumulative effects of logging, soil compaction, soil disturbance and erosion, habitat disturbance COMBINED with the fact that cattle will be grazing in these areas? Has this even been studied at all? [29-19]

Concern: [Seq#266]

As we noted in our scoping letter, we are concerned that "revisiting previous decisions regarding cattle grazing" has been expressly excluded from the project. In the Draft EA, the Forest restates that the existing allotment management plan (AMP) has already considered those impacts. The allotment plan, however, is now over five years old and was not developed with the goals of this project in mind. While it did address forage, riparian impacts, and range numbers, it did not address the need to protect regenerating aspen stands and unfenced riparian areas that will be at greater risk when opened to cattle.

We reiterate our concerns with the Forest's failure to review the AMP in light of the goals of the restoration plan. See our letter of June 1, 2016.

[ID#280]
Response: [Seq#266]

Cattle access and effects on regenerating aspen stands is discussed in the Range Section on EA page 242. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The effects of livestock grazing on aspen were analyzed in this EA. The discussion in the range section on page 242 summarized this analysis. [ID#280]

Associated Comments: [Seq#266]

As we noted in our scoping letter, we are concerned that "revisiting previous decisions regarding cattle grazing" has been expressly excluded from the project. In the Draft EA, the Forest restates that the existing allotment management plan (AMP) has already considered those impacts. The allotment plan, however, is now over five years old and was not developed with the goals of this project in mind. While it did address forage, riparian impacts, and range numbers, it did not address the need to protect regenerating aspen stands and unfenced riparian areas that will be at greater risk when opened to cattle....We reiterate our concerns with the Forest's failure to review the AMP in light of the goals of the restoration plan. See our letter of June 1, 2016. [30-18]

Concern: [Seq#267]

Cattle grazing plays too big a part in causing the unhealthy forest for me to leave out the topic. If it is not addressed the forest will not be restorable and the USFS will not reach its goal of forest health and resilience. Fire regimes have changed in the west to favor livestock production including fire suppression to reduce loss of forage; increase of foraging increases tree seedling density; both of which increase unhealthy stands increasing susceptibility to fire-prone stands. [ID#281]

Response: [Seq#267]

Opinion that is unsupported by references.. Management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. (Draft EA page 252) [ID#281]

Associated Comments: [Seq#267]

Cattle grazing plays too big a part in causing the unhealthy forest for me to leave out the topic. If it is not addressed the forest will not be restorable and the USFS will not reach its goal of forest health and resilience. Fire regimes have changed in the west to favor livestock production including fire suppression to reduce loss of forage; increase of foraging increases tree seedling density; both of which increase unhealthy stands increasing susceptibility to fire-prone stands. [51-10]

Concern: [Seq#268]

When cows wander into the creeks they compact the moist soils, increase soil erosion and sediment and pollute the water and degrade the riparian zone. [ID#282]
Response: [Seq#268]

Changes in openings or routes providing cattle access to riparian areas are discussed in the Range Section 3.10 on Draft EA pages 243-244.

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237.

[ID#282]
Associated Comments: [Seq#268]
When cows wander into the creeks they compact the moist soils, increase soil erosion and sediment and pollute the water and degrade the riparian zone. [51-11]

Concern: [Seq#269]

Cows spread exotic plants which will, by USFS's plan, then result in herbicidal spraying because so many plants are toxic to cows. [ID#283]
Response: [Seq#269]

This is an opinion. Only one species of invasive plant (houndstongue) is listed as being toxic to cattle in the Mission project analysis in Appendix A. Any treatment of invasive plants would use Integrated Weed Management, including herbicide, to reduce or eliminate the spread of existing infestations and Introduction and Establishment of New Infestations, not to reduce the potential of toxic exposure to cattle. (Draft EA Invasive Plant Section 3.11, pages 252-270). All authorizations for spraying of noxious weeds were part of previously completed NEPA documents, and not the Mission Restoration Project NEPA document. [ID#283]
Associated Comments: [Seq#269]

Cows spread exotic plants which will, by USFS plan, then result in herbicidal spraying because so many plants are toxic to cows. [51-12]

Concern: [Seq#270]

I am curious-how is it that a destructive practice such as the grazing of cattle in the forest is perpetuated as there is so little economic gain and so much contraindication? [ID#284]

Response: [Seq#270]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. (Draft EA Chapter 1, Figure 5. Mission Restoration Project Issues, Page 24) Any impacts from treatments proposed by this project on current range management practices are discussed in Section 3.10, Range, in Chapter 3 and in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring.

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237. [ID#284]

Associated Comments: [Seq#270]

I am curious-how is it that a destructive practice such as the grazing of cattle in the forest is perpetuated as there is so little economic gain and so much contraindication? [51-13]

Concern: [Seq#271]

Rearranging the forest for the benefit of the cattle industry when the Forest Service makes next to nothing on cattle allotments.-What's up with that? [ID#285]
Response: [Seq#271]

The primary forage type within the Lookout Mountain allotment is transitory range, which are areas of temporary forage resulting from openings created by past timber harvest, prescribed fire, and wildfire. The no action alternative could result in limiting livestock use patterns and distribution. Livestock use within the project area would be more concentrated as the transitory range forage production becomes more limited. Mission project thinning treatments would increase transitory range and increase the amount of available forage within the grazing allotment and would improve livestock distribution. This a secondary benefit of the project proposal. It is not part of the Purpose and Need in chapter 1. (Draft EA Range Section 3.10, Pages 232-251). [ID#285]
Associated Comments: [Seq#271]
* Rearranging the forest for the benefit of the cattle industry when the Forest Service makes next to nothing on cattle allotments-What's up with that? [67-12]

Concern: [Seq#272]

No coherent explanation of the lack of integration of cattle grazing into the "interdisciplinary" analysis, or purpose and need statement, is offered. Grazing is a significant factor in forest health, and its negative impacts documented in depth.

[ID#286]
Response: [Seq#272]

Grazing is currently managed under the direction of the 2013 Allotment Management Plan (AMP). Cattle impacts are documented in depth in the 2011 Libby, Little Bridge, Newby, and Poorman Allotment Environmental Assessment (LLBNP EA). The AMP implements the EA decision. The interdisciplinary team identified all resource indicators pertinent to the effects of grazing and project activities which are analyzed in detail in section *3.10 Range*. The analysis concluded that management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. Draft EA page number: 232-252.

[ID#286]
Associated Comments: [Seq#272]
No coherent explanation of the lack of integration of cattle grazing into the "interdisciplinary" analysis,

or purpose and need statement, is offered. Grazing is a significant factor in forest health, and its negative impacts documented in depth. [69-10]

Concern: [Seq#273]

As mentioned before, the decommissioning of some roads is a good step. However, the impact of cattle grazing appears to have had an inadequate analysis. Along with thinning or logging normally comes an increase of grass, which will be grazed by cattle and also will spread wildfire more quickly than the forested areas. I have not seen a section proposing to reduce the probable impacts of the cattle, especially upon streams. [ID#287]

Response: [Seq#273]

The effects of project activities on livestock access and impacts to riparian areas are addressed in Section 3.10, Range, in Chapter 3 *under Environmental Consequences* of the EA pages 243-245.

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237.

[ID#287]

Associated Comments: [Seq#273]

As mentioned before, the decommissioning of some roads is a good step. However, the impact of cattle grazing appears to have had an inadequate analysis. Along with thinning or logging normally comes an increase of grass, which will be grazed by cattle and also will spread wildfire more quickly than the forested areas. I have not seen a section proposing to reduce the probable impacts of the cattle, especially upon streams. [70-10]

Concern: [Seq#274]

Grazing has major negative impacts upon native forbs and water quality in creeks and rivers. If the Forest Service wants to increase the health, and specifically the biodiversity of the area, it must seek to phase out open-range grazing. This goal is not furthered by the Mission Project but should be a high priority for the Forest Service as a land management agency. [ID#288]

Response: [Seq#274]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. (Figure 5. Mission Restoration Project Issues. Page 24.) Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). Management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. (EA page 252).

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237. [ID#288]

Associated Comments: [Seq#274]

Grazing has major negative impacts upon native forbs and water quality in creeks and rivers. If the Forest Service wants to increase the health, and specifically the biodiversity of the area, it must seek to phase out open-range grazing. This goal is not furthered by the Mission Project but should be a high priority for the Forest Service as a land management agency. [73-3]

Concern: [Seq#275]

9. Grazing impacts not included - We have read the rationale for not including an analysis of the incremental contribution to ecological impacts from the existing range allotment. Given that nearly

43,000 acres of the Mission planning area are within this allotment, it seems illogical to not include this in the overall analysis of cumulative effects of all forest land management activities. [ID#289]
Response: [Seq#275]

Livestock Grazing is listed as one of the Present and On-going Actions and Reasonably Foreseeable Future Actions to be analyzed in cumulative effects (EA page 45-46). The resources that analyzed the cumulative effects of grazing are Section 3.3, Water Resources, 3.4, Soils, 3,5, Vegetation, 3.8, Transportation, 3.9, Botany and 3.11,Invasive Plants in chapter 3 of the EA.. [ID#289]
Associated Comments: [Seq#275]
9. Grazing impacts not included - We have read the rationale for not including an analysis of the incremental contribution to ecological impacts from the existing range allotment. Given that nearly 43,000 acres of the Mission planning area are within this allotment, it seems illogical to not include this in the overall analysis of cumulative effects of all forest land management activities. [78-32]

Concern: [Seq#276]

Specific objectives to monitor livestock access and maintaining fences that keep livestock out of fish-bearing streams should be addressed in the project to meet hydrologic goals.

[ID#290]
Response: [Seq#276]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Maintenance of fences to keep cattle out of fish-bearing streams is addressed in the AMP. Chapter 1, Figure 5, Mission Restoration Project Issues, Page 24.

Both upland and riparian monitoring has been conducted to quantify livestock impacts. Forage (grass) utilization standards are 45 percent in upland understory environments (pinegrass/Idaho fescue) and 55 percent in upland grasslands (bluebunch wheatgrass). Upland forage within the project area is meeting Forest Plan (USDA & USDI 1994, 1995, 2007; USDA 1989) utilization standards with the exception of a few localized high use areas that may exceed 60 percent utilization. All DMAs within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been

meeting allowable use standards over the past 10 years with few exceptions. Affected Environment, Draft EA page number: 236, 237.

[ID#290]

Associated Comments: [Seq#276]

Specific objectives to monitor livestock access and maintaining fences that keep livestock out of fish-bearing streams should be addressed in the project to meet hydrologic goals. [18-22]

Concern: [Seq#277]

Figure 5. Mission Restoration Project Issues Introduce beaver to aquatic areas. Proposed beaver habitat enhancement treatments would prepare an estimated 34.6 acres in 6 locations for beaver release in connection with a current beaver relocation program, with resulting increased water storage capacity. (pp.23-26) [Commercial logging and permitted commercial beef production will impact most of the project area of 50,000 acres. Concern for enhancing watershed function by introducing beaver would be limited to less than 35 acres, while other potential beaver habitat will be logged and continue to be grazed by permitted commercial cattle.] [ID#291]

Response: [Seq#277]

The current Lookout Mountain Allotment Management Plan (AMP) is designed to improve resource conditions in riparian areas within the project area, which would include potential beaver habitat. The Lookout Mountain allotments has designated monitoring areas (DMAs). The DMAs are chosen to be representative of a larger stream or meadow area. Not all riparian areas are monitored. The riparian areas with the highest priority to monitor are where past grazing management (prior to 2010) may have adversely affected ESA listed fish. Recent monitoring identifies that these areas have been meeting allowable use standards over the past 10 years with few exceptions. The Forest Service does not assume that cattle access to riparian areas equates to loss of watershed function, our monitoring records do not indicate this. (EA, 3.10 page 237) [ID#291]

Associated Comments: [Seq#277]

Figure 5. Mission Restoration Project Issues Introduce beaver to aquatic areas. Proposed beaver habitat enhancement treatments would prepare an estimated 34.6 acres in 6 locations for beaver release in connection with a current beaver relocation program, with resulting increased water storage capacity. (pp.23-26) [Commercial logging and permitted commercial beef production will impact most of the project area of 50,000 acres. Concern for enhancing watershed function by introducing beaver would be limited to less than 35 acres, while other potential beaver habitat will be logged and continue to be grazed by permitted commercial cattle.] [11-17]

Concern: [Seq#278]

Need for full consideration of grazing impacts, as thinning will change forage availability and grazing access to sensitive areas

[ID#292]

Response: [Seq#278]

Thinning would promote more open stand structure and increase understory forage that would be available as transitory range. The additional forage would distribute livestock use patterns more evenly reducing overall utilization levels across the grazing allotment and project area. The continued implementation of the 2013 Lookout Mountain AMP, with grazing strategies designed to alternate the season of use to provide for proper pasture rest or deferment, would help to sustain understory forage production. Opening the forest stands would increase available forage outside of riparian areas. The number of cattle that access riparian areas may decrease, because grazing distribution patterns would improve in the uplands. Even though the more open stands could allow easier access to riparian areas, no additional use of riparian areas is expected because cattle distribution would be improved and direct access to streams would be restricted by riparian vegetation along streams. (EA, 3.10, p. 241, 249, 244) [ID#292]

Associated Comments: [Seq#278]

Need for full consideration of grazing impacts, as thinning will change forage availability and grazing access to sensitive areas [30-11]

Concern: [Seq#279]

15. No management of shrub-steppe vegetative communities. Section 1.3.3 -P & N #3 -

The sections of the EA dealing with

Vegetation Composition and Structure

do not mention shrub-steppe or range lands, as characterized by big sagebrush/bitterbrush/grass. Shrub-steppe represents nearly 30 percent of the Libby Creek watershed. But, activities in the shrub-steppe were eliminated from consideration because it would increase the potential for spread of invasive plants, yet, the treatment of the 10,000+ forested acres (across both watersheds) will do the same. Noxious weeds thrive many areas of the Methow that are subjected to commercial logging, ground disturbance and slash burning

[ID#293]
Response: [Seq#279]

Conditions within forested and shrub steppe habitats are different; shrub steppe communities have more sun exposure, are hotter and drier than forested habitats and may have more bare ground available. These conditions are more favorable to the spread and establishment of invasive and weedy plants, such as knapweed. Post-treatment canopies in forested areas will still provide degrees of shade to the understory, which can provide enough cover to out-compete invasive and weedy plants. Furthermore, the residual post-treatment understory vegetation in forest areas will provide more completion for invasive plants than that of a shrub-steppe environment. Post prescribed fire treatments in shrub steppe would leave more bare ground where invasive plants could establish.

In addition, project activities within forested habitats that could lead to the potential for invasive plant spread and establishment are mitigated by winter logging, operating over slash mats during summer logging and small-scale post-disturbance seeding. Mitigations for the potential spread and establishment of invasive plants in shrub-steppe, where prescribed burning is the treatments, may involve broad scale seeding. This mitigation on a broad scale treatment of burning in shrub steppe may not be as effective in mitigating for invasive plants or cheatgrass. [ID#293]
Associated Comments: [Seq#279]
15. No management of shrub-steppe vegetative communities. Section 1.3.3 -P & N #3 - The sections of the EA dealing with Vegetation Composition and Structure do not mention shrub-steppe or range lands, as characterized by big sagebrush/bitterbrush/grass. Shrub-steppe represents nearly 30 percent of the Libby Creek watershed. But, activities in the shrub-steppe were eliminated from consideration because it would increase the potential for spread of invasive plants, yet, the treatment of the 10,000+ forested acres (across both watersheds) will do the same. Noxious weeds thrive many areas of the Methow that are subjected to commercial logging, ground disturbance and slash burning. [78-41]

Concern: [Seq#280]

introduction of exotic species [ID#294]
Response: [Seq#280]

Vehicles and transportation corridors are considered to be primary vectors for the movement of invasive plant species (EA page 253). As weeds are commonly associated with roads and old harvest activities, the potential effect of the Mission project on introduction and spread would be an increase of weeds on the road system and within areas of soil disturbance associated with the mission project activities. The risk of spread of New Invader weeds form existing populations is relatively low as there are only 19 acres within the project area (EA, 3.11, Invasive Species, page 259). Both action alternatives would reduce potential for spread in the long-term on closed and decommissioned roads by preventing

vehicular access. A total of 34.8 miles of open road would be closed under alternative 2 and 33.8 miles under alternative 3. A total of 33.6 miles of road would be decommissioned for alternative 2 and 56.2 miles for alternative 3. Both action alternatives would reduce potential for spread in the long-term on closed and decommissioned roads by preventing vehicular access. (EA, 3.11 page 269). [ID#294]
Associated Comments: [Seq#280]
introduction of exotic species [27-27]

Concern: [Seq#281]

This comment letter is similar to comment letter 68. [ID#295]
Response: [Seq#281]

Because this comment letter is similar to comment letter 68, all comments will be separated and addressed through that letter except the one comment in letter 45 that is different from letter 68. Letter 68 includes some comments not included in letter 45. [ID#295]
Associated Comments: [Seq#281]
This project requires a full EIS. The impacts would be significant and are not fully represented in this EA, especially regarding ESA listed species. It is significant that the Forest did not post this as an "issue" from scoping comments. Also, a 50,000 acre project area of this nature will have significant impacts. The EIS is necessary in order to allow more full public involvement and to provide a greater suite of alternatives. [45-2]

Concern: [Seq#282]

The commenters are concerned with the sediment impacts from construction and maintenance of haul routes. [ID#296]
Response: [Seq#282]

Any construction or maintenance to haul roads with be conducted according to current BMPs. While the concern is valid, we believe that haul can be done in such a way as to minimize the effects of sediment to streams and fish habitat. Additionally, these potential sediment impacts will be short lived whereas the benefits of decommissioning post-haul and other aquatic projects will be long term and positive. Effects of sediment on ESA listed fish species is addressed Section 3.3, Water Resources, in chapter 3 of the EA and in the Biological Assessment. Maintenance is addressed through the timber sale contract. Also see response to 48-20 Dust abatement was analyzed and considered in Section 3.8, Transportation, in chapter 3. [ID#296]
Associated Comments: [Seq#282]

Most of the haul roads would need to be reconstructed or have maintenance done to them that would create sediment that would run into streams with ESA listed fish. Most of the haul roads follow creeks and streams. [63-53]

The document does not seem to specifically disclose any road work that will need to take place in order to haul logs. All road work will cause sediment which is a detriment to the aquatic resources and ESA listed fish. [68-82]

Concern: [Seq#283]

"The Forest Service should analyze in detail the impact of climate change on forest roads on the landscape" [ID#297]
Response: [Seq#283]

Climate Change is addressed in Section 3.15 of Chapter 3. Section 3.8, Transportation, in Chapter 3 summarizes the transportation system (roads) analysis and the implementation of the TAP (Travel Analysis Process) in compliance with 36CFR212.5. See response to 5-3.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

[ID#297]
Associated Comments: [Seq#283]
The Forest Service should analyze in detail the impact of climate change on forest roads on the landscape." [63-89]

Concern: [Seq#284]

"WildEarth Guardians expressed concerns for the challenges the Forest Service faces "with its vastly oversized, under-maintained, and unaffordable road system. The impacts from roads to water, fish, wildlife, and ecosystems are tremendous and well documented in scientific literature. The Okanogan-Wenatchee National Forest is no exception, with 7,948 miles of system roads, the required maintenance of which exceeds annual maintenance costs. See Okanogan-Wenatchee National Forest, Forestwide Travel Analysis Report (Attachment A), page 11; Draft EA at 213 ("current road maintenance funding levels are lower than needed to maintain all the existing roads")." [ID#298]

Response: [Seq#284]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

[ID#298]

Associated Comments: [Seq#284]

WildEarth Guardians expressed concerns for the challenges the Forest Service faces "with its vastly oversized, under-maintained, and unaffordable road system. The impacts from roads to water, fish, wildlife, and ecosystems are tremendous and well documented in scientific literature. The

Okanogan-Wenatchee National Forest is no exception, with 7,948 miles of system roads, the required maintenance of which exceeds annual maintenance costs. See Okanogan-Wenatchee National Forest, Forestwide Travel Analysis Report (Attachment A), page 11; Draft EA at 213 ("current road maintenance funding levels are lower than needed to maintain all the existing roads"). [63-43]

Concern: [Seq#285]

"Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, ensure reliable recreational access, and operate within budgetary constraints. And it is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and drastically declining funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and (3) it's a win for the public because removing unneeded roads from the landscape allows the agency to focus its limited resources on the roads we all use, improving public access across the forest and helping ensure roads withstand strong storms." [ID#299]

Response: [Seq#285]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to

conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#299]

Associated Comments: [Seq#285]

Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, ensure reliable recreational access, and operate within budgetary constraints. And it is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and drastically declining funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and (3) it's a win for the public because removing unneeded roads from the landscape allows the agency to focus its limited resources on the roads we all use, improving public access across the forest and helping ensure roads withstand strong storms." [63-44]

Concern: [Seq#286]

"There are other road activities planned (i.e., new construction and reopening of closed roads) to facilitate logging activities. The roads and their miles (approximately 55.72 mi.) for both Alternative 2 & 3 are the same as those noted for log hauling. Therefore, both the direct and indirect effects of Alternative 3 would be the same as for Alternative 2 regarding commercial thinning/logging activities. Whether or not logging is performed there is insufficient funding to maintain or repair existing roads. If logging is permitted, with its resultant high-impact the magnitude of road problems is increased." [ID#300]

Response: [Seq#286]

Section 3.8, Transportation, of Chapter 3 summarizes the transportation system (roads) analysis (including effects by alternative) and the implementation of the TAP (Travel Analysis Process) in compliance with 36CFR212.5. Appendix B addresses Transportation system definitions through the actual Transportation Plan, from current condition through activities, to post project.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Chapter 3.8 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit

to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

[ID#300]

Associated Comments: [Seq#286]

There are other road activities planned (i.e., new construction and reopening of closed roads) to facilitate logging activities. The roads and their miles (approximately 55.72 mi.) for both Alternative 2 & 3 are the same as those noted for log hauling. Therefore, both the direct and indirect effects of Alternative 3 would be the same as for Alternative 2 regarding commercial thinning/logging activities. Whether or not logging is performed there is insufficient funding to maintain or repair existing roads. If logging is permitted, with its resultant high-impact the magnitude of road problems is increased. [63-46]

Concern: [Seq#287]

"WildEarth Guardians commented on the inadequacy of Forest budget for road maintenance: "In its travel analysis report finalized in July 2015, the agency did an analysis of the benefits, risks and costs of the 7,948 miles of system roads cutting across the forest. The forest would need about $158 million to bring the entire road system back up to standard, and about $10.2 million per year to keep the current road system fully maintained to standard. But on average, the forest receives only $1.8 million per year—about 18% of the funding necessary to address the estimated annual maintenance costs."
[ID#302]

Response: [Seq#287]

The Engineering Resources report refers to this earlier travel analysis and the TAP was addressed in Section 3.8, Transportation, of Chapter 3. Also a more site specific Travel Analysis Process (TAP) was completed for this project.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, of Chapter 3 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#302]

Associated Comments: [Seq#287]

WildEarth Guardians commented on the inadequacy of Forest budget for road maintenance: "In its travel analysis report finalized in July 2015, the agency did an analysis of the benefits, risks and costs of the 7,948 miles of system roads cutting across the forest. The forest would need about $158 million to bring the entire road system back up to standard, and about $10.2 million per year to keep the current road system fully maintained to standard. But on average, the forest receives only $1.8 million per year—about 18% of the funding necessary to address the estimated annual maintenance costs." [63-98]

Concern: [Seq#289]

"Regarding roads, the EA, the Transportaion Report nor the Transportation Appendix give any definition of "closed" and/or "decommission". The public cannot make an informed judgement on transportation when the FS doesn't really say what it is doing. Can closed roads be re-opened? Can decommissioned roads be re-opened? What are the real environmental consequences of closing vs decommissioning?"

[ID#304]
Response: [Seq#289]

Definitions, policy, and transportation analysis are summarized in Section 3.8, Transportation, in Chapter 3 of the Draft EA, in Appendix B, and in the Engineering Resources report Appendices A, B & C.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, in Chapter 3 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#304]
Associated Comments: [Seq#289]
Regarding roads, the EA, the Transportaion Report nor the Transportation Appendix give any definition of "closed" and/or "decommission". The public cannot make an informed judgement on transportation when the FS does really say what it is doing. Can closed roads be re-opened? Can decommissioned roads be re-opened? What are the real environmental consequences of closing vs decommissioning? [68-99]

Concern: [Seq#290]

The Forest is conducting an environmental analysis for travel management planning that will designate motorized public access routes in the project area; a decision on this analysis is expected in 2017." (EA 46.) The EA fails to explain how the Mission project is responding to or conflicts with the purpose and need for this motorized route designation process. The EA also fails to provide sufficient analysis and disclosure of the ongoing impacts of motorized travel in the project area.

[comment end] [ID#305]
Response: [Seq#290]

The Environmental Assessment does address travel management planning. The Transportation System and Travel Management Maintenance of system roads is addressed in Chapter 3 in Section 3.1.1.3 under Reasonably Foreseeable Future Actions. It specifically addresses the use of the Forest-wide travel management planning to meet the proposed transportation system (TAP) analyzed in this project area stating "Within the Mission Restoration project area, the proposed alternative would not include new motorized travel routes, motorized trails, or authorization of unlicensed vehicles on open roads". It also addresses aspects for the Recreation activities, and relative to the outcome of the travel management planning decision. Section 3.8, Transportation, of Chapter 3 describes the site specific analysis for the area, Travel Analysis Process (TAP), and the Engineering Resources also references the Forest-wide version from 2015. The EA, Appendix B, addresses the definitions, policy, and proposed Transportation Plan relative to the project.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, in Chapter 3 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#305]

Associated Comments: [Seq#290]

The Forest is conducting an environmental analysis for travel management planning that will designate motorized public access routes in the project area; a decision on this analysis is expected in 2017." (EA 46.) The EA fails to explain how the Mission project is responding to or conflicts with the purpose and need for this motorized route designation process. The EA also fails to provide sufficient analysis and disclosure of the ongoing impacts of motorized travel in the project area. [72-11]

Concern: [Seq#291]

Much of the project area is encompassed within the Lookout Mountain grazing allotment. Although not every acre of the allotment may currently be accessible to livestock, the act of removing trees and other vegetation from treatment areas and road corridors would alter that situation significantly. This includes riparian areas, for which the NWFP Aquatic Conservation Strategy establishes Objectives and other direction related to livestock grazing. Yet the EA completely omits discussion of such direction. It is expected that this omission will be corrected in the final NEPA document

[ID#306]

Response: [Seq#291]

There are riparian areas on the Lookout Mountain allotment within the project area where past management (prior to 2010) may have adversely affected ESA listed fish. There are several areas that did not meet Aquatic Conservation Strategy Objectives (ACSO). The current Allotment Management Plan (AMP) is designed to improve resource conditions in these areas to eliminated impacts that retard or prevent attainment of the objectives. These riparian areas are Libby Creek, Buttermilk Creek, and East Fork Buttermilk Creek. It is a requirement of the AMP to meet allowable use in these riparian areas. (Range Section, EA page 237)

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). Any impacts from treatments proposed by this project on current range management practices are discussed in Section , 3..10, Range, in Chapter 3 of the EA and in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring. (chapter 1, EA page 24) [ID#306]

Associated Comments: [Seq#291]

Much of the project area is encompassed within the Lookout Mountain grazing allotment. Although not

every acre of the allotment may currently be accessible to livestock, the act of removing trees and other vegetation from treatment areas and road corridors would alter that situation significantly. This includes riparian areas, for which the NWFP Aquatic Conservation Strategy establishes Objectives and other direction related to livestock grazing. Yet the EA completely omits discussion of such direction. It is expected that this omission will be corrected in the final NEPA document. [72-60]

Concern: [Seq#292]

"streambank alteration is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions." This is simply not true.

[ID#307]

Response: [Seq#292]

The Range section on EA page 237 states: Within the project area, the Lookout Mountain allotments has designated monitoring areas (DMAs) for monitoring streambank alteration and Riparian shrub use and use on riparian grasses/sedges. The DMAs are chosen to be representative of a larger stream or meadow area. The Forest Service recognizes that there are localized areas where allowable use is exceeded, however the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan contains a comprehensive monitoring plan to ensure critical resource values are protected. The monitoring is consistent with that AMP monitoring plan. [ID#307]

Associated Comments: [Seq#292]

"streambank alteration is not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions." This is simply not true. [68-106]

Concern: [Seq#293]

These comments are concerned with harvest activities occurring within the Riparian Reserve.

Driving heavy equipment, feller bunchers, logging trucks etc., through creeks, aquatic ecosystem and riparian zones, while conveniently aiding in the achievement of your short term logging goals, is a flawed

aspect of your plan. You can gloss over the guidelines with amendments but you will do great harm that you will be hard pressed to rectify in the foreseeable future [ID#308]
Response: [Seq#293]

Logging activities will be conducted in such a way as to minimize impacts to riparian areas. This includes following BMPs that prohibit the use of logging equipment in the stream channel. Any areas that may be sensitive to equipment impacts will be harvested under winter conditions which essentially eliminates any sediment impacts. Additionally, any harvesting that will occur in the riparian area are being harvested for the benefit of aquatic and wildlife resources. [ID#308]
Associated Comments: [Seq#293]
Driving heavy equipment, feller bunchers, logging trucks etc., through creeks, aquatic ecosystem and riparian zones, while conveniently aiding in the achievement of your short term logging goals, is a flawed aspect of your plan. You can gloss over the guidelines with amendments but you will do great harm that you will be hard pressed to rectify in the foreseeable future. What about the endangered species of salmonids in the creeks? How can you destroy their habitat and save them at the same time? Buttermilk Creek and Libby Creek are critical habitat to three ESA listed salmonids-spring chinook, summer steelhead and bull trout. Such habitat deficiencies that can threaten their existence include: low base flows, low instream wood levels, excessive summer temperatures, elevated fine sediment and habitat loss. Most of these deficiencies would be exacerbated by commercial logging activity. Thus it is not farsighted nor prudent to allow such adverse effects to the aquatic ecosystem and riparian zone. [48-13]

Driving heavy equipment, feller bunchers, logging trucks etc., through creeks, aquatic ecosystem and riparian zones, while conveniently aiding in the achievement of your short term logging goals, is a flawed aspect of your plan. You can gloss over the guidelines with amendments but you will do great harm that you will be hard pressed to rectify in the foreseeable future. [51-31]

* A creek is not to drive through. Most especially when there are 3 ESA listed salmonids trying to make a comeback. The Buttermilk and Libby creeks are already at risk. Sediment from erosion is choking the streams, the aquatic habitat is lacking for woody debris and cows are mucking up the surrounding riparian zone. [67-5]

NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan Final Report, July 30, 2014, indicates the need for stronger protections for riparian reserves and aquatic resources and points to the known adverse effects of mechanical thinning and fuel reduction activities on these resources: Observed and anticipated effects of climate change, and of cumulative anthro-pogenic stressors operating in the nonfederal lands surrounding NFP lands strongly indicate the need to strengthen, not weaken key ACS protections. Roads and ground disturbance associated with mechanical thinning and fuels reduction activities, especially within Riparian Reserves, cause adverse environmental impact that generally offset or exceed presumed restorative benefits. Headwater streams warrant wider riparian forest buffers than current ACS provisions to ensure effective retention of sediment and nutrients derived from upslope logging, fire, and landslides. [68-77]

Harvest treatments when conducted in Riparian Reserves would occur primarily to benefit and restore aquatic resources. Regeneration harvest would not occur in Riparian Reserves. All trees 21 inches DBH

and larger would be retained in Riparian Reserves. COMMENT: Harvest in or near the buffers of Riparian Reserves will create sediment that will harm ESA listed fish and will clear the way for increased cattle grazing around these waterways, which is already a huge problem. [68-108]

Concern: [Seq#294]

Comments are concerned with water temperature. [ID#309]
Response: [Seq#294]

Water temperature has been monitored at sites in both Buttermilk and Libby drainages for over ten years. While there are some concerns of water temperature, we believe that temperature is less of a limiting factor to fish than sediment and the impact from roads. Additionally, changes in water temperature can be difficult to predict but the treatments proposed are likely to increase water storage which will help reduce water temperatures in late summer (soil de-compaction, beaver enhancement, road decommissioning). Treatments in riparian reserves are designed to not reduce stream shading.

As stated on in Figure 26, Water Resources Considered but Not Analyzed in detail on page 61 of the preliminary EA: "This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature." [ID#309]
Associated Comments: [Seq#294]
Within the project area, habitat deficiencies include low base flows, low instream wood levels, excessive summer water temperatures (Libby Creek), elevated fine sediment in fish bearing tributaries, and habitat loss on in some private lands in the lower Buttermilk Creek, and Libby Creek. Here we see further description of the ESA listed species habitat being already at risk. Although summer water temperature is documented as being "excessive" monitoring data is weak and planning for seasonal monitoring lacking. [63-63]

but without the overstory, stream temperatures will rise threatening the aquatic life of the 3 ESA listed salmonids. [67-24]

The Aquatics portion of the EA does not adequately address project impact on stream temperatures. This is highly important for ESA listed fish. [68-78]

In addition to the trampling of streamsides and introduction of increased nitrogen into streams, I am especially concerned about the impacts of this sale upon water temperature. As shade from forests decrease, the soil temperatures rise and thus the temperature of underground water increases; finally the temperatures of streams increase. Warm water contains less oxygen than cold water, resulting in the death of stream insects that are highly dependent upon oxygen - such as mayflies, stone flies, caddis flies, and others. Along with the reduction of such insect life comes the reduction of trout and other populations that are dependent upon such insects for food. What will then be the impacts upon the

whole stream and upon the fish populations that depend upon these benthic macroinvertebrates? The EA doesn't provide a stream temperature analysis despite the parameter's importance for native fish habitat. Trends for streams with elevated temperatures are omitted from the analysis. The EA assumes without adequate scientific basis that logging and other vegetation removal in riparian areas will not affect temperatures. This not correct. It is an error in fact. [70-11]

The EA doesn't provide a stream temperature analysis despite the parameter's importance for native fish habitat. Trends for streams with elevated temperatures are omitted from the analysis. The EA assumes without adequate scientific basis that logging and other vegetation removal in riparian areas will not affect temperatures. [72-171]

The EA ignores the fact that opening the forest canopy in upland sites can raise water temperature in streams. [72-228]

Concern: [Seq#295]

Eliminate and/or reduce grazing. Do not allow the project to create more grazing impacts.

RESPONSE:The

effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment

Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities

and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area.

COMMENT: For this to be an interdisciplinary, comprehensive restoration plant it must consider and deal with the main factors that have lead to the Forest's ill-health. Also, the FS is notoriously negligent in its monitoring of range resources.

[[ID#310]
Response: [Seq#295]

The opinion of the respondent is noted. Past livestock grazing was not identified as a main factor contributing to densely-stocked stands. The purpose and need lists the main factors that have lead to the need to restore forest Vegetation Composition and Structure in the project area. Past management practices, include fire suppression, have lead to a large increase of densely-stocked stands with multiple canopy layers or closed canopies with a high proportion of young shade-tolerant tree species. (The Purpose and Need for Action section, EA page 13) [ID#310]
Associated Comments: [Seq#295]
Eliminate and/or reduce grazing. Do not allow the project to create more grazing impacts. RESPONSE:The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area. COMMENT: For this to be an interdisciplinary, comprehensive restoration plant it must consider and deal with the main factors that have lead to the Forest's ill-health. Also, the FS is notoriously negligent in its monitoring of range resources. [68-65]

Concern: [Seq#296]

Based on impacts to fish, commenters recommend an EIS instead of an EA.

These roads together with other commercial forest uses (i.e., logging, fire suppression, and livestock management threaten the restoration and survival of three ESA-listed salmonids in the Methow Valley and the MRP Libby and Buttermilk watersheds. The risk of further damage to critical habitat of bull trout, steelhead, and spring chinook salmon is sufficient to require an Environmental Impact Statement. [ID#311]
Response: [Seq#296]

Thank you for your response. Based on the actions proposed and the long-term beneficial impacts to aquatic resources, USFS recommends the use of an EA for analysis.

As described in Forest Service Handbook 1909.15, National Environmental Policy Act Handbook: "An environmental assessment (EA) shall be prepared for proposals as described in 220.4(a) that are not categorically excluded from documentation (220.6) and for which the need of an EIS has not been determined (220.5)." The purpose of an EA is to: "(1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact."

The CEQ regulations define a finding of no significant impact (FONSI) as: ". . . a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (1507.7(a)(5)).

The project team feels a FONSI can be prepared because the proposed action does not have a significant effect on the environment. [ID#311]

Associated Comments: [Seq#296]

Often built near streams to give access to timber harvest sites, the roads were not intended to have long-life (5-7 years). When such short-lived roads deteriorate, sediment rich run-off is dumped into the streams where it alters stream flow dynamics, often making them more shallow and wide which can result in raised water temperatures. Sediment-filled muddy water from such washed-out roads is threatening to the survival of endangered salmon which require cool, clear water in order to thrive and produce offspring. The fine sediment found in such waters puts the fish in peril by smothering their eggs as well as damaging the gills of salmon and trout. There are three ESA-listed salmonids in the watersheds which will be threatened by the proposed actions. The proposed Mission Restoration plan places them in further peril. Due to the risk of further damage to critical habitat alone, an Environmental Impact Statement should be prepared before any "treatment" takes place in these watersheds. [47-13]

These roads together with other commercial forest uses (i.e., logging, fire suppression, and livestock management threaten the restoration and survival of three ESA-listed salmonids in the Methow Valley and the MRP Libby and Buttermilk watersheds. The risk of further damage to critical habitat of bull trout, steelhead, and spring chinook salmon is sufficient to require an Environmental Impact Statement. [63-42]

"There may be short-term increases in fine sediment delivery to streams." Where there are ESA listed fish and where the streams and creeks are already at risk, this is completely unacceptable and should be further reviewed in a required EIS. The EA specifies that adverse effects from fine sediment to endangered fish will be by definition long-term, therefore all references to short-term affects should be eliminated from the EA and any subsequent EIS. [63-60]

Resource Indicator: Ground Cover " There may be short-term increases in fine sediment delivery to streams." Where there are ESA listed fish and where the streams and creeks are already at risk, this is completely unacceptable and should be further reviewed in an EIS. [68-127]

Concern: [Seq#297]

These comments are concerned with the potential extinction of spring Chinook and the impacts to the species.

Given that the ESA listed species in the project area are experiencing difficult recovery and are threatened to become extinct (spring chinook), it is foolish and irresponsible to do a project that will produce sediment. This logging operation will produce sediment which is why the Forest only says it will reduce sediment in the long term. The EA also recognizes that by Forest definition sediment delivery is a long term adverse effect. It is well known and documented that logging operations produce sediment- the operation itself and the road related uses. [ID#312]

Response: [Seq#297]

The aquatic restoration activities proposed in this EA are all in line with the restoration strategy for spring Chinook. Many restoration activities do cause a short term negative impact to fish but the short term impacts are countered by the long term beneficial effects, which include sediment reduction, increased habitat diversity, more habitat connectivity, etc. Even timber harvest may increase the water storage capacity of the landscape. We have analyzed both the short and long term impacts to fish and believe that the long term benefits out weight the short term impacts. We also believe that the activities proposed will not put the fish species in jeopardy of extinction (see Section 3.3, Water Resources in Chapter 3 of the EA, the Hydrology and Aquatic baseline report in project files, and the document prepared for consultation in project files. [ID#312]

Associated Comments: [Seq#297]

Given that the ESA listed species in the project area are experiencing difficult recovery and are threatened to become extinct (spring chinook), it is foolish and irresponsible to do a project that will produce sediment. This logging operation will produce sediment which is why the Forest only says it will reduce sediment in the long term. The EA also recognizes that by Forest definition sediment delivery is a long term adverse effect. It is well known and documented that logging operations produce sediment- the operation itself and the road related uses. [63-52]

The EA states that "Alternative 2 may affect, and would likely adversely affect, steelhead and bull trout species and their critical habitat. Adverse impacts would be temporary and negligible to minor in consequence. Habitat conditions for ESA-listed species would move towards desired habitat conditions. This project would contribute towards the recovery of these species across the Upper Columbia Basin." This positive conclusion is false and has no basis. The omission of spring Chinook, described as an ESU in danger of extinction in the Methow watershed is a critical error. [63-62]

A new report just came out showing spring Chinook, one of the ESA listed species in this project, are at risk to become extinct. See: The Governor's full report can be found at http://stateofsalmon.wa.gov/governors-report-2016/. This newly released report (Feb, 2017) informs us

that Spring Chinook, an ESA listed species in this project area, are decreasing instead of recovering and face possible extinction. [68-75]

A NOAA Fisheries five year status review completed last year found that upper Columbia River spring Chinook are at high risk of extinction, even after a recovery plan was put into place in 2007. sub basins methow... all of the damage from this would not just effect Libby or Buttermilk, it would effect the Methow Rive [68-76]

Concern: [Seq#298]

concerned with sediment and temperature.

Without funds for long-term maintenance they deteriorate resulting in erosion and sediment delivery to streams and altering stream flows making the channels more shallow with increased water temperatures and decreased dissolved oxygen resulting in reduced fish productivity. [ID#313]
Response: [Seq#298]

All proposed actions will be done using design criteria that will reduce the impacts of sedimentation and will not increase water temperature or dissolved oxygen. Most of the proposed actions will actually reduce sedimentation (road decommissioning, culvert replacement, hardening stream crossings, rock armoring, etc.) and will help to keep stream temperatures low by increasing water storage capacity.

Water temperature has been monitored at sites in both Buttermilk and Libby drainages for over ten years. While there are some concerns of water temperature, we believe that temperature is less of a limiting factor to fish than sediment and the impact from roads. Additionally, changes in water temperature can be difficult to predict but the treatments proposed are likely to increase water storage which will help reduce water temperatures in late summer (soil de-compaction, beaver enhancement, road decommissioning). Treatments in riparian reserves are designed to not reduce stream shading.

As stated on in Figure 26, Water Resources Considered but Not Analyzed in detail on page 61 of the preliminary EA: "This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature." [ID#313]
Associated Comments: [Seq#298]
Water Quality: The Washington Department of Ecology Water Quality Assessment for Washington has sampling locations downstream from the proposed project area on the lower Twisp River and lower Methow River. Washington State Water quality parameters specific to aquatic habitat that are most susceptible to change by thinning and prescribed fire treatments are turbidity, fine sediment, and temperature. This project would not impact these parameters where the sampling locations exist.(p.55) [Planned project activities would impact the above parameters, as well as stream flows, contributing to

reduced water quality in these waters, which rely on the NWFP for protection. Feeder streams, as well as downstream locations, important to salmonid spawning and rearing would be negatively impacted. Conclusions based on what the projected impact might be at existing downstream sampling locations are not helpful.] [11-46]

Without funds for long-term maintenance they deteriorate resulting in erosion and sediment delivery to streams and altering stream flows making the channels more shallow with increased water temperatures and decreased dissolved oxygen resulting in reduced fish productivity. [63-41]

It is important to understand that fine sediment in stream gravel may continue to influence fish production long after surface waters become clear. It may take several years before these fine sediments are flushed from the gravel. This is why elsewhere in the EA it is acknowledged that there will be long-term adverse impacts of sediment on critical habitat essential to production of endangered fishes. This finding is significant, although water temperature, pathogens, dissolved oxygen, competition from other species, and direct mortality are all influenced by temperature and none of these factors are discussed in this document. [63-61]

It is important to understand that fine sediment in stream gravel may continue to influence fish production long after surface waters become clear. It may take several years before these fine sediments are flushed from the gravel. COMMENT: This finding is significant Water temperature Pathogens, dissolved oxygen, competition from other species, and direct mortality are all influenced by temperature. COMMENT: none of these factors are discussed in this document [68-135]

Concern: [Seq#299]

Wisdom, et al., 2000, conducted analyses of the Interior Columbia River Basin and made the following statements (emphases added):

Our analysis …indicated that >70 percent of the 91 species are affected negatively by one or more factors associated with roads. …Comprehensive mitigation of road- associated factors would require a substantial reduction in the density of existing roads as well as effective control of road access in relation to management of livestock, timber, recreation, hunting, trapping, mineral development, and other human activities.

...Efforts

to

restore

habitats without simultaneous efforts to reduce road density and control human disturbances will curtail the effectiveness of habitat restoration, or even contribute to its failure; this is because of the large number of species that are simultaneously affected by decline in habitat as well as by road-associated factors. [ID#314]
Response: [Seq#299]

Both action alternatives reduce road densities. Effects of the road actions on wildlife species are discussed in the Preliminary EA at p. 139-166, in the Wildlife Specialist Report, and the Biological Assessment. Effects of roads on hydrology and aquatic species is addressed in Section 3.3, Water Resources, of Chapter 3 of the EA. [ID#314]
Associated Comments: [Seq#299]
Wisdom, et al., 2000, conducted analyses of the Interior Columbia River Basin and made the following statements (emphases added): Our analysis …indicated that >70 percent of the 91 species are affected negatively by one or more factors associated with roads. …Comprehensive mitigation of road-associated factors would require a substantial reduction in the density of existing roads as well as effective control of road access in relation to management of livestock, timber, recreation, hunting, trapping, mineral development, and other human activities. ...Efforts to restore habitats without simultaneous efforts to reduce road density and control human disturbances will curtail the effectiveness of habitat restoration, or even contribute to its failure; this is because of the large number of species that are simultaneously affected by decline in habitat as well as by road-associated factors. [72-3]

Concern: [Seq#301]

Section 3.7.4 Environmental Consequences 3.7.4.1

Considered, but not Analyzed in Detail

The Wildlife Resource Report(Glidden 2016) describes in detail the wildlife species that were considered but not analyzed in detail.(p.183)

[This is not adequate EA treatment for the ESA-listed grey wolf.] [ID#316]
Response: [Seq#301]

Wolves are discussed briefly, in the Specialist Report at p. 6 (below) and in detail in the Biological Assessment (still in draft form 5/8/17).

The project area is part of the Lookout Pack's territory. Gray wolves and a rendezvous site are documented in the project area, but no den sites have been found there. Timing restrictions may be implemented if a den or rendezvous site is found. Deer are found across the project area, year-round, and provide a prey base. Deer forage is expected to increase in quantity and palatability as a result of planned treatments, which may increase deer numbers in the area. Disturbance and vegetation changes from treatments would not be expected to negatively affect wolves, although wolves and prey may be temporarily displaced during activities. Current open road density in the project area is 1.1 miles per square mile, and will be increased to 1.2 post-project with alternative 2 (although 13.2 miles of the increased road miles are administrative use only, which is estimated to average 1-2 vehicles per year). Alternative 3 would reduce road densities to 0.8 miles per square mile. The determination for wolves is "may affect (due to temporary and short-term disturbance), not likely to adversely affect". Reduction in road density would be a beneficial effect for wolves and their prey (alternative 3).

[ID#316]

Associated Comments: [Seq#301]

3.7.4 Environmental Consequences 3.7.4.1 Considered, but not Analyzed in Detail The Wildlife Resource Report(Glidden 2016) describes in detail the wildlife species that were considered but not analyzed in detail.(p.183) [This is not adequate EA treatment for the ESA-listed grey wolf.] [11-69]

Concern: [Seq#302]

Concerned about lack of reference to John Crandall's report. [ID#317]

Response: [Seq#302]

Thank you for your comment. John Crandall's report was reviewed by district resource staff and, although not specifically cited in the EA, the content was addressed in the report by Lance George, Hydrologist, and Gene Shull, Fish Biologist. The report was mostly a compilation in one place of existing information. [ID#317]

Associated Comments: [Seq#302]

3.3 Water Resources The section below summarizes existing condition information along with the direct, indirect, and cumulative effects of the Mission Restoration Project, as analyzed in the Mission Restoration Project Water Resources Report by G. Shull and R. L. George (2016). [The earlier Mission Restoration Project Aquatics Resources Report should be referred to in this EA. It was presented by the consultant, John Crandall, on Feb. 16, 2016 to the Methow Restoration Council. It appears to have been eliminated for analysis and consideration in this EA.] [11-40]

Why was an earlier Mission Restoration Project Aquatics Resources Report eliminated for analysis and consideration in this EA? It was presented by the consultant, John Crandall, on Feb. 16, 2016 to the Methow Restoration Council. [29-33]

Concern: [Seq#303]

Comment is about logging reducing available wood for instream use.

Finally the EA should address the proposed actions ability to address or contribute to addressing limiting factors identified in John Crandall's 2016 "Mission Project Aquatics Assessment Support Project" such as:

[...] [ID#318]
Response: [Seq#303]

While logging may reduce the overall density of trees on the landscape, harvest activities will not reduce the recruitment potential of large wood within the riparian reserve area. Riparian reserve widths are specifically designed to protect trees that have the potential to fall into the stream channel.

This is partially being addressed through coarse woody debris (CWD) enhancement on up to 8.2 miles in 4 stream segments. Live and dead conifers less than 21" in diameter would be felled into streams. [ID#318]
Associated Comments: [Seq#303]
Finally the EA should address the proposed actions ability to address or contribute to addressing limiting factors identified in John Crandall's 2016 "Mission Project Aquatics Assessment Support Project" such as:...o Low wood levels. How can the project actively restore and contribute to wood levels, including retention of any valuable wood in thinning in riparian reserves to meet aquatic restoration goals? [18-6]

Large wood, spawning habitat, and/or pool habitat are currently below desired conditions for ESA listed fish species (USDA, USDC, and USDI 2004)and in small headwater streams within the project area." Commercial logging of 6.3 million board feet will not help these above referenced conditions. [68-74]

Concern: [Seq#304]

Comments are concerned with poor fine sediment data.

Forest plan standard 3-3 requires fine sediment levels in spawning areas not to exceed 20% for the

<1mm size class. Draft EA at 57 (explaining that fine sediment levels of spawning habitat is Properly Functioning (PF) when particles <6mm are less than 12%; Functioning At Risk (FAR) when the levels are 12-20%; and Not Functioning (NF) when the levels are greater than 20%). Based on fine sediment level data collected in 2010 and 2011, the Forest Service concludes that Buttermilk drainage is properly functioning for fine sediment levels and some fine sediment levels are elevated within Libby Creek.

Id.

at 58. The Forest Service should update this data with more recent surveys. [ID#319]
Response: [Seq#304]

We acknowledge the data is older than desired but there have not been any land use or management changes since the data was collected that we believe would have any measurable change on fine sediments. From an aquatics stand point, Alternative 3 would be preferable for reducing sediment input to streams and we appreciate your comment. [ID#319]
Associated Comments: [Seq#304]
Forest plan standard 3-3 requires fine sediment levels in spawning areas not to exceed 20% for the<1mm size class. Draft EA at 57 (explaining that fine sediment levels of spawning habitat is Properly Functioning (PF) when particles <6mm are less than 12%; Functioning At Risk (FAR) when the levels are 12-20%; and Not Functioning (NF) when the levels are greater than 20%). Based on fine sediment level data collected in 2010 and 2011, the Forest Service concludes that Buttermilk drainage is properly functioning for fine sediment levels and some fine sediment levels are elevated within Libby Creek. Id. at 58. The Forest Service should update this data with more recent surveys. [27-35]

Plus, the Forest Service fails to provide any data showing fine sediment levels based on particles<0.85 mm, which would more closely align with the metric used in the forest plan standard. Based on this older data, however, the road activities in Alternative 3 are still better designed to achieve the statement of purpose and need to "restore and maintain aquatic and hydrologic processes impacted by management due to, inter alia, "[s]everal roads add sediment, increase the drainage network, block fish migration, and reduce woody debris recruitment in the project area." [27-36]

Concern: [Seq#305]

Comments are concerned with the lack of funding for proposed projects.

Decommission all roads at risk that can't be maintained by expected funding. Close most roads. Decommission more roads.

RESPONSE:Alternative

3 was formed to address this issue. The effects of closing more roads than identified in the Travel Analysis Process (TAP) (which considered administration and resource needs for the present and the

future) is displayed in Chapter 3. Appendix B summarizes the proposed transportation changes for this project. More specific information about road management is include in the Engineering Resource Report in project files.

COMMENT: Alternative 3 is not adequate treatment of road closure and decommissioning.

And, the response here does not address funding, part of the issue raised. [ID#320]
Response: [Seq#305]

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed actions. While roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads slated for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners. Thank you for your comment and we agree that the funding issue is a difficult one. [ID#320]
Associated Comments: [Seq#305]
"The project would reduce the amount of riparian roads by 41 to 49 percent and stream crossings by 53 to 58 percent of all stream crossings. Fine sediment levels would increase temporarily for 1-3 years. Design criteria will minimize these effects to negligible levels. In the long-term, this effort will reduce sediment sources across the project area and improve fish habitat conditions downstream" (Restoration Aquatics Hydrology Resource Report, p.72). ["taking approximately one to three years before vegetation would be re-established enough to effectively cover exposed soil and prevent surface erosion, but the duration would be long-term as defined. (p.75)" The effects would not be "temporary" and the long-term benefits of road closures and reduced stream crossings is not assured by appropriated funds and are not dependent on commercial logging activity.] [11-61]

Funding for restoration activities should be guaranteed, secured for the long-term, and the sources shared with the public in advance of implementation of the project. Commercial logging should not be the driver of the project. [61-5]

Road decommissioning is included as part of the current restoration proposal only after logging is completed, in perhaps ten years if funding is available at that time. [63-45]

Another MVCC concern was " Need for prioritization of, and assurance of funding for, road decommissioning and maintenance. [63-97]

Decommission all roads at risk that can't be maintained by expected funding. Close most roads. Decommission more roads. RESPONSE:Alternative 3 was formed to address this issue. The effects of closing more roads than identified in the Travel Analysis Process (TAP) (which considered administration and resource needs for the present and the future) is displayed in Chapter 3. Appendix B summarizes

the proposed transportation changes for this project. More specific information about road management is include in the Engineering Resource Report in project files. COMMENT: Alternative 3 is not adequate treatment of road closure and decommissioning. And, the response here does not address funding, part of the issue raised. [68-69]

Due to hydrologic connectivity with roads, sediment could reach fish habitat. This increase would last an estimated 1-3 years following treatment. Design Features and Mitigation Measures, listed in Appendix A would minimize sediment delivery to streams. Measures like rock armoring perennial stream crossings prior to log hauling and working under dry weather conditions would minimize fine sediment mobilization. The amount of sediment reaching streams, using design features and BMPs would be minor. Regarding the above claims: "Applying these design criterion would require some level of assessment, inspection, or monitoring by resource staff before, during, and/or after implementation" The FS does not commit to, with staff, timetable or funding, any of the design features which makes them useless. These resources need more protection, not fickle, unfunded declarations of intent. [68-133]

The EA indicates "Road closure and decommissioning would be spread out over the period of the project or after completion of the project depending on where and when funding is available." (25) So where the analyses in the EA explicitly state or imply any certainty this work will happen, they are misleading. [72-223]

Concern: [Seq#306]

Comment pertains to need for ESA consultation and potential impacts to ESA species. [ID#321]
Response: [Seq#306]

All activities will be consulted on with USFWS and NMFS. These agencies will write a Biological Opinion, or Concurrence letter, pertaining to any potentially adverse effects to ESA species. This will be completed before any work will be conducted. This consultation includes the impacts to critical habitat of spring Chinook and steelhead. The impacts will be made publically available in the Mission Project Biological Assessment and the response from NMFS and USFWS will also be available. Many of the actions proposed are activities that will directly benefit ESA species even though they may cause a short-term negative impact. This includes the construction of fish passage culverts that will increase the amount of available habitat by about 6 miles and the addition of large wood into 4 sections of streams that may be lacking in large wood and habitat diversity. These activities will cause sediment and potential harassment of ESA fish but, in the long-term, will create better fish habitat and habitat connectivity and will help restore the species. Even proposed actions like harvest and prescribed fire will help restore stream flow and make more resilient and native riparian areas.

Lookout AMP results and plan are available in the Lookout AMP available from the local FS office. [ID#321]

Associated Comments: [Seq#306]
Buttermilk Creek Sub-watershed Description: Much of the Twisp Watershed, including Buttermilk, is a Tier 1 key watershed identified under the NWFP as important in contributing to the conservation of anadromous salmonids, bull trout, and other resident fish species. (p.54) [Elsewhere the Buttermilk watershed has been suggested to be separate from the Twisp Watershed. Activities of the Mission Project must be considered with regard to their potential to negatively impact ESA-listed salmonids in this watershed.] [11-44]

Libby Creek Sub-watershed Description: Libby Creek flows in an easterly direction for approximately 14 miles to its confluence with the Methow River at RM 26, just downstream from the town of Carlton, at an elevation of 1,360'. Other tributaries to Libby Creek include Smith Canyon, Chicamun Canyon, Ben Canyon, Mission Creek, and Hornet Draw. These streams are mostly perennial but may flow intermittently in low water years and when water diversion volumes exceed instream flow. Several other intermittent creeks and draws also contribute to the instream flow especially during spring runoff. Both the Buttermilk and Libby Creek sub-watersheds experienced decades of timber harvest, fire suppression, livestock grazing, firewood cutting, dispersed recreation impacts, and road construction with varying effects to aquatic and riparian resources. Implementation of the NWFP and listing fish species as Threatened or Endangered under the Endangered Species Act have substantially reduced activities and impacts within RRs.(pp.54-55) [Activities of the Mission Project must be considered with regard to their potential to negatively impact ESA-listed salmonids in this watershed. The results of eliminating management activities that resulted in environmental degradation within these watersheds should be determined before renewing those activities with a commercial logging "restoration" operation and the potential increase in commercial livestock grazing.] [11-45]

Fish Species and Habitat: The project analysis area contains habitat for fish species listed under the ESA, Regional Forester's Sensitive Species, Management Indicator Species (MIS), and species for which Essential Fish Habitat (EFH) has been designated under the Magnuson Stevens Fishery Conservation and Management Act (see Fig. 15). Both the Buttermilk and Libby Creek drainages contain federally endangered Upper Columbia River Spring-run Chinook, threatened Upper Columbia River steelhead, and Columbia River bull trout. Buttermilk Creek is designated critical habitat for Spring Chinook, summer steelhead, and bull trout. Libby Creek is designated critical habitat for steelhead only (see Fig. 16). Bull trout use West Fork and East Fork Buttermilk Creeks for spawning and rearing. The mainstem of Buttermilk Creek is used for foraging and migrating to and from spawning habitat. Limited bull trout use occurs in Libby Creek and there is no known spawning activity in this drainage. Steelhead salmon spawn and rear in Buttermilk and Libby Creeks. Juvenile spring chinook salmon use the lower portions of Buttermilk and Libby Creek for rearing. Within the project area, habitat deficiencies include low base flows, low instream wood levels, excessive summer water temperatures (Libby Creek), elevated fine sediment in fish bearing tributaries, and habitat loss on in some private lands in the lower Buttermilk Creek, and Libby Creek drainages. (p.55-56) [It is impossible to understand how the Methow Ranger District can justify a "restoration project" that includes commercial logging millions of board feet of timber in these drainages that are critical habitat for ESA-listed salmonids. (see the report cited on page 3 above "Because of this extinction risk, the Fish and Wildlife Committee of the Northwest Power and Conservation Council at its Portland meeting Tuesday, February 14, agreed to ask the Independent Scientific Advisory Committee to review the status and the efforts to recover the upper Columbia River

spring chinook evolutionary significant unit (ESU)." This ESU includes the Libby and Buttermilk areas of the Methow watershed within the Mission Project.] [11-47]

Riparian roads and hillslope failures from past logging activities contribute excess sediment to the stream system, but the data suggest sediment is not a problem in fish habitat (see Fig.17). It is important to note that Buttermilk Creek, including the West Fork and East Fork Buttermilk Creek tributaries, has mostly steep gradient channels with high sediment transport capacity. Most fine sediment in the drainage is transported to the Twisp River, which is generally low in fine sediment levels (USDA 2011a; Lookout Mountain AMP Biological Assessment). Fine sediment levels are elevated within the Libby Creek drainage. Three out of the nine sites monitored had surface fines categorized as Not Functioning and the remaining six sites were Functioning At Risk. Some tributary streams are receiving bank damage from livestock, but it has been minor across the sub-watershed. The higher fine sediment levels is likely due to the high road density in several areas across the sub-watershed. Fine sediment within the Libby Creek drainage is Functioning At Risk and below desired levels for fish production.(pp.57-58) [Both watersheds in the planned project area have been subject to management activities that have resulted in excessive stream sediment levels not desirable for fish production. Commercial logging activities "contribute excess sediment to the stream system"; how then can this activity be justified in streams designated as "critical habitat" for endangered salmonids?] [11-48]

3.3.4.3.2 Cumulative Effects Spatial and Temporal Context for Effects Analysis: Project effects are not expected to extend outside of these sub-watersheds. Localized increases of erosion and sedimentation would occur from the instream work and some riparian treatments, however this increase would be short in duration and is not expected to have a cumulative effect at the watershed scale. (pp.76-77) [The numerous negative impacts on ESA-listed species of planned project activities would impede their recovery and extend into the Methow River watershed. The surface erosion "duration would be long-term as defined" (see p.75). (see the report cited on page 3 above "Because of this extinction risk, the Fish and Wildlife Committee of the Northwest Power and Conservation Council at its Portland meeting Tuesday, February 14, agreed to ask the Independent Scientific Advisory Committee to review the status and the efforts to recover the upper Columbia River spring chinook evolutionary significant unit (ESU)." This ESU includes the Libby and Buttermilk areas of the Methow watershed within the Mission Project.]] [11-58]

3.3.4.3.3 Summary of Cumulative Effects Alternative 2 may affect, and would likely adversely affect, steelhead and bull trout species and their critical habitat. Adverse impacts would be temporary and negligible to minor in consequence. Habitat conditions for ESA-listed species would move towards desired habitat conditions. This project would contribute towards the recovery of these species across the Upper Columbia Basin.(p.77) [Positive conclusions have no basis when there will be adverse affects on "critical habitat" of long-term duration as determined and defined by this EA. The 2011 Draft EA for AMP Revision included the following language: "AQUATIC RESOURCES Regulatory Framework (Pages 3-39 and 40) The desired condition (DC) provided for in the Okanogan Forest Plan "is for habitat that supports fish rearing, spawning, and migration will be in an improved state" and that water yield and quality will be substantially the same. Fish habitat management objectives are to maintain and improve fish habitat; to maintain or enhance its biological, chemical, and physical qualities. "The structural and functional properties of aquatic systems will be managed to promote bank and channel stability--.""The

Northwest Forest Plan ammended the Okanogan Forest Plan in 1994; it includes an Aquatic Conservation Strategy(ACS) that focuses on maintaining and/or improving conditions and processes associated with streams and adjacent riparian areas. Standards and Guidelines for Riparian Reserves include: "adjust or eliminate grazing practices to eliminate impacts that reduce or prevent attainment of ACS objectives". Part of the ACS was the establishment of Key Watersheds to act as refugia and provide high quality habitat; priorities include "maintaining and recovering at-risk fish stocks". "Existing Condition Pages 3-40 to 42 Limiting factors for fish habitat and fish populations in the analysis area are low base flows, excessive summer temperatures, moderate to high fine sediment in fish bearing tributaries, and habitat loss." "Past management activities, such as timber harvest within riparian areas, road construction, and livestock grazing, have impacted streams by reducing shade, altering streamside vegetation and increasing sediment input."] [11-60]

3.4.4.3 Alternatives 2 and 3 Resource Indicator: Detrimental Surface Erosion/Mass Wasting Following soil design features will result in adverse, short-term, negligible detrimental surface erosion from management activities. Forests generally have very low erosion rates unless they are disturbed in a manner that exposes bare soils to the erosive energy of water and wind. Management caused disturbances include prescribed fire, road maintenance, harvesting, and post-harvest operations.(p.95) "Each treatment activity is associated with a different level of ground cover alteration within the project area. Alteration or removal of ground cover in drainages increases the potential for erosion and sedimentation by reducing the effectiveness of groundcover to trap and filter sediment from upslope areas. There may be short-term increases in fine sediment delivery to streams" (Restoration Aquatics Hydrology Resource Report, p.45) . [Management activities, such as those planned should not be initiated in "critical habitat" of ESA-listed salmonids, especially those currently "functioning at risk". "Fine sediment within the Libby Creek drainage is Functioning At Risk and below desired levels for fish production."(pp.57-58) "Fine sediment levels are elevated within the Libby Creek drainage. Three out of the nine sites monitored had surface fines not functioning and the other six sites were functioning at risk" (Restoration Aquatics Hydrology Resource Report, p.28).] [11-65]

· Sediment Reduction Amendment. The proposal to potentially increase sediment levels has the potential for incidental take of TES fish in Libby Creek. This amendment requires USFWS consultation. In addition, please refer to agreements in the EA to protect soils made during the most recent grazing allotment renewal for Libby Creek. [18-40]

Second, the long term effect will not necessarily be positive. The EA defines long term as 15 years. If the ESA-listed salmonids in these watersheds go extinct, partly because of increased sediment, higher water temperatures, lower water flow, etc. associated with this project, that is not something that will recover with time. The long term effect would be negative. [29-14]

Impact to critical aquatic environments of endangered species has not been addressed let alone evaluated. [42-2]

What about the endangered species of salmonids in the creeks? How can you destroy their habitat and save them at the same time? [51-32]

Buttermilk Creek and Libby Creek are critical habitat to three ESA listed salmonids-spring chinook, summer steelhead and bull trout. Such habitat deficiencies that can threaten their existence include: low base flows, low instream wood levels, excessive summer temperatures, elevated fine sediment and habitat loss. Most of these deficiencies would be exacerbated by commercial logging activity. Thus it is not farsighted nor prudent to allow such adverse effects to the aquatic ecosystem and riparian zone. [51-33]

Do not create any new sediment and reduce sediment from the project area since it is harmful to aquatic species. RESPONSE:Alternative 1, No Action, would not create any new sediment from proposed project activities. Alternatives 2 and 3 are designed to decrease sediment to area streams over the long-term. Please see the description of Alternatives 2 and 3 contained in section 2.2.4. Decreasing sediment is part of P&N #1 for this project. The project contains six resource actions to address these concerns. See the Aquatic Resource section of Chapter 3 for disclosure of sediment related impacts from the project. COMMENT: Given that the ESA listed species in the project area are experiencing difficult recovery and are threatened to become extinct (spring Chinook), it is foolish and irresponsible to do a project that will produce sediment. This logging operation will produce sediment which is why the Forest only says it will reduce sediment in the long term. It is well known and documented that logging operations produce sediment- the operation itself and the road related uses. Also, the design of Alt 2 and 3 to reduce sediment over the long term is not likely to happen. [68-64]

3.3.4.3.3Summary of Cumulative Effects Alternative 2 may affect, and would likely adversely affect, steelhead and bull trout species and their critical habitat. Adverse impacts would be temporary and negligible to minor in consequence. Habitat conditions for ESA-listed species would move towards desired habitat conditions. This project would contribute towards the recovery of these species across the Upper Columbia Basin. This positive conclusion is false and has no basis; it is subjective and outrageous. [68-120]

Within the project area, habitat deficiencies include low base flows, low instream wood levels, excessive summer water temperatures (Libby Creek), elevated fine sediment in fish bearing tributaries, and habitat loss on in some private lands in the lower Buttermilk Creek, and Libby Creek. Here we see further description of the ESA listed species habitat being already at risk. [68-122]

"The Endangered Species Act, Forest Plan direction, and the Magnuson-Stevens Fishery Conservation and Management Act require that consultation be completed with respect to effects of proposed activities on Endangered, Threatened, Sensitive, and Management Indicator Species, Critical Habitat, and Essential Fish Habitat. The species and habitat of concern in the Mission Restoration project are described later in this section. Consultation on effects to Endangered Species Act (ESA) listed species was conducted with the required regulatory agencies (U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)) prior to issuance of the EA and Decision Notice for the project." THE FS IS SAYING THIS, BUT THE EA AND DECISION NOTICE HAVEN'T EVEN BEEN ISSUED AND I DON'T THINK THE CONSULTATIONS HAVE HAPPENED YET. This is yet another indication that the FS is following a pre-determined plan and not considering informed citizen voices. [68-125]

The Mission project area provides valuable habitat for ESA-listed fish species including Spring Chinook

salmon, Summer Steelhead, and Bull Trout, as well as for the Sensitive species Westslope Cutthroat trout and Interior Redband Rainbow trout. The EA fails to provide an analysis that explains how viable populations of these species will be insured in project area streams. [72-162]

Since the EA's analyses for Water Resources is so flawed, the FS cannot assure that project activities won't adversely modify Critical Habitat for ESA-listed fish species. [72-181]

11. T&E fish species - The project purports to have an overall net benefit to native fish species using habitats found with the project area, despite the short term inputs of fine sediment from road remediation and decommissioning. It would be helpful to see included in the final EA what the federal services have concluded on the acceptability of these short-term impacts. {See Figure 38 p. 83} [78-34]

Concern: [Seq#307]

Locations where roads cross waterways change the natural shape of the river [or creek] and how it is allowed to flow through the barrier. This can affect sediment transport and deposition and the movement of migration of aquatic species (Forman and Alexander, 1998; Warren and Pardew, 1998). Natural processes are altered by crossings and higher barrier frequency has a negative impact on many aspects of waterway health. Specifically, increases in the water velocity due to the configuration of a road crossing are inversely proportional to fish movement (Warren and Pardew, 1998). A similar metric is used in assessing logging road impacts on fish habitat. In this case, road density is used with the assumption that all crossings have a similar configuration and are proportional to road density (Baxter, Frissell et al., 1999)…..The desired condition of the landscape, from an ecological standpoint, is to have no barriers in the aquatic habitat. This could mean all road crossings or other structures are configured such that they generate no impact on the habitat or movement of aquatic species…..Alteration of road crossings or installation of new crossings (or other barriers) that do not specifically address the need for habitat-friendly design will negatively impact aquatic connectivity due to increases in runoff, total suspended solids and water chemistry (Byron and Goldman, 1989; Forman and Alexander, 1998; Ahearn, Sheibley et al, 2005)." (Source: Fraser Shilling, Ph.D., et al, University of California at Davis)

[[ID#322]
Response: [Seq#307]

Thank you for your comment. [ID#322]
Associated Comments: [Seq#307]
"Locations where roads cross waterways change the natural shape of the river [or creek] and how it is allowed to flow through the barrier. This can affect sediment transport and deposition and the movement of migration of aquatic species (Forman and Alexander, 1998; Warren and Pardew, 1998). Natural processes are altered by crossings and higher barrier frequency has a negative impact on many aspects of waterway health. Specifically, increases in the water velocity due to the configuration of a road crossing are inversely proportional to fish movement (Warren and Pardew, 1998). A similar metric

is used in assessing logging road impacts on fish habitat. In this case, road density is used with the assumption that all crossings have a similar configuration and are proportional to road density (Baxter, Frissell et al., 1999)…..The desired condition of the landscape, from an ecological standpoint, is to have no barriers in the aquatic habitat. This could mean all road crossings or other structures are configured such that they generate no impact on the habitat or movement of aquatic species…..Alteration of road crossings or installation of new crossings (or other barriers) that do not specifically address the need for habitat-friendly design will negatively impact aquatic connectivity due to increases in runoff, total suspended solids and water chemistry (Byron and Goldman, 1989; Forman and Alexander, 1998; Ahearn, Sheibley et al, 2005)." (Source: Fraser Shilling, Ph.D., et al, University of California at Davis) [47-15]

My earlier comments were based on information provided by the USFS, as well as my professional education (B.S. Wildlife Conservation, Ph.D. in Zoology) and experience in natural resource management and research (USFS in wildlife and timber management, as well as contract work as a Fisheries Scientist; as well as a career as a University Professor and Fisheries Scientist). I did not, as most public citizens, have the time necessary to conduct review of relevant "best available Science" literature. My career has focused on environmental factors that affect fisheries productivity. My interest in this project is as a concerned public that is well acquainted with the project area (13 years residency on Libby Creek) and as a Fisheries Scientists concerned with public land management. I have no financial involvement in the Mission Restoration Project. I recognize that many of the projects supporters do have vested financial interests in seeing this project initiated. Many of the projects opponents have concerns for loss of their property and personal values. [63-10]

Concern: [Seq#308]

P&N 3,5 &6 are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale. Forest Restoration is just an excuse for timber harvest.

[ID#323]

Response: [Seq#308]

Timber harvest is about 1,952 acres of the total 10,255 acres planned for thinning and fuels treatments. The need and effects of timber harvest on effectiveness and duration is found on preliminary EA pages 123-127 and 155-162.

Purpose and Needs #3, 4, 5 and 6 are all supported by the Okanogan-Wenatchee National Forest Restoration Strategy (2012).

The proposed vegetation management is in line with the Forest Restoration Strategy [FSR] (2012). The 2012 Okanogan-Wenatchee National Forest Restoration Strategy is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and

externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques. [ID#323]

Associated Comments: [Seq#308]

Only complete hand-thinning of small diameter trees. RESPONSE: This approach would not meet the P&N #3, #5, or #6, and is an Alternative Considered but Eliminated from Detailed Study, section 2.1. Thinning only small-diameter trees would not move the existing stand structure towards desire conditions. COMMENT: of course it does not meet P&N 3,5 &6 because these are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale. [68-61]

Do not cut trees greater than 19" diameter at breast height (dbh). RESPONSE: Excluding the harvest of trees 18 inches DBH or greater would not meet P&N #3 (Vegetation Composition and Structure) and #5 (Sensitive Plants and Unique Habitats) in some instances. Limiting harvest to trees less than 18 inches DBH would not provide a cost-effective method to accomplish proposed vegetation management treatment objectives including: maintenance and restoration of large trees, reduction of conifer encroachment to promote aspen, dwarf mistletoe reduction, and promotion of preferred conifer species in treated areas. Girdling conifers = 18 inches DBH to achieve vegetation management treatment objectives would not be cost-effective compared to harvesting the same trees because girdling would require an additional treatment that would be more expensive to implement than harvest and would provide no economic value to fund additional restoration treatments in the project area COMMENT:of course it does not meet P&N 3,5 &6 because these are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale. [68-70]

"Without harvest and thinning treatments, these acres at an increased risk for disturbances (wildfires, insects, and disease)." This statement is fabricated for the purpose of having a timber sale and is unsubstantiated by the scientific community. [68-107]

Concern: [Seq#309]

The Purpose and Need statements are fabricated in order to show a need for harvest treatment. There is no scientific bases for these Purpose and Need statements.

[ID#324]

Response: [Seq#309]

The purpose and need statements support the need for vegetation management. Timber harvest is only one of the tools that would be applied in the action alternatives. Of the approximately 10,256 acre foot print of planned treatment only about 1,952 acres would be harvested through a commercial timber

sale. The need and effects of timber harvest on effectiveness and duration is found on preliminary EA pages 123-127 and 155-162.

Purpose and Needs #3, 4, 5 and 6 are all supported by the Okanogan-Wenatchee National Forest Restoration Strategy (2012). [ID#324]

Associated Comments: [Seq#309]

I contend that #3, 5 and 6 Purpose and Need of this project are not agreed upon in the scientific or lay community, but that the FS does not listen to these viewpoints. Purpose and Need #3, 5 and 6 are misguided and not scientifically sound and were pre-determined years before the NEPA process for this project began. [68-19]

Let the project area recover naturally; eliminate new disturbance. RESPONSE:Alternative 1, No Action, addresses this issue. Under the No Action alternative, new disturbances would not be approved in this Environmental Assessment. Selection of this alternative would not meet the Purpose and Need statements for this project. The effects of selecting No Action are included in the effects analysis for each resource in Chapter 3. COMMENT: of course it does not meet P&N 3,5 &6 because these are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale. [68-67]

Concern: [Seq#310]

1.4.5 Decisions to be Made Based on this Analysis Should the Methow Valley Ranger District implement mechanical vegetation treatments conducive to maintaining and promoting Threatened and Endangered species habitat? - If so, what type of treatments would be the most successful and how much treatment is appropriate? (p.20) [There is no evidence or "best available science" that suggests commercial logging and beef production in watershed headwaters can maintain or promote ESA-related habitat. Those activities should not be conducted or increased within the existing habitat of those species (i.e., grey wolf, spring Chinook salmon, steelhead, and bull trout).] [ID#325]

Response: [Seq#310]

The effects of commercial logging on listed species are discussed in the Preliminary EA at p. 139-166. Beef production is not part of the project, and is outside the scope of the project.

In Washington State, restriction on timber harvest is not considered to be necessary to maintain or promote wolf habitat. Washington Department of Fish and Wildlife's Wolf Conservation Plan (Wiles et al., 2011) states that wolves are adaptable, and will enter and forage in towns and farms, cross highways and open environments, and den near sites heavily disturbed by people such as logging sites and military firing ranges (Fuller et al. 2003). It goes on to state that wolves are also fairly tolerant of moderate amounts of human disturbance, even in the vicinity of active wolf dens (Thiel et al. 1998, Frame et al. 2007) and that restrictions on land use practices have not been necessary to achieve wolf

conservation in Idaho, Montana, and Wyoming (USFWS 2009). The Conservation Plan concluded that "*wolf reestablishment in Washington is not expected to result in the imposition of any land use restrictions to protect and conserve wolves other than those that occasionally may be needed to temporarily protect den sites from malicious or careless destruction during the denning period (see Chapter 8). In neighboring states with wolves, no restrictions have been placed on the forest products industry regarding timber management and logging to protect wolves."*

Person and Russell (2009) recommended that, because timber harvest may affect prey populations, increase access that facilitates hunting and trapping or disturb dens (Person et al. 1996, Person and Russell 2008), that retaining roadless forested buffers around low elevation major lakes and streams, closing roads, within that buffer likely would reduce the effects of existing roads on den site selection and retaining watershedscale habitat reserves that encompass productive habitats for ungulate prey and suitable denning locations, to reduce turnover in wolf packs and ensure wolf populations are resilient to habitat change owing to human activity (Person et al. 1996, Person and Russell 2008).

Effects on list fish species and their critical habitat is discussed in Section 3.3, Water Resources, of Chapter 3 of the EA. It is also discussed in the Hydrology and Aquatic Species background report and the Biological Assessment in project files. [ID#325]

Associated Comments: [Seq#310]

1.4.5 Decisions to be Made Based on this Analysis Should the Methow Valley Ranger District implement mechanical vegetation treatments conducive to maintaining and promoting Threatened and Endangered species habitat? - If so, what type of treatments would be the most successful and how much treatment is appropriate? (p.20) [There is no evidence or “best available science” that suggests commercial logging and beef production in watershed headwaters can maintain or promote ESA-related habitat. Those activities should not be conducted or increased within the existing habitat of those species (i.e., grey wolf, spring Chinook salmon, steelhead, and bull trout).] [11-10]

Concern: [Seq#311]

Which personnel will be measuring, marking, and estimating the age of these trees? It would be inappropriate for commercial operator's to be left with this task alone without the presence of an entity whom does not have a financial stake in this determination. Additionally, in "c" above, how do you define "occasional"; what is the standard for determining "occasional harvest", who gets to make such a determination, and how do you define a "more preferred species" of tree? This type of imprecise language and absence of clear definition is what makes this EA a deficient document and calls into question whether the science cited and proposed methodology is robust enough to give a green light to the proposals contained therein.

[[ID#326]

Response: [Seq#311]

Large diameter trees could be identified by FS employees or contractors, but the final mark or treatment would be approved by FS personnel. The removal of trees 21 inches and larger would not be common and would only happen if the tree is less than 24 inches DBH **and** is less than 150 years of age **and** which would release an even larger tree, release aspen or remove a source of dwarf mistletoe to a stand relatively free of that pathogen (Preliminary EA page 305).

All marking in this project, to the present, havsbeen completed by Forest Service employees. [ID#326]
Associated Comments: [Seq#311]
Which personnel will be measuring, marking, and estimating the age of these trees? It would be inappropriate for commercial operator's to be left with this task alone without the presence of an entity whom does not have a financial stake in this determination. Additionally, in "c" above, how do you define "occasional"; what is the standard for determining "occasional harvest", who gets to make such a determination, and how do you define a "more preferred species" of tree? This type of imprecise language and absence of clear definition is what makes this EA a deficient document and calls into question whether the science cited and proposed methodology is robust enough to give a green light to the proposals contained therein. [65-8]

Concern: [Seq#312]

It is false and misleading to claim that the project is promoting "resilience." The FS definition of resilience is "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and way of functioning...." The vegetation modeling and harvesting component of the project are based on changing the basic structure.

One commenter infers that because FS recognizes that the effects are relatively short term, that is not actually providing resiliency. [ID#327]
Response: [Seq#312]

The definition of resilience in the Okanogan- Wenatchee National Forest Restoration Strategy (2012) is "the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary"

The project intends to restore forest structure to historical ranges of variability so that the remaining trees and patches are resilient to wildfire and insects (preliminary EA pages 13-14). Without some disturbance to the structure (ie vegetation management) the effects of wildfire and defoliation are likely to be uncharacteristically intense and widespread, which may result in the loss of large trees and patches of trees that would not normally be lost (preliminary EA pages 120-127 and 150-161). While large trees would eventually return to the landscape without human influence, it would take a very long

time. The potential effects to soil from uncharacteristically high wildfire severity would be the best example of a collapse into a qualitatively different state, where erosion and loss of organic horizons result in reduced soil productivity. See preliminary EA pages 94-95.

The EA discusses the need to provide periodic disturbances in order to maintain the progress towards achieving historic conditions, which were maintained by periodic disturbances (preliminary EA pages 123 and 155). [ID#327]

Associated Comments: [Seq#312]

I agree with Donna Bresnahan when she concluded "It is false and misleading to claim that the project is promoting "resilience." The Forest definition of resilience is "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and way of functioning...." The vegetation modeling and harvesting component of the project are based on changing the basic structure." The EA states that it will be necessary to repeat the disturbance of the logging and prescribed actions planned on a cyclic basis in order to maintain the modeled structure. [63-65]

It is false and misleading to claim that the project is promoting "resilience." The FS definition of resilience is "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and way of functioning...." The vegetation modeling and harvesting component of the project are based on changing the basic structure. [68-25]

Concern: [Seq#313]

The EA fails to provide any analysis of livestock grazing/fire effects interactions

[ID#328]

Response: [Seq#313]

The effects of underburning on understory forage production, cattle distribution in response to under burning, the timing of the burning relative to scheduled grazing rotations, and the impacts of underburing on riparian areas relative to cattle access are discussed in the Range section on EA pages 240, 242 and 245. The effects of livestock grazing on underburning were not discussed because livestock grazing has never been identified by our fuels specialist as a factor that would limit the effectiveness of prescribed burning. The effects of cattle grazing and wildfire interacting is outside the scope of this analysis. [ID#328]

Associated Comments: [Seq#313]

The EA fails to provide any analysis of livestock grazing/fire effects interactions [72-103]

Concern: [Seq#314]

In Okanogan County, gray squirrels use ponderosa pine and Douglas-fir stands, and adjacent riparian black cottonwoods (Linders and Stinson 2007).

Sites with more large (>15" dbh) trees may be better habitat

because they provide

more food, better cover, more cavities, and, often, interlocking crowns important for nest site security and arboreal travel

. Approximately 64% of the project area is comprised of forested stands that could be habitat for gray squirrels, and they have been documented in the project area.(p.180) [Project

activity that opens forest canopy and removes millions of board feet of large (>15" dbh) trees would negatively impact gray squirrels

.] [ID#329]

Response: [Seq#314]

The effects of the project are disclosed in the Preliminary EA at p.154-155, and 162-165. Alternative 2 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing. Effects would occur on about 10,256 acres, about 20% of the project area. Post-project, open road mileage would increase, increasing risk of mortality from vehicle strikes. Alternative 2 would decrease the risk of large-scale habitat loss from wildfire. Alternative 3 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing. Post-project, open road mileage would decrease, due to the decommissioning of roads. Alternative 3 would increase habitat resilience to severe, large-scale wildfire, protecting it into the future. [ID#329]

Associated Comments: [Seq#314]

In Okanogan County, gray squirrels use ponderosa pine and Douglas-fir stands, and adjacent riparian black cottonwoods (Linders and Stinson 2007). Sites with more large (>15” dbh) trees may be better habitat because they provide more food, better cover, more cavities, and, often, interlocking crowns important for nest site security and arboreal travel. Approximately 64% of the project area is comprised of forested stands that could be habitat for gray squirrels, and they have been documented in the project area.(p.180) [Project activity that opens forest canopy and removes millions of board feet of large (>15” dbh) trees would negatively impact gray squirrels.] [11-68]

Concern: [Seq#315]

"...issues of wilderness, motorized access, etc. will generally not be addressed" [ID#330]
Response: [Seq#315]

Determining proposed new or expanded wilderness areas is done during Forest Plan revision and not on a project by project basis. This project addressed Wilderness, Inventoried Roadless Areas, and Unroaded Areas in Section 3.15.9. No activities are proposed within the existing wilderness boundary as part of the Mission Restoration Project. Approximately two acres of the Sawtooth Inventoried Roadless Area is proposed to be underburned in the Mission Restoration Project as part of a larger landscape underburn.

Approximately 177 acres of unroaded area within the project area, outside wilderness or the IRA, would be treated by proposed understory ladder fuel reduction thinning and prescribed fire in Libby Creek, along with two miles of hand fireline. This total areas are those treatments that are not within one-half mile of an existing road.

Treatments proposed in the IRA and unroaded area are designed to restore desired low ranges of crown fire risk and to reduce wildfire hazards in a priority WUI treatment area as designated by the Community Wildfire Protection Plan. [ID#330]
Associated Comments: [Seq#315]
Excerpted from NCWFHC Operating Protocols: "...issues of wilderness, motorized access, etc. will generally not be addressed" [63-23]

Concern: [Seq#316]

In 2012, Washington State had about 22,000 miles of USFS-built roads which represented more than three times the State's total of state, interstate, and U.S. highways. Those roads were commonly built near streams to facilitate construction and provide access to timber stands. They were intended to provide service for the operational life of timber sales (5-7 years). [ID#331]
Response: [Seq#316]

This comparison is to state, interstate, and U.S. highways in Washington State and not to total roads (does not include private, County, or roads in cities and towns. Many of the early roads built were for recreation and private land access. Roads were generally built where access was the easiest and timber harvest could take place using ground based yarding systems. Most of these roads were built to provide long-term access. [ID#331]
Associated Comments: [Seq#316]
In 2012, Washington State had about 22,000 miles of USFS-built roads which represented more than three times the State's total of state, interstate, and U.S. highways. Those roads were commonly built near streams to facilitate construction and provide access to timber stands. They were intended to

provide service for the operational life of timber sales (5-7 years). [63-40]

Concern: [Seq#317]

We support Alternative 3's goal of retaining only 9.8 miles of open roads in critical habitat for Canada Lynx (another ESA-listed species) post-project, as opposed to 15.7 miles in Alternative 2. [ID#332]
Response: [Seq#317]

Thank you for your comment. The existing conditions is 2.6 miles of open roads in lynx habitat in the Lynx Analysis Unit (LAU); 9.9 miles of open roads in critical habitat for lynx. Alternative 2 is proposed to have 2.6 miles and 15.7 miles post-project. The only road actions that would occur in lynx habitat within the LAUs are decommissioning of already closed roads.

Alternative 3 is proposed to have 2.6 miles and 9.8 miles post-project. Approximately 2.6 miles of currently closed roads would be decommissioned with implementation of Alternative 3. Lynx are not particularly disturbed by human presence since they are not hunted or trapped (since they are a sensitive species) and with one exception near Buttermilk Butte, these roads are not likely to receive much OHV use due to vegetation, length, and lack of an interesting destination. In critical habitat, o.04 miles of temporary road would be constructed, and 1.6 miles of open road would be decommissioned. [ID#332]
Associated Comments: [Seq#317]
We also support Alternative 3's goal of retaining only 9.8 miles of open roads in critical habitat for Canada Lynx (another ESA-listed species) post-project, as opposed to 15.7 miles in Alternative 2. [30-14]

Concern: [Seq#318]

Thank you for your cooperation and helpfulness in providing additional reports to consider the potential alternatives and impacts of going forward with the proposed Mission Project. I cannot support any of the current Alternatives. My additional comments in support of that decision are attached and included below [ID#333]
Response: [Seq#318]

Thank you for your comment. [ID#333]
Associated Comments: [Seq#318]

Thank you for your cooperation and helpfulness in providing additional reports to consider the potential alternatives and impacts of going forward with the proposed Mission Project. I cannot support any of the current Alternatives. My additional comments in support of that decision are attached and included below. [63-12]

Concern: [Seq#319]

I also commend the Forest Service for plans to decommission roads that are not serving a justifiable function. The impact of roads upon wildlife has, in my opinion, been greatly underestimated. [ID#334]
Response: [Seq#319]

The interdisciplinary team for this project went through a transportation analysis process (TAP) to identify roads that will be needed for future management. Roads that will not be needed in the next several years for management may have had their Maintenance Level reduced to a level 1, closed to all wheeled vehicle use after the end of the project, or proposed to be decommissioned. Alternative 3 proposed closing additional roads which put more emphasis on managing for resources such as fisheries, hydrology, wildlife, and recreation and less on fuels management and commodity production. Many of the additional roads proposed to be closed are in Management Area 25 which has a commodity production emphasis under the Forest Plan. [ID#334]
Associated Comments: [Seq#319]
I also commend the Forest Service for plans to decommission roads that are not serving a justifiable function. The impact of roads upon wildlife has, in my opinion, been greatly underestimated. [70-2]

Concern: [Seq#320]

Although we have come far, we are still scratching the surface of understanding the complexities that surround our fire-dependent ecosystem. [ID#335]
Response: [Seq#320]

Based on monitoring and research, we are trying to understanding the complexities that surround our fire-dependent ecosystems. Based on monitoring of past restoration treatments, we believe they have reduced fire intensities and trees killed by over 50% in treated stands. A good example of this is the past timber and fuel treatments adjacent to County Road 3785, Lyman Lake to the Colville Reservation, which was in the North Star Fire but shows up on the burn severity map as low severity or unburned. This was

also true in portions of the 2014 Carlton Fire. [ID#335]
Associated Comments: [Seq#320]
Although we have come far, we are still scratching the surface of understanding the complexities that surround our fire-dependent ecosystem. [70-5]

Concern: [Seq#321]

The notion that the Forest needs to manipulate the stand species, spacing and composition to "restore" it is a fabricated idea not supported by common sense or science. The forest will restore itself if the management practices that created the problems (road building, logging, cattle grazing, and fire suppression) were ended rather than maintained. This has been pointed out by scoping comments and the Forest itself in the EA and supporting reports.There is no restoration alternative given that does not have include commercial logging, road construction, or cattle grazing [ID#336]
Response: [Seq#321]

The proposed vegetation management are supported by the Okanogan-Wenatchee National Forest Restoration Strategy (2012), which is peer reviewed.

This project proposes to reduce the overall road miles in the project area (preliminary EA pages 30-32) and reduces road impacts by replacing culverts and armoring and hardening crossings (preliminary EA pages 30-32).

Not all logging has negative effects. Under current regulations and the use of the best management practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events. There is no other way to achieve that result that is as safe, responsible, and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103).

Cattle management is outside the scope of this EA since it was studied in a separate NEPA document in 2011.

Halting fire suppression before forest structure departures are addressed would result in severe effects to vegetation and soil (See preliminary EA pages 94-95, 120, 150-151) from new fires.

Vegetation management, including timber harvest, has been identified as a key component to meeting Purpose and Need numbers 3, 4,5, and 6. All action alternatives are required to meet a reasonable set of the Purpose and Need statements.

[ID#336]

Associated Comments: [Seq#321]

The notion that the Forest needs to manipulate the stand species, spacing and composition to "restore" it is a fabricated idea not supported by common sense or science. The forest will restore itself if the management practices that created the problems (road building, logging, cattle grazing, and fire suppression) were ended rather than maintained. This has been pointed out by scoping comments and the Forest itself in the EA and supporting reports.There is no restoration alternative given that does not have include commercial logging, road construction, or cattle grazing. [63-28]

Concern: [Seq#322]

"Estimated effects of implementing the proposed vegetation management treatments indicated that there would be no measurable difference from existing and post-treatment conditions regarding the percentage of the landscape and average patch size of forest patches with medium, large, or large and medium size trees in the Buttermilk Creek and Libby Creek subwatersheds." If they are cutting 6.3 million board feet of trees how can there be no difference? [ID#337]

Response: [Seq#322]

There would be no immediate change in these metrics. The existing patches with these characteristics would continue to have them after vegetation treatments. However. EMDS results are based on immediate changes brought about by the proposed action. it takes many years for patches to move from small to medium sized trees and from medium to large sized trees. [ID#337]

Associated Comments: [Seq#322]

"Estimated effects of implementing the proposed vegetation management treatments indicated that there would be no measurable difference from existing and post-treatment conditions regarding the percentage of the landscape and average patch size of forest patches with medium, large, or large and medium size trees in the Buttermilk Creek and Libby Creek subwatersheds." If they are cutting 6.3 million board feet of trees how can there be no difference? [68-95]

Concern: [Seq#323]

We ask that the FS consider our earlier comments which have been largely ignored in the development of the project to this point. We once again ask that you provide the answers and disclosures they requested. [ID#338]

Response: [Seq#323]

We reviewed all of the scoping letters that we have received and have written responses to many of the comments that we received, but have not completed this. Mostly we have addressed the resource specific comments and not the non-resource specific comments. There is no NEPA requirement to prepare written responses to scoping comments.

We have not ignored any comments, we may have not decided to have changed the project because of them. The Interdisciplinary Team on this project has spent over 1,000 hours reviewing, considering, and responding to comments. [ID#338]

Associated Comments: [Seq#323]

Many relevant questions from scoping comments were not addressed. Also, requests were made to have all scoping comments posted so that the public could view them and the Forest refused to do so. [68-141]

Finally, we ask that the FS once again consider our earlier comments (a letter from of Sierra Club Upper Columbia River Group/Alliance for the Wild Rockies and a letter from Conservation Congress), which have been largely ignored in the development of the project to this point. We once again ask that you provide the answers and disclosures they requested. [72-225]

Concern: [Seq#324]

The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concerns about logging that most offered in their scoping comments. [ID#339]

Response: [Seq#324]

Both public meetings were held in an open house format to answer specific resource questions about the project area from the public. These meetings were not held to formally take comments on the proposal or to response to specific scoping oomments. The Interdisciplinary Team has spent over 1,000 hours reading, reviewing, and responding to comments. [ID#339]

Associated Comments: [Seq#324]

The public meeting held for the preliminary EA was essentially identical in form and substance to the meeting held for scoping. No attempt was made to address the concerns about logging that most offered in their scoping comments. [63-31]

Concern: [Seq#325]

Belsky and Gelbard, 2000 is a literature review of livestock as contributing to noxious weed spread [ID#340]

Response: [Seq#325]

The respondent's literature review is noted. The reference seems to be mostly talking about potential routes of invasive species spread by cattle. Based on the local project area, most invasive species locations are along transportation routes and not located in cattle grazing areas. Much of the cited work in the cited document seems to be in Utah, New Mexico, Nevada, and California and not in North Central Washington. [ID#340]

Associated Comments: [Seq#325]

Belsky and Gelbard, 2000 is a literature review of livestock as contributing to noxious weed spread. [72-61]

Concern: [Seq#326]

Does the FS monitor the effectiveness of noxious weed treatments under the 2000 Okanogan National Forest Integrated Weed Management Project? If so, what indication is there that noxious weed infestations on the forest are decreasing as a result? What would be the cost of weed management attributable to the Mission project? What is the annual cost of weed management of the forest?

[ID#341]

Response: [Seq#326]

Annual monitoring is conducted primarily at the time of follow-up treatments where the number of plants are counted or the amount of herbicide is compared to previous years treatments. The Methow Valley Ranger District (MVRD) records indicate that weed infestations are decreasing with some very large reductions in populations. The weed presence within the analysis area is primarily diffuse knapweed. Diffuse knapweed is the only low priority Established Invader weed that has been inventoried and analyzed in the project area, which makes up over 90% of the total weed populations. It has a low treatment priority and is generally not treated. There are only 19 acres of high priority New Invaders within the project area with most of the populations less than 1 acre.

Only the Buttermilk and Twisp river portion of the project area were covered under the 2000 Weed EA. The new Forest-wide Site-Specific Invasive Plants EIS (2017 EIS), which is now being implemented, is to expand treatment options and expand the treatment area to the entire Okanogan-Wenatchee National

Forest to effectively suppress, contain, control and/or eradicate invasive plants species. Currently only limited herbicide treatment is planned for the Libby watershed with active manual treatments being used at this time. There have been very few weed treatments within the project area relative to the MVRD as a whole. The annual cost of weed management within the Mission project area would be relatively low compared to areas on the MVRD that have much greater populations of New Invader weeds. [ID#341]

Associated Comments: [Seq#326]

Does the FS monitor the effectiveness of noxious weed treatments under the 2000 Okanogan National Forest Integrated Weed Management Project? If so, what indication is there that noxious weed infestations on the forest are decreasing as a result? What would be the cost of weed management attributable to the Mission project? What is the annual cost of weed management of the forest? [72-144]

Concern: [Seq#327]

The FS does not disclose why the analysis area itself was chosen over some other area. This is critical information in order for the public to ascertain what decisions were at the top of the funnel for the FS to decide on this area and then to evaluate those decisions. [ID#342]

Response: [Seq#327]

This project was identified in 2012. Some of the recommendations for this project area were identified in the 1995 Twisp River Watershed Analysis, the 1995 Libby Creek Watershed Analysis, and the 1999 Lower Methow Watershed Analysis. Examples included road decommissioning, road and trail maintenance needs, culvert (fish passage barriers) replacements, restoring stream channels, reducing soil compaction including from past timber sale areas, reducing open road densities, releasing aspen stands, increasing/enhancing lynx foraging habitat and snowshoe hare habitat, and vegetation management. [ID#342]

Associated Comments: [Seq#327]

The FS does not disclose why the analysis area itself was chosen over some other area. This is critical information in order for the public to ascertain what decisions were at the top of the funnel for the FS to decide on this area and then to evaluate those decisions. [68-3]

Concern: [Seq#328]

Despite the mitigation plans, the FS really has no handle on the losses of biodiversity and reductions in land productivity due to proliferating invasive species. "The seeds would slide past along with the soil." The agency seems to be in denial of the fact that every acre disturbed increases the rate of spread. The historic range of variability (HRV) for noxious weeds is zero, and with every acre disturbed the FS is "moving towards" the wrong direction [ID#343]

Response: [Seq#328]

The most pertinent goal of the Mission project relevant to the management of invasive plants is stated in the Pacific Northwest Region Invasive Plant Program Preventing and Managing Invasive Plants EIS. The goal is to minimize the creation of conditions that favor invasive plant introduction, establishment and spread during land management actions and land use activities (Invasive Plant specialist report). The FS acknowledges that there is a potential for introduction and spread of invasive plants by the Mission project activities, but that the potential would be reduced or minimized, not eliminated.

Both action alternatives would increase the risk of introduction of new noxious weeds into the project area by vehicles and equipment and would create more soil disturbance than the no-action Alternative. However, implementation of the design features in conjunction with the Prevention and Management Strategy would reduce the risk of introduction and spread of noxious weeds. (EA, 3.11 page 268) [ID#343]

Associated Comments: [Seq#328]

Despite the mitigation plans, the FS really has no handle on the losses of biodiversity and reductions in land productivity due to proliferating invasive species. "The seeds would slide past along with the soil." The agency seems to be in denial of the fact that every acre disturbed increases the rate of spread. The historic range of variability (HRV) for noxious weeds is zero, and with every acre disturbed the FS is "moving towards" the wrong direction. [72-145]

Concern: [Seq#329]

"The EA does not demonstrate the FS is managing the project area or forest consistent with the Travel Management Regulations (36 CFR 212) Subpart A which requires the FS to involve the public while conducting a science-based analysis to identify the minimum road system needed to manage the Forest sustainably. Likewise, The EA does not demonstrate that the FS is managing the project area or Forest consistent with 36 CFR 212 Subparts B and C" [ID#344]

Response: [Seq#329]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering

Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, of Chapter 3 of the EA address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

[ID#344]

Associated Comments: [Seq#329]

The EA does not demonstrate the FS is managing the project area or forest consistent with the Travel Management Regulations (36 CFR 212) Subpart A which requires the FS to involve the public while conducting a science-based analysis to identify the minimum road system needed to manage the Forest sustainably. Likewise, The EA does not demonstrate that the FS is managing the project area or Forest consistent with 36 CFR 212 Subparts B and C. [72-185]

Concern: [Seq#330]

"The EA states, "The existing road network costs more to maintain than is available in road maintenance funding." (14.) The trouble is, the EA does not provide an analysis which determines if adequate maintenance funding will exist for the post-project road network, nor does it disclose how deferred maintenance costs might increase or decrease post-project" [ID#345]

Response: [Seq#330]

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the

TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, in chapter 3 of the EA address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning.

[ID#345]

Associated Comments: [Seq#330]

The EA states, "The existing road network costs more to maintain than is available in road maintenance funding." (14.) The trouble is, the EA does not provide an analysis which determines if adequate maintenance funding will exist for the post-project road network, nor does it disclose how deferred maintenance costs might increase or decrease post-project. [72-186]

Concern: [Seq#331]

It must be noted that eliminating the adverse effects of cattle in riparian areas is a significant omission in the "design criteria". [ID#347]

Response: [Seq#331]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this

plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). (EA, 1.6 page 24) [ID#347]

Associated Comments: [Seq#331]

It must be noted that eliminating the adverse effects of cattle in riparian areas is a significant omission in the "design criteria". [63-85]

Concern: [Seq#332]

Removing or significantly reducing grazing is likely to be far more effective, in cost and success, than piecemeal approaches to address some of these concerns in isolation. [ID#348]

Response: [Seq#332]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). (EA, 1.6 page 24) [ID#348]

Associated Comments: [Seq#332]

Removing or significantly reducing grazing is likely to be far more effective, in cost and success, than piecemeal approaches to address some of these concerns in isolation. [72-74]

Concern: [Seq#333]

As pointed out in my scoping comments, the FS did not respect the intent of NEPA nor supply an adequate scoping document. Additionally, the FS did not follow regulations regarding the date of publication for the Preliminary EA notice. Additionally,on the project page of the FS website, the FS maintained an incorrect date for the receipt of comments which is all very unfair and confusing to citizens [ID#349]

Response: [Seq#333]

It is believed that the scoping document meet Forest Service requirements. The scoping document refined the proposed action, determined the responsible official, identified preliminary issues, and identified interested and affected individuals. A coherent proposal was presented. Scoping was carried out in accordance with the requirements of 40 C.F.R. 1501.7. No scoping technique is required or prescribed; it depends on the nature and complexity of a proposed action to determine the scope and intensity of the scoping analysis. The Forest Service supplied more than an adequate scoping document. Few scoping documents have been more thorough than this package. The biggest fall down was that we identified the potential need for more Forest Plan amendments than was determined needed after additional field work.

Since the date of publication of the legal notice for the preliminary EA was unclear, the Forest Service held a second 30-day comment period which gave individuals almost 60 days to comment on the Preliminary EA.

On the project page in CARA, the date for the receipt of comments is established automatically once you input the date of the legal ad in the newspaper of record. The confusion comes about if day "1" is the date of the publication or is the day after publication, To somewhat avoid this type of confusion, it is recommended that individuals from the Forest Service are not to provide the closing date to individuals unless they are sure what it is.. [ID#349]

Associated Comments: [Seq#333]

As pointed out in my scoping comments, the FS did not respect the intent of NEPA nor supply an adequate scoping document. Additionally, the FS did not follow regulations regarding the date of publication for the Preliminary EA notice. Additionally,on the project page of the FS website, the FS maintained an incorrect date for the receipt of comments which is all very unfair and confusing to citizens. [68-96]

Concern: [Seq#334]

The "Impact Terms" throughout the EA are practically meaningless because they are so subjective and vague. Environmental impacts should not be dumbed down with this kind of language. It also gives the public no substantial information to make an intelligent assessment of what the FS is trying to say. [ID#350]

Response: [Seq#334]

The "Intensity Level Definitions" were provided in Section 3.2 (pages 46 & 47), and are generally provided in each individual resource sections such as in Section 3.3.2 for Water Resources (page 52), Section 3.4.2 for Soils (pages 89 & 90), Section 3.5.2 for Vegetation (pages 106 & 107, and so on throughout the document. In preparing this document we tried to use terms that could be understood by the general public so to try and be clear on what the FS was trying to say. If you review the background resource reports in project files, the Interdisciplinary Team tried to use more scientific terms for explanation of effects. [ID#350]

Associated Comments: [Seq#334]

The "Impact Terms" throughout the EA are practically meaningless because they are so subjective and vague. Environmental impacts should not be dumbed down with this kind of language. It also gives the public no substantial information to make an intelligent assessment of what the FS is trying to say. [68-98]

Concern: [Seq#335]

The Mission EA does not explain how it addresses the "Considerations for Forest Plan Revision", "New Information" and "Challenges to Managing Our National Forest" in the Proposed Action for forest plan revision [ID#351]

Response: [Seq#335]

I am not sure what this comment relates to or is referring to since the names in " " are not a specific document. The Mission Project looked at several proposed non-significant amendments to the existing Okanogan National Forest, Forest Plan where it is not current with existing science or management strategies (management in deer winter range and the Restoration Strategy). The Okanogan Wenatchee National Forest was working on revising our Forest Plans until the Region put a hold on all revisions of Forest Plans in Forests that contained Northern Spotted Owl habitat. The Mission project is following current direction and trying not to preclude any future decisions under a revised Forest Plan. The Methow Valley and Tonasket Ranger Districts have proposed doing an estimated 5 - 8 amendments to the existing Forest Plan under the 2012 Planning Rule but other Foundational Work has been determined a higher priority. [ID#351]

Associated Comments: [Seq#335]

The Mission EA does not explain how it addresses the "Considerations for Forest Plan Revision", "New Information" and "Challenges to Managing Our National Forest" in the Proposed Action for forest plan revision. [72-10]

Concern: [Seq#336]

We find that our ability to participate in this NEPA process is severely hampered by the failure of the EA to state all applicable and relevant forest plan direction, and explain how Mission project and other management would be consistent with that direction. This includes direction from the original forest plan, and also as amended by the Northwest Forest Plan. Such omissions are likely because the FS believes it is permissible to simplify the NEPA process utilizing an EA to the point that compliance with

the forest plan and other laws is merely a given, instead of taking a hard look at that direction. This leaves the public uninformed as to the FS's intent, and gives the impression that the FS is incapable of adhering to environmental laws and tailoring management to be consistent with best available science. Although these comments do cite some examples, it is not our intent to quote each and every relevant forest plan or Northwest Forest Plan standard, guideline, objective, goal, etc. that FS should have evaluated but the EA ignores. It is the duty of the FS to make explicit in NEPA documents how it is following programmatic direction at a level of detail that allows an evaluation of conformance. Only then can the public be adequately informed and involved in the NEPA process. As a result of the FS making the RS its de facto forest plan, the EA fails to demonstrate consistency with management direction in the real Forest Plan, which was prepared and developed in conformance with NEPA guidelines and full public involvement. Desired Conditions of the RS supplant Forest Plan desired future conditions. Several Forest Plan standards and guidelines relevant to the Mission project are completely ignored in the EA. This violates both NEPA and NFMA. [ID#352]

Response: [Seq#336]

The Interdisciplinary Team is not sure of the meaning of this comment since they did look at the relevant Forest Plan direction and guidance in Chapter 1 in Section 1.4 on pages 14 - 18 and in most individual resource sections titled "Consistency Statement" such as 3.3.5 in Water Resources, Section 3.4.5 in the Soils section, Section 3.5.5 in the Vegetation section, and so on throughout the document. There also is Appendix G, Regulatory Framework, which summarizes the consistency with the Forest Plan; the Northwest Forest Plan; Watershed Assessments; Forest Service Manual and Handbook direction; and other laws, regulations, and other guidance documents.

This comment does not seem specific to this project NEPA document, but is something carried over from previous comment letters on other projects. [ID#352]

Associated Comments: [Seq#336]

We find that our ability to participate in this NEPA process is severely hampered by the failure of the EA to state all applicable and relevant forest plan direction, and explain how Mission project and other management would be consistent with that direction. This includes direction from the original forest plan, and also as amended by the Northwest Forest Plan. Such omissions are likely because the FS believes it is permissible to simplify the NEPA process utilizing an EA to the point that compliance with the forest plan and other laws is merely a given, instead of taking a hard look at that direction. This leaves the public uninformed as to the FS's intent, and gives the impression that the FS is incapable of adhering to environmental laws and tailoring management to be consistent with best available science. Although these comments do cite some examples, it is not our intent to quote each and every relevant forest plan or Northwest Forest Plan standard, guideline, objective, goal, etc. that FS should have evaluated but the EA ignores. It is the duty of the FS to make explicit in NEPA documents how it is following programmatic direction at a level of detail that allows an evaluation of conformance. Only then can the public be adequately informed and involved in the NEPA process. As a result of the FS making the RS its de facto forest plan, the EA fails to demonstrate consistency with management direction in the real Forest Plan, which was prepared and developed in conformance with NEPA guidelines and full public involvement. Desired Conditions of the RS supplant Forest Plan desired future conditions. Several Forest Plan standards and guidelines relevant to the Mission project are completely ignored in the EA. This violates both NEPA and NFMA. [72-24]

Concern: [Seq#337]

The EA does not analyze or disclose cumulative effects of livestock on Sensitive and S&M species. [ID#353]
Response: [Seq#337]

Cumulative Actions are defined as: . . . actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same statement (40 CFR 1508.25.

Cumulative Impact is defined 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7)

The analysis of cumulative effects begins with consideration of the direct and indirect effects on the environment that are expected or likely to result from the alternative proposals for agency action. Since this project is not proposing actions to manage range, that was done in a previous NEPA document, the analysis of cumulative effects needs to consider the effects of the proposed actions in the Mission Restoration Project on range management and that is considered in the NEPA document in Section 3.10.4.4.2, pages 248 & 249.

Range cumulative effects to Sensitive and Survey & Manage species is in the NEPA document which forms the basis for the Allotment Management Plan which was completed in 2011. This project makes no decisions about range management within th eproject area.

[ID#353]
Associated Comments: [Seq#337]
The EA does not analyze or disclose cumulative effects of livestock on Sensitive and S&M species. [72-211]

Concern: [Seq#338]

The Desired outcomes uses the term "inherent range of variability" but does not define what that means. [ID#354]
Response: [Seq#338]

Section 1.4.4, The Desired Condition, uses the term "inherent range of variability". The meaning is the same as the "historic" range of variability. It is proposed to change the wording to "historic" in the final EA. [ID#354]

Associated Comments: [Seq#338]

The Desired outcomes uses the term "inherent range of variability" but does not define what that means. [68-90]

Fuel loadings are such that fire can function as a natural process on the landscape at intensities that are within the inherent range of variability" [68-91]

Concern: [Seq#339]

According to the Forest Service Manual, Ecological Restoration and Resilience, a restoration project must include adaptive management. See Principles #4: "Adaptive management, monitoring, and evaluation are essential to ecological restoration." The EA fails to convey how this project follows adaptive management. It fails to explain how monitoring and evaluation would actually happen. No [ID#355]

Response: [Seq#339]

There is no requirement that there is an Adaptive Management section/plan in each NEPA document what is required is monitoring of the outcomes from the project. Adaptive Management is a system of management practices based on clearly identified intended outcomes and monitoring to determine if management actions are meeting those outcomes; and, if not, to facilitate management changes that will best ensure that those outcomes are met or re-evaluated. Adaptive management stems from the recognition that knowledge about natural resource systems is sometimes uncertain (36 CFR 220.3) Adaptive management can be implemented by reviewing the results of one project and changing future projects based on the outcomes of previous projects. This project is similar to numerous restoration projects that have been implemented in the past and outcomes are expected to be similar to previously implemented projects. No [ID#355]

Associated Comments: [Seq#339]

According to the Forest Service Manual, Ecological Restoration and Resilience, a restoration project must include adaptive management. See Principles #4: "Adaptive management, monitoring, and evaluation are essential to ecological restoration." The EA fails to convey how this project follows adaptive management. It fails to explain how monitoring and evaluation would actually happen. [68-6]

The FS does not adequately address adaptive management requirements. [68-10]

Concern: [Seq#340]

In addition, the determination of age and composition of unvisited, high elevation boreal forests through photo- interpretation is open to question. As a photo- interpreter who is also familiar with the upper Libby drainage, the characterization of those forests as young forest multi- storied and single- story stem- exclusion fails to account for significant landscape features of long glacial valleys with poor frost drainage and soils composed of saturated glacial talus. [ID#356]
Response: [Seq#340]

The portion of the landscape in question (upper Libby Creek subwatershed) is without road access and is cold forest. Had the interdisciplinary team chosen to address departures in cold forest environment then a more thorough inventory of this area would have been appropriate. The analysis of this coarse filter information did not inform the departure results for Moist Forest and Dry Forest, which the IDT used to develop a course of action for the project. [ID#356]
Associated Comments: [Seq#340]
In addition, the determination of age and composition of unvisited, high elevation boreal forests though photo- interpretation is open to question. As a photo- interpreter who is also familiar with the upper Libby drainage, the characterization of those forests as young forest multi- storied and single- story stem- exclusion fails to account for significant landscape features of long glacial valleys with poor frost drainage and soils composed of saturated glacial talus. [18-85]

Concern: [Seq#341]

INSECTS: insect outbreaks reduce fire severity

https://www.scientificamerican.com/article/oddly-insect-outbreaks-reduce-wildfire-severity/

Has the FS incorporated this current best science?

[[ID#357]
Response: [Seq#341]

Both insects and fire are recognized as major disturbance agents in the Eastern Cascades. Both are natural processes that effect each other. The provided article provides some general understandings of this interaction, but also recognizes that there is still much to learn in this area. The information in the article does not contradict any statement or undermine any analysis published in the preliminary EA. The preliminary EA does address the effect of bark beetles and defoliating insects on medium and large trees (preliminary EA pages 120-126). [ID#357]
Associated Comments: [Seq#341]
INSECTS: insect outbreaks reduce fire severity

https://www.scientificamerican.com/article/oddly-insect-outbreaks-reduce-wildfire-severity/ Has the FS incorporated this current best science? [68-109]

Concern: [Seq#342]

T

he EA states, "Dry and moist forest vegetation in the project area is susceptible to increased frequency and severity of natural disturbances (including insects, disease, and fire) associated with warmer, drier climate." (13.) What is the scientific basis for this "increased frequency and severity" claim? [ID#358]
Response: [Seq#342]

This claim comes from a quote in the Okanogan-Wenatchee National Forest Restoration Strategy (2012), which quotes Dale et al. 2001.

Climate change can affect forests by altering the frequency, intensity, duration, and timing of fire, and can result in drought, introduction of exotic species, and insect outbreaks (Dale et al. 2001).

Dale, V.H.; Joyce, L.A.; McNulty, S. Neilson, R.P.; Ayres, M.P.; Flannigan, M.D.; Hanson, P.J.; Irland, L.C.; Lugo, A.E.; Peterson, C.J.; Simberloff, D.; Swanson, F.J.; Stocks, B.J.; Wotton, B.M. 2001. Climate change and forest disturbances. Bioscience 51(9): 723-734. [ID#358]
Associated Comments: [Seq#342]
The EA states, "Dry and moist forest vegetation in the project area is susceptible to increased frequency and severity of natural disturbances (including insects, disease, and fire) associated with warmer, drier climate." (13.) What is the scientific basis for this "increased frequency and severity" claim? [72-90]

Concern: [Seq#343]

Finally, ecological resilience, which the FS implies it would create with this project, is not the absence of natural disturbances such as wildland fire or beetle kill. Rather, it is the opposite (DellaSala and Hanson, 2015, Chapter 1, pp. 12-13). What the FS is promoting here is the human control of the forest ecosystem through mechanical means in order to maintain unnatural stasis by eliminating, suppressing or altering natural disturbances such as wildland fire and insect or disease effects, to maximize the commercial potential of natural resources. [ID#359]
Response: [Seq#343]

It is one of the purpose and needs for this project to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resilience to insect, disease and wildfire events (P&N #3, preliminary EA page 13). Maintaining and promoting large tree habitat (part of P&N #4) as well as reducing risk to uncharacteristic wildfire in the wildland urban interface can both be accomplished through implementing P&N #3. The premise of returning to historical and future ranges of variability is that natural processes would continue to take place but at more normal intensities and frequencies, which is what is meant by "improve forest resiliency", which is a term and approach developed in further detail in the Okanogan-Wenatchee National Forest Restoration Strategy (2012).

Timber harvest is proposed on about 1952 acres out of the proposed 10,255 acres of thinning and underburning treatments. Maximizing the commercial potential of this landscape is hardly the objective of this project. If that were the case, then most of the high value, large diameter trees would be targeted for harvest, much more stand regeneration treatments would be proposed, and proposed residual stocking levels in thinned stands would be much lower in order to maximize stem growth. It is also likely that more roads would be proposed under this objective that would allow harvest treatment of more area. Only about 25 - 33% of the volume of the stands are being removed in commercial harvest units. [ID#359]

Associated Comments: [Seq#343]

(Emphasis added.) Finally, ecological resilience, which the FS implies it would create with this project, is not the absence of natural disturbances such as wildland fire or beetle kill. Rather, it is the opposite (DellaSala and Hanson, 2015, Chapter 1, pp. 12-13). What the FS is promoting here is the human control of the forest ecosystem through mechanical means in order to maintain unnatural stasis by eliminating, suppressing or altering natural disturbances such as wildland fire and insect or disease effects, to maximize the commercial potential of natural resources. [72-92]

Concern: [Seq#344]

Resilience is a term that might be used to characterize forest ecosystems. However, mostly what we "learn" about resilience from the FS and EA is it only happens when the forest is "managed" (i.e., mostly logged or prescribe burned), and the more the forest is logged and burned, the more resilient it becomes. Also we "learn" that nothing that happens naturally, without management, will increase resilience. In other words, from the FS's perspective, resilience can only be manufactured, engineered, or imposed by management. The term "resilience" as used by the EA is invalid, rendering much of the analyses confusing and misleading. [ID#360]

Response: [Seq#344]

Active vegetation management is required when, in order to achieve Multiple Use Objectives, "no action" would likely result in unacceptable consequences to private property and homes (preliminary EA pages 152, 193), loss of key landscape components like large and old trees (preliminary EA page 120-121), or severe degradation of soils and aquatic systems (preliminary EA pages 94-95). Due to

departures in forest structure from historical conditions, these dire results have been found to be likely consequences of inaction in the Mission project area and the lands surrounding it. Through vegetation management that brings forest structure back to a historical range of variability, natural process such as fire, insects and disease could take place without unnaturally severe consequences to environmental and economic values, which is essentially the meaning of resilience. [ID#360]

Associated Comments: [Seq#344]

Resilience is a term that might be used to characterize forest ecosystems. However, mostly what we "learn" about resilience from the FS and EA is it only happens when the forest is "managed" (i.e., mostly logged or prescribe burned), and the more the forest is logged and burned, the more resilient it becomes. Also we "learn" that nothing that happens naturally, without management, will increase resilience. In other words, from the FS's perspective, resilience can only be manufactured, engineered, or imposed by management. The term "resilience" as used by the EA is invalid, rendering much of the analyses confusing and misleading. [72-94]

Concern: [Seq#345]

"Our answer is to develop land-based performance measures that evaluate the "outcomes" rather than the "outputs" of our management -- to focus less on what we take from the land and more on what we leave behind. To focus less on the volume of wood fiber removed and more on the quality of the water, the diversity of the species, the productive capacity of the land, itself (Remarks of USFS Chief Dombeck, PhD, at a Society of American Foresters Breakfast September 21, 1998)." [ID#361]

Response: [Seq#345]

In the Mission Forest and Fuels Restoration Project, there is a focus on what forest structure is left behind (preliminary EA page 128-131) and on water quality and fish habitat improvement (preliminary EA page 84) as well as restored habitat (preliminary EA page 209). [ID#361]

Associated Comments: [Seq#345]

"Our answer is to develop land-based performance measures that evaluate the "outcomes" rather than the "outputs" of our management -- to focus less on what we take from the land and more on what we leave behind. To focus less on the volume of wood fiber removed and more on the quality of the water, the diversity of the species, the productive capacity of the land, itself (Remarks of USFS Chief Dombeck, PhD, at a Society of American Foresters Breakfast September 21, 1998)." [63-35]

Concern: [Seq#346]

Is reforestation an integral and guaranteed part of the Mission Restoration Project? [ID#362]

Response: [Seq#346]

While Stand Initiation structure (SI) is recognized as an important component of the landscape, it is not a structure type that is seen as severely departed. In fact SI is within the Desired Range of Variability (DRV) for percent landscape in Libby Creek in both Dry and Moist forest types. SI in Buttermilk Creek is within 1 percent of DRV for percent landscape in both Dry and Moist forest types. That given, the objective is to deal with forest disease issues requiring regeneration while staying within or moving towards the DRV for percent landscape and patch size of SI. Reforestation of stands treated with the Variable Retention Regeneration prescription (currently 2 units, 59 acres), which creates SI, is required under NFMA. Planting followed up with survival surveys is a component of the design criteria for the project (preliminary EA page 352, #31). [ID#362]

Associated Comments: [Seq#346]

Is reforestation an integral and guaranteed part of the Mission Restoration Project? [51-20]

Concern: [Seq#347]

In our scoping comments, we recommended excluding trees of 18" dbh or greater in the proposed overstory/commercial thinning. We noted that removing these large trees has the potential to degrade forest conditions, rather than restoring natural function. Both Alternatives 2 and 3 and the Vegetation Report in the Draft EA refer to two classes of stand structure: old forest single story, and old forest multistory. Tree size categories are large trees, >25" dbh, and large and medium trees, 16-25" dbh. The Vegetation Report discusses the importance of large trees and the need to retain them for forest resilience. There is some discussion of removing a limited number of trees in the large and medium class. In the Draft EA, it appears that the Forest does not intend to remove trees >21" or approximately 150 years old. If this is correct, it meets our concern about removing large and old trees. We understand that there will not be any "forest plan" for old growth in treatment units, and consequently there will be no need to amend Forest Plan Standard and Guideline 5-1, regarding treatment of old growth, as was proposed in the scoping document. [ID#363]

Response: [Seq#347]

The commenter is not correct in their interpretation of the discussion regarding trees between 19 and 24 inches DBH.

All trees greater than 24 inches would remain. Although the harvest of 19-24 inch trees has not been excluded from the project, the intent of this concern would be addressed because only trees that are **both** younger than 150 years **and** less than 24 inches in diameter would be considered for harvest and even then only occasional trees between 21 and 24 inches would be harvested. Under most situations, conifers would be thinned from below, retaining the largest, most vigorous, and most preferred conifer species present to meet treatment objectives (page 305 EA). The effects of the proposed action alternatives on large and medium sized trees is shown on pages 124-125. [ID#363]

Associated Comments: [Seq#347]

In our scoping comments, we recommended excluding trees of 18" dbh or greater in the proposed overstory/commercial thinning. We noted that removing these large trees has the potential to degrade

forest conditions, rather than restoring natural function. Both Alternatives 2 and 3 and the Vegetation Report in the Draft EA refer to two classes of stand structure: old forest single story, and old forest multistory. Tree size categories are large trees, >25" dbh, and large and medium trees, 16-25" dbh. The Vegetation Report discusses the importance of large trees and the need to retain them for forest resilience. There is some discussion of removing a limited number of trees in the large and medium class. In the Draft EA, it appears that the Forest does not intend to remove trees >21" or approximately 150 years old. If this is correct, it meets our concern about removing large and old trees. We understand that there will not be any "forest plan" for old growth in treatment units, and consequently there will be no need to amend Forest Plan Standard and Guideline 5-1, regarding treatment of old growth, as was proposed in the scoping document. [30-4]

Concern: [Seq#348]

This comment is in support of Alternative 3 based on aquatic restoration.

Road activities identified under Alternative 3 will provide the greatest benefit.

Guardians strongly supports the road activities identified under Alternative 3, which proposes further aquatic and hydrologic restoration through more road closure and decommissioning than what is proposed under Alternative 2. Alternative 3 will provide the greatest water resource and wildlife protections and improvements.

See, e.g.

, EA at 35, 39-40. The Forest Service recognizes that the extensive road network in the project area is one of the primary drivers impairing current watershed and aquatic ecosystem function.

See

Draft EA at 48-49.

[[ID#364]
Response: [Seq#348]

Thank you for your support and comment. [ID#364]
Associated Comments: [Seq#348]
9. Road activities identified under Alternative 3 will provide the greatest benefit. Guardians strongly supports the road activities identified under Alternative 3, which proposes further aquatic and hydrologic restoration through more road closure and decommissioning than what is proposed under Alternative 2. Alternative 3 will provide the greatest water resource and wildlife protections and improvements. See, e.g., EA at 35, 39-40. The Forest Service recognizes that the extensive road network

in the project area is one of the primary drivers impairing current watershed and aquatic ecosystem function. See Draft EA at 48-49. [27-33]

Concern: [Seq#349]

Logging encourages dense growth. [ID#365]
Response: [Seq#349]

Harvest activities open canopies and create a disturbance that invites a regeneration response. That outcome is noted in the preliminary EA on pages 123 and 157. For that reason, the proposed prescribed fire treatments include a follow up underburn at about year 15 with the intent to thin this response with fire (preliminary EA page 313). [ID#365]
Associated Comments: [Seq#349]
Logging encourages dense growth. [51-15]

Concern: [Seq#350]

This comment is concerned that pebble counts were used for sediment analysis.

The EA provides no scientific justification for substituting "pebble count data collected in the project area" (57) for forest plan sediment standard metrics. This violates NEPA and NFMA. [ID#367]
Response: [Seq#350]

Wolman pebble counts (Wolman 1954) are an established and repeatable measure of streambed sediment measures. While the size classes used for pebble counts might be slightly different than the Forest Plan Standards measure, the pebble count data provides information that can be used to estimate the percentage of sediment within any size class of interest. This is a common practice for fish biologists through the world as pebble count data is often more available and cheaper to obtain than core samples. Wolman, M. Gordon. "A method of sampling coarse river-bed material." *EOS, Transactions American Geophysical Union* 35.6 (1954): 951-956. [ID#367]
Associated Comments: [Seq#350]
The EA provides no scientific justification for substituting "pebble count data collected in the project area" (57) for forest plan sediment standard metrics. This violates NEPA and NFMA. [72-170]

Concern: [Seq#351]

Heat and smoke kills some plant pathogens while logging introduces insects and exotic weeds, tree diseases, compacts soil and increases erosion and sedimentation. [ID#368]

Response: [Seq#351]

Most plant pathogens are only killed when the host is killed. Dwarf mistletoe infection levels may be reduced by fire but rarely does fire eliminate all of the infections. However, eliminating dwarf mistletoe is not an objective of the project, but merely to reduce its impacts on the remaining trees and the expected regeneration. The prescription and expected effects to dwarf mistletoe are found on preliminary EA pages 308-309 and 126-127.

The design criteria specific to minimizing the spread of invasive species through vegetation management are found on preliminary EA page 344. The effects of planned harvest activity on invasive species are found pages 261-262 of the preliminary EA and are compliant with Executive Order 13112, The Okanogan National Forest Plan Land and Resource Management Plan (LRMP), and the Northwest Forest Plan (preliminary EA pages 269-270).

All off road project vehicles would be required to be free of soil prior to coming onto the National Forest System Lands (preliminary EA page 344) such that introducing new root disease from outside the project acre, would not be an issue .

The effects of harvest treatments on soil is found on preliminary EA pages 96-100 and are found to be consistent with the LRMP (preliminary EA page 102).

The effects of the planned activities to water quality are found on pages 69-77 and are found to be consistent with the LRMP, Northwest Forest Plan Standard and Guidelines and the Aquatic Conservation Strategy Objectives (preliminary EA pages 84-88).

[ID#368]

Associated Comments: [Seq#351]

Heat and smoke kills some plant pathogens while logging introduces insects and exotic weeds, tree diseases, compacts soil and increases erosion and sedimentation. [51-18]

Concern: [Seq#352]

Comment is interested in species that are impacted by ACS.

What are the invertebrate and vertebrate riparian-dependent species for which Aquatic Conservation Strategy Objectives were designed to maintain and restore habitat? [ID#369]

Response: [Seq#352]

The Northwest Forest Plan states that the Riparian Reserves will be protected for "fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls" (Attachment A to the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl, Section B, page B-13). This list is not exhaustive and may include other riparian dependent species.

[ID#369]

Associated Comments: [Seq#352]

What are the invertebrate and vertebrate riparian-dependent species for which Aquatic Conservation Strategy Objectives were designed to maintain and restore habitat? [72-175]

Concern: [Seq#353]

Comment is concerned with water storage and hydrologic function.

Low water. While addressing issues of water rights and irrigation is outside the scope of this project, the analysis should indicate how decisions about the transportation system, trails, and thinning activities will work to restore the hydrologic function and water storage capacity of the watershed. [ID#370]

Response: [Seq#353]

Many of the proposed actions will likely benefit hydrologic function and water storage. Examples of these actions would be beaver enhancement areas, sub-soiling techniques, ladder fuel reductions, and many others. Water storage is hard to measure or predict so for this analysis we have used other indicators as a surrogate for hydrologic function and we have proposed actions that will be done in a way as to not reduce and further impact hydrologic function and water storage. [ID#370]

Associated Comments: [Seq#353]

o Low water. While addressing issues of water rights and irrigation is outside the scope of this project, the analysis should indicate how decisions about the transportation system, trails, and thinning activities will work to restore the hydrologic function and water storage capacity of the watershed. [18-7]

Concern: [Seq#354]

Comment is concerned with the potential adverse effects from grazing in Elderberry Cr.

]

3.1.1. Past, Present, and Reasonably Foreseeable Future Actions The interdisciplinary team (IDT) identified past, present, and reasonably foreseeable future actions that might have cumulative impacts with the proposed actions early in the analysis process. Current conditions have been impacted by innumerable actions over the last century and beyond, and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Past and on-going actions affecting resources may be described as part of the existing condition information for specific resources later in this chapter.(p.44) [

The past and continuing effects of logging and permitted grazing of cattle have been identified to be responsible for residual impacts in USFS documents and special reports

being considered with regard to this project. LLBNP SIR 2014 includes additional information on this allotment. There is r

ecognition that overgrazing in Elderberry could "adversely impact" downstream "critical habitat" of steelhead spawners. [ID#371]

Response: [Seq#354]

The effects from grazing have been analyzed in the Lookout-Little Bridge AMP, as described by the commenter. This project does not change the grazing actions in that AMP but it does include actions that may help to mitigate or restore the impacts from grazing. We are proposing fencing of wetland meadows and beaver habitat. The thinning of understory will also serve to increase upland grazing conditions that may draw the cattle out of the riparian areas and into the uplands. While grazing does impact riparian areas, the actions proposed in this EA would likely reduce cattle impacts in critical habitat. [ID#371]

Associated Comments: [Seq#354]

3.1.1. Past, Present, and Reasonably Foreseeable Future Actions The interdisciplinary team (IDT) identified past, present, and reasonably foreseeable future actions that might have cumulative impacts with the proposed actions early in the analysis process. Current conditions have been impacted by innumerable actions over the last century and beyond, and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Past and on-going actions affecting resources may be described as part of the existing condition information for specific resources later in this chapter.(p.44) [The past and continuing effects of logging and permitted grazing of cattle have been identified to be responsible for residual impacts in USFS documents and special reports being considered with regard to this project. LLBNP SIR 2014 includes additional information on this allotment. There is recognition that overgrazing in Elderberry could "adversely impact" downstream "critical habitat" of steelhead spawners. [11-38]

Concern: [Seq#355]

Commenter is concerned with the indicators used for analysis.

3.3 Water Resources Figure 11. Water resource elements, indicators, and measures.(pp.47-48] Sediment and base flow are given as water quality elements. An indicator of sediment is ground cover and a measurement is acres of bare soil. [It is clear that ground cover and bare soil are associated with the origin of sediment which is a factor in water quality; the measurement of sediment in the stream would be a more direct indicator of a problem.] Beaver habitat is the indicator of base flow and the measure is number of enhancement sites. [A more direct and accurate measure of base flow associated with stream water quality would be data gathered with a flow meter.] Indicators of aquatic habitat quality are stream channel complexity and fish distribution. [These choices are relevant.] Measures of aquatic habitat are miles of stream restored with coarse woody debris, miles of stream accessible to fish, and number of aquatic organism passage pipes installed. [The first and last of these measures do not reflect natural characteristics of the water resource, while the central one does.] [ID#372]
Response: [Seq#355]

In order to obtain high-quality and relevant data related to water quality trends, we would need 5-20 years of data and would have several people dedicated to data collection. As federal budgets continue to be reduced, this type of data collection is not feasible and will likely not change the results of the analysis presented in this EA and the upcoming biological assessment. The indicators used in this analysis have been peer-reviewed and approved by an inter-agency group as good surrogates for watershed water quality measures. Thank you for your concerns and we feel that we have presented the best available data.

On other projects, flow and sediment have been gathered and recorded and short-term results seem to indicate that one year the monitoring area has less sediment and the next year the stream channel may be more impacted. Stream flow data is similar. Over time you also see impacts from the monitoring, such as core sampling data, since the area of monitoring is limited. [ID#372]
Associated Comments: [Seq#355]
3.3 Water Resources Figure 11. Water resource elements, indicators, and measures.(pp.47-48] Sediment and base flow are given as water quality elements. An indicator of sediment is ground cover and a measurement is acres of bare soil. [It is clear that ground cover and bare soil are associated with the origin of sediment which is a factor in water quality; the measurement of sediment in the stream would be a more direct indicator of a problem.] Beaver habitat is the indicator of base flow and the measure is number of enhancement sites. [A more direct and accurate measure of base flow associated with stream water quality would be data gathered with a flow meter.] Indicators of aquatic habitat quality are stream channel complexity and fish distribution. [These choices are relevant.] Measures of aquatic habitat are miles of stream restored with coarse woody debris, miles of stream accessible to fish, and number of aquatic organism passage pipes installed. [The first and last of these measures do not reflect natural characteristics of the water resource, while the central one does.] [11-41]

Concern: [Seq#356]

This comment is concerned with timber harvest and the impacts to endangered fish species.

But that's not all-the USFS is threatening to log 50,200 acres in 2 watersheds which will exacerbate the existing conditions and could, with ease, drive these salmonids to extinction. [ID#373]
Response: [Seq#356]

The commenter believes that the timber harvest equipment will be driven through the stream- this is not the case. In response to comments on timber harvesting impacting fish species: all activities will be concurred with by USFWS and NMFS. We believe that the timber harvest will actually benefit fish species by reducing the impacts from future extreme wildfire and to increase water storage. Less than 2,000 acres of commercial timber harvest is proposed in the 50,000 area project area, about 4% of the area. Treatments are proposed on about 10,000 acres, 20% of the project area. [ID#373]
Associated Comments: [Seq#356]
But that's not all-the USFS is threatening to log 50,200 acres in 2 watersheds which will exacerbate the existing conditions and could, with ease, drive these salmonids to extinction. [67-6]

Concern: [Seq#357]

The FS has posted documents that were written for, and paid for by the NCWFHC, on the official MRP website (https://www.fs.usda.gov/project/?project=49201). Are other organizations allowed this same kind of access? Is there a clearly stated policy of which organization's studies and documents will be posted, and which will not? [ID#374]
Response: [Seq#357]

Prior to initiation of the Mission Restoration NEPA Analysis, the North Central Washington Forest Health Collaborative (NCWFHC) partnered with the Methow Valley Ranger District during the early assessment phase. The District identified needs related to field data collection, synthesis of EMDS data outputs, and providing public forums to discuss the science behind landscape analysis and restoration. The Collaborative funded an external consultant, Derek Churchill, to develop and present draft landscape prescriptions and treatment areas from initial EMDS modeling results. The Forest Service placed portions of this information on line for potential public review, as we were requested to do. In addition, the Collaborative provided funding and personnel for stand data verification (completed under the supervision of the district silviculturist) and for a report on aquatic conditions. Volunteers from the Collaborative also helped gather data on existing roads, such as location of culverts and user-created roads. Two documents prepared or paid for by the Collaborative were posted on line including the "Mission Aquatics Assessment Support Project-Final Report" and Derek Churchill's Mission Landscape Prescription and Treatment Recommendations. These two reports were used as background information, after Forest Service review, in the preparation of the Environmental Assessment. [ID#374]
Associated Comments: [Seq#357]

The FS has posted documents that were written for, and paid for by the NCWFHC, on the official MRP website (https://www.fs.usda.gov/project/?project=49201). Other organizations have not been allowed this same kind of access. [63-24]

The FS has posted documents that were written for, and paid for by the NCWFHC, on the official MRP website (https://www.fs.usda.gov/project/?project=49201). Are other organizations allowed this same kind of access? Is there a clearly stated policy of which organization's studies and documents will be posted, and which will not? [69-7]

Concern: [Seq#358]

From what source would funds come to repair them afterwards? Are they earmarked and currently guaranteed? [ID#375]
Response: [Seq#358]

The commenter may not fully understood. The timber sale purchaser is responsible for bare soil created by timber harvest operations and its revegetation. The Forest Service Fire/Fuels department is responsible for revegation of bare soil areas created during fuels treatment. Non-commercial thinning generally does not create bare soils except during fuels treatments. If soil restoration by decompacting previously-compacted soil areas is undertaken, part of the project will be reseeding of disturbed areas. [ID#375]
Associated Comments: [Seq#358]
From what source would funds come to repair them afterwards? Are they earmarked and currently guaranteed? [51-48]

Concern: [Seq#359]

Timber sales are driven by the need to spend all NFTM dollars in the same FY the money is allocated. Line-officers who have unspent NFTM dollars at the end of the FY have their budget cut the next year and their promotion potential will be affected. [ID#376]
Response: [Seq#359]

With the new 4-year budgeting proposal, it is not clear how funding will be carried over from one year to the next but there will not likely be a

need to spend all NFTM dollars in the same FY the money is allocated. Under the present UPOWs funding process, Districts somewhat bid on what each District can accomplish each year with available funds, Because funds are not available to complete all projects in a given year from NFTM dollars, certain available projects are not completed. Since NFTM (timber) dollars are always lower than requested to complete projects, WFHF (fuels) dollars have been used to fund project work for the past few years. [ID#376]

Associated Comments: [Seq#359]

Timber sales are driven by the need to spend all NFTM dollars in the same FY the money is allocated. Line-officers who have unspent NFTM dollars at the end of the FY have their budget cut the next year and their promotion potential will be affected. [63-34]

Concern: [Seq#360]

Comment addressed in concern response #380. This was a duplicate when the system hiccupped. [ID#378]

Response: [Seq#360]

See Concern/Response 380. [ID#378]

Associated Comments: [Seq#360]

NEPA states that "Accurate scientific analysis... (is) essential to implementing NEPA." And the NEPA regulations at 40 CFR § 1502.24 ("Methodology and scientific accuracy") state: Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix. [72-28]

Concern: [Seq#361]

NEPA states that "Accurate scientific analysis... (is) essential to implementing NEPA." And the NEPA regulations at 40 CFR § 1502.24 ("Methodology and scientific accuracy") state:

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.

Lee Cobert, a Libby Creek resident, submitted a list of scientists with publications not cited in the EA in the disciplines of fire ecology (Timothy Ingalsbee), landscape ecology (Dominick A. DellaSala), conservation biology (James R. Strittholt), resource economy (Thomas Michael Power), public policy (Randal O'Toole), geography (Thomas R. Vale), environmental history (Stephen J. Pyne), biology/zoology (Stephen C. Trombulak), fisheries science (Christopher A. Frissell), and forest health/entomology (Joe Fox) that offer objective views that contradict many of those offered in the EA. The public could better evaluate proposed actions if the EA had provided a broader survey of relevant science, including many USFS reports, rather than excluding the research of those that have found adverse effects of actions proposed for this project. Otherwise it could be concluded that the conclusions reached could have been guided by a pre-determined outcome favorable to the logging industry and the Cattlemen's Association. In "The Okanogan-Wenatchee National Forest Restoration Strategy: adaptive ecosystem management to restore landscape resillency (2012)". Lee Cobert concluded "that a sincere best practice—one which would truly incorporate stakeholder/public engagement and dialogue—would give more than an obligatory procedural nod to the public. This would represent not only good public relations and genuine outreach, but is actually the honorable way in which to engage". [ID#380]
Response: [Seq#361]

Appendix E, Literature Cited, contains approximately 246 references that were cited throughout the document. This document has been written to

insure the professional and scientific integrity of the discussions and analyses in this document. Methodologies used were explicitly referenced. We have tried to use references that are applicable to the local project area or at least eastern Washington and Oregon and not used references that are more applicable, such as some of the above, to Northern or Southern California, South Western Oregon, and other areas west of the Cascade Range.

When specific references and the associated documents are sited, we have reviewed the referenced document or an abstract of that document, including some documents by the authors listed above. [ID#380]
Associated Comments: [Seq#361]
Time and again, your documents emphasize the use of the best available science in guiding purpose and need. What do you truly mean by this? You see, having conducted my own research, I can say with all certainty that for every Paul Hessburg and Derek Churchill, there are many other contemporary Ph.D-level scientists in the disciplines of fire ecology (Timothy Ingalsbee, Ph.D.), landscape ecology (Dominick A. DellaSala, Ph.D.), conservation biology (James R. Strittholt, Ph.D.), resource economy (Thomas Michael Power, Ph.D.), public policy (Randal O'Toole, Ph.D.), geography (Thomas R. Vale, Ph.D.), environmental history (Stephen J. Pyne, Ph.D.), biology/zoology (Stephen C. Trombulak, Ph.D.), fisheries science (Christopher A. Frissell, Ph.D.), and forest health/entomology (Joe Fox, Ph.D.), to name just some, whom offer objective views in contrast to those which you have selected to promote a one-sided view of forest health and build a case for an untenable forest health plan. It would serve the public more optimally were the USFS to survey and incorporate the other research which has been conducted and not simply that which, for a number of years, supports a forest plan which has a largely

pre-determined outcome favorable to the logging industry and a few local cattle ranchers. In a January 30, 2017 news release, the MVRD District Ranger himself expressed, "Multiple public voices and perspectives are critical in designing the path forward." Again, the credibility of such statements would be greatly enhanced were the USFS to actually demonstrate inclusion of additional perspectives rather than merely those which would expedite the planned project. To do so otherwise suggests a disingenuousness which erodes public trust. I can only speak for myself when I say that there is an extremely unreasonable and illegitimate modus operandi at work in how this process has been presented to the public. I am disappointed in how the USFS is choosing to demonstrate its openness to public commentary. I see that in your November 2012 publication, The Okanogan-Wenatchee National Forest Restoration Strategy: adaptive ecosystem management to restore landscape resiliency, you appear to stress the importance of stakeholder/public engagement (pp. 62 & 63). My conviction is that a sincere best practice-one which would truly incorporate stakeholder/public engagement and dialogue-would give more than an obligatory procedural nod to the public. This would represent not only good public relations and genuine outreach, but is actually the honorable way in which to engage. [47-2]

Lee Cobert, a Libby Creek resident, submitted a list of scientists with publications not cited in the EA in the disciplines of fire ecology (Timothy Ingalsbee), landscape ecology (Dominick A. DellaSala), conservation biology (James R. Strittholt), resource economy (Thomas Michael Power), public policy (Randal O'Toole), geography (Thomas R. Vale), environmental history (Stephen J. Pyne), biology/zoology (Stephen C. Trombulak), fisheries science (Christopher A. Frissell), and forest health/entomology (Joe Fox) that offer objective views that contradict many of those offered in the EA. The public could better evaluate proposed actions if the EA had provided a broader survey of relevant science, including many USFS reports, rather than excluding the research of those that have found adverse effects of actions proposed for this project. Otherwise it could be concluded that the conclusions reached could have been guided by a pre-determined outcome favorable to the logging industry and the Cattlemen's Association. In "The Okanogan-Wenatchee National Forest Restoration Strategy: adaptive ecosystem management to restore landscape resillency (2012)". Lee Cobert concluded "that a sincere best practice—one which would truly incorporate stakeholder/public engagement and dialogue—would give more than an obligatory procedural nod to the public. This would represent not only good public relations and genuine outreach, but is actually the honorable way in which to engage". [63-8]

Concern: [Seq#362]

There has been a great deal of confusion regarding the timeline for submission of comments. First I received a letter indicating that the 30 day window for the submission of comments would begin with a notice in the publication of record, the Wenatchee World, on January 25, 2017. I rely on US postal mail for notices of this type. I did not receive any further written notices, and check email on an irregular basis (I have never given permission for email to be my contact for official notices). Several days into February, I discovered an email that had arrived earlier, stating that the notice had been published on January 31st. Due to confusion about the actual date and time of the end of comment period, a member

of the citizen's group that I am a part of, the Libby Creek Watershed Association, emailed ID team leader Meg Trebon asking for clarification. She emailed back that the final date was March 2nd. Today, March 1st, someone told us that the Forest Service Mission Restoration Project website states that the deadline is March 1st. We contacted Ms. Trebon for further clarification. She indicated there had been a mistake, and that the website was in error. In addition, she said the responsible official, Supervisor Williams, had approved a second 30 day window for comments due to the error. However, it is my understanding that her statement is not legally binding; today could be the final opportunity to comment. Therefor, I am submitting these comments today, though I had hoped to work on and finalize them tomorrow. If there should be a second comment period opened up, I would like to request that any additional comments I submit replace this document, as it is in a provisional form, and would confuse my position in the public record. [ID#381]

Response: [Seq#362]

The legal notice announcing the start of the comment period on the draft environmental assessment for the Mission Restoration project was published in The Wenatchee World on January 31, 2017. The notice was uploaded onto the project website at https://www.fs.usda.gov/project/?project=49201 on the same date, as noted by the date stamp adjacent to the legal notice: (Mission Legal Ad Comment Period (PDF 150kb) *01-31-2017*).

To further assure you the date was in fact 2017-01-31, we have posted the affidavit from The Wenatchee World that provides additional documentation of the publication date of the legal notice on the project website.
http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/104067_FSPLT3_3951367.pdf

You received notification via email on January 25, 2017 that the draft EA was available for public access through the project website, allowing for additional review time beyond the comment period, and informing you that the legal notice would be published in The Wenatchee World. You received a second email notification on February 1, 2017 that the legal notice had been published, starting the 30-day public comment period.

The published notice of the start of the comment period states that you should rely on no other date than the date of publication in the paper of record. [ID#381]

Associated Comments: [Seq#362]

There has been a great deal of confusion regarding the timeline for submission of comments. First I received a letter indicating that the 30 day window for the submission of comments would begin with a notice in the publication of record, the Wenatchee World, on January 25, 2017. I rely on US postal mail for notices of this type. I did not receive any further written notices, and check email on an irregular basis (I have never given permission for email to be my contact for official notices). Several days into February, I discovered an email that had arrived earlier, stating that the notice had been published on January 31st. Due to confusion about the actual date and time of the end of comment period, a member of the citizen's group that I am a part of, the Libby Creek Watershed Association, emailed ID team leader Meg Trebone asking for clarification. She emailed back that the final date was March 2nd. Today, March 1st, someone told us that the Forest Service Mission Restoration Project website states that the deadline is March 1st. We contacted Ms. Trebone for further clarification. She indicated there had been

a mistake, and that the website was in error. In addition, she said the responsible official, Supervisor Williams, had approved a second 30 day window for comments due to the error. However, it is my understanding that her statement is not legally binding; today could be the final opportunity to comment. Therefor, I am submitting these comments today, though I had hoped to work on and finalize them tomorrow. If there should be a second comment period opened up, I would like to request that any additional comments I submit replace this document, as it is in a provisional form, and would confuse my position in the public record. [49-22]

Concern: [Seq#363]

Resource Indicator: Change to

Habitat for Threatened species- spotted owls, lynx, Critical Habitat for lynx.

The basis for effects will be the changes in amount and quality of late/old mixed conifer forest habitat for spotted owls, and changes to roads in suitable habitat.(p.171) [The following information was taken from Mission Wildlife Report (A. Glidden 2016.) under the heading Figure1: Resources Considered But Not Analyzed in Detail,

There is no explanation in this Environmental Assessment for exclusion of this Endangered Species

.] "The project area is part of the Lookout Pack's territory.

Gray wolves and a rendezvous site are documented in the project area

, but no den sites have been found there. Timing restrictions may be implemented if a den or rendezvous site is found. Deer are found across the project area, year-round, and provide a prey base. Deer forage is expected to increase in quantity and palatability as a result of planned treatments, which may increase deer numbers in the area.

Disturbance and vegetation changes from treatments would not be expected to negatively affect wolves, although wolves and prey may be temporarily displaced during activities.

Current open road density in the project area is 1.1 mile per square mile, and will be increased to 1.2 post-project with alternative 2 (although 13.2 miles of the increased road miles are administrative use, which is estimated to average 1-2 vehicles per year).Alternative 3 would reduce road densities to 0.8 miles per square mile.

The determination for wolves is "may affect (due to temporary and short-term disturbance), not likely to adversely affect". Reduction in road density would be a beneficial effect for wolves and their prey (alternative 3)

. [The ESA-listed grey wolf established the first pack in Washington State since 1970 in the project area. They were killed and driven away, but the presence of grey wolves within the area in 2016 has been documented.

The grey wolf should be included here as they would be adversely affected by the planned activities and again killed or driven from the area.

] [ID#382]
Response: [Seq#363]

Effects to wolves are discussed in the Wildlife Report (Glidden, 2017 p. 6), which is publicly available on the public website at https://www.fs.usda.gov/project/?project=49201, and in the Biological Assessment (draft). The proposed ESA determination is "may affect (due to temporary and short-term disturbance), not likely to adversely affect". Wolves are less sensitive to disturbance than many other species. [ID#382]
Associated Comments: [Seq#363]
Resource Indicator: Change to Habitat for Threatened species- spotted owls, lynx, Critical Habitat for lynx. The basis for effects will be the changes in amount and quality of late/old mixed conifer forest habitat for spotted owls, and changes to roads in suitable habitat.(p.171) [The following information was taken from Mission Wildlife Report (A. Glidden 2016.) under the heading Figure1: Resources Considered But Not Analyzed in Detail, There is no explanation in this Environmental Assessment for exclusion of this Endangered Species.] “The project area is part of the Lookout Pack's territory. Gray wolves and a rendezvous site are documented in the project area, but no den sites have been found there. Timing restrictions may be implemented if a den or rendezvous site is found. Deer are found across the project area, year-round, and provide a prey base. Deer forage is expected to increase in quantity and palatability as a result of planned treatments, which may increase deer numbers in the area. Disturbance and vegetation changes from treatments would not be expected to negatively affect wolves, although wolves and prey may be temporarily displaced during activities. Current open road density in the project area is 1.1 mile per square mile, and will be increased to 1.2 post-project with alternative 2 (although 13.2 miles of the increased road miles are administrative use, which is estimated to average 1-2 vehicles per year).Alternative 3 would reduce road densities to 0.8 miles per square mile. The determination for wolves is "may affect (due to temporary and short-term disturbance), not likely to adversely affect". Reduction in road density would be a beneficial effect for wolves and their prey (alternative 3). [The ESA-listed grey wolf established the first pack in Washington State since 1970 in the project area. They were killed and driven away, but the presence of grey wolves within the area in 2016 has been documented. The grey wolf should be included here as they would be adversely affected by the planned activities and again killed or driven from the area.] [11-66]

Concern: [Seq#364]

In our view, the proposed Mission Restoration Project is a very intensive project treating over 10,000 acres and commercially thinning nearly 2,000 acres within the Libby and Buttermilk watersheds over 15

years. If we exclude the wilderness, the designated roadless area, and the shrub-steppe from the 50,000-acre project area, the plan is to treat almost half of the remaining forest within the project area. The initial stands to be "treated" will the subjected to logging and thinning in the first five years of the project. We feel this level of logging focused in these units is too severe given other higher priority thinning and fuel reduction efforts that could be accomplished elsewhere in the project area. [ID#383]
Response: [Seq#364]

In respect to the effects on fire behavior, it has been recognized that there is a synergy of effectiveness of vegetation management as larger portions of a landscape are treated. There is also a desire to implement this treatment as one pulse instead of ongoing and chronic impact to habitat security and effectiveness and to recreationists and local land owners. The average amount of total treatment from commercial harvest operations combining the Methow Valley and Tonasket Ranger Districts is about 1800 acres per year. This project is of a similar scale to many similar projects on the Methow Valley and Tonasket Ranger Districts over the past 10 years. While commercial thinning may occur over a 5-year period, the majority of proposed thinning in this project is non-commercial thinning using the prescriptions for Ladder Fuel Reduction, Conifer Girdling for Aspen Restoration, Plantation Thin, Post and Pole Thin, and Wetland Thin (p- 315-317, Revised Preliminary EA), which would occur over an estimated ten to fifteenyear period as funds became available. [ID#383]
Associated Comments: [Seq#364]
In our view, the proposed Mission Restoration Project is a very intensive project treating over 10,000 acres and commercially thinning nearly 2,000 acres within the Libby and Buttermilk watersheds over 15 years. If we exclude the wilderness, the designated roadless area, and the shrub-steppe from the 50,000-acre project area, the plan is to treat almost half of the remaining forest within the project area. The initial stands to be "treated" will the subjected to logging and thinning in the first five years of the project. We feel this level of logging focused in these units is too severe given other higher priority thinning and fuel reduction efforts that could be accomplished elsewhere in the project area. We do understand that the outcome of this partial cutting might net a modicum of benefit to increasing stand... diversity and possibly reducing competition in some mature conifer stands. [78-4]

Concern: [Seq#365]

Yet, the fact that none of the proposed non-commercial treatments will be implemented until adequate funding becomes available does not give us much confidence that ecological restoration and fire hazard reduction is a priority.[...]Assumptions from the past about the availability of future funding may be unrealistic under the funding priorities voiced by this new federal administration. If that proves to be the case, what assurances can be given that other restoration actions can proceed in a reasonable timeframe? [ID#384]
Response: [Seq#365]

The EA states in many places that project work would take place as funding becomes available. The district has traditionally been able to receive funding for most of the aquatic resource improvement projects including road decommissioning, culvert replacement, rock armoring, coarse woody debris enhancement and stream crossing improvements. Specialists expect that there would be funding available for beaver enhancement and soil restoration projects as well. Fuel reduction projects have been historically funded at 1,000-2,000 acres per year.

The current thinking is that this project will be sold under 2 separate Stewardship Contracts with the first containing up to 6MMBF of timber volume and the 2nd containing up to 3MMBF of timber volume. The estimated value of the goods to be removed under the first contract is $395,000. The very initial (not final) services contract proposed is about $526,000 of timber stand improvement and ladder fuel reduction thinning and piling to restore large tree characteristics, $29,000 for road decommissioning for wildlife and aquatic habitat improvement, and $16,000 for whip felling for preparation for tree planting. [ID#384]

Associated Comments: [Seq#365]

Yet, the fact that none of the proposed non-commercial treatments will be implemented until adequate funding becomes available does not give us much confidence that ecological restoration and fire hazard reduction is a priority....Assumptions from the past about the availability of future funding may be unrealistic under the funding priorities voiced by this new federal administration. If that proves to be the case, what assurances can be given that other restoration actions can proceed in a reasonable timeframe? [78-5]

Concern: [Seq#366]

14. In Appendix A - the prescriptions refer to harvesting "Conifers 7 to 9 inches DBH up to 24 inches diameter" and "Conifers less than seven to nine inches DBH", which is it, 7 or 9 inches? That is unclear and confusing terminology. [ID#385]

Response: [Seq#366]

The merchantability specifications for ponderosa pine is 9 inches diameter at breast height (DBH), while the specifications for all of the other coniferous species is 7 inches DBH. Only merchantable trees would be harvested in the proposed harvest treatments. [ID#385]

Associated Comments: [Seq#366]

14. In Appendix A - the prescriptions refer to harvesting "Conifers 7 to 9 inches DBH up to 24 inches diameter" and "Conifers less than seven to nine inches DBH", which is it, 7 or 9 inches? That is unclear and confusing terminology. [78-40]

Concern: [Seq#367]

There is a perception that logging is proposed on 50,200 acres. [ID#386]
Response: [Seq#367]

The term "Logging" is typically applied to the harvest of timber. Currently, about 1,952 acres of stands have been identified for commercial harvest treatments. There are about 8,183 acres of understory-only thinning planned. Altogether there is a 10,255 acre footprint of planned vegetation management using a chain saw (preliminary EA page 312). Final commercial timber harvest acres are estimated to be slightly smaller while non-commercial treatments may be slightly larger. [ID#386]
Associated Comments: [Seq#367]
logging on 50,200 acres [67-42]

Concern: [Seq#368]

The implementation horizon for this Mission Project is 10 to 15 years. How does this plan fit in to a long-term landscape plan? Can the landscape sustain the level of merchantable timber removal through time? Or can the FS justify a one-time entry such that no subsequent logging in the future would take place? These questions should be addressed in the plan itself. [ID#387]
Response: [Seq#368]

Timber harvest would be taking place over the next 2-5 years. The long term plan would be to continue to move towards or maintain landscape metrics within the Desired Range of Variability which should also meet the other bullets of the Desired Condition (preliminary EA page 18-19).

Timber harvest is a byproduct of the vegetation management activity in the implementation of forest restoration. It is not necessarily a desired condition to sustain any particular level of merchantable timber removal through time on this landscape. Harvest activity associated with this project does not preclude any future timber harvest in these subwatersheds. Planned thinning of understory trees would lead to eventual opportunities to harvest those released understory and overstory trees.

The effectiveness and duration of the effect of the vegetation management with timber harvest and without harvest on stand structure is shown on pages 123-127 of the preliminary EA. The effectiveness and duration of the effect of the vegetation management with timber harvest and with harvest on Crown Fire Risk is found on page 155 of the preliminary EA. [ID#387]
Associated Comments: [Seq#368]
17. The implementation horizon for this Mission Project is 10 to 15 years. How does this plan fit in to a long-term landscape plan? Can the landscape sustain the level of merchantable timber removal through time? Or can the FS justify a one-time entry such that no subsequent logging in the future would take place? These questions should be addressed in the plan itself. [78-48]

Concern: [Seq#369]

What

research do you have about whether climate change has altered what might be considered ideal stand composition? [ID#388]
Response: [Seq#369]

The Desired Range of Variability is the overlap between the Historical Range of Variability and the Future Range of Variability (preliminary EA pages 103-104). This is on the landscape level. This target is based on the Okanogan-Wenatchee Forest Restoration Strategy (2012).

On the patch level, the ideal composition, in regards to future climate change, depends on the site in question. The future climate is expected to be warmer and drier for the Eastern Cascades. Species that are relatively drought resistant that are already on the site would be the most successful in their respective sites. Another factor in the warmer and drier future scenario is the likelihood of more frequent fire, especially in the lower elevations. Species that are more resilient to fire would be the best candidates for cool-dry, warm-dry, and hot-dry sites, which have had a history of frequent fire intervals. As stands are thinned, the species that are the most drought, insect and fire resistant would be the highest priority to leave (Preliminary EA page 305). The Okanogan-Wenatchee Forest Restoration Strategy (2012 version) contains many citations regarding the likely effects of climate change on forest species.

[ID#388]
Associated Comments: [Seq#369]
research do you have about whether climate change has altered what might be considered ideal stand composition? [29-25]

Concern: [Seq#370]

Clarify what area is meant by young conifer and deciduous is lacking at some higher elevations. [ID#389]
Response: [Seq#370]

The Purpose and Need #4 in the preliminary EA on page 13 says "Existing early-successional conifer and deciduous stands is under-represented based on historical conditions ...". This does not mean that this structure is lacking, only that it is now under-represented compared to the historical range of conditions for this area.

The opportunity to meet the need for treatments in the high elevations was identified in the Public Scoping Document that was posted April , 2016 (page 2). Because of the poor road access and steep

slopes this component of the Purpose and Need was not analyzed as a resource indicator in the preliminary EA (page 177).

[ID#389]

Associated Comments: [Seq#370]

Clarify what area is meant by young conifer and deciduous is lacking at some higher elevations. [18-20]

Concern: [Seq#371]

"Has the FS established road management objectives for all project area roads?" [ID#390]

Response: [Seq#371]

Road management objectives (RMOs) are updated for all the project area roads as a result of the Travel Analysis (TAP) conducted with this project. These are shown in the analysis file for the Travel Analysis Process, but are pulled into the US Forest Services (INFRA) roads data base from Appendix B (Proposed Transportation Plan) of the Engineering Resources Report at the time a decision is made.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, in Chapter 3 of the EA address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators

and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#390]
Associated Comments: [Seq#371]
Has the FS established road management objectives for all project area roads? [72-188]

Concern: [Seq#372]

"The EA states the project "moves toward compliance with 36CFR212.5" (215). Exactly what would total compliance with that regulation require the FS to do?" [ID#391]
Response: [Seq#372]

To see the requirements of 36CFS212.5, refer to References for the Engineering resources report in analysis file. 36CFR212.5 addresses "Road system management." [ID#391]
Associated Comments: [Seq#372]
The EA states the project "moves toward compliance with 36CFR212.5" (215). Exactly what would total compliance with that regulation require the FS to do? [72-190]

Concern: [Seq#373]

"The EA does not give any indication if the surveys which discovered unauthorized (or non- system) roads were comprehensive enough over the entire project area to locate all such routes." [ID#392]
Response: [Seq#373]

This is addressed in the EA, section 3.8.1 and the Engineering Resources report under Methodology. It states

"A complete inventory of NFS roads in the project area was compiled. In addition, an inventory of existing unauthorized roads was developed. Most roads were field checked and data updated to reflect existing conditions. This information was used to update the project GIS database. As unmapped roads were discovered, they were added to the inventory of unauthorized roads." It continues to describe more of the process. [ID#392]
Associated Comments: [Seq#373]
The EA does not give any indication if the surveys which discovered unauthorized (or non- system) roads were comprehensive enough over the entire project area to locate all such routes. [72-193]

Concern: [Seq#374]

"If "unauthorized roads are currently being driven on by highway vehicles" (EA 213) (or by any motorized vehicle, for that matter), what does this say about closure and enforcement effectiveness?" [ID#393]

Response: [Seq#374]

Closures and other measures address unauthorized road access in the Engineering Resources report via the Transportation Plan in Appendix B, the descriptions of road decommissioning in Appendix C and options for closing or decommissioning (including unauthorized) roads in Forest Restoration projects in Appendix A. These measures were analyzed to improve the existing situation in the alternatives, and the proposals summarized in Appendix B.

Law enforcement actions are outside the scope of this proposed action. [ID#393]

Associated Comments: [Seq#374]

If "unauthorized roads are currently being driven on by highway vehicles" (EA 213) (or by any motorized vehicle, for that matter), what does this say about closure and enforcement effectiveness? [72-194]

Concern: [Seq#375]

"The EA does not disclose the extent of non-system and user-built roads in the project area." [ID#394]

Response: [Seq#375]

The EA discloses the Travel Analysis Process, and road analysis including NFSR and unauthorized roads in the Chapter 1, 2 and 3, in summary in 3.8, Transportation, in Appendix B of the EA, and in details for the Engineering Resources Report including Appendices A, B, and C. [ID#394]

Associated Comments: [Seq#375]

The EA does not disclose the extent of non-system and user-built roads in the project area. [72-197]

Concern: [Seq#376]

The landscape prescription spoke to the deficiency in old growth and large old trees in this landscape, while the scoping notice only speaks to them in treatments in specific land allocations. The EA should

address how individual large and old trees throughout the project area as well as old growth stands will be maintained, connected, and fostered. The EA should include location, plant association, and spatial distribution of these attributes today and post project. [ID#395]
Response: [Seq#376]

No Okanogan NF Old Growth stands would be treated under this project and No Late Old Structure would be treated either. The commercial thinning parameters for the project are found on page 305 of preliminary EA, in which describes how large and old trees would be addressed. The EA discusses the effects on medium/large trees on preliminary EA, page 124-125.

The patch polygon data is available in the project file. [ID#395]
Associated Comments: [Seq#376]
o The landscape prescription spoke to the deficiency in old growth and large old trees in this landscape, while the scoping notice only speaks to them in treatments in specific land allocations. The EA should address how individual large and old trees throughout the project area as well as old growth stands will be maintained, connected, and fostered. The EA should include location, plant association, and spatial distribution of these attributes today and post project. [18-12]

Concern: [Seq#377]

"The EA does not disclose the assigned Maintenance Level for every system road in the project area. Consequently how can environmental and economic effects of these roads be analyzed?" [ID#396]
Response: [Seq#377]

This is disclosed (including assignment Maintenance Levels for roads of the project area)in the EA Appendix B Transportation Definitions and Proposed Changes, and in the Engineering Resources Report Appendix B Proposed Transportation Plan. This information is also summarized in several sections of the EA including Section 3.8, Transportation. [ID#396]
Associated Comments: [Seq#377]
The EA does not disclose the assigned Maintenance Level for every system road in the project area. Consequently how can environmental and economic effects of these roads be analyzed? [72-198]

Concern: [Seq#378]

Regardless, Figure 53 shows almost two-thirds of combined Landscape and Patch Size categories are "within DRV" but apparently that's not good enough. Yet the EA doesn't bother disclosing how many of these categories would be moved within DRV by the action alternatives, because it combines "move

towards" with "within." [ID#397]
Response: [Seq#378]

Figure 53 was meant to summarize the effects. The details, including structure, forest type and subwatersheds are found in Figure 51 of the preliminary EA. Only one category would be brought to within the DRV for Percent Landscape and three categories would be brought into DRV for Mean Patch Size. [ID#397]
Associated Comments: [Seq#378]
Regardless, Figure 53 shows almost two-thirds of combined Landscape and Patch Size categories are "within DRV" but apparently that's not good enough. Yet the EA doesn't bother disclosing how many of these categories would be moved within DRV by the action alternatives, because it combines "move towards" with "within." [72-89]

Concern: [Seq#379]

"The EA does not analyze the impacts of roads not maintained in conformance to BMP or in compliance with standards because of funding shortfalls, nor does it analyze impacts of roads that go without maintenance because they are unauthorized or non-system." [ID#398]
Response: [Seq#379]

The EA summarizes effects of actions, including roads in Chapter 3 especially in the Water Resources section 3.3 and Transportation section 3.8. BMPs and compliance with standards are also addressed in the EA Appendix D of Design Features, Best Management Practices, Mitigation, and Monitoring - note especially the Transportation section. Also the Engineering Resources report addresses roads found within the analysis area.

The Environmental Assessment discloses the Travel Analysis Process (TAP), and roads analysis including National Forest system Roads and unauthorized roads throughout the different sections of the EA and is summarized in Section 3.8, transportation, and in details for th eEngineering Resource Report including Appendices A, B, and C. in [ID#398]
Associated Comments: [Seq#379]
The EA does not analyze the impacts of roads not maintained in conformance to BMP or in compliance with standards because of funding shortfalls, nor does it analyze impacts of roads that go without maintenance because they are unauthorized or non-system. [72-187]

Concern: [Seq#380]

"The EA states, "Several roads add sediment, increase the drainage network, block fish migration, and reduce woody debris recruitment in the project area." Has the FS surveyed the full lengths of all system and non-system roads and all unauthorized roads in the project area to locate all significant sediment sources and erosion sites? Fly et al., 2011 demonstrate a comprehensive inventory of erosion and sediment sources." [ID#399]
Response: [Seq#380]

The FS has survey the system and non-system, and unauthorized roads within the project area. A complete inventory of NFS roads in the project area was compiled with help from several sources including the Forest Service Engineering Department, and volunteers from the Collaborative. In addition, an inventory of existing unauthorized roads was developed. Most roads were field checked and data updated to reflect existing conditions. This information was used to update the project GIS database. As unmapped roads were discovered, they were added to the inventory of unauthorized roads."

Effects of sediment and erosion sites are addressed in Water Resources (Chapter 3.3 of draft EA) and Soils section (Chapter 3.4 of draft EA). [ID#399]
Associated Comments: [Seq#380]
The EA states, "Several roads add sediment, increase the drainage network, block fish migration, and reduce woody debris recruitment in the project area." Has the FS surveyed the full lengths of all system and non-system roads and all unauthorized roads in the project area to locate all significant sediment sources and erosion sites? Fly et al., 2011 demonstrate a comprehensive inventory of erosion and sediment sources. [72-163]

Concern: [Seq#381]

This comment is concerned with culvert analysis.

Has the FS inspected all culverts in project area streams or only the ones on roads projected for management activities (to determine fish passage and other proper culvert functioning)? [ID#400]
Response: [Seq#381]

All culverts on all perennial and the majority of intermittent streams in the project area were surveyed for effectiveness and potential for failure, not just roads that may have harvest/fuels treatments on them. Data collected helped to identify culverts proposed for replacement, will help prioritize culverts for replacement as funding becomes available, and help prioritize culverts for rock armoring. Up to 33 stream crossings are proposed for rock armoring; 8 fish barrier culverts are proposed to be replaced, and 15 undersized culverts on non-fish-bearing streams are proposed to be replaced. [ID#400]
Associated Comments: [Seq#381]
Has the FS inspected all culverts in project area streams or only the ones on roads projected for

management activities (to determine fish passage and other proper culvert functioning)? [72-164]

Concern: [Seq#382]

Moist and wet forests or spruce forests controlled by soil moisture rather than canopy dominance should be managed for longer disturbance intervals. Stand density curves may be much higher. Upper elevation sites (4,000 feet elevation or 3,500 feet elevation and near riparian area) typically have moister soils and less frequent, more severe, fire regimes, that may not be outside the historic range of variability for fire, or they may be dominated by other disturbances such as snowpack and windthrow, and used by subalpine wildlife species such as wolverine, lynx, moose, boreal owls or great gray owls. Some of the high elevation units appear to be very near roadless areas or roads designed for commodity extraction. The following units appear to lie within remote, moister, cooler areas: units 27, 503, 505 318, 321, 322 in East Fork Buttermilk Creek; units 039, 338, 339, 340, 341, 343, 345, 348 on North Fork Libby Creek. [ID#401]

Response: [Seq#382]

It is recognized by the IDT that fire return intervals for the cool-dry portions of the project area had a mixed severity fire behavior and that the cool-moist portions of the project had a infrequent, high severity fire history (preliminary EA page 143). The departures for Crown Fire Risk associated with these fire regimes are found on preliminary EA pages 143-147. The difference between target stocking levels between hot-dry and cool-dry is found on page 307 of the preliminary EA. The prescription for moist forest stands is adjusted to account for a different disturbance regime (see preliminary EA pages 309-311). The prescription for Unit 027 is Moist Forest Thin and unit 039, due to its high level of disease has been identified for Variable Retention Regeneration (preliminary EA pages 309-311). Units 503, 505 318, 321, 322, 338, 339, 340, 341, 343, 345, 348 are all identified for non-commercial thinning. [ID#401]

Associated Comments: [Seq#382]

Moist and wet forests or spruce forests controlled by soil moisture rather than canopy dominance should be managed for longer disturbance intervals. Stand density curves may be much higher. Upper elevation sites (4,000 feet elevation or 3,500 feet elevation and near riparian area) typically have moister soils and less frequent, more severe, fire regime, that may not be outside the historic range of variability for fire, or they may be dominated by other disturbances such as snowpack and windthrow, and used by subalpine wildlife species such as wolverine, lynx, moose, boreal owls or great gray owls. Some of the high elevation units appear to be very near roadless areas or roads designed for commodity extraction. The following units appear to lie within remote, moister, cooler areas: units 27, 503, 505 318, 321, 322 in East Fork Buttermilk Creek; units 039, 338, 339, 340, 341, 343, 345, 348 on North Fork Libby Creek. [18-27]

Concern: [Seq#383]

The vegetation analysis and Draft EA do not explicitly discuss tree-marking guidelines to address spacing during thinning operations, but do discuss leaving clumps of 0.5 to 2.5 acres to provide diversity. We believe that leaving all large trees and all trees > 21" dbh and older than approximately 150 years will provide for the desired uneven spacing within treatment units.

[ID#402]

Response: [Seq#383]

The desired spatial pattern for each prescription is shown on preliminary EA pages 308-310. Clumps of 0.5-2.5 acres are identified for the Variable Retention Regeneration units only (preliminary EA page 310). Openings for the Dry Forest Restoration Thin prescription are expected to be 1/3 acre or less. Canopy openings up to 2 acres in size are expected for the Dry forest Restoration Thin with Dwarf Mistletoe Reduction prescription. Openings for the Moist Forest Thin would be no larger than ¼ acre in size (preliminary EA pages 308-309).

All trees greater than 24 inches would remain. Only trees that are **both** younger than 150 years **and** less than 24 inches in diameter would be considered for harvest and even then only occasional trees between 21 and 24 inches would be harvested. Under most situations, conifers would be thinned from below, retaining trees among the largest, most vigorous, and most preferred conifer species present to meet treatment objectives (page 305 EA). The effects of the proposed action alternatives on large and medium sized trees is shown on pages 124-125.

[ID#402]

Associated Comments: [Seq#383]

The vegetation analysis and Draft EA do not explicitly discuss tree-marking guidelines to address spacing during thinning operations, but do discuss leaving clumps of 0.5 to 2.5 acres to provide diversity. We believe that leaving all large trees and all trees > 21" dbh and older than approximately 150 years will provide for the desired uneven spacing within treatment units. [30-6]

Concern: [Seq#384]

In addition, the initial letter mailed to me regarding the preliminary EA states that email is a valid way to submit comments. It also states that emails submitted to "e-mail addresses other than the one listed above… will be rejected." However, there is no email address listed in the letter to submit comments to. [ID#403]

Response: [Seq#384]

I am not sure which letter this was since no date of the letter is included. I could not find the letter or legal ad that had the language stated without the email address included for comments. Early notifications of the availability of the preliminary EA prior to the commencement of the comment period did not included the email address for where to send comments and the news release about the release of the preliminary EA did not contain the email address of where to send comments, but these releases were prior to the commencement of the comment period. One stated when the legal notice was expected to be published. [ID#403]

Associated Comments: [Seq#384]

In addition, the initial letter mailed to me regarding the preliminary EA states that email is a valid way to submit comments. It also states that emails submitted to "e-mail addresses other than the one listed above… will be rejected." However, there is no email address listed in the letter to submit comments to. [49-23]

Concern: [Seq#385]

Need for careful consideration of impacts of overstory removal to assure that they are consistent with restoration goals.

[...]

As explained below, we believe that both Alternatives 2 and 3 of the Draft EA have addressed several aspects of our concerns with overstory removal. [ID#404]

Response: [Seq#385]

How the action alternatives address the restoration goals is addressed in the preliminary EA on pages 123-134 and 152-159. In general, most commercial harvest treatments are thinning from below in dry sites, except 2 units, 59 acres, of Variable Retention Regeneration harvest where conifers of merchantable diameter would be harvested to simulate mixed to high severity fire, to regenerate a new cohert of early seral tree species, and consolidate and increase the patch size of adjacent early seral forest vegetation while retaining forest patches, tree clumps, and individual trees for structure and biological diversity. [ID#404]

Associated Comments: [Seq#385]

· Need for careful consideration of impacts of overstory removal to assure that they are consistent with restoration goals...As explained below, we believe that both Alternatives 2 and 3 of the Draft EA have addressed several aspects of our concerns with overstory removal. [30-9]

Concern: [Seq#386]

From the EA, there is no way to assess the efficiency of alternatives towards the assumed benefits. The costs of units of management activity were not analyzed. One might wonder what the expected costs might be of noxious weed treatments. Forget that. What about the taxpayer investment per board feet produced? Nope. What dollar amount per grazed Animal Unit Month or accumulated pound of beef does the taxpayer spend with its subsidies to the cattle owners? It isn't analyzed anywhere. [ID#405]
Response: [Seq#386]

The intent of the economics analysis is to determine if the timber sale is viable (timber value is higher than harvest cost). It can also be used to compare between alternatives when there are acre or logging system differences between action alternatives. The economic analysis does not include the cost of analysis or project implementation, because harvesting is seen as an instrument to alter stand structure and composition, and timber volume is merely a bi-product. Harvest and haul cost, by unit, is available in the analysis file.

The treatment of invasive species is not an activity that is included in the proposed action; it is covered in previous document decisions. The effects on invasive species is found on preliminary EA pages 258-269.

Range management is not part of the proposed action for this project since it was covered in a 2011 NEPA document for allotments in the project area. The effects on forage, ability to meet riparian objectives, and range management access is found on pages 232-252. As in the case for timber, increased forage (AUMs) [creation of transitory range] would only be a byproduct of the forest restoration process.

[ID#405]
Associated Comments: [Seq#386]
From the EA, there is no way to assess the efficiency of alternatives towards the assumed benefits. The costs of units of management activity were not analyzed. One might wonder what the expected costs might be of noxious weed treatments. Forget that. What about the taxpayer investment per board feet produced? Nope. What dollar amount per grazed Animal Unit Month or accumulated pound of beef does the taxpayer spend with its subsidies to the cattle owners? It isn't analyzed anywhere. [72-206]

Concern: [Seq#387]

I join with LCWA members and others who have identified a number of factors pointing to the need for a more careful review of the project than this EA provides. These factors include the large size of the analysis area (~50,000 acres); the time span for the project is not established in the EA, but the Forest Service (FS) has indicated it could be more than a decade; involvement of profit-driven organizations in

the design, data collection and analysis via the North Central Washington Forest Health Collaborative (NCWFHC); the Forest's stated goal of using this project as a pilot for similar future projects; the use of proprietary EMDS software in determining the desired stand composition with algorithms and modeling the public has no ability to examine; the presence of listed and endangered species in the area; the need for amendments to the Forest Plan; and the limited climate discussion [ID#406]

Response: [Seq#387]

The analysis area is relatively large at approximately 50,000 acres. Approximately 8,304 acres are proposed to be treated with non-commercial thinning, 1,952 acres with commercial thinning and 10,968 acres are proposed to be treated with prescribed fire in the preliminary EA. The acres of prescribed fire mostly are the same acres as the non-commercial and commercial thinning. The time span for the majority of the project is an estimated 10 years, with the commercial timber sale contract(s) likely being about three years each, without any extensions, and fuels treatment likely happening within 5 years after the end of the timber sale contract, but some other proposed restoration projects may not be completed for several years after that. It is also proposed re-burn some of the fuels treatments about 15 years after the first treatment.

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands. The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, collecting fisheries data, and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment.

As the results of modeling are developed and used, they are being reviewed and monitored to try and determine if the information was useful and how the collection and modeling of this data can be improved. This is continuing on other projects on the Forest would have used this type of modeling. The EMDS models are not proprietary, it just takes a lot of training to be able to use it successfully. [ID#406]

Associated Comments: [Seq#387]

I join with LCWA members and others who have identified a number of factors pointing to the need for a more careful review of the project than this EA provides. These factors include the large size of the analysis area (~50,000 acres); the time span for the project is not established in the EA, but the Forest Service (FS) has indicated it could be more than a decade; involvement of profit-driven organizations in the design, data collection and analysis via the North Central Washington Forest Health Collaborative (NCWFHC); the Forest's stated goal of using this project as a pilot for similar future projects; the use of proprietary EMDS software in determining the desired stand composition with algorithms and modeling the public has no ability to examine; the presence of listed and endangered species in the area; the need

for amendments to the Forest Plan; and the limited climate discussion. [63-13]

Concern: [Seq#388]

From the document appendix: "...large (>25 inches DBH) and old trees (> or _ 150 years) may be nonexistent to relatively abundant." So, which is it? What does thorough field review and mandated inventory show? [ID#407]
Response: [Seq#388]

The passage quoted in the EA speaks to the presence of individual large trees found throughout the project area and in most units identified for overstory treatment. Only when large trees are concentrated and in an area larger than 10 acres does that information get mapped. No patches that qualify as Late and Old structure or stands that meet the definition of Forest Plan Old Growth would be treated. The effects on medium and large trees is found on pages 120-125 of the preliminary EA. [ID#407]
Associated Comments: [Seq#388]
From the document appendix: "...large (>25 inches DBH) and old trees (> or _ 150 years) may be nonexistent to relatively abundant." So, which is it? What does thorough field review and mandated inventory show? [68-105]

Concern: [Seq#389]

Regarding this project and the NCWFHC, it should be noted that other National Forests and community oriented collaborative groups have had a much more open and honest dialogue with the communities they are associated with. The FS and the NCWFHC had this project pre-determined when the public was informed that it was proceeding. Forest health, and especially the subject of wildfire, needs to start at the top of the funnel and include citizens. That's why this project, if implemented, will be a disaster. The FS has had no intention of listening to anyone or any science outside of their pre- concieved box. Many policy changes and decisions regarding wildfire could save money, lives, property and trees, but the FS does not indicate that they truly care about public process. [ID#408]
Response: [Seq#389]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and

Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands.

Different Collaborative groups have different operating guidelines and objectives. The objectives of this project were not predetermined except to the extent that the objective for the project was to accelerate landscape-scale forest restoration. The Methow Valley District listened to wildfire/WUI concerns from the public and the project has been modified in several areas to try and provide increase fire resistance adjacent to private lands in the mouth of Buttermilk Creek and near Libby Creek and its tributaries.

There has been discussion about considering more fuels treatment in shrub/steppe habitat but based on wildlife input from Forest Service and State Wildlife Biologists because of the recent fires, the present time is not the appropriate time and the Forest Service will try to review that input in 10 - 15 years when it may be more appropriate. The FS has reviewed existing, peer reviewed science that has been presented to us when the science applies to North Central Washington. [ID#408]

Associated Comments: [Seq#389]

Regarding this project and the NCWFHC, it should be noted that other National Forests and community oriented collaborative groups have had a much more open and honest dialogue with the communities they are associated with. The FS and the NCWFHC had this project pre-determined when the public was informed that it was proceeding. Forest health, and especially the subject of wildfire, needs to start at the top of the funnel and include citizens. That's why this project, if implemented, will be a disaster. The FS has had no intention of listening to anyone or any science outside of their pre- concieved box. Many policy changes and decisions regarding wildfire could save money, lives, property and trees, but the FS does not indicate that they truly care about public process. [68-41]

Concern: [Seq#390]

The EA states, "Past management practices, including fire suppression, changed forest vegetation structure, overstory and understory species composition, and spatial patterns in comparison to historical conditions." The EA fails to properly attribute impacts to the project area forests due to two very intrusive management practices-livestock grazing and logging. Instead, it largely attributes "undesired" changes of vegetation to fire suppression. Such an analysis would allow the public and decisionmaker to understand how similar Mission project actions might result in cumulative impacts. [ID#409]

Response: [Seq#390]

The reasons for not itemizing the impacts of previous management activity in the project area are stated on pages 45-46 of the preliminary EA. The cumulative impact of all of the past and ongoing management are identified in the affected environment section of each resource report. The range and scope of impacts of road management, harvest treatment, non-commercial vegetation treatment, soil restoration and underburning, using the design criteria, best management practices and mitigation

identified in Appendix D of the preliminary EA, are well known based on previous monitoring of these activities.

There are many and frequent citations of previous management other than fire suppression found in Chapter 3 of the preliminary EA. The affected environment section for Water Resources recognizes that fire suppression is but one of the past management practices that have changed vegetation patterns (preliminary EA page 55). The affected environment section for Soils cites previous harvest, shake mill activity and fuels treatments (preliminary EA pages 92-93). The affected environment section for Vegetation refers to previous land management practices that include timber harvest and grazing (preliminary EA pages 108-109). The Affected environment section for Fire/Fuels refers to past timber harvest practices (preliminary EA page 142). The Wildlife section includes recognizes effects of recent fires (preliminary EA page 179), existing open roads (preliminary EA pages 174-175) and firewood cutting (preliminary EA page 182). [ID#409]

Associated Comments: [Seq#390]

The EA states, "Past management practices, including fire suppression, changed forest vegetation structure, overstory and understory species composition, and spatial patterns in comparison to historical conditions." The EA fails to properly attribute impacts to the project area forests due to two very intrusive management practices-livestock grazing and logging. Instead, it largely attributes "undesired" changes of vegetation to fire suppression. Such an analysis would allow the public and decisionmaker to understand how similar Mission project actions might result in cumulative impacts. [72-182]

Concern: [Seq#391]

To help fund the restoration work needed on this project, the Forest could utilize the K-V authority to collect funds for various resource enhancements. The K-V authority allows funds to be used outside of the project area for needed aquatic and terrestrial improvements across the Forest. [ID#410]

Response: [Seq#391]

KV authority (Knutson Vandenberg Trust Fund Act) is one way to apply stumpage receipts (timber value) for a particular timber sale or stewardship contract to pay for activity within 1/4 mile of harvest treatments, given that that there is sufficient stumpage to pay for the work. Funding sources to implement the various components of the proposed action is outside the scope of the analysis. [ID#410]

Associated Comments: [Seq#391]

To help fund the restoration work needed on this project, AFRC suggests the Forest utilize the K-V authority to collect funds for various resource enhancements. The K-V authority allows funds to be used outside of the project area for needed aquatic and terrestrial improvements across the Forest. [14-13]

Concern: [Seq#392]

Numerous members of the public have voiced interest in the Mission Restoration Project; the majority have communicated concerns regarding the removal of commercial overstory timber. (see scoping period comments, which unfortunately were not posted online. The OWNF NEPA officer attributed

this

to lack of technical ability to do so). There were multiple meetings with Forest Service personnel that addressed concerns about overstory logging (by the Libby Creek Watershed Association, Pacific Biodivirsity Institute); discussion occurred at the public meeting held by the FS for scoping; and an alternative treatment proposal was submitted by the Pacific Biodivirsity Institute. At no point was there indication from the FS that any modification of the commercial harvest would be considered. [ID#411]

Response: [Seq#392]

The Interdisciplinary Team reviewed all of the scoping letters that we have received and have written responses to many of the resource comments that we received, but have not completed this. Mostly we have addressed the resource specific comments and not the non-resource specific comments. There is no NEPA requirement to prepare written responses, and post online, responses to scoping comments. Responses to comments on the Preliminary and Revised Preliminary EA are being completed and will likely be posted in a public reading room. At the present time (12/10/2017), all but about 10 comments have had preliminary responses written with over 700 responses to comments finalized of the over 1100 comments submitted.

Individuals from the Libby Creek Watershed Association have met with members of the Forest Service about their concerns. As the result of a meeting with Pacific Biodiversity Institute (PBI) an alternative was created and reviewed. This alternative is displayed in Section 2.1.1 under Alternatives Considered but Eliminated from Detailed Study. Interdisciplinary Team (IDT) Members meet with PBI staff on (July 11, 2016 to discuss the intent and specifics of this alternative, and reviewed the outcome of this discussion at a full IDT meeting. The IDT modified the thinning and prescribed fire treatments proposed in Alternatives 2 and 3 by adding 125 acres of additional treatments in the WUI, where feasible. Other elements of their proposal were considered but eliminated from further study because of IDT concerns which are listed in Section 2.1.1 of the EA. The biggest difference is in the increased acres treated by the project [ID#411]

Associated Comments: [Seq#392]

Numerous members of the public have voiced interest in the MRP; the majority have communicated concerns regarding the removal of commercial overstory timber. (see scoping period comments, which unfortunately were not posted online. The OWNF NEPA officer attributed this to lack of technical ability to do so). There were multiple meetings with forest service personnel that addressed concerns about overstory logging (by the Libby Creek Watershed Association, Pacific Biodivirsity Institute); discussion

occurred at the public meeting held by the FS for scoping; and an alternative treatment proposal was submitted by the Pacific Biodivirsity Institute. At no point was there indication from the FS that any modification of the commercial harvest would be considered. [69-23]

Concern: [Seq#393]

Since the North Central Washington Forest Health Collaborative has already, in part, funded development of the Mission project (EA 20-21), the EA must demonstrate how the FS maintains objectivity and avoids bias towards actions that result in financial gain by collaborative members. It fails to do so. How will the chosen contract mechanism maintain the proper distance between the FS and these private entities? [ID#412]

Response: [Seq#393]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board. It is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, Vaughan Brothers, WDF&W, and AFRC are members of this group. The 2012 Planning Rule encourages collaborative type involvement in Restoration Projects. As can be seen by the list of some of the groups involved in the collaborative, it is not privatizing portions of the planning and implementation of management activity on federal lands.

The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, and others collecting stream, stand, and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment. Many of the potential timber stands identified for possible commercial harvest treatments were not included in the project for multiple reasons including after further review that there was not a need for treatment at the present time, treatment would require the construction of new roads, and/or treatments may be expensive due to the need to use cable yarding systems. Potential habitat identified as potentially suitable for spotted owls use in the EMDS model were reviewed on the ground and determined to not be suitable. As stated above the Collaborative is made up of diverse members with only several of the member organizations representing the timber industry. The chosen contract mechanism allows any suitable bidders to participate in the proposed Stewardship Contracts.. [ID#412]

Associated Comments: [Seq#393]

Since the North Central Washington Forest Health Collaborative has already, in part, funded development of the Mission project (EA 20-21), the EA must demonstrate how the FS maintains

objectivity and avoids bias towards actions that result in financial gain by collaborative members. It fails to do so. How will the chosen contract mechanism maintain the proper distance between the FS and these private entities? [72-222]

Concern: [Seq#394]

This commercial logging is the only part of the project currently funded. What the entire EA is saying is that the FS cannot commit to any of the non-commercial logging components of the restoration. Therefore, the project is not restoration, it is a timber sale. [ID#413]
Response: [Seq#394]

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed restoration actions. While roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads slated for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners. Thank you for your comment and we agree that the funding issue is a difficult one.

At the present time, it is proposed to offer the commercial timber volume proposed to be removed through 2 Stewardship Contracts. The Interdisciplinary Team is in the very preliminary stages of developing a proposal. The first contract has a proposed product value [goods] (net) of $395,000 with a first proposed services list of projects of $571,000. These projects include whip felling for preparation of tree planting ($16,000); road decommissioning for wildlife and aquatic habitat improvements ($29,000); and timber stand improvement and ladder fuel reduction thinning and piling to restore large tree structure of ($526,000). The list of projects (services) proposed to be funded is subject to change after further Interdisciplinary Team review.

The 2nd Stewardship Contract is expected to be somewhat similar but an estimated product value has not be determined since field work has not been completed. [ID#413]
Associated Comments: [Seq#394]

Page 291 of the EA says "The proposed action requires a level of investment that may not be possible within current or expected levels of appropriations." It then goes on to say that aspects of the project that generate funds will be prioritized. The fact that they generate funds has nothing to do with how valuable they are to the ecology of the area. It is unacceptable to move forward with this project without funds to do the things that are best for the environment....Moving forward with the worst parts of the project (commercial logging of millions of board feet) and abandoning the only valuable parts (road closures, prescribed burning) is deceiving the public. [29-29]

Additionally, two tables in the EA underscore the gap between the commercial value generated by the project and the costs of the non-commercial components. The EA states that the timber sale is viable according the analysis and is estimated to generate $310,000, while restoration needs in the project exceed $2 million. Recognizing this gap, in the short-term for this specific project our collaborative is highly interested in discussions that increase economic efficiencies and outcomes of the project while partnering with your district to seek external funding to accomplish the non-commercial work. Discussions have already begun between your staff and our Projects Workgroup to this end, and we look forward to continuing them. In the longer term, our collaborative is interested in discussions on this topic with your district and forest wide, as it is relevant to nearly all Integrated Vegetation Management Projects. [33-12]

In conclusion, I find it completely unacceptable that much of the proposed "restoration" plan is predicated upon commercial logging and that the MVRD position is to have the logs 'pay their way out of the forest', as has been expressed by the Forest Service at numerous meetings. That such activities will come first and then the other restoration activities will follow--once funds from unspecified sources are available-is far too nebulous. [47-22]

It should be stated clearly and near the beginning of the voluminous preliminary EA that the only portion of the MRP funded at this time is the commercial timber sale component; the additional components are provisional based on future funding. [49-17]

It is proposed to extract 6.3 million board feet of "merchantable timber" from Libby Creek and Buttermilk watersheds. These logs will be going down the highway to someplace far away, no benefit to valley employment, and no guarantee to pay for the other restorations proposed which will be on hold for lack of funds. [51-2]

The truly needed restorations, which are the plans dependent on allocation of funds (thus translating to no guarantee at all), are road closures, beaver/wetland enhancement, culvert replacement, aquatic/riparian ecosystem improvements and soil compaction work. [51-22]

this commercial logging is the only part of the project currently funded; [63-18]

It should have been stated clearly near the beginning of the EA that the only portion of the MRP funded at this time is the commercial timber sale component; the additional components are provisional based on future funding. [63-96]

Ms. Bresnahan cites the EA (p.291): "The proposed action requires a level of investment that may not be possible within current or expected levels of appropriations." The EA goes on to say that aspects of the project that generate funds will be prioritized. She found it unacceptable to move forward with this project without funds to do the things that are directly "restorative" and felt that moving forward with the worst parts of the project (commercial logging of the overstory) and abandoning the only valuable parts (road closures, prescribed burning) was deceiving the public. [63-99]

* The MRP should not commence until it is fully funded [67-37]

Where is the funding to do so? [68-7]

What the entire EA is saying is that the FS cannot commit to any of the non-commercial logging components of the restoration. Therefore, the project is not restoration, it is a timber sale. [68-31]

Over $2 million are needed to implement the strategy, yet what is available is $0. [68-86]

"Project Design Features and Mitigation Measures The Hydrologic/Aquatic Design Features and Mitigation Measures were developed to lessen impacts from proposed actions, provide for meeting Okanogan Forest Plan and Northwest Forest Plan Standard and Guidelines, and to meet resource objectives.Measures include working in fish habitat during the Washington State designated instream work windows, maintaining protective no-treatment buffers along streams and wetlands during harvest activities, isolating the work area fish during culvert upgrades, removing all fish from the work area prior to work in occupied habitat, and using standard erosion control BMPs. Appendix A displays each of the protective hydrology, aquatic, and riparian measures for this project." BUT THEY AREN'T FUNDED. [68-124]

It should be stated clearly and near the beginning of the voluminous preliminary EA that the only portion of the MRP funded at this time is the commercial timber sale component; the additional components are provisional based on future funding. [69-22]

The plan places too much emphasis on commercial logging within the first three years of implementation, with no assurance that any other restoration treatments will transpire. Implementation of the other treatments to reduce fuel loads, to fix transportation issues related to sediment inputs into stream, to do modest rehabilitation of aquatic habitats, etc., take a back seat to the initial commercial logging/pre-commercial thinning on nearly 2000 acres of forest lands. All non-commercial harvest restoration treatments will only be done if and when funding becomes available. Net income from the commercial sale will net about $310,000 to the US which is too little to fund but a very few of the other proposed treatments. [78-24]

Concern: [Seq#395]

Dwarf mistletoe and other tree diseases may be present in individual trees or small pockets and are not widespread throughout treated stands." Given this, then restoration is not necessary. [ID#414]
Response: [Seq#395]

While the percent landscape of stand conditions vulnerable to Douglas-fir dwarf mistletoe (DFDM) is within the range of variability for both landscapes, DFDM has the potential to retard, prevent or reverse the attainment of the attribute of "medium and large trees". By reducing the intensity and scope of DFDM there would be an increased potential and rate for treated stands to attain or retain desired structure classes (preliminary EA page 127). [ID#414]
Associated Comments: [Seq#395]
Dwarf mistletoe and other tree diseases may be present in individual trees or small pockets and are not widespread throughout treated stands." Given this, then restoration is not necessary. [68-110]

Concern: [Seq#396]

Most of the treatments call for leaving trees over 25" dbh. This criteria is not part of the Northwest Forest Plan and should not be part of this project. Many of the forest health problems identified such as dwarf mistletoe and Douglas-fir bark beetles require the larger "host" trees to be removed. More of the larger trees would return more dollars for stumpage and for completing the restoration work that currenlty won't be funded to improve forest health. [ID#415]
Response: [Seq#396]

A guiding principal of the Okanogan-Wenatchee Forest Restoration Strategy (FRS) is to "restore the density of Large and Old Trees. The density objectives for Large and Old trees in the FRS is found on page 102. Based on the FRS, large trees are trees 20 inches DBH and larger. Old has been identified, for this project, to be 150 years, based on the time it takes to grow to 25 inches dbh in the project area (preliminary EA pages 110-111).

Removing infected host species trees has benefits (preliminary EA page 126-127) that have to be weighed against the value of large and old trees on the landscape. Trees between 21 and 24 inches that are infected with DFDM **and** are less than 150 years old could be harvested (preliminary EA page 305).

Although the district recognizes that larger diameter trees generate more revenue, the intent of the IDT and direction from the line officer is to find the correct balance of the positive and negative effects of harvest activity. While leaving lower stocking and harvesting larger trees could help pay for more treatment, it would come at a cost to other resources. [ID#415]
Associated Comments: [Seq#396]
Most of the treatments call for leaving trees over 25” dbh. This criteria is not part of the Northwest Forest Plan and should not be part of this project. Many of the forest health problems identified such as dwarf mistletoe and Douglas-fir bark beetles require the larger “host” trees to be removed. In a later discussion, we address the value of the sawtimber to be removed from this project. AFRC suggests that

harvesting more of the larger trees would return more dollars for stumpage and for completing the restoration work that currenlty won't be funded to improve forest health. [14-6]

Concern: [Seq#397]

The EA states that the Forest cannot commit to any of the non-commercial logging components of the MRP. Therefore, the project is not restoration, it is a timber sale. Donna Bresnahan submits that "The Mission Restoration Project uses a veil of restoration goals (that are questionable and not funded) over what began as almost the exact same timber sale from several years ago (2008?). This was a HFRA sale that was flagged and ready to go until local citizens caught the District Ranger using Legacy Road Funds illegally to improve roads for the log haul instead of using them for their assigned purpose of decommissioning roads [ID#416]

Response: [Seq#397]

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

This project is very different from the project that Donna refers to; Smith-Elderberry. Some of the objectives are similar but that project just looked at the lower elevations of Libby Creek and this project looks at both the lower and higher elevations of Libby Creek and Buttermilk Creek.

The current thinking is to offer 2 Stewardship Contracts for removal of commercial timber (goods). The first contract is currently estimated to provide about $395,000 that can be used for restoration work (services). In the first draft of the Stewardship Contracting Proposal, work proposed to be completed includes whip felling for preparation for tree planting; road decommissioning for wildlife and aquatic habitat improvement; and timber stand improvement and ladder fuel reduction thinning andpiling to restore large tree structure.

[ID#416]

Associated Comments: [Seq#397]

The EA states that the Forest cannot commit to any of the non-commercial logging components of the MRP. Therefore, the project is not restoration, it is a timber sale. Donna Bresnahan submits that "The MRP uses a veil of restoration goals (that are questionable and not funded) over what began as almost the exact same timber sale from several years ago (2008?). This was a HFRA sale that was flagged and ready to go until local citizens caught the District Ranger using Legacy Road Funds illegally to improve roads for the log haul instead of using them for their assigned purpose of decommissioning roads. [63-48]

Concern: [Seq#398]

The FS should thin stands to minimum densities in the Mission Restoration Project. This will create better fuel breaks in case of wildfire, create better forage conditions for the northern spotted owl, and as pointed out earlier, improve deer survival on their winter range. Additionally, this will greatly improve the economics of the project and provide more dollars for restoration activities. The Forest Service and OSU are in the process of completing a 20-year study on the effects of a variety of thinning intensities implemented on the Siuslaw National Forest to achieve the type of structural diversity that you are trying to achieve in this project. This 20-year study found that individual tree growth was greater in the heavily thinned stands and that the abundance and diversity of understory increased with increased thinning intensity. Results also indicated that canopies closed at a relatively high rate following thinning. [ID#417]

Response: [Seq#398]

It is not known what the commenter intended by "minimum density". One might take that to industrial extremes and say that zero trees per acre is the absolute minimum stocking level. Stocking levels were identified based on historical stand reconstruction performed by Derek Churchill et. al.

The IDT feels that they have identified target stand densities that meet the most objectives, including generating timber value with which to implement restoration work, based on all of the issues at play.

The Siuslaw forest is on the West side of the Cascades where light is the limiting factor. The conclusions made to the research done there would not necessarily apply to eastside conditions. [ID#417]

Associated Comments: [Seq#398]

AFRC strongly encourages the Forest Service to thin stands to minimum densities in the Mission Restoration Project. This will create better fuel breaks in case of wildfire, create better forage conditions for the northern spotted owl, and as pointed out earlier, improve deer survival on their winter range. Additionally, this will greatly improve the economics of the project and provide more dollars for restoration activities. The Forest Service and OSU are in the process of completing a 20-year study on the effects of a variety of thinning intensities implemented on the Siuslaw National Forest to

achieve the type of structural diversity that you are trying to achieve in this project. This 20-year study found that individual tree growth was greater in the heavily thinned stands and that the abundance and diversity of understory increased with increased thinning intensity. Results also indicated that canopies closed at a relatively high rate following thinning. [14-10]

Concern: [Seq#399]

In general, road reconstruction and maintenance would be implemented at the beginning of the project as needed on all roads that would be

used for timber haul.. Temporary roads constructed for the project would be decommissioned soon after timber harvest on the units that have been completed. Road closure and decommissioning would be spread out over the period of the project or after completion of the project depending on where and when funding is available. The IDT Fish Biologist and Hydrologist would determine which roads are the highest priority for closure first, which may depend on the type of funding available.

COMMENT: what this is saying is that there is no problem with road construction and maintenance for logging, but anything else to do with roads for the entire project is not for sure. Again, that points to the highest priority being cut and remove trees (big ones) for an economic loss to the public.

[

[ID#418]
Response: [Seq#399]

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

In general, road reconstruction, maintenance on roads used for timber haul, and construction of temporary roads would be implemented at the beginning of the project.

Temporary roads constructed for the project would be decommissioned soon after timber harvest on the unit has been completed. Road closure and decommissioning would be spread out over the period of the project or after completion of the project depending on where and when funding is available. The IDT Fish Biologist and Hydrologist would determine which roads are the highest priority for closure first, which may depend on the type of funding available. The Forest Service, in general, has been finding funding for closing of roads within several years of completing the necessary NEPA documents to do this. As stated above, stewardship sale receipts can be used for closing roads in the project area.

The current thinking is to offer 2 Stewardship Contracts for removal of commercial timber (goods). The first contract is currently estimated to provide about $395,000 that can be used for restoration work (services). In the first draft of the Stewardship Contracting Proposal, work proposed to be completed includes whip felling for preparation for tree planting; road decommissioning for wildlife and aquatic habitat improvement; and timber stand improvement and ladder fuel reduction thinning and piling to restore large tree structure.

[ID#418]

Associated Comments: [Seq#399]

Do not implement the project until funding for road decommissioning and maintenance has been secured or develop a plan to prioritize/phase project implementation and road decommissioning (i.e. no commercial activities in Phase 2 would take place until high-priority road decommissioning in Phase 1 had taken place). RESPONSE: In general, road reconstruction and maintenance would be implemented at the beginning of the project as needed on all roads that would be used for timber haul.. Temporary roads constructed for the project would be decommissioned soon after timber harvest on the unit has been completed. Road closure and decommissioning would be spread out over the period of the project or after completion of the project depending on where and when funding is available. The IDT Fish Biologist and Hydrologist would determine which roads are the highest priority for closure first, which may depend on the type of funding available. COMMENT: what this is saying is that there is no problem with road construction and maintenance for logging, but anything else to do with roads for the entire project is not for sure. Again, that points to the highest priority being cut and remove trees (big ones) for an economic loss to the public. [68-72]

Concern: [Seq#400]

Supervisor Williams, your arrogance and public deception is unequalled in the USFS. The cover page photo for the Preliminary Environmental Assessment shows a beautiful forest setting with a small lake in the foreground. If you had any intention of serving the public rather than your corporate masters you would label the picture with this caption "This is how it used to look before we "restored" the area by pock marking it with logging units." The west and south of Twisp River drainages are popular with recreationists. Will they appreciate you plundering their playground? A few of your IDT members know

exactly what they are helping you do. They know they must overlook and ignore the resource damage this timber sale will inflict in order to provide you with your precious volume. The IDT members who know what they are doing and proceed anyway should hang their heads in shame. [ID#419]
Response: [Seq#400]

The cover page photo is Blackpine Meadows, which is in the project area. A "wetland thinning" prescription (revised preliminary EA, p. 317, 324) is proposed to remove small-diameter (up to 8" dbh) conifers that are encroaching on this meadow habitat. Debris created by thinning would be lopped and scattered, or hand-piled if necessary. This photo provides a historic record of prior to treatment which can be compared during monitoring to after treatment and may provide a basis for adaptive management on similar projects in the future. [ID#419]
Associated Comments: [Seq#400]
Supervisor Williams, your arrogance and public deception is unequalled in the USFS. The cover page photo for the Preliminary Environmental Assessment shows a beautiful forest setting with a small lake in the foreground. If you had any intention of serving the public rather than your corporate masters you would label the picture with this caption "This is how it used to look before we "restored" the area by pock marking it with logging units." The west and south of Twisp River drainages are popular with recreationists. Will they appreciate you plundering their playground? A few of your IDT members know exactly what they are helping you do. They know they must overlook and ignore the resource damage this timber sale will inflict in order to provide you with your precious volume. The IDT members who know what they are doing and proceed anyway should hang their heads in shame. [2-2]

Concern: [Seq#401]

Churchill's analysis and the subsequent EA share similar assumptions: 1) the study of historical aerial photos from the 1930s, combined with the use of computer modeling, can provide a plan for engineering an ideal forest stand composition; 2) since naturally ignited wildfires will be suppressed in almost all cases the way to achieve this plan's objectives is through the use of large scale, industrial logging, [ID#420]
Response: [Seq#401]

Although it is not clear what the issue is, it appears that there is a concern that there is over confidence on the EMDS process and that the conclusion, that stand composition change and harvest treatment is needed, may not be valid.

The proposed project starts with the opportunities identified in the coarse filter landscape evaluation using modeling developed from new, peer reviewed science (Ecosystem Management Decision Support) and passes those opportunities through the filter of standards, laws and policy constraints applicable to the project area as well as identified Purpose and Needs. After that site specific identification and analyses of a proposed treatment takes place.

[ID#420]

Associated Comments: [Seq#401]

Churchill's analysis and the subsequent EA share similar assumptions: 1) the study of historical aerial photos from the 1930s, combined with the use of computer modeling, can provide a plan for engineering an ideal forest stand composition; 2) since naturally ignited wildfires will be suppressed in almost all cases the way to achieve this plan's objectives is through the use of large scale, industrial logging, [63-17]

Concern: [Seq#402]

The MRP has remained consistent in its character since the early landscape analysis and treatment proposal contract with Derek Churchill by the NCWFHC. That study focused solely on stand composition; additional analyses, like aquatics and wildlife were added later, and did not change the essential design. [ID#421]

Response: [Seq#402]

The landscape prescription that includes both commercial and noncommercial thinning as well as underburning, lined up fairly consistently with objectives for wildlife habitat. There are several design criteria, however that mitigate impacts to deer winter cover, and nesting, roosting and foraging habitat (see Design Criteria numbers 69-75, and 77 or the preliminary EA).

A balance and integration of upland and riparian objectives were also identified after the presentation of the landscape prescription (Design Criteria numbers 78-96). [ID#421]

Associated Comments: [Seq#402]

The MRP has remained consistent in its character since the early landscape analysis and treatment proposal contract with Derek Churchill by the NCWFHC. That study focused solely on stand composition; additional analyses, like aquatics and wildlife were added later, and did not change the essential design. [63-16]

Concern: [Seq#403]

We would like to combine the fish passage improvements of Alternative 2 with Alternative 3 so that increased fish passage would also be incorporated into the project. Alternative 2 was described in the EA, p. 73, as, "… the bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced with a similar open- bottom structure, allowing for fish passage." [ID#422]

Response: [Seq#403]

The fish passage improvements included in Alternative 2 are included in Alternative 3. The main difference between Alternative 2 and Alternative 3 is that Alternative 2 proposes replacing the West Fork Buttermilk bridge, when funding is available, and mostly leaving the roads accessed by that bridge open to recreational and administrative use; while Alternative 3 does not propose replacing the bridge and proposes decommissioning the roads accessed by the bridge plus other system roads desired for future management of the landscape. [ID#422]

Associated Comments: [Seq#403]

We would like to combine the fish passage improvements of Alternative 2 with Alternative 3 so that increased fish passage would also be incorporated into the project. Alternative 2 was described in the EA, p. 73, as, "… the bridge over West Fork Buttermilk Creek, on road 4300550, would be replaced with a similar open- bottom structure, allowing for fish passage." [18-76]

Concern: [Seq#404]

Proposed reductions in effective groundcover in riparian reserves have been avoided, minimized, and mitigated by project design to limit bare soil creation near surface water areas. Project Design, requiring monitoring to be effective, is not funded. [ID#423]

Response: [Seq#404]

This type of monitoring is not specifically funded, but if this mitigation and monitoring is included in the NEPA document, there is a Forest Service obligation to complete this monitoring. Based on project design to limit bare soil creation near surface water areas, very little monitoring should be required based on past experience. Much of what is listed is "Design Criteria" which is how the project will be implemented and is contained n the timber sale contract. [ID#423]

Associated Comments: [Seq#404]

Proposed reductions in effective groundcover in RRs have been avoided, minimized, and mitigated by project design to limit bare soil creation near surface water areas. Project Design, requiring monitoring to be effective, is not funded. [68-128]

Concern: [Seq#405]

Logging technology has advanced to where there will be no significant impacts from its use. [ID#424]

Response: [Seq#405]

Based on the context of the comment, it appears that the commenter does not agree with this statement.

The effects of the proposed harvest activity are found in each of the resource sections and in each section is a finding that the proposed harvest treatments including all of the design criteria in the preliminary EA Appendix D meet all pertinent guidelines and management direction.

Implementation of this project by the Sale Administrator, and others, following the Design Criteria should avoid significant impacts from the project. [ID#424]
Associated Comments: [Seq#405]
3) logging technology has advanced to where there will be no significant impacts from its use; [63-19]

Concern: [Seq#406]

Regarding Mission Project: I am opposed to ANY logging of old growth forest. I am opposed to ANY new roads. The area in question should be managed as if were part of the Sawtooth Wilderness Area. [ID#425]
Response: [Seq#406]

No logging of old growth forests are proposed based on resource determinations made by the project's assigned wildlife biologist. No new permanent roads are proposed. 1.2 miles of short-term, temporary roads to individual landings are proposed to facilitate commercial timber treatments. This project proposes decommissioning 33.6 - 56.2 miles of roads. No commercial timber harvest is proposed in the existing wilderness or inventoried roadless areas. 2 acres of fuels treatment is proposed in an existing inventoried roadless area to avoid a mid-slope fire line which would be hard to maintain during underburning. [ID#425]
Associated Comments: [Seq#406]
Regarding Mission Project: I am opposed to ANY logging of old growth forest. I am opposed to ANY new roads. The area in question should be managed as if were part of the Sawtooth Wilderness Area. [35-1]

Concern: [Seq#407]

Bioengineering of the project area's vegetation is more in the public's interest than conserving and protecting the forest's natural resources. [ID#426]
Response: [Seq#407]

Bioengineering refers to changing the genetics of the species involved. That is not happening with the Mission Restoration Project. However, the new science that is used in the Okanogan-Wenatchee Restoration Strategy and the measuring stick that is provided by EMDS, are used to both identify key ecological departures on the landscape and provide parameters which apply to the implementation of

these objectives and other objectives like reducing wildfire hazard in the wildland urban interface. [ID#426]

Associated Comments: [Seq#407]

bioengineering of the project area's vegetation is more in the public's interest than conserving and protecting the forest's natural resources. [63-21]

Concern: [Seq#408]

The Mission Restoration Project prioritizes the commercial logging aspect of the project but that is upside-down thinking. The truly needed restorations, which are the plans dependent on allocation of funds (thus translating to no guarantee at all), are road closures, beaver/wetland enhancement, culvert replacement, aquatic/riparian ecosystem improvements and soil compaction work. Many of the commercial and non-commercial forest restorations simply benefit logging and cattle grazing, while these two industries contribute to catastrophic fire. These priorities are convoluted, unsound and unsafe. [ID#427]

Response: [Seq#408]

Commercial and non-commercial thinning are somewhat prioritized since this is where the traditional funding has been available. Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed actions. While roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads slated for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners.

The current thinking is to offer 2 Stewardship Contracts for removal of commercial timber (goods). The first contract is currently estimated to provide about $395,000 that can be used for restoration work (services). In the first draft of the Stewardship Contracting Proposal, work proposed to be completed

includes whip felling for preparation for tree planting; road decommissioning for wildlife and aquatic habitat improvement; and timber stand improvement and ladder fuel reduction thinning and piling to restore large tree structure. The Forest Service is in preliminary discussions regarding funding of the beaver habitat enhancement. Some of the proposed rock armoring of the road surface at stream crossings will likely be included in the contract.

[ID#427]

Associated Comments: [Seq#408]

The Mission Restoration Project prioritizes the commercial logging aspect of the project but that is upside-down thinking. The truly needed restorations, which are the plans dependent on allocation of funds (thus translating to no guarantee at all), are road closures, beaver/wetland enhancement, culvert replacement, aquatic/riparian ecosystem improvements and soil compaction work. Many of the commercial and non-commercial forest restorations simply benefit logging and cattle grazing, while these two industries contribute to catastrophic fire. These priorities are convoluted, unsound and unsafe. [48-8]

Concern: [Seq#409]

The project appears to have been set up by those with personal gains from timber sales. The Forest Service is violating the Forest Plan and the things it was set up to protect. [ID#428]

Response: [Seq#409]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, Vaughan Brothers and AFRC are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands.

The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, and others collecting stream and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment. Many of the potential timber stands identified for possible commercial harvest treatments were not included in the project for multiple reasons including after further review that there was not a need for treatment

at the present time, treatment would require the construction of new roads, and/or treatments may be expensive due to the need to use cable yarding systems. Potential habitat identified as potentially suitable for spotted owls use in the EMDS model were reviewed on the ground and determined to not be suitable. As stated above the Collaborative is made up of diverse members with only several of the member organizations representing the timber industry. The chosen contract mechanism allows any suitable bidders to participate. [ID#428]

Associated Comments: [Seq#409]

The project appears to have been set up by those with personal gains from timber sales. The Forest Service is violating the Forest Plan and the things it was set up to protect. [63-6]

Concern: [Seq#410]

Comments our groups submitted during the scoping period identified reasons why an Environmental Impact Statement (EIS) is necessary in order to comply with the National Environmental Policy Act (NEPA) for development of the Mission project. From our reading of the EA, several additional reasons arise that support the need for an EIS for this project. For one, the EA indicates the FS is implementing its 2012 Okanogan-Wenatchee National Forest Restoration Strategy with the Mission project. This Restoration Strategy states in part, under "Need for Change and a Sense of Urgency": A new strategy is needed because of new science, local monitoring results, and a need to be more efficient in our planning efforts. The OWNF Restoration Strategy emphasizes a restoration paradigm where ecological outcomes for multiple resources drive the development and implementation of projects. This is different from the existing paradigm in which timber production targets often drive forest projects, while the needs of other resources are often overlooked. The Restoration Strategy enables more efficient project area identification and planning to increase the size of the OWNF's restoration footprint. But the development of the Restoration Strategy, which would eliminate Late Successional Reserves and other Northwest Forest Plan direction, was not done in the context of any sort of NEPA process. [ID#429]

Response: [Seq#410]

We are implementing the Restoration Strategy under the existing Forest Plan while doing one site-specific Forest Plan amendment for amending Forest Plan standards and guidelines for deer thermal cover. Since the Forest Plan was signed new science indicates that under certain circumstances providing improved forage quality and quantity is more important for winter survival of deer (preliminary EA Section 2.3.2).

Figure 5 in the preliminary EA addresses many of the issues raised by the public during scoping and subsequent meetings. The Restoration strategy emphasizes a restoration paradigm where ecological outcomes for multiple resources drive the development and implementation of projects. This is not really that different from the paradigm that drives projects under the existing Forest Plan. The way that the existing Forest Plan is being implemented is through more efficient project area identification and planning to increase the size of the OWNF's restoration footprint. The development of the Restoration

Strategy is not eliminating Late Successional Reserves and other Northwest Forest Plan direction. The revision of the Forest Plan, at some point in the future, may modify Northwest Forest Plan direction, if better science indicates that current direction was not correct or best science. [ID#429]

Associated Comments: [Seq#410]

Comments our groups submitted during the scoping period identified reasons why an Environmental Impact Statement (EIS) is necessary in order to comply with the National Environmental Policy Act (NEPA) for development of the Mission project. From our reading of the EA, several additional reasons arise that support the need for an EIS for this project. For one, the EA indicates the FS is implementing its 2012 Okanogan-Wenatchee National Forest Restoration Strategy with the Mission project. This Restoration Strategy states in part, under "Need for Change and a Sense of Urgency": A new strategy is needed because of new science, local monitoring results, and a need to be more efficient in our planning efforts. The OWNF Restoration Strategy emphasizes a restoration paradigm where ecological outcomes for multiple resources drive the development and implementation of projects. This is different from the existing paradigm in which timber production targets often drive forest projects, while the needs of other resources are often overlooked. The Restoration Strategy enables more efficient project area identification and planning to increase the size of the OWNF's restoration footprint. But the development of the Restoration Strategy, which would eliminate Late Successional Reserves and other Northwest Forest Plan direction, was not done in the context of any sort of NEPA process. [72-4]

Concern: [Seq#411]

The project does not preserve biodiversity as required by NFMA. The Forest Plan states that riparian reserve restoration shall restore large conifer canopy, not cut it down. The planned opening of the canopy and drastic "thinning" of fir species by design reduces biodiversity. [ID#430]

Response: [Seq#411]

Large diameter trees are the target for release in the Riparian Reserves. Harvest in Riparian Reserves would be solely for restoring aquatic resources. All trees 21 inches DBH and larger would be left in in Riparian Reserves (preliminary EA page 305).

Douglas-fir has been a primary species on this landscape historically. However, it has increased in percent composition, under fire suppression, into areas where it was not found in great numbers historically. Harvest and fuels treatments would reduce the stocking and stand composition of Douglas-fir with the result of returning the species composition of riparian reserves towards a historical range of variation. In all of the units with Dry Forest Restoration Thin, Moist Forest Thin and Dry Forest Thin with Dwarf mistletoe Reduction prescriptions, the strategy is to reduce the canopy layers and trees per acre of Douglas-fir (preliminary EA page 125-127). There would remain a fair amount of Douglas-fir. The 78 (currently proposed 59 acres) acres of Variable Retention Regeneration would regenerate to ponderosa pine because of disease issues. However, at least 15 percent of the stand would be retained in patches and individual trees (preliminary EA page 310). [ID#430]

Associated Comments: [Seq#411]
The project does not preserve biodiversity as required by NFMA. The Forest Plan states that riparian reserve restoration shall restore large conifer canopy, not cut it down. The planned opening of the canopy and drastic "thinning" of fir species by design reduces biodiversity. [63-55]

The project does not preserve biodiversity as required by NFMA. [68-48]

Concern: [Seq#412]

This project requires a full EIS. The impacts would be significant and are not fully represented in this EA, especially regarding ESA listed species. It is significant that the Forest Service (FS) did not post this as an "issue" from scoping comments. Also, a 50,000 acre project area of this nature will have significant impacts. The EIS is necessary in order to allow more full public involvement and to provide a greater suite of alternatives. [ID#431]
Response: [Seq#412]

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to Buck EA, South Summit II, Light, Crawfish Restoration, and Annie which did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made.

Based on the effects analysis determined in the Preliminary EA, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where he proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct several

hundred feet of hand fireline in an IRA and burn about 2 acres in the IRA to a more defensible burn boundary. This use will not substantially alter the IRA.

Purpose & Need #4 - Wildlife Habitat includes Threatened and Endangered Species including Northern Spotted Owls, Lynx, and their critical habitats. Section 3.7 - Wildlife - discusses habitat for threatened species including the northern spotted owl, lynx, and critical habitat for lynx as Wildlife Resource Indicators and measures for Assessing Effects. Habitat for wolves and grizzly bears is addressed in the Wildlife Resource Report in project files. Consultation with the U.S. Fish & Wildlife Service will be completed on this project prior to the Decision Notice being signed. [ID#431]

Associated Comments: [Seq#412]

This project requires a full EIS. The impacts would be significant and are not fully represented in this EA, especially regarding ESA listed species. It is significant that the Forest Service (FS) did not post this as an "issue" from scoping comments. Also, a 50,000 acre project area of this nature will have significant impacts. The EIS is necessary in order to allow more full public involvement and to provide a greater suite of alternatives. [68-1]

Concern: [Seq#413]

Given the high degree of complexity of unit types (treatment types) that are spatially right next to each other, it is highly likely that the commercial harvesters would commonly cut beyond unit perimeters. How would this be monitored? [ID#432]

Response: [Seq#413]

Timber sale boundary areas are well posted with tags and tracer paint. It is highly uncommon for these boundaries to be breached accidently. A timber sale administrator would be assigned to the contract and would closely monitor operator activity and enforce contract provisions that identify trees available for harvest. [ID#432]

Associated Comments: [Seq#413]

Given the high degree of complexity of unit types (treatment types) that are spatially right next to each other, it is highly likely that the commercial harvesters would commonly cut beyond unit perimeters. How would this be monitored? [68-50]

Concern: [Seq#414]

Also, the FS has told the public that this is seen as a pilot project, therefore setting a precedent that could affect many more acres than the Mission Project area itself, being that it would influence other

decisions on this the Okanogan Wenatchee National Forest and possibly other National Forests. This cumulative effect should be acknowledged and should be a signal for an EIS. [ID#433]
Response: [Seq#414]

The analysis area is relatively large at approximately 50,000 acres. Approximately 8,304 acres are proposed to be treated with non-commercial thinning, 1,952 acres with commercial thinning and 10,968 acres are proposed to be treated with prescribed fire. The acres of prescribed fire mostly are the same acres as the non-commercial and commercial thinning. The time span for the majority of the project is an estimated 10 years, with the commercial timber sale contract likely being about three years, each, without any extensions, and fuels treatment likely happening within 5 years after the end of the timber sale contract, but some other projects may not be completed for several years after that. It is currently proposed to offer two Stewardship Contracts, instead of the one originally proposed.

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands. The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, collecting fisheries data, and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment.

As the results of modeling are developed and used, they are being reviewed and monitored to try and determine if the information was useful and how the collection and modeling of this data can be improved. This is continuing on other projects on the Forest would have used this type of modeling. The EMDS model is not proprietary, it just takes a lot of training to be able to use it successfully.

The pilot project thought was in trying to consider treatment of a larger landscape at one time. This is not proposed to greatly increase the yearly treatments, but to decrease the planning expenses of these treatments. [ID#433]
Associated Comments: [Seq#414]
Also, the FS has told the public that this is seen as a pilot project, therefore setting a precedent that could affect many more acres than the Mission Project area itself, being that it would influence other decisions on this the Okanogan Wenatchee National Forest and possibly other National Forests. This cumulative effect should be acknowledged and should be a signal for an EIS. [68-2]

Concern: [Seq#415]

This document does not disclose how many miles of skid trails (which are roads for the most part) there would be and at what locations or if they cross any streams. This information should be disclosed. [ID#434]

Response: [Seq#415]

Skid trail locations are identified and approved by the sale administrator as timber harvest progresses. Ground operations using feller-bunchers or cut to length systems typically operate on paths 40 - 100 feet apart. Not all paths are used for skidding. With the application of soil Best Management Practices, (preliminary EA pages 353-360) impacts to soil compaction would be minor (preliminary EA page 98) and be consistent with Okanogan National Forest LRMP Standard and Guideline 13-10 which allows no more than 15 percent of an area in a compacted state (preliminary EA page 102).

There would be skid trails that cross ephemeral draws as approved by the Timber Sale Administrator. No heavy equipment would be allowed in Riparian Reserves (applied to intermittent and perennial streams) except under winter logging conditions (preliminary EA page 368).

[ID#434]

Associated Comments: [Seq#415]

This document does not disclose how many miles of skid trails (which are roads for the most part) there would be and at what locations or if they cross any streams. This information should be disclosed. [68-55]

Concern: [Seq#416]

The Forest Service is violating the Forest Plan and the things it was set up to protect. [ID#435]

Response: [Seq#416]

The Forest Service is not violating the Forest Plan and the things it was set up to protect. The Okanogan Forest Plan has been amended more than 58 times since it was written. This project is following the 2012 Planning Rule direction for amending a land management plan. A Plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for change, and should be used to keep plans current and help units adapt to new information or changing conditions. The responsible official has the discretion to determine whether and how to amend the plan and to determine the scope and scale of any amendment (refer to sections 219.13, Plan amendment and administrative changes of CFR 36 Part 219). [ID#435]

Associated Comments: [Seq#416]

The Forest Service is violating the Forest Plan and the things it was set up to protect. [29-38]

Concern: [Seq#417]

How many timber sale administrators (TSA) does the district have and what would be their schedule be the timber sales in this project? How will sale administrators be held accountable for monitoring during implementation of the logging component? [ID#436]
Response: [Seq#417]

The north zone of the Okanogan-Wenatchee National Forest (Methow Valley and Tonasket Ranger Districts) share one full time Timber Sale Administrator. He has access to Forest Service harvest inspectors as needed. Depending on the work load and schedule, they would visit on site operations once or twice a week. The Timber Sale Administrator is supervised by the North Zone Vegetation Manager. His work as a timber sale administrator is overseen by the assigned Forest Service Representative and Forest Contracting Officer. [ID#436]
Associated Comments: [Seq#417]
How many timber sale administrators (TSA) does the district have and what would be their schedule be the timber sales in this project? How will sale administrators be held accountable for monitoring during implementation of the logging component? [68-51]

Concern: [Seq#418]

How is it possible to have faith in the USFS when the prior instituted rules are broken/changed/amended for the convenience of the proposed projects?

[...]

[

The ends justify the means is not a philosophy to be proud of. As a government agency, to maintain and proceed by those standards and guidelines to which you espouse would elevate you to a level worthy of respect. Surely those rules and regulations were created in the spirit of doing the right thing in the interest of our public lands. When rescinded, even temporarily, the compromise is detrimental and the results are not guaranteed to be brief in nature. No man, nor computer projection, can accurately forecast the net outcome. [ID#438]
Response: [Seq#418]

The Forest Service is not violating the Forest Plan and the things it was set up to protect. The Okanogan Forest Plan has been amended more than 58 times since it was written. This project is following the 2012 Planning Rule direction for amending a land management plan. A Plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for change, and should be used to keep plans current and help units adapt to new information or changing conditions. The responsible official has the discretion to determine whether and how to amend the plan and to determine the scope and scale of any amendment (refer to sections 219.13, Plan amendment and administrative changes of CFR 36 Part 219). The Mission Restoration Environmental Assessment is presently only considering one Forest Plan amendment. This amendment is not detrimental, utilizes more current science and will better protect wintering deer populations in the situation that we are in, in the Mission Project Area. [ID#438]

Associated Comments: [Seq#418]

How is it possible to have faith in the USFS when the prior instituted rules are broken/changed/amended for the convenience of the proposed projects?...The ends justify the means is not a philosophy to be proud of. As a government agency, to maintain and proceed by those standards and guidelines to which you espouse would elevate you to a level worthy of respect. Surely those rules and regulations were created in the spirit of doing the right thing in the interest of our public lands. When rescinded, even temporarily, the compromise is detrimental and the results are not guaranteed to be brief in nature. No man, nor computer projection, can accurately forecast the net outcome. [51-29]

Concern: [Seq#419]

The EA does not explain how the process used for Mission project forest plan amendments conforms to the 2012 Planning Rule. Ecosystem services were not analyzed. Check the 2012 Planning Rule for an explanation on why ecosystem services are important. [ID#439]

Response: [Seq#419]

The EA is was revised to be compliant with the 2012 Planning Rule and went out for another comment period in June 2017 to make sure that it conforms to the 2012 Planning Rule (36 CFR 219). Each affected resource section will address Sustainability (219.8), Diversity of plant and animal communities (219.9), Multiple use (219.10), and Timber requirements based on the National Forest Management Act [NFMA] (219.11). This will also be discussed in Chapter 2, near the end of Chapter 3, and in project files. [ID#439]

Associated Comments: [Seq#419]

The EA does not explain how the process used for Mission project forest plan amendments conforms to the 2012 Planning Rule. [72-12]

Ecosystem services were not analyzed. Check the 2012 Planning Rule for an explanation on why ecosystem services are important. [72-207]

Concern: [Seq#420]

It is not adequate to allow the TSA to completely be in charge of roads related to a timber sale, including new construction. They are out for profit and will not take environmental considerations seriously. [ID#440]

Response: [Seq#420]

Timber sale administrators are not solely in charge of the roads related to timber sale activities. Road management for the sale is part of the Environmental Assessment and Decision Notice for the project. The appropriate components of road management is included in the Timber Sale or Stewardship contract, which is reviewed by the IDT, the District Ranger, the Forest Contracting Officer and other forest staff. Forest Service Road Engineers oversee and approve all road maintenance, construction and reconstruction. Implementation of all activities included in the decision, including harvest and road work, are monitored by IDT members as well as district and forest staff for compliance with design criteria as well as regarding meeting purpose and need identified in Chapter 1 of the EA.

Timber Sale Administrators have no financial incentive to cut environmental protection corners. Good performance evaluation for timber sale administrators depends on them following contracting guidelines, following the design criteria and best management practices established in the EA and coordination with appropriate district and forest staff regarding environmental, logistical, and monitoring concerns. [ID#440]

Associated Comments: [Seq#420]

It is not adequate to allow the TSA to completely be in charge of roads related to a timber sale, including new construction. They are out for profit and will not take environmental considerations seriously. [68-52]

Concern: [Seq#421]

18-74

We encourage you to reconsider whether the proposal to amend the Forest Plan to exceed the standard for mule deer winter thermal cover retention (p. 33 of the EA) is justified, after completely reviewing the available literature and taking time to address our scoping comments.

11-32 Proposed thinning treatments may

cause a reduction in deer winter thermal cover to levels below Forest Plan Standards and Guidelines

within the project area, which would require amending these prescriptions.

This amendment would affect up to 17% (2,075 acres) of deer winter range in the project area.

Since the Forest Plan was written, studies have found that thermal cover is not as critical as forage quality and quantity for winter survival of deer (USDA 2012a). Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance.(p.33) [The thinning referred to would be more correctly stated as winter commercial logging. The research cited deals with forest cover and deer forage.

The planned winter logging will have a cumulative effect on both of these needs now protected by existing Standards and Guidelines.

Wintering mule deer are foraging in the open on shrubs and require access to adjacent forest cover. This is especially important in this area with an ESA-listed grey wolf pack.

An amendment would increase disturbance and potential survival of deer by the addition of an active winter logging operation on their thermal cover, as well as their exposure during winter foraging.

]

[comment end]

18-45 Cook John G., L. Irwin, L. Bryant, R. Riggs, and Jack Ward Thomas. 1998. Relations of forest cover and condition of elk: a test of the thermal cover hypothesis in summer and winter. Wildlife Monograph No.141.

3 Forrester, Tavis; Heiko Wittmer (2013). A review of the population dynamics of mule deer and black-tailed deer

Odocoileus hemionus in North America. Mammal Review 43: 292-308.

4 Bender, Louis C. (2012) Guidelines for Management of Habitat for Mule Deer: Pinon-juniper, Chihuahuan desert, arid grasslands, and associated arid habitat types. Circular 662, New Mexico State University.

5 Cook, J. G., L. L. Irwin, L. D. Bryant, R. A. Riggs, and J. W. Thomas. 2005. Thermal Cover Needs of Large Ungulates: A Review of Hypothesis Tests. Pages 185-196 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of

long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA.

Cook, John G. 2000. Why Do Elk Seek Shelter? The Case Against The Need For Thermal Cover. Science Findings Issue 22.

[comment end]

18-73 We are not against thinning overstocked overstory canopies for bonafide reasons such as improving the health of retained trees, but the EA fails to justify a plan amendment to reduce mule deer thermal cover. We are attaching our scoping comments which document on pages 7 to 9 why the thermal cover reduction argument in the EA is not justified, along with the original literature so you can understand why the EA used them inappropriately.

72-130 The EA doesn't demonstrate the insignificance of amending the Forest Plan Management Area prescriptions for winter deer habitat. The EA fails to fully address the scientific basis of the forest plan standards. How many times has the FS amended the forest plan to sidestep this thermal cover standard? [ID#441]
Response: [Seq#421]

Based on literature review that failed to find a need for **40%** thermal cover and the landscape analysis that found an overabundance of dense stands, the amendment is needed to improve sustainability of forested stands.

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

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Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a sustained basis (MA5-6B)."

Derek Churchill's analysis of forest restoration needs based on stand structure departures indicated that dense stands were overrepresented in the landscape compared to historical conditions (Preliminary EA

at p.64) . These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire.

Effects to deer, including disturbance are disclosed in the Preliminary EA at p. 142, 155-156, 162-164 and in the updated Specialist Report (Glidden, 2017 at p.67, copied below).

The amendment would affect 746 acres. In MA 14, up to 516 acres of winter thermal and 813 acres of snow-intercept thermal cover could be changed to a non-cover condition before the amount of cover would fall **below** *forest plan standards. So, this amendment would allow treatment of an additional 134 acres of winter thermal and 593 acres of snow-intercept thermal cover in MA 14, for a total of 746 acres of thinning in winter range that would reduce cover below Forest Plan Standards and Guidelines.*

The amendment would result in:

- *a minor short- to medium-term reduction of cover on an additional MAXIMUM of 19 acres of MA 26 and 727 acres in MA 14 because these acres would not provide cover for the short-term, until canopies close again.*
- *a minor short-term positive effect because the stands would provide additional forage, and be more sustainable to loss from wildfire, insects and disease, and*
- *a minor, medium to long-term benefit because reduced tree competition allows for development of larger trees that are able to provide snow interception and thermal cover.*
- *Temporary, short-term, minor disturbance to deer on winter range on a maximum of 557 acres proposed for winter logging.*

The thinning referred to includes both commercial and noncommercial treatments.This standard and guideline has been amended for several projects, for reasons discussed above. [ID#441]
Associated Comments: [Seq#421]
Proposed thinning treatments may cause a reduction in deer winter thermal cover to levels below Forest Plan Standards and Guidelines within the project area, which would require amending these prescriptions. This amendment would affect up to 17% (2,075 acres) of deer winter range in the project area. Since the Forest Plan was written, studies have found that thermal cover is not as critical as forage quality and quantity for winter survival of deer (USDA 2012a). Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance.(p.33) [The thinning referred to would be more correctly stated as winter commercial logging. The research cited deals with forest cover and deer forage. The planned winter logging will have a cumulative effect on both of these needs now protected by existing Standards and Guidelines. Wintering mule deer are foraging in the open on shrubs and require access to adjacent forest cover. This is especially important in this area with an ESA-listed grey wolf pack. An amendment would increase disturbance and potential survival of deer by the addition of an active winter logging operation on their thermal cover, as well as their exposure during winter foraging.] [11-32]

o The Okanogan Plan standard applies to the Okanogan, not Oregon, where bitterbrush is a common

short shrub that is normally blanketed by winter shows. The study site in Oregon pictured below is dominated by an endless sea of dense conifer species quite unlike what we have here. [18-42]

o The Okanogan Plan standard applies to the Okanogan, not Oregon, where pinegrass (Calamagrostis rubescens), is able to persist under canopies above 80% density. The Oregon study area appears to have a much higher basal area than the Mission area can support (photo below). Although the areas where Cook studied elk do have some of high quality grasslands, they do not necessarily represent the ecology of the Okanogan, which is a diverse, patchy forest matrix, with steep slopes in the foothills of the Cascade rainshadow, with many dry open stands that are favorable to mule deer. Elk occur more in moister areas of the state. [18-43]

The science findings by Cook were done to answer the question of why “many elk populations in the Northwest are declining 20 to 40 percent or more, which is totally irrelevant to the Mission project. The cover photo illustrates just how far removed their study is from our ecosystem: [18-44]

2 Cook John G., L. Irwin, L. Bryant, R. Riggs, and Jack Ward Thomas. 1998. Relations of forest cover and condition of elk: a test of the thermal cover hypothesis in summer and winter. Wildlife Monograph No.141. 3 Forrester, Tavis; Heiko Wittmer (2013). A review of the population dynamics of mule deer and black-tailed deer Odocoileus hemionus in North America. Mammal Review 43: 292-308. 4 Bender, Louis C. (2012) Guidelines for Management of Habitat for Mule Deer: Pinon-juniper, Chihuahuan desert, arid grasslands, and associated arid habitat types. Circular 662, New Mexico State University. 5 Cook, J. G., L. L. Irwin, L. D. Bryant, R. A. Riggs, and J. W. Thomas. 2005. Thermal Cover Needs of Large Ungulates: A Review of Hypothesis Tests. Pages 185-196 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA. Cook, John G. 2000. Why Do Elk Seek Shelter? The Case Against The Need For Thermal Cover. Science Findings Issue 22. [18-45]

We are not against thinning overstocked overstory canopies for bonafide reasons such as improving the health of retained trees, but the EA fails to justify a plan amendment to reduce mule deer thermal cover. We are attaching our scoping comments which document on pages 7 to 9 why the thermal cover reduction argument in the EA is not justified, along with the original literature so you can understand why the EA used them inappropriately. [18-73]

We encourage you to reconsider whether the proposal to amend the Forest Plan to exceed the standard for mule deer winter thermal cover retention (p. 33 of the EA) is justified, after completely reviewing the available literature and taking time to address our scoping comments. [18-74]

George Wooten, representing Conservation NW, encouraged the Forest to "reconsider whether the proposal to amend the Forest Plan to exceed the standard for mule deer winter thermal cover retention (p. 33 of the EA) is justified, after completely reviewing the available literature and taking time to address our scoping comments." In my earlier comments I objected to amending Forest Plan Standards and Guidelines to provide for winter operations that would require snowplowing Forest Road 43 and disturb winter access on deer winter range. "Winter commercial logging in these areas would require

amendments to the Forest Plan designed to protect the interests of wintering mule deer, as well as the presence of people. These areas are utilized by large groups of mule deer which forage on shrubs in open terrain between forested areas they use for cover. They should continue to be protected by the Standards and Guidelines of the Forest Plan. These areas are utilized by large groups of mule deer which forage on shrubs in open terrain between forested areas they use for cover. They should continue to be protected by the Standards and Guidelines of the Forest Plan." "Since the Forest Plan was written, studies have found that thermal cover is not as critical as forage quality and quantity for winter survival of deer (USDA 2012a). Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. The thinning referred to would be more correctly stated as winter commercial logging. The research cited deals with forest cover and deer forage. The planned winter logging will have a cumulative effect on both of these needs now protected by existing Standards and Guidelines. Wintering mule deer are foraging in the open on shrubs and require access to adjacent forest cover. This is especially important in this area with an ESA-listed grey wolf pack. An amendment would increase disturbance and potential survival of deer by the addition of an active winter logging operation on their thermal cover, as well as their exposure during winter foraging." [63-95]

The EA doesn't demonstrate the insignificance of amending the Forest Plan Management Area prescriptions for winter deer habitat. The EA fails to fully address the scientific basis of the forest plan standards. How many times has the FS amended the forest plan to sidestep this thermal cover standard? [72-130]

Concern: [Seq#422]

The Forest Plan Amendments proposed are not justifiable or acceptable. The EA claims that the amendments are "non-significant" but who gets to decide what is significant or not? The word "significant" is completely subjective without specific definition and is totally determined by the personal opinions of the person writing it. [ID#442]

Response: [Seq#422]

Currently there remains only one proposed Forest Plan Amendment that has to do with managing for deer winter range thermal cover less than the percentages contained in the Okanogan National Forest, Forest Plan.

The Forest Service is not violating the Forest Plan and the things it was set up to protect. The Okanogan Forest Plan has been amended more than 58 times since it was written. This project is following the 2012 Planning Rule direction for amending a land management plan. A Plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for change, and should be used to keep plans current and help units adapt to new information or changing conditions. The responsible official has the discretion to determine whether and how to amend the plan and to

determine the scope and scale of any amendment (refer to sections 219.13, Plan amendment and administrative changes of CFR 36 Part 219). The Mission Restoration Environmental Assessment is presently only considering one Forest Plan amendment. This amendment is not detrimental, is more recent science and will better protect wintering deer populations in the situation that we are in, in the Mission Project Area.

Based on literature review that failed to find a need for **40%** thermal cover and the landscape analysis that found an overabundance of dense stands, the amendment is needed to improve sustainability of forested stands.

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Concern: [Seq#423]

I refer to my earlier comments on amendment of the Forest Plan: Winter commercial logging in these areas would require amendments to the Forest Plan designed to protect the interests of wintering mule deer, as well as the presence of people. The proposed amendments to allow snow plowing are intended to make winter logging viable. These forest plan rules are in place for good reason and should not be changed. [ID#443]
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Associated Comments: [Seq#423]
I refer to my earlier comments on amendment of the Forest Plan: Winter commercial logging in these areas would require amendments to the Forest Plan designed to protect the interests of wintering mule deer, as well as the presence of people. [63-78]

The proposed amendments to allow snow plowing are intended to make winter logging viable. These forest plan rules are in place for good reason and should not be changed. [68-92]

Concern: [Seq#424]

Forest Plan Amendments - There are still three proposed amendments from existing FS Standards and Guidelines that are sought to allow proceeding with certain proposed treatments. On Figure 5 on page 24 of the EA, it is stated that three "of the proposed FP amendments listed in the initial scoping letter have been determined as not necessary" …including commercial logging of old growth (they say there isn't any), sediment standards exceedance in fish spawning streams and allowing for temporary increase in road density. However, two proposed amendments are still part of the plan, including soil protection by allowing winter harvest (Sec. 2.3.1), and thinning in deer winter thermal cover - forest restoration (Sec. 2.3.2). We have no issues with these two remaining amendments. [ID#444]
Response: [Seq#424]

Currently there remains only one proposed Forest Plan Amendment (S&G MA 14-6A and 26-6A) that has to do with managing for deer winter range thermal cover less than the percentages contained in the Okanogan National Forest, Forest Plan. Forest Plan amendments for soil protection, 17-6, 17-8, and

MA14-17B were eliminated since the required winter logging units for soil protection did not fall in a section of road which has restrictions or the goals of the management area for deer management were being met during winter harvest operations. To meet the standards and guidelines for MA 14 & 26, several proposed harvest units were changed to require summer logging, decreasing flexibility for the logger when these units could be harvested. The management currently proposed seems to respond to your comment.

[ID#444]

Associated Comments: [Seq#424]

6. Forest Plan Amendments - There are still three proposed amendments from existing FS Standards and Guidelines that are sought to allow proceeding with certain proposed treatments. On Figure 5 (which is actually a table) on page 24 of the EA, it is stated that three "of the proposed FP amendments listed in the initial scoping letter have been determined as not necessary" …including commercial logging of old growth (they say there isn't any), sediment standards exceedance in fish spawning streams and allowing for temporary increase in road density. However, two proposed amendments are still part of the plan, including soil protection by allowing winter harvest (Sec. 2.3.1), and thinning in deer winter thermal cover - forest restoration (Sec. 2.3.2). We have no issues with these two remaining amendments. [78-27]

Concern: [Seq#425]

The FS rejected the idea of analyzing an action alternative that didn't require Forest Plan amendments for implementation, saying essentially that such an alternative wouldn't meet enough of the Purpose and Need. However, the reasons for fully analyzing such an alternative would be to justify that claim. The range of alternatives is too narrow to comply with NEPA. For example, the EA chooses a "method to protect sensitive ash-capped soils from compaction, rutting, displacement or other disturbances is to operate during the winter when the ground is frozen and snow-covered." The method is, "winter operations would require snowplowing Forest Road 43 and winter access on deer winter range, which would require amending Standards and Guidelines." The EA does not explain why merely dropping activities that disturb the sensitive ash-capped soils isn't worth considering. [ID#445]

Response: [Seq#425]

Currently there remains only one proposed Forest Plan Amendment (S&G MA 14-6A and 26-6A) that has to do with managing for deer winter range thermal cover less than the percentages contained in the Okanogan National Forest, Forest Plan. Forest Plan amendments for soil protection, 17-6, 17-8, and MA14-17B were eliminated since the required winter logging units for soil protection did not fall in a section of road which has restrictions or the goals of the management area for deer management were being met during winter harvest operations. To meet the standards and guidelines for MA 14 & 26, several proposed harvest units were changed to require summer logging, decreasing flexibility for the logger when these units could be harvested. Section 2.1.4 and 2.3 of the preliminary EA are being

rewritten in the final Environmental Assessment since all but one Forest Plan Amendments were determined to not be necessary for the above stated reasons.

Forest guidelines require providing the earliest possible opportunity for the public to comment on proposed Forest Plan amendments so during scoping we try to identify all potential amendments and as field work is completed we try to eliminate amendments which will not be required for implementation of the project. [ID#445]

Associated Comments: [Seq#425]

The FS rejected the idea of analyzing an action alternative that didn't require Forest Plan amendments for implementation, saying essentially that such an alternative wouldn't meet enough of the Purpose and Need. However, the reasons for fully analyzing such an alternative would be to justify that claim. The range of alternatives is too narrow to comply with NEPA. For example, the EA chooses a "method to protect sensitive ash-capped soils from compaction, rutting, displacement or other disturbances is to operate during the winter when the ground is frozen and snow-covered." The method is, "winter operations would require snowplowing Forest Road 43 and winter access on deer winter range, which would require amending Standards and Guidelines." The EA does not explain why merely dropping activities that disturb the sensitive ash-capped soils isn't worth considering. [72-224]

Concern: [Seq#426]

I also find your mix of treatments very odd between Alternatives 2 and 3. Why not include the hardened, driveable fords and small diameter rock at stream crossings in both alternatives? Seems like this wouldn't be very expensive and is a basic road maintenance action. [ID#446]

Response: [Seq#426]

Please refer Section 3.14, Economics, of the Environmental Assessment. Figure 129 shows the potential estimated non-timber project costs. The costs for Alternative 2 is approximately 2.11 million dollars, while alternative 3 is 2.46 million dollars (much of the costs of each alternative is for non-commercial plantation thinning, wetland thinning, and post and pole thinning; and culvert replacements). The big difference in costs is the additional $230,000 for road closing/decommissioning and $120,000 for rock armouring. Most other projects are the same. At the time of making the decision, the Responsible Official can select to include the rock armouring in Alternative 2. By not having the same mitigation related to rock armouring, it provides the opportunity to detail the benefits from this project.

The draft decision will likely include rock armoring on 6 stream crossings as part of the contract and allow rock armoring on another 27 crossings as funding becomes available. Under Alternative 3, all 33 stream crossings would be armored under the timber contract. Rock armoring is estimated to cost about $4,000/location armored. [ID#446]

Associated Comments: [Seq#426]

I also find your mix of treatments very odd between Alternatives 2 and 3. Why not include the hardened, driveable fords and small diameter rock at stream crossings in both alternatives? Seems like this wouldn't be very expensive and is a basic road maintenance action. [7-2]

Concern: [Seq#427]

AFRC supports the Forest Service in their use of the proposed forest plan amendments. These include: a. Allowing harvest in Forest Plan Old Growth areas to enhance forest health and long-term stand improvements. b. Providing for snow plowing during winter timber haul in winter recreation areas and wildlife winter range. c. Allow vegetative treatments to reduce thermal cover in wildlife winter range which recent studies have shown to actually improve deer survival. d. Allowing increased road density during timber harvest for product removal in deer winter range, and recreational areas. [ID#447]

Response: [Seq#427]

The Forest Service found ways to implement this project without all but one necessary Forest Plan Amendment for activities in Deer Winter Range. Part of being able to do that required making some units designated summer logging units, thus limiting timing on some harvest activities to none winter times. Once the numbers were finalized, road density was not a concern. No harvest or fuels treatment in Forest Plan old growth is planned in the project. Much of the areas with ash-caped soils, where winter logging is required, are accessed off an Okanogan County Road and not Forest Road 4300. [ID#447]

Associated Comments: [Seq#427]

AFRC supports the Forest Service in their use of the proposed forest plan amendments. These include: a. Allowing harvest in Forest Plan Old Growth areas to enhance forest health and long-term stand improvements. b. Providing for snow plowing during winter timber haul in winter recreation areas and wildlife winter range. c. Allow vegetative treatments to reduce thermal cover in wildlife winter range which recent studies have shown to actually improve deer survival. d. Allowing increased road density during timber harvest for product removal in deer winter range, and recreational areas. [14-9]

Concern: [Seq#428]

I am completely opposed to amendments being made to the Forest Plan's Standards and Guidelines for the Mission Restoration Project. That these guidelines are being proposed to be amended until the project is complete in 2033 is unconscionable. Undue adverse impacts occur when wildlife foraging and winter thermal cover and habitat are encroached upon; the aquatic ecosystem is threatened with high sediment counts and survival of ESA listed salmonids are placed in jeopardy; and risking human safety on Libby Creek and Black Pine Lake Roads by logging trucks, with only consideration for short term goals, is disregarding present quality of life for this watershed. No amendments should be made without prioritizing health and safety of people and wildlife over economic gain. [ID#448]

Response: [Seq#428]

Currently there remains only one proposed Forest Plan Amendment (S&G MA 14-6A and 26-6A) that has to do with managing for deer winter range thermal cover less than the percentages contained in the Okanogan National Forest, Forest Plan. Forest Plan amendments for soil protection, 17-6, 17-8, and MA14-17B were eliminated since the required winter logging units for soil protection did not fall in a section of road which has restrictions or the goals of the management area for deer management were being met during winter harvest operations. To meet the standards and guidelines for MA 14 & 26, several proposed harvest units were changed to require summer logging, decreasing flexibility for the logger when these units could be harvested. Section 2.1.4 and 2.3 of the preliminary EA are being rewritten in the final Environmental Assessment since all but one Forest Plan Amendments was determined to not be necessary for the above stated reasons. Most non-commercial and commercial thinning and fuels treatment, plus many of the proposed activities, should be completed within 5 - 10 years of the letting of the Stewardship Contract for this project. Impacts of this project on wildlife is displayed in Chapter 3.7 of the Environmental Assessment or the Wildlife Resource Report in project files and on the Forest website. Impacts on Aquatic Habitat/Water Resources is displayed in Chapter 3.3, Water Resources, of the EA or the Water Resource Report available in project files and on the Forest website. Please refer to Section 3.15.6, Public Health and Safety for a discussion of risks to human safety.

Based on literature review that failed to find a need for **40%** thermal cover and the landscape analysis that found an overabundance of dense stands, the amendment is needed to improve sustainability of forested stands.

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

Local studies of mule deer winter range use in Okanogan and Chelan counties found little use of dense cover stands. Naney and Myers (undated) followed 11 radio-collared deer and made 692 observations

representing 1,044 deer in the Methow Valley during two winters. Of the deer observed, 73% were on sites with no conifer crown closure. Five % of the total winter observations were of deer using cover with greater than 60% crown closure. Ninety % of the winter range was dominated by habitat classes dominated by bitterbrush, sagebrush, bunchgrass, and pole-sized trees with undergrowth of shrubs or bunchgrass. In this study, deer did not appear to prefer thermal cover. However, they noted that observations were daylight hours only, and during winters that were warmer and drier than normal. Moore (2003), in a similar study in Chelan county, found that mule deer use was positively associated to areas without cover, and had a negative association to areas of cover. No difference in day and night habitat use was observed.

Of the references provided- I discussed findings from Cook et al. (1998 and 2005). Forrester and Wittmer (2013) discussed population dynamics, but not thermal cover, and supports the need for quality forage. Bender (2012) discusses mule deer habitats in arid and semi-arid habitats with very different plant associations (pinyon, juniper, oak-mountain mahogany, mesquite shrublands and others) than the winter range habitats dominated by ponderosa pine, mixed conifer, and open shrub-steppe habitats of bitterbrush, serviceberry and bluebunch wheatgrass that are used by the migratory mule deer population in northcentral Washington. The mule deer population in the Bender publication does not appear to be migratory.The percentages recommended in the Bender publication are not applicable. The key findings in Cook (2000) support the need for forage over a specific amount of cover, at least for elk. The four findings were that • No significant positive effect of thermal cover was found on condition of elk during any of four winter-long experiments and two summer-long experiments. In fact, during winter, dense cover actually provided the most costly energetic environment. • The lack of significant positive benefits of thermal cover during any winter of the study is consistent with every other study of thermal cover influences on large wild ungulates conducted under rigorous scientific conditions. • During summer, results showed no indication that elk performance was influenced in any way by forest cover treatments, despite temperatures significantly above normal both summers. Other researchers have found elk to be surprisingly tolerant of high summer temperatures. • The energetic benefits of thermal cover seem inconsequential, thus leaving forage effects as the primary mechanism through which habitat influences individual animal performance. In the article, Cook notes that "the finding that thermal cover failed to provide energetic benefits during winter is consistent with every other study of thermal cover influence on large ungulates conducted under rigorous scientific conditions."

Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a sustained basis (MA5-6B)."

Derek Churchill's analysis of forest restoration needs based on stand structure departures indicated that dense stands were overrepresented in the landscape compared to historical conditions (Preliminary EA

at p.64) . These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire.

Effects to deer, including disturbance are disclosed in the Preliminary EA at p. 142, 155-156, 162-164 and in the updated Specialist Report (Glidden, 2017 at p.67, copied below).

The amendment would affect 746 acres. In MA 14, up to 516 acres of winter thermal and 813 acres of snow-intercept thermal cover could be changed to a non-cover condition before the amount of cover would fall **below** *forest plan standards. So, this amendment would allow treatment of an additional 134 acres of winter thermal and 593 acres of snow-intercept thermal cover in MA 14, for a total of 746 acres of thinning in winter range that would reduce cover below Forest Plan Standards and Guidelines.*

The amendment would result in:

- *a minor short- to medium-term reduction of cover on an additional MAXIMUM of 19 acres of MA 26 and 727 acres in MA 14 because these acres would not provide cover for the short-term, until canopies close again.*
- *a minor short-term positive effect because the stands would provide additional forage, and be more sustainable to loss from wildfire, insects and disease, and*
- *a minor, medium to long-term benefit because reduced tree competition allows for development of larger trees that are able to provide snow interception and thermal cover.*
- *Temporary, short-term, minor disturbance to deer on winter range on a maximum of 557 acres proposed for winter logging.*

The thinning referred to includes both commercial and noncommercial treatments.This standard and guideline has been amended for several projects, for reasons discussed above. [ID#448]

Associated Comments: [Seq#428]

I am completely opposed to amendments being made to the Forest Plan's Standards and Guidelines for the Mission Restoration Project. That these guidelines are being proposed to be amended until the project is complete in 2033 is unconscionable. Undue adverse impacts occur when wildlife foraging and winter thermal cover and habitat are encroached upon; the aquatic ecosystem is threatened with high sediment counts and survival of ESA listed salmonids are placed in jeopardy; and risking human safety on Libby Creek and Black Pine Lake Roads by logging trucks, with only consideration for short term goals, is disregarding present quality of life for this watershed. No amendments should be made without prioritizing health and safety of people and wildlife over economic gain. [51-30]

Concern: [Seq#429]

What is the Forest's record for duration of weed-free time on a permanent log landing, without the use herbicides. [ID#449]
Response: [Seq#429]

The species of weeds that typically establish in log landings are the *Established Invaders*, Bull thistle and Mullein. These weeds are lower priority and are fairly widespread within the project area and are so extensive Forest wide that they are not generally inventoried or treated. Both of these weeds will establish in log landings quickly - usually within 2 years - but generally do not out-compete most desirable vegetation and diminish over time. Typically landings with Bull thistle and Mullein will diminish to just a few plants within 5 years. The implementation of the project Design Features (Appendix D pages 344, 345) will reduce the potential for post project weed establishment on log landings and greatly reduce the establishment of *New Invader* weeds. The much higher priority *New Invader* weeds seldom invade log landings. (EA 3.11 pages 254-256) [ID#449]
Associated Comments: [Seq#429]
What is the Forest's record for duration of weed-free time on a permanent log landing, without the use herbicides? [72-146]

Concern: [Seq#430]

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The EA presents absolutely no quantitative analysis of the impacts of weed spread caused by the project. [ID#450]
Response: [Seq#430]

Both the existing weed presence and the area that will be disturbed by the project activities are well quantified. The implementation of the project Design Features (Appendix D pages 344, 345) will reduce the potential for weed spread into these areas. The number one required standard in the Record of Decision (ROD) for the Final Environmental Impact Statement for the Pacific Northwest Region Invasive Plant Program Preventing and Managing Invasive Plants (USDA Forest Service 2005) is the following: Prevention of invasive plant introduction, establishment and spread will be addressed in watershed analyses; roads analyses; fire and fuels management plans, vegetation management plans, and other land management assessments. The discussion of the weed spread caused by the project in EA section 3.11 adequately meets this standard by which the Forest Service conducts invasive plant analysis. [ID#450]
Associated Comments: [Seq#430]
The EA presents absolutely no quantitative analysis of the impacts of weed spread caused by the project. [72-147]

Concern: [Seq#431]

We support the purpose and need of the Mission Restoration Project, which is focused on improving hydrologic function, aquatic habitat, soil productivity, vegetation composition and structure, wildlife habitat, wildfire conditions in the wildland urban interface (WUI), and the transportation system. However, we recommend that an additional purpose and need be added to the project that reflects the need for economic and community benefits to the surrounding areas as a by-product of ecological restoration. This includes providing raw materials to maintain the local milling infrastructure and contracts to accomplish restoration actions such as road upgrades and restoration. [ID#451]

Response: [Seq#431]

The Purposes and Needs for the project focuses on objectives. How those objectives are achieved is spelled out in the proposed actions. Commercial thinning is proposed under Alternatives 2 and 3 as one of the means to meet the detailed Purposes and Needs for the project for landscape restoration. Because funding for many of the restoration projects may come from other sources than the timber sale receipts, it was not imperative to provide economic guidance within the Purpose and Need statements. Section 3.14, Economics, discusses the importance of the timber industry to the welfare of NE Washington Counties. The monetary return from the sale of Forest Products is discussed in this section.

The project is now proposed to be broken into 2 Stewardship Contracts with the first project to be offered in Fiscal Year 2018. This portion of the harvest is expected to have about 6MMBF of commercial harvest and provide an estimated $395,000 of goods which can be used for restoration services. The second contract is expected to be about 3MMBF and may be offered in 2018 also. [ID#451]

Associated Comments: [Seq#431]

We support the purpose and need of the Mission Restoration Project, which is focused on improving hydrologic function, aquatic habitat, soil productivity, vegetation composition and structure, wildlife habitat, wildfire conditions in the wildland urban interface (WUI), and the transportation system. However, we recommend that an additional purpose and need be added to the project that reflects the need for economic and community benefits to the surrounding areas as a by-product of ecological restoration. This includes providing raw materials to maintain the local milling infrastructure and contracts to accomplish restoration actions such as road upgrades and restoration. [33-11]

Concern: [Seq#432]

The FS has posted documents that were written for, and paid for by the NCWFHC, on the official MRP website (https://www.fs.usda.gov/project/?project=49201). Are other organizations allowed this same kind of access? Is there a clearly stated policy of which organization's studies and documents will be posted, and which will not? [ID#452]

Response: [Seq#432]

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, etc. are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands. The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, collecting fisheries data, and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment and prior to posting online.

As the results of modeling are developed and used, they are being reviewed and monitored to try and determine if the information was useful and how the collection and modeling of this data can be improved. This is continuing on other projects on the Forest would have used this type of modeling. The EMDS models are not proprietary, it just takes a lot of training to be able to use it successfully.

[ID#452]

Associated Comments: [Seq#432]

The FS has posted documents that were written for, and paid for by the NCWFHC, on the official MRP website (https://www.fs.usda.gov/project/?project=49201). Are other organizations allowed this same kind of access? Is there a clearly stated policy of which organization's studies and documents will be posted, and which will not? [49-6]

Concern: [Seq#433]

"Forest Health" Amendment. The scoping document proposes to amend thermal cover percentage levels under the name "forest health" amendment (p. 7). Why not call it a thermal cover amendment? The waiving of thermal cover needs for mule deer cited in Cook et al. (1996, 1998) is outdated and does not justify reduction of thermal cover percentage levels. The plan amendment to reduce mule deer thermal cover based on Cook's (1995, 1998) research is unjustified. Cook's research has been updated in two separate studies and no 1995 paper is even listed as a reference in those studies. Cook's 1998 research is inappropriate for the Mission Restoration Project because it was based on a small number (ca 12) penned elk, not deer. Cook acknowledged that the effect of thermal cover on elk was an indirect result of forage availability and only exhibited at high canopy density levels (greater than 70%) sufficient to suppress forage growth. More recent research on mule deer indicates that the limiting factors for mule deer are complex interconnections between weather, fawn survival, and predation, as well as forage. Amendments to the Forest Plan, even temporary ones, deserve a sound justification, not yet met.

Forrester and Wittmer (2013) reviewed 48 deer population studies and found that three population dynamics operated to control deer habitat quality: forage-weather; differential forage-predation ratios

for adults and fawns; changes in predator abundance. A critical element was sustained high levels of adult survival. Perhaps this should be the objective to strive for.

Indeed, this was closer to the original goal of the work by Cook even though it was on elk. Bender, studying pinyon juniper deer range, found that at least 1/4 of a female mule deer's home range should remain unmanaged with at least 60% cover, 1/4 should be thinned to no less than 30% cover and the remaining half should be thinned to no less than 10% cover. Large areas of south slopes in Libby Creek are naturally lower than 10% cover and based on this, reduction of the adjacent timber has the potential to negatively impact deer based on this study. Granted, the habitat in Bender's study is not the same as the Okanogan, but the shrub component in Libby Creek is more like to Bender's study area than the La Grande area penned elk "pastures" are to our Douglas-fir / pinegrass forests used by migrating herds of deer. In their later papers (Cook et al. 2000, 2005) emphasize that the context for thermal cover retention should be forage production. This doesn't really have much bearing on the Okanogan mule deer thermal cover standard for many reasons including:

o The Okanogan Plan standard is based on mule deer not elk.

o The Okanogan Plan standard is based on migratory herds with large home ranges that cover large landscapes, not penned animals.

o The Okanogan Plan standard applies to the Okanogan, not La Grande, Oregon. Our winter snows are consistently deep enough in the summer ranges to limit winter forage access, so that migrating deer return from British Columbia each year to the southern end of their range south of Twisp where snowfall is low enough for them to access low shrub cover. [ID#453]
Response: [Seq#433]

I cited Cook's 1996 and 1998 papers because they were used in our Forest Restoration Strategy (2012), which is the basis for the Mission Project. Other literature also emphasized the importance of forage.

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate

additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

Local studies of mule deer winter range use in Okanogan and Chelan counties found little use of dense cover stands. Naney and Myers (undated) followed 11 radio-collared deer and made 692 observations representing 1,044 deer in the Methow Valley during two winters. Of the deer observed, 73% were on sites with no conifer crown closure. Five % of the total winter observations were of deer using cover with greater than 60% crown closure. Ninety % of the winter range was dominated by habitat classes dominated by bitterbrush, sagebrush, bunchgrass, and pole-sized trees with undergrowth of shrubs or bunchgrass. In this study, deer did not appear to prefer thermal cover. However, they noted that observations were daylight hours only, and during winters that were warmer and drier than normal. Moore (2003), in a similar study in Chelan county, found that mule deer use was positively associated to areas without cover, and had a negative association to areas of cover. No difference in day and night habitat use was observed.

The Forest Restoration Strategy is a peer-reviewed document that provides guidance for planning and implementing projects that address forest sustainability, especially in dry forest types like that of the Mission project area. Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a **sustained basis** *(MA5-6B)."*

The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire. Derek Churchill's analysis of forest restoration needs based on stand structure departures indicated that dense stands were overrepresented in the landscape compared to historical conditions (Preliminary EA at p.64). These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. Hayden et al. (2008), in the Western Association of Fish and Wildlife Agencies' "Habitat Guidelines for Mule Deer", suggests a "thin from below" approach to maintain snow interception capacity in the short term while promoting increase stand vigor and tree forms of greater value to deer in the long term. This is the prescription for winter range, with the exception of the 46 acres of clearcut prescription. Some of the stands will provide thermal cover, post-treatment, although not to the 60% or 70% canopy closure levels defined in the Forest Plan. Local experience has found deer use in stands with much lower canopy closure, where large trees hold snow in the upper branches (J. Rohrer, pers.comm., S.Fitkin, pers.comm., Naney and Myers (undated), Moore (2003)). Thinning will allow maintenance of some deer cover while increasing sustainability of the habitat and reducing risk of loss of large amounts of cover from wildfire, insects or disease.

The Washington State Department of Fish and Wildlife (WDFW) is responsible for management of the state's mule deer populations. The Forest Service is responsible for the habitat on National Forest lands. One of the habitat parameters that can be affected by forest management is the availability of forage, which this project will increase. The WDFW's Mule Deer Management Plan (2016) habitat protection strategy for the Methow Valley is to encourage treatments such as prescribed burns, timber harvest, and shrub planting to enhance the quality of winter range habitats and increase available forage for mule deer. The Mission Project would contribute to this goal.

The percentages recommended in the Bender publication are not applicable. The arid and semi-arid habitats have very different plant associations (pinyon, juniper, oak-mountain mahogany, mesquite shrublands and others) than the winter range habitats dominated by ponderosa pine, mixed conifer, and open shrub-steppe habitats of bitterbrush, serviceberry and bluebunch wheatgrass that are used by the migratory mule deer population in northcentral Washington. The mule deer population in the Bender publication does not appear to be migratory.

There is no dispute that dense, forested stands on winter range are used by deer. However, the need for 40% of the area to provide winter thermal or snow-intercept thermal cover is not supported in the recent literature. The Forest Plan definition of cover (modelled as winter thermal=

≥ 70% canopy closure, with

≥20% in sapling component, 50% in pole component, 5 acre minimum and snow-intercept thermal cover= overstory

≥12" dbh trees

≥ 40% crown as (FEIS, Appendix F-2)) is also not supported.

The State's approach to habitat improvement (Washington Department of Fish and Wildlife, 2016) recognized that "within the East Slope Cascades MDMZ (mule deer management zone), the greatest gains will come by focusing habitat improvement and acquisition projects on spring, fall, and winter use areas, and reducing disturbance to wintering mule deer." The Management Plan (2016) notes that "much of the mid-elevation forest used by mule deer during the spring and fall is comprised of closed-canopy, over-stocked stands of mixed conifer species with little understory vegetation. Timber management treatments such as thinning or burning would open the canopy, promote seral stage vegetation communities, and improve these timber stands for mule deer". The Mission project would thin, burn, and close roads on winter range, as discussed in the Preliminary EA, Chapter 3. [ID#453]

Associated Comments: [Seq#433]

“Forest Health” Amendment. The scoping document proposes to amend thermal cover percentage levels under the name “forest health” amendment (p. 7). Why not call it a thermal cover amendment? The waiving of thermal cover needs for mule deer cited in Cook et al. (1996, 1998) is outdated and does not justify reduction of thermal cover percentage levels. The plan amendment to reduce mule deer thermal cover based on Cook's (1995, 1998) research is unjustified. Cook’s research has been updated in two separate studies and no 1995 paper is even listed as a reference in those studies. Cook’s 1998 research2 is inappropriate for Mission because it was based on a small number (ca 12) of penned elk, not deer. Cook acknowledged that the effect of thermal cover on elk was an indirect result of forage availability and only exhibited at high canopy density levels (greater than 70%) sufficient

to suppress forage growth. More recent research on mule deer indicates that the limiting factors for mule deer are complex interconnections between weather, fawn survival and predation, as well as forage. Amendments to the Forest Plan, even temporary ones, deserve a sound justification not yet met. Forrester and Wittmer (2013)3 reviewed 48 deer population studies and found that three population dynamics operated to control deer habitat quality: forage-weather; differential forage-predation ratios for adults and fawns; changes in predator abundance. A critical element was sustained high levels of adult survival. Perhaps this should be the objective to strive for. Indeed, this was closer to the original goal of the work by Cook even though it was on elk. Bender, studying pinyon juniper deer range4, found that at least 1/4 of a female mule deer's home range should remain unmanaged with at least 60% cover, 1/4 should be thinned to no less than 30% cover and the remaining half should be thinned to no less than 10% cover. Large areas of south slopes in Libby Creek are naturally lower than 10% cover and based on this, reduction of the adjacent timber has the potential to negatively impact deer based on this study. Granted, the habitat in Bender's study is not the same as the Okanogan, but the shrub component in Libby Creek is more like to Bender's study area than the La Grande area penned elk "pastures" are to our Douglas-fir / pinegrass forests used by migrating herds of deer. In their later papers (Cook et al. 2000, 2005)5 emphasize that the context for thermal cover retention should be forage production. This doesn't really have much bearing on the Okanogan mule deer thermal cover standard for many reasons including: o The Okanogan Plan standard is based on mule deer not elk. o The Okanogan Plan standard is based on migratory herds with large home ranges that cover large landscapes, not penned animals. o The Okanogan Plan standard applies to the Okanogan, not La Grande, Oregon. Our winter snows are consistently deep enough in the summer ranges to limit winter forage access, so that migrating deer return from British Columbia each year to the... southern end of their range south of Twisp where snowfall is low enough for them to access low shrub cover. [18-41]

Concern: [Seq#434]

[comment:29-32]

Also, an amendment to allow winter harvest will impact wildlife in the area. The EA claims that this impact is "not as critical" as it was previously thought to be. What does that mean? What impact will it have? Animals in the area, including a ESA-listed grey wolf have not been appropriately considered in regards to this amendment. [ID#454]

Response: [Seq#434]

The Forest Restoration Strategy is the basis for the Mission project, and is a peer-reviewed document that provides guidance for planning and implementing projects that address forest sustainability, especially in dry forest types like that of the Mission project area. Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a **sustained basis** *(MA5-6B)."*

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

Local studies of mule deer winter range use in Okanogan and Chelan counties found little use of dense cover stands. Naney and Myers (undated) followed 11 radio-collared deer and made 692 observations representing 1,044 deer in the Methow Valley during two winters. Of the deer observed, 73% were on sites with no conifer crown closure. Five % of the total winter observations were of deer using cover with greater than 60% crown closure. Ninety % of the winter range was dominated by habitat classes dominated by bitterbrush, sagebrush, bunchgrass, and pole-sized trees with undergrowth of shrubs or bunchgrass. In this study, deer did not appear to prefer thermal cover. However, they noted that observations were daylight hours only, and during winters that were warmer and drier than normal. Moore (2003), in a similar study in Chelan county, found that mule deer use was positively associated to areas without cover, and had a negative association to areas of cover. No difference in day and night habitat use was observed. (EA at p.?)

Effects of the amendment on deer and listed species are discussed in the revised EA starting at p.79. Effects of the entire project, of which the winter range is a smaller part, are discussed in the Preliminary EA at p.128-166, Glidden (2017) and the Biological Assessment (draft). The amendment covers 746 acres of the 12,142 acres of winter range in the project area, so effects would be less than those disclosed for the entire project. [ID#454]

Associated Comments: [Seq#434]

Also, an amendment to allow winter harvest will impact wildlife in the area. The EA claims that this impact is "not as critical" as it was previously thought to be. What does that mean? What impact will it have? Animals in the area, including a ESA-listed grey wolf have not been appropriately considered in regards to this amendment. [29-32]

Concern: [Seq#437]

comment:18-53]Until the shrub- steppe disturbance regime is restored, the lack of appropriate restoration over significant parts of the analysis area is a serious flaw in the EA that makes it difficult or impossible to meet the purpose and need for management of wildlife habitat (P & N # 4), vegetation (1.3.3 P & N # 3), and wildfire hazard reduction (P & N # 6).

18-54 Significant amounts of what would have historically been grasslands in the project area are in Fire Regime Condition Class 3 (multiple fire return periods have been missed), in need of restoration by treatment of shrubs with prescribed fire (Figures 2 and 3).[...]

comment:18-56]This project should have proposed a more significant shrub- steppe management component, but it doesn't (Figure 3). Shrub- steppe vegetation in this area is in need of thinning, pruning and prescribed fire. We understand the need for temporary mule deer forage until areas burned by the 2014 and 2015 fires can recover, but this will take less than a decade.

[comment:18-57]

Until then the lack of treatments in the shrub- steppe will not meet the Mission Project Purpose and Needs for wildfire hazard reduction (1.3.6 P & N # 6) or wildlife habitat enhancement (1.3.4 P & N # 4).

comment:18-62]Overgrown shrub- steppe vegetation can negatively affects wildlife that are adapted to grasslands. While shrublands are an important component of the landscape, historically, grasslands would have been more prominent. Mule deer will be negatively impacted relative to white- tailed deer due to the preference of the latter for more shrubs. Overgrown shrub- steppe vegetation may alter historical migration corridors of mule deer away from the south part of the valley where critical habitat is dictated by lower snowpack, rather than overstory cover. Heavy shrub cover has the potential to enhance white- tail deer habitat at the expense of mule deer.

comment:18-65]We would like to see a strategy for restoration of the shrub- steppe habitat within the project area. Neither of the two alternatives appears to have sufficiently analyzed the habitat restoration goals for gray flycatchers or western gray squirrels that include restoration of open grassland habitats, measured by the percent change of open grassland (EA, p. 171), and there are valid unanswered questions about mule deer migration corridors as well

comment:18-90]The Wildlife report discussed deciduous habitat deficiencies, without mentioning that the shrub:herb ratio in shrub- steppe is higher than historical norms. Consequently this was not

presented in the EA. The distinction between deciduous shrubs and deciduous herbs was completely missed, yet this ratio has a strong effect on wildlife that graze on vegetation during the winter.

comment:30-22]The Draft EA also states that prescribed burns should not be done in the shrub-steppe because of the consequent loss of deer winter range. We are mindful of the need to balance treatment of shrub-steppe with maintaining deer winter range after previous large fires, and we suggest you consider limited prescribed burns with cooler fire surface temperatures in the shrub-steppe. With this treatment, loss of winter range should be of limited spatial and temporal scope.

[comment:30-23]We assume that loss of bitterbrush following prescribed fire in shrub-steppe is the primary concern about this treatment. Research has shown, however, that bitterbrush can resprout -perhaps as much as 25%.1 Cooler surface fire temperatures are particularly desirable for bitterbrush resprouting.

[comment:30-24]It is possible that areas of prescribed burn could return to grassland, rather than shrub-steppe. While those areas would not provide winter forage for deer, the Forest should consider whether restoring historical grassland could benefit the ecosystem in other ways. Perhaps it would be helpful to first take a closer look at the fires in the past decade or so to see how much of the Libby Creek watershed non- forest has burned and the current stage of recovery. This is one area where monitoring and adaptive management could play an important role.[comment end]

comment:70-8]FORESTED AREAS VS. SHRUB-STEPPE

The area of the Mission Sale, especially in Libby Creek, has significant areas of Shrub-Steppe communities. As we saw in the Carlton Complex run to Pateros, fire travels much more quickly in grassland and Shrub- Steppe than it does in forested areas. The shrub-steppe is meant to burn frequently. Careful consideration of the treatment of the shrub-steppe community should be looked at. If carefully planned prescribed burning is considered for forested areas, it should be considered also for any benefits to the shrub-steppe communities.

comment:78-42]Another reason stated for dropping consideration of burning in the shrub-steppe is further loss of deer winter range. But this is just a temporary loss, it would not be recommended that the entire shrub- steppe be prescribed burned within the planning horizon. Most of the shrub-steppe within the project area contains old bitterbrush, which does not currently provide optimal winter forage for mule deer.[comment end]5

[comment:78-43]Rejuvenation of the shrub-steppe through intelligent use of prescribed fire will result in an increase of deer winter browse in a 10-30-year time horizon. It is important that this plant community have fire reintroduced. Research has shown that, under certain conditions, bitterbrush can sprout. Our own observations confirm this in the Methow. This is where monitoring and adaptive management could play an important role.[comment end]

[comment:78-44]Shrub-steppe within the project area is susceptible to extreme fire behavior. Historically, this vegetation community burned often. We believe prescribed burning in this community should be included in the project. We understand that the shrub-steppe is important deer wintering habitat, but some shrub- steppe should be treated to reduce the probability of extreme fire behavior and deleterious impacts.[...][comment end]

[comment:78-44][...]The planning horizon for implementation is 15 years. We believe that at least some of the shrub-steppe should be included in prescribed fire planning. It will ultimately improve range/forage for both cattle and deer.[comment end] [comment:78-45]The Mission Vegetation Report is actually the Forest Vegetation Report prepared by the

silviculturist and doesn't address management of the shrub-steppe.[comment end][comment:78-46] And likewise, the Botany Resource Report does not address management of shrub-steppe, or the [...][comment end][comment:78-46][...]lack thereof.[comment [ID#457]
Response: [Seq#437]

Some shrub-steppe habitat is included in the landscape burns, in the Libby drainage. A very rough estimate of this is that about 579 acres of shrub-steppe habitat would be included in the burns. This is an attempt to balance the need to reduce fuels (Purpose and Need 1.3.6, Preliminary EA at p.14) with the need to retain winter forage for mule deer (Purpose and Need 1.3.4, Preliminary EA at p.14 *"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".)*

Restoration of shrublands to grasslands was not identified as a major restoration need in the landscape prescription and treatment recommendations for the watershed (Churchill 2016). Field review of the habitat showed that the bitterbrush plants were low-growing, healthy plants with small to medium stems, rather than the large, woody older plants that are less valuable, and less available, as deer browse. Due to the loss of winter browse for mule deer from recent fires, there is a need to retain shrubs that are providing winter forage.

In the Methow Valley, wildfires have burned large areas of deer winter range in the last 5 years. An estimated 51% of the winter range on the Methow Ranger District burned since 2012. Approximately 16% of the winter range burned with moderate to high severity effects to vegetation.

Another 13% of the winter range burned in 2006, for a total of 64% of the Forest winter range in the Methow burned in an 11-year period.

Field reviews of burned sites showed that on severely burned sites, 12% of the bitterbrush plants were resprouting from the 2014 fire and 14% were resprouting from the 2006 fire. A moderately burned site from the 2006 fire showed 27% of the bitterbrush plants were dead with no resprouting occurring, 11 years post-burn. Other shrubs (serviceberry, ceanothus, willow, snowberry) on the winter range were resprouting on one severely burned site from the 2014 fire, but were small enough that they would not provide much forage during the winter yet.

The degree to which the proposed treatments would affect the resource indicators used to indicate how the proposed actions would meet Purpose and Needs #4 and #6 in comparison to taking no action are described in Figure 11 of the revised preliminary EA on p. 33 (fuels/fire) and p. 35 (wildlife improvements to habitat for sensitive species in shrub-steppe). For these indicators, proposed actions would improve conditions related to wildfire behavior and wildlife habitat. The actions proposed in this project do not preclude future treatments in shrub-steppe once forage conditions in the surrounding area have improved. [ID#457]

Associated Comments: [Seq#437]
Until the shrub- steppe disturbance regime is restored, the lack of appropriate restoration over significant parts of the analysis area is a serious flaw in the EA that makes it difficult or impossible to meet the purpose and need for management of wildlife habitat (P & N # 4), vegetation (1.3.3 P & N # 3), and wildfire hazard reduction (P & N # 6). [18-53]

Significant amounts of what would have historically been grasslands in the project area are in Fire Regime Condition Class 3 (multiple fire return periods have been missed), in need of restoration by treatment of shrubs with prescribed fire (Figures 2 and 3).... Figure 2. Shrublands in Mission Project Area (lavender). [18-54]

This project should have proposed a more significant shrub- steppe management component, but it doesn't (Figure 3). Shrub- steppe vegetation in this area is in need of thinning, pruning and prescribed fire. We understand the need for temporary mule deer forage until areas burned by the 2014 and 2015 fires can recover, but this will take less than a decade. [18-56]

Until then the lack of treatments in the shrub- steppe will not meet the Mission Project Purpose and Needs for wildfire hazard reduction (1.3.6 P & N # 6) or wildlife habitat enhancement (1.3.4 P & N # 4). [18-57]

Overgrown shrub- steppe vegetation can negatively affects wildlife that are adapted to grasslands. While shrublands are an important component of the landscape, historically, grasslands would have been more prominent. Mule deer will be negatively impacted relative to white- tailed deer due to the preference of the latter for more shrubs. Overgrown shrub- steppe vegetation may alter historical migration corridors of mule deer away from the south part of the valley where critical habitat is dictated by lower snowpack, rather than overstory cover. Heavy shrub cover has the potential to enhance white-tail deer habitat at the expense of mule deer. [18-62]

We would like to see a strategy for restoration of the shrub- steppe habitat within the project area. Neither of the two alternatives appears to have sufficiently analyzed the habitat restoration goals for gray flycatchers or western gray squirrels that include restoration of open grassland habitats, measured by the percent change of open grassland (EA, p. 171), and there are valid unanswered questions about mule deer migration corridors as well. [18-65]

The Wildlife report discussed deciduous habitat deficiencies, without mentioning that the shrub:herb ratio in shrub- steppe is higher than historical norms. Consequently this was not presented in the EA. The distinction between deciduous shrubs and deciduous herbs was completely missed, yet this ratio has a strong effect on wildlife that graze on vegetation during the winter. [18-90]

The Draft EA also states that prescribed burns should not be done in the shrub-steppe because of the consequent loss of deer winter range. We are mindful of the need to balance treatment of shrub-steppe with maintaining deer winter range after previous large fires, and we suggest you consider limited prescribed burns with cooler fire surface temperatures in the shrub-steppe. With this treatment, loss of winter range should be of limited spatial and temporal scope. [30-22]

It is possible that areas of prescribed burn could return to grassland, rather than shrub-steppe. While those areas would not provide winter forage for deer, the Forest should consider whether restoring historical grassland could benefit the ecosystem in other ways. Perhaps it would be helpful to first take a closer look at the fires in the past decade or so to see how much of the Libby Creek watershed non-forest has burned and the current stage of recovery. This is one area where monitoring and adaptive management could play an important role. [30-24]

As it stands, and as pointed out by several organizations who have already commented on the Mission Project, including the Methow Valley Citizens Council, I am dismayed at your lack of planned treatment for the sagebrush environment [62-3]

FORESTED AREAS VS. SHRUB-STEPPE The area of the Mission Sale, especially in Libby Creek, has significant areas of Shrub-Steppe communities. As we saw in the Carlton Complex run to Pateros, fire travels much more quickly in grassland and Shrub- Steppe than it does in forested areas. The shrub-steppe is meant to burn frequently. Careful consideration of the treatment of the shrub-steppe community should be looked at. If carefully planned prescribed burning is considered for forested areas, it should be considered also for any benefits to the shrub-steppe communities. [70-8]

Encroachment of woody shrubs at the expense of native grasses and other plants can occur in grazed areas, affecting pollinators, birds, small mammals and other native wildlife. [72-69]

Another reason stated for dropping consideration of burning in the shrub-steppe is further loss of deer winter range. But this is just a temporary loss, it would not be recommended that the entire shrub-steppe be prescribed burned within the planning horizon. Most of the shrub-steppe within the project area contains old bitterbrush, which does not currently provide optimal winter forage for mule deer. [78-42]

Rejuvenation of the shrub-steppe through intelligent use of prescribed fire will result in an increase of deer winter browse in a 10-30-year time horizon. It is important that this plant community have fire reintroduced. Research has shown that, under certain conditions, bitterbrush can sprout. Our own observations confirm this in the Methow. This is where monitoring and adaptive management could play an important role. [78-43]

Concern: [Seq#438]

Under the Northwest Forest Plan, riparian standards and guidelines apply to riparian ecosystems Forest-wide, but as a minimum they shall be applied to areas within

100 feet slope distance either side of intermittent streams, wetlands less than one acre, and unstable areas,

150 feet slope distance of

perennial non-fish bearing streams or

wetlands greater than one acre, and 300 feet slope distance of

fish bearing streams, lakes or

natural ponds

.(Restoration_Aquatics_Hydrology_Resource_Report , p.4) [

Mission Pond meadow is stated in this EA to be being encroached by the fir overstory, but in fact that meadow is only partially fenced and has been repeatedly trampled by grazing cattle.

The NWFP suggest a lack of disturbance within 150 feet of a wetland or 300 feet of a pond

. Mission Pond and Meadow, an abandoned beaver habitat, is not currently being adequately protected and this Restoration Project apparently plans to cut fir timber within the protected zone. [ID#459]
Response: [Seq#438]

Mission Pond is fenced. Commercial timber harvest is not proposed. Non-commercial wetland thinning and ladder-fuel reduction thinning are planned in the riparian reserves. The non-commercial wetland thinning would cut trees up to 10" dbh, at the meadow edge, where encroachment by conifers is occurring. The trees that are fallen, would be left on site. Ladder fuel reduction would cut conifer trees up to 8" dbh. These also would remain on site. All felling of trees would be done by hand. [ID#459]
Associated Comments: [Seq#438]
Under the Northwest Forest Plan, riparian standards and guidelines apply to riparian ecosystems Forest-wide, but as a minimum they shall be applied to areas within 100 feet slope distance either side of intermittent streams, wetlands less than one acre, and unstable areas, 150 feet slope distance of perennial non-fish bearing streams or wetlands greater than one acre, and 300 feet slope distance of fish bearing streams, lakes or natural ponds.(Restoration_Aquatics_Hydrology_Resource_Report , p.4) [Mission Pond meadow is stated in this EA to be being encroached by the fir overstory, but in fact that meadow is only partially fenced and has been repeatedly trampled by grazing cattle. The NWFP suggest a lack of disturbance within 150 feet of a wetland or 300 feet of a pond. Mission Pond and Meadow, an abandoned beaver habitat, is not currently being adequately protected and this Restoration Project apparently plans to cut fir timber within the protected zone.] [11-56]

Concern: [Seq#439]

The Lynx Conservation Assessment and Strategy (LCAS), considered some of the best available science currently, provides conservation measures that are the basis for ESA consultation with US Fish and Wildlife Service

. Critical habitat for Lynx: Approximately 12,890 acres within the project area

are designated Critical Habitat for lynx. Critical Habitat receives protection under section 7 of the Endangered Species Act, and

agencies must ensure that any actions are not likely to result in destruction or adverse medication of Critical Habitat. Lynx in this area avoid

Douglas-fir and ponderosa pine forests,

openings, recent burns, open canopy and understory cover

, and steep slopes (Koehler et al. 2008)

.

Approximately 9.9 miles of road are found in Critical Habitat, which could result in disturbance or habitat disturbance. (p.176-178) [Having such a large portion of the area designated lynx habitat disturbed by traffic, mechanical thinning, and a prescribed burn does not seem in the best interest of lynx and their prey.]

[comment end] [ID#460]
Response: [Seq#439]

Effects to lynx and to critical habitat for lynx are disclosed in the Preliminary EA, Chapter 3 at p.146-150 and p.159-160, in the Wildlife Resource Report in project files, and in the Biological Assessment (draft). [ID#460]
Associated Comments: [Seq#439]
The Lynx Conservation Assessment and Strategy (LCAS), considered some of the best available science currently, provides conservation measures that are the basis for ESA consultation with US Fish and Wildlife Service. Critical habitat for Lynx: Approximately 12,890 acres within the project area are designated Critical Habitat for lynx. Critical Habitat receives protection under section 7 of the Endangered Species Act, and agencies must ensure that any actions are not likely to result in destruction or adverse medication of Critical Habitat. Lynx in this area avoid Douglas-fir and ponderosa pine forests, openings, recent burns, open canopy and understory cover, and steep slopes (Koehler et al. 2008). Approximately 9.9 miles of road are found in Critical Habitat, which could result in disturbance or habitat disturbance. (p.176-178) [Having such a large portion of the area designated lynx habitat disturbed by traffic, mechanical thinning, and a prescribed burn does not seem in the best interest of lynx and their prey.] [11-67]

Concern: [Seq#440]

The 1987 Okanogan Forest Plan included Management Indicator Species such as pine marten and northern three-toed woodpeckers that require specific protective habitat designation. [ID#461]
Response: [Seq#440]

MIS are discussed in the updated Wildlife Report (p. 9-11), for species considered but not analyzed in detail. Effects to MIS analyzed in detail (spotted owls, lynx and winter range habitat for mule deer) are disclosed in the preliminary EA at p.143-148, 154-155, 158-160, and 162. In the Northwest Forest Plan area, habitats for MIS are no longer delineated specifically by Management Requirement areas (MRs), as they are on the non-NWFP side of the district, because the late-successional reserves provide for a network of mature and old habitats that would meet habitat needs for the species using mature/old and cavity habitats. [ID#461]
Associated Comments: [Seq#440]
The 1987 Okanogan Forest Plan included Management Indicator Species such as pine marten and northern three-toed woodpeckers that require specific protective habitat designation. [18-16]

Concern: [Seq#441]
We appreciate the objective to improve habitat for species such as goshawk, western gray squirrels, white-headed woodpeckers and western gray squirrels, but how will this project improve habitat for other TES species and species of concern such as wolves, peregrine falcons, bears and wolverines? [ID#462]
Response: [Seq#441]

Effects to those species are disclosed in the Wildlife Report (Glidden 2017) at p.7-12 for the sensitive species, in the preliminary EA at p.142-149 and 158-164 for spotted owls, lynx and critical habitat, and the Biological Assessment (draft) for listed species. Habitat for peregrine and wolverine would not be affected by project activities, which are primarily in low-elevation, dry forest stands. [ID#462]
Associated Comments: [Seq#441]
We appreciate the objective to improve habitat for species such as goshawk, western gray squirrels, white-headed woodpeckers and western gray squirrels, but how will this project improve habitat for other TES species and species of concern such as wolves, peregrine falcons, bears and wolverines? [18-17]

Concern: [Seq#442]

In the creation of white-headed woodpecker habitat in the project, speak to the creation and conservation of snags in the project area including management to ensure they are conserved following project implementation including consideration of commercial and recreational firewood removal. [ID#463]
Response: [Seq#442]

Effects to white-headed woodpeckers, including snag habitat changes, are disclosed in the preliminary EA at p.153 and the Wildlife report at p.47 and appendix A (snag management). Temporary roads would not be open to public use, including firewood cutting. Commercial and personal firewood cutting are not part of the proposed action, and would continue to be managed under existing regulations. [ID#463]
Associated Comments: [Seq#442]
In the creation of white-headed woodpecker habitat in the project, speak to the creation and conservation of snags in the project area including management to ensure they are conserved following project implementation including consideration of commercial and recreational firewood removal. [18-18]

Concern: [Seq#443]

Specifically address how fuel reduction (i.e. areas for commercial treatment) will be balanced mule deer winter range an

d western grey squirrel habitat needs for canopy connectivity. [ID#464]
Response: [Seq#443]

Effects of the fuels reduction/commercial projects on winter range are discussed in the preliminary EA at. p.155-156. The total cover remaining across the winter range would be approximately 33% in each management area. To provide for adequate cover distribution across the project area (and to increase diversity and provide connectivity and habitat elements for other wildlife species), each ladder fuel reduction unit would leave 20% of the area untreated, in patches from 0.1 acre to multiple acres in size (preliminary EA at. p.155).

Effects of the fuels reduction/commercial projects on western gray squirrels are discussed in the preliminary EA at. p.154-155. Thinning prescriptions would provide for retention of clumps of trees, which would provide opportunity for arboreal travel (preliminary EA at. p.154).

Mitigations are a key component for providing balance between current habitat needs for wildlife species, including winter range and gray squirrel habitat, and the need to increase sustainablility of the stands so that they can provide habitat into the future (i.e. to reduce the risk of large-scale loss of habitat to fire, insects or disease). These are found in Appendix D of the preliminary EA, starting at p. 341. Mitigations for wildlife habitat start at p. 365, and include:

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels. [ID#464]
  Associated Comments: [Seq#443]
  Specifically address how fuel reduction (i.e. areas for commercial treatment) will be balanced mule deer winter range and western grey squirrel habitat needs for canopy connectivity. [18-21]

Concern: [Seq#444]

The Forest Service and the NCWFHC have explicitly limited discussions of wildland issues, as the following quotes make clear. Excerpted from the "FS Mission Restoration Project Summary" document released at the February public meeting:

"Project is not: revisiting previous decisions regarding cattle grazing or making decisions on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan revision/amendment." It should be noted, however, that the Forest Service is asking in the EA for amendments to be made to the Forest Plan to expedite the logging process.

[ID#465]
Response: [Seq#444]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision. The effects of livestock grazing on aspen and riparian area management were analyzed in this EA. The discussion in the range section on page 242 summarized this analysis. The permitted use on the allotment is currently meeting Forest Plan standards and guidelines and is in balance with the current level of road access and forage availability. Range management techniques - such as riding, adjusting intensity, proper salting, and maintaining water developments and fences - would continue to help meet riparian objectives and to obtain a more uniform distribution of use. The continued implementation of the 2013 Lookout Mountain AMP, with grazing strategies designed to alternate the season of use to provide for proper pasture rest or deferment, would help to sustain understory forage production. If changes are necessary, all of these changes could be made under the existing AMP.

As previously stated, this project can not make a decision on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan Revision. This project can only make changes to the character of the unroaded area. A Forest Plan amendment is different than a Forest Plan Revision. Section 3.15.9, Wilderness, Inventory Roadless Areas, and Unroaded Areas, discusses project effects on the existing Lake Chelan - Sawtooth Wilderness Area (no impacts) and the Sawtooth Inventoried Roadless Area [IRA] (2 acres of underburning). Treatments proposed in the IRA and unroaded area are designed to restore low ranges of crown fire risk and to reduce wildfire hazards in a priority WUI treatment area as designated by the Community Wildfire Protection Plan. These proposed actions would not degrade the quality of the IRA or unroaded area, or change the potential of these areas being considered for wilderness or IRA designation in the future. The project would have minor impacts on the untrammeled quality of the IRA or unroaded area, or change the potential of these areas to be considered for wilderness or IRA designation in the future. There would be no impacts to the undeveloped or natural qualities since there would be no roads constructed. There would not be any impacts to the opportunities for solitude or primitive or unconfined recreation because the project portions of the project area are not currently offering these opportunities due to close proximity to private land and open roads. [ID#465]

Associated Comments: [Seq#444]

5) Vegetative engineering of the project area is more valuable and more in the public's interest than conserving and protecting portions of it as wildlands. Nowhere are these assumptions clearly stated in the EA. Both the Forest Service and the NCWFHC explicitly limit discussions of wilderness/wildland issues, as the following quotes make clear. Excerpted from the "FS Mission Restoration Project Summary" document (released at the public meeting held in Twisp): "Project is not: revisiting previous decisions regarding cattle grazing or making decisions on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan revision/amendment." (It should be noted that the Forest Service is asking in the EA for amendments to be made to the Forest Plan to expedite the logging process). Excerpted from NCWFHC Operating Protocols: "...issues of wilderness, motorized access, etc. will generally not be addressed" [49-5]

The Forest Service and the NCWFHC have explicitly limited discussions of wildland issues, as the

following quotes make clear. Excerpted from the "FS Mission Restoration Project Summary" document released at the February public meeting: "Project is not: revisiting previous decisions regarding cattle grazing or making decisions on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan revision/amendment." It should be noted, however, that the Forest Service is asking in the EA for amendments to be made to the Forest Plan to expedite the logging process. [63-22]

Both the Forest Service and the NCWFHC explicitly limit discussions of wilderness/wildland issues, as the following quotes make clear. Excerpted from the "FS Mission Restoration Project Summary" document (released at the public meeting held in Twisp): "Project is not: revisiting previous decisions regarding cattle grazing or making decisions on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan revision/amendment." (It should be noted that the Forest Service is asking in the EA for amendments to be made to the Forest Plan to expedite the logging process). Excerpted from NCWFHC Operating Protocols: "...issues of wilderness, motorized access, etc. will generally not be addressed" [69-8]

Concern: [Seq#445]

For the wet meadow thinning objective for treatment on 22 acres, specifically address why thinning is necessary for this restoration to work in complement with beaver reintroduction efforts rather than allowing beavers as they are reintroduced to do this work on their own. For instance through drowning trees, creating snags and logjams and building aquatic habitat structures. If the forest is old growth or riparian, then evaluate whether this is a special situation requiring a more complex analysis than is available based on terrestrial silviculture or historic range of variability. [ID#466]

Response: [Seq#445]

It is desirable to maintain open meadow habitat for biological diversity. In both meadows, small trees along the edges of the meadows would be removed, which would maintain the open habitat and retain food sources for beaver and other wildlife species.

Eventually, beaver reintroduction could result in a higher water table and drowned trees, however, beaver reintroductions are successful about half the time (John Rohrer, pers. comm.), possibly due to inadequate food source. Beavers have been released in both sites previously, only partially successfully.

These are not old-growth stands or riparian stands. The project was proposed by wildlife biologists, and was not part of the silvicultural prescriptions derived from the EMDS process. Many of these projects have been accomplished on the district since the 1980's. [ID#466]

Associated Comments: [Seq#445]

For the wet meadow thinning objective for treatment on 22 acres, specifically address why thinning is

necessary for this restoration to work in complement with beaver reintroduction efforts rather than allowing beavers as they are reintroduced to do this work on their own. For instance through drowning trees, creating snags and logjams and building aquatic habitat structures. If the forest is old growth or riparian, then evaluate whether this is a special situation requiring a more complex analysis than is available based on terrestrial silviculture or historic range of variability. [18-30]

Concern: [Seq#446]

The wildlife habitat objective for increasing high elevation young conifer is based on a single rationalization on p. 3: "Compared to historical conditions, young conifer and deciduous stands are lacking in some higher elevation areas, which results in less quality habitat for wildlife and prey." While there is some truth to this for some generalist species like moose, and some aspects of lynx- hare forage, it is a sweeping conclusion that could result in loss of habitat quality if not considered in relation to individual species and varying elevations. The objective should acknowledge that high elevation areas have fire return intervals upward of 300 years that provide habitat for climate-sensitive species and species of seclusion like great gray owls, wolverine, pine marten and grizzly bear, that could possibly be undone by a management entry and return to early seral habitats. This is not just an academic argument, because several great gray owl nests in the Long Swamp and Tiffany area were abandoned following fire that was within the normal fire regime. In Libby and Buttermilk Creek watersheds, a useful marker for high elevation stands is the presence of subalpine fir, generally beginning at around 4,000 to 4,500 feet elevation. This is the elevation where critical lynx habitat begins, occurring in the Analysis Area from Blackpine Lake upwards, mostly in roadless areas and Wilderness. We appreciate a reasonable amount of lynx-friendly management toward early seral conifer, but this needs to consider the needs of other species as well. Unfortunately the use of fire regime information to guide lynx habitat restoration is too coarse of a filter. It is also necessary to know the plant association. [ID#467]

Response: [Seq#446]

Lynx habitat and high elevation habitats are discussed in the Preliminary EA at p. 133-135, 140, 147-150, 160-161. Little work is proposed in the higher elevation forest, the Mission Project primarily treats dry forest habitat types. Fifty-five acres of noncommercial thinning would occur within the boreal forest area where lynx would be expected. In the Libby drainage, 50 acres of pre-commercial thinning (in plantations) would occur in stands that are typed as stand-initiation phase. Five acres of aspen understory treatment would occur in the Buttermilk drainage (Preliminary EA at p.147). While lynx habitat restoration was considered as a possible project component, there is limited opportunity to restore stand structures within the lynx habitat, due to topography, elevation, and the existing transportation system (Preliminary EA at p.134). [ID#467]

Associated Comments: [Seq#446]

The wildlife habitat objective for increasing high elevation young conifer is based on a single rationalization on p. 3: "Compared to historical conditions, young conifer and deciduous stands are lacking in some higher elevation areas, which results in less quality habitat for wildlife and prey." While there is some truth to this for some generalist species like moose, and some aspects of lynx- hare

forage, it is a sweeping conclusion that could result in loss of habitat quality if not considered in relation to individual species and varying elevations. The objective should acknowledge that high elevation areas have fire return intervals upward of 300 years that provide habitat for climate-sensitive species and species of seclusion like great gray owls, wolverine, pine marten and grizzly bear, that could possibly be undone by a management entry and return to early seral habitats. This is not just an academic argument, because several great gray owl nests in the Long Swamp and Tiffany area were abandoned following fire that was within the normal fire regime. In Libby and Buttermilk Creek watersheds, a useful marker for high elevation stands is the presence of subalpine fir, generally beginning at around 4,000 to 4,500 feet elevation. This is the elevation where critical lynx habitat begins, occurring in the Analysis Area from Blackpine Lake upwards, mostly in roadless areas and Wilderness. We appreciate a reasonable amount of lynx-friendly management toward early seral conifer, but this needs to consider the needs of other species as well. Unfortunately the use of fire regime information to guide lynx habitat restoration is too coarse of a filter. It is also necessary to know the plant association. [18-3]

Concern: [Seq#447]

Address how the value of understory shrub cover for wildlife will be balanced with fuel reduction needs. For instance, how will you prioritize conservation needs of a species like western gray squirrel that favors more open understories for foraging and caching, with the needs of a species like the spotted owl which favors more structured understories for perching and nesting? [ID#468]
Response: [Seq#447]

The treatment area footprint comprises about 20% of the project area, so much of the area will be left in an untreated condition, which will provide a balance of dense and more open forest. The more mesic habitat types would be managed for spotted owls, while the dry pine-dominated stands (and stands that would have historically been pine-dominated) would be managed for squirrels and other species, such as gray flycatchers and white-headed woodpeckers. Habitat needs for these species and the effects of the project on their habitats are found in the Preliminary EA at p. 128-166.

Within the units, design criteria and mitigation measures are an important component to balance the needs of a variety of wildlife species and provide within-stand diversity. These are found in Appendix D of the preliminary EA, starting at p. 341. Mitigations for wildlife habitat start at p. 365, and include:

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.

- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.
- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 15 - 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.
- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees. [ID#468]
  Associated Comments: [Seq#447]
  Address how the value of understory shrub cover for wildlife will be balanced with fuel reduction needs. For instance, how will you prioritize conservation needs of a species like western gray squirrel that favors more open understories for foraging and caching, with the needs of a species like the spotted owl which favors more structured understories for perching and nesting? [18-19]

Concern: [Seq#448]

Gray flycatchers depend on open pine grasslands, while avoiding shrubby vegetation. The EA was a bit misleading in describing their habitat as, "Gray flycatchers use open ponderosa pine / bitterbrush / bunchgrass stands,". While this is true, they use shrublands much less than grasslands. Reintroduction of fire would restore these shrublands to grasslands.

[ID#469]
Response: [Seq#448]

The EA discusses habitat for gray flycatchers (Preliminary EA at 136)- "*Breeding habitats for the gray flycatcher are shrub-steppe and open woodland. On the Okanogan-Wenatchee National Forest, habitat is scattered open ponderosa pine with bitterbrush and bunchgrass understories (Kent Woodruff, USFS, personal communication). In the central Washington Cascades, ponderosa pine trees within gray flycatcher territories are mid-successional size (mean dbh 11-13") (Altman and Woodruff 2011). Nests are generally open-cups in trees or shrubs within a few meters of the ground, up to 20 meters, and nest-building and egg-laying occur in early to mid-June in Washington (Altman and Woodruff 2011).*

Habitat loss and alteration that reduces the amount or suitability of flycatcher habitat is the most likely threat to the gray flycatcher population (Altman and Woodruff 2011) and recent changes in fire regimes threaten persistence of the primary habitat type for this species."

Recommendations for fuels reduction and thinning projects in gray flycatcher habitat, from the Conservation Assessment (Altman and Woodruff 2011) are:

• In thinning and/or fuels reduction projects in mid to late successional ponderosa pine forests:

1) maintain stand-level canopy cover in the 25-60% range with no areas <10% or >70%,

2) maintain stand-level shrub cover (i.e., shrubs and small trees that function as shrubs) < 20%, and

3) maintain stand-level herbaceous ground cover > 50% with some areas of bare ground.

• In early to mid-successional ponderosa pine forests (i.e., trees 15-25 centimeters dbh [6-10 inches dbh]) maintain small openings (i.e., 10-15 meters in diameter [33-49 feet in diameter) throughout the area. (Wildlife Report, Glidden, 2017 at p.22).

Effects of the proposed action are disclosed in the Preliminary EA at p.152. While treatments in shrub-steppe habitats have not been specifically proposed in the Mission project, LFR treatments with underburning are planned for more open forest habitats interspersed with shrub-steppe habitat in Smith Canyon, Elderberry Canyon, Mission Creek, and Buttermilk Creek which will help to restore habitat conditions for this species.

[ID#469]

Associated Comments: [Seq#448]

Gray flycatchers depend on open pine grasslands, while avoiding shrubby vegetation. The EA was a bit misleading in describing their habitat as, “Gray flycatchers use open ponderosa pine / bitterbrush / bunchgrass stands,”. While this is true, they use shrublands much less than grasslands. Reintroduction of fire would restore these shrublands to grasslands. [18-63]

Concern: [Seq#449]

It certainly did not allow time for a literature review of "best available science". The reports provided did provide hundreds more pages of technical papers to read to determine the information the USFS staff considered and avoided in making their presentation. [ID#470]

Response: [Seq#449]

Three comment periods on the preliminary Environmental Assessments for this project have been held. These comment periods have totaled about 90 days. Individual comment periods are not allowed to be longer than 30 days on the Preliminary EA. This should have allowed time for a literature review of "best available science". The reports provided did provide hundreds more pages of technical papers to read to determine the information the USFS staff considered and avoided in making their presentation. [ID#470]

Associated Comments: [Seq#449]

It certainly did not allow time for a literature review of "best available science". The reports provided did provide hundreds more pages of technical papers to read to determine the information the USFS staff considered and avoided in making their presentation. [63-4]

Concern: [Seq#450]

Marla Fox, Rewilding Attorney (WildEarth Guardians) expressed satisfaction in seeing that "the Okanogan-Wenatchee National Forest considering ecosystem restoration was on a large scale to address many of the factors that continue to degrade ecosystems. In general, we support ecosystem restoration. This is especially true for the plan components that address water quality and aquatic habitats, improve watersheds and forest resiliency, and reduce overall road density by returning expensive and deteriorating forest roads to the wild." [ID#471]

Response: [Seq#450]

Thank you for your comment. The Forest is moving towards trying to analysis a larger planning area, such as greater than 50,000 acres, that looks at a broader range of reclamation activities. This larger planning areas helps to try and see the broader effects of project activities on a watershed and hopefully reduces the planning cost of each individual project. [ID#471]

Associated Comments: [Seq#450]

Marla Fox, Rewilding Attorney (WildEarth Guardians) expressed satisfaction in seeing that "the Okanogan-Wenatchee National Forest considering ecosystem restoration was on a large scale to address many of the factors that continue to degrade ecosystems. In general, we support ecosystem restoration. This is especially true for the plan components that address water quality and aquatic habitats, improve watersheds and forest resiliency, and reduce overall road density by returning expensive and deteriorating forest roads to the wild." [63-9]

Concern: [Seq#451]

In figure 4, the EA confuses the Northwest Forest Plan with the 1989 Okanogan Forest Plan developed before the Okanogan Forest merged with the Wenatchee National Forest. [ID#472]

Response: [Seq#451]

The Northwest Forest Plan amended the Okanogan Forest Plan. Figure 4 shows the amended Management Areas that resulted. [ID#472]

Associated Comments: [Seq#451]

In figure 4, the EA confuses the Northwest Forest Plan with the 1989 Okanogan Forest Plan developed before the Okanogan Forest merged with the Wenatchee National Forest. [18-50]

Concern: [Seq#452]

From my (GW) personal experience monitoring the presence of western gray squirrels over hundreds of locations including this project, it is apparent that dense shrubs are a limiting factor in gray squirrel dispersal, food caching, foraging and predator escapement. [ID#473]
Response: [Seq#452]

Thanks for the observation. The Western Gray Squirrel Recovery Plan recommends as a desirable habitat characteristic for Eastern Washington that less than 20% of the understory be shrubs, noting that *"Historically, a higher percentage of the ground cover may have been in pine grass or bunchgrasses."* Effects to gray squirrels are discussed in the Preliminary EA at p.154-155 and p.162. [ID#473]
Associated Comments: [Seq#452]
From my (GW) personal experience monitoring the presence of western gray squirrels over hundreds of locations including this project, it is apparent that dense shrubs are a limiting factor in gray squirrel dispersal, food caching, foraging and predator escapement. [18-64]

Concern: [Seq#453]

These comments are concerned with water quality and roads.

Erosion, compaction, and other alterations in forest geomorphology and hydrology associated with roads seriously impair water quality and aquatic species viability.

In addition, the erosion and sediment that would be caused by traffic and road improvement would impact aquatic health with the road just above the creek [ID#474]
Response: [Seq#453]

Roads are a source of sediment that can negatively impact aquatic health. Even worse than roads are poorly built or maintained roads that have a higher likelihood of erosion. The proposed action will repair roads used for timber haul to make them more stable and less likely to cause harmful sedimentation. Additionally, the proposed actions include decommissioning or closing roads in such a way to reduce impacts to aquatic health. The project also proposed restoration activities such as soil restoration, culvert replacement, beaver habitat enhancement, coarse woody debris enhancement, rock armoring of the road surface at stream crossings, and in Alternative 3, hardening open fords on stream crossings. Thank you for your comments. [ID#474]
Associated Comments: [Seq#453]
Erosion, compaction, and other alterations in forest geomorphology and hydrology associated with

roads seriously impair water quality and aquatic species viability. [27-23]

In addition, the erosion and sediment that would be caused by traffic and road improvement would impact aquatic health with the road just above the creek. [51-50]

Concern: [Seq#454]

This commenter wants more actions related to limiting factors. [ID#475]
Response: [Seq#454]

We believe that one of the primary limiting factors to fish species and aquatic habitat in the project area is the density of roads and road crossings within a portion of the planning area. We are proposing for a large suite of actions that address these limiting factors. Additionally, while the proposed aquatics actions may not specifically address some of the limiting factors of interest, all of the proposed restoration actions will help set the watershed on a trajectory of restoration, including soil treatments, harvest and fuels treatments, and beaver enhancement. [ID#475]
Associated Comments: [Seq#454]
Additionally, actions should be recommended in this project that address other limiting factors. [18-5]

Concern: [Seq#455]

18-67 The nest trees of gray squirrels are often located near water, so while it is important to thin understory and shrub vegetation, it is also important to protect canopy connectivity along drainages, including intermittent draws that may have been wetter before stock and irrigation withdrawals.

[comment:18-68]

Canopy connectivity should be protected along linear corridors along drainages. It is not realistic to try and identify nest sites and buffer them individually, since walk- through wildlife surveys fail to detect gray squirrels most of the time.

[comment end] [ID#476]
Response: [Seq#455]

Connectivity for gray squirrels is important, and will be protected in units using the following mitigation measures:

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.

These are found in Appendix D of the preliminary EA, starting at p. 341. Mitigations for wildlife habitat start at p. 365.

Riparian buffers would also help to retain connectivity, and can be found in the Preliminary EA at p. 368, and are copied below. *The following buffers apply to commercial harvest operations near intermittent streams; no commercial harvest would occur within these buffers:*

- *Buffer stream channel 50 feet on 0-10% slopes.*
- *Buffer stream channel 70 feet on 11-25% slopes.*
- *Buffer stream channel 90 feet on 26-35% slopes. Where commercial harvest occurs near perennial streams, ponds, lakes, and wetlands, operations would occur in winter or, if outside of winter, no equipment would be allowed in Riparian Reserves (RR). Buffer stream channel, lake, wetland, or pond by 100 feet.* [ID#476]

  Associated Comments: [Seq#455]

  The nest trees of gray squirrels are often located near water, so while it is important to thin understory and shrub vegetation, it is also important to protect canopy connectivity along drainages, including intermittent draws that may have been wetter before stock and irrigation withdrawals. [18-67]

  Canopy connectivity should be protected along linear corridors along drainages. It is not realistic to try and identify nest sites and buffer them individually, since walk- through wildlife surveys fail to detect gray squirrels most of the time. [18-68]

Concern: [Seq#456]

[comment:18-77]

A significant limiting factor in gray squirrel mortality is vehicle collision. One year after a gray squirrel was killed (2015) that was known for years to inhabit Libby Creek on the DNR section, there are still no new squirrel nests. During the 2008 Libby sale preparation we suggested several measures to reduce vehicle- caused impacts that are still advisable. These measures also help make roads safer, and reduce fugitive dust emissions.

· Enforce 25mph speed limits and consider lowering them further where dangerous sections occur

· Require road watering

· Surface the section of road near Robertson's that is most dusty

· Route traffic down Gold Creek or Buttermilk Creek

· Don't haul with double- trailers [ID#477]
Response: [Seq#456]

Mortality by vehicles is a threat to squirrel populations, in addition to habitat loss and disease (Linders and Stinson 2007). Approximately 45.3 miles of open roads are found in the habitat for western gray squirrels (Preliminary EA at p. 137). Effects of road changes are found in the Preliminary EA on p.154 and 161, and summarized briefly, below.

Alternative 2- Post-harvest, open road decommissioning would occur on 2.2 miles in western gray squirrel habitat. However, other road changes would result in a net increase of 6.2 miles of open roads in this habitat post-project including 2.4 miles of currently closed road that would be opened to general use.

Alternative 3- Decommissioning of currently open roads would occur on 6.1 miles. Approximately 0.1 mile of currently closed road would be opened, which would result in vehicle traffic and potential loss of squirrels through vehicle strikes.

The other proposed mitigation measures will be considered by the Interdisciplinary Team and Decision Maker. Not hauling with double trailers, if they are road legal, likely can not be restricted by the Forest Service. The Forest Service likely could not restrict hauling down Libby Creek unless there was a specific resource reason. Because of costs of hauling on National Forest System roads, timber haulers generally

haul downhill, the shortest distance to County Roads in the direction of where they are selling the wood being hauled.

Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. [ID#477]
Associated Comments: [Seq#456]
A significant limiting factor in gray squirrel mortality is vehicle collision. One year after a gray squirrel was killed (2015) that was known for years to inhabit Libby Creek on the DNR section, there are still no new squirrel nests. During the 2008 Libby sale preparation we suggested several measures to reduce vehicle- caused impacts that are still advisable. These measures also help make roads safer, and reduce fugitive dust emissions. · Enforce 25mph speed limits and consider lowering them further where dangerous sections occur · Require road watering · Surface the section of road near Robertson's that is most dusty · Route traffic down Gold Creek or Buttermilk Creek · Don't haul with double- trailers Late/ old forests [18-77]

Concern: [Seq#457]

The extent of alternation of habitat for spotted owl and lynx and Critical habitat for lynx is underestimated and should not be permitted. [ID#478]
Response: [Seq#457]

The effects for these species are disclosed in the Preliminary EA at. p.129, 131, 134-135, 140, 142-150, 160-161, and 163-164. There is little habitat for either species in the project area, and even less habitat that would be affected by treatments.

Effects were assessed for spotted owls by identifying suitable habitat (NRF) and comparing the changes in amount and quality of these habitats. Changes to roads in suitable habitat were also assessed to quantify potential disturbance. Commercial thinning would reduce habitat quality, slightly, in two units. This short-term effect would not result in a downgrade of the habitat, and would help maintain the habitat into the future. Noncommercial thinning in suitable habitat would also slightly degrade, but not downgrade the habitat, also helping to maintain habitat into the future. Mitigation measures (Preliminary EA at p. 165 and Wildlife Report (Glidden, 2017, updated, at p. 34) are critical to protecting the currently suitable habitat. These are:

- Limit diameter of large trees cut under trees in stands providing NRF habitat (harvest units 1 and 65), to 21" dbh. Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in

proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls.

- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre.

Lynx habitat was evaluated by identifying habitats within the subalpine fir zone in Lynx Assessment Units (LAUs), and the capability to support the primary prey species of the lynx- snowshoe hare, then identifying treatment units that would intersect the habitat. The project is primarily dry forest restoration, and only 55 acres of boreal habitat in the LAUs were treated. These stands were no longer providing hare habitat because the tree branches had grown out of reach for hares.

Critical Habitat for lynx was assessed by the effects of the treatments on the Primary Constituent Elements (PCEs) of the habitat in boreal forest. Changes to roads in suitable habitat were also measured.

[ID#478]
Associated Comments: [Seq#457]
The extent of alternation of habitat for spotted owl and lynx and Critical habitat for lynx is underestimated and should not be permitted. [68-137]

Concern: [Seq#458]

Comment is concerned with cost and maintenance of rock armoring. [ID#479]
Response: [Seq#458]

We have estimated that the proposed rock armoring would cost $120,000 (see Economics specialist report). This treatment will help reduce stream sedimentation at road crossings used for rock haul. The crossings will be monitored during haul operations and will be maintained as needed (this cost is included in the estimate). Post-haul, the rock armoring will continue to provide stream protection for years with limited maintenance and cost. The contract (modified Alternative 2) is likely to require the armoring of 6 stream crossings, with the other 27 crossings to be armored when funding is available. [ID#479]
Associated Comments: [Seq#458]
The action alternatives include "rocked crossings which require maintenance." (EA 217.) What is the cost of this maintenance, how often would it occur, and what are the environmental impacts if the maintenance doesn't occur? [72-196]

Concern: [Seq#459]

Concerned with impacts to fish species.

Fishery impacts are probably the primary area in which this proposal fails to address a minimum level of environmental stewardship. Salmon and steelhead are critical species to the health of our ecosystems. The water quality decreases that the Mission Project would bring about are completely unacceptable for our struggling fish populations [ID#480]
Response: [Seq#459]

The restoration actions proposed would result in a long-term beneficial impact to aquatic habitat and fish species. For example, replacement of culverts with fish passage culverts will create a pulse of sediment that will reduce water quality in the short term but will lead to an increase in about 6 miles of connected habitat that can be used by steelhead and other fish species. Many restoration projects have short term negative impacts but long term beneficial ones. Other potential restoration projects include constructing 4 rocked open fords on stream crossings in Alternative 3, rock armoring of up to 33 stream crossings, restoring deficit levels of coarse woody debris over up to 8.2 miles of streams, enhancing and protecting up to 6 sites for future beaver utilization, and replacement of up to 15 culverts where existing culverts are undersized on non-fish-bearing streams. [ID#480]
Associated Comments: [Seq#459]
Fishery impacts are probably the primary are in which this proposal fails to address a minimum level of environmental stewardship. Salmon and steelhead are critical species to the health of our ecosystems. The water quality decreases that the Mission Project would bring about are completely unacceptable for our struggling fish populations. [73-5]

Concern: [Seq#460]

This comment is concerned with the harm that harvesting will cause fish.

Methow Valley Ranger District are guided by the Region 6 Aquatic Restoration Strategy and the Okanogan-Wenatchee's Whole Watershed Restoration Procedure. These strategies include identifying priority watersheds for restoration, identifying degraded habitat indicators, and developing treatment actions that move these indicators toward desired conditions. A key part of our strategy is to coordinate the design/implementation of restoration projects with other agencies and interest groups, and increasing the availability of resources such as partnerships to successfully implement the strategy."

While millions of dollars have been spent in this area for salmon recovery, the FS wants to log 6.3 million board feet of timber that will harm all that has been done to recover these native and endangered fish [ID#481]
Response: [Seq#460]

Due to years of fire suppression and other management factors, the forests in the project area are overgrown and not in a natural state. The Vegetation report details the analysis process used to determine the appropriate areas for timber harvest and what types of harvest are recommended. By harvesting timber to restore the forest back to a more natural state, we will likely see beneficial impacts to fish by increased water storage and restoration of diverse habitat types (meadow restoration). Limited harvest will occur in the outer edges of the riparian area and it will only be of conifers in order to help restore hardwood vegetation in the riparian areas. No harvest equipment will enter the riparian reserves. We believe that the harvest treatments proposed will indirectly benefit water quantity, riparian reserve health, and aquatic habitat diversity. [ID#481]

Associated Comments: [Seq#460]

"Methow Valley Ranger District are guided by the Region 6 Aquatic Restoration Strategy and the Okanogan-Wenatchee's Whole Watershed Restoration Procedure. These strategies include identifying priority watersheds for restoration, identifying degraded habitat indicators, and developing treatment actions that move these indicators toward desired conditions. A key part of our strategy is to coordinate the design/implementation of restoration projects with other agencies and interest groups, and increasing the availability of resources such as partnerships to successfully implement the strategy." While millions of dollars have been spent in this area for salmon recovery, the FS wants to log 6.3 million board feet of timber that will harm all that has been done to recover these native and endangered fish. [68-85]

Concern: [Seq#461]

We agree with and support the direction to improve white- headed woodpecker habitat, however we are less confident that the project will provide much benefit to western gray squirrels or gray flycatchers. In addition to the need to do more thinning of shrub- steppe, gray squirrels have neutral or negative impacts from canopy reduction beyond where tree crowns are interconnected.

[ID#482]

Response: [Seq#461]

The project would have mixed effects on habitat for western gray squirrels and gray flycatchers, which are disclosed in the Preliminary EA at p. 152-155 and 161-165.

Mitigations would reduce negative effects from canopy reduction for gray squirrels and are listed in the Preliminary EA at p. 365-367, copied below.

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy.
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.

- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.

Recommendations for fuels reduction and thinning projects in gray flycatcher habitat, from the Conservation Assessment for gray flycatchers (Altman and Woodruff 2011) are:

• In thinning and/or fuels reduction projects in mid to late successional ponderosa pine forests:

1) maintain stand-level canopy cover in the 25-60% range with no areas <10% or >70%,

2) maintain stand-level shrub cover (i.e., shrubs and small trees that function as shrubs) < 20%, and

3) maintain stand-level herbaceous ground cover > 50% with some areas of bare ground.

• In early to mid-successional ponderosa pine forests (i.e., trees 15-25 centimeters dbh [6-10 inches dbh]) maintain small openings (i.e., 10-15 meters in diameter [33-49 feet in diameter) throughout the area. (Wildlife Report, Glidden, 2017 at p.24).

Treatments in shrub-steppe habitats have not been specifically proposed in the Mission project, however, LFR treatments followed by underburning are planned for more open forest habitats interspersed with shrub-steppe habitat in Smith Canyon, Elderberry Canyon, Mission Creek, and Buttermilk Creek which will help to restore more open habitat conditions for gray flycatchers. [ID#482]
Associated Comments: [Seq#461]
We agree with and support the direction to improve white- headed woodpecker habitat, however we are less confident that the project will provide much benefit to western gray squirrels or gray flycatchers. In addition to the need to do more thinning of shrub- steppe, gray squirrels have neutral or negative impacts from canopy reduction beyond where tree crowns are interconnected. [18-66]

Concern: [Seq#462]

This comment is concerned with lack of description of proposed decommissioned roads.

The EA does not present a detailed analysis of the conditions of the roads proposed for decommissioning. We are concerned because we've observed with projects on other national forests the FS inflates the restoration value of road decommissioning in cases where the roads pose little or no risk of watershed damage because they are essentially naturally recovered. [ID#483]

Response: [Seq#462]

We acknowledge that some of the roads slated for decommissioning are already naturally recovered but are still officially "open" in the FS road system database. Any changes to this status must go through the NEPA process and this project will officially close/decommission many of these types of roads. If there is no risk of road failure that could cause negative resource effects, overgrown roads will likely be left as they are. The other roads proposed for decommissioning will be prioritized as funding becomes available and potentially the source of that funding. For example, in the South Summit II project area, groups of roads have been decommissioning based on impacts to stream habitat, risk of failure, and proximity to priority roads (low-risk roads may be decommissioned as part of a group of roads in the same area to reduce costs). While we are not required to do a priority analysis at this point in the NEPA process, the aquatics staff will work with partner agencies and organizations to prioritize decommissioning. [ID#483]

Associated Comments: [Seq#462]

The EA does not present a detailed analysis of the conditions of the roads proposed for decommissioning. We are concerned because we've observed with projects on other national forests the FS inflates the restoration value of road decommissioning in cases where the roads pose little or no risk of watershed damage because they are essentially naturally recovered. [72-189]

Concern: [Seq#463]

I wrote to you regarding this project last summer, and one angle I suggested exploring at that time was the generation of a recreation-first alternative. It is not clear to me that proposal was considered. The only possible future for industries like logging and grazing lies in their transition to sustainable practices, which the Mission Project proposal does not incorporate. Recreational uses of this area may very likely bring about greater economic benefits than extractive industries while causing far less ecological degradation. Recreation also must be done sustainably, but would arguably allow for more sustainable use of the resources for which the Forest Service is responsible.

[ID#484]

Response: [Seq#463]

The objective of the Mission project is restoration. A recreation-first alternative is not part of the objective. Most recreation projects require separate NEPA analysis and would be more specific to particular uses. The Mission project analysis does not affect any recreational activities beyond some snowmobile use during winter haul. This proposal provides the environmental review needed for replacement of the West Fork Buttermilk Bridge if funding is available which would benefit recreational use of apportion of the project area.

[ID#484]

Associated Comments: [Seq#463]

I wrote to you regarding this project last summer, and one angle I suggested exploring at that time was the generation of a recreation-first alternative. It is not clear to me that proposal was considered. The only possible future for industries like logging and grazing lies in their transition to sustainable practices, which the Mission Project proposal does not incorporate. Recreational uses of this area may very likely bring about greater economic benefits than extractive industries while causing far less ecological degradation. Recreation also must be done sustainably, but would arguably allow for more sustainable use of the resources for which the Forest Service is responsible. [73-6]

Concern: [Seq#464]

[comment:18-70]

The EA apparently misinterprets the mule deer status document by Fitkin and Heinlen (2012) by applying it only to forested habitats rather than non- forested shrub- steppe. This narrow interpretation is used as justification to seek an amendment of the Forest Plan Standard for canopy cover reduction. Omitted from the EA is a another statement by Fitkin and Heinlen that clearly applies to open shrub-steppe, "[a declining mule deer population] ... is likely a function of the reduced productivity of aging shrubs (particularly bitterbrush and ceanothus) and the lack of recruitment of new shrubs under continued fire suppression regimes."

[comment end]

[comment:18-71]

It should be clear that mule deer thermal cover provided by open canopy forests is not necessarily the same as mule deer winter range, which also depends in large part on non- forested shrub- steppe.

[comment end]

[comment:18-72]

The key feature lacking in the EA is to describe a resilient desired future condition for mule deer that is applicable to this landscape, but the EA misses this opportunity and instead goes further and further out on a limb to justify canopy reduction first by inappropriately using 1989 Forest Plan standards that do not account for shrub- steppe, then by misinterpreting forage needs as if they were forest needs, then by pulling in a lot of irrelevant documents on elk habitat needs while claiming they are about deer, all the while completely ignoring our scoping comments that clarified this.

[comment end] [ID#485]
Response: [Seq#464]

The purpose of the Mission project is to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease, and wildfire events and to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire (Preliminary EA at p.13). Most treatments are to forested stands, so effects to wildlife species, including deer, are focused on effects to those stands from thinning and other fuels treatments.

No intent to downplay the importance of open shrub-steppe habitat on winter range should be inferred by the focus on the forested stands where most of the treatment would occur. Both forest and shrub steppe are key components of winter range. Thinning and burning in forested stands opens the canopy and provides additional forage for deer. More open stands are consistent with the historical condition and are more resilient to disturbance. Additional forage on winter (and all seasonal) ranges is a benefit, particularly with the loss of winter forage from the 2014 and 2015 wildfires.

The justification for a forest plan amendment is based on literature review that failed to find a need for *40%* thermal cover and the landscape analysis that found an overabundance of dense stands. The amendment is needed to improve sustainability of forested stands and reduce risk of large-scale loss of important habitats, including cover and forage for deer.

I cited Cook's 1996 and 1998 papers because they were used in our Forest Restoration Strategy (2012), which is the basis for the Mission Project. Other literature also emphasized the importance of forage.

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

Local studies of mule deer winter range use in Okanogan and Chelan counties found little use of dense cover stands. Naney and Myers (undated) followed 11 radio-collared deer and made 692 observations

representing 1,044 deer in the Methow Valley during two winters. Of the deer observed, 73% were on sites with no conifer crown closure. Five % of the total winter observations were of deer using cover with greater than 60% crown closure. Ninety % of the winter range was dominated by habitat classes dominated by bitterbrush, sagebrush, bunchgrass, and pole-sized trees with undergrowth of shrubs or bunchgrass. In this study, deer did not appear to prefer thermal cover. However, they noted that observations were daylight hours only, and during winters that were warmer and drier than normal. Moore (2003), in a similar study in Chelan county, found that mule deer use was positively associated to areas without cover, and had a negative association to areas of cover. No difference in day and night habitat use was observed.

Of the references provided in your scoping document- I discussed findings from Cook et al. (1998 and 2005). Forrester and Wittmer (2013) discussed population dynamics, but not thermal cover, and supports the need for quality forage. Bender (2012) discusses mule deer habitats in arid and semi-arid habitats with very different plant associations (pinyon, juniper, oak-mountain mahogany, mesquite shrublands and others) than the winter range habitats dominated by ponderosa pine, mixed conifer, and open shrub-steppe habitats of bitterbrush, serviceberry and bluebunch wheatgrass that are used by the migratory mule deer population in northcentral Washington. The mule deer population in the Bender publication does not appear to be migratory.The percentages recommended in the Bender publication are not applicable. The key findings in Cook (2000) support the need for forage over a specific amount of cover, at least for elk. The four findings were that:

- No significant positive effect of thermal cover was found on condition of elk during any of four winter-long experiments and two summer-long experiments.In fact, during winter, dense cover actually provided the most costly energetic environment.
- The lack of significant positive benefits of thermal cover during any winter of the study is consistent with every other study of thermal cover influences on large wild ungulates conducted under rigorous scientific conditions.
- During summer, results showed no indication that elk performance was influenced in any way by forest cover treatments, despite temperatures significantly above normal both summers. Other researchers have found elk to be surprisingly tolerant of high summer temperatures.
- The energetic benefits of thermal cover seem inconsequential, thus leaving forage effects as the primary mechanism through which habitat influences individual animal performance.

In the article, Cook notes that "the finding that thermal cover failed to provide energetic benefits during winter is consistent with every other study of thermal cover influence on large ungulates conducted under rigorous scientific conditions."

Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter

range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a sustained basis (MA5-6B)."

Derek Churchill's analysis of forest restoration needs based on stand structure departures indicated that dense stands were overrepresented in the landscape compared to historical conditions (Preliminary EA at p.64). These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire.

[ID#485]

Associated Comments: [Seq#464]

The EA apparently misinterprets the mule deer status document by Fitkin and Heinlen (2012) by applying it only to forested habitats rather than non- forested shrub- steppe. This narrow interpretation is used as justification to seek an amendment of the Forest Plan Standard for canopy cover reduction. Omitted from the EA is a another statement by Fitkin and Heinlen that clearly applies to open shrub-steppe, "[a declining mule deer population] ... is likely a function of the reduced productivity of aging shrubs (particularly bitterbrush and ceanothus) and the lack of recruitment of new shrubs under continued fire suppression regimes." [18-70]

It should be clear that mule deer thermal cover provided by open canopy forests is not necessarily the same as mule deer winter range, which also depends in large part on non- forested shrub- steppe. [18-71]

The key feature lacking in the EA is to describe a resilient desired future condition for mule deer that is applicable to this landscape, but the EA misses this opportunity and instead goes further and further out on a limb to justify canopy reduction first by inappropriately using 1989 Forest Plan standards that do not account for shrub- steppe, then by misinterpreting forage needs as if they were forest needs, then by pulling in a lot of irrelevant documents on elk habitat needs while claiming they are about deer, all the while completely ignoring our scoping comments that clarified this. [18-72]

Concern: [Seq#465]

Also, the road is a high use recreational road with people touring, going for hikes and visiting Blackpine Lake. Even weekday log haul on this road is highly dangerous. [ID#486]

Response: [Seq#465]

Thank you for your comment. Warning signs and public notices will be present on those roads used for logging traffic. Most of the Forest Service spur roads off the main roads, such as the 4300 road, will be

signed for logging use only when logging operations are taking place. Portions of the 4300 road may also be closed, particularly the bottom portion of the Libby Creek side through the slide area during log haul, but the Buttermilk side may be closed also, but not both sides at the same time.. [ID#486]
Associated Comments: [Seq#465]
Also, road is a high use recreational road with people touring, going for hikes and visiting Blackpine Lake. Even weekday log haul on this road is highly dangerous. [63-54]

Concern: [Seq#466]

From a somewhat more self-serving perspective, I also support the proposed action to restore the bridge at Buttermilk Creek, which would restore access to a ridge trail - now in very short supply - into the Sawtooth Wilderness [ID#487]
Response: [Seq#466]

Thank you for your support of the Mission project and this part of the analysis. The Mission Restoration analysis will provide the necessary NEPA analysis for restoration of this bridge, but funding will need to be found to replace the bridge before it can be installed. [ID#487]
Associated Comments: [Seq#466]
From a somewhat more self-serving perspective, I also support the proposed action to restore the bridge at Buttermilk Creek, which would restore access to a ridge trail - now in very short supply - into the Sawtooth Wilderness. [64-4]

Concern: [Seq#467]

Considering the road closers for Libby Creek/Buttemilk Butte areas I request you keep the 4300-200 Rd, Blackpine Beaver Ponds open! Needs to be 4' wide for local snow-mobilers and hikers and mountain bike riders. [ID#488]
Response: [Seq#467]

The 4300-200 road will be decommissioned as an open road in Alternatives 2 and 3, but a 4 foot wide "trail" will be maintained as a "winter-only" trail. Other non-motorized travel will be allowed during the other seasons, but the trail will only be maintained for winter travel and not added to the District trail system as an official trail other than a winter use one. [ID#488]
Associated Comments: [Seq#467]

Concidering the road closers for Libby Creek/Buttemilk Butte areas I request you keep the 4300-200 Rd, Blackpine Beaver Ponds open! Needs to be 4' wide for local snow-mobilers and hikers and mountain bike riders. [74-1]

Concern: [Seq#468]

Where will the hikers hike, kayakers kayak, campers camp, photographers photograph, tourists vacation when the natural forest goes industrial engineered in a predictable manmade pattern?. [ID#489]
Response: [Seq#468]

Thank you for your comment. The forest will no go to being an industrial engineered in a predictable manmade pattern. There will still be areas for the hikers to hike, kayakers to kayak, campers to camp, photographers to photograph, etc. [ID#489]
Associated Comments: [Seq#468]
* Where will the hikers hike, kayakers kayak, campers camp, photographers photograph, tourists vacation when the natural forest goes industrial engineered in a predictable manmade pattern? [67-14]

Concern: [Seq#469]

The EA doesn't analyze or disclose the extent of snowmobiling across the project area. It merely mentions groomed trails. Effects of cross-country travel are not considered. These effects must be considered in the NEPA document. [ID#490]
Response: [Seq#469]

Snowmobile use will not change under the Mission project. Snowmobile use analysis was not part of the proposed action beyond maintenance of the groomed snowmobile trails during winter harvest, which meets the Okanogan Forest Plan. No further analysis was needed for this project. [ID#490]
Associated Comments: [Seq#469]
The EA doesn't analyze or disclose the extent of snowmobiling across the project area. It merely mentions groomed trails. Effects of cross-country travel are not considered. These effects must be considered in the NEPA document. [72-143]

Concern: [Seq#470]

]

Forest Plan standard 8-8 requires, "Off road vehicle opportunities shall be designed to minimize damage to soil, water vegetation, and other resources, to minimize disturbance of wildlife or significant disruption of wildlife habitat, and to minimize conflict with other resources." This is identical to Executive Orders requirements, and the EA fails to address the requirements. [ID#491]

Response: [Seq#470]

Off road use is presently being addressed under the Okanogan-Wenatchee Travel Management analysis and is not part of the Mission Restoration project analysis which only looks at road related use and road closures as part of the analysis. [ID#491]

Associated Comments: [Seq#470]

Forest Plan standard 8-8 requires, "Off road vehicle opportunities shall be designed to minimize damage to soil, water vegetation, and other resources, to minimize disturbance of wildlife or significant disruption of wildlife habitat, and to minimize conflict with other resources." This is identical to Executive Orders requirements, and the EA fails to address the requirements. [72-192]

Concern: [Seq#471]

Overall, the rest of the project area would meet a range of Visual Quality Objectives from Retention to Partial Retention to Modification." The EA fails to disclose the objective for each area and demonstrate compliance. The locations for compliance determination are too limited to get an idea of the real visual impacts that the public would experience. [ID#492]

Response: [Seq#471]

Each areas scenic quality objectives are within the Visual Quality Objectives set forth in the Okanogan Forest Plan, specifically in Management Area 5 which is managed for partial retention or retention along the Buttermilk road corridor. This has been achieved in those fuel and harvest unit prescriptions in this corridor. Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring contains the following measures:

- Visual Quality Objectives for retention or partial retention is required in MA-5 and MA-17. Monitor treatment design to manage the foreground of the travel route of Forest Service Road 4300 and Black Pine Lake Campground to minimize the visual impact of project activities. Repeating form, line, color, texture, pattern, and scale common to the valued landscape character being viewed is

the most effective way to maintain scenic integrity in the High and Moderate Visual Quality Objective (VQO) Scenic Integrity Levels

■

Methods used to control prescribed burns should not dominate naturally established form, line, color, and texture of the area in MA-5 and MA-17 viewsheds. Use vegetation screens or diminishing stark dozer or firelines along hillsides in the viewshed to retain the scenic integrity of the High or Moderate Quality Objective (VQO) Scenic Integrity Levels.

■

Minimize visual impacts of landing sites in the FSR 4300 corridor. when possible, locate landings out of the immediate foreground (or seen area) in MA-5 Retention allocation areas, or screen as much as possible where vegetation is available and consistent with fuel treatment objectives, or use existing landings where they exist and seed after the project is complete. [ID#492]

Associated Comments: [Seq#471]

Overall, the rest of the project area would meet a range of Visual Quality Objectives from Retention to Partial Retention to Modification." The EA fails to disclose the objective for each area and demonstrate compliance. The locations for compliance determination are too limited to get an idea of the real visual impacts that the public would experience. [72-219]

Concern: [Seq#472]

This comment is concerned with removal of fish.

Project Design Features and Mitigation Measures": The Hydrologic/Aquatic Design Features and Mitigation Measures were developed to lessen impacts from proposed actions, provide for meeting Okanogan Forest Plan and Northwest Forest Plan Standard and Guidelines, and to meet resource objectives. Measures include working in fish habitat during the Washington State designated instream work windows, maintaining protective no-treatment buffers along streams and wetlands during harvest activities, isolating the work area fish during culvert upgrades, removing all fish from the work area prior to work in occupied habitat, and using standard erosion control BMPs."[This presentation acknowledges impacts, presents mitigation measures that won't be initiated unless or until adequate public funding is allocated and after commercial logging is completed. The plan for "removing all fish from the work area" is similar to the rationale that mature trees must be commercially logged to prevent them from burning. [ID#493]

Response: [Seq#472]

When we say "removal of fish" we are referring to removing fish from a localized area where in-stream work is being completed (culvert replacement primarily). We will set up nets both upstream and

downstream of the construction site and use an electrofishing unit to safety remove the fish and place them in safe holding areas. After work is completed, the fish will be released back in the location of capture. This is a very typical technique and does not harm the fish. [ID#493]

Associated Comments: [Seq#472]

"Project Design Features and Mitigation Measures": The Hydrologic/Aquatic Design Features and Mitigation Measures were developed to lessen impacts from proposed actions, provide for meeting Okanogan Forest Plan and Northwest Forest Plan Standard and Guidelines, and to meet resource objectives. Measures include working in fish habitat during the Washington State designated instream work windows, maintaining protective no-treatment buffers along streams and wetlands during harvest activities, isolating the work area fish during culvert upgrades, removing all fish from the work area prior to work in occupied habitat, and using standard erosion control BMPs."[This presentation acknowledges impacts, presents mitigation measures that won't be initiated unless or until adequate public funding is allocated and after commercial logging is completed. The plan for "removing all fish from the work area" is similar to the rationale that mature trees must be commercially logged to prevent them from burning. [63-93]

Concern: [Seq#473]

This sale could eliminate consideration of the area under forest planning for Recommended Wilderness or for Wilderness designation. This is a serious element that requires analysis. [ID#494]

Response: [Seq#473]

As previously stated, this project can not make a decision on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan Revision. This project can only make changes to the character of the unroaded area. A Forest Plan amendment is different than a Forest Plan Revision. Section 3.15.9, Wilderness, Inventory Roadless Areas, and Unroaded Areas, discusses project effects on the existing Lake Chelan - Sawtooth Wilderness Area (no impacts) and the Sawtooth Inventoried Roadless Area [IRA] (2 acres of underburning). Treatments proposed in the IRA and unroaded area are designed to restore low ranges of crown fire risk and to reduce wildfire hazards in a priority WUI treatment area as designated by the Community Wildfire Protection Plan. These proposed actions would not degrade the quality of the IRA or unroaded area, or change the potential of these areas being considered for wilderness or IRA designation in the future. The project would have minor impacts on the untrammeled quality of the IRA or unroaded area, or change the potential of these areas to be considered for wilderness or IRA designation in the future. There would be no impacts to the undeveloped or natural qualities since there would be no roads constructed. There would not be any impacts to the opportunities for solitude or primitive or unconfined recreation because the project portions of the project area are not currently offering these opportunities due to close proximity to private land and

open roads. [ID#494]
Associated Comments: [Seq#473]
This sale could eliminate consideration of the area under forest planning for Recommended Wilderness or for Wilderness designation. This is a serious element that requires analysis. [70-15]

Concern: [Seq#474]

The FS's Northern Region explains the concept of "Roadless Expanse" in a document entitled "Our Approach to Roadless Area Analysis of Unroaded Lands Contiguous to Roadless Areas" (12/2/10). In summary, this paper is based on some judicial history regarding the Roadless Area Conservation Rule. This 2010 document states that "projects on lands contiguous to roadless areas must analyze the environmental consequences, including irreversible and irretrievable commitment of resources on roadless area attributes, and the effects for potential designation as wilderness under the Wilderness Act of 1964. This analysis must consider the effects to the entire roadless expanse; that is both the roadless area and the unroaded lands contiguous to the roadless area." (Emphasis added.) The Mission EA does not "consider the effects to the entire roadless expanse." The EA does not take a hard look at the Mission project impacts on the Roadless Characteristics and Wilderness Attributes of the Sawtooth Inventoried Roadless Area and uninventoried roadless making up the Roadless Expanse. The public must be able to understand if the project would cause irreversible and irretrievable impacts on the suitability of any portion of the Roadless Expanse for future consideration for Recommended Wilderness or for Wilderness designation under forest planning. [ID#495]
Response: [Seq#474]

This analysis is contained in the preliminary EA in section 3.15.9, Wilderness, Inventoried Roadless Areas, and Unroaded Areas of the Revised Preliminary EA, page 306. [ID#495]
Associated Comments: [Seq#474]
The FS's Northern Region explains the concept of "Roadless Expanse" in a document entitled "Our Approach to Roadless Area Analysis of Unroaded Lands Contiguous to Roadless Areas" (12/2/10). In summary, this paper is based on some judicial history regarding the Roadless Area Conservation Rule. This 2010 document states that "projects on lands contiguous to roadless areas must analyze the environmental consequences, including irreversible and irretrievable commitment of resources on roadless area attributes, and the effects for potential designation as wilderness under the Wilderness Act of 1964. This analysis must consider the effects to the entire roadless expanse; that is both the roadless area and the unroaded lands contiguous to the roadless area." (Emphasis added.) The Mission EA does not "consider the effects to the entire roadless expanse." The EA does not take a hard look at the Mission project impacts on the Roadless Characteristics and Wilderness Attributes of the Sawtooth Inventoried Roadless Area and uninventoried roadless making up the Roadless Expanse. The public must be able to understand if the project would cause irreversible and irretrievable impacts on the suitability of any portion of the Roadless Expanse for future consideration for Recommended Wilderness or for Wilderness designation under forest planning. [72-57]

Concern: [Seq#475]

Most roadless areas, particularly in the interior western U.S., are at middle to high elevations (Henjum et al. 1994). Higher elevations are cooler, receive more moisture, and have a shorter summer dry season than lower elevations. They are typically characterized by a regime of low- frequency, high-intensity fires. Roadless areas are therefore less likely to have current fire regimes that are significantly different from historical conditions (Beschta et al. 2004) and are therefore of low priority for fuel treatment. Roadless areas have a lower potential for high- intensity fires than roaded areas partly because they are less prone to human caused ignitions (DellaSala et al. 1995, USDA Forest Service, 2000). The EA fails to acknowledge the best scientific information that recognizes the high ecological integrity and functioning of unmanaged areas. [ID#496]

Response: [Seq#475]

Thank you for your comment. Only about 2 acres of proposed fuels treatment are proposed in the Sawtooth Inventoried Roadless Area and that is so that a ridge top control line can be used instead of a mid-slope line since the boundary of the IRA does not follow a topographic break. No proposed fuels treatment is in the Lake Chelan - Sawtooth Wilderness Area. [ID#496]

Associated Comments: [Seq#475]

Most roadless areas, particularly in the interior western U.S., are at middle to high elevations (Henjum et al. 1994). Higher elevations are cooler, receive more moisture, and have a shorter summer dry season than lower elevations. They are typically characterized by a regime of low- frequency, high-intensity fires. Roadless areas are therefore less likely to have current fire regimes that are significantly different from historical conditions (Beschta et al. 2004) and are therefore of low priority for fuel treatment. Roadless areas have a lower potential for high- intensity fires than roaded areas partly because they are less prone to human caused ignitions (DellaSala et al. 1995, USDA Forest Service, 2000). The EA fails to acknowledge the best scientific information that recognizes the high ecological integrity and functioning of unmanaged areas. [72-58]

Concern: [Seq#476]

[comment:18-79]

Having been an owl surveyor during the owl surveys of the 1980s and 1990s referred to in the EA (p. 17), I (GW) would agree that, "[T]he western edge of the project area … may be a dispersal route between more mesic habitats in the Twisp River drainage and higher elevations of Gold Creek",

however the claim that, "No nests or activity centers have been located" is inaccurate because Libby Creek lies well within the home ranges of nests located in War Creek and in Foggy Dew, and in addition, surveys do not completely cover the entire project area. The presence of these two nests is ample evidence that spotted owl habitat was sufficient for two home ranges between Foggy Dew and War Creek, even if not being centered directly within Libby or Buttermilk Creeks.

[comment:18-80]

Management of this biological corridor for spotted owl connectivity should strive to maintain stringers with over 50% canopy connectivity while thinning from below to improve the health of large old trees and reduce wildfire hazards to a manageable level. This will also benefit western gray squirrel habitat. [ID#497]

Response: [Seq#476]

The statement "no nests or activity centers have been located" is out of context, and refers to the project area. The paragraph (Preliminary EA at p. 132) reads " *While surveys done in the 1980's and 1990's have documented the presence of spotted owls in the project area, follow-up visits indicated that they were either transient through the area or resident single birds. No nests or activity centers have been located. Recent surveys have not located spotted owls in the project area."*

The provincial median annual home range radius for spotted owls in the Washington Cascade province is 1.8 miles (USFWS, 2012). Libby Creek is not within a home range radius for either War Creek or Foggy Dew owls.

Owl surveys covered all concentrations of suitable habitat in the project area, and were completed to protocol (USFWS, 2012). Survey protocol requires only that suitable habitat is surveyed.

Connectivity between the Twisp River area and Foggy Dew, and within the project area is important. The treatment area footprint comprises about 20% of the area, so much of the area will be left in an untreated condition, which will provide a balance of dense and more open forest. Mitigations to retain connectivity include riparian buffers (Preliminary EA at p. 368), and the following (Preliminary EA at p. 341):

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide

stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.

- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 15 - 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.
- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees.
- Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls (Wildlife Report, Glidden, 2017).
- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre. (Wildlife Report, Glidden, 2017).

Thinning from below is planned, with the exception of the 80 acres (since been reduced to about 59 acres, 12/09/2017) that would be regeneration harvested (variable retention regeneration). [ID#497]
Associated Comments: [Seq#476]
Having been an owl surveyor during the owl surveys of the 1980s and 1990s referred to in the EA (p. 17), I (GW) would agree that, "[T]he western edge of the project area … may be a dispersal route between more mesic habitats in the Twisp River drainage and higher elevations of Gold Creek", however the claim that, "No nests or activity centers have been located" is inaccurate because Libby Creek lies well within the home ranges of nests located in War Creek and in Foggy Dew, and in addition, surveys do not completely cover the entire project area. The presence of these two nests is ample evidence that spotted owl habitat was sufficient for two home ranges between Foggy Dew and War Creek, even if not being centered directly within Libby or Buttermilk Creeks. [18-79]

Management of this biological corridor for spotted owl connectivity should strive to maintain stringers with over 50 canopy connectivity while thinning from below to improve the health of large old trees and reduce wildfire hazards to a manageable level. This will also benefit western gray squirrel habitat. [18-80]

Concern: [Seq#477]

Create a Roadless Area around Lookout Mountain. There is a need to assess the Lookout PWA and adjacent "roadless area"for qualification as wilderness or other designation. RESPONSE:This is outside the scope of the project because actions of this nature are addressed at the Forest level during forest plan revision, not during smaller-scale planning projects. The effects on Wilderness, Inventoried Roadless Areas, and Unroaded/Undeveloped Character is discussed in Chapter 3 in the Other Required Disclosures section of this document. COMMENT: This is NOT a small scale project and, therefore,

should not be implemented until the Forest Plan revision addresses the roadless area and PWA issues set forth [ID#498]

Response: [Seq#477]

The planning area is relatively large in comparison with past planning areas, but future planning areas are likely to be this size or larger. The amount of proposed commercial harvest treatment is similar in size to other recent similar projects. When the Forest Plan will be revised has not been determined but may be several years.

As previously stated, this project can not make a decision on changing wilderness or inventoried roadless area boundaries. Decisions on changing wilderness or inventoried roadless area boundaries can only be made through a Forest Plan Revision. This project can only make changes to the character of the unroaded area. A Forest Plan amendment is different than a Forest Plan Revision. Section 3.15.9, Wilderness, Inventory Roadless Areas, and Unroaded Areas, discusses project effects on the existing Lake Chelan - Sawtooth Wilderness Area (no impacts) and the Sawtooth Inventoried Roadless Area [IRA] (2 acres of underburning). Treatments proposed in the IRA and unroaded area are designed to restore low ranges of crown fire risk and to reduce wildfire hazards in a priority WUI treatment area as designated by the Community Wildfire Protection Plan. These proposed actions would not degrade the quality of the IRA or unroaded area, or change the potential of these areas being considered for wilderness or IRA designation in the future. The project would have minor impacts on the untrammeled quality of the IRA or unroaded area, or change the potential of these areas to be considered for wilderness or IRA designation in the future. There would be no impacts to the undeveloped or natural qualities since there would be no roads constructed. There would not be any impacts to the opportunities for solitude or primitive or unconfined recreation because the project portions of the project area are not currently offering these opportunities due to close proximity to private land and open roads. [ID#498]

Associated Comments: [Seq#477]

Create a Roadless Area around Lookout Mountain. There is a need to assess the Lookout PWA and adjacent "roadless area"for qualification as wilderness or other designation. RESPONSE:This is outside the scope of the project because actions of this nature are addressed at the Forest level during forest plan revision, not during smaller-scale planning projects. The effects on Wilderness, Inventoried Roadless Areas, and Unroaded/Undeveloped Character is discussed in Chapter 3 in the Other Required Disclosures section of this document. COMMENT: This is NOT a small scale project and, therefore, should not be implemented until the Forest Plan revision addresses the roadless area and PWA issues set forth. [68-66]

Concern: [Seq#478]

Indicate acreage and location of Lookout Roadless Area (National Forest Management Act requirement). Okanogan Forest Plan land allocations may be inappropriate within roadless areas that were omitted

from the scoping document Figure 4. (See Figure attached below). [ID#499]
Response: [Seq#478]

The area previously discussed, prior to terminating Forest Plan Revision for the Okanogan-Wenatchee National Forest, was about 6,055 acres. Project treatments in this proposed area are mostly along existing roads, in existing plantations, or are ladder fuel reduction with underburning and will do little to change the character of this area and will make the area more resilient to insects, disease, or fires. [ID#499]
Associated Comments: [Seq#478]
Indicate acreage and location of Lookout Roadless Area (National Forest Management Act requirement). Okanogan Forest Plan land allocations may be inappropriate within roadless areas that were omitted from the scoping document Figure 4. (See Figure attached below). [18-34]

Concern: [Seq#479]

Burning in the spring impacts the rearing of young wildlife too detrimentally; [ID#500]
Response: [Seq#479]

Prescribed burning is often used to restore forest habitats and to reduce risk of wildfire. Spring burns may remove grass and shrubs that provide forage and cover for small mammals, birds, ungulates and invertebrates, but in general, burn cooler than fall burns, so fewer trees and large logs are lost (Pilliod, 2006). Spring burning will affect some animals in a positive way, and others, negatively. Direct mortality of wildlife due to equipment, incineration or asphyxiation during fuel reduction burning is considered to be low, but that is anecdotal information (Pilliod et al. 2006). Spring burning during the breeding season may result in mortality of ground- and shrub-nesting bird nestlings and species living within litter such as small mammals, reptiles, amphibians and invertebrates (Pilliod et al. 2006). Pilliod et al. conclude that "it should be recognized that a planned burn will likely kill some individuals and mortality can be significant for some populations", and that species with limited distributions need special consideration. Post-burn changes in structure and composition of vegetation will affect species, as well. Species' response depends on many things, including age, life history and species' mobility, availability of refugia, burning conditions and timing. [ID#500]
Associated Comments: [Seq#479]
Burning in the spring impacts the rearing of young wildlife too detrimentally; [51-43]

Concern: [Seq#480]

[comment:18-89]

For instance, the wildlife report cites no effect from the transportation plan on western gray squirrels, which is completely irrelevant to the cumulative impacts of the roads themselves on western gray squirrels over the last hundred years, combined with the other effects of vegetation changes, fire suppression and logging.

[comment end]

78-37 We have considerable concern that the western gray squirrel (a State Threatened Species) will be adversely affected by the commercial logging of mature trees in the project area. The western gray squirrel depends on mature ponderosa pine and Douglas-fir stands that maintain canopy connectivity. The logging plans may destroy this canopy connectivity and may also remove trees that the squirrels use as nest sites. The persistence of the western gray squirrel population has already been significantly impacted in the Methow Ranger District by wildfires in 2014 and 2015, so further degradation of habitat is not advisable.

68-139 The gray squirrel has been making a comeback in the project area. Harvest, hauling, thinning and burning would all be harmful disturbance to the gray squirrel.

72-128 "Mortality (of Western Gray Squirrels) due to vehicle strikes would continue on 45.3 miles of open roads." (184.) What is the best available science on threats posed to viability of Western Gray Squirrels from motorized traffic? [ID#501]
Response: [Seq#480]

Effects to western gray squirrels as a result of the changes to the project roads network are discussed in the preliminary EA at p. 137, 141, 154, 161-162, and 165.

If the transportation plan referred to is the travel management project (due to be signed in 2017), the Wildlife Report (Glidden, 2017) cumulative effects section for alternative 2, at p.50 and 53 says that "Road changes from the Travel Management project would not change the potential for mortality to squirrels because they close ML 1 roads to off-road vehicles, which are travelling at lower speeds and not likely to strike squirrels. There is no overlap between Travel Management and the Mission project for this species."

Project

Overlap In Time Space

Measurable

Cumulative

Effect?

Extent,

Detectable?

Travel management -general

Goshawks

Gray flycatchers

White-headed woodpeckers

Western gray squirrels

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

No

No

No

No

No

No

Travel management would close ML 1 roads to OHV use and close the forest to off-road motorized travel, which would reduce disturbance, habitat avoidance and access-related mortality.

Access for falconers would be reduced by road decommissioning and closures of ML1 roads to all motorized vehicles. However, the extent of use of this area by falconers is unknown. No goshawks were found during surveys.

Effects to this species is probably limited.

Effects to this species would be from changes in snag levels, which would occur in the Mission project from open road decommissioning. No effects on snags would occur from the Travel Management project.

Mortality to western gray squirrels is the primary effect of open roads on this species, and would be reduced due to road decommissioning and closures in the Mission project. Travel management would close ML1 (currently closed) roads to OHVs. However, slower speeds used by OHVs on primitive roads would make it less likely that squirrels would be hit.

The effects of the vegetation management are disclosed in the Preliminary EA at p.154-155, and 162-165. Alternative 2 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing. Effects would occur on 10,256 acres, about 30% of the project area. Post-project, open road mileage would increase, increasing risk of mortality from vehicle strikes. Alternative 2 would decrease the risk of large-scale habitat loss from wildfire. Alternative 3 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing. Effects would occur on 10,256 acres, about 30% of the project area. Post-project, open road mileage would decrease, due to the decommissioning of roads. Alternative 3 would increase habitat resilience to severe, large-scale wildfire, protecting it into the future.

Mitigations would reduce negative effects from canopy reduction for gray squirrels and are listed in the Preliminary EA at p. 365-367, copied below.

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy.
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.

- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.

No baseline population data is available for the western gray squirrel in the Methow Valley, so it is unknown whether the population is increasing or decreasing (Scott Fitkin, WDFW, personal communication, 2017).

Best available science on mortality of western gray squirrels from vehicles is found in the Recovery Plan (Linders and Stinson, 2007). The Plan concludes that *"major threats to the western gray squirrel in Washington include habitat loss and degradation, road-kill mortality, and disease".* However, Vander Haegen et al. (2013) determined cause of death for 81 western gray squirrels in southcentral Washington and found only 1 killed by a vehicle strike (<1%). Cause of mortality for the remainder was disease (37%) and predation (63%). [ID#501]

Associated Comments: [Seq#480]

For instance, the wildlife report cites no effect from the transportation plan on western gray squirrels, which is completely irrelevant to the cumulative impacts of the roads themselves on western gray squirrels over the last hundred years, combined with the other effects of vegetation changes, fire suppression and logging. [18-89]

The gray squirrel has been making a comeback in the project area. Harvest, hauling, thinning and burning would all be harmful disturbance to the gray squirrel. [68-139]

"Mortality (of Western Gray Squirrels) due to vehicle strikes would continue on 45.3 miles of open roads." (184.) What is the best available science on threats posed to viability of Western Gray Squirrels from motorized traffic? [72-128]

We have considerable concern that the western gray squirrel (a State Threatened Species) will be adversely affected by the commercial logging of mature trees in the project area. The western gray squirrel depends on mature ponderosa pine and Douglas-fir stands that maintain canopy connectivity. The logging plans may destroy this canopy connectivity and may also remove trees that the squirrels use as nest sites. The persistence of the western gray squirrel population has already been significantly impacted in the Methow Ranger District by wildfires in 2014 and 2015, so further degradation of habitat is not advisable. [78-37]

Concern: [Seq#481]

We agree that lynx critical habitat in boreal forests within the project area is unlikely to improve due to climate change (EA, top of p. 20). However it is important to consider the cumulative effects to lynx and other species of concern in boreal areas that could experience a trend toward uplisting as the climate changes, including grizzly bears, pikas, mountain goats, golden- mantled ground squirrels. [ID#502]
Response: [Seq#481]

Effects to boreal forest habitats are important, but this project is primarily a dry forest restoration project, with little boreal forest habitat treated. Fify-five acres of treatment would occur in mapped boreal habitat. These treatments are in plantations that have grown out of reach for hares, and in aspen stands. Effects to lynx, including cumulative effects are disclosed in the preliminary EA at p. 147-150 and 159-160, in the Wildlife Report (Glidden, 2017) at p. 37-41, 50-53, 55-56, 58-60, and biological assessment (draft). No future vegetation projects have been identified for the boreal forest. In general, most forest management here is focused on the dry forest types that have changed dramatically as a result of fire-suppression and management activities over the last century.

Climate change is an important consideration in the project design, and treatments for the project were developed using a process that considered the predicted warming and drying that could conservatively result from climate change (Preliminary EA at p.60). *"The Future Range of Variability (FRV)(Gärtner et al. 2008) was developed to provide insight as to how forest vegetation in the sub-watersheds may be affected by a changing climate. FRV reference conditions for a given sub-watershed are based on HRV reference conditions of the next (not necessarily geographically located) environmentally warmer and drier ESR. This is a conservative approach for estimating climate change, and it may underestimate the FRV if the degree of climate change is more severe than indicated by the next warmer and drier ESR."*

[ID#502]
Associated Comments: [Seq#481]
We agree that lynx critical habitat in boreal forests within the project area is unlikely to improve due to climate change (EA, top of p. 20). However it is important to consider the cumulative effects to lynx and other species of concern in boreal areas that could experience a trend toward uplisting as the climate changes, including grizzly bears, pikas, mountain goats, golden- mantled ground squirrels. [18-82]

Concern: [Seq#482]

The EA states, "After logging operations including: felling, skidding, processing, loading, required brush disposal, road maintenance, and required mitigation … there would remain approximately $310,000 that could be used to supplement or support other planned projects." (294.) Nothing in the EA explains the source of that figure. On the same page the EA states that $310,000 are the "Costs directly related to the Timber Sale." Which is it? [ID#503]
Response: [Seq#482]

The estimated $310,000 would be the funding (goods) that could be used to supplement or support other planned restoration projects besides timber harvest, required brush disposal, road maintenance, required mitigation including erosion control and reforestation, etc. costs such as non-commercial thinning and ladder fuel reduction, road closing/decommissioning costs, beaver habitat enhancement, rock armouring, culvert upsizing, and/or coarse woody debris enhancement.

Based on several factors, it has been suggested that the project be sold under two different contracts. The 1st contract is presently estimated to include about 6 MMBF of commercial timber harvest, while the second contract is estimated to include 3 MMBF of commercial timber harvest The estimated $310,00 figure has been updated to about $395,000 (goods) for the first contract. No figure has been estimated for the 2nd contract. [ID#503]

Associated Comments: [Seq#482]

The EA states, "After logging operations including: felling, skidding, processing, loading, required brush disposal, road maintenance, and required mitigation … there would remain approximately $310,000 that could be used to supplement or support other planned projects." (294.) Nothing in the EA explains the source of that figure. On the same page the EA states that $310,000 are the "Costs directly related to the Timber Sale." Which is it? [72-205]

Concern: [Seq#483]

A number of residents along the primary log hauling route for the Libby Creek drainage have expressed safety concerns about year round log truck traffic, over a period of years, on narrow, increasingly populated and trafficked roads, where ice, heavy dust, and blind corners are common. The Forest Service has denied any responsibility for accidents that could occur on the county portion of the roads, though the risks the project presents on them are obvious. Public safety should not be compromised so that private parties can profit financially.

The FS irresponsibly claims that there is no safety risk to the project. This is false. How will the safety of citizens be insured, beyond question, on the log haul roads in summer and in winter? [ID#504]

Response: [Seq#483]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient

travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Chapter 3.8 Transportation section, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Also, USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction.

During project timber haul, most local roads will be closed to public use. Also during timber haul, closing the Libby Creek, Forest Road 4300 may also be considered, particularly through the slide area. Something similar may be proposed on the Buttermilk side of Forest Road 4300 during timber haul. [ID#504]

Associated Comments: [Seq#483]

A number of residents along the primary log hauling route for the Libby Creek drainage have expressed safety concerns about year round log truck traffic, over a period of years, on narrow, increasingly populated and trafficked roads, where ice, heavy dust, and blind corners are common. The Forest Service has denied any responsibility for accidents that could occur on the county portion of the roads, though the risks the project presents on them are obvious. Public safety should not be compromised so that private parties can profit financially. [63-77]

As noted there are family residences in these areas that utilize the area and existing roads for access to recreation and for survival (i.e., travel for employment, medical, educational, and logistical needs). Their use of roads proposed for logging activities on snow and ice by heavy equipment for winter commercial logging would threaten their activities and lives if existing Standards and Guidelines were amended." [63-79]

Public safety is at risk from logging traffic on Okanogan County and National Forest System roads. RESPONSE:Roads in the project area maintained by Okanogan County are outside of the scope of the project because they are not within the jurisdiction of the Forest Service. Public safety risk from logging traffic is discussed under Other Required Disclosures near the end of Chapter 3. Hauling on NFS roads on weekends or holidays would not be allowed unless approved by the recreation program manager and the sale administrator (Appendix D). Contractors and Forest Service drivers are responsible to follow agency Road Use Rules and State Laws. Some of the lower standard roads in the project area would be open only to project-related activities and not open to the public use. Most National Forest Service system roads proposed for commercial timber haul would either be reconstructed by the project or have pre-haul maintenance making use of these roads more safe. COMMMENT: this is saying that most of the haul roads would need to be reconstructed or have maintenance done to them that would created sediment that would run into streams with ESA listed fish. Most of the haul roads follow creeks and streams. Also, there has been a log haul related death on Libby Creek Road in the past. Also, road 4300 (Blackpine Lake rd)is a high use recreational road with people touring, going for hikes and visiting Blackpine Lake. Even weekday log haul on this road is highly dangerous. [68-73]

The FS irresponsibly claims that there is no safety risk to the project. This is false. How will the safety of citizens be insured, beyond question, on the log haul roads in summer and in winter? [68-113]

Concern: [Seq#484]

Roads disturb and fragment wildlife habitat, altering species distribution, interfering with critical life functions such as feeding, breeding, and nesting, and resulting in loss of biodiversity. [ID#505]
Response: [Seq#484]

True, and this project decommissions roads in both action alternatives. Effects of changes to the road network on wildlife are discussed by species in the Preliminary EA at p. 128 to 166. [ID#505]
Associated Comments: [Seq#484]
Roads disturb and fragment wildlife habitat, altering species distribution, interfering with critical life functions such as feeding, breeding, and nesting, and resulting in loss of biodiversity. [27-24]

Concern: [Seq#485]

This project's restoration goals, coupled with the amendments, are more threatening to wildlife habitat than if the USFS did nothing to help. [ID#506]
Response: [Seq#485]

Thank you for your comment. The project's purpose is to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease, and wildfire events (preliminary EA p.13), and wildlife habitats associated with the more historical conditions. Species associated with denser conditions would be negatively affected, while species preferring more open habitats would benefit. To put this in context, vegetation treatments occur on a small portion of the project area, about 20%, and abundant dense habitat would remain over 80% of the area. Treatment units are largely in areas that have been previously disturbed by management activities and residential development. [ID#506]
Associated Comments: [Seq#485]
This project's restoration goals, coupled with the amendments, are more threatening to wildlife habitat than if the USFS did nothing to help. [51-55]

Concern: [Seq#486]

Does the USFS have enough roads yet? The USFS has 22,000 miles of roads in the state of Washington alone, nearly the circumference of the earth. Decommissioning and closing roads ought to be a big

priority on the FS's agenda considering that road density degrades wildlife and aquatic habitat due to increased accessibility by humans. The gray wolf, grizzly bear and Canada lynx need contiguous habitat to survive and multiply. That's a lot of roads to keep under repair for an organization that is chronically underfunded. [ID#507]
Response: [Seq#486]

True, and this project decommissions roads in both action alternatives. Effects to wildlife species as a result of changes to the road network in the project area are disclosed in the preliminary EA at p. 128-166, in the Wildlife Specialist Report (updated, Glidden, 2017) and the biological assessment (draft). Alternative 2 proposes to decommission about 33.7 miles of road and Alternative 3 proposes to decommission more than 56 miles of roads, if funding is available. [ID#507]
Associated Comments: [Seq#486]
* Does the USFS have enough roads yet? The USFS has 22,000 miles of roads in the state of Washington alone, nearly the circumference of the earth. Decommissioning and closing roads ought to be a big priority on the FS's agenda considering that road density degrades wildlife and aquatic habitat due to increased accessibility by humans. The gray wolf, grizzly bear and Canada lynx need contiguous habitat to survive and multiply. That's a lot of roads to keep under repair for an organization that is chronically underfunded. [67-13]

Concern: [Seq#487]

Old-growth habitat - Habitat for certain wildlife that is characterized by overmature coniferous forest stands with large snags and decaying logs. Old-growth stand (old growth) -Any stand of trees generally containing the following Characteristics 1)contain mature and overmature trees in the overstory and are well into the mature growth stage, 2) will usually contain a multilayered canopy and trees of several age classes, 3) standing dead trees and down material are present; and 4) evidences of man's activities may be present, but do not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand. These stands exist in the project area. [ID#508]
Response: [Seq#487]

Stands with old growth character have been mapped using the following process:

Air photo interpretation was completed and individual stands labelled with a set of attributes. One of the attributes is stand structure. The Old Forest Multi-story (OFMS) and Old Forest Single-story (OFSS) classifications refer to old growth structures. This has been completed for both watersheds, and a subset of these have been field-verified. The project silviculturist determined that these stands are not "Forest Plan" old growth, in other words, they don't meet all the criteria specified in the Okanogan National Forest Land and Resource Management Plan (which includes an acreage minimum, snag and down wood levels, canopy closure, and a large tree per acres standard). **However, they are a good indication of large tree habitat (old growth) across the project area.**

One focus of the project is to maintain and restore large tree habitat. Forest structures with a high proportion of large overstory trees currently are present at very low levels compared to estimated historic conditions (OFMS) or not present at all (OFSS) in the Libby Creek drainage. Portions of the project area are susceptible to dwarf mistletoe infection, defoliating insects, and bark beetle attacks due to vegetation composition and structure changes from historical conditions. The risk of crown fire initiation and spread and associated fire effects are greater than historical conditions, due to increased tree density and development of forest stands with multiple and closed canopy layers across the landscape. Vegetation in the project area is susceptible to increased frequency and severity of natural disturbances (including insects, disease, and fire) associated with warmer, drier climate.

Alternatives 2 and 3 treat 304 acres which would reduce the acres of high and moderate vulnerability to Douglas-fir beetles and treat acres vulnerable to Douglas-fir dwarf mistletoe. The planned treatments would maintain or promote medium and/or large trees on nearly 14% of the landscape.

Large trees will be protected by:

- Trees 21 inches DBH and larger with an estimated age of 150 years or greater (based on criteria described in Van Pelt 2008) would be retained.
- Trees 21 to 24 inches DBH with an estimated age of less than 150 years would occasionally be harvested to release a larger (more preferred species) tree, reduce dwarf mistletoe infection, or reduce conifer encroachment in aspen stands when consistent with treatment objectives.
- Removing smaller trees that act as ladder fuels, which allows fire to move from the ground to tree canopy.
- Reducing competition from smaller trees which compete for soil nutrients and water, increasing the risk of large tree mortality caused by bark beetle attacks. Increased stand density and inter-tree competition also reduces the likelihood of larger medium size trees from developing into large trees. [ID#508]

  Associated Comments: [Seq#487]

  Old-growth habitat - Habitat for certain wildlife that is characterized by overmature coniferous forest stands with large snags and decaying logs. Old-growth stand (old growth) -Any stand of trees generally containing the following Characteristics 1)contain mature and overmature trees in the overstory and are well into the mature growth stage, 2) will usually contain a multilayered canopy and trees of several age classes, 3) standing dead trees and down material are present; and 4) evidences of man's activities may be present, but do not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand. These stands exist in the project area. [68-102]

Concern: [Seq#488]

comment:61-2]

A new inventory of old-growth trees should be prepared before further planning proceeds.

[comment:68-62]

Do not treat in Forest Plan old growth stands since such treatments will negatively impact old growth/Forest Plan Old Growth.

RESPONSE:Since

scoping, photo analysis and field review have clarified that Forest Plan Old Growth does not exist in any proposed thinning or prescribed

fire treatment unit. Therefore, this concern does not apply to the project.

****COMMENT: This is a blatant dismissal of the expressed old growth concern regarding the commercial harvest areas and their access, not just the thinning or prescribed fire units. Field review information should be included. See my other comments about old growth.

[comment:68-100]

The FS must prove that their statement that there is no old growth in the project area is true. According to FS personnel there is no old growth inventory.

[ID#509]
Response: [Seq#488]

Air photo interpretation was completed and individual stands labelled with a set of attributes. One of the attributes is stand structure. The Old Forest Multi-story (OFMS) and Old Forest Single-story (OFSS) classifications refer to old growth structures. This has been completed for both watersheds, and a subset of these have been field-verified. The project silviculturist determined that these stands are not "Forest Plan" old growth, in other words, they don't meet all the criteria specified in the Okanogan National Forest Land and Resource Management Plan (which includes an acreage minimum, snag and down wood levels, canopy closure, and a large tree per acres standard). However, they are a good indication of large tree habitat (old growth) across the project area. The Forest Plan restriction on treatments applies only to stands that meet the criteria.

One focus of the project is to maintain and restore large tree habitat. Forest structures with a high proportion of large overstory trees currently are present at very low levels compared to estimated historic conditions (OFMS) or not present at all (OFSS) in the Libby Creek drainage. Portions of the project area are susceptible to dwarf mistletoe infection, defoliating insects, and bark beetle attacks due to vegetation composition and structure changes from historical conditions. The risk of crown fire initiation and spread and associated fire effects are greater than historical conditions, due to increased tree density and development of forest stands with multiple and closed canopy layers across the landscape. Vegetation in the project area is susceptible to increased frequency and severity of natural disturbances (including insects, disease, and fire) associated with warmer, drier climate. The Preliminary EA at p.60, 65-68, 77-78, and 90 discusses the current condition of the stands of large trees, propose treatments, rationale and effects.

Alternatives 2 and 3 treat 304 acres which would reduce the acres of high and moderate vulnerability to Douglas-fir beetles and treat acres vulnerable to Douglas-fir dwarf mistletoe. The planned treatments would maintain or promote medium and/or large trees on nearly 14% of the landscape.

Large trees will be protected by:

- Trees 21 inches DBH and larger with an estimated age of 150 years or greater (based on criteria described in Van Pelt 2008) would be retained. Trees 21 to 24 inches DBH with an estimated age of less than 150 years would occasionally be harvested to release a larger (more preferred species) tree, reduce dwarf mistletoe infection, or reduce conifer encroachment in aspen stands when consistent with treatment objectives.
- Removing smaller trees that act as ladder fuels, which allows fire to move from the ground to tree canopy.
- Reducing competition from smaller trees which compete for soil nutrients and water, increasing the risk of large tree mortality caused by bark beetle attacks. Increased stand density and inter-tree competition also reduces the likelihood of larger medium size trees from developing into large trees.

[ID#509]

Associated Comments: [Seq#488]

A new inventory of old-growth trees should be prepared before further planning proceeds. [61-2]

Do not treat in Forest Plan old growth stands since such treatments will negatively impact old growth/Forest Plan Old Growth. RESPONSE:Since scoping, photo analysis and field review have clarified that Forest Plan Old Growth does not exist in any proposed thinning or prescribed fire treatment unit. Therefore, this concern does not apply to the project. ****COMMENT: This is a blatant dismissal of the expressed old growth concern regarding the commercial harvest areas and their access, not just the thinning or prescribed fire units. Field review information should be included. See my other comments about old growth. [68-62]

The FS must prove that their statement that there is no old growth in the project area is true. According to FS personnel there is no old growth inventory. [68-100]

Concern: [Seq#489]

"Does the EA include unauthorized and non-system roads with its road density calculations?" [ID#510]
Response: [Seq#489]

Yes. See Section 3.8, Transportation, in Chapter 3 as well as Engineering Resources Specialist Report- tables display density calculations summaries, including Appendix A (definitions of roads analyzed- including non-system and Unauthorized roads) and Appendix B listing FSR, unauthorized and non-system roads considered in the analysis.

An interdisciplinary process -Transportation Analysis Process (TAP) was conducted and followed per 36 CFR-212.5. This is sometimes confused with a MRA -See Engineering Resources Specialist Report for clarity. The Engineering Resources Specialist Report described the interdisciplinary process by which the TAP made recommendations (risk/benefit) by resources (ex: silviculture, timber, aquatics, soils, wildlife, invasive-weeds, range, fuels, recreation, etc.). The interdisciplinary team met, provided input/ recommendations which is recorded in the Engineering Resources analysis file. The Engineering Resources Report, the Travel Analysis Process (TAP) and in the EA in Section 3.8, Transportation, in Chapter 3 address the TAP. The Engineering Resources Report cites the law- 36CFR212.5 that addresses how the Travel Analysis Process is conducted and meets the 2001 Road Management Rule Both processes evolved initially from the 2001 Road Management Rule; "that require the responsible official on each National Forest System (NFS) unit to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands". Note, the provisions from the original 2001Road Management Rule are now incorporated in Subpart A of the 2005 Travel Management Rule. It is policy and in compliance with 36CFR212.5 to conduct the Travel Management Process. Appendix A of the Engineering Resources Report describes the Management Levels (MLs) of roads. It generally addresses the concern by describing some aspects of decommissioning and some information relevant to ML 1 roads- where they are closed or stored for future use, not decommissioned. Appendix B of the Engineering Resources Report describes the roads before, during and post project. Appendix C of the Engineering Resource Report describes and defines levels of Decommissioning. Also note that the effects of roads for each resource is addressed in Chapter 3 of the EA.

A Travel Analysis Process (TAP) was conducted for this project was interdisciplinary and is in compliance with Subpart A of the 2005 Travel Management Rule. It is policy and is in compliance with 36CFR212.5 to conduct the Travel Management Process. Refer to Engineering Specialist Report- in Resource Indicators and Measures. Appendix A of the Engineering Resources report describes types of roads- especially those encumbered by easement, special use permit, etc. Appendix B summarizes the recommendations made by the interdisciplinary team, and Appendix C describes the types of decommissioning. [ID#510]
Associated Comments: [Seq#489]
Does the EA include unauthorized and non-system roads with its road density calculations? [72-195]

Concern: [Seq#490]

The EA claims logging "would generate $2.73 million in timber value at the mill." It doesn't say how much the government will receive for the timber, or how that contributes to net benefit [ID#511]
Response: [Seq#490]

Figure 132 and pages 294 and 295 indicate that the timber sale could potentially contribute $310,000 to non-timber sale projects under a Stewardship Contract to supplement or support other planned projects. This project will likely be split into 2 Stewardship Contracts with currently an estimated timber volume of about 9 MMBF.The first contract is estimated to be about 6 MMBF and is estimated to currently provide about $395,000 of goods (value above costs that can be used for stewardship restoration projects.

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed actions. While roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads slated for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners. Thank you for your comment and we agree that the funding issue is a difficult one. [ID#511]
Associated Comments: [Seq#490]
The EA claims logging "would generate $2.73 million in timber value at the mill." It doesn't say how much the government will receive for the timber, or how that contributes to net benefit. [72-204]

Concern: [Seq#491]

The Mission Project Economical Analysis should be part of a required EIS that reflects that the benefit of commercial beef production in the Libby Creek watershed is not "economically efficient", as well as contributing to an "adverse impact" resulting from planned activities of the project. [ID#512]
Response: [Seq#491]

The requested economic analysis is on issues that are outside issues to be resolved in this environmental analysis (grazing since covered in a 2011 NEPA document for the project area)..

The cumulative effects of the Mission project combined with livestock grazing are summarized in the Range section *3.10.4.5 Summary of Effects.* Specifically, the effects of the proposed "logging" on livestock grazing are discussed in section *3.10.4 Environmental Consequences.* Grazing impacts under both the no-action and the action alternatives are analyzed. The interdisciplinary team identified all resource indicators pertinent to the cumulative effects of grazing and project activities. The analysis concluded that management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. Draft EA page number: 250-252, 239-244 [ID#512]
Associated Comments: [Seq#491]
The Mission Project Economical Analysis should be part of a required EIS that reflects that the benefit of commercial beef production in the Libby Creek watershed is not "economically efficient", as well as contributing to an "adverse impact" resulting from planned activities of the project.] [11-39]

Concern: [Seq#492]

For forest health and restoration issues and for wildfire protection issues, a priority challenge for the Methow Valley Ranger District will be to accomplish funding for the important Mission non-timber projects. Effectiveness of the overall Mission proposal outcome, as well as Forest Service credibility with the public for this and any future large proposals, will depend in good part on accomplishing funding of non-timber forest health and restoration projects. [ID#513]
Response: [Seq#492]

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road

improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work with quite a bit of past success for aquatics and road closure type of projects.

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed actions. While temporary roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads slated for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners. Thank you for your comment and we agree that the funding issue is a difficult one.

This project is presently proposed to be contracted under 2 separate Stewardship contracts with the first contract contain about 6 MMBF of timber with an estimated $395,000 (of goods) which can be used to provide funding for restoration projects. The 2nd stewardship contract is estimated to contain about 3 MMBF of timber with no current estimate of goods that can go towards restoration projects. [ID#513]

Associated Comments: [Seq#492]

For forest health and restoration issues and for wildfire protection issues, a priority challenge for the Methow Valley Ranger District will be to accomplish funding for the important Mission non-timber projects. Effectiveness of the overall Mission proposal outcome, as well as Forest Service credibility with the public for this and any future large proposals, will depend in good part on accomplishing funding of non-timber forest health and restoration projects. [6-5]

Concern: [Seq#493]

A number of residents along the primary log hauling route for the Libby Creek drainage have expressed safety concerns about year round log truck traffic, over a period of years, on narrow, increasingly populated and trafficked roads, where ice, heavy dust, and blind corners are the normal state of affairs. The FS claims that CB radios will allow residents to safely navigate the major hazard of industrial logging traffic. However, CB radios are installed in only a tiny number of cars; the likelihood of the majority of drivers on these roads using them is equally tiny. In addition, the FS disavows any responsibility for accidents that could occur on the county portion of the roads, though the risks the project presents on them are obvious. Public safety should not be compromised so that private parties can profit financially. [ID#514]

Response: [Seq#493]

Safety measures are included in the analysis. However safety is addressed also through the timber sale contract. (signage, maintenance & plowing if necessary) Dust abatement may occur on USFS ML2 & 3 roads for fines reduction and safety. Also in the document, Design Features describe some of the safety measures utilized. Log haul not allowed on weekends and holidays. (in Recreation section.) Budget constraints on road maintenance described in Current Operation Maintenance Levels of Appendix B of

the Transportation Plan. The Travel Management - Subpart A of 36 CFR 2.12.5 describe that the road system-, the responsible official must identify the minimum road system needed for safe and efficient travel... to meet applicable statuary and regulatory requirements, to reflect long-term funding expectations, ...and maintenance. Chapter 2.4 Design Criterion, Mitigation Measures and Monitoring implements provisions for this in detail Appendix D- . Additionally, Section 3.8, Transportation, in Chapter3 details, safety measures dust abatement for safety are described. Engineering Resources specialist report addresses it in the analysis file. Chapter 3.15.6- Public Health and Safety restricts log haul & heavy equipment moving "during weekends and holidays prohibited." Most logging roads, except main haul routes, will remain closed to the general public to minimize traffic conflicts and impacts to wildlife during log hauling and heavy equipment moving activities.

The USFS does not manage roads under Okanogan County (OCR) or Washington State jurisdiction. For safety concerns on these roads, an individual would need to talk to the appropriate government agency, most likely Okanogan County Public Works Department for Libby Creek County roads.

The use of a CB radio may provide additional information about vehicle movements. Most ML2 roads will be signed for harvest operations only with public use highly discouraged. Because of the condition of Forest Road 43 in the Libby Creek drainage this road may also be signed for harvest vehicle use only, particularly during the winter. This could also be required on the Buttermilk portion of the 43 road also.

[ID#514]

Associated Comments: [Seq#493]

Public Safety A number of residents along the primary log hauling route for the Libby Creek drainage have expressed safety concerns about year round log truck traffic, over a period of years, on narrow, increasingly populated and trafficked roads, where ice, heavy dust, and blind corners are the normal state of affairs. The FS claims that CB radios will allow residents to safely navigate the major hazard of industrial logging traffic. However, CB radios are installed in only a tiny number of cars; the likelihood of the majority of drivers on these roads using them is equally tiny. In addition, the FS disavows any responsibility for accidents that could occur on the county portion of the roads, though the risks the project presents on them are obvious. Public safety should not be compromised so that private parties can profit financially. [69-26]

Concern: [Seq#494]

I also support the Confederated Tribes of the Colville in their request for further environmental assessment in regards to the potential impacts to cultural resources. [ID#515]

Response: [Seq#494]

Cultural resource surveys were completed for the portions of the project area where activities are planned during the summer of 2016. The State Historic Preservation Office (SHPO) concurred with our determination of "No Affect" for this project

See Section 3.15.8, American Indian Treaty Rights. The Tribal governments for the Confederate Tribes of the Colville Reservation and the Yakama Nation were contacted during government to government consultation during April 2016; no concerns about the project were raised by either tribal government at that time. Activities would avoid eligible and unevaluated cultural resources. Burn plans and contracts would contain clauses allowing the Forest Service to modify or cancel portions of the operations to protect known and newly discovered cultural resources. If cultural resources are discovered as a result of project activity, all work in the vicinity of the discovery would cease until assessment by a cultural resource specialist(measure 61).

During comments on the Preliminary Environmental Assessment a comment was submitted on behalf of the Confederated Tribes of the Colville Reservation (CCT) Tribal Historic Preservation Officer (THPO), Guy Moura due to the Environmental Assessment neglecting any consideration of potential impacts to cultural resources posed by the project. They requested that a revised EA be prepared that assesses the direct, indirect, and cumulative effects on cultural resources of implementing the proposed action. It has not been determined if such a section will be prepared for the final EA since with no cultural resources located during surveys that would be effected, there is no direct, indirect, or cumulative effects. The Interdisciplinary Team will determine if the completed cultural resource report, or an edited version eliminating sensitive information can be posted on the project website. [ID#515]

Associated Comments: [Seq#494]

I also support the Confederated Tribes of the Colville in their request for further environmental assessment in regards to the potential impacts to cultural resources. [79-4]

Concern: [Seq#495]

The results of surveys for all Survey and Manage plant species, and disclosure of direct, indirect, and cumulative effects is not addressed in the EA. [ID#516]

Response: [Seq#495]

Two Survey and Manage species were found during survey efforts. In the Botanical Resources Specialist report, in the "Considered But Not Analyzed In Detail" section "Figure 1" states,

There is one R6 Sensitive species, Pinus albicaulis (whitepark pine) and two S&M species, Mycena overholtsii (Cat B fungi) and Botrychium montanum (Mountain moonwort- Cat A vascular plant), which occur within the project boundary. Populations of P. albicaulis, Mycena overholtsii and Botrychium

montanum occur within the analysis area, but in isolated locations where there would be no effects from the proposed treatments, will not be analyzed.

[ID#516]

Associated Comments: [Seq#495]

The EA does not disclose the results of surveys for all Survey and Manage plant species, nor does it analyze and disclose direct, indirect, and cumulative effects on all S&M species. [72-208]

Concern: [Seq#496]

What is the best available science used for whitebark pine analysis in the Mission EA? [ID#517]

Response: [Seq#496]

The Botanical Resources Report relied on the Natural Resources Information System (NRIS) and field reconnaissance to document the presence and analysis the potential effects of whitebark pine. NRIS is a Forest Service, database that documents known sites and is used to track population and species trends through monitoring. Field reconnaissance and NRIS documented known sites and determined that project activities would not occur within whitebark pine habitat or known populations. These findings are stated in the "Considered But Not Analyzed In Detail" section under "Figure 1" of the specialist report,

"There is one R6 Sensitive species, Pinus albicaulis (whitepark pine) and two S&M species, Mycena overholtsii (Cat B fungi) and Botrychium montanum (Mountain moonwort- Cat A vascular plant), which occur within the project boundary. Populations of P. albicaulis, Mycena overholtsii and Botrychium montanum occur within the analysis area, but in isolated locations where there would be no effects from the proposed treatments, thus will not be analyzed". [ID#517]

Associated Comments: [Seq#496]

What is the best available science the FS relies upon for analysis of whitebark pine in the Mission EA? [72-216]

Concern: [Seq#497]

What is the scientific basis, in the Botanical Resources report, for the statement, "Conifer encroachment and closed canopies are limiting available nutrients, water and sunlight to the riparian vegetation in unique and sensitive plant habitats." [ID#518]

Response: [Seq#497]

Seagar (2013) et al. state, "Thus, conifers that invade meadows and associated aspen stands decrease soil moisture, soil resources, and overstory sunlight that are necessary for aspen persistence". This statement has now been included in the Botanical Resources specialist report.

Other scientific papers that state the same evidence are:

- Dodson, E.K.; Peterson, D.W. 2010. Dry coniferous forest restoration and understory plant diversity: The importance of community heterogeneity and the scale of observation. Forest Ecology and Management. 260(10): 1702-1707. www.fs.fed.us/pnw/pubs/journals/pnw_2010_dodson002.pdf
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Shepperd, W.D., Bartos, D.L., Mata, S.A., 2001a. Above- and below-ground effects of aspen clonal regeneration and succession to conifers. Canadian Journal of Forest Research 31, 739-745. https://www.fs.fed.us/rm/pubs_other/rmrs_2001_shepperd_w001.pdf

[ID#518]

Associated Comments: [Seq#497]

Conifer encroachment and closed canopies are limiting available nutrients, water and sunlight to the riparian vegetation in unique and sensitive plant habitats." (EA 225.) What is the scientific basis for that statement? [72-215]

Concern: [Seq#498]

Those roads to be decommissioned that are currently used extensively by cattle would be designed to provide cattle access by leaving a trail-space along the edge of the decommissioned road." (EA 246.) What will be the annual cost to taxpayers of maintaining cattle "trail space" on decommissioned roads in the project area? [ID#519]

Response: [Seq#498]

There should be no cost to taxpayers for maintaining cattle access. If the range permittee wants to maintain this access, they will be required to maintain these cattle trails like is done on other cattle trails in the allotment. [ID#519]

Associated Comments: [Seq#498]

Those roads to be decommissioned that are currently used extensively by cattle would be designed to provide cattle access by leaving a trail-space along the edge of the decommissioned road." (EA 246.) What will be the annual cost to taxpayers of maintaining cattle "trail space" on decommissioned roads in the project area? [72-201]

Concern: [Seq#499]

Explain the term "Sensitive and Unique habitats". [ID#520]
Response: [Seq#499]

Unique and Sensitive habitats as it pertains to the Botanical Resources report, are aspen stands, meadows and riparian areas dominated by riparian vegetation. [ID#520]
Associated Comments: [Seq#499]
The EA uses the term "Sensitive and Unique habitats" but doesn't explain what it means. [72-212]

Concern: [Seq#500]

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. [ID#521]
Response: [Seq#500]

Section 3.15.4 of the Environmental Assessment addresses this comment.

The Union of Concerned Scientists report (Boucher and Ferretti-Gallon, 2015 noted deforestation/forest degradation as a major source of greenhouse gas emissions. Although this science is not presented in a formally peer-reviewed scientific journal, it is consistent with the information presented in the EA analysis.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades). [ID#521]

Associated Comments: [Seq#500]

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. [72-36]

Concern: [Seq#501]

The effects of treatments will increase, not decrease, cattle impacts on *B. crenulatum*. [ID#522]

Response: [Seq#501]

Cattle are currently able to access these *B. crenulatum* sites and are causing minor amounts of disturbance, see "Figure 7" under "**Present and Future Actions"** in the Botanical Resources report. Design Criteria 21, 23 and 24 within the Botanical Resources report would reduce the chances that cattle access would become easier. [ID#522]

Associated Comments: [Seq#501]

The action alternatives would have a long-term, beneficial, minor effect on B. crenulatum populations because thinning and prescribed fire treatments would help create more transitory range that would disperse cattle over more ground, thereby reducing the potential for cumulative impacts from grazing and trampling." (EA 230.) Because the B. crenulatum habitat is said to be showing only "minimal" cattle use now (probably because cattle forage is shaded out, or because the vegetation is too thick to allow cattle access to cool shady rest areas), it is obvious the effect of the treatments will increase-not decrease-impacts on B. crenulatum. The EA's unreasonable conclusion is in violation of NEPA. [72-214]

Concern: [Seq#502]

We would like to see a the EA better address cumulative effects to include climate change, so that when future funding opportunities arise, they can be used to justify those concerns. [ID#523]
Response: [Seq#502]

Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration addresses climate change in the Environmental Assessment. Each resource section individually addresses cumulative effects such as in 3.3, Water Resources in Sections 3.3.4.3.2, 3.3.4.3.3, 3.3.4.4.2, 3.3.4.4.3, Section 3.4, Soils in Sections 3.4.4.3.2, etc. throughout the document. [ID#523]
Associated Comments: [Seq#502]
We would like to see a the EA better address cumulative effects to include climate change, so that when future funding opportunities arise, they can be used to justify those concerns. [18-87]

Concern: [Seq#503]

The Forest Service should consider the impacts of climate change and the cumulative impacts resulting from the project and climate change. Pursuant to final guidance issued by the Council on Environmental Quality (CEQ) on August 1, 2016, All federal projects should consider:

(1) The potential effects of a proposed action on climate change as indicated by assessing greenhouse gas (GHG) emissions (e.g., to include, where applicable, carbon sequestration); and

(2) The effects of climate change on a proposed action and its environmental impacts.

CEQ's 2016 final guidance recommends agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools suitable for the proposed agency action. It suggests agencies use projected GHG emissions as a proxy for assessing potential climate change effects. And it recommends that where an agency does not quantify an action's projected GHG emissions because tools, methodologies, or data inputs are

not reasonably available to support calculations for a quantitative analysis, it should include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available

The current administration has provided new guidance on this issue.

[ID#524]
Response: [Seq#503]

Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration, considers the effect of climate change caused by this project and

the cumulative impacts resulting from the project and climate change.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

. [ID#524]

Associated Comments: [Seq#503]

The Forest Service should consider the impacts of climate change and the cumulative impacts resulting from the project and climate change. Pursuant to final guidance issued by the Council on Environmental Quality (CEQ) on August 1, 2016,6 all federal projects should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing greenhouse gas (GHG) emissions (e.g., to

include, where applicable, carbon sequestration); and(2) The effects of climate change on a proposed action and its environmental impacts. CEQ's 2016 final guidance recommends agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools suitable for the proposed agency action. It suggests agencies use projected GHG emissions as a proxy for assessing potential climate change effects. And it recommends that where an agency does not quantify an action's projected GHG emissions because tools, methodologies, or data inputs are 6 See Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (2016) (noting that "[a]nalyzing a proposed action's GHG emissions and the effects of climate change relevant to a proposed action—particularly how climate change may change an action's environmental effects—can provide useful information to decision makers and the public."). not reasonably available to support calculations for a quantitative analysis, it should include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available. [27-31]

Global warming and greenhouse gas emissions The EA fails to address the extent to which logging will contribute to global warming through the cumulative build-up of greenhouse gases, e.g., CO2. Given the extent to which climatic change can be demonstrated as impacting local environs and the planet as a whole, this is a staggering and unconscionable omission. The EA fails to acknowledge and discuss greenhouse gas emissions stemming from other anthropogenic impacts on the environment, both directly and concomitant to logging and post-logging/multi-use activities on public lands associated with the Mission Restoration Project (MRP). These include: logging industry equipment, USFS administrative vehicle use, recreational off-road vehicles (all-terrain vehicles, off-road motorcycles, and snowmobiles), and the practice of cattle grazing allotments. In general, the USFS-prepared EA on the MRP is remiss in failing to take ownership of the impacts of its management actions and policies; it provides no accounting for, or estimates of, increased carbon emissions, even though such estimates are possible to calculate. Rather than reinforcing and perpetuating local, regional, national, and world-wide policies and practices which only contribute to the degradation of the planet, the USFS has an opportunity-beginning here and now in the Libby-Buttermilk Watersheds-to stand up and take a true leadership role. [65-9]

Concern: [Seq#504]

Why doesn't the FS integrate fire ecology into the EA's biological discussion of *B.crenulatum* given the definition of its habitat? [ID#525]

Response: [Seq#504]

The Botanical Specialists report did not integrate a discussion about fire ecology for the two populations of *B. crenulatum* known to occur in units 16 and 503, as these populations will be involved in prescribed fire treatments. The population in unit 503 will be flagged so that pile burning does not occur near it. Where underburning is proposed in unit 16, design criteria number 23 will limit the spread of fire into the *B. crenulatum* population.

A Conservation Assessment for 13 Species of Moonworts (Botrychium Swartz Subgenus Botrychium) was written by Ahlenslager, K and Potash, L. 2007. In it they cover the threats or impacts of fire to moonworts. Ahlenslager and Potash relied on a study by Johnson-Groh and Farrar (1996a). The study found that, "fire in and of itself is not detrimental to moonworts. The leaves brown, but unless the fire is intense moonworts don't burn because of their succulent nature. Severely scorched or wilted plants return the successive year and actually sometimes show an increase in size. The loss of the photosynthetic capacity the year of the fire is no different than non-emergence for a year. They concluded that normal (not excessively hot or dry) burns pose no serious threat to moonworts. However they noted that an exceptionally hot burn or one that comes when the soil is desiccated is harmful. Fires that are hot and stationary are likely to cause damage by killing the plant outright or indirectly by killing the mycorrhizae. Johnson-Groh and Farrar (1996a) note that leaf loss due to fire does little harm to the plant. Moreover the concurrent effects of fire such as damaged tissue, desiccation or sedimentation may be more important.

The information above will be incorporated into the Final Botanical Resources report under "Methodology and Impact Level Definitions".

[ID#525]

Associated Comments: [Seq#504]

The EA: "Two proposed treatment units (16 and 503) have known populations of B. crenulatum. … B. crenulatum requires nearly permanent moisture, often occurring in saturated headwater fens and seeps (Farrar 2006). It is usually found in partly shaded to heavily shaded sites at mid to high elevations (Farrar 2005)." Given the definition of B. crenulatum, habitat, why doesn't the FS integrate fire ecology into the EA's biological discussion of the species? What is "the range of scientifically acceptable ecological consequences"? [72-213]

Concern: [Seq#505]

"Off-road vehicles are typically powered by two-stroke engines that are highly inefficient and produce relatively high emissions of gases that harm the environment and can adversely affect human health." (J.J. White, J. N. Carroll, J. G. Lourenco, and A. D. Iaali, "Baseline and Controlled Exhaust Emissions from Off-highway Vehicle Engines," presented at the Small Engine Technology Conference. Pisa, Italy, 1993.) "One two-stroke off-road motorcycle or all-terrain vehicle emits as much hydrocarbon pollution per mile as 118 passenger cars, while relatively cleaner four-stroke engines still emit more than seven times the level of carbon monoxide as new cars." (L.M.S. Fussell, "Exposure of snowmobile riders to carbon monoxide: Emissions pose potential risk," Park Science: Integrating Research and Resource Management 17, no. 1 (1997): 8-10.) "According to the Environmental Protection Agency, recreational vehicles account for nearly 10 percent of national mobile-source hydrocarbon emissions and about 3 percent of national mobile- source carbon monoxide emissions. If left uncontrolled, by 2020, these engines will contribute 33 percent of national mobile source hydrocarbon emissions, 9 percent of carbon monoxide emissions, 9 percent of oxides of nitrogen emissions, and 2 percent of particulate matter emissions." (EPA, Environmental Fact Sheet, Frequently Asked Questions: Environmental Impacts of Recreational

Vehicles and Other Non-road Engines (2001: EPA), http://www.epa.gov/oms/regs/nonroad/proposal/f01030.htm.) "The Council on Environmental Quality (CEQ) issues this guidance to assist Federal agencies in their consideration of the effects of greenhouse gas (GHG) emissions and climate change when evaluating proposed Federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ Regulations Implementing the Procedural Provisions of NEPA (CEQ Regulations). As discussed in this guidance, when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate change on a proposed action and its environmental impacts." [Final guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, August 2016]. Pursuant to the aforementioned guidelines, there is no indication that the USFS has, in this EA, addressed the cumulative impacts of its proposed MRP actions associated with climate change upon the landscape under consideration. [ID#526]

Response: [Seq#505]

Thank you for the comment. This project does not change ATV and UTV use in the project area except to likely reduce it slightly because of road decommissioning.

The Forest is presently completing a Motorized Travel Management Environmental Assessment and this comment is somewhat addressed in that analysis.

Much of the quoted information is out of date since most ATVs and UTVs are presently 4-stroke or some type of modified 2 stroke engine.

The cumulative effects are addressed in Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration, considers the effect of climate change caused by this project and

the cumulative impacts resulting from the project and climate change.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible. [ID#526]

Associated Comments: [Seq#505]

"Off-road vehicles are typically powered by two-stroke engines that are highly inefficient and produce relatively high emissions of gases that harm the environment and can adversely affect human health." (J.J. White, J. N. Carroll, J. G. Lourenco, and A. D. Iaali, "Baseline and Controlled Exhaust Emissions from Off-highway Vehicle Engines," presented at the Small Engine Technology Conference. Pisa, Italy, 1993.) "One two-stroke off-road motorcycle or all-terrain vehicle emits as much hydrocarbon pollution per mile as 118 passenger cars, while relatively cleaner four-stroke engines still emit more than seven times the level of carbon monoxide as new cars." (L.M.S. Fussell, "Exposure of snowmobile riders to carbon monoxide: Emissions pose potential risk," Park Science: Integrating Research and Resource

Management 17, no. 1 (1997): 8-10.) "According to the Environmental Protection Agency, recreational vehicles account for nearly 10 percent of national mobile-source hydrocarbon emissions and about 3 percent of national mobile- source carbon monoxide emissions. If left uncontrolled, by 2020, these engines will contribute 33 percent of national mobile source hydrocarbon emissions, 9 percent of carbon monoxide emissions, 9 percent of oxides of nitrogen emissions, and 2 percent of particulate matter emissions." (EPA, Environmental Fact Sheet, Frequently Asked Questions: Environmental Impacts of Recreational Vehicles and Other Non-road Engines (2001: EPA), http://www.epa.gov/oms/regs/nonroad/proposal/f01030.htm.) "The Council on Environmental Quality (CEQ) issues this guidance to assist Federal agencies in their consideration of the effects of greenhouse gas (GHG) emissions and climate change when evaluating proposed Federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ Regulations Implementing the Procedural Provisions of NEPA (CEQ Regulations). As discussed in this guidance, when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate change on a proposed action and its environmental impacts." [Final guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, August 2016]. Pursuant to the aforementioned guidelines, there is no indication that the USFS has, in this EA, addressed the cumulative impacts of its proposed MRP actions associated with climate change upon the landscape under consideration. [65-10]

Concern: [Seq#506]

One of MVCC's most significant concerns was the " Need for full consideration of grazing impacts, as thinning will change forage availability and grazing access to sensitive areas". The analysis of cumulative effects of cattle grazing and logging must be part of a subsequent Environmental Impact Statement; they have a history of habitat degradation in the study area and their continued impact if Alternate 2 or 3 were chosen has the potential to prevent restoration of ESA-listed salmonids in the project watersheds. The spring Chinook salmon in the Methow is an ESU (evolutionary significant unit) of the species presently considered in danger of extinction. These fish presently utilize critical habitat in the watersheds of the MRP [ID#527]

Response: [Seq#506]

The Lookout Mountain allotment is managed under the terms and conditions of the USFWS-issued and the NOAA Fisheries-issued Biological Opinions. There are riparian areas on the Lookout Mountain allotment within the project area where past management (prior to 2010) may have adversely affected ESA listed fish. There are several areas that did not meet Aquatic Conservation Strategy Objectives (ACSO). The current Allotment Management Plan (AMP) and the implementation of the terms and conditions of the Biological Opinions are designed to improve resource conditions in these areas to

eliminated impacts that retard or prevent attainment of the objectives. (Lookout Mountain AMP) The consistency of meeting these objectives would be determined through MRP consolation with the two regulatory agencies. [ID#527]

Associated Comments: [Seq#506]

One of MVCC's most significant concerns was the " Need for full consideration of grazing impacts, as thinning will change forage availability and grazing access to sensitive areas". The analysis of cumulative effects of cattle grazing and logging must be part of a subsequent Environmental Impact Statement; they have a history of habitat degradation in the study area and their continued impact if Alternate 2 or 3 were chosen has the potential to prevent restoration of ESA-listed salmonids in the project watersheds. The spring Chinook salmon in the Methow is an ESU (evolutionary significant unit) of the species presently considered in danger of extinction. These fish presently utilize critical habitat in the watersheds of the MRP. [63-80]

Concern: [Seq#507]

The cost to the ranchers per AUM has recently (2017) decreased to $1.87 (the equivalent of getting forage for less than $4/ton). This subsidy results in a deficit of approximately $250,000,000 each year. This ongoing policy fails the test of economic efficiency in these Forest public lands. Any valid forest restoration efforts in these watersheds should not include logging or cattle grazing [ID#528]

Response: [Seq#507]

The respondent's opinion is noted. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a) which includes an economic analysis.

The price per AUM is set at a higher level and the Methow Valley District has no control of the price. [ID#528]

Associated Comments: [Seq#507]

The cost to the ranchers per AUM has recently (2017) decreased to $1.87 (the equivalent of getting forage for less than $4/ton). This subsidy results in a deficit of approximately $250,000,000 each year. This ongoing policy fails the test of economic efficiency in these Forest public lands. Any valid forest restoration efforts in these watersheds should not include logging or cattle grazing. [63-81]

Concern: [Seq#508]

Provide the scientific evidence that proposed treatments would improve population vigor of Botrychium spp. [ID#529]
Response: [Seq#508]

The Botanical Resources report states that, "*Two proposed treatment units (16 and 503) have known populations of B. crenulatum. There are patches of dense conifer canopies surrounding the occupied habitat in these units. Encroaching conifers could displace riparian trees and shrubs that are associated with B. crenulatum habitats. Dense stands of conifers could also lead to a high severity fire which could mean a long recovery time for vegetation*."

Known populations of *Botrychium crenulatum* would be flagged and treatment buffers would be established. Design Criteria for known *sites* are in place for proposed prescribed fire treatments. Underburning would occur at a time when soils within the population are saturated in order to limit fire spread into the population (see Design Criteria in Botanical Resources report).

As stated in the

Methodology and Impact Level Definitions portion of the Botanical Resources specialist report, "*Identification of threats is somewhat challenging for moonworts (which includes B. crenulatum), since so much information is still needed on habitat requirements, environmental tolerances and the effects of management. In a conservation assessment written by Ahlenslager and Potash, 2007, threats to moonworts in Oregon and Washington (ORNHIC 2002 and WNHP 2002) are actions that alter existing site characteristics, including actions that would change the microclimate, canopy coverage, hydrology, or mycorrhizal association on a site from the regime that has supported a given population over the past decade.* Ahlenslager et al. (2007)goes on to say, "*These species require some degree of active management to maintain individual sites/populations. Management approaches for these species should include maintenance of suitable, but unoccupied habitat that will be available for colonization by spores and the development of new populations (Ahlenslager and Potash, 2007). The overarching, likely most important management consideration for site/population management is to continue the level and type of disturbance that has supported the site/population over the last decade (Farrar 2006). For all but Botrychium pumicola and B. montanum, this includes maintaining and encouraging a 10-30 year disturbance cycle (Ahlenslager and Potash, 2007). Fire in and of itself is not detrimental to moonworts (Johnson-Groh and Farrar 1996a). The leaves brown, but unless the fire is intense moonworts don't burn because of their succulent nature. Johnson-Groh and Farrar (1996a) compared burned and unburned prairie plots and found similar return in both treatments in subsequent years. Johnson-Gogh et.al. (1996a) concluded that normal (not excessively hot or dry) burns pose no serious threat to moonworts. However they noted that an exceptionally hot burn or one that comes when the soil is desiccated is harmful. Fires that are hot and stationary are likely to cause damage by killing the plant outright or indirectly by killing the mycorrhizae. Johnson-Groh and Farrar (1996a) note that leaf loss due to fire does little harm to the plant. Moreover the concurrent effects of fire such as damaged tissue, desiccation or sedimentation may be more important (Ahlenslager and Potash, 2007).* The above information is now in the Botanical Resources specialist report under

Methodology and Impact Level Definitions and

Affected Environment.

Habitats were known populations exist and proposed aspen release treatments in suitable habitat, are outside of the 10-30 year disturbance window suggested by Farrar (2006). Conifer encroachment within known and suitable habitats, could limit available water, soil nutrients and sunlight to associated species. In some areas young dense stands of conifer are encroaching suitable habitat. Conifer encroachment and fire behavior outside the range of scientifically acceptable ecological consequences, could be a threat to these sites. [ID#529]

Associated Comments: [Seq#508]

What scientific support exists for the premise that the proposed vegetation treatments would "improve population vigor" of moonworts (Botrychium spp.)? [72-209]

Concern: [Seq#509]

Does the Forest Service have effectiveness monitoring results for Survey and Manage and Sensitive species? [ID#530]

Response: [Seq#509]

The Methow Valley Ranger District has received grants for effectiveness monitoring through the R6 Interagency Special Status Sensitive Species Program (ISSSSP). Species include those listed on the R6 Regional Forester's ISSSSP list. In addition, the FS conducts yearly monitoring for species that have been involved in projects. Monitoring of R6 and Survey and Mange species is also conducted on FS lands by Rare Care who is affiliated with the University of Washington. Rare Care builds partnerships with federal, state and local agencies to provide critical information needed in the conservation and recovery of our state's native rare species. Citizen scientists and students participate in rare plant monitoring, *ex situ* conservation, reintroduction and education. Information from monitoring results through ISSSSP grants are documented in a final report and site data is entered into the Natural Resources Information System (NRIS), which is the corporate database for R6 Sensitive and S&M species. The NRIS database is Geographic Information System (GIS) based, with a tabular data function that allows specialist to overlay past treatment activities and monitoring results for various species. [ID#530]

Associated Comments: [Seq#509]

Does the FS have effectiveness monitoring results for Sensitive and S&M species? [72-210]

Concern: [Seq#510]

How does the Okanogan NF insure black-backed woodpecker viability? This is a species which is directly and significantly affected by fire suppression [ID#531]

Response: [Seq#510]

Black-backed woodpeckers are a Management Indicator Species (MIS) for dead and defective trees on the Okanogan Wenatchee National Forest, and reach their highest densities in unsalvaged, recent (1-5

years) post-fire habitat with high densities of snags (Youkey, 2011). Projects consistent with the Northwest Forest Plan (NWFP) are expected to maintain viability of the late-successional associated MIS, including the primary cavity excavators and the black-backed woodpecker. The Mission project is consistent with the NWFP, and doesn't propose activities in recent post-fire habitat. In addition, the Mission Project utilized the concept of Historic Range of Variability (HRV). By managing habitat within HRV it is assumed that adequate habitat will be provided because species survived those levels of habitat in the past to be present today. Thus, if we manage current habitats within the range of historic variability, we will likely do an adequate job of ensuring population viability for those species that remain (Landres et al. 1999).

Large-scale viability assessments conducted for the NWFP and the Interior Columbia Basin Project (ICBEMP) analyzed primary cavity excavators (PCE) MIS, including the black-backed woodpecker, for the Okanogan and Wenatchee National Forests. The selected alternative for the Northwest Forest Plan was determined to meet the NFMA requirement to provide for a diversity of plant and animal communities (USDA and USDI 1994a). This information is summarized in the *Status of Management Indicator Species On the Okanogan and Wenatchee National Forests* (Youkey, 2011), which is incorporated by reference into the Wildlife Report (Glidden, 2017). The following information is taken from that report.

The 6 PCE found in the Okanogan-Wenatchee National Forest were determined to be closely associated with late-successional and old-growth forests, with occurrence of large snags necessary for optimal habitat (USDA and USDI 1994)(Youkey, 2011). A viability assessment was completed by the Scientific Analysis Team (SAT) (Thomas et al. 1993) for the PCE. The viability outcome for the black-backed woodpecker was B/C. Viability outcome definitions are below.

Five viability outcomes (modified from Raphael et al. 2001) were used to describe the probability of the assessment area to support a population of the management indicator species (MIS) based on habitat and risk factors. These outcomes were evaluated for current conditions for each MIS species within the planning area (national forest). The term 'suitable environment' refers to the combination of habitat and risk factors that influence the probability of occupancy and demographic performance of a MIS species. The five viability outcomes we used were:

- **Outcome A** - Suitable environments are broadly distributed and of high abundance. The combination of distribution and abundance of environmental conditions provides opportunity for continuous or nearly continuous intra-specific interactions for the MIS species. MIS species with this outcome are likely well-distributed throughout the planning area.
- **Outcome B** - Suitable environments are broadly distributed and of high abundance, but there are gaps where suitable environments are absent or only present in low abundance. However, the disjunct areas of suitable environments are typically large enough and close enough to permit dispersal among subpopulations and to allow the species to potentially interact as a metapopulation. Species with this outcome are likely well-distributed throughout most of the planning area.
- **Outcome C** - Suitable environments are distributed frequently as patches and/or exist at low abundance. Gaps where suitable environments are either absent or present in low abundance are large enough such that some subpopulations are isolated, limiting opportunity for intra-specific interactions. There is opportunity for subpopulations in most of the planning area to interact, but

some subpopulations are so disjunct or of such low density that they are essentially isolated from other populations. For species for which this is not the historical condition, reduction in the species' range in the planning area may have resulted. Species with this outcome are likely well-distributed in only a portion of the planning area.

- **Outcome D** - Suitable environments are frequently isolated and/or exist at very low abundance. While some of the subpopulations associated with these environments may be self-sustaining, there is limited opportunity for population interactions among many of the suitable environmental patches. For species for which this is not the historical condition, reduction in species' range in the planning area may have resulted. These species are likely not well-distributed in the planning area.
- **Outcome E** - Suitable environments are highly isolated and exist at very low abundance, with little or no possibility of population interactions among suitable environmental patches, resulting in strong potential for extirpations within many of the patches, and little likelihood of recolonization of such patches. There has likely been a reduction in the species' range from historical conditions, except for some rare, local endemics that may have persisted in this condition since the historical time period. Species with this outcome are not well-distributed throughout much of the planning area.

In the NWFP, additional mitigation measures were implemented because the outcome likelihood for the black-backed woodpecker was less than 80 (table below). Mitigation measures involved modified salvage logging guidelines that considered foraging needs of this species (USDA and USDI), which was expected to raise the likelihood of outcome A to greater than 80 percent (USDA and USDI 1994).

Table PCE13. Outcome likelihoods for the preferred alternative under the NWFP.

Species

Outcome likelihood

A

B

C

D

Hairy woodpecker

100

0

0

0

White-headed woodpecker

100

0

0

0

Black-backed woodpecker

73

27

0

0

Three-toed woodpecker

100

0

0

0

Williamson's sapsucker

100

0

0

0

Northern flicker

100

0

0

0

[ID#531]

Associated Comments: [Seq#510]

How does the Okanogan NF insure black-backed woodpecker viability? This is a species which is directly and significantly affected by fire suppression. [72-116]

Concern: [Seq#511]

"habitat is limited and scattered in the project area compared to historical conditions, and habitat connectivity to suitable habitat outside of the project area is fragmented from past management actions. Meadow habitat around Mission Pond and Black Pine Meadows is shrinking due to conifer encroachment. Conifer encroachment in the project area has decreased nutrient, water, and sunlight availability to moonworts, bladderworts, and aspen."(pp.13-14)

[This "wildlife habitat" section suggests that planned logging treatment can both increase large tree stands and early-successional stands, but "best science" would suggest that future climatic conditions and reducing or eliminating "past management actions" that have produced habitat problems could be expected to yield better results.

There is no evidence that conifers invade meadow habitat in the absence of climate change. The elimination of continuing meadow degradation by permitted commercial cattle grazing and the restoration of beaver colonies could be expected to restore and protect the meadow. To suggest that aggressive conifers can impact these plants with no reference to existing and planned management activities may be an example of "alternative facts".][comment end]

[ID#532]

Response: [Seq#511]

Effects of logging on wildlife habitat are discussed in the Preliminary EA, section 3.7.4.3.1 and the effects on stand structures in section 3.5.4.1. Future climate conditions are considered and modelled using the Ecosystem Management Decision Support (EMDS) modeling tool (EMDS 3.0.2; Reynolds and Hessburg 2005) (EA at 3.5.1). EMDS was used to compare the current conditions to a range of historical (HRV) and future reference conditions (FRV) for each sub-watershed to give insights into how dry and moist forest vegetation composition and structure have changed and how they are likely to change in the future with a predicted warmer and drier climate (EA at 3.5.1). "Reducing or eliminating "past management actions"" of logging was discussed in the effects of the "no-action" alternative (EA at 3.3.4.2.1, 3.4.4.2.1, 3.8.4.2.1, 3.10.4.5, 3.11.4.2.1, and 3.14.4.2.1). Logging is not proposed for the wetland thinning, which would cut small trees up to 10" dbh.

Rochefort et al., 1995, Woodward et al. 1995, Miller and Halpern 1998 and many others have discussed the causes of conifer encroachment in western mountain meadows. Climate change, cessation of sheep grazing, and long-term suppression of wildfire have been identified as contributors to conifer invasion of meadows (Arno and Gruell, 1986, Dunwiddie, 1977; Vale 1981, Miller and Halpern 1998, Halpern et al.

2010, Rochefort et al. 1994, Van Auken 2000, Jurena & Archer 2003; Heyerdahl et al. 2006. Coop & Givnish 2008).

Regardless of the cause of encroachment, it is desirable to maintain open meadow habitat for biological diversity. Haugo and Halpern (2007) concluded that removal or killing of trees at an early stage before soil changes occur is a more effective strategy for conservation of meadow systems than at later stages when viable seeds for meadow species are less likely to remain in the seed bank.

Cattle are not permitted within the meadows proposed for thinning. Beaver restoration would be expected to improve meadow condition, provided that they remain in the area. Approximately 50% of beaver reintroductions are successful. [ID#532]

Associated Comments: [Seq#511]

"habitat is limited and scattered in the project area compared to historical conditions, and habitat connectivity to suitable habitat outside of the project area is fragmented from past management actions. Meadow habitat around Mission Pond and Black Pine Meadows is shrinking due to conifer encroachment. Conifer encroachment in the project area has decreased nutrient, water, and sunlight availability to moonworts, bladderworts, and aspen."(pp.13-14) [This "wildlife habitat" section suggests that planned logging treatment can both increase large tree stands and early-successional stands, but "best science" would suggest that future climatic conditions and reducing or eliminating "past management actions" that have produced habitat problems could be expected to yield better results. There is no evidence that conifers invade meadow habitat in the absence of climate change. The elimination of continuing meadow degradation by permitted commercial cattle grazing and the restoration of beaver colonies could be expected to restore and protect the meadow. To suggest that aggressive conifers can impact these plants with no reference to existing and planned management activities may be an example of "alternative facts".] [11-4]

Concern: [Seq#512]

The Forest Service should consider the risk of increased disturbance when analyzing this proposed project. For example, as the warming climate alters species distribution and forces wildlife migration, landscape connectivity becomes even more critical to species survival and ecosystem resilience. Id. at 9-14. See also USDA, Forest Service, National Roadmap for Responding to Climate Change at 26 (2011), available at http://www.fs.fed.us/climatechange/pdf/Roadmapfinal.pdf (recognizing importance of reducing fragmentation and increasing connectivity to facilitate climate change adaptation). [ID#533]

Response: [Seq#512]

The draft guidance referred to (and the final, 8/1/2016) *Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews* states that "Federal agencies, to remain consistent with NEPA, should consider the extent to which a proposed action and its reasonable alternatives contribute to climate change through GHG emissions and take into account the ways in which a changing climate over the life of the proposed project may alter the overall environmental

implications of such actions." This is disclosed in the Preliminary EA at 3.15.4 Climate Change, Greenhouse Gases and Carbon Sequestration section.

Future climate conditions are considered and modelled using the Ecosystem Management Decision Support (EMDS) modeling tool (EMDS 3.0.2; Reynolds and Hessburg 2005) (EA at 3.5.1) for the Mission Project. EMDS was used to compare the current conditions to a range of historical (HRV) and future reference conditions (FRV) for each sub-watershed to give insights into how dry and moist forest vegetation composition and structure have changed and how they are likely to change in the future with a predicted warmer and drier climate (EA at 3.5.1).

The Preliminary EA at p.60 describes the process used to define the desired range of vegetation conditions to aim for. *"Current conditions in each sub-watershed were evaluated independently with HRV and FRV reference conditions based on the ecological subregion (ESR) to which they are assigned. ESRs are comprised of areas (sub-watersheds) with similar climate, geology, topography, aquatic characteristics, and disturbance history (Hessburg et al. 2000). The FRV (Gärtner et al. 2008) was developed to provide insight as to how forest vegetation in the sub-watersheds may be affected by a changing climate. FRV reference conditions for a given sub-watershed are based on HRV reference conditions of the next (not necessarily geographically located) environmentally warmer and drier ESR. This is a conservative approach for estimating climate change, and it may underestimate the FRV if the degree of climate change is more severe than indicated by the next warmer and drier ESR.*

The desired values for the amount and arrangement of dry and moist forest structure classes in this analysis were determined by finding where the HRV and FRV overlap; this intersection is called "the desired range of variability" (DRV) for this analysis. One key premise of the Restoration Strategy, which is based on current knowledge of existing and anticipated future environmental conditions, is that maintaining and restoring forest vegetation conditions to levels that are within ranges where the HRV and FRV overlap will provide for more sustainable and resilient forest ecosystems."

Connectivity within the project area and to areas adjacent is important and has been considered in project design and mitigation. The treatment area footprint comprises about 20% of the area, so much of the area will be left in an untreated condition, which will provide a balance of dense and more open forest. Mitigations to retain connectivity include riparian buffers (Preliminary EA at p. 368), and the following (Preliminary EA at p. 341):

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.

- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 15 - 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.
- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees.
- Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls (Wildlife Report, Glidden, 2017).
- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre. (Wildlife Report, Glidden, 2017).

Thinning from below is planned, with the exception of the 80 acres (currently reduced to 59 acres) that would be clear-cut. While the thinned areas will be more open than currently, they will still provide forested connections.

The National Roadmap for Responding to Climate Change document that you cited describes the approach taken in the Mission Project, and in the Forest Restoration Strategy which the project is based on. It states *"To address the risks and vulnerabilities associated with climate change, land managers will need science-based assessments of the relative vulnerability of key ecosystem components and their ability to adapt to increased stress. These assessments will help managers set priorities in maintaining healthy, resilient ecosystems and protecting communities and infrastructure. Basing their decisions on such assessments, land managers can avoid fragmented, piecemeal approaches and make cost-effective investments."*

The science-based approach was the EMDS modelling, which was followed by analysis by Dr. Derek Churchill and field verification by contracted and District staff.

Two of the on-going management actions referenced by the Roadmap (at p.23) *("Restoring healthy, resilient forest and grassland ecosystems by doing the following: - Treating overgrown forests to make them less vulnerable to wildfire, pathogens, and insect attack."* and *"Protecting infrastructure by modifying or relocating roads, culverts, trails, campgrounds, and other facilities to resist floods and other major disturbances.")* are accomplished in the Mission project.

[ID#533]

Associated Comments: [Seq#512]

The Forest Service should consider the risk of increased disturbance when analyzing this proposed project. For example, as the warming climate alters species distribution and forces wildlife migration, landscape connectivity becomes even more critical to species survival and ecosystem resilience. Id. at 9-14. See also USDA, Forest Service, National Roadmap for Responding to Climate Change at 26 (2011), available at http://www.fs.fed.us/climatechange/pdf/Roadmapfinal.pdf (recognizing importance of reducing fragmentation and increasing connectivity to facilitate climate change adaptation). [27-29]

Concern: [Seq#513]

What will become of 50,200 acres worth of wildlife during the 16 years of high disturbance that the MRP represents?

How will they live, forage, procreate, be safe? [ID#534]
Response: [Seq#513]

The treatment area footprint comprises about 20% of the area. 80% of the area will be left in an untreated condition, which will provide a balance of dense and more open forest, and undisturbed areas. Mitigations to retain denser forest areas within units include riparian buffers (Preliminary EA at p. 368), and the following (Preliminary EA at p.341):

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.
- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.
- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees.
- Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls (Wildlife Report, Glidden, 2017).
- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre. (Wildlife Report, Glidden, 2017).

Thinning from below is planned, with the exception of the 80 acres that would be clear-cut. While the thinned areas will be more open than currently, they will still provide forested connections.

The Mission project seeks to restore a limited amount of the two drainages, to a more historical condition with more open patchy stands dominated by fire-resistant species, that would be less likely to contribute to the spread of large, high-severity, wildfire. This would provide more open habitat types across the landscape, and introduce more habitat diversity. This habitat has been reduced by fire suppression over the last decade.

The wildlife species present in most of the project area evolved in a frequent fire regime, and fire plays a key role in rejuvenation of understory forage and habitat components such as snags and down wood. Pilliod et al. (2006) report that, in general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from fuel reduction activities, while species that are closely associated with closed canopy forests or dense understory, will likely be negatively affected by fuel reductions. Deer would be benefitted by increased forage quantity and quality, particularly on winter range. Species' responses to project activities depend on the species and habitats used. Threatened, endangered, sensitive and focal species are discussed in the Preliminary EA at p.128-166 and in the Wildlife Report (Glidden, 2017). Retaining key habitat components- snags, large trees and down wood, mitigates negative effects, as does maintaining untreated areas adjacent to treated areas.

Habitat loss from low intensity prescribed fire may persist for only a few months or years, in the case of understory vegetation and litter, however, large diameter snags and down wood take longer to recover. These important habitat elements are avoided to the extent possible, during treatments. Pilliod et al. (2006) concluded that management activities that consider the retention of habitat structures such as snags, down wood, and refugia of untreated stands may increase habitat heterogeneity and benefit the greatest number of species in the long run.

The Mission activities retain important habitat components within treatment units by the use of an "individuals, clumps, and gaps" (ICO) marking method in harvest units and a mitigation in fuels units to leave 20% of the unit in undisturbed patches from 0.1 to several acres over the fuels and pre-commercial thin units. This would result in diversity at a fine scale across the units, while maintaining snags, large trees and logs, mistletoe clumps and defective trees, cover, connectivity and a variety of food resources.

Disturbance will occur during project activities, and will result in short-term displacement for some species. These effects are disclosed for threatened, endangered, sensitive and focal species in the Preliminary EA at p.128-166 and in the Wildlife Report (Glidden, 2017). Work will be limited spatially, as logging of all units does not happen at once. This is also true of fuels units. While logging and non-commercial thinning/ladder fuel reduction would occur over limited periods over several years, prescribed burning would take longer, as conditions for burning are only achieved for a few days or weeks per year. Activities occur over a limited area that has been affected previously by human settlement, logging, grazing and other activities. Approximately 80% of the drainages would remain in an undisturbed condition.

[ID#534]

Associated Comments: [Seq#513]

* What will become of 50,200 acres worth of wildlife during the 16 years of high disturbance that the MRP represents? How will they live, forage, procreate, be safe? [67-31]

Concern: [Seq#514]

The entire wildlife analysis should include the endangered gray wolf, but it was dismissed. The project area was home to the reappearance of the gray wolf to Washington State since the 1930's. The project area has been chosen by the wolf for rendezvous sites. Den sites are very closely adjacent to the project site. I contest that the project would have only short term disturbance to the wolf. The project will negatively affect deer, one of the animals wolf prey on. Though the EA determines there will be no negative affect on deer, I know that by logging and thinning deer will be negatively affected. Their cover would be greatly altered. Deer need cover for fawning and for protection from the elements and from humans. Again, because huge areas adjacent to the project area burned in 2014 and 2015, there is already a significant negative impact on deer cover. We can expect to see a drop in the deer population as a result of this project. [ID#535]

Response: [Seq#514]

Effects to wolves are disclosed in the Wildlife Report (Glidden, 2017) at p. 7, and in the draft biological assessment, and copied below.

" Gray wolves are habitat generalists and one of the most adaptable large predators in the world (USFWS 2009). They require only a sufficient year-round prey base and protection from excessive human-caused mortality. Restrictions on human development and other land use practices have not been necessary to achieve wolf recovery in Idaho, Montana, and Wyoming (USFWS 2009), and the U.S. Fish and Wildlife Service did not designate critical habitat for wolves in the western United States (Wiles et al. 2011).The project area is part of the Lookout Pack's territory. Gray wolves and a rendezvous site are documented in the project area, but no den sites have been found there. Timing restrictions may be implemented if a den or rendezvous site is found. Deer are found across the project area, year-round, and provide a prey base. Deer forage is expected to increase in quantity and palatability as a result of planned treatments, which may increase deer numbers in the area. Disturbance and vegetation changes from treatments would not be expected to negatively affect wolves, although wolves and prey may be temporarily displaced during activities. Current open road density in the project area is 1.1 mile per square mile, and will be increased to 1.2 post-project with alternative 2 (although 13.2 miles of the increased road miles are administrative use, which is estimated to average 1-2 vehicles per year). Alternative 3 would reduce road densities to 0.8 miles per square mile. The determination for wolves is "may affect (due to temporary and short-term disturbance), not likely to adversely affect". Reduction in road density would be a beneficial effect for wolves and their prey (alternative 3). More detail in biological assessment. "

Effects to deer on winter range are disclosed in the Revised Preliminary EA at p. 137-138, 140, 155-156, 160, 162-166 and in the Wildlife Report at p. 11, 24-29, 46-47, 54, 59, 61-64. The primary management concern listed for this mule deer management zone by WDFW (2016) is the "*extensive loss of winter*

range shrub forage due to recent wildfires in the northern three-fourths of the zone. Modest increases in antlerless harvest have been implemented in the most heavily impacted GMUs to stabilize or slightly decrease the local population in the short-term to bring deer numbers in line with the landscape's reduced carrying capacity, and avoid over-browsing of recovering winter range shrubs." The Mission Project will provide additional forage due to canopy opening of thinned stands, and will rejuvenate small amounts of shrub habitat between forested stands with low-intensity prescribed burning, while retaining the larger blocks of bitterbrush that are still low-growing and healthy.

Estimated cover for *non*-winter range is 66% (Wildlife Report at p. 12), which would provide adequate hiding, thermal and fawning cover. Decreases in canopy closure as a result of thinning would produce more deer browse, and would improve habitat. Post-treatment, a conservative estimate of remaining thermal cover would be 49% (assuming all harvest and noncommercial treatments would remove all cover, which overestimates loss of cover). The Washington Department of Fish and Wildlife (WDFW) describes Methow non-winter range as productive, high mountain habitat with *"optimal habitat conditions that provide nutritious forage for lactating does and contribute to high fawn survival and recruitment. These habitats are not limited, face little threat of alteration, and are at present self-sustaining."*

[ID#535]

Associated Comments: [Seq#514]

The entire wildlife analysis should include the endangered gray wolf, but it was dismissed. The project area was home to the reappearance of the gray wolf to Washington State since the 1930's. The project area has been chosen by the wolf for rendezvous sites. Den sites are very closely adjacent to the project site. I contest that the project would have only short term disturbance to the wolf. The project will negatively affect deer, one of the animals wolf prey on. Though the EA determines there will be no negative affect on deer, I know that by logging and thinning deer will be negatively affected. Their cover would be greatly altered. Deer need cover for fawning and for protection from the elements and from humans. Again, because huge areas adjacent to the project area burned in 2014 and 2015, there is already a significant negative impact on deer cover. We can expect to see a drop in the deer population as a result of this project. [68-138]

Concern: [Seq#515]

The Forest Service should include existing and reasonably foreseeable climate change impacts as part of the affected environment, assess them as part of the agency's hard look at impacts, and integrate them into each of the alternatives, including the no action alternative. The Forest Service has a substantive duty under its own Forest Service Manual to establish resilient ecosystems in the face of climate change. The Forest Service should analyze in detail the impact of climate change on forest roads and resources. The analysis here fails to address the cumulative impacts of climate change and forest roads on the landscape. [ID#536]

Response: [Seq#515]

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate.

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon. The oceans have been rising for all of recorded history. [ID#536]

Associated Comments: [Seq#515]

The Forest Service should include existing and reasonably foreseeable climate change impacts as part of the affected environment, assess them as part of the agency's hard look at impacts, and integrate them

into each of the alternatives, including the no action alternative. The Forest Service has a substantive duty under its own Forest Service Manual to establish resilient ecosystems in the face of climate change.7 The Forest Service should analyze in detail the impact of climate change on forest roads and resources. The analysis here fails to address the cumulative impacts of climate change and forest roads on the landscape. [27-32]

I am apprehensive that with the rising temperatures of climate change that this volatile combination could be disastrous. I do not want the Mission Restoration Project experimenting on Libby Creek and Buttermilk Watersheds, in the form of ICO, as the next failed policy. [51-57]

Concern: [Seq#516]

climate change can be accurately modeled and its long-term impact accurately predicted [ID#537]
Response: [Seq#516]

Climate change cannot be accurately modeled and its long-term impact accurately predicted. That is why when reading the literature there is so many different models and most predicted results are based on the most likely scenarios. Scientists studying climate change in the Western Hemisphere have numerous disagreements with scientists studying climate change in Europe and Russia.

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon. The oceans have been rising for all of recorded history. Most climate change models are based on less than 90 years of data and do not look at geological cycles (millions of years long) as well as the shorter ice age cycles (hundreds of thousands of years long) or even shorter cycles of 400 - 1000 years.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions

associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

[ID#537]

Associated Comments: [Seq#516]

climate change can be accurately modeled and its long-term impact accurately predicted; [63-20]

Concern: [Seq#517]

The Forest Service should include existing and reasonably foreseeable climate change impacts as part of the affected environment, assess them as part of the agency's hard look at impacts, and integrate them into each of the alternatives, including the no action alternative. The Forest Service has a substantive duty under its own Forest Service Manual to establish resilient ecosystems in the face of climate change. [ID#538]

Response: [Seq#517]

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate. [ID#538]

Associated Comments: [Seq#517]

Marcy Fox, Rewilding Attorney for WildEarth Guardians, pointed out that "The Forest Service should include existing and reasonably foreseeable climate change impacts as part of the affected environment, assess them as part of the agency's hard look at impacts, and integrate them into each of the alternatives, including the no action alternative. The Forest Service has a substantive duty under its own Forest Service Manual to establish resilient ecosystems in the face of climate change. [63-88]

Concern: [Seq#518]

It is highly unfortunate, or shall I say perilous, that given the existing level of cogent scientific consensus regarding global warming, that the USFS has elected to heed the advice of a handful of scientists whom peddle those practices which actually run counter to legitimate forest protection while professing that the stated proposed actions would restore the land to some randomly chosen time period-a period, circa 1930, which presumably pre-dates the mismanagement and failed policies of the forest under the auspices of the USFS itself. We are now asked to somehow have trust and faith that the latest science will not be another gross misstep even though some of the methods are untried, as in the case of the "individuals, clumps, and openings" computer-generated model, and some are simply more of the same practices, i.e., fire suppression, commercial logging, cattle grazing allotments, and road-building, which certainly incur more harm than good and which, evidenced by the omissions in the MRP EA, do not adhere to Federal Guidelines related to green house gas emissions. [ID#539]
Response: [Seq#518]

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these

disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon by scientists. The oceans have been rising for all of recorded history. Most climate change models are based on less than 90 years of data and do not look at geological cycles (millions of years long) as well as the shorter ice age cycles (hundreds of thousands of years long), or even shorter cycles of 400 - 1000 years. Numerous European and Russian climate scientists disagree with the conclusions of Western Hemisphere Climate Scientists.

Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate. The historic range of variability is mostly based on the 1930's which was before the start of large scale timber harvest on National Forest lands which in the west was not until after World War II.

[ID#539]

Associated Comments: [Seq#518]

It is highly unfortunate, or shall I say perilous, that given the existing level of cogent scientific consensus regarding global warming, that the USFS has elected to heed the advice of a handful of scientists whom peddle those practices which actually run counter to legitimate forest protection while professing that the stated proposed actions would restore the land to some randomly chosen time period-a period, circa 1930, which presumably pre-dates the mismanagement and failed policies of the forest under the auspices of the USFS itself. We are now asked to somehow have trust and faith that the latest science will not be another gross misstep even though some of the methods are untried, as in the case of the "individuals, clumps, and openings" computer-generated model, and some are simply more of the same practices, i.e., fire suppression, commercial logging, cattle grazing allotments, and road-building, which certainly incur more harm than good and which, evidenced by the omissions in the MRP EA, do not adhere to Federal Guidelines related to green house gas emissions. [65-13]

Concern: [Seq#519]

Climate change is not adequately considered in the 400+ page EA of the MVP.

What is the carbon foot print of this 16 year project estimated at?

[ID#540]
Response: [Seq#519]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy

between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

[ID#540]

Associated Comments: [Seq#519]

* Climate change is not adequately considered in the 400+ page EA of the MVP. What is the carbon foot print of this 16 year project estimated at? [67-20]

Concern: [Seq#520]

Trees hold CO2;

Logging releases CO2

More CO2;

More climate change

More heat;

More wildfire

Less water;

Less fish;

Less wildlife;

Less biodiversity

Less quality of life for us, the animals, the earth

Our mistakes return to haunt us. [ID#541]

Response: [Seq#520]

Thank you for your comment.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

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Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate. [ID#541]

Associated Comments: [Seq#520]

* Trees hold CO2 Logging releases CO2 More CO2 More climate change More heat More wildfire Less water Less fish Less wildlife Less biodiversity Less quality of life for us, the animals, the earth Our mistakes return to haunt us. [67-10]

Concern: [Seq#521]

Some politicians and status quo profiteers pretend there's nothing to do about climate change because it isn't real. The FS acknowledges it's real, focuses only its symptoms and-like those politicians and profiteers-ignores and distracts from the causes it enables. Global climate change is a significant threat to humanity and forests. Climate change is caused by excess CO2 and other greenhouse gases transferred to the atmosphere from other pools. All temperate and tropical forests, including those in this project area, are an important part of the global carbon cycle. Since the time the forest plan was written, there is significant new information reinforcing the need to conserve all existing stores of carbon in forests to keep carbon in forests and out of the atmosphere, in order to mitigate climate change. Since all forests are an important part of the global carbon cycle, the agency must do its part by managing forests to maintain and increase carbon storage. Global warming is caused by the cumulative buildup of greenhouse gases, including CO2, in the atmosphere. Logging will add to the cumulative total carbon emissions so it is clearly part of the problem and must be minimized. Logging will not only transfer carbon from storage to the atmosphere but future regrowth is unlikely to ever make up for the effects of logging, because carbon storage in logged forests will lag behind carbon storage in unlogged forests for decades or centuries. [ID#542]

Response: [Seq#521]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

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Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate.

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon by scientists. The oceans have been rising for all of recorded history.

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon that the scientists from the Western Hemisphere do not completely agree with scientists from Europe and Russia on. The oceans have been rising for all of recorded history. Most climate change models are based on less than 90 years of data and do not look at geological cycles (millions of years long) as well as the shorter ice age cycles (hundreds of thousands of years long). [ID#542]

Associated Comments: [Seq#521]

CLIMATE CHANGE: The EA does not include the large body of science relating to the adverse effects of such projects upon on carbon sequestration Where is the analysis of cumulative impacts of this project and other similar projects upon climate change? The importance of forests and their contribution to global climate regulation has long been recognized. There is a large body of evidence that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. Such impacts should be analyzed in an EIS. [70-13]

Some politicians and status quo profiteers pretend there's nothing to do about climate change because it isn't real. The FS acknowledges it's real, focuses only its symptoms and-like those politicians and profiteers-ignores and distracts from the causes it enables. Global climate change is a significant threat to humanity and forests. Climate change is caused by excess CO2 and other greenhouse gases transferred to the atmosphere from other pools. All temperate and tropical forests, including those in this project area, are an important part of the global carbon cycle. Since the time the forest plan was written, there is significant new information reinforcing the need to conserve all existing stores of carbon in forests to keep carbon in forests and out of the atmosphere, in order to mitigate climate change. Since all forests are an important part of the global carbon cycle, the agency must do its part by managing forests to maintain and increase carbon storage. Global warming is caused by the cumulative buildup of greenhouse gases, including CO2, in the atmosphere. Logging will add to the cumulative total carbon emissions so it is clearly part of the problem and must be minimized. Logging will not only transfer carbon from storage to the atmosphere but future regrowth is unlikely to ever make up for the effects of logging, because carbon storage in logged forests will lag behind carbon storage in unlogged forests for decades or centuries. [72-29]

Concern: [Seq#522]

The EA ignores the large body of science on forest management's adverse effects on carbon sequestration. Also, the FS likes to claim that carbon emissions from projects such as Mission are minimal in the overall context of such things, however the FS avoids the logical step of analyzing and disclosing the cumulative effects of overall agency management contributions to climate change.

[[ID#543]
Response: [Seq#522]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration, considers the effect of climate change caused by this project and

the cumulative impacts resulting from the project and climate change. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

Section 3.5, Vegetation, assesses whether landscape characteristics including forest vegetation composition and structures have departed from historic and/or future ranges of variability. The future ranges of variability looks at how forest vegetation composition and structure are likely to change in the future with a predicted warmer and drier climate. The historic range of variability is mostly based on the 1930's which was before the start of large scale timber harvest on National Forest lands which in the west was not until after World War II.

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

Climate change cannot be accurately modeled and its long-term impact accurately predicted. That is why when reading the literature there is so many different models and most predicted results are based on the most likely scenarios or ranges. While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon. The oceans have been rising for all of recorded history. Most climate change models are based on less than 90 years of data and do not look at geological cycles (millions of years long) as well as the shorter ice age cycles (hundreds of thousands of years long). Scientists studying climate change in the Western Hemisphere have disagreements with scientists studying climate change in Europe and Russia. [ID#543]

Associated Comments: [Seq#522]

The EA ignores the large body of science on forest management's adverse effects on carbon sequestration. Also, the FS likes to claim that carbon emissions from projects such as Mission are minimal in the overall context of such things, however the FS avoids the logical step of analyzing and disclosing the cumulative effects of overall agency management contributions to climate change. [72-34]

Concern: [Seq#523]

Abundant wildlife exists in this area, including endangered and threatened species such as wolves, lynx, moose, cougars, goshawks, and others that would benefit from a Wilderness designation in the future. The EA states that the project area is in the core area for lynx, that 12,890 acres are designated Critical Habitat for lynx. Approximately 4,604 acres are within the mapped lynx habitat. So what is the expected impact upon Lynx [ID#544]

Response: [Seq#523]

Effects to lynx and critical habitat are found in the Revised Preliminary EA at p. 147-150 and in the draft Biological Assessment in project files. [ID#544]

Associated Comments: [Seq#523]

Abundant wildlife exists in this area, including endangered and threatened species such as wolves, lynx, moose, cougars, goshawks, and others that would benefit from a Wilderness designation in the future. The EA states that the project area is in the core area for lynx, that 12,890 acres are designated Critical Habitat for lynx. Approximately 4,604 acres are within the mapped lynx habitat. So what is the expected impact upon Lynx? [70-16]

Concern: [Seq#524]

[comment:51-51]

I am concerned about the wildlife that makes these watersheds their home. How can they survive this lengthy, loud, disturbing process, known to us as the Mission Restoration Project, while their habitat is being decimated?

[comment:51-52]

With an individuals, clumps and openings mosaic model, where in the forest will the mule and white tail deer, wolf, cougar, bear, bob cat, moose, squirrels, rodents, raptors, song birds, reptiles, amphibians and invertebrates eat, sleep, hide, procreate, give birth and rear young?

[comment:51-53]

After fifteen years of prescribed burning what will be left to forage and will some animals suffocate due to the smoke? [ID#545]
Response: [Seq#524]

Species' responses to project activities depend on the species and habitats used. Threatened, endangered, sensitive and focal species are discussed in the Preliminary EA at p.128-166 and in the Wildlife Resource Report (Glidden, 2017), in project files, and the draft biological assessment (for threatened and endangered species), in project files).

The treatment area footprint comprises about 20% of the area. 80% of the area will be left in an untreated condition, which will provide a balance of dense and more open forest, and undisturbed areas. Mitigations to retain denser forest areas within units will provide additional untreated habitat. These include riparian buffers (Preliminary EA at p. 368), and the following mitigations (Preliminary EA at p.341):

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy (ICO method- individuals, clumps and openings)
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.
- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.

- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees.
- Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls (Wildlife Report, Glidden, 2017).
- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre. (Wildlife Report, Glidden, 2017).

Thinning from below is planned, with the exception of the 80 acres (currently 59 acres) that would be include in 2 variable retention regeneration harvest units (clear-cut). While the thinned areas will be more open than currently, they will still provide forested connections.

The Mission project seeks to restore a limited amount of the two drainages to a more historical condition with more open patchy stands dominated by fire-resistant tree species, that would be less likely to contribute to the spread of large, high-severity, habitat-destroying wildfire. This would result in more open habitat types across the landscape, and introduce more habitat diversity. This habitat type has been reduced by fire suppression over the last decade, to the detriment of species that are associated with it (and a more frequent low intensity fire regime), such as white-headed woodpeckers.

The wildlife species present in most of the project area evolved in a frequent fire regime, and fire plays a key role in rejuvenation of understory forage and habitat components such as snags and down wood. Pilliod et al. (2006) report that, in general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from fuel reduction activities, while species that are closely associated with closed canopy forests or dense understory, will likely be negatively affected by fuel reductions. Deer (including white-tailed) would be benefitted by increased forage quantity and quality, particularly on winter range. Retaining key habitat components- snags, large trees and down wood, mitigates negative effects to some species, as does maintaining untreated areas adjacent to treated areas. These are routine mitigations, and are incorporated into the ICO method utilized for implementing the Forest Restoration Strategy.

Habitat loss from low intensity prescribed fire may persist for only a few months or years, in the case of understory vegetation and litter, however, large diameter snags and down wood take longer to recover, if they are burned. These important habitat elements are avoided to the extent possible, during treatments. Pilliod et al. (2006) concluded that management activities that consider the retention of habitat structures such as snags, down wood, and refugia of untreated stands may increase habitat heterogeneity and benefit the greatest number of species in the long run. The Mission activities retain important habitat components within treatment units by the use of an "individuals, clumps, and gaps" (ICO) marking method in harvest units and a mitigation in fuels units to leave 20% of the unit in undisturbed patches from 0.1 to several acres over the fuels and pre-commercial thin units. This would result in diversity at a fine scale across the units, while maintaining snags, large trees and logs, mistletoe clumps and defective trees, cover, connectivity and a variety of food resources.

Disturbance will occur during project activities, and will result in short-term displacement for some species. These effects are disclosed for threatened, endangered, sensitive and focal species in the Preliminary EA at p.128-166, the draft biological assessment and in the Wildlife Report (Glidden, 2017). Work will be limited spatially and temporally, as logging of all units does not happen at once. Ground-based logging, which would cover approximately 4% of the project area outside of Wilderness would occur in several units at one time. This would displace animals temporarily due to noise and human presence. However, they would not need to move far to avoid disturbance.

While logging and non-commercial thinning/ladder fuel reduction would occur over limited periods over several years, prescribed burning may take longer, as conditions for burning are only achieved for a few days or weeks per year. Activities occur over a limited area that has been affected previously by human settlement, logging, grazing and other activities. Approximately 80% of the drainages would remain in an undisturbed condition.

Prescribed fire at low severities rejuvenates vegetation, providing more abundant, palatable and nutritious plant foods. Prescribed burning was found to result in no change to red squirrel densities (Russell, Lehmkuhl 2010). Bagne and Purcell (2011) found that low-severity prescribed fire in the spring drove bird communities toward pre-suppression conditions and more historical patterns. Bull and Wales (2001) found that prescribed burning benefitted woodpeckers associated with ponderosa pine, but was detrimental to other woodpeckers due to loss of down wood. Cavity excavators depend on disturbance from insects, disease and fire to create dead and hollow trees.

Direct mortality of wildlife due to equipment, incineration or asphyxiation during fuel reduction burning is considered to be low, but that is anecdotal information (Pilliod et al. 2006). Spring burning during the breeding season may result in mortality of ground- and shrub-nesting bird nestlings and species living within litter such as small mammals, reptiles, amphibians and invertebrates (Pilliod et al. 2006). Pilliod et al. conclude that "it should be recognized that a planned burn will likely kill some individuals and mortality can be significant for some populations", and that species with limited distributions need special consideration. Species with limited distribution (recognized as threatened, endangered or sensitive) are not found in the project area, or their habitats are not affected. The Wildlife Report disclosed effects to species found in the project area. [ID#545]

Associated Comments: [Seq#524]

I am concerned about the wildlife that makes these watersheds their home. How can they survive this lengthy, loud, disturbing process, known to us as the Mission Restoration Project, while their habitat is being decimated? [51-51]

With an individuals, clumps and openings mosaic model, where in the forest will the mule and white tail deer, wolf, cougar, bear, bob cat, moose, squirrels, rodents, raptors, song birds, reptiles, amphibians and invertebrates eat, sleep, hide, procreate, give birth and rear young? [51-52]

After fifteen years of prescribed burning what will be left to forage and will some animals suffocate due to the smoke? [51-53]

Concern: [Seq#525]

Since large mammals require dense thickets and some small ones like the pine marten also, where will they go when their habitat is removed? [ID#546]
Response: [Seq#525]

The treatment area footprint comprises about 20% of the area. 80% of the area will be left in an untreated condition, which will provide a balance of dense and more open forest, and undisturbed areas. Mitigations to retain denser forest areas within units will provide additional untreated habitat. These include riparian buffers (Preliminary EA at p. 368), and the following mitigations (Preliminary EA at p.341):

- In harvest units, retain complex patches, clumps, and canopy gaps in accordance with the Forest Restoration Strategy (ICO method- individuals, clumps and openings)
- During post-harvest ladder fuel reduction thinning, retain complex patches, clumps, and gaps retained in the harvest units.
- During ladder fuel reduction thinning outside of harvest units, retain clumps of unthinned patches of trees from 0.1 to multiple acres.
- Retain denser forest in riparian areas and in clumps and patches across the landscape for western gray squirrels. In harvest and ladder fuel reduction thinning units, retain groups of trees with interlocking canopies and more open areas to balance fungal and mast crop production. Provide stringers of trees with interlocking crowns between natal nest sites, forage areas, and water for western gray squirrels.
- In ladder fuel reduction thinning units, retain areas of dense multistoried canopy cover across 20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres for mule deer.
- Limit the diameter of large trees cut under trees in stands providing Nesting-Roosting-Foraging (NRF) habitat to <21" DBH. Retain snags and defective trees.
- Retain snags and defective trees. Maintain canopy closure of 60%, and create no openings greater than ¼ acre. Maintain groups of large trees, including large douglas-fir in proximity to large pines and clumps of large trees with canopy interaction sufficient to provide habitat elements for owls (Wildlife Report, Glidden, 2017).
- In NRF stands, where LFR treatment would occur (units 1, 24, 65, 73, 403, 406, 407, 410, 418, 419, 420, 421, 423), maintain canopy closure of 60%, and create no openings greater than ¼ acre. (Wildlife Report, Glidden, 2017).

Thinning from below is planned, with the exception of the 80 acres (now 59 acres in 2 units) that would be clear-cut. While the thinned areas will be more open than currently, they will still provide forested conditions. The areas to be treated are generally along roads and in previously logged areas, and along the residential interface, where fuels reduction is the most badly needed.

The Mission project seeks to restore a limited amount of the two drainages to a more historical condition with more open patchy stands dominated by fire-resistant tree species, that would be less likely to contribute to the spread of large, high-severity, habitat-destroying wildfire. This would result in more open habitat types across the landscape, and introduce more habitat diversity. This habitat type has been reduced by fire suppression over the last decade, to the detriment of species that are associated with it (and a more frequent low intensity fire regime), such as white-headed woodpeckers.

Disturbance will occur during project activities, and will result in short-term displacement for some species. These effects are disclosed for threatened, endangered, sensitive and focal species in the Preliminary EA at p.128-166, the draft biological assessment and in the Wildlife Report (Glidden, 2017). Work will be limited spatially and temporally, as logging of all units does not happen at once. Ground-based logging, which would cover approximately 4% of the project area outside of Wilderness would occur in several units at one time. This would displace animals temporarily due to noise and human presence. However, they would not need to move far to avoid disturbance.

While logging and non-commercial thinning/ladder fuel reduction would occur over limited periods over several years, prescribed burning may take longer, as conditions for burning are only achieved for a few days or weeks per year. [ID#546]
Associated Comments: [Seq#525]
Since large mammals require dense thickets and some small ones like the pine marten also, where will they go when their habitat is removed? [51-54]

Concern: [Seq#526]

[comment:68-111]

PURPOSE AND NEED (p&n) #4"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and **reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".**

There is no evidence that the logging portion of this project will do any of the above stated purpose, and, to the contrary, evidence supports that it will only harm wildlife and will not increase resilience to wildfire. [ID#547]
Response: [Seq#526]

There is evidence that commercial thinning can develop, enhance and maintain habitats for wildlife species. The effects of thinning have been disclosed in the Preliminary EA at p. 142-159 and the Wildlife Report (Glidden, 2017) at p.6, in project files, for threatened, endangered, sensitive, MIS and focal species. Hutto (2008) found that many wildlife species in dry forest are that historically are subject to a frequent low-severity fire regime depend on fire-maintained structures and early-seral habitats. Fontaine and Kennedy (2012) concluded that *"thinning and prescribed fire have been shown to serve as good surrogates for wildfire, with the resulting conditions benefiting many wildlife species."* Hayes et al. (2003) studied bird response to thinning, and concluded that "thinning precipitates a number of short- and long-term changes in forest structure, that in turn influence habitat quality and suitability for a variety of species." Their research showed that the short-term effects of thinning for most bird species evaluated were positive, neutral, or of minor negative impact; which was consistent with previous studies of influences of thinning on birds (Hagar et al. 1996, Haveri and Carey 2000, in Hayes et al., 2003). Hayes et al. recommended that, since neither thinned nor unthinned stands provide habitat for maximum numbers of all species of diurnal birds, to optimize habitat for birds, landscapes dominated by younger stands be managed to retain a wide diversity of stand types, and that maintaining some densely stocked, unthinned stands, such as stands in or entering the stem-exclusion stage of stand development should provide refugia for species that are impacted by thinning. Their observations suggested that small (0.5 ha), unthinned patches within stands may provide habitat for some species of songbirds, and that variable-density thinning may be a useful conservation strategy in some situations. Other studies showed that moderate and heavy thinning intensities, at least in the short term, appeared to be neutral or positive for abundance of flying squirrels (D. M. Gomez, R. G. Anthony, and J. P. Hayes, unpublished manuscript in Hayes et al., 2003), abundance of several species of small mammals (Larson 2002, Suzuki and Hayes 2003, in Hayes et al., 2003), and use by bats (Humes et al. 1999, in Hayes et al., 2003). Sollman et al. (2016) found that thinning had negative effects on Northern flying squirrel density on the scale of a thinning treatment unit, but their results suggested that these effects were largely absorbed by the heterogeneous landscape, as animals shifted their distribution into unthinned areas without a decline in overall density. 80% of the project area would be untreated. Latham andTappeiner (2002) found that cutting trees to reduce density in old-growth stands or to modify the amount and distribution of fuels can be beneficial to residual large old-growth trees, which has implications for maintenance of this important habitat type and the species that are associated with old-growth habitats. Several compilations and research summaries discuss thinning and burning, and the positive and negative effects to wildlife species, including *Meta-analysis of avian and small-mammal response to fire severity and fire surrogate treatments in U.S. fire-prone forests* (Fontaine and Kennedy, 2012)*, Synthesis of Knowledge on the Effects of Fire and Fire Surrogates on Wildlife in U.S. Dry Forests* (Kennedy and Fontaine, 2009*), Seeing the Forest for the Fuel: Integrating ecological values and fuels management* (Lehmkuhl et al. 2007*)* and *Wildlife and Invertebrate Response to Fuel Reduction Treatments in Dry Coniferous Forests of the Western United States: A Synthesis* (Pilliod et al. 2006)*,* to name a few. The effects of thinning and burning on fire behavior and fuels have been studied, and summarized in several publications including the Forest Restoration Strategy (2012), *Forest Structure and Fire Hazard in Dry Forests of the Western United States* (Peterson et al. 2005), and Basic principles of forest fuel reduction treatments (Agee and Skinner, 2005). [ID#547]

Associated Comments: [Seq#526]

PURPOSE AND NEED (p&n) #4"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by

increasing resilience of habitats to wildfire". There is no evidence that the logging portion of this project will do any of the above stated purpose, and, to the contrary, evidence supports that it will only harm wildlife and will not increase resilience to wildfire. [68-111]

Concern: [Seq#527]

What will be the impacts of this sale upon fire-dependent species? This analysis is lacking. [ID#548]
Response: [Seq#527]

The project area is a fire-dependent ecosystem, and historical fire regimes have been discussed in the Preliminary EA at 3.6.3, Affected Environment. The wildlife species present in most of the project area (the dry forest) evolved in a frequent fire regime, and fire plays a key role in rejuvenation of understory forage and habitat components such as snags and down wood. Project treatments are focused in areas that have changed the most over time, and contribute to the restoration of more historical vegetation types that have been much reduced in the project area. These habitat changes have resulted in changes in wildlife species composition, abundance and richness. Effects to wildlife species are found in the Preliminary EA in chapter 3, the Wildlife Specialist report (Glidden, 2017), in project files, and the biological assessment (draft), in project files.

The effects of the project on white-headed woodpeckers, a species associated with burned forest, are disclosed in the Preliminary EA at p.153-154. Other woodpecker species also have an association with burned habitats, and are discussed in **Status of Management Indicator Species** *On the Okanogan and Wenatchee National Forests* **(Youkey, 2011).**

Pilliod et al. (2006) discuss the effects of thinning and prescribed burning in dry coniferous western forests on wildlife species, concluding that *"In general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from fuel reduction activities. In contrast, species that prefer closed-canopy forests or dense understory, and species that are closely associated with those habitat elements that may be removed or consumed by fuel reductions, will likely be negatively affected by fuel reductions. Some habitat loss may persist for only a few months or a few years, such as understory vegetation and litter that recover quickly. The loss of large-diameter snags and down wood, which are important habitat elements for many wildlife and invertebrate species, may take decades to recover and thus represent some of the most important habitat elements to conserve during fuel reduction treatments. Management activities that consider the retention of habitat structures (such as snags, down wood, and refugia of untreated stands) may increase habitat hetergeneity and may benefit the greatest number of species in the long run."*

[ID#548]
Associated Comments: [Seq#527]
What will be the impacts of this sale upon fire-dependent species? This analysis is lacking. [70-14]

Concern: [Seq#528]

And where the EA does reveal signs the FS ought to be cautious about its heavy reliance on the EMDS model, the agency simply ignores them. E.g., "Wildlife habitat for selected focal wildlife species was analyzed based on field data because EMDS results predicted habitat characteristics that were inconsistent with what was observed in the project area." (Id.) In other word, the only wildlife data the FS possesses for this project area that was gathered on the ground-which just happens to be inconsistent with the "photo-interpreted data"-was disregarded in favor of the latter in regards to choosing areas for logging and/or burning. [ID#549]

Response: [Seq#528]

The EMDS outputs depend on field verification, as air photo interpretation can be difficult, particularly for forested stands with multiple canopy layers. Field work is recognized as a component of this process (Forest Restoration Strategy, 2012 at p.36). The statement that "the only wildlife data the FS possesses for this project area that was gathered on the ground-which just happens to be inconsistent with the "photo-interpreted data"-was disregarded in favor of the latter in regards to choosing areas for logging and/or burning." is incorrect. The field data was used to refine the habitat layers and treatment proposals (which meant that some units were added and some were dropped or modified), and to better predict effects. [ID#549]

Associated Comments: [Seq#528]

And where the EA does reveal signs the FS ought to be cautious about its heavy reliance on the EMDS model, the agency simply ignores them. E.g., "Wildlife habitat for selected focal wildlife species was analyzed based on field data because EMDS results predicted habitat characteristics that were inconsistent with what was observed in the project area." (Id.) In other word, the only wildlife data the FS possesses for this project area that was gathered on the ground-which just happens to be inconsistent with the "photo-interpreted data"-was disregarded in favor of the latter in regards to choosing areas for logging and/or burning. [72-14]

Concern: [Seq#529]

[comment:72-27]

Ruggiero, 2007 (a scientist from the research branch of the FS) recognizes a fundamental need to demonstrate the proper use of scientific information, in order to overcome issues of decisionmaking

integrity that arise from bureaucratic inertia and political influence. Also, Sullivan et al. 2006 addressing the issue of what is "best available science." And the Committee of Scientists (1999) state:

To ensure the development of scientifically credible conservation strategies, the Committee recommends a process that includes (1) scientific involvement in the selection of focal species, in the development of measures of species viability and ecological integrity, and in the definition of key elements of conservation strategies; (2) independent scientific review of proposed conservation strategies before plans are published; (3) scientific involvement in designing monitoring protocols and adaptive management; and

(4) a national scientific committee to advise the Chief of the Forest Service on scientific issues in assessment and planning.

[comment end]

comment:72-104]The quality of the EA's analysis for terrestrial wildlife raises numerous concerns. Apparently many of the species of concern are not detected within the project area, although the EA doesn't present an adequate analysis of the cumulative effects on habitat conditions. In other words, if these species don't occur in the project area, is it because of the way the Forest has been managed and manipulated down through the years, or is it because the project area has naturally or historically not been their habitat?[comment end]

[comment:72-105]The EA doesn't disclose the best available biological science the FS is relying upon for establishing species/habitat relationships for all of the species of concern.[comment end]

[comment:72-106]Please disclose the best available science the FS relied upon for designing the programmatic habitat management strategies for each of the Management Indicator, Sensitive, and ESA-listed species, and likewise if the EA uses different science, please disclose your comprehensive list of those scientific cites.[comment end] [ID#550]
Response: [Seq#529]

comment:72-27 Thank you for input. This comment discusses a process that occurs at a higher level of the organization, and is outside the scope of this decision. Scientific information used has generally been independently peer reviewed, is current, and is applicable to the project area.

comment:72-104, 105, 106

The threatened, endangered, sensitive, management indicator, and other focal species are discussed in the preliminary EA at 3.7, Wildlife, starting at p.128, and in the Wildlife Report (Glidden, 2017) at p.6, in project files. Cumulative Effects were discussed for the project activities in the Preliminary EA at p. 158-159 and 163-166 and the Wildlife Resource Report (Glidden, 2017) at p.50-55 and 60-62, in project files, for habitat types present in the project area. These include open (gray flycatcher, white-headed woodpecker) and closed canopy forest (goshawk, varied thrush), boreal forest (lynx), snag habitat

(white-headed woodpecker, spotted owls), large trees (spotted owls, brown creepers), riparian and deciduous habitats (ruffed grouse, yellow warblers, willow flycatchers).

Some species may have been affected to some extent by past management activities, including loons (by campground development), bumblebees, fritillaries, Peck's skippers (by fire exclusion which allowed stand densities to decrease, which reduced understory plants used by these species), the woodpeckers, Townsend's big-eared bat, little brown myotis (by snag loss from firewood and hazard tree cutting) and Pacific fisher (by loss of structurally diverse late/old habitat). It is not known if these species were found in the project area previously (with the exception of the woodpeckers, that have been found in the project area) or if management activities affected them.

References are listed in the preliminary EA, appendix E, at p.375 and in the Wildlife Report (Glidden, 2017) for individual species that are resource indicators. Habitat relationships are summarized in Wisdom, 2000, Youkey, 2011, Birds of North America Online (2015-2017, various authors) and NatureServe (2015-2017, various authors).

For "programmatic habitat management strategies" on the west side of the Methow and Chewuch Rivers, the Forest uses the Northwest Forest Plan for managing spotted owl habitat and late/old forest. Recovery Plans and WDFW state management plans are used for individual species for best available science and habitat management. Citations can be found in the preliminary EA, Appendix E, starting at p.375. [ID#550]

Associated Comments: [Seq#529]

Ruggiero, 2007 (a scientist from the research branch of the FS) recognizes a fundamental need to demonstrate the proper use of scientific information, in order to overcome issues of decisionmaking integrity that arise from bureaucratic inertia and political influence. Also, Sullivan et al. 2006 addressing the issue of what is "best available science." And the Committee of Scientists (1999) state: To ensure the development of scientifically credible conservation strategies, the Committee recommends a process that includes (1) scientific involvement in the selection of focal species, in the development of measures of species viability and ecological integrity, and in the definition of key elements of conservation strategies; (2) independent scientific review of proposed conservation strategies before plans are published; (3) scientific involvement in designing monitoring protocols and adaptive management; and (4) a national scientific committee to advise the Chief of the Forest Service on scientific issues in assessment and planning. [72-27]

The quality of the EA's analysis for terrestrial wildlife raises numerous concerns. Apparently many of the species of concern are not detected within the project area, although the EA doesn't present an adequate analysis of the cumulative effects on habitat conditions. In other words, if these species don't occur in the project area, is it because of the way the Forest has been managed and manipulated down through the years, or is it because the project area has naturally or historically not been their habitat? [72-104]

The EA doesn't disclose the best available biological science the FS is relying upon for establishing species/habitat relationships for all of the species of concern. [72-105]

Please disclose the best available science the FS relied upon for designing the programmatic habitat management strategies for each of the Management Indicator, Sensitive, and ESA-listed species, and

likewise if the EA uses different science, please disclose your comprehensive list of those scientific cites. [72-106]

Concern: [Seq#530]

Comment is concerned with the potential of negative impacts of harvest activities.

The EA states the current decline in ecosystem health and resilience is partially caused by past vegetation management practices, including logging and cattle grazing. The alternatives offered feature and include those activities and the EA and accompanying reports describe how those practices in a MRP would result in long term, by USFS definition, "adverse impacts" to critical habitat. Information provided by the USFS associates describe how these practices have previously resulted in increased sediment, higher water temperatures, lower water flow that are currently below standards for optimum production of ESA-listed salmonids [ID#551]

Response: [Seq#530]

The current conditions have been influenced by previous land management practices that did not follow the same regulations as we currently have. Harvest and fuels treatments now are designed to mimic natural processes to help restore the landscape and streams. [ID#551]

Associated Comments: [Seq#530]

The EA states the current decline in ecosystem health and resilience is partially caused by past vegetation management practices, including logging and cattle grazing. The alternatives offered feature and include those activities and the EA and accompanying reports describe how those practices in a MRP would result in long term, by USFS definition, "adverse impacts" to critical habitat. Information provided by the USFS associates describe how these practices have previously resulted in increased sediment, higher water temperatures, lower water flow that are currently below standards for optimum production of ESA-listed salmonids. [63-51]

Concern: [Seq#531]

The concern is about the lack of quantitative data to ensure forest plan compliance.

Forest Plan Standard 3-2 requires the FS to "Rehabilitate fish habitats where past management activities have adversely affected their ability to support fish populations. Those fish habitats identified as having impacts from management activities shall be managed to show an upward trend with at least a 5%

increase in conditions per year until objectives for the habitat are met." The EA simply states, "The project meets this guidance via active and passive means of restoration." FYI, the forest plan's use of the symbol "%" refers to a number, specifically a ratio between two numbers. There are no numbers here. The EA fails to demonstrate an upward trend, and the EA fails to demonstrate the FS is managing consistent with Standard 3-2. This situation is typical of the EA. The FS is not really trying to demonstrate consistency with the Forest Plan, probably because the FS does not really want to manage consistent with the Forest Plan. The FS cannot claim "no significant impacts" in the absence of a genuine analysis and while it ignores the management requirements and constraints of its forest plan. It would be pointless for us to go through all the forest plan (and other programmatic direction) to point out everything the FS is ignoring. Obviously, the FS knows it is ignoring vast portions of its programmatic requirements, and apparently it is hoping nobody would notice. [ID#552]

Response: [Seq#531]

Whenever possible, we collect quantitative data on current stream conditions. This is summarized in the Aquatics report, in project files. Many aspects of stream restoration are extremely difficult to measure quantitatively so we have used qualitative terms and surrogate indicators for determining impacts. The EA and the Aquatics reports specifies the likely impact from this project and how it may change the aquatic conditions in Section 3.3, Water Resources, and summarized in Sectin 2.5, Comparison of Alternatives, startng on page 28 of the revised. [ID#552]

Associated Comments: [Seq#531]

Forest Plan Standard 3-2 requires the FS to "Rehabilitate fish habitats where past management activities have adversely affected their ability to support fish populations. Those fish habitats identified as having impacts from management activities shall be managed to show an upward trend with at least a 5% increase in conditions per year until objectives for the habitat are met." The EA simply states, "The project meets this guidance via active and passive means of restoration." FYI, the forest plan's use of the symbol "%" refers to a number, specifically a ratio between two numbers. There are no numbers here. The EA fails to demonstrate an upward trend, and the EA fails to demonstrate the FS is managing consistent with Standard 3-2. This situation is typical of the EA. The FS is not really trying to demonstrate consistency with the Forest Plan, probably because the FS does not really want to manage consistent with the Forest Plan. The FS cannot claim "no significant impacts" in the absence of a genuine analysis and while it ignores the management requirements and constraints of its forest plan. It would be pointless for us to go through all the forest plan (and other programmatic direction) to point out everything the FS is ignoring. Obviously, the FS knows it is ignoring vast portions of its programmatic requirements, and apparently it is hoping nobody would notice. [72-227]

Concern: [Seq#532]

Concerned with roads and the impact to aquatic resources.

Forest Service-built roads can, directly or indirectly, lead to habitat loss and fragmentation; decreased instream wood levels; negative edge effects, defined as increased risk of parasitism or disease, increased risk of predation, adverse microclimate conditions, and competition from invasive species; movement barriers--created when roads cross streams, they can pose barriers to aquatic organism movement, effectively fragmenting linear habitat. They also can affect the channel's morphology and geomorphic processes, causing incision and erosion; dislocation or bypass of areas, and disturbance at specific sites. Additionally, inappropriately-sized culverts impair access to critical fish habitat. (Washington Watershed Restoration Initiative, 2012). [ID#553]

Response: [Seq#532]

We agree with the statement and have proposed actions that will work to restore more natural conditions, including increased habitat connectivity. These positive effects are described in the Aquatics report in the project file and in Section 3.3, Water Resources of Chapter 3 of the EA. Some of the proposed restoration type projects include road closures and decommissioning, hardening road crossings on open fords , soil restoration through sub-soiling areas of previous-compacted soil such as where previous cedar mills were constructed, culvert replacement of culverts where fish barriers existing on fish-bearing streams and replacing undersized culverts on non-fish-bearing streams, enhancing and protecting areas viable for future beaver utilization, applying rock to road surfaces at stream crossings, and restoring deficit levels of coarse woody debris in fish-bearing stream channels Thank you for your comment. [ID#553]

Associated Comments: [Seq#532]

Forest Service-built roads can, directly or indirectly, lead to habitat loss and fragmentation; decreased instream wood levels; negative edge effects, defined as increased risk of parasitism or disease, increased risk of predation, adverse microclimate conditions, and competition from invasive species; movement barriers--created when roads cross streams, they can pose barriers to aquatic organism movement, effectively fragmenting linear habitat. They also can affect the channel's morphology and geomorphic processes, causing incision and erosion; dislocation or bypass of areas, and disturbance at specific sites. Additionally, inappropriately-sized culverts impair access to critical fish habitat. (Washington Watershed Restoration Initiative, 2012). [47-14]

Concern: [Seq#533]

Concerned with the watershed analyses not including limiting factors from WA Conservation Commission (2000).

Watershed Analysis

: Watershed analysis is a systematic procedure for evaluating the geomorphic and ecologic processes operating in a specific watershed. The Forest Service completed a watershed analysis for the entire Twisp Watershed in 1995 (USDA 1995), which includes the Buttermilk Creek drainage. The Libby Creek

drainage had a specific watershed analysis completed in 1995 (USDA 1995) and it was reviewed again in 1999 with the Lower Methow River Watershed Analysis (USDA 1999).

Particularly in these watersheds, the watershed analysis should include the

Salmon, Steelhead and Bull Trout Limiting Factors

study by the Washington Conservation Commission, July 2000 and the

Lower Libby Creek Reach Assessment

prepared for the Yakima Nation Fisheries, 2012. [ID#554]
Response: [Seq#533]

The watershed analyses were written before the report that outlined additional limiting factors that the commenter is concerned with. We have used the NMFS/USFWS indicators for habitat and population of ESA listed fish species. The Aquatics report and the project BA, in project files, have addressed the existing indicators and the potential impacts to the indicators. [ID#554]
Associated Comments: [Seq#533]
Watershed Analysis: Watershed analysis is a systematic procedure for evaluating the geomorphic and ecologic processes operating in a specific watershed. The Forest Service completed a watershed analysis for the entire Twisp Watershed in 1995 (USDA 1995), which includes the Buttermilk Creek drainage. The Libby Creek drainage had a specific watershed analysis completed in 1995 (USDA 1995) and it was reviewed again in 1999 with the Lower Methow River Watershed Analysis (USDA 1999). Particularly in these watersheds, the watershed analysis should include the Salmon, Steelhead and Bull Trout Limiting Factors study by the Washington Conservation Commission, July 2000 and the Lower Libby Creek Reach Assessment prepared for the Yakima Nation Fisheries, 2012. [68-84]

Concern: [Seq#534]

Concerned with the lack of population data.

(We highlight these portions of the aquatic analysis not only to explain why the EA's cursory level of analysis for aquatic habitat fails NEPA requirements, but also as exemplary of most of the EA's analyses using "indicators" as proxies for analysis of impacts on all resources, or as proxies for demonstrating consistency with programmatic direction.)

The EA identifies sources of cumulative effects to aquatic habitats:

Both the Buttermilk and Libby Creek sub-watersheds experienced decades of timber harvest, fire suppression, livestock grazing, firewood cutting, dispersed recreation impacts, and road construction with varying effects to aquatic and riparian resources. Implementation of the NWFP and listing fish species as Threatened or Endangered under the Endangered Species Act have substantially reduced activities and impacts within (Riparian Reserves).

Then, the EA claims that "Implementation of the NWFP and listing fish species as Threatened or Endangered under the Endangered Species Act have substantially reduced activities and impacts within Riparian Reserves." However, these claims are made in the complete absence of numbers for populations of any fish species, of population trends, or of measured trends for habitat conditions. This does not suffice for a cumulative effects analysis or for compliance with programmatic direction or NFMA provisions.

[[ID#555]
Response: [Seq#534]

Obtaining meaningful data on fish populations is a time and money intensive process. Based on our analysis of impacts to aquatic resources, the actions proposed will likely benefit aquatic habitats and so we do not need to have concrete population estimates because the result will likely increase populations. We have used the best available science for our report and by using indicators, we are able to analysis the impacts in a meaningful way. We believe that we have fulfilled our NEPA requirements. [ID#555]
Associated Comments: [Seq#534]
(We highlight these portions of the aquatic analysis not only to explain why the EA's cursory level of analysis for aquatic habitat fails NEPA requirements, but also as exemplary of most of the EA's analyses using "indicators" as proxies for analysis of impacts on all resources, or as proxies for demonstrating consistency with programmatic direction.) The EA identifies sources of cumulative effects to aquatic habitats: Both the Buttermilk and Libby Creek sub-watersheds experienced decades of timber harvest, fire suppression, livestock grazing, firewood cutting, dispersed recreation impacts, and road construction with varying effects to aquatic and riparian resources. Implementation of the NWFP and listing fish species as Threatened or Endangered under the Endangered Species Act have substantially reduced activities and impacts within (Riparian Reserves). Then, the EA claims that "Implementation of the NWFP and listing fish species as Threatened or Endangered under the Endangered Species Act have substantially reduced activities and impacts within RRs." However, these claims are made in the complete absence of numbers for populations of any fish species, of population trends, or of measured trends for habitat conditions. This does not suffice for a cumulative effects analysis or for compliance with programmatic direction or NFMA provisions. [72-168]

Concern: [Seq#535]

comment:72-107]

Traill et al., 2010 and Reed et al., 2003 are published, peer-reviewed scientific articles addressing "minimum viable population" and how that number has been drastically underestimated in past. The FS has not identified the best available science for making minimum viable population determinations of wildlife species on the Forest.

[comment end].

comment:72-108]

The EA utilizes changes in suitable habitat as a "Resource Indicator" but such methodology would never allow anyone to tell when too much cumulative habitat "change" (loss) has occurred. The FS fails to set meaningful thresholds in an apparent assumption that habitat losses are insignificant. Schultz (2010) concludes "the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact." (See also Schultz 2012, who notes these problems of analyses for many wildlife species.) The geographic scope of wildlife viability analyses must be forestwide, or at least encompass the area of a truly viable population.

[comment end] [ID#557]
Response: [Seq#535]

Traill et al. (2010) and Reed et al. (2003) address minimum viable populations and how that number has been underestimated in past. However, minimum viable population analysis is a Forest-wide analysis, rather than a project-level analysis. This analysis is documented in *Status of Management Indicator Species On the Okanogan and Wenatchee National Forests* (Youkey, 2011), which is incorporated by reference into the Wildlife Report (Glidden, 2017). Determinations for MIS are found in the preliminary EA at 146-147, and in the Wildlife Report, in project files, at p.10-13, 37, 39, 46, 48, 57-60.

Other large-scale viability assessments conducted for the Northwest Forest Plan (NWFP) and the Interior Columbia Basin Project (ICBEMP) also analyzed viability of many species found on the Okanogan and Wenatchee National Forests.

The Forest uses "habitat as proxy" to ensure the continued viability of species whose populations are difficult to monitor. Managing the Forest to meet the historic range of variability using the EMDS process for stand structural stages is one example of this approach. A desired range of variability was determined for the project area using a process described in the preliminary EA at p.60.

Schultz (2010 and 2012) describes the difficulties of NEPA cumulative effects analysis and the lack of habitat thresholds. While no habitat thresholds are provided by the Okanogan National Land and Resource Management Plan, other than on winter range for deer and in lynx habitat (both now outdated science), the selected alternative for the Northwest Forest Plan was determined to meet the NFMA requirement to provide for a diversity of plant and animal communities (USDA and USDI 1994a). The Record of Decision for the NWFP concludes that it will provide an amount and distribution of habitat adequate to support the continued persistence of vertebrate species in the planning area.

Changes to suitable habitat used as an indicator do not give the decision-maker a comparison to a habitat threshold, but do indicate whether habitat is trending in a positive or negative direction for the species. [ID#557]

Associated Comments: [Seq#535]

Traill et al., 2010 and Reed et al., 2003 are published, peer-reviewed scientific articles addressing "minimum viable population" and how that number has been drastically underestimated in past. The FS has not identified the best available science for making minimum viable population determinations of wildlife species on the Forest. [72-107]

The EA utilizes changes in suitable habitat as a "Resource Indicator" but such methodology would never allow anyone to tell when too much cumulative habitat "change" (loss) has occurred. The FS fails to set meaningful thresholds in an apparent assumption that habitat losses are insignificant. Schultz (2010) concludes "the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact." (See also Schultz 2012, who notes these problems of analyses for many wildlife species.) The geographic scope of wildlife viability analyses must be forestwide, or at least encompass the area of a truly viable population. [72-108]

Concern: [Seq#536]

In addition the presence of permitted grazing cattle on facilitating the delivery of sediment to this "critical habitat" is not considered. [ID#558]

Response: [Seq#536]

Grazing within the Mission project area is currently managed under the direction of the 2013 Allotment Management Plan (AMP) which implements the 2011 Libby, Little Bridge, Newby, and Poorman Allotment Environmental Assessment (LLBNP EA). The potential effects of livestock grazing on in-stream sediment levels was analyzed in the LLBNP EA. The effects of livestock grazing on in-stream sediment levels is complex. Sediment, including fine sediment, is a natural part of all water body environments. It is difficult to distinguish sediment from natural sources and the various management activities in a drainage. Research by Kondolf (1994) attempted to discern what portion of the sediment yield was caused from grazing and he noted at the end of his study that available sediment data were inconclusive regarding effects of livestock grazing. It was not possible to state what percentage of the sediment measured in his study resulted from livestock grazing. The LLBNP analysis assumes sediment effects from livestock occur from streambank trampling. Livestock-related trampling and bank shear does occur in areas across the Lookout Mountain allotment, increasing sediment delivery to the stream system. However, field inspections show these effects occur in a very small proportion of the analysis area (<1%) in isolated hotspots interspersed among much larger extents of un-impacted area. Streambanks across the allotment are generally well armored with vegetation and coarse substrates and protected by thick

brush, downed trees, and rugged terrain; as a result, cows find access difficult along the vast majority of stream length and sediment contributions from livestock grazing are small. (LLBNP EA, Chapter 3, Aquatic Resources section) [ID#558]
Associated Comments: [Seq#536]
In addition the presence of permitted grazing cattle on facilitating the delivery of sediment to this "critical habitat" is not considered. [63-59]

Concern: [Seq#537]

Belsky et al., 1999 is a literature review of peer-reviewed studies concerning effects of livestock grazing on water resources. [ID#559]
Response: [Seq#537]

The Forest Service recognizes that Belsky et al., 1999 reports that livestock grazing was found to negatively affect water resources. However, the current Allotment Management Plan contains a comprehensive monitoring plan to ensure critical resource values are protected. All riparian monitoring areas within the project area have been meeting allowable use standards over the past 10 years with few exceptions. The allowable use standard for livestock caused streambank alteration in riparian areas is not to exceed 20% current year alteration by livestock and limits allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. (3.10.3 Affected Environment, Draft EA page number: 236, 237). Documentation of monitoring are in Methow Valley Ranger District range files. [ID#559]
Associated Comments: [Seq#537]
Belsky et al., 1999 is a literature review of peer-reviewed studies concerning effects of livestock grazing on water resources [72-62]

Concern: [Seq#538]

T

he EA should disclose the required level of funding to annually administer the Lookout Mountain grazing allotments in the project area. [ID#560]
Response: [Seq#538]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (LLBNP EA, USDA 2011a). Disclosing

the required level of funding to annually administer the Lookout Mountain allotment are outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP, including an economic analysis in section 3.9 of Chapter 3 of the LLBNP EA. [ID#560]
Associated Comments: [Seq#538]
The EA should disclose the required level of funding to annually administer the Lookout Mountain grazing allotments in the project area. [72-75]

Concern: [Seq#539]

Are allotment permittees authorized to clear ML-1 roads when they become impassible due to washouts, debris, etc.? [ID#561]
Response: [Seq#539]

Under alternatives 2 and 3 all ML 1 roads would be closed to all motorized vehicles, unless converted to a ML2 Administrative Use designation, so there would be no motorized clearing of washouts and debris on ML-1 roads. It is not anticipated that there would be a need for the clearing of washouts and debris on closed roads other than the possibility of needing to open cattle access through fallen trees or wood debris with a chainsaw. Some ML-1 roads are also used as livestock driveways. [ID#561]
Associated Comments: [Seq#539]
Are allotment permittees authorized to clear ML-1 roads when they become impassible due to washouts, debris, etc.? [72-200]

Concern: [Seq#540]

Water developments and diversion for livestock can reduce streamflows and increase water temperatures, degrading habitat for fish and aquatic invertebrates. [ID#562]
Response: [Seq#540]

There are no water developments or diversions for livestock proposed under the Mission Restoration Project. [ID#562]
Associated Comments: [Seq#540]
Water developments and diversion for livestock can reduce streamflows and increase water temperatures, degrading habitat for fish and aquatic invertebrates. [72-71]

Concern: [Seq#541]

A concern is, livestock grazing impacts on naturally regenerating aspen clones is continuous and ongoing everywhere livestock graze in the vicinity of aspen. This is an example of the FS not publicly disclosing relevant biological research and important biological information in the EA. [ID#563]

Response: [Seq#541]

Livestock grazing impacts on aspen are discussed in section 3.10, Range, on page 242 of the Preliminary EA, page 248 of the Revised Preliminary EA. The recent grazing Allotment Management Plan revision Environmental Assessment (LLBNP EA 2011) analyzed the effects of cattle grazing on aspen which included all of the Mission planning area. The analysis found that most, if not all, of the aspen stands were utilized by cattle for grazing and loafing, but the grazing system [2011] appeared to be conducive to allowing aspen stands to regenerate through sucker sprouting. The stands appeared to be healthy and were limited more by conifer shading and disease than by ungulate browsing. Hadfield and Magelssen (2004) found that aspen stands on the Okanogan and Wenatchee National Forests were commonly browsed by cattle and deer, but not severe enough to prevent aspen sprouts from growing into larger stem sizes. Some of the stands they reviewed were in the Mission project area. Cattle are using these stands but do not appear to be detrimentally browsing the suckers to the point of preventing stand development. (Hadfield and Magelssen 2004; LLBNP EA 2011) [ID#563]

Associated Comments: [Seq#541]

A concern is, livestock grazing impacts on naturally regenerating aspen clones is continuous and ongoing everywhere livestock graze in the vicinity of aspen. This is an example of the FS not publicly disclosing relevant biological research and important biological information in the EA. [72-217]

Concern: [Seq#542]

I object to logging around Look Out Mountain or Black Pine Lake. These destinations offer hikes, boating, fishing and camping opportunities for locals and tourists. The Methow depends on tourism for a healthy economy. Who will desire to go to these places when the forest is stripped of its spirit by mechanization? [ID#564]

Response: [Seq#542]

There is no planned harvest activity within the foreground of the Lookout Mountain lookout or the road providing it access. There is no planned harvest activity within view of Blackpine Lake Campground. With the proposed best management practices employed (preliminary EA pages 341-342), scenic quality

would be maintained around campgrounds, trails and other routes used for year round recreation. The effects of the alternatives on visual quality objectives are found in the preliminary EA on pages 276-277. [ID#564]

Associated Comments: [Seq#542]

I object to logging around Look Out Mountain or Black Pine Lake. These destinations offer hikes, boating, fishing and camping opportunities for locals and tourists. The Methow depends on tourism for a healthy economy. Who will desire to go to these places when the forest is stripped of its spirit by mechanization? [51-38]

Concern: [Seq#543]

The EA states that "(aspen) stands appeared to be healthy and were limited more by conifer shading and disease than by ungulate browsing." How does the FS make that distinction? [ID#565]

Response: [Seq#543]

The cited section of the EA in question is a quote from a report made by the Area Forest Pathologist, James Hadfield, who was considered an expert in aspen recovery. The lack of aspen sprouts shows that the environment (excessive shading) or the health of the tree, which is also related to shading as well as to disease, are the limiting factors to successful reproduction. If there had been many sprouts that had been hedged back by ungulate browsing then the limiting factor for successful reproduction would have been seen to be browsing. It is assumed that Mr. Hadfield had not seen a pattern of trailing, manure or negative impacts of livestock in the aspen within the Mission project area to lead him to believe that they would be a risk to future aspen regeneration/restoration efforts. [ID#565]

Associated Comments: [Seq#543]

The EA states that "(aspen) stands appeared to be healthy and were limited more by conifer shading and disease than by ungulate browsing." How does the FS make that distinction? [72-218]

Concern: [Seq#544]

Additionally, silvicultural treatments, even when conducted carefully, can lead to the following adverse conditions (excerpted from Frost 1999): • Damage to soil integrity through increased erosion, compaction, and loss of litter layer (Harvey, et al. 1994, Meurisse and Geist 1994). • Increased mortality of residual trees due to pathogens and mechanical damage to boles and roots (Hagle and Schmitz 1993, Filip 1994) • Creation of sediment that may eventually be delivered to streams (Beschta 1978, Grant and Wolff 1991) • Increased levels of fine fuels and near-term fire hazard (Fahnestock 1968, Weatherspoon 1996, Wilson and Dell 1971, Huff, et al. 1995) • Dependence on roads, which result in numerous adverse effects (Henjum, et al. 1994, Megahan, et al. 1994) • Reduced habitat quality for sensitive species associated with cool, moist micro-sites or closedcanopy forests (FEMAT 1993, Thomas, et al. 1993) [ID#566]

Response: [Seq#544]

It is agreed that timber harvest has the potential to have the effects described in the concern. However, due to the application of best management practices and design criteria, the team specialists were able to determine that timber harvest included in the proposed action for the Mission project would; not damage soil beyond that allowed in the Okanogan Forest Plan (preliminary EA page 102); result in improving tree and stand health (preliminary EA pages 124-127); is consistent with the Forest Plan Standards and Guidelines regarding sediment production (preliminary EA page 87); upon completion of all the planned activity, result in an overall reduction in ground and ladder fuels, which would reduce fire behavior in the WUI and wildfire risks along FS roads 43 and 4340 (preliminary EA page 164); and reduce open road density and overall road density of the project area (preliminary EA page 219).

On the east side of the Cascades, mortality associated with disease caused from bole and root damage from timber harvest, is rare because the moist conditions that allow these pathogens to flourish is uncommon (personal experience). The effects to wildlife habitat is summarized on preliminary EA pages 206-208 and have been found to be consistent with the Okanogan National Forest LRMP and other relevant laws. regulations, policies and pans (preliminary EA page 209). [ID#566]

Associated Comments: [Seq#544]

Additionally, silvicultural treatments, even when conducted carefully, can lead to the following adverse conditions (excerpted from Frost 1999): • Damage to soil integrity through increased erosion, compaction, and loss of litter layer (Harvey, et al. 1994, Meurisse and Geist 1994). • Increased mortality of residual trees due to pathogens and mechanical damage to boles and roots (Hagle and Schmitz 1993, Filip 1994) • Creation of sediment that may eventually be delivered to streams (Beschta 1978, Grant and Wolff 1991) • Increased levels of fine fuels and near-term fire hazard (Fahnestock 1968, Weatherspoon 1996, Wilson and Dell 1971, Huff, et al. 1995) • Dependence on roads, which result in numerous adverse effects (Henjum, et al. 1994, Megahan, et al. 1994) • Reduced habitat quality for sensitive species associated with cool, moist micro-sites or closedcanopy forests (FEMAT 1993, Thomas, et al. 1993) [63-68]

Concern: [Seq#545]

The premise that thinning and other mechanical treatments replicate natural fire is contradicted by science (for example see Rhodes and Baker 2008, McRae et al 2001, and Rhodes 2007). [ID#567]

Response: [Seq#545]

Replication of natural fire is not a Purpose and Need for the Mission project, but it is recognized that a disturbance is needed in order to achieve the multiple Purpose and Need statements that are based on forest vegetation patterns on the landscape. While wildfire was historically been the principal disturbance agent on this landscape, allowing wildfire to go unsuppressed outside of Wilderness is not socially acceptable or even allowed under the Okanogan National Forest LRMP within the managed portions of the Mission Project Area (Forestwide Standards and Guidelines 19-3, Standards and

Guidelines MA5-19A, MA14-19A, MA17-19A, MA25-19A and MA26-19A). Thus another source of disturbance is needed in order to meet the Purpose and Need for changes to vegetation composition and structure, wildlife habitat, sensitive plant habitat, and wildfire hazard (preliminary EA pages 13-14). The proposed action includes activities that would provide the disturbance needed to move the landscape towards desired conditions. The preliminary EA discusses how the proposed activities contribute towards meeting that desired condition on pages 123-127; 152-167; and 185-209. It also states on page 155 that thinning and prescribed fire treatments are viable fire surrogates that would help restore desired fire behavior and provides multiple supporting science citations.

Several peer-reviewed, data-based publications suggest that overstory thinning treatments can effectively modify fire behavior are referenced in the EA (p. 154,168, revised preliminary EA); the citations referenced include multiple references to further studies that are incorporated into this analysis by reference. Further studies supporting the ability of thinning treatments to affect forest structure and thereby fire behavior include Agee and Lolley 2006; Agee and Skinner 2005; Cochrane et al. 2012; Covington 2003); Fule et al. 2012; Graham et al. 2004; Harrod et al. 2007; Kennedy and Johnson 2014; Omi and Martinson 2004; Peterson et al. 2005; Prichard et al. 2010; Safford et al. 2009; Stephens and Moghaddas 2005; Stephens et al. 2009; Valliant et al. 2009; and USDA 2012a. [ID#567]
Associated Comments: [Seq#545]
The premise that thinning and other mechanical treatments replicate natural fire is contradicted by science (for example see Rhodes and Baker 2008, McRae et al 2001, and Rhodes 2007). [72-78]

Concern: [Seq#546]

Thinning of small diameter trees in dense, young forests may be appropriate and result in reduction of wildfire risk to human communities in certain situations. The most appropriate place to apply forest thinning is in dry forest types adjacent to human communities threatened by wildfires. [ID#568]
Response: [Seq#546]

The Mission Project includes the thinning of small diameter trees on much of the landscape, especially in dry forest conditions. The Mission IDT prioritized the areas adjacent to human communities for this treatment. [ID#568]
Associated Comments: [Seq#546]
Thinning of small diameter trees in dense, young forests may be appropriate and result in reduction of wildfire risk to human communities in certain situations. The most appropriate place to apply forest thinning is in dry forest types adjacent to human communities threatened by wildfires [68-88]

Concern: [Seq#547]

The EA states, "Portions of the project area are susceptible to dwarf mistletoe infection, defoliating insects, and bark beetle attacks due to vegetation composition and structure changes from historical conditions." (13.) The FS has no scientific basis for the EA's implication that this susceptibility is in any way unusual or unnatural. [ID#569]

Response: [Seq#547]

One of the intentions of the Okanogan-Wenatchee Forest Restoration Strategy is to bring landscape vegetation patterns to the overlap of the range of historical variability and the future range of variability. This allows for ecological processes like disease, insects and fire to take place within their normal bounds having taken climate change into account. When conditions are outside of these ranges then there are changes to the effects and intensities of these ecological processes, which are described in numerous places within the preliminary EA. The EA does not claim or infer that the percent landscape of stands susceptible to bark beetles of dwarf mistletoe is outside the historical range of variability, but does talk to the effects of treatment on these ecological processes. For that reason only the acres treated is used for a resource indicator for bark beetles and dwarf mistletoe (preliminary EA pages 105-106). The vulnerability of a stand to western spruce budworm is much more closely linked with canopy cover and numbers of canopies and is therefore described in terms relative to Historical Conditions.

A Purpose and Need is to maintain and restore vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease, and wildfire events (preliminary EA page 13). Old Forest is poorly represented in the Mission Project Area (preliminary EA page 115-116). One of the components of the landscape that is hardest to attain is large trees because of the length of time it takes to achieve this size. Large trees are more susceptible to bark beetle attack and fire in overstocked and/or diseased conditions. Medium tree growth is retarded by disease and overstocked conditions and Medium trees in these conditions are at risk to mortality in times of drought or wildfire events, such that some stands may never attain the attribute of Large and Medium Tree (preliminary EA pages 120-121). Planned vegetation management treatments would improve the potential of maintaining and promoting large and medium trees (preliminary EA page 124).

[ID#569]

Associated Comments: [Seq#547]

The EA states, "Portions of the project area are susceptible to dwarf mistletoe infection, defoliating insects, and bark beetle attacks due to vegetation composition and structure changes from historical conditions." (13.) The FS has no scientific basis for the EA's implication that this susceptibility is in any way unusual or unnatural. [72-84]

Concern: [Seq#548]

COMMENT 72-109 And, like other sections of the EA, consistency with forest plan standards and other binding direction is either not assured or otherwise ignored. [ID#570]
Response: [Seq#548]

Here is the regulatory framework associated with wildlife resources for the Mission Project, and how it was met. Regulatory framework is listed in the Preliminary EA in Appendix G and in the Wildlife Report (Glidden, 2017) at p.1-4, in project files.

National Forest Management Act (NFMA)

NFMA requires the Forest Service to manage fish and wildlife habitat to maintain viable populations of all native and desirable non-native wildlife species and conserve all listed threatened or endangered species populations (36CFR219.19). Sensitive species and Management Indicator Species (MIS) are identified to meet requirements of this act.

The Preliminary EA discusses MIS and sensitive species that are resource indicators at 3.7.1 starting at p.128. The remainder of these species are discussed in the Wildlife Report, starting at p.6.

Determinations for MIS are (alternative 2):

Spotted owls: The project would improve conditions over time, for spotted owls, and protect the limited suitable habitat. The slight degradation of unoccupied suitable habitat by opening of the canopy and short-term disturbance would be insignificant at the Forest scale.

Lynx: The project would not contribute to a negative trend in viability on the Forest.

White-headed woodpecker: The proposed project would improve conditions for white-headed woodpeckers in the project area and would not contribute to a negative trend in Forest-wide viability.

Mature and Old Growth Indicators and Primary Cavity Excavators: Despite minor snag loss, the project would slightly improve conditions for pileated woodpeckers, three-toed woodpeckers, Pacific marten, and barred owls in the project area because it would reduce wildfire risk to late/old habitats in the analysis area, reduce competition on large trees used as nesting/denning/foraging habitat, and accelerate development of stands of large trees. The project would not contribute to a negative trend in viability for these species at the Forest level.

Ruffed Grouse: The project would improve conditions for ruffed grouse in the project area because conifers would be removed in and around 286 acres of aspen stands. The project will not contribute to a negative trend in viability on the Forest.

Determinations for sensitive species are:

Gray flycatcher: Alternative 2 may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

White-headed woodpecker: Alternative 2 may affect, but is not likely to adversely affect lynx.

Northern Goshawk: Alternative 2 may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Western Gray Squirrel: Alternative 2 may adversely impact individuals through loss of arboreal travel opportunities or nests and potential for mortality from vehicle strikes during logging, but is not likely to result in a loss of viability in the project area, nor cause a trend toward federal listing.

The determination for the proposed project for harlequin ducks, great gray owls, Lewis' woodpecker, boreal whiteface dragonflies, little brown myotis and Townsend's big-eared bats, is "may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss or viability to the population or species". Habitat for these species is available in the project area, and the species are documented or suspected in the area. Riparian areas, wetlands and ponds will be protected by riparian buffers. Snags will be retained, except for minor loss as hazard trees in logging units and during prescribed burns, where some soft snags are lost and hard snags created.

The determination for the proposed project for western bumblebees, meadow fritillaries and Peck's skippers, is "may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss or viability to the population or species". Habitat for these species is available in the project area, and the species are documented or suspected in the area. Reduced overstory canopy closure and creation of small openings through harvest and **burning would increase understory plants. The project would have a beneficial impact on these species.**

The determination for the remaining sensitive species is "No Impact". Either the species or habitat is not present, or the project would not affect the habitat.

Determinations for threatened and endangered species are "may affect, not likely to adversely affect".

Endangered Species Act (ESA)

ESA requires the Forest Service to manage for the recovery of threatened and endangered species and the ecosystems upon which they depend. Forests are required to consult with the US Fish and Wildlife Service if a proposed activity may affect the population or habitat of a listed species. This includes any activities funded, authorized or carried out by the agency.

Effects to threatened and endangered species and ESA determinations are discussed in the Preliminary EA starting at p.128, the Wildlife Report (Glidden, 2017) and the biological assessment (draft).

Determinations for threatened and endangered species are "may affect, not likely to adversely affect".

Migratory Bird Treaty Act (MBTA)

MBTA established an international framework for the protection and conservation of migratory birds. This Act makes it illegal, unless permitted by regulations, to pursue, hunt, take, capture, purchase, deliver for shipment, ship, cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird. Under the provisions of the MBTA, the unauthorized take of migratory birds is a criminal offense, even if it is unintentional.

Effects to landbirds are discussed in the Preliminary EA starting at p.156 and in the Wildlife Report (Glidden, 2017). No "take" is expected.

E**xecutive Order 13186** Responsibilities of Federal Agencies to Protect Migratory Birds (2001)

This order directed agencies whose activities could have a measurable negative effect on migratory bird populations to develop a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) to promote the conservation of migratory bird populations. It further directed agencies, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions, to (1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions; (2) to restore and enhance the habitat of migratory birds, as practicable; and (3)to prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Effects to landbirds are discussed in the Preliminary EA starting at p.156 and in the Wildlife Report (Glidden, 2017). Project activities would contribute to restoration of habitats for landbirds that use more historical conditions on 20% of the area. Mitigation measures (Preliminary EA starting at p.375) would help to retain large trees, down wood and snags, connectivity and other important habitat components.

Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 688 [a]; 50 C.F.R. 22). The U.S. Fish and Wildlife Service has issued National Bald Eagle Management Guidelines to advise landowners and land managers of when protective measures may be required to minimize effects to the species. These guidelines provide recommendations to avoid disturbance at nesting, communal roosting and foraging areas, and suggest additional recommendations to benefit bald eagles.

Bald eagles are discussed in the Wildlife Report at p.8. Nesting habitat (along larger fish-bearing streams) is not present in analysis area.

Okanogan National Forest Land and Resource Management Plan

Forestwide Standards and Guidelines

Diversity 4-1 Successional stage diversity shall be provided on all suitable timber lands managed with even-aged systems, in mixed conifer plant communities, by maintaining, at a minimum, the following amounts of each described successional stage. (Mature successional stage is not synonymous with old growth.) The amounts shall be maintained for each township: grass/forb- 5%, seedling/sapling 10%, poles 10%, young forest- 5%, mature-5%.

These minimum amounts are met for the project area. Derek Churchill's January 2016 report discusses current and historical levels of these components by watershed for the project area and recommends treatments that would contribute to restoration of more historical conditions.

Old Growth 5-1 No scheduled or non-scheduled timber harvest or firewood collection shall be permitted in mixed conifer old growth stands.

Preliminary EA at p.23- Since scoping, photo analysis and field review have clarified that Forest Plan Old Growth does not exist in any proposed thinning or prescribed fire treatment unit. Therefore, this concern does not apply to the project.

Old Growth 5-3 Sufficient stands that have potential to develop old growth characteristics shall be identified as replacement old growth to provide for 5% of suitable forest land acres in an old growth condition in perpetuity.

Air photo interpretation completed as a component of the EMDS process identified stands with late/old characteristics that are or have the potential to become old growth in the near future.

Old Growth 5-4 Management requirements for species dependent on old growth or mature stands shall be provided. The species are spotted owls, barred owls, pileated woodpeckers, pine marten (now Pacific marten), and three-toed woodpeckers.

Old growth and mature stands have been delineated in the project area. Activities occurring in old growth habitat would focus on protection of this important habitat type from uncharacteristic wildfire and reducing competition between trees, thus perpetuating the large trees on the landscape over time (Wildlife Report at p.10).

Wildlife Planning 6-1 Manage to provide a minimum of 30 percent cover (15 percent thermal/l5 percent hiding) on deer summer range. Block sizes for summer thermal cover should range from 20 to 100 acres; and for hiding cover, from 5 to 40 acres. Cover should be spatially distributed across the landscape and provided on a gross area basis.

Estimated cover for non-winter range is 66%, well-above the Forest Plan standard, and limiting to forage production. Current levels are not sustainable. Post-treatment, a conservative estimate of remaining thermal cover would be 49% (assuming all harvest and noncommercial treatments would remove all cover) (Wildlife Report at p.12).

Wildlife Planning 6-5 Forestwide, dead tree habitat shall be managed to maintain primary excavator populations to at least 60 percent of their biological potential. In the lodgepole pine working group where existing tree size prevents meeting the guidelines, patches containing the largest dead trees and replacement green trees shall be retained and distributed in the treatment unit to approach populations meeting 60 percent of their biological potential.

The concept of biological potential is no longer considered best available science for managing dead tree habitat. Dead tree habitat is assessed in Status of Management Indicator Species On the Okanogan and Wenatchee National Forests (Youkey, 2011), at the Forest level using DecAid. Snags are also discussed in Appendix A of the Wildlife Report (p.84).

Wildlife Planning 6-6 In riparian areas and old growth stands, dead tree habitat shall be managed to maintain primary excavator populations at 100 percent of their biological potential.

See 6.5 above.

Wildlife Planning 6-9 Maintain continuous suitable habitat on ridgetops that provide wintering areas for blue grouse.

Large old douglas-fir would not be cut.

Wildlife Planning 6-10 Active raptor nest sites shall be protected through the nesting season (until young are fledged).

None have been found in the units.

Wildlife Planning 6-11 Raptor nest sites should be protected. Depending on the individual situation and the biological needs of the species, a primary zone extending up to 500 feet from the nest site (750 feet from goshawk nest site) should be managed to provide raptor habitat. In some areas a secondary restricted activity zone may be necessary outside the primary zone: during the active nest season (through August), certain project activities may be limited. This secondary zone may extend up to one-quarter mile from the nest. When a nest site has not been occupied by a pair for five consecutive years, the site may be managed according to the direction of the management area. Nests located after the project contract has been purchased will not be considered under this guideline.

None have been found in or near units. If found, this would be done.

Wildlife Planning 6-12 For raptor nests located during contract activities, to the extent practicable, the following should apply: a) accipiters - major project activities (i.e, road construction, logging) within 1/4 mile of active accipiter nests should be avoided from the onset of nesting until the young are fledged (mid-August); b) other raptors - nest trees and four to five adjacent large trees (required for fledgling) should be protected during the active nesting season-the onset of nest construction until the young are fledged (mid-August); these trees may be harvested following current year nesting activities. Major activities (i.e., road construction, logging) should be postponed within 750 feet of the nest tree during incubation and until initial brooding are completed or until the young birds have established thermoregulation.

None have been found in or near units. If found, this would be done.

Wildlife Planning 6-13 Drainages containing hardwoods shall be managed to perpetuate hardwoods as a stand component during early conifer seral stages. Hardwoods shall be perpetuated in associations where it is the climax forest community. After regeneration treatment in hardwood stands, discourage livestock browsing for at least two growing seasons.

Aspen maintenance is a part of the project. See preliminary EA at p.303 for descriptions of treatments.

Wildlife Planning 6-17 Threatened and endangered species shall be managed according to recovery plans. Coordinate management with U.S. Fish and Wildlife Service and the Washington State Departments of Fisheries and Wildlife.

Recovery Plans were used to develop mitigations where needed.

Wildlife Planning 6-1 8 Consultation with the US. Fish and Wildlife Service shall be initiated when threatened or endangered species may be affected by resource proposals.

A preliminary consultation meeting was held in 2016. Final consultation will be completed in 2018.

Wildlife Planning 6-19 Sensitive plants and animals should be protected.

Discussed in Preliminary EA (starting at p. 128) for resource indicator species (goshawk, gray flycatcher, white-headed woodpecker) and in the Wildlife Report for others (starting at p. 7).

Protection Fire and Fuels 19-7 Woody debris shall be left on the forest floor for wildlife habitat, long-term site productivity, soil fertility, and, where necessary, for microsite protection and seed. A

sufficient amount of this debris shall be uncharred to provide for terrestrial wildlife, long-term soil productivity, and other purposes.

Prescribed fire burns in a patchy manner, which provides for adequate uncharred large wood.

Protection Fire and Fuels 19-8 Treatment of natural fuels shall be prohibited in identified old growth stands.

No Forest Plan old-growth has been identified for the project.

Protection Fire and Fuels 19-9 In stands managed as future old growth, fuels treatment including prescribed fire shall provide for the retention of all key components of old growth.

Prescriptions retain large wood, snags and decadent trees.

Management Area Prescriptions

MA5 and MA25 Minimum cover amounts shall be 30% (15% hiding and 15% summer thermal cover) of the gross Management Area acreage and well distributed.

Estimated cover for non-winter range is 66%, well-above the Forest Plan standard, and limiting to forage production. Current levels are not sustainable. Post-treatment, a conservative estimate of remaining thermal cover would be 49% (assuming all harvest and noncommercial treatments would remove all cover).

The following MA14 and MA26 requirements would be amended and are discussed in the Preliminary EA (at p.33, 132, 143, 163) and in the Wildlife Report. A 2012 Planning Rule section will be added to the Revised EA and the Wildlife Report.

MA 14 and MA26 All identified deer winter range should be managed for the following well distributed cover:

Percent of Deer Winter Range Cover by Area in Prescription 5 (in winter range), 14, and 26

Winter Range Cover

Methow and Other

Snow Intercept Thermal

>15%

Winter Thermal

>25%

Hiding

>0%

Total:

>40%

MA14 and MA26 Where natural forest vegetation is not present to support optimal cover amounts, manage existing vegetation to approach cover objectives on a sustained basis.

MA14 and MA26 Where potential is not present as a result of previous management activities, manage to attain these percentages.

MA14 Minimum cover amounts shall be 40% (20% hiding and 20% summer thermal cover) on the gross Management Area acreage and well distributed.

Post-project, this would be met. Thermal cover would be 33%. Hiding cover would continue to be abundant.

MA14 Operating season for logging and post-sale operations shall be restricted where necessary to protect roads, soil, water, and wildlife resources. To protect fawning (June) and deer during winters (December through March), the operating season shall be decided on a case by case basis in fawning areas and deer winter range.

The restriction on winter logging is not necessary in the area. The Forest winter range is higher elevation than the more heavily used areas on private land that are lower elevation and have less snow. Winter logging standards call for frozen ground and a minimum snowpack of 8" of compacted snow, to protect soils. By the time this amount of snow has accumulated, deer have often moved to lower elevations where food is more available. Logging and hauling would occur on winter range during the winter on 557 acres, distributed across 5 drainages as follows:

Smith Canyon- 126 acres

Hornet Draw- 43 acres

Elderberry Creek- 175 acres

Chicamun Creek- 199

Ben Creek- 14 acres

Three of these drainages have private residences, so access and disturbance to deer winter range is ongoing during the winter months.

It is likely that only one drainage would have harvest activities occurring at any time, reducing effects of temporary displacement on mule deer. Disturbance to deer would be temporary and short-term, and adjacent undisturbed areas are available for animals to use. Previous experience has demonstrated that deer may not be displaced from an area by logging, but may remain in the area to forage on logging slash. In the longer term, harvest will remove shading by trees and encourage growth of shrubs used as forage, providing more food resources available to deer (Wildlife Report at p.49).

MA14 To limit wildlife disturbance, road density shall be limited to 2 miles of road open to motorized use per square mile of discrete individual Management Area. Exceptions to this road density may be permitted provided they meet the goals of the Management Area.

Road densities in the winter range land allocations for the project are below the maximum densities in each discrete management area.

MA14 Access by motorized vehicles shall be prohibited on deer winter range, December through March, except for designated through routes. Winter haul may be permitted provided the goals of the Management Area are met.

The restriction on winter log hauling is not necessary in the area. The Forest winter range is higher elevation than the more heavily used areas on private land that are lower elevation and have less snow. Winter logging standards call for frozen ground and a minimum snowpack of 8" of compacted snow, to protect soils. By the time this amount of snow has accumulated, deer have often moved to lower elevations where food is more available. Logging and hauling would occur on winter range during the winter on 557 acres, distributed across 5 drainages as follows:

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Three of these drainages have private residences, so access and disturbance to deer winter range is ongoing during the winter months.

It is likely that only one drainage would have harvest activities occurring at any time, reducing effects of temporary displacement on mule deer. Disturbance to deer would be temporary and short-term, and adjacent undisturbed areas are available for animals to use. Previous experience has demonstrated that deer may not be displaced from an area by logging, but may remain in the area to forage on logging slash. In the longer term, harvest will remove shading by trees and encourage growth of shrubs used as forage, providing more food resources available to deer (Wildlife Report at p.49).

MA25 Minimum cover amounts shall be 30% (15% hiding and 14% summer thermal cover) of the gross MA acreage and well distributed.

Estimated cover for non-winter range is 66%, well-above the Forest Plan standard, and limiting to forage production. Current levels are not sustainable. Post-treatment, a conservative estimate of remaining thermal cover would be 49% (assuming all harvest and noncommercial treatments would remove all cover) (Wildlife Report at p.12).

MA25 To limit wildlife disturbance, road density shall be limited to 3 miles of road open to motorized use (not including snow machines) per square mile of discrete individual Management Area.

Preliminary EA at p.169-

Open (NFS) road density in discrete management areas

Miles per square mile

(MA5-03)

1.64

(MA14-10)

1.25

(MA17-135)

N/A

(MA25-13)

0.55

(MA25-14)

0.53

(MA25-15)

1.17

(MA26-06)

0.29

(MA26-07)

0.19

MA26 Cavity nester habitat shall be managed to provide at least 80% of potential woodpecker population size.

See 6.5 above.

MA26 Scheduled and non-scheduled timber harvests shall be designed to perpetuate deer habitat and to address current habitat needs.

Habitat for deer has been discussed in the Preliminary EA starting at p.137. Mitigations have been incorporated to address effects to deer, "in fuels units, retain areas of dense multistoried canopy cover across 15-*20% of the fuels treatment footprint in patches from 0.1 acre to multiple acres."*

MA26 To protect deer during winter, operations shall be prohibited December through March except east of the Okanogan River. Logging and post-sale operations shall be limited to protect fawning during June.

No operations are proposed in winter for MA 26.

MA26 To limit wildlife disturbance, road density shall be limited to 1 mile of road open to motorized use per square mile of discrete individual Management Area. Exceptions to this road density may be permitted provided they meet the goals of the Management Area.

Road densities are below standards in the management area (Preliminary EA at p.169).

MA26 Access by motorized vehicles shall be prohibited December through March, except for designated through routes. Winter haul may be permitted provided the goals of the Management Area are met. Access through fawning area by motorized vehicles shall be prohibited in June, except where designated open.

There is no logging or haul proposed in the management area.

Northwest Forest Plan Standards and Guidelines

Late-successional Reserves: The plan establishes late-successional reserves (LSRs) that are managed to protect and enhance late-successional and old growth conditions. Silvicultural activities within LSRs have 2 principal objectives: development of old-growth forest characteristics including snags, logs on the forest floor, large trees, and canopy gaps that enable establishment of multiple tree layers and diverse species composition; and prevention of large-scale disturbances by fire, wind, insects, and diseases that would destroy or limit the ability of the reserves to sustain viable forest species populations. Non-silvicultural activities that are neutral or beneficial to the creation and maintenance of late-successional habitat are allowed.

89 acres of plantation thinning (of small trees) would occur in the LSR (~ 4% of the LSR), contingent on Regional Office review. Thinning would accelerate development of small trees into larger trees, and is consistent with direction for LSRs.

Retaining coarse woody debris that is already on the ground during logging and other land management activities and providing a renewable supply of large down logs well distributed across the landscape.Matrix Allocation: Matrix lands are those within the Northwest Forest Plan area that are outside LSRs or other designated areas. Guidelines for matrix lands include:

- Regeneration harvests must maintain a minimum of 120 lineal feet of logs per acre greater than or equal to 16" diameter and 16' long. Partial harvests should follow same guideline, but modified to reflect timing of stand development. *This is incorporated in prescriptions.*
- Retain 15% of the area associated with each cutting unit for green tree and snag retention. A general guide is that 70% of the total area to be retained should be aggregates of moderate to larger size with the remainder as dispersed structures. Patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees and hard snags occurring in the unit. *This is incorporated in prescriptions.*
- Providing for retention of old-growth fragments in watersheds where little remains. *No large trees (>24" dbh would be cut.*
- White-headed woodpeckers, black-backed woodpeckers, pygmy nuthatches, and flammulated owls are species that would not be sufficiently protected by application of Northwest Forest Plan mitigation measures for riparian habitat protection (USDA and USDI, 1994). Mitigation standards and guidelines to prevent declines in numbers or distribution include providing sufficient green trees and snags to provide for 100% population potential of these species. *Snags would not be cut, except for hazard trees in units. This is discussed in the Wildlife Report, Appendix A.*

- The Northwest Forest Plan provides protection for bats by requiring surveys of caves, mines, and abandoned wooden bridges and buildings in matrix, and protection of these sites, if occupied, in all land allocations (USDA and USDI, 2001). *None in treatment area.*

Survey and Manage Species: Pre-disturbance surveys are required for species designated as "survey and manage" in all land allocations, if a project within the range of the species would negatively affect the species' habitat. Known sites (locations) for these species are protected. *Great gray owls are a survey and manage species under the Northwest Forest Plan, however surveys are not required because the project area is not within the area recommended for project level surveys (Wildlife Report at p.7). Other survey and manage species- project is either outside the range for the species, or treatments would not affect their habitat (Wildlife Report, p. 8 and 11).* [ID#570]

Associated Comments: [Seq#548]

And, like other sections of the EA, consistency with forest plan standards and other binding direction is either not assured or otherwise ignored. [72-109]

Concern: [Seq#549]

The EA does not provide an analysis of population numbers or trends to insure that population viability is being assured on the Forest for any MIS, sensitive, or ESA-listed species. The FS has failed to monitor population trends as directed by the forest plan and NFMA [ID#571]

Response: [Seq#549]

Large-scale viability assessments conducted for the Northwest Forest Plan (NWFP) and the Interior Columbia Basin Project (ICBEMP) analyzed viability of many species found on the Okanogan and Wenatchee National Forests. Population viability is assessed on the Forest-wide level, and has been completed in *Status of Management Indicator Species On the Okanogan and Wenatchee National Forests* (Youkey, 2011).

MIS are used to determine the effects of management activities on their populations and the populations of species with similar habitat needs. MIS are discussed in the Wildlife Report on p.10 and 12 (species not used as a resource indicator) and in the Preliminary EA for species used as resource indicators (spotted owls, lynx, mule deer).

[ID#571]

Associated Comments: [Seq#549]

The EA does not provide an analysis of population numbers or trends to insure that population viability is being assured on the Forest for any MIS, sensitive, or ESA-listed species. The FS has failed to monitor population trends as directed by the forest plan and NFMA. [72-110]

Concern: [Seq#550]

[comment:72-111]

Numerous recent studies have found that pine marten are particularly vulnerable to habitat fragmentation. How does the FS assure pine marten viability on this Forest? The EA does not document this issue. [ID#572]

Response: [Seq#550]

The Mission Project is primarily a dry forest restoration project, and few treatments are proposed in the colder, more mesic forests preferred by martens. The Wildlife Resource Report, in project files, at p.10- "*All old growth stands would be retained, and 50 acres would have understory treatments to protect large trees from wildfire and reduce competition, thus retaining old growth on the landscape for a longer period. Snags and large down wood would be retained except a minor loss of snags as hazard trees and along roads for hazard trees or firewood use (see three-toed woodpecker section, above). 5 acres of small tree thinning and 5 acres of aspen treatments would accelerate development of large tree habitat and increase habitat diversity".* More snag information can be found in Appendix A of the Wildlife Report.

Mature and Old Growth Indicators and Primary Cavity Excavators: Despite minor snag loss, the project would slightly improve conditions for pileated woodpeckers, three-toed woodpeckers, Pacific marten, and barred owls in the project area because it would reduce wildfire risk to late/old habitats in the analysis area, reduce competition on large trees used as nesting/denning/foraging habitat, and accelerate development of stands of large trees. The project would not contribute to a negative trend in viability for these species at the Forest level (Wildlife Report, p.13).

Viability at the Forest scale was discussed in *Status of Management Indicator Species On the Okanogan and Wenatchee National Forests* (Youkey, 2011). [ID#572]

Associated Comments: [Seq#550]

Numerous recent studies have found that pine marten are particularly vulnerable to habitat fragmentation. How does the FS assure pine marten viability on this Forest? The EA does not document this issue. [72-111]

Concern: [Seq#551]

The Mission EA does not explain why the wide-ranging wolverine is not expected to occur in the project area. Wolverines use habitat ranging from Douglas-fir and lodgepole pine forests to subalpine whitebark

pine forests (Copeland et al., 2007). Lofroth (1997) determined wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993)

[comment:72-113]

The Washington Wildlife Habitat Connectivity Working Group mapped for focal species (including wolverines) around the year 2010. These maps show where wolverines might be expected in the Okanogan-Wenatchee NF.

[comment end] [ID#573]
Response: [Seq#551]

The Mission Project is primarily a dry forest restoration project, and no treatments are proposed in the higher elevation environments used by wolverine. Wolverines are known to occasionally use lower elevation habitat but are recognized to be dependent on high-elevations that maintain late-season snow pack for denning. They are not habitat specialists and not tied to a particular forest structure, and so would not be affected by the thinning and burning proposed in the drier, lower elevation habitats in the Mission Project. The determination for wolverine, if listed as threatened, is "No Effect". If not listed, the determination is "No Impact" (Wildlife Report at p.13). [ID#573]
Associated Comments: [Seq#551]
The Mission EA does not explain why the wide-ranging wolverine is not expected to occur in the project area. Wolverines use habitat ranging from Douglas-fir and lodgepole pine forests to subalpine whitebark pine forests (Copeland et al., 2007). Lofroth (1997) determined wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). [72-112]

The Washington Wildlife Habitat Connectivity Working Group mapped for focal species (including wolverines) around the year 2010. These maps show where wolverines might be expected in the Okanogan-Wenatchee NF. [72-113]

Concern: [Seq#552]

I just hope that the thinnings proposed will be intense enough to stop or delay a major wild fire. More than just a meager thinning needs to be done. There are areas with large trees that also need to be thinned or the FireWise objective won't be successful. [ID#574]
Response: [Seq#552]

The EA states its adherence to the suggested practices of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al. 2014) We further describe in

the EA the need for maintenance and restoration of forestlands to promote healthy, functional ecosystems. Improving stand conditions will improve forestland adaptive capacity and function better under threat of disturbances like fire. This improved resiliency to disturbance threats will improve chances of future forest persistence.

Several studies throughout western forests support the efficacy of thinning for reducing severity of potential wildfire (Agee and Skinner, 2005; Safford et al., 2009; Stephens et al., 2009; Safford et al., 2012). There is also evidence to suggest that treatments such as thinning reduce burn probability in adjacent untreated stands (Moghaddas et al., 2010). Evidence does indicate a cost in terms of reduced carbon storage for this reduced burn severity. The project's benefit of increased forest resilience is supported by science that projects higher levels of fire under future climate change, and the need to restore forests by increasing uneven-aged, large trees stands that are more resistant to disturbance (Rogers et al., 2011). The literature indicates the need to proactively promote resilience to fire and other disturbances under the uncertainty to how future climate will affect the extent and severity of fire in the future by increasing spatial heterogeneity (landscape diversity) at multiple scales (Cansler and McKenzie, 2014), which is in line with the intent of the proposed action alternatives. [ID#574]

Associated Comments: [Seq#552]

I just hope that the thinnings proposed will be intense enough to stop or delay a major wild fire. More than just a meager thinning needs to be done. There are areas with large trees that also need to be thinned or the FireWise objective won't be successful. [5-2]

Concern: [Seq#553]

In its Order dated 4/4/16, the U.S. District Court of Montana ruled: "The United States Fish & Wildlife Service's Withdrawal of its Proposed Rule to list the distinct population segment of the North American wolverine occurring in the contiguous United States as a threatened species under the Endangered Species Act, 79 Fed. Reg. 47,522 (Aug. 13, 2014), is hereby VACATED." Therefore the status of the wolverine is Proposed for listing under the ESA, and the FS must undergo consultation with the U.S. Fish & Wildlife Service. How does the Okanogan NF insure wolverine viability? [ID#575]

Response: [Seq#553]

Consultation with US Fish and Wildlife Service was initiated in November, 2016, and will be finalized prior to the signing of the decision document for the Mission Project. The effect call for wolverine, if listed, would be "no effect". Treatments proposed in the Mission Project do not occur in high-elevation habitat used by wolverine.

Viability is assessed at the Forest-level in Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-scale trends and Management Implications- volume 2. No specific management direction is provided for wolverine in the Forest Plan. At the project level, effects to threatened, endangered and sensitive species are analyzed in NEPA documents and the biological assessment to assure that project actions don't negatively affect species viability.

[ID#575]

Associated Comments: [Seq#553]

In its Order dated 4/4/16, the U.S. District Court of Montana ruled: "The United States Fish & Wildlife Service's Withdrawal of its Proposed Rule to list the distinct population segment of the North American wolverine occurring in the contiguous United States as a threatened species under the Endangered Species Act, 79 Fed. Reg. 47,522 (Aug. 13, 2014), is hereby VACATED." Therefore the status of the wolverine is Proposed for listing under the ESA, and the FS must undergo consultation with the U.S. Fish & Wildlife Service. How does the Okanogan NF insure wolverine viability? [72-114]

Concern: [Seq#554]

Amendments to forest plan standards and guidelines should always be fully explained as to why they are necessary to meet the Purpose and Need, showing that without them the ecological benefits sought in the project could not be met. Therefore, we ask that you provide more details about some of the proposed amendments including the need, specific location, and specific objective for the amendment. · Amendment on Motorized access (p. 6). The amendment for temporary winter operations and implementation should not apply to public use of the roads. Such an amendment needs to go beyond simply opening to road for project implementation, to assure that illegal use doesn't occur. The best available science should be followed to prevent disturbance to deer and lynx winter range, rather than simply referring to "previous experience in the area". Judging from "previous experience", increased winter access contributed to the direct disturbance of wildlife populations. We would like to see more assurances that disturbance will be actively discouraged through better control of illegal access.

[ID#576]

Response: [Seq#554]

All Forest Plan amendments have been eliminated except the need to exceed deer winter range thermal cover. The Forest Service is going out with a third comment period on the preliminary EA to fully explain the need for the one remaining Forest Plan amendment.

Portions of the revised draft EA addressing proposed Forest Plan amendments and substantive provisions related to the amendments are proposed to be located on pages 8, 31-34, 312-316, 85-86, 104-105, 138-139, 172-173, 214-219, 242-243, 263, 281, 301-302, and 307.

The proposed Forest Plan amendment for Forest Restoration, Standard and Guidelines (S&G) 5-1 and 19-8, treatments in old growth were eliminated after more intensive field verification since the team determined that there were no stands identified for treatment with the requisite number of trees over 18" in diameter at breast height (15 per acre with a minimum area of 30 acres) to qualify as Forest Plan Old Growth. These amendments were not included in the Preliminary Environmental Assessment.

The proposed Forest Plan amendment for sediment in fisheries streams, S&G 3-3, was eliminated since sediment in fishery streams shall be maintained at levels low enough to support good reproductive success of fish populations as well as adequate instream food production by indigenous aquatic communities to support those populations. Based upon analysis, the aquatic resource specialist determined that this Forestwide S&G could be met by applying Best Management Practices and would not need to be amended. This amendment was not included in the Preliminary EA.

A proposed Forest Plan amendment, MA5-17C, 14-17A, 25-17C, and 26-17B, to amend standards to allow temporary increases in open road density during project implementation was not included since the transportation planner determined that road densities would remain below the S&Gs for all management areas for all phases of implementation. No amendment for road density was included in the Preliminary EA.

A proposed Forest Plan amendment for soil protection would have allowed haul on a portion of Forest Road 43 between December 1 to April 1. Although having this option to haul on this section of Forest Road 43 during the winter season would increase the flexibility of implementing proposed commercial harvest treatments in the winter, all of the treatments could still be implemented without this amendment by requiring logging on some treatment units outside this period. This amendment will not be included in the Revised Preliminary EA.

A proposed Forest Plan amendment to allow snowplowing or being open to motorized wheeled traffic from December 1 to April 1 in the same year (if one is open or plowed, then the other will not be) on Forest Roads 4300300 or 43 and 43 or 4300800 was not essential to meet the intent of treating vegetation in areas with sensitive soils. All required winter harvest for sensitive soils could take place under these conditions without amendment, This amendment was not included in the Revised Preliminary EA.

A proposed Forest Plan amendment for S&G 14-17B and 26-17C to amend restrictions on motorized vehicles on deer winter range December 1 to March 31 to allow temporary winter operations and access for the purpose of implementing the Mission Project were proposed to allow for winter harvest which is needed to avoid damage to sensitive soils. The proposed action alternatives have no proposed harvest treatments areas in MA 26 that require "Winter Logging Only" due to soil impact concerns. The Interdisciplinary Team was in error when it thought that an amendment was needed to allow for harvest activity and log haul in MA14 because S&G MA14-17B allows for haul, provided the goals of the Management Area are met and MA14-20G allows the operating season for logging to be decided on a case by case basis. These amendments were not included in the Revised Preliminary EA. [ID#576]

Associated Comments: [Seq#554]

Amendments to forest plan standards and guidelines should always be fully explained as to why they are necessary to meet the Purpose and Need, showing that without them the ecological benefits sought in the project could not be met. Therefore, we ask that you provide more details about some of the proposed amendments including the need, specific location, and specific objective for the amendment.

· Amendment on Motorized access (p. 6). The amendment for temporary winter operations and implementation should not apply to public use of the roads. Such an amendment needs to go beyond simply opening to road for project implementation, to assure that illegal use doesn't occur. The best available science should be followed to prevent disturbance to deer and lynx winter range, rather than simply referring to "previous experience in the area". Judging from "previous experience", increased

winter access contributed to the direct disturbance of wildlife populations. We would like to see more assurances that disturbance will be actively discouraged through better control of illegal access. [18-38]

Concern: [Seq#555]

Recently, the U.S. Fish and Wildlife Service stated that listing the fisher under the ESA "may be warranted..." (https://www.federalregister.gov/articles/2016/01/12/2016-00157/endangered-and-threatened-wildlife-and-plants-90-day-findings-on-17-petitions). How does the Okanogan NF insure viability of fisher on the Forest? [ID#577]

Response: [Seq#555]

Fishers, though not specifically mentioned in *Status of Management Indicator Species On the Okanogan and Wenatchee National Forests* (Youkey, 2011), use late/old successional habitats similar to those of spotted owls, marten, pileated woodpeckers and black-backed woodpeckers. Effects to key habitat components for these species (large snags, large trees, large down wood) would be similar, although the fisher uses lower elevation, more mesic late and old structural stands than marten.

MIS are used to determine the effects of management activities on their populations and the populations of species with similar habitat needs. MIS for late/old habitats are discussed in the Wildlife Report on p.10 and 12 (species not used as a resource indicator) and in the Preliminary EA for species used as resource indicators (spotted owls).

Viability analysis for fishers has also been assessed in the broader-scale assessments completed for the Northwest Forest Plan and the Interior Columbia Basin (Wisdom et al. 2000). Projects that are in compliance with the Northwest Forest Plan (as Mission is) are expected to maintain viability for species using late-old habitats, such as fisher. At this time, however, fishers are considered to be extinct in Washington, except where reintroductions have occurred.

[ID#577]

Associated Comments: [Seq#555]

Recently, the U.S. Fish and Wildlife Service stated that listing the fisher under the ESA "may be warranted..." (https://www.federalregister.gov/articles/2016/01/12/2016-00157/endangered-and-threatened-wildlife-and-plants-90-day-findings-on-17-petitions). How does the Okanogan NF insure viability of fisher on the Forest? [72-115]

Concern: [Seq#556]

[comment:72-118]

The EA doesn't demonstrate proper survey protocols for Threatened, Endangered, Proposed, Sensitive or other species of concern have been utilized for determining occupancy.

[comment end] [ID#578]
Response: [Seq#556]

There is no requirement to survey for occupancy for any species, except pre-disturbance surveys for survey and manage species where a project within the range of the species would negatively affect the species' habitat. However, to avoid timing or other restrictions on management activities, agencies can survey for spotted owls to assess presence of spotted owls and identify owl territories that could be affected by activities, thus minimizing potential for unauthorized incidental take. Two-year, 6 visit protocol surveys were completed for spotted owls for the Mission Project (Preliminary EA at p.133, 144, 145, 146, 160).

Pre-disturbance surveys for survey and manage species were not necessary because:

Great gray owls -surveys are not required because the project area is not within the area recommended for project level surveys (Wildlife Report at p.6).

Chelan mountainsnail- outside the range,

blue-gray taildropper- no habitat,

Puget Oregonian- outside the range,

Columbia Oregonian- outside the range,

larch mountain salamander- outside the range,

masked duskysnail- no habitat,

(Wildlife Report at p.8-9, 11)

Surveys were also done in areas where historical or current goshawk activity was documented or suspected.

[ID#578]
Associated Comments: [Seq#556]
The EA doesn't demonstrate proper survey protocols for Threatened, Endangered, Proposed, Sensitive or other species of concern have been utilized for determining occupancy. [72-118]

Concern: [Seq#557]

[comment:72-117]

The EA uses focal species as a point of analysis, without disclosing a purpose or definition. Does the FS recognize some regulatory requirements for focal species, or is this just a distraction from real regulatory requirements?` [ID#579]
Response: [Seq#557]

Guidance for landbird conservation is provided by the Landbird Strategic Plan and The Conservation Strategy for Landbirds in Oregon and Washington (Altman 2000a, b, and Altman and Holmes, 2000)(Wildlife Report (Glidden, 2017) at p.28). The Wildlife Report at p.28 states that *"Focal species were selected to assess effects on habitat types present in the project area."*

The Conservation Stategies use habitat requirements of "focal species" that are highly associated with important attributes or conditions within each habitat type as a strategy for achieving functioning ecosystems for landbirds. Using focal species draws immediate attention to habitat attributes most in need of conservation or most important in a functioning ecosystem. By managing for a group of species representative of important components in a functioning ecosystem, many other species and elements of biodiversity also will be conserved (Altman, 2000).

NFMA requires maintenance of viable populations of native and desired non-native wildlife species. There are no additional regulatory requirements, unless the focal species is also a listed, sensitive or MIS. Effects to focal species are disclosed in the Preliminary EA at p.138-139, 141-142, 156-159, 164-165. [ID#579]
Associated Comments: [Seq#557]
The EA uses focal species as a point of analysis, without disclosing a purpose or definition. Does the FS recognize some regulatory requirements for focal species, or is this just a distraction from real regulatory requirements? [72-117]

Concern: [Seq#558]

Global warming and its consequences may be effectively irreversible, which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). The USFS should recognize that all net carbon emissions from logging represent "irretrievable and irreversible commitments of resources." Clearly, the management of the planet's forests is a nexus for addressing the largest crisis ever facing humanity. Yet the EA fails to even provide a minimal quantitative analysis of project- or agency-caused CO2 emissions or consider the best available science on the topic. This is immensely unethical and immoral. The lack of detailed scientific discussion in the EA concerning climate change is far more troubling than the document's failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all

human societies. This is an issue as serious as nuclear annihilation (although at least with the latter we're not already pressing the button). [ID#580]
Response: [Seq#558]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks

(Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon. The oceans have been rising for all of recorded history. Scientists research climate change in North America seem to be reaching some different conclusions that scientists researching climatic change in Europe and Russia particularly about the importance of CO2. [ID#580]

Associated Comments: [Seq#558]

Global warming and its consequences may be effectively irreversible, which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). The USFS should recognize that all net carbon emissions from logging represent "irretrievable and irreversible commitments of resources." Clearly, the management of the planet's forests is a nexus for addressing the largest crisis ever facing humanity. Yet the EA fails to even provide a minimal quantitative analysis of project- or agency-caused CO2 emissions or consider the best available science on the topic. This is immensely unethical and immoral. The lack of detailed scientific discussion in the EA concerning climate change is far more troubling than the document's failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious as nuclear annihilation (although at least with the latter we're not already pressing the button). [72-30]

Concern: [Seq#559]

Respected experts say that the atmosphere might be able to safely hold 350 ppm of CO2.1 So when we were at pre-industrial levels of about 280 ppm, we had a cushion of about 70 ppm which represents millions of tons of GHG emissions. Well, now that cushion is completely gone. We are already at about 390 ppm CO2 and rising, so what's the safe level of additional emissions (from logging or any other activity)? It's negative. There is no safe level of additional emissions that our earth systems can tolerate. In fact, we need to be removing carbon, not adding carbon to the atmosphere.2 How could we do that? By growing forests. Logging moves us away from our objective while conservation moves us toward our objective. [ID#581]

Response: [Seq#559]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

I could not find a respected expert that would say the atmosphere might be able to safely hold 350 ppm of CO2. Scientists researching climate change in North America seem to be reaching some different conclusions that scientists researching climatic change in Europe and Russia particularly about the importance of CO2. While the earth is indeed warming up, the extent of man's contribution remains mostly a mystery speculated upon. The oceans have been rising for all of recorded history. Most research only looks at several decades with little, or no, research looking at longer periods of time such as 400 years, 1000 years, or 10,000 years. [ID#581]

Associated Comments: [Seq#559]

Respected experts say that the atmosphere might be able to safely hold 350 ppm of CO2.1 So when we were at pre-industrial levels of about 280 ppm, we had a cushion of about 70 ppm which represents

millions of tons of GHG emissions. Well, now that cushion is completely gone. We are already at about 390 ppm CO2 and rising, so what's the safe level of additional emissions (from logging or any other activity)? It's negative. There is no safe level of additional emissions that our earth systems can tolerate. In fact, we need to be removing carbon, not adding carbon to the atmosphere.2 How could we do that? By growing forests. Logging moves us away from our objective while conservation moves us toward our objective. [72-31]

Concern: [Seq#560]

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of

Ecosystem

services

, the "Benefits people obtain from ecosystems, including: (2)

Regulating services,

such as long term storage of carbon; climate regulation…" [ID#582]
Response: [Seq#560]

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and

sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

The 2012 Planning Rule recognizes, in its definition of

Ecosystem

services

, the "Benefits people obtain from ecosystems, including: (2)

Regulating services,

such as long term storage of carbon; climate regulation…" I assume you are referring to section 219.19, Definitions, Ecosystem services, (2). [ID#582]

Associated Comments: [Seq#560]

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of Ecosystem services, the "Benefits people obtain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation…" [72-35]

Concern: [Seq#561]

In conceptually implementing the RS, the FS alleges it is choosing its logging and burning (manipulation) areas "where vegetation characteristics …were outside of the desired range of values." (Id.) Yet a simple inspection of the EA's vegetation analysis section reveals this isn't what the FS is doing at all. Several vegetation characteristics of chosen manipulation areas are within the FS's own desired conditions yet they are proposed for logging and/or burning anyway. [ID#583]

Response: [Seq#561]

The commenter did not provide specific areas of concern.

The process used to identify treatment areas was to first identify vegetative structure and composition that are outside of the range of variability on the landscape level and then find places on the ground where vegetation treatment could change the landscape level patterns in the desired direction (preliminary EA pages 102-103). There are also many areas where vegetation management is needed to maintain existing structure/ composition within the target range of variability (See EA pages 13, 123). Some areas are identified for treatment to meet other Purpose and Needs such as Wildfire Hazard Reduction in the Wildland Urban Interface (preliminary EA page 14). In these cases, EMDS is used to ensure that treatment does not result in creating or aggravating landscape departures. [ID#583]

Associated Comments: [Seq#561]

In conceptually implementing the RS, the FS alleges it is choosing its logging and burning (manipulation) areas "where vegetation characteristics …were outside of the desired range of values." (Id.) Yet a simple inspection of the EA's vegetation analysis section reveals this isn't what the FS is doing at all. Several vegetation characteristics of chosen manipulation areas are within the FS's own desired conditions yet they are proposed for logging and/or burning anyway. [72-15]

Concern: [Seq#562]

The EA states, "The project area is in the core area for lynx, where long-term persistence of lynx has been documented." (176.) Also, "In the (non-Wilderness) project area, 12,890 acres are designated Critical Habitat for lynx. Approximately 4,604 acres are within the mapped lynx habitat." (178.) 2,137 acres of designated Critical Habitat for lynx would be impacted by the Mission project. (EA 191.) How much of this 2,137 acres is within "mapped" lynx habitat? How is "mapped" habitat determined? [ID#584]

Response: [Seq#562]

Approximately 2,373 acres would receive silvicultural or fuels reduction treatments with implementation of the proposed action. Treatments in the Critical Habitat area are in matrix habitats (dry forest, plantations, aspen) or have grown out of hare reach, with the exception of the 55 acres in

lynx habitat that are discussed above, in the "Lynx" section (Wildlife Report at p. 41, Preliminary EA at p.142, 147-150).

"Mapped" lynx habitat for the Methow Ranger district was delineated using plant association group mapping, subalpine fir habitats, and local knowledge of lynx presence, prior to lynx listing as a threatened species.

[ID#584]

Associated Comments: [Seq#562]

The EA states, "The project area is in the core area for lynx, where long-term persistence of lynx has been documented." (176.) Also, "In the (non-Wilderness) project area, 12,890 acres are designated Critical Habitat for lynx. Approximately 4,604 acres are within the mapped lynx habitat." (178.) 2,137 acres of designated Critical Habitat for lynx would be impacted by the Mission project. (EA 191.) How much of this 2,137 acres is within "mapped" lynx habitat? How is "mapped" habitat determined? [72-119]

Concern: [Seq#563]

The EA basically says that departures from DRV, HRV, or FRV are unacceptable. It fails to disclose how often during reference conditions that all of the metrics it uses fell within desired ranges. The EA doesn't, because the FS can't, and because the EA's conceptualization is scientifically challenged. [ID#585]

Response: [Seq#563]

The the term "Unacceptable" is not a term used in the EA regarding departures from HRV. The Purpose and Need regarding vegetation composition and structure is to restore forest vegetation characteristics to within estimated historical and future ranges (preliminary EA page 13). Departures or even metrics on the extreme edges of the ranges are identified as opportunities or needs that can be addressed through vegetation management to meet one or more of the projects identified Purpose and Needs.

Data associated with the reference subwatersheds was collected during the analysis of the Interior Columbia Basin Ecosystem Management Project and was used by the authors of the Okanogan-Wenatchee Forest Restoration Strategy and in the development of the Ecosystem Management Decision Support software. The commenter is inferring that there is an inherent variation between subwatersheds that should not be taken as a reason for action.

The IDT realizes that each subwatershed has unique characteristics that when compared to reference watersheds may make it appear to be departed in regards to forest vegetation. The IDT chose to focus on the more fundamental metrics such as Forest Structure, Forest Types and the presence of Medium and Large trees and not pursue "fixing" departures that are inherent to the individual subwatershed. Much of the outlier data is removed by focusing on the 80th percentile minimums and maximums for identifying the range of variability (preliminary EA page 103). [ID#585]

Associated Comments: [Seq#563]
The EA basically says that departures from DRV, HRV, or FRV are unacceptable. It fails to disclose how often during reference conditions that all of the metrics it uses fell within desired ranges. The EA doesn't, because the FS can't, and because the EA's conceptualization is scientifically challenged. [72-88]

Concern: [Seq#564]

In closing, we ask that you please keep us fully informed of all further developments on the Mission project. It is our intention that you review the literature cited and include it in the project file. Please contact me if you need a copy of any of these references. [ID#586]
Response: [Seq#564]

The Forest Service will keep you informed on the Mission Restoration Project, the same as all individuals who provided comments during a designated comment period. The Forest Service will review the literature cited that is in your comments. Literature at the bottom of the document and is not used in your comments may be reviewed. In a quick review, about 20% of the documents cited at the bottom of the page did not seem to be cited in your comments, Many of these same references were cited in other people's comments. [ID#586]
Associated Comments: [Seq#564]
In closing, we ask that you please keep us fully informed of all further developments on the Mission project. It is our intention that you review the literature cited and include it in the project file. Please contact me if you need a copy of any of these references. [72-226]

Concern: [Seq#565]

The vast majority of fines are being delivered annually by the road system (see roads section above). Thinning, harvest activities, and fuels treatments should generate no measurable increase in sediment yield due to buffers and other design criteria. The design criteria need staff and funding to be implemented. This is not designated. [ID#587]
Response: [Seq#565]

A number of projects are proposed to be implemented to decrease fine sediment introduction to water bodies. Some of these include; road reconstruction, pre-haul maintenance, maintenance during haul, and post-haul road maintenance; replacing 8 culverts where full or partial fish barriers exist on fish bearing streams, replacing 15 culverts where undersized fishless stream culverts are impacting channel morphology and increasing the risk of culvert failure; 34.6 acres of beaver habitat enhancement in 6 sites; 8.2 miles of coarse woody debris enhancement in 4 stream segments, and rock armouring of

numerous streams crossings are used for summer haul where approaches are greater than 3% (total of 33 stream crossings). Some of these projects will be completed under the timber contract and some would be completed when funding is available but in general funding is available within 10 years of signing of the decision. All of these projects, when completed, will have some monitoring.

Of the approximately 96 Design Features, Best Management Practices, and Mitigation Measures identified that the Forest Service is committing to, we are committing to monitoring on approximately 84. Much of this is implementation monitoring of contracts or of activities carried out by the Forest Service. [ID#587]

Associated Comments: [Seq#565]

The vast majority of fines are being delivered annually by the road system (see roads section above). Thinning, harvest activities, and fuels treatments should generate no measurable increase in sediment yield due to buffers and other design criteria. The design criteria need staff and funding to be implemented. This is not designated. [68-130]

Concern: [Seq#566]

"EMDS was used to compare the current conditions to a range of historical and future reference conditions for each subwatershed to give insights into how dry and moist forest vegetation composition and structure have changed and how they are likely to change" (EA 102). Another issue with EMDS is that it considers dry and moist forest vegetation to be a stark dichotomy rather than a gradient across the project area, which results in invalid and misleading analyses. [ID#588]

Response: [Seq#566]

The commenter is correct in that there is a distinct gradient between Moist Forest and Dry Forest. Having landscape data specific to Plant Associations would be more accurate in that, if correctly identified, it would result in a more accurate and useful range of variability. However, the subtle differences between plant associations are impossible to see using aerial photography, making the Physionomic Forest Type (Moist Forest/Dry Forest) a better feature to track in landscape analysis. Marking guides have been created to better account for plant association differences (See preliminary EA pages 307-308). [ID#588]

Associated Comments: [Seq#566]

"EMDS was used to compare the current conditions to a range of historical and future reference conditions for each subwatershed to give insights into how dry and moist forest vegetation composition and structure have changed and how they are likely to change" (EA 102). Another issue with EMDS is that it considers dry and moist forest vegetation to be a stark dichotomy rather than a gradient across the project area, which results in invalid and misleading analyses. [72-86]

Concern: [Seq#567]

The EA uses changes of roads in lynx habitat as an indicator, despite also saying that they don't affect lynx habitat anyway. Please reconcile the EA's opposing positions.

[ID#589]
Response: [Seq#567]

Road construction results in a conversion of vegetation (habitat) to non-habitat. Road decommissioning would eventually result in vegetation being restored (Preliminary EA at p.161, 150, 147).

Road mileage is not as useful an indicator of habitat quality for lynx as it is for species that have a stronger reaction to roads, but it is still a measure of change. Effects are minor, but may occur. [ID#589]
Associated Comments: [Seq#567]
The EA uses changes of roads in lynx habitat as an indicator, despite also saying that they don't affect lynx habitat anyway. Please reconcile the EA's opposing positions. [72-120]

Concern: [Seq#568]

Kosterman, 2014 finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success, and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This scientific information is not recognized by the EA or in the LCAS. Kosterman, 2014 demonstrates that LCAS standards are not adequate for lynx viability and recovery. The EA also does not acknowledge scientific evidence indicating multistory winter forage habitat as a limiting factor for lynx. [ID#590]
Response: [Seq#568]

Kosterman, 2014 finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success, and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This scientific information is not recognized by the EA or in the LCAS.

While this is good information, because no treatments were proposed that would change the proportion of young forest or mature undisturbed forest in lynx habitat in the LAUs, I didn't refer to it in the Wildlife

Report (Glidden, 2017). The Revised LCAS didn't refer to it because the thesis was published in 2014, after the revised LCAS was published in 2013.

Fifty of the 55 acres of treatment in lynx habitat occurs in plantations that are not habitat for hares or lynx. The remaining 5 acres of treatment is an aspen release treatment in an open stand (Preliminary EA at p.147). No clearcuts are planned in lynx habitat. Because no treatments were planned that would affect the amount of young forest present, whether the correct number is 30% from the LCAS or 10-15% from the Kosterman thesis was irrelevant.

At the present time,young forest is very limited in the project area, with 245 acres in the Spirit LAU and 123 acres in the Gold LAU (Preliminary EA at p.131), comprising about 8% of the LAUs.

Kosterman, 2014 demonstrates that LCAS standards are not adequate for lynx viability and recovery. Kosterman (2014) found that female lynx home ranges consisting of >50% mature forest and approximately 10-15% young regenerating forest at both home range extents appeared to be the optimal composition of forest structure types, and that greater connectivity of mature forest combined with young regenerating forest patches with low perimeter-area ratios appears to be the optimal configuration of forest structure types. Kosterman's data does not support the LCAS conservation measure *"To maintain the amount and distribution of lynx foraging habitat over time, manage so that no more than 30% of the lynx habitat in an LAU is in an early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (i.e., does not provide winter snowshoe hare habitat)."* She suggests that 10-15% composition of young regenerating forest may be more appropriate, and suggests that lesser amounts (<10%) and greater amounts (>15%) may negatively affect lynx reproductive output. The thesis did not discuss viability or conclude that the LCAS was inadequate for recovery, and acknowledged that the sample size was small. This statement is an opinion, and also is outside the scope of the Mission project.

The EA also does not acknowledge scientific evidence indicating multistory winter forage habitat is a limiting factor for lynx.

No treatments were proposed in this habitat, so I did not discuss this. [ID#590]
Associated Comments: [Seq#568]
Kosterman, 2014 finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success, and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This scientific information is not recognized by the EA or in the LCAS. Kosterman, 2014 demonstrates that LCAS standards are not adequate for lynx viability and recovery. The EA also does not acknowledge scientific evidence indicating multistory winter forage habitat is a limiting factor for lynx. [72-121]

Concern: [Seq#569]
In several places the EA uses the word "resilient" or "resilience" in terms of how the action alternatives are responding to desired conditions by increasing the resilience of the ecosystem. The Forest Plan for the Kootenai National Forest defines "resilience" as "The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for

self-organization, and the capacity to adapt to stress and change." However, the Mission EA provides absolutely no operational definition of resilience that would allow anybody to actually measure the resilience of the ecosystem as it stands now, or measure the change in resilience following project activities. An essential component of an operational definition is measurement. A simple and accurate definition of measurement is the assignment of numbers to a variable in which we are interested. In this case, the variable in which we are interested is resilience, and how the FS measures it in these ecosystems. [ID#591]

Response: [Seq#569]

Resilience is defined in the Glossary section of the Vegetation Report, which can be found in the Mission Restoration Project files. A glossary will be provided in the Final EA. "Resiliency" is an adjective rather than a variable to be measured. The EA refers to resiliency in regard to insects, disease and wildfire events (preliminary EA page 13). The effects to Medium and Large trees, the vegetation management included in Alternatives Two and Three would result in increasing the potential for survival for medium and large trees by reducing stress to individual trees, decrease vulnerability to defoliating insects and dwarf mistletoe and increase fire resiliency. The factors involved in fire resiliency are shown in the preliminary EA on pages 157-159. [ID#591]

Associated Comments: [Seq#569]

In several places the EA uses the word "resilient" or "resilience" in terms of how the action alternatives are responding to desired conditions by increasing the resilience of the ecosystem. The Forest Plan for the Kootenai National Forest defines "resilience" as "The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change." However, the Mission EA provides absolutely no operational definition of resilience that would allow anybody to actually measure the resilience of the ecosystem as it stands now, or measure the change in resilience following project activities. An essential component of an operational definition is measurement. A simple and accurate definition of measurement is the assignment of numbers to a variable in which we are interested. In this case, the variable in which we are interested is resilience, and how the FS measures it in these ecosystems. [72-93]

Concern: [Seq#570]

Figure 129 of the EA indicates that "Potential Non-Timber Sale Costs" would total almost $2.5 million, but elsewhere it admits a lot more such costs are unaccounted for. It apparently doesn't estimate Timber Sale Costs. The FS is unable to estimate net value. There is no estimate of the net loss to taxpayers, which is inevitably what would happen. [ID#592]

Response: [Seq#570]

The costs shown in Figure 129 are not timber sale costs. They are specific costs associated with the restoration projects that would not be accomplished through timber harvest included in a timber sale.

Forest Service regulations require an economic analysis for projects involving timber harvest in order to determine if the timber value is positive (timber value outweighs costs associated with harvest) so that the project could be implemented via a normal timber sale or stewardship or if the value is negative (the direct costs associated with harvest are higher than the expected value at the mill), in which case, the harvest of timber should be included in a service contract. The other reason for providing an economic analysis on the timber harvesting portion of a project is so action alternatives can be effectively compared regarding timber volume and value.

The expected value and timber volume that is expected to be generated by the selling the timber is shown on page 294 of the preliminary EA, and will be revised in the Final EA since the estimated volume of the project is greater than used in the Preliminary EA. The only costs shown in this section of the economic analysis is what a purchaser would incur and the only values shown are how much wood would be produced and how much it would be worth (goods in a stewardship contract). This project is now proposed to be split into 2 stewardship contracts with a total volume estimated at about 9 MMBF which should provide a "goods" value higher than in the current economic analysis. [ID#592]

Associated Comments: [Seq#570]

Figure 129 of the EA indicates that "Potential Non-Timber Sale Costs" would total almost $2.5 million, but elsewhere it admits a lot more such costs are unaccounted for. It apparently doesn't estimate Timber Sale Costs. The FS is unable to estimate net value. There is no estimate of the net loss to taxpayers, which is inevitably what would happen. [72-203]

Concern: [Seq#571]

Forest composition, structure, function, and pattern are appropriate to the forest type and within the inherent range of variability. Maintain and develop sustainable vegetation and fuels conditions that limit the likelihood of losing these forest stands during wildfires and other natural disturbances.(p.19) [Commercial logging and watershed headwater cattle grazing are not "natural conditions" and must be considered here. [ID#593]

Response: [Seq#571]

The nature of the concern is not clear.

The EA does not claim that commercial logging or livestock grazing in upper watersheds are natural conditions. Livestock grazing was considered as a cumulative effect in that it has taken place within the watershed for many years and is expected to continue into the future (preliminary EA pages 46-47). Any change to current livestock grazing in the project area is outside the scope of this project. The effects of vegetation management, including timber harvest are shown throughout the EA. [ID#593]

Associated Comments: [Seq#571]

Forest composition, structure, function, and pattern are appropriate to the forest type and within the inherent range of variability. Maintain and develop sustainable vegetation and fuels conditions that limit the likelihood of losing these forest stands during wildfires and other natural disturbances.(p.19) [Commercial logging and watershed headwater cattle grazing are not “natural conditions” and must be considered here.] [11-8]

Concern: [Seq#572]

The overall management emphasis of the Mission project conflicts with the following direction in the RRP: It is not our intent, nor do we believe it would be consistent with the above objectives, to do landscape wide treatments for the purpose of excluding disturbance events such as fires, including high-severity fires. On the contrary, we are looking to support the disturbance regimes inherent to these systems and believe our management should be consistent with the counsel of Hessburg et al. (2007:21): "Restoring resilient forest ecosystems will necessitate managing for more natural patterns and patch size distributions of forest structure, composition, fuels, and fire regime area, not simply a reduction of fuels and thinning of trees to favor low severity fires." [ID#594]

Response: [Seq#572]

It is not the intent for this project to exclude wildfire, rather to provide fire resilience in the landscape is part of Purpose and Need #3 (preliminary EA page 13). Paul Hessburg is a principal contributor to the Okanogan-Wenatchee Forest Restoration Strategy and a developer of the Ecosystem Management Decision Support (EMDS) software. Both of these resources provide guidance to the process as well as to landscape and stand level prescriptions that are included in this EA that do address natural patterns, patch size distribution, composition, (preliminary EA page 133) fuels and fire regimes (preliminary EA p.164-167). [ID#594]

Associated Comments: [Seq#572]

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Concern: [Seq#573]

Under Alternative 2, the Forest Service proposes to construct temporary roads for vegetation management activities, and states these will be "decommissioned after use." Draft EA at 214. The analysis states, "these roads are on the landscape for a relatively short and defined period of time and are associated with a specific project or mining plan of operations." Draft EA, Appendix B at 326. Temporary roads must be closed within 10 years of completion of a project, per 16 U.S.C. 1608(a), unless the Forest Service re-evaluates the road and determines it to be necessary for the minimum road

system. During the project, however, and for an additional 10 years after completion of the project, the temporary roads will continue to have very real impacts on the landscape. For example, temporary roads will continue to allow for harassment of wildlife, littering, fires, invasive plant distribution, and negative impacts to aquatic and riparian habitat, as well as the fish that depend on that habitat. Temporary road mileage is not included in road density standards, we are unaware of any tracking mechanism the forest has to ensure roads are removed, and under this decision the logging contractors apparently provide no monetary assurances that the roads will be closed after project completion. The Forest Service must ensure that the temporary roads will in fact be temporary by including monitoring and enforcement of the projects and 10 years following completion of the projects. [ID#595]
Response: [Seq#573]

Temporary roads would be constructed by the timber purchaser and would be decommissioned by them (as required by contract) once harvest and haul are complete for the harvest units that they service.

The rehabilitation of these roads would include decompaction, re-contouring, slashing, and seeding to speed recovery of soil and block entrances to prevent unauthorized OHV use. These actions would occur as soon as access is no longer needed by the purchaser, preferably in the same season. See design feature #62 in the Preliminary EA. All temporary road construction and decommissioning would be tracked by the timber sale administrator. The satisfactory completion of this work would be required before the serviced timber harvest unit is released from the timber purchaser bond.

Temporary roads were included in the analysis of open road density on pages 214-219 of the preliminary EA. These roads were used in the analysis of the effects to wildlife and their habitat and are summarized on preliminary EA page 207. [ID#595]
Associated Comments: [Seq#573]
6. The Forest Service must analyze the impact of constructing temporary roads, and provide assurances that the roads will in fact be temporary. The Forest Service should assess the impact of constructing temporary roads on its duty to identify and implement the minimum road system. An agency's underlying substantive duty should inform the scope of the agency's NEPA analysis. Westlands Water Dist. v. U.S. Dept. of the Interior, 376 F.3d 853, 866 (9th Cir. 2004) (When an agency takes an action "pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS."). The Forest Service has a substantive duty to identify the minimum road system it determines is needed to, inter alia, ensure the "identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance." 36 C.F.R. § 212.5(b). Under NEPA, it also has a duty to consider the effects of its proposed action when added to the existing road and trail system. Wilderness Society v. U.S. Forest Service, 850 F. Supp. 2d 1144, 1157-58 (D. Idaho 2012) (holding the Forest Service was arbitrary and capricious to conclude that designating 94 miles of user-created routes as non-system routes would have no significant impact). The agency must consider the effects of its proposal to construct temporary roads when combined with the effects of its minimum road system. It must also consider how construction of the proposed temporary roads will detract from the purpose of subpart A of the agency's own rules, to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of the National Forest System lands." 36 C.F.R. § 212.5(b) (emphasis added). This is especially true if the Forest Service fails to provide assurances that the proposed temporary roads will in fact be closed within 10 years of completion of the relevant

project. [27-18]

Under Alternative 2, the Forest Service proposes to construct temporary roads for vegetation management activities, and states these will be "decommissioned after use." Draft EA at 214. The analysis states, "these roads are on the landscape for a relatively short and defined period of time and are associated with a specific project or mining plan of operations." Draft EA, Appendix B at 326. Temporary roads must be closed within 10 years of completion of a project, per 16 U.S.C. 1608(a), unless the Forest Service re-evaluates the road and determines it to be necessary for the minimum road system. During the project, however, and for an additional 10 years after completion of the project, the temporary roads will continue to have very real impacts on the landscape. For example, temporary roads will continue to allow for harassment of wildlife, littering, fires, invasive plant distribution, and negative impacts to aquatic and riparian habitat, as well as the fish that depend on that habitat. Temporary road mileage is not included in road density standards, we are unaware of any tracking mechanism the forest has to ensure roads are removed, and under this decision the logging contractors apparently provide no monetary assurances that the roads will be closed after project completion. The Forest Service must ensure that the temporary roads will in fact be temporary by including monitoring and enforcement of the projects and 10 years following completion of the projects. [27-19]

Concern: [Seq#574]

Commercial timber harvest is the only component of the project that the FS commits to. That means this is a timber sale, not a restoration project. This project uses a veil of restoration goals (that are questionable and not funded) over what began as almost the exact same timber sale from several years ago (2011?). This was a HFRA sale that was flagged and ready to go until local citizens caught the District Ranger using Legacy Road Funds illegally to improve roads for the log haul instead of using them for their assigned purpose of decommissioning roads. This Mission Project timber sale was being flagged this last fall (2016) and from what many citizens could tell from many hikes and explorations, the flagging was really just re-flagging the HFRA sale. [ID#596]

Response: [Seq#574]

Timber harvest is among the first of many stages (one of many stages - Ladder Fuel Reduction and aquatic restoration could start before timber harvest) of the planned restoration work. The Methow Valley Ranger District has consistently been funded for prescribed fire treatments to reduce thinning debris within harvest units. The district also has a good track record in receiving funding for stream restoration, ladder fuel reduction (LFR) thinning and prescribed fire treatments outside of harvest units, and road decommissioning. Stand alone fuels work such as LFR thinning, young plantation thinning and prescribed burning would be prioritized based on proximity to WUI as funds become available.

This project includes stands that had been prepared for a previous timber sale that was never sold, so tree marking paint is still visible from that project. These units would need to be marked with another color for this project. Flagging and boundary tags have been placed during the reconnaissance and field

verification of harvest units planned in the Mission Restoration Project. Most of this work did take place before scoping. Although the previous unit boundaries did not automatically influence the location of the boundaries for the Mission Restoration Project harvest units, some boundaries would be the same, such as at the foot of slopes, adjacent to riparian management zones, or along a road or forest boundary. The district has started to mark units that are common to all action alternatives as the comments to the preliminary EA are being addressed. Trees marked with orange paint would stay.

The timber volume from the project is proposed to be offered in two stewardship timber contracts. The first is estimated to contain about 6 MMBF and the second about 3 MMBF. The first contract has an estimated timber value (goods) of about $395,000 which can be used to fund restoration work. These funds will likely go to fund timber stand improvement and ladder fuel reduction thinning and piling to restore large trees; road decommissioning for wildlife and aquatic habitat improvement; and whip felling for preparation for tree planting. [ID#596]

Associated Comments: [Seq#574]

Commercial timber harvest is the only component of the project that the FS commits to. That means this is a timber sale, not a restoration project. This project uses a veil of restoration goals (that are questionable and not funded) over what began as almost the exact same timber sale from several years ago (2011?). This was a HFRA sale that was flagged and ready to go until local citizens caught the District Ranger using Legacy Road Funds illegally to improve roads for the log haul instead of using them for their assigned purpose of decommissioning roads. This Mission Project timber sale was being flagged this last fall (2016) and from what many citizens could tell from many hikes and explorations, the flagging was really just re-flagging the HFRA sale. [68-56]

Concern: [Seq#575]

While the cost of implementing many aspects of the proposed project can be expressed in monetary terms, the benefits are not easily quantified and involve both market and non market values. Funding for the different non timber projects can come from a variety of different sources such as appropriations, stewardship receipts, or through partnerships with public and private collaboraters. It is this funding uncertainty that will make it difficult to analyze into depth. COMMENT: No funding for the non timber projects is completely unacceptable and makes this huge project, covering 50,000 acres, a debacle. Alternative 2 requires 2.11 million dollars and Alternative 3 requires 2.46 million dollars. It is not likely that even a small fraction of this money will be acquired. [ID#597]

Response: [Seq#575]

As expressed in the comment above funding for the different non-timber projects can come from a variety of different sources such as appropriations, stewardship receipts, or through partnerships with public and private collaboraters.

Timber harvest is the first of many stages of the planned restoration work. The Methow Valley Ranger District has consistently been funded to provide follow up fuels management within harvest units. The district also has a good track record in receiving funding for stream restoration, culvert

installation/improvements, and road decommissioning. Stand alone fuels work will be prioritized based on proximity to harvest units and WUI as funds become available.

Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. Currently the District is considering 2 separate contracts since the volume estimate has increased from about 6.2 MMBF to about 9 MMBF. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work. An estimated $310,000 of stewardship type funding is expected to be available for non-timber harvest type of projects in the Preliminary EA. This estimate has been increased to about $395,000 of goods (timber receipts above costs) for the first contract for about 6 MMBF. With another contract estimated at 3 MMBF to be offered a little later. No estimate of "goods" has been made for this contract.

It is an unfortunate reality that the FS does not have the resources to fully fund all proposed actions. Some of these projects are included so that the District has NEPA-ready projects available if funding does become available. While roads used for timber harvest will be rehabilitated or decommissioned post-harvest as part of the contract, the other roads listed for closure or decommissioning will be completed as funded becomes available. This may come through the FS or may be provided by partners. The Methow District has been relatively successful in acquiring road closure funds for roads near anadromous streams.

If it is decided to use sites in this project for beaver enhancement, or the placement beaver enhancement analogs, funding for this type of project will likely be available from outside sources. The District has been successful for about 10 years in implementing these type of projects. Past beaver enhancement projects have had about a 50% success in establishing and keeping beavers in the selected sites.

[ID#597]

Associated Comments: [Seq#575]

While the cost of implementing many aspects of the proposed project can be expressed in monetary terms, the benefits are not easily quantified and involve both market and non market values. Funding for the different non timber projects can come from a variety of different sources such as appropriations, stewardship receipts, or through partnerships with public and private collaborates. It is this funding uncertainty that will make it difficult to analyze into depth. COMMENT: No funding for the non timber projects is completely unacceptable and makes this huge project, covering 50,000 acres, a debacle. Alternative 2 requires 2.11 million dollars and Alternative 3 requires 2.46 million dollars. It is not likely that even a small fraction of this money will be acquired. [68-140]

Concern: [Seq#576]

I oppose commercial logging in these areas because decisions will repeatedly be made in the interest of profit, not in the interest of protecting these beautiful and precious places. [ID#598]
Response: [Seq#576]

Commercial logging is not being done in the interest of profit, but the interest of protecting these beautiful and precious places, particularly from the long-term risk of wildfire, insects, and disease. If the timber sale was made strictly in the interest of the sale of timber and profit, we would remove the best and largest trees instead of mostly thinning from underneath, the least commercial portion of the volume.

Commercial and non-commercial thinning are somewhat prioritized since this is where the traditional funding has been available. Commercial thinning harvest will happen under some type of timber sale contract; likely a Stewardship type of contract. A stewardship type of contract has the advantage of providing funding from timber sale receipts to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values. Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

The project is now proposed to be split into 2 contracts. The first will offer about 6 MMBF and the second will offer about 3 MMBF. An estimated $395,000 of timber value (goods) will be generated by the first offering. No estimate of timber value from the 2nd contract has been made. [ID#598]
Associated Comments: [Seq#576]
I oppose commercial logging in these areas because decisions will repeatedly be made in the interest of profit, not in the interest of protecting these beautiful and precious places. [17-5]

Concern: [Seq#577]

Adaptive management, which is the purported modus operandi of the USFS, states, "…policies are experiments: learn from them…" (Lee 1993:9 in USDA Adaptive Management of Natural Resources: Theory, Concepts, and Management Institutions). The three policies that come to mind are: fire suppression, logging, and cattle grazing. Does the USFS truly use the adaptive management strategy with these three policies in mind because as such they are clearly unsustainable practices. Observation, analysis, feedback, the making of appropriate changes and exhibiting flexibility are the hallmarks of this strategy but I don't see evidence of their effective utilization. I am apprehensive that with the rising temperatures of climate change that this volatile combination could be disastrous. I do not want the Mission Restoration Project experimenting on Libby Creek and Buttermilk Watersheds, in the form of ICO, as the next failed policy. According to the adaptive management cycle the four steps are: plan/act/monitor/and evaluate. I see the plan, though I question its merit; the actions are yet to be taken but there are no visible means by which to pay for the monitoring and evaluation. I object to proceeding without all four steps in place. Anything less would be simply muddling through which is not a scientific manner in which to move forward. Experimenting on 50,400 acres is irresponsible. [ID#599]
Response: [Seq#577]

Alternatives **may** include an adaptive management strategy allowing for adjustment of the action during implementation. As stated in the Forest Service NEPA Procedures "The proposed action and one or more alternatives to the proposed action **may** include adaptive management. An adaptive management proposal or alternative must clearly identify the adjustment(s) that may be made when monitoring during project implementation indicates that the action is not having its intended effect, or is causing unintended and undesirable effects. The EA (EIS) must disclose not only the effects of the proposed action or alternative but also the effect of the adjustment. Such proposals or alternatives must also describe the monitoring that would take place to inform the responsible official during implementation whether the action is having the intended effect. (36 CFR 220.5(e)(2) and 220.7(b)(2)(iv).

Not all actions lend themselves to an adaptive management strategy and use of adaptive management guidance should not be construed to require its use. The ability to accomplish necessary monitoring and to fully analyze the effects of the range of additional adaptive management action needs to be carefully considered before using an adaptive management approach.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this

Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. A new monitoring plan was completed in 2013 with the first monitoring report due in 2018/2019.

Fire suppression, logging, and cattle grazing have adapted with time. Grazing has been on-going in many areas for over 100 years and has been adapted with time through annual meetings with the permittees. The Restoration Strategy and EMDS are an adapted management strategy under the Forest Plan and are currently being implemented. [ID#599]

Associated Comments: [Seq#577]

Adaptive management, which is the purported modus operandi of the USFS, states, "…policies are experiments: learn from them…" (Lee 1993:9 in USDA Adaptive Management of Natural Resources: Theory, Concepts, and Management Institutions). The three policies that come to mind are: fire suppression, logging, and cattle grazing. Does the USFS truly use the adaptive management strategy with these three policies in mind because as such they are clearly unsustainable practices. Observation, analysis, feedback, the making of appropriate changes and exhibiting flexibility are the hallmarks of this strategy but I don't see evidence of their effective utilization. I am apprehensive that with the rising temperatures of climate change that this volatile combination could be disastrous. I do not want the Mission Restoration Project experimenting on Libby Creek and Buttermilk Watersheds, in the form of ICO, as the next failed policy. According to the adaptive management cycle the four steps are: plan/act/monitor/and evaluate. I see the plan, though I question its merit; the actions are yet to be taken but there are no visible means by which to pay for the monitoring and evaluation. I object to proceeding without all four steps in place. Anything less would be simply muddling through which is not a scientific manner in which to move forward. Experimenting on 50,400 acres is irresponsible. [48-23]

Adaptive management, which is the purported modus operandi of the USFS, states, "…policies are experiments: learn from them…" (Lee 1993:9 in USDA Adaptive Management of Natural Resources: Theory, Concepts, and Management Institutions). The three policies that come to mind are: fire suppression, logging, and cattle grazing. Does the USFS truly use the adaptive management strategy with these three policies in mind because as such they are clearly unsustainable practices....Observation, analysis, feedback, the making of appropriate changes and exhibiting flexibility are the hallmarks of this strategy but I don't see evidence of their effective utilization. [51-56]

Concern: [Seq#578]

In matrix habitat, activities that change vegetation structure or condition would not be considered an adverse effect to Critical Habitat unless they would create barriers or impede lynx movement between habitat components." (EA 178.) How might any "activities that change vegetation structure or condition"

create a barrier or impede lynx movement? We suspect the FS would never admit any of its activities create such barriers or impediments. [ID#600]

Response: [Seq#578]

The Critical Habitat rule (USFWS, 2014), where the statement originated, states "*In matrix habitat, activities that change vegetation structure or condition would not be considered an adverse effect to lynx critical habitat unless those activities would create a barrier or impede lynx movement between patches of foraging habitat and between foraging and denning habitat within a potential home range, or if they would adversely affect adjacent foraging habitat or denning habitat."* The Critical Habitat Rule continues with examples- *"For example, a pre-commercial thinning or fuels reduction project in matrix habitat would not adversely affect lynx critical habitat, and would not require consultation. However, a new highway passing through matrix habitat that would impede lynx movement may be an adverse effect to lynx critical habitat, and would require consultation. The scale of any activity should be examined to determine whether direct or indirect alteration of habitat would occur to the extent that the value of critical habitat for the survival and recovery of lynx would be appreciably diminished."*

The updated Wildlife Report (Glidden, 2017), in project files, includes a map that shows the boreal and matrix forest in the project area and discusses the treatments in the matrix portions vs the boreal forest at p.41-43, copied below. "*Treatments in the Critical Habitat area are in matrix habitats (dry forest, plantations, aspen) or have grown out of hare reach, with the exception of the 55 acres in lynx habitat that are discussed above, in the "Lynx" section.*

Figure 12: Overstory Treatments in Lynx Critical Habitat

Overstory Treatments in Critical Habitat

acres

Aspen

80

Dry forest/mistletoe sanitation

112

Dry forest restoration

11

Moist forest thin

15

Regeneration

19

Total

236

Silvicultural treatments would open the canopy and result in increased understory vegetation, which would be beneficial to hares and other lynx prey. This would continue until the overstory closes again. Depending on how open the stands are, post-treatment, this effect could last for a decade or more.

Figure 13: Understory Treatments in Lynx Critical Habitat

Understory Treatments in Critical Habitat

acres

Aspen_understory

26

Aspen- girdle

8

Ladder fuel reduction (LFR)

1,663

Timber stand improvement (TSI)

421

Whip-felling

19

Total

2,137

Ladder fuel reduction and whip-felling could affect understory structure and reduce food availability for hares. Shrubs are not cut in these treatments, but small trees could provide some food resources for hares and other prey, although many trees are suppressed and lacking branches, or branches are too high for hares to reach. A general mitigation in fuels treatments is to leave 15-20% of the acreage in unthinned patches of trees from 0.1 to multiple acres and to retain the complex patches, clumpiness and gaps retained in the harvest units. This will provide cover and forage for hares. Because understory vegetation is not limited across the Critical Habitat unit and treatments are in matrix or grown out of hare reach, the treatments are not expected to reduce hare forage or populations. Prey for lynx in the matrix habitat would be maintained. Timber stand improvement units are plantations, generally of ponderosa pine, provide limited cover, and have grown out of reach of hares. [ID#600]

Associated Comments: [Seq#578]

"In matrix habitat, activities that change vegetation structure or condition would not be considered an adverse effect to Critical Habitat unless they would create barriers or impede lynx movement between habitat components." (EA 178.) How might any "activities that change vegetation structure or condition"

create a barrier or impede lynx movement? We suspect the FS would never admit any of its activities create such barriers or impediments. [72-122]

Concern: [Seq#579]

The economics analysis is all about justifying management by expounding upon the benefits to the local economy. On the other hand the costs to U.S. taxpayers for all these local focus benefits are not clearly analyzed or disclosed. The externalized costs of the existing and subsequent environmental damage due to management actions and other human activities are also not considered. [ID#601]
Response: [Seq#579]

Forest Service regulations require an economic analysis for projects involving timber harvest in order to determine if the timber value is positive (timber value outweighs costs associated with harvest) so that the project could be implemented via a normal timber sale or stewardship or if the value is negative (the direct costs associated with harvest are higher than the expected value at the mill), in which case, the harvest of timber should be included in a service contract. The other reason for providing an economic analysis on the timber harvesting portion of a project is so action alternatives can be effectively compared regarding timber volume and value.

The expected value and timber volume that is expected to be generated by the selling the timber is shown on page 294 of the preliminary EA. The only costs shown in this section of the economic analysis is what a purchaser would incur and the only values shown are how much wood would be produced and how much it would be worth. This section will be updated in the final EA which will likely increase the timber value. Currently it is proposed to offer the project under 2 separate Stewardship contracts. The first contract is estimated to contain about 6 MMBF of offered timber with a product value of approximately $395,000. The second contract may contain an estimated 3 MMBF. No product value has currently been estimated.

The approximate cost of the other components of the restoration project are shown in the Preliminary EA on page291.

It is not known which "external costs" are being referred to in the comment. The effects of the two action alternatives are documented throughout chapter 3 of the preliminary EA. Analysis of the effects do not show any "external costs" that would require expending additional government dollars.

Impacts from previous human activity is included in the Existing Condition for each resource in Chapter 3 of the preliminary EA. Present and ongoing actions are listed on pages 46-47 of the preliminary EA and are included in the cumulative effects discussion for each resource in Chapter 3 of the preliminary EA. No dollar amount is assigned to existing "damage". However, the cost of the various proposed restoration projects are displayed on pages 291-292 of the preliminary EA. [ID#601]
Associated Comments: [Seq#579]
The economics analysis is all about justifying management by expounding upon the benefits to the local

economy. On the other hand the costs to U.S. taxpayers for all these local focus benefits are not clearly analyzed or disclosed. The externalized costs of the existing and subsequent environmental damage due to management actions and other human activities are also not considered. [72-202]

Concern: [Seq#580]

The other 2 alternatives are almost the same and represent very little departure from the project as it was being described 2 years ago. Therefore, I conclude that citizen input, including attendance at NCWFH Collaborative meetings, has fallen on deaf ears. [ID#602]

Response: [Seq#580]

Comments received did not fall on deaf ears and have been considered in the development of this project. The response to comments are part of that consideration. Figure 5, Mission Restoration Project Issues, pgs. 23 - 26 details a number of alternatives considered and the approach that the project took to these proposals. Further information is disclosed in Section 2.1, Alternative Considered but Eliminated from Detailed Study, pgs. 27 - 28 including the Pacific Biodiversity Institute Alternative; an alternative to Not Close Additional Roads and Adopt all Unauthorized Roads into the National Forest System; an alternative of No Commercial Harvest, Non-commercial Thinning and Prescribed Fire Only; and an alternative that included No Forest Plan Amendments. The project has been modified so that it presently is only considering 1 Forest Plan amendment.

An alternative was considered that did not include timber harvest. It was determined that this alternative would not meet 3 out of the 7 Purpose and Needs. See preliminary EA page 28. Analyzing a project that includes timber harvest is very time consuming and expensive.

Pacific Biodiversity Institute proposed a new alternative. Alternatives 2 and 3 were modified to include more hazard fuels reduction treatments adjacent to private lands in Libby Creek. The remainder of the proposed alternative was Considered but Eliminated from Detailed Study, Section 2.1, and Figure 5 in the Preliminary EA.

Alternative 3 was created to respond to public and agency comments to include more Aquatic Restoration Projects than Alternative 2 thus Alternative 3 was created.

[ID#602]

Associated Comments: [Seq#580]

The other 2 alternatives are almost the same and represent very little departure from the project as it was being described 2 years ago. Therefore, I conclude that citizen input, including attendance at NCWFH Collaborative meetings, has fallen on deaf ears. [68-40]

Concern: [Seq#581]

The U.S. Fish & Wildlife Service did not determine critical habitat for lynx at the time the species was listed. U.S. Fish & Wildlife Service was ordered to "undertake prompt rulemaking" in order to determine and designate lynx critical habitat.

Defenders

of Wildlife v. Norton,

239 F.Supp.2d 9, 26 (D.D.C. 2002). "On February 28, 2008, the Service issued the proposed rule designating lynx critical habitat. The final rule was then published on February 25, 2009."

Alliance

for the Wild Rockies v. Lyder,

728 F.Supp.2d 1126, 1143 (D.Mont. 2010) (citing 74 Fed. Reg. 8616). The U.S. Fish & Wildlife Service excluded many large areas from the map in the Final Rule. The Final Rule was challenged and ultimately ruled "arbitrary and capricious" because in determining what habitat was "critical" for lynx, the U.S. Fish & Wildlife Service required evidence of reproduction.

Lyder,

728 F.Supp. at 1132. The Court held that because the agency required evidence of reproduction for mapped critical habitat, the Final Rule was unlawful and that the agency must re-evaluate and reissue a rule properly designating lynx critical habitat.

Lyder,

728

F.Supp. at 1145 [ID#603]

Response: [Seq#581]

Yes. The Final Critical Habitat Rule for designating revised critical habitat for the contiguous United States distinct population segment of the Canada lynx (Lynx canadensis) under the Endangered Species Act of 1973, as amended, was finalized in the Federal Register on September 12, 2014. [ID#603]

Associated Comments: [Seq#581]

The U.S. Fish & Wildlife Service did not determine critical habitat for lynx at the time the species was listed. U.S. Fish & Wildlife Service was ordered to "undertake prompt rulemaking" in order to determine and designate lynx critical habitat. Defenders of Wildlife v. Norton, 239 F.Supp.2d 9, 26 (D.D.C. 2002). "On February 28, 2008, the Service issued the proposed rule designating lynx critical habitat. The final rule was then published on February 25, 2009." Alliance for the Wild Rockies v. Lyder, 728 F.Supp.2d 1126, 1143 (D.Mont. 2010) (citing 74 Fed. Reg. 8616). The U.S. Fish & Wildlife Service excluded many large areas from the map in the Final Rule. The Final Rule was challenged and ultimately ruled "arbitrary and capricious" because in determining what habitat was "critical" for lynx, the U.S. Fish & Wildlife

Service required evidence of reproduction. Lyder, 728 F.Supp. at 1132. The Court held that because the agency required evidence of reproduction for mapped critical habitat, the Final Rule was unlawful and that the agency must re-evaluate and reissue a rule properly designating lynx critical habitat. Lyder, 728 F.Supp. at 1145. [72-123]

Concern: [Seq#582]

[comment:72-124]

The EA for this project does not apply the best available science regarding the Canada lynx. The project will result in unauthorized take as defined by Section 9 of the ESA. [ID#604]
Response: [Seq#582]

Because the treatments in lynx habitat are so limited (50 acres in plantations and 5 acres in an open-canopied stand (Preliminary EA), I didn't include an extensive species account. I used the LCAS (2013), which is considered the best available science and USFWS Federal Register documents (2000, 2014), which summarize existing science on lynx biology, habitat, range and distribution, viability, threats, climate change. The BA (draft), in project files, has a more extensive species account.

The determination for lynx is *"The project may affect, but is not likely to adversely affect lynx. Treatments are very limited in the mapped lynx habitat (55 acres), and would increase understory growth that provides cover and forage for prey species. The project is consistent with the LCAS. Stem densities would not be reduced through thinning until stands no longer provide winter hare habitat."* (Draft BA at p.12)

Final consultation with US Fish and Wildlife Service is scheduled for February 2018. The project will not result in unauthorized take. [ID#604]
Associated Comments: [Seq#582]
The EA for this project does not apply the best available science regarding the Canada lynx. The project will result in unauthorized take as defined by Section 9 of the ESA. [72-124]

Concern: [Seq#583]

Sufficient stands that have potential to develop old growth characteristics be identified as replacement old growth to provide for 5% of suitable forest land acres in an old growth condition in perpetuity." This is a forest plan standard, ignored by the EA. [ID#605]

Response: [Seq#583]

This standard has, over time, been seen as applicable only when the proposed action would result in reduction of Forest Plan Old Growth. No Forest Plan Old Growth would be treated by either action alternative (preliminary EA page 134). The analysis for the effects on Forest Patches of Large and Medium trees on pages 124-125 of the preliminary EA satisfies the requirement to discuss Replacement Forest Plan Old Growth. [ID#605]

Associated Comments: [Seq#583]

Sufficient stands that have potential to develop old growth characteristics be identified as replacement old growth to provide for 5% of suitable forest land acres in an old growth condition in perpetuity." This is a forest plan standard, ignored by the EA. [72-133]

Concern: [Seq#584]

Snags removed could have provided homes for cavity-dwelling species and trees fallen into streams improve aquatic habitat. [ID#606]

Response: [Seq#584]

The effects of proposed activity on snags and coarse woody debris is found on page 98 and throughout the Wildlife section in Chapter 3 of the preliminary EA.

No snags would be removed by timber harvest (this will be stated clearly in the final EA), but some may be fell and left in place to mitigate safety concerns, and underburning would result in some loss in snags as well (preliminary EA page 193-194). The temporary increase in open road density would result in snag loss (preliminary EA page 202). [ID#606]

Associated Comments: [Seq#584]

Snags removed could have provided homes for cavity-dwelling species and trees fallen into streams improve aquatic habitat. [51-17]

Concern: [Seq#585]

All references to "interdisciplinary" are false and misleading to the public. The FS does not consider range, wilderness or any serious alternative to continuing full fire suppression. Those disciplines were not considered. [ID#607]

Response: [Seq#585]

Consideration of a fire use program and stopping the suppression of all fires is outside the scope of this project because it would require changing agency fire policy and the Okanogan Forest Plan. Forest Plan amendments would have to undergo separate environmental analysis to consider this proposal. Consideration of this proposal would occur during a Forest Plan revision, and not planning at the project level.

The Forest has infrequently considered allowing fires to burn in wilderness areas. Allowing fires to burn needs to meet Management Area goals and fire management direction in a cost effective manner. Wildfires are not to be used on the Okanogan National Forest to accomplish land and resource management objectives (19-3). In riparian areas and old growth stands, the preferred suppression strategy is control. In fire tolerant stands containment strategy may be used where riparian and old growth characteristics are not adversely affected (19-2). MAs 5, 14, 25, and 26 basically have a preferred fire suppression strategy of contain/control with a requirement to limit acres burned by damaging wildfires. Wilderness areas have a preferred suppression strategy for lightening caused wildfires of confinement with a number of restrictions on when this strategy can be used which are included in the Forest Plan, as amended. As an example see MA 15 (A or B); 19A through 19E.

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) revision. The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management, as needed, on National Forest System lands. Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area. [ID#607]

Associated Comments: [Seq#585]

All references to "interdisciplinary" are false and misleading to the public. The FS does not consider range, wilderness or any serious alternative to continuing full fire suppression. Those disciplines were not considered. [68-22]

Concern: [Seq#586]

[comment:72-125]

The FS has not completed formal consultation in light of the most recent Critical Habitat designations, which the Ninth Circuit Court of Appeals has ruled is required. Because of this particular failure to consult, the public is not fully informed as to the effects on lynx Critical Habitat Primary Constituent Elements. [ID#608]

Response: [Seq#586]

Formal consultation is not required because there will not be determination of adverse effects for any species or adverse modification of critical habitat. Effects to critical habitat are disclosed in the Preliminary EA at p. 147-149. Informal consultation is scheduled for February 2018. [ID#608]

Associated Comments: [Seq#586]

The FS has not completed formal consultation in light of the most recent Critical Habitat designations, which the Ninth Circuit Court of Appeals has ruled is required. Because of this particular failure to consult, the public is not fully informed as to the effects on lynx Critical Habitat Primary Constituent Elements. [72-125]

Concern: [Seq#587]

If we want healthy, resilient forests, we cannot heavily log trees to make money now and then hope that that money will somehow fund limited restoration efforts in the future.

I wonder whether some environmental organizations would be open to funding pilot projects on sustainable treatment of critical areas such as sagebrush.

Some environmental organizations may be open to funding pilot projects on sustainable treatment. Alternatively, the scale of the project could be brought back to much smaller pilot areas that could be easily monitored and evaluated for effectiveness.

The idea that the kind of logging proposed by the Mission Project would lead to more resilient forests is doubtful at best.

[ID#610]

Response: [Seq#587]

Timber harvest is among the first of many stages of the planned restoration work. The Methow Valley Ranger District has consistently been funded for prescribed fire treatments to reduce thinning debris within harvest units. The district also has a good track record in receiving funding for stream restoration, ladder fuel reduction (LFR) thinning and prescribed fire treatments outside of harvest units, beaver enhancement, and road decommissioning. Stand alone fuels work such as LFR thinning, young plantation thinning and prescribed burning will be prioritized based on proximity to WUI as funds become available.

In regards to treatments in the shrub/steppe, we are concerned about several factors including the spread of invasive species, the effects on wildlife forage, and fire/fuels effects on rates of potential spread during a wildfire (preliminary EA page 27) . In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2014 and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time may not be

ripe for additional treatments in this habitat within the next decade and may consider those type of treatments at that time.

The Methow Valley Ranger District has many years of previous experience in designing timber harvest and fuels management projects in landscapes that include large trees. Ongoing monitoring has provided the opportunity to make adjustments to planning, contracts, and contract administration for restoration projects. Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring, of the Preliminary EA includes the planned monitoring for Mission Restoration Project.

The project intends to restore forest structure to within the historical or future ranges of variability, if possible, so that the remaining trees and patches are resilient to wildfire and insects (preliminary EA pages 13-14). Without some disturbance to the structure (ie vegetation management) the effects of wildfire and defoliation are likely to be uncharacteristically intense and widespread, which may result in the loss of large trees and patches of trees that would not normally be lost (preliminary EA pages 120-127 and 150-161). While large trees would eventually return to the landscape without human influence, it would take a very long time. The potential effects to soil from uncharacteristically high wildfire severity would be the best example of a collapse into a qualitatively different state, where erosion and loss of organic horizons result in reduced soil productivity. See preliminary EA pages 94-95.

[ID#610]

Associated Comments: [Seq#587]

I do understand that a project of this nature needs to be funded and that commercial interests are only too happy to line up at your door to take advantage of the fear created by the large fires of recent years. But our short-term strategies need to be in line with our long-term goals. If we want healthy, resilient forests, we cannot heavily log trees to make money now and then hope that that money will somehow fund limited restoration efforts in the future. I have no experience in seeking enormous sources of funding and I do not want to diminish the incredible effort it must be to obtain them but I'm wondering whether alternative options could be available. For example, I wonder whether some environmental organizations would be open to funding pilot projects on sustainable treatment of critical areas such as sagebrush. Alternatively, the scale of the project could be brought back to much smaller pilot areas that could be easily monitored and evaluated for effectiveness. Such areas could focus on land directly adjacent to private property. I am also not against the idea of selective thinning in the forest in the manner many land owners in the area, including myself, have done. But the idea that the kind of logging proposed by the Mission Project would lead to more resilient forests is doubtful at best. [62-6]

Concern: [Seq#588]

I support my neighbors on the Buttermilk and Twisp River in seeing plans and actions that address their safety concerns. Forest conditions in the Buttermilk do not mimic conditions found on Libby Creek and options that may be necessary and helpful there may not be desirable on Libby Creek. I would like to see these projects separated with priority given to firewise work in the Buttermilk drainage. [ID#611]

Response: [Seq#588]

Roads in the project area maintained by Okanogan County are outside of the scope of the project because they are not within the jurisdiction of the Forest Service. The Forest Service has had several discussions with the Okanogan County Commissioners about this project including the issue of public safety.

Public safety risk from logging traffic is discussed under Required Disclosures near the end of Chapter 3, Section 3.15.6, Public Health and Safety. There would be limited health and safety hazards to the general public from the project. None of the health and safety hazards are unusual or unique to this project. Recreationists, nearby residents, and permittees could be exposed to smoke during prescribed fire operations. Proposed treatments would use design criteria, monitoring, and mitigation to maintain Clean Water Act and Clean Air Act standards.

Recreationists and local residents could encounter logging traffic. Most logging roads, including possibly main haul routes such as Forest Roads 4300000, 4340000, and 4300300, could remain closed to the general public to minimize traffic conflicts and impacts to wildlife, particularly during the winter. Log hauling and heavy equipment moving during weekends and holidays is prohibited, without prior approval from the Forest Service beginning Memorial Day weekend through Labor Day weekend and also during the general rifle season. The safety of the area would be beneficially improved by the reduction of wildland fuels creating safer escape routes, more direct fire suppression conditions, and an increased ability to protect homes and other structures in the area.

Contractors and Forest Service drivers are responsible to follow agency Road Use Rules and State Laws. Most National Forest Service system roads proposed for commercial timber haul would either be reconstructed by the project or have pre-haul maintenance, during the project, and post-haul road maintenance making use of these roads more safe.

A proposed project to reconstruct about 5 miles of the Buttermilk Road, Forest Road 43, to Blackpine Lake was not awarded in 2017 since all bids came in at about twice available funding. [ID#611]

Associated Comments: [Seq#588]

I support my neighbors on the Buttermilk and Twisp River in seeing plans and actions that address their safety concerns. Forest conditions in the Buttermilk do not mimic conditions found on Libby Creek and options that may be necessary and helpful there may not be desirable on Libby Creek. I would like to see these projects separated with priority given to firewise work in the Buttermilk drainage. [79-3]

Concern: [Seq#589]

"Surveys for goshawks were limited…" (EA 193). The EA does not provide protections for the goshawk if pre-project surveys don't consider best available science for locating the goshawks. Additionally, surveys need to be ongoing, because nest stands are not occupied every year and the logging could eliminate a

nest stand. [ID#612]
Response: [Seq#589]

Goshawk surveys are not a requirement, however, we try to locate historic nests and to survey good habitat during project field reviews. Goshawk nests are protected under the Forest Plan, which requires (under Forestwide Standards and Guidelines):

- Wildlife Planning 6-10 Active raptor nest sites shall be protected through the nesting season (until young are fledged).
- Wildlife Planning 6-1 1 Raptor nest sites should be protected. Depending on the individual situation and the biological needs of the species, a primary zone extending up to 500 feet from the nest site (750 feet from goshawk nest site) should be managed to provide raptor habitat. In some areas a secondary restricted activity zone may be necessary outside the primary zone: during the active nest season (through August), certain project activities may be limited. This secondary zone may extend up to one-quarter mile from the nest. When a nest site has not been occupied by a pair for five consecutive years, the site may be managed according to the direction of the management area. Nests located after the project contract has been purchased will not be considered under this guideline.
- Wildlife Planning 6-12 For raptor nests located during contract activities, to the extent practicable, the following should apply: a) accipiters - major project activities (i.e, road construction, logging) within 1/4 mile of active accipiter nests should be avoided from the onset of nesting until the young are fledged (mid-August); b) other raptors - nest trees and four to five adjacent large trees (required for fledgling) should be protected during the active nesting season-the onset of nest construction until the young are fledged (mid-August); these trees may be harvested following current year nesting activities. Major activities (i.e., road construction, logging) should be postponed within 750 feet of the nest tree during incubation and until initial brooding are completed or until the young birds have established thermoregulation. (Preliminary EA, Appendix G)

The best approach to finding goshawks is:

- Look where there have been nests in the past
- Look in areas where goshawks have been seen
- Look in dense, late-old habitat with large trees

Where goshawks are suspected, follow-up surveys are completed. However, a nest could unintentionally be cut if goshawks move into a unit prior to harvest. Contract provision GT.2.4 requires reporting of any discovery of additional areas, resources, or members of species needing special protection to the other party, and operations delayed or interrupted if there is risk of damage from continued operations. [ID#612]
Associated Comments: [Seq#589]
"Surveys for goshawks were limited…" (EA 193). The EA does not provide protections for the goshawk if pre-project surveys don't consider best available science for locating the goshawks. Additionally, surveys

need to be ongoing, because nest stands are not occupied every year and the logging could eliminate a nest stand. [72-126]

Concern: [Seq#590]

Even if project area conditions could correctly be described as overly continuous dense forest this doesn't imply inevitable catastrophe. In discussing the adjacent Colville National Forest, Churchill, 2011 explains how natural ecological processes/dynamics accomplishes restoration to a significant degree: Over time, stand development processes and biophysical variation, along with low and mixed-severity disturbances, break up these large patches into a finer quilt of patch types. These new patterns then constrain future fires. Landscape pattern is thus generated from a blend of finer scale, feedback loops of vegetation and disturbance and broad scale events that are driven by extreme climatic events. [ID#613]
Response: [Seq#590]

The team considered an alternative that does not include timber harvest, but was not fully developed (see Preliminary EA, page 28). The effects of No Action are addressed throughout the EA and are compared to the effects of Alternatives Two and Three (see EA pages 36-44). Because fuel levels are so much higher than that of historical conditions, unplanned fire (results of No Action) would have much more negative effect on upland and riparian forest habitat as well as to neighboring lands and property than the planned activity (see EA pages 150-170). While some aspects of natural fire in this landscape would be beneficial, there would be many components of the stated Purpose and Need, late and old structure development being just one example, that would not be achieved within a reasonably period of time, but instead would take hundreds of years to establish after the expected uncharacteristic wildfire kills the existing late and old structure in the analysis area (Preliminary EA, pages 120-121). [ID#613]
Associated Comments: [Seq#590]
Even if project area conditions could correctly be described as overly continuous dense forest this doesn't imply inevitable catastrophe. In discussing the adjacent Colville National Forest, Churchill, 2011 explains how natural ecological processes/dynamics accomplishes restoration to a significant degree: Over time, stand development processes and biophysical variation, along with low and mixed-severity disturbances, break up these large patches into a finer quilt of patch types. These new patterns then constrain future fires. Landscape pattern is thus generated from a blend of finer scale, feedback loops of vegetation and disturbance and broad scale events that are driven by extreme climatic events. [72-91]

Concern: [Seq#591]

Neither the Vegetation Report nor the Botany Resource Report addresses management of shrub-steppe. The Vegetation Report is actually the "Forest" Vegetation Report, prepared by the silviculturist,

with no mention of shrub-steppe. This is a serious omission, considering that shrub-steppe represents nearly 30 percent of the Libby Creek watershed. [ID#614]
Response: [Seq#591]

Shrub-steppe restoration was not included in the Purpose and Need. None of the proposed activity has the potential for direct effects on shrub-steppe habitat and therefore was not discussed.

In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2014 and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time may not be ripe for additional treatments in this habitat within the next decade. This potential treatment should be considered then, when we can better assess the effects of such a treatment. [ID#614]
Associated Comments: [Seq#591]
Neither the Vegetation Report nor the Botany Resource Report addresses management of shrub-steppe. The Vegetation Report is actually the "Forest" Vegetation Report, prepared by the silviculturist, with no mention of shrub-steppe. This is a serious omission, considering that shrub-steppe represents nearly 30 percent of the Libby Creek watershed. [30-19]

The Mission Vegetation Report is actually the Forest Vegetation Report prepared by the silviculturist and doesn't address management of the shrub-steppe. [78-45]

And likewise, the Botany Resource Report does not address management of shrub-steppe, or the...lack thereof. [78-46]

Concern: [Seq#592]

The project relies heavily on the OWNF Restoration Strategy (FRS). The FRS analysis and it's proposed treatments are not conclusively agreed upon in the scientific community, and, in fact are highly debated. [ID#615]
Response: [Seq#592]

The 2012 Okanogan-Wenatchee National Forest Restoration Strategy is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques. [ID#615]
Associated Comments: [Seq#592]
The project relies heavily on the OWNF Restoration Strategy (FRS). The FRS analysis and it's proposed treatments are not conclusively agreed upon in the scientific community, and, in fact are highly debated.

[68-23]

The FS must conduct a Science Consistency Review for the RS and its application for a project such as Mission. Guldin et al. 2003: ...outlines a process called the science consistency review, which can be used to evaluate the use of scientific information in land management decisions. Developed with specific reference to land management decisions in the U.S. Department of Agriculture Forest Service, the process involves assembling a team of reviewers under a review administrator to constructively criticize draft analysis and decision documents. Reviews are then forwarded to the responsible official, whose team of technical experts may revise the draft documents in response to reviewer concerns. The process is designed to proceed iteratively until reviewers are satisfied that key elements are consistent with available scientific information. [72-22]

Concern: [Seq#593]

The FRS, in terms of vegetation, relies on a presentation of a historical range of variability that is derived primarily from photos from the 1930's. A true picture of forest health would have been long before this time period, therefore it makes this approach fickle and subjective. Also, the FS should disclose the limitations of such an approach which is a very short range snapshot of complex forest succession stages that involve major human intervention.

"A lot has changed in the last century; no description of how climate change may have altered environmental conditions required for the MRP concept of ideal stand composition has been presented." [ID#616]

Response: [Seq#593]

It is well understood that a single 1930's photograph by itself would represent a very arbitrary reference point, however by characterizing the 1930 vegetation patterns across a landscape you are capturing the suite of vegetation composition and patterns shaped by natural processes over hundreds to thousands of years prior to the time of the photo. This is termed a 'substitution of space for time', a sampling method common in ecology (Pickett, 1989). One strength of this process is that when you capture multiple similar landscapes across a large geographic region, a range of conditions can be created. This range of conditions captures landscapes that have developed as a result of the same processes but in different times, different places, and can represent different phases of development. This space for time substitution means that we are referencing a range of conditions (both in time and space) that are in different stages of development, effectively capturing a range of possible landscape evolutions. Unlike other approaches to estimate Historical Range of Variability (HRV) using unverified assumptions, our approach to quantifying HRV is grounded with observed conditions.

The Historical Range of Variability (HRV) is not a single condition to be rigorously adhered to. Rather, it represents a range of conditions that were present historically and thus provides a broad metric with which to compare current landscapes to base management actions on. The Okanogan-Wenatchee National Forest Restoration Strategy analyzes landscapes to describe landscape resilience via HRV

estimates for multiple attributes. This is distinctively different from "forest health" which is a measure of specific conditions that may or may not be conducive to some particular objective (e.g. mistletoe stands in campgrounds). Using this definition, "forest health" could be assessed utilizing photographs from any point in time, but would only be relevant for particular places in a landscape. A resilient landscape can (and should) have a variety of 'healthy' to 'unhealthy' conditions because these stands provide different functionalities on the landscape. The FRS uses a science based methodology to develop HRV to estimate resilience thereby quantifying the pattern and quantities of both 'healthy' and 'unhealthy' conditions.

While "human interventions" did create some complex conditions in the pre-1930's forests captured in the photography, they did not affect geographically large areas. These pre-1930's forests were shaped more by natural processes and less by human-caused disturbance than contemporary forests. Significant timber management and fire suppression began in earnest post World War II. Regardless, human interactions with ecosystems in the western United States is a given. The magnitude, appropriateness, location of, and the scale anthropogenic impacts is beyond the scope of this document. The methodology used to define HRV and the methods used for the landscape analysis identify the obvious human impacts of logging (in some cases grazing), but do not attempt to disentangle human impacts from the social values of those impacts.

The EA does not claim that climate change has altered environmental conditions. No observations of climate change nor its effects on the landscape are needed to build and apply a model of how a warm and dry future would effect a landscape and what levels and patterns of forest vegetation would be sustainable.

The target forest vegetation condition is not one ideal set of conditions, rather it is a range of conditions. [ID#616]

Associated Comments: [Seq#593]

Clare Bresnahan, a LCWA member who grew up on Libby Creek, questioned the definition and importance of "historical conditions". A lot has changed in the last century; no description of how climate change may have altered environmental conditions required for the MRP concept of ideal stand composition has been presented. [63-26]

The FRS, in terms of vegetation, relies on a presentation of a historical range of variability that is derived primarily from photos from the 1930's. A true picture of forest health would have been long before this time period, therefore it makes this approach fickle and subjective. Also, the FS should disclose the limitations of such an approach which is a very short range snapshot of complex forest succession stages that involve major human intervention. [68-26]

Concern: [Seq#594]

The FS did not consider using Natural Range of Variation along with broad and current understandings of historical conditions outside of Forest peer reviews as requested in my scoping comments. [ID#617]

Response: [Seq#594]

Natural Range of Variation is a more broadly defined condition. Our use of HRV is a robust estimate of historical conditions that are considered more resilient than current conditions (OWF-RS, 2012, pg. 12, FSM 2020.3). This approach has gone through a peer- review process and is subject to adaptive management based on new science.

(OWF-RS) The Okanogan--Wenatchee National Forest Restoration Strategy: adaptive ecosystem management to restore landscape resiliency. US Department of Agriculture Forest Service; Okanogan--Wenatchee National Forest, 2012

(FSM 2020.3) Forest Service Manual: 2000-2900. National Forest Resource Management; 2020.3. Accessed June 14, 2017.

[ID#617]
Associated Comments: [Seq#594]
The FS did not consider using Natural Range of Variation along with broad and current understandings of historical conditions outside of Forest peer reviews as requested in my scoping comments. [68-27]

Concern: [Seq#595]

The FRS relies on EMDS software to project a future range of variability. I contest that this software is accurate. [ID#618]
Response: [Seq#595]

Ecosystem Management Decision Support (EMDS) is a software package that is a decision support tool. The application of EMDS within the FRS is to simply compare multiple attributes, each with multiple metrics, for multiple polygons, and for multiple conditions. The application of EMDS is in decision support of the FRS, not modeling a future range of variability.

The future range of variability (FRV) is a set of reference conditions derived from the same methods as the historical range of variability. The selection of which FRV reference to use is informed by the global climate change models, which generally predict warmer and drier conditions for the Okanogan-Wenatchee National Forest (Peterson, 2014). In the case for Mission, the warmer and drier conditions of Ecological SubRegion 11 was used, which includes Benson Creek and Gold Creek.

Peterson, D. W.; Kerns, B. K. & Dodson, E. K. Climate Change Effects on Vegetation in the Pacific Northwest: A Review and Synthesis of the Scientific Literature and Simulation Model Projections. USDA Forest Service, USDA Forest Service, 2014

[ID#618]
Associated Comments: [Seq#595]
The FRS relies on EMDS software to project a future range of variability. I contest that this software is accurate. [68-28]

Concern: [Seq#596]

The MRP will avoid due process if it moves forward without completing an EIS. [ID#619]
Response: [Seq#596]

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to the Buck EA, South Summit II EA, Light EA, and Annie EA which did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made and supported.

Based on the effects analysis determined in the Revised Preliminary EA, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where the proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct about 900 feet of hand fireline in an IRA and burn about 2 acres in the IRA so a more defensible burn boundary can be used. This use will not substantially alter the IRA. [ID#619]
Associated Comments: [Seq#596]
The MRP will avoid due process if it moves forward without completing an EIS. [63-7]

Concern: [Seq#597]

A required EIS must analyse what the cumulative effects of logging, soil compaction, soil erosion, and habitat disturbance together with the cattle grazing will be. [ID#620]
Response: [Seq#597]

Chapter 3 of the EA includes cumulative effects discussions in each resource section, where appropriate. Section 3.1.1.2 describes Present and On-going Actions and Section 3.1.1.3 describes Reasonably Foreseeable Actions along with current conditions provides the base for cumulative effects discussions.

Cumulative Actions are defined as actions, which when viewed with other proposed actins have cumulatively significant impacts and should therefore be discussed in the same impact statement (40 CFR 1508.25).

Cumulative Impact is 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Water Resources (Section 3.3) cumulative effects are described in sections 3.3.4.3.2, Cumulative Effects; 3.3.4.3.2, Summary of Cumulative Effects, 3.3.4.4.2, Cumulative Effects, and 3.3.4.4.3, Summary of Cumulative Effects.

Soils (Section 3.4) cumulative effects are described in section 3.4.4.3.2, Cumulative Effects,

Vegetation (Section 3.5) cumulative effects are described in Sections 3.5.4.4, Cumulative Effects.

Other resource Sections have similar sections throughout the document. [ID#620]
Associated Comments: [Seq#597]
A required EIS must analyse what the cumulative effects of logging, soil compaction, soil erosion, and habitat disturbance together with the cattle grazing will be. [63-83]

Concern: [Seq#598]

Instead, the EA resorts to an uninformative "it is what it is" analysis of cumulative impacts: In order to understand the contribution of past actions to the cumulative effects of the proposed action, this analysis relies on current environmental conditions as a proxy for the impacts of past action. This is because existing conditions reflect the aggregate impact of all prior human actions on natural events that have affected the environment and might contribute to cumulative effects. The FS take such a position in part because "a catalog and analysis of all past actions would be impractical to compile and

unduly costly to obtain." Apparently, being accountable for past management impacts needs to be avoided, and the way to do that is simply pretend they don't exist. Next, the FS claims, "providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action." On the contrary, quite reasonably, such an analysis would allow the public and decisionmaker to understand how similar Mission project actions might result in impacts similar in kind and intensity as happened previously. Finally, the EA states, "public scoping for this project did not identify and public interest of need for detailed information on individual past actions." The public is not required, during scoping, to remind the FS to do its duties under NEPA.

The EA appears to be missing some cumulative effects discussion and cumulative effects seem to be only an afterthought. The Index only lists cumulative effects of roads and soils, yet the Wildlife report lists some, but certainly not a comprehensive set, of cumulative effects. [ID#621]
Response: [Seq#598]

Please refer to the discussion under Section 3.1.1.1., Past Actions, for a further discussion of this approach. The cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century, and beyond, and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events that may contribute to cumulative effects as much as human actions. By looking at current conditions, residual effects of past human actions and natural events are captured, regardless of which particular action or event contributed those effects. Thirdly, public scoping for this project did not identify and public interest of need for detailed information on individual past actions related to what is being considered in this analysis. Finally, the Council on Environmental Quality (CEQ) issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on current aggregate effects of past actions without delving into the historical details of individual past actions."

The cumulative effects analysis of the EA is also consistent with Forest Service National Policy Act Regulations (36 CFR 220.4(f)) dated July 24, 2008, which states in part: "CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions."

For these reasons, the analysis of past actions in the cumulative effects analysis in each resource section is based on current environmental conditions.

Past and on-going actions affecting resources may be described as part of the existing condition information for specific resources later in Chapter 3. A summary of certain types of past actions known to have occurred in the project area is available in the project record.

This method provides the most accountability for past management actions. Many management actions proposed in this restoration project are generally not very similar to past actions in the project area. Most commercial harvest treatments utilize a different type of prescription with different proposed objectives. Underburning on a landscape scale is different than past fuels treatments, which were mostly concerned with project created slash.

Cumulative effects were not an afterthought. There is no present index in this document so I am not sure what the commenter is referring to. Each resource report and resource section discusses cumulative effects if appropriate. Section 3.14, Economics, does not disclose cumulative effects since costs and benefits are shown over a multiyear basis. Cultural resources also does not discuss cumulative effects. [ID#621]

Associated Comments: [Seq#598]

The EA appears to be missing some cumulative effects discussion and cumulative effects seem to be only an afterthought. The Index only lists cumulative effects of roads and soils, yet the Wildlife report lists some, but certainly not a comprehensive set, of cumulative effects. [18-88]

Instead, the EA resorts to an uninformative "it is what it is" analysis of cumulative impacts: In order to understand the contribution of past actions to the cumulative effects of the proposed action, this analysis relies on current environmental conditions as a proxy for the impacts of past action. This is because existing conditions reflect the aggregate impact of all prior human actions on natural events that have affected the environment and might contribute to cumulative effects. The FS take such a position in part because "a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain." Apparently, being accountable for past management impacts needs to be avoided, and the way to do that is simply pretend they don't exist. Next, the FS claims, "providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action." On the contrary, quite reasonably, such an analysis would allow the public and decisionmaker to understand how similar Mission project actions might result in impacts similar in kind and intensity as happened previously. Finally, the EA states, "public scoping for this project did not identify and public interest of need for detailed information on individual past actions." The public is not required, during scoping, to remind the FS to do its duties under NEPA. [72-183]

Concern: [Seq#599]

The EMDS software is proprietary and thus it is not in the public interest to use it as the public cannot access it to clarify how it is really being used. [ID#622]

Response: [Seq#599]

Ecosystem Management Decision Support (EMDS) is not proprietary and is available to anyone with a computer and internet access. The underlying model is described in the Okanogan-Wenatchee National Forest Restoration Strategy as well as a peer reviewed article (Hessburg, 2013).

Hessburg, P. F.; Reynolds, K. M.; Salter, R. B.; Dickinson, J. D.; Gaines, W. L. & Harrod, R. J. Landscape evaluation for restoration planning on the Okanogan-Wenatchee National Forest, U.S.A. Sustainability, Multidisciplinary Digital Publishing Institute, 2013, 5, 805-840.

[ID#622]

Associated Comments: [Seq#599]

The EMDS software is proprietary and thus it is not in the public interest to use it as the public cannot access it to clarify how it is really being used. [68-29]

Concern: [Seq#600]

Also, the EMDS software uses only 1 scenario for climate change. I was informed that the FS could not afford to do more than one analysis. [ID#623]

Response: [Seq#600]

Running a different climate change scenario in this mid-scale approach simply involves choosing a different set of reference conditions. A warmer and drier future scenario is generally agreed to be the most likely for this region and is the most difficult to manage for. Global climate change models typically predict warmer and drier conditions for eastern Washington. Also, several studies indicate an expected increase in the number of fires and insect outbreaks - both of which would be exacerbated by the overstocked and fragmented landscapes in contemporary forests that have resulted from past fire suppression and timber management.

Adding an additional scenario is not difficult, but it is time consuming to work through the information that is provided by the analysis and can add significant time to develop management plans Furthermore, the number of developed future range of variability (FRV) scenarios (which stand in as climate change scenarios) are limited and choosing additional scenarios could be difficult or not possible. [ID#623]

Associated Comments: [Seq#600]

Also, the EMDS software uses only 1 scenario for climate change. I was informed that the FS could not afford to do more than one analysis. [68-30]

Concern: [Seq#601]

The proposed manipulations wouldn't result in some of the vegetation conditions being brought to the FS's desired conditions. The FS's vegetation purpose and need statements, modeling results, vegetation characteristics, and desired conditions are an incoherent mess. [ID#624]

Response: [Seq#601]

The IDT understands that not all of the desired conditions for vegetation would be accomplished through this project. It does bring more forest vegetation structure and patterns towards the Desired Range of Variability (DRV) and desired conditions than does Alternative 1 (preliminary EA pages 37-38).

The metrics involved with landscape analysis are complex and difficult to explain in plain terms. However, by using this process, the intensity of the existing problems and the level of improvement can be measured. [ID#624]

Associated Comments: [Seq#601]

Furthermore, the proposed manipulations wouldn't result in some of the vegetation conditions being brought to the FS's desired conditions. The FS's vegetation purpose and need statements, modeling results, vegetation characteristics, and desired conditions are an incoherent mess. [72-16]

Concern: [Seq#602]

The quality of maps in the EA is extremely poor. Enlarging the electronic versions just increases the blur. This obfuscates the EA's analyses, and violates NEPA. One can hardly tell the locations of proposed treatment units in conjunction with other important features. For one example, unroaded areas. [ID#627]

Response: [Seq#602]

Maps are a problem on most large restoration projects. Appendix F contains a number of resource maps, 3 maps per resource (east part of project area, west part of project, and entire project area) to try and make the maps more understandable. The team also tried to minimize the type of information contained on each individual map; as an example Thinning and Prescribed Fire Treatments (Figures 142, 143, and 144). There also is a number of maps on the project website on the Forest web that can be printed at larger scales, such as 36" X 24", or larger if you have a plotter.

The Interdisciplinary Team will try to make the maps available for the "Objection" period easier to print and view, at least on the web site. [ID#627]

Associated Comments: [Seq#602]

The quality of maps in the EA is extremely poor. Enlarging the electronic versions just increases the blur. This obfuscates the EA's analyses, and violates NEPA. One can hardly tell the locations of proposed treatment units in conjunction with other important features. For one example, unroaded areas. [72-220]

Concern: [Seq#603]

The EA relies upon "Impact Terms" for the purposes of qualifying direct impacts for every resource area. However, instead of providing quantified impacts or even estimates of measurements, these impact terms are mostly subjective and qualitative. It would be impossible for anyone to verify or monitor such qualitative guesses because they are so subjective. This results in much of the EA's Environmental Consequences section being vague and/or misleading. [ID#628]

Response: [Seq#603]

The Resource Specialist tried to use words that are understandable to the general public. Section 3.3.2, Impact Terms Defined, describes whether impacts are beneficial or adverse and the meaning of those terms throughout Chapter 3. This section also described context, duration and intensity as used throughout the document. Each resource section such as 3.3.2 provides Intensity Level Definitions for that particular resource (Water Resources) or Section 3.4.2 under soils. Many of these terms have specific standards that relate to the term such as under Section 3.4.2 duration of impact is defined as 5 - 10 years or 10+ years.

If these terms are considered in relation to numbers shown in the effects sections for Resource Indicators, they are more quantifiable and provide measurements of impacts are not believed to be vague and/or misleading. These terms were used to try and make the meaning of certain numbers more understandable to the public. In many places resource specialists tried to use "%" to also make the impacts more understandable. [ID#628]

Associated Comments: [Seq#603]

The EA relies upon "Impact Terms" for the purposes of qualifying direct impacts for every resource area. However, instead of providing quantified impacts or even estimates of measurements, these impact terms are mostly subjective and qualitative. It would be impossible for anyone to verify or monitor such qualitative guesses because they are so subjective. This results in much of the EA's Environmental Consequences section being vague and/or misleading. [72-221]

Concern: [Seq#604]

"...monitoring at the plan and project levels is a primary means by which the continued appropriateness of management techniques will be evaluated. Thus it is an indispensable part of ongoing forest management."

Monitoring is required by the NFMA and Best Management Practices From Standards and Guidelines: Monitoring at any scale should: * Detect changes in ecological systems from both individual and cumulative management actions and natural events * Provide a basis for natural resource policy decisions * Provide standardized data * Compile information systematically * Link overall information management strategies for consistent implementation * Ensure prompt analysis and application of data in the adaptive management process * Distribute results in a timely manner " The EA does not make it clear how the public will be kept informed about the above components and how they will take place in all aspects of this project where monitoring is required.

Adaptive ecosystem management, as specified in the Northwest Forest Plan and OWNF Restoration Strategy (2012), suggests that a monitoring scheme that measures outcomes from management activities, over time, be a part of the Mission Restoration Project. As currently envisioned, there is no such monitoring system in the project, one that meets the generally agreed meaning of adaptive management. Such a plan would identify the desired future condition, the range of acceptable future outcomes from applied treatments, and a monitoring scheme that would enable determination of whether or not we achieved those desired outcomes from the prescribed and implemented treatments. Treatments applied over a relatively short period of time should be closely monitored over time with respect to the stated objectives. This is to ensure we are achieving those stated objectives and permit adjustments to treatment.

In this draft EA, there is little clear tie-in between the stated objectives, treatment actions and expected outcomes, all things that should form the core of an integrated monitoring program. Appendix D does list the monitoring work that is planned for this project, but it is solely focused on implementation monitoring (i.e. did they do what they said they'd do?), with no provision for monitoring of the effectiveness of those actions or tracking trends over time in key ecological metrics through monitoring. We believe this is a significant deficiency in the EA as currently drafted and detracts from the legitimacy of the intended restoration strategy. [ID#629]

Response: [Seq#604]

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed to as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. Monitoring of the Buck and Wrangle Timber Sales was relied on heavily in the development of this project. The District Leadership Team reviewed both of these projects on the ground and discussed in the field and office what we saw. Monitoring results related to soils were discussed as recently as December 5, 2017 as the Interdisciplinary team are trying to complete the final EA for this project.

The Forest also has recently created an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine

consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest moinitoring report is likely in 2018/2019. [ID#629]

Associated Comments: [Seq#604]

Monitoring is required by the NFMA and Best Management Practices From Standards and Guidelines: Monitoring at any scale should: * Detect changes in ecological systems from both individual and cumulative management actions and natural events * Provide a basis for natural resource policy decisions * Provide standardized data * Compile information systematically * Link overall information management strategies for consistent implementation * Ensure prompt analysis and application of data in the adaptive management process * Distribute results in a timely manner " The EA does not make it clear how the public will be kept informed about the above components and how they will take place in all aspects of this project where monitoring is required. [63-91]

"...monitoring at the plan and project levels is a primary means by which the continued appropriateness of management techniques will be evaluated. Thus it is an indispensable part of ongoing forest management." [68-11]

Adaptive ecosystem management, as specified in the Northwest Forest Plan and OWNF Restoration Strategy (2012), suggests that a monitoring scheme that measures outcomes from management activities, over time, be a part of the Mission Restoration Project. As currently envisioned, there is no such monitoring system in the project, one that meets the generally agreed meaning of adaptive management. Such a plan would identify the desired future condition, the range of acceptable future outcomes from applied treatments, and a monitoring scheme that would enable determination of whether or not we achieved those desired outcomes from the prescribed and implemented treatments. Treatments applied over a relatively short period of time should be closely monitored over time with respect to the stated objectives. This is to ensure we are achieving those stated objectives and permit adjustments to treatment. [78-10]

In this draft EA, there is little clear tie-in between the stated objectives, treatment actions and expected outcomes, all things that should form the core of an integrated monitoring program. Appendix D does list the monitoring work that is planned for this project, but it is solely focused on implementation monitoring (i.e. did they do what they said they'd do?), with no provision for monitoring of the effectiveness of those actions or tracking trends over time in key ecological metrics through monitoring. We believe this is a significant deficiency in the EA as currently drafted and detracts from the legitimacy of the intended restoration strategy. [78-14]

Concern: [Seq#605]

The Restoration Strategy (RS) provides no explicit plan disclosing the details on how a restored landscape would be sustained. In other words, how often treatments will occur, how extensive they need to be, which kinds of treatments will be necessary, how many miles of roads will be needed (both permanent and temporary), etc. This means we cannot know how many acres at any given time will be suffering reduced productivity because of soil damage or infested by noxious weeds, or how many acres of wildlife will be subject to diversity impacts due to snag losses due to logger safety or firewood cutting. Also missing is an economic analysis of the RS, which would disclose how much managing for this regime will cost on a continuing basis-and therefore how likely such a plan could actually be implemented in order to achieve or maintain the "restored" (under the FS definition) vegetation conditions. [ID#630]

Response: [Seq#605]

The EA recognizes that there will be a need for future management in order to continue the trajectory towards meeting the Desired Range of Variability, but does not quantify the acres of treatment or the cost of future treatments (preliminary EA page 155). The duration of the effects are shown on pages 123-127 and 152-161 of the preliminary EA.

As this ecosystem has been dependent and adapted to frequent fires and other disturbances to maintain the historic vegetation patterns, future disturbances will be needed to continue towards meeting the Desired Range of Variability. However, the proposed activity from this project is limited to that described in the Chapter 2 and Appendices A-D of the preliminary EA. The decision regarding this project is not expected to include any future activity not already included in the preliminary EA. The proposed activity does not permanently commit the government to a course of direction or to future costs (preliminary EA page 155).

The only future activity discussed from a timing standpoint is the need for additional fuels treatments in about 15 years and the need to review in about 10 years the need for treatments in shrub/steppe habitat to create additional forage. [ID#630]

Associated Comments: [Seq#605]

The RS provides no explicit plan disclosing the details on how a restored landscape would be sustained. In other words, how often treatments will occur, how extensive they need to be, which kinds of treatments will be necessary, how many miles of roads will be needed (both permanent and temporary), etc. This means we cannot know how many acres at any given time will be suffering reduced productivity because of soil damage or infested by noxious weeds, or how many acres of wildlife will be subject to diversity impacts due to snag losses due to logger safety or firewood cutting. Also missing is an economic analysis of the RS, which would disclose how much managing for this regime will cost on a continuing basis-and therefore how likely such a plan could actually be implemented in order to achieve or maintain the "restored" (under the FS definition) vegetation conditions. [72-21]

Concern: [Seq#606]

The EA indicates fire suppression will continue under any alternative, meaning that further timber management and fuels treatments would occur perpetually in intervals.

The USFS contends a high density of roads also facilitates fire suppression. These are cumulative effects issues, all across the managed portion of the Okanogan-Wenatchee NF.

Project-level NEPA documents such as the Mission EA are implementing a hybrid, reactionary management scheme which continues to attempt replacing wildland fire with logging and burning, but not in the context of conducting the necessary analyses of cumulative, forestwide impacts.

Hutto (2008) states: (C)onsider the question of whether forests outside the dry ponderosa pine system are really in need of "restoration." While stem densities and fuel loads may be much greater today than a century ago, those patterns are perhaps as much of a reflection of human activity in the recent past (e.g., timber harvesting) as they are a reflection of historical conditions (Shinneman and Baker 1997). Without embracing and evolutionary perspective, we run the risk of creating restoration targets that do not mimic evolutionarily meaningful historical conditions, and that bear little resemblance to the conditions needed to maintain populations of native species, as mandated by law (e.g., National Forest Management Act of 1976).

The FS strategy to move towards desired landscape conditions essentially focuses upon achieving static conditions, instead of fostering the natural dynamics of the ecosystem. An abundance of evidence suggests DCs be replaced with desired future dynamics to align with best available science. [ID#631]

Response: [Seq#606]

The EA recognizes that ongoing treatments will be needed in order to maintain the trajectory towards restoring vegetation patterns and attaining conditions within the Desired Range of Variability to address foreseen climate changes (preliminary EA pages 123-127 and 152-161). However, the proposed activity and the demonstrated effects described in the EA is limited to the proposed project that is described in Chapter 2 and Appendices A-D of the preliminary EA. The decision regarding this project is not expected to include any future activity not already included in the preliminary EA. The proposed activity does not permanently commit the government to a course of direction or to future costs (preliminary EA page 155).

The road management activity proposed in this EA reflect the management needs of the future based on current thinking. The effects of that road system are presented in various scales (subwatershed, Critical Habitat, road systems, stream riparian management zones, and Discrete Management Area) in the preliminary EA on pages 69-74, 78-82, 161-163, 185-209, 240, 244-247, 265, and 278.

Proposed activity is in line with Okanogan National Forest Land and Resource Management Plan, which looks at the effects of management at the forest level, except for cover requirements in Management Areas 14 and 26. The documentation for these forest plan amendments is included throughout the revised preliminary EA.

Proposed activity is in line with the 2012 Okanogan-Wenatchee Restoration Strategy (FRS). The FRS is based on an extensive body of peer reviewed science for Washington and Oregon. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques.

A goal of FRS is to maintain the potential for natural processes to take place on the landscape, which is attained by restoring and maintaining historical levels and patterns of forest vegetation (FRS page 12). "Desired Future Dynamics" is a term used in the Interior Columbia Basin Ecosystem Management Plan (ICBEMP). The FRS is co-developed by one of the contributors to the ICBEMP, Paul Hessburg, who was also instrumental in the development of the Ecosystem Management Decision Support (EMDS) model, which measures the degree to which current vegetation patterns compare to historical patterns on the landscape. To the degree that patterns are within the historical range of forest vegetation structure, determines the potential of for desired future ecological dynamics to take place within the landscape.

[ID#631]

Associated Comments: [Seq#606]

The EA indicates fire suppression will continue under any alternative, meaning that further timber management and fuels treatments would occur perpetually in intervals. The USFS contends a high density of roads also facilitates fire suppression. These are cumulative effects issues, all across the managed portion of the Okanogan-Wenatchee NF. Project-level NEPA documents such as the Mission EA are implementing a hybrid, reactionary management scheme which continues to attempt replacing wildland fire with logging and burning, but not in the context of conducting the necessary analyses of cumulative, forestwide impacts. Hutto (2008) states: (C)onsider the question of whether forests outside the dry ponderosa pine system are really in need of "restoration." While stem densities and fuel loads may be much greater today than a century ago, those patterns are perhaps as much of a reflection of human activity in the recent past (e.g., timber harvesting) as they are a reflection of historical conditions (Shinneman and Baker 1997). Without embracing and evolutionary perspective, we run the risk of creating restoration targets that do not mimic evolutionarily meaningful historical conditions, and that bear little resemblance to the conditions needed to maintain populations of native species, as mandated by law (e.g., National Forest Management Act of 1976). [72-81]

Ultimately the EA reflects an overriding bias favoring vegetation manipulation and resource extraction via "management" needed to "move toward" some selected desired conditions, along the way neglecting the ecological processes driving these ecosystems. Essentially the RS and EA rig the game, as many desired conditions would only be achievable by resource extractive activities. But since desired conditions must be maintained through repeated management/manipulation the management paradigm conflicts with natural processes-the real drivers of the ecosystem. The FS strategy to move towards desired landscape conditions essentially focuses upon achieving static conditions, instead of fostering the natural dynamics of the ecosystem. An abundance of evidence suggests DCs be replaced with desired future dynamics to align with best available science. [72-83]

Concern: [Seq#607]

The project is completely remiss of any responsibility to monitor or evaluate any of the project components if implemented. Though it is stated that monitoring is part of the project, there is no funding or commitment to do so. See executive order below:

Executive Order 11514 issued March 5, 1970, as amended by E.O. 11991 issued May 24, 1977. Protection and enhancement of environmental quality (35 FR 4247, March 7, 1970). This order states that the Federal Government shall provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. This order provides for monitoring, evaluation, and control on a continuing basis of the activities of each Federal agency so as to protect and enhance the quality of the environment.

Detailed specifics are needed to understand how assessment, inspection and monitoring (and evaluation) would take place: what staff personnel, what schedule, what budget, etc. How can the FS guarantee that monitoring would take place with implementation of every component and that this information will be accessible to the public in an ongoing basis and that impacts will be addressed in a timely manner?

Need for a fully-funded monitoring and adaptive management plan consistent with the Forest Restoration Strategy[...] Our concerns regarding failure to include a monitoring and adaptive management plan and impacts of grazing do not appear to have been addressed adequately in either action alternative.

[ID#632]

Response: [Seq#607]

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects.

Monitoring of the Buck and Wrangle sales on the Methow Valley Ranger District were extensively used in development of this project. The District Leadership Team reviewed both of these projects in the field and discussions took place in the field and the office of the results of that monitoring. Monitoring discussions related to soils place as late as 12-5-2017 as the Interdisciplinary Team is trying to complete the final EA for this project.

The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018 or 2019.

Much of the monitoring is carried out as part of implementation so is funded there. The District Leadership Team, on the Northern Zone of the Forest reviews on the ground a number of projects each year including after fuels treatment activities, after harvest activities, and during the planning process. Other monitoring is completed during project layout and as part of normal Forest Service activities such as invasive species surveys; wildlife, aquatic, soils, and sensitive plant surveys; etc. [ID#632]

Associated Comments: [Seq#607]

As we noted in our June 2016 letter, a monitoring plan that measures outcomes from management activities, over time, should be a part of the Mission Restoration Project. While "Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring" describes some level of monitoring, we do not see in either action alternative a monitoring plan that meets the generally agreed meaning of adaptive management. [30-1]

Treatment of nearly a third of the planning area not in designated wilderness or roadless areas over a relatively short period should be closely monitored to ensure that either the stated objectives are being attained or adjustments to treatment are made, if warranted. [30-2]

To accomplish the goals of the Forest's Restoration Strategy, a monitoring plan must be developed and fully funded prior to initiating implementation of the project. Without such a plan, it will be very difficult to engage in successful adaptive management, a key component of the Restoration Strategy....While we appreciate that monitoring has costs for the Forest, it is a crucial component of any successful

restoration action. We urge you to develop a long-term monitoring and adaptive management plan, with measurable interim objectives and potential adjustments to the treatment plan if interim objectives are not being attained. [30-3]

· Need for a fully-funded monitoring and adaptive management plan consistent with the Forest Restoration Strategy... Our concerns regarding failure to include a monitoring and adaptive management plan and impacts of grazing do not appear to have been addressed adequately in either action alternative. [30-8]

The monitoring proposed for the MRP is implementation monitoring; no planned, funded evaluation of whether the project is meeting it's goals or having unplanned impacts is planned. Modifying the project based on its effectiveness (or lack thereof), and it's undesired impacts, is not proposed. Adaptive management, a stated goal of the OWNF, is not being meaningfully implemented in this project. [49-15]

Speaking of monitoring-are there funds set aside to monitor the entire project and do follow up? If not it is not appropriate to plunge in. [51-40]

* With no funds for monitoring, what choice will loggers make when they see large trees? [67-35]

The project is completely remiss of any responsibility to monitor or evaluate any of the project components if implemented. Though it is stated that monitoring is part of the project, there is no funding or commitment to do so. See executive order below: S1. Executive Order 11514 issued March 5, 1970, as amended by E.O. 11991 issued May 24, 1977. Protection and enhancement of environmental quality (35 FR 4247, March 7, 1970). This order states that the Federal Government shall provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. This order provides for monitoring, evaluation, and control on a continuing basis of the activities of each Federal agency so as to protect and enhance the quality of the environment. [68-12]

Monitoring is required by the NFMA and Best Management Practices From Standards and Guidelines: Monitoring at any scale should: * Detect changes in ecological systems from both individual and cumulative management actions and natural events * Provide a basis for natural resource policy decisions * Provide standardized data * Compile information systematically * Link overall information management strategies for consistent implementation * Ensure prompt analysis and application of data in the adaptive management process * Distribute results in a timely manner How will the public be kept informed about the above components and how can the public be guaranteed that the above components of monitoring will take place in all aspects of this project where monitoring is required? [68-13]

The EA fails to describe and define how the project will complete the 3 types of monitoring: implementation, effectiveness and validation. [68-14]

General objectives of monitoring to determine if objectives of Aquatic Conservation Strategy are met will be to: (1) determine if Best Management Practices have been implemented, (2) determine the effectiveness of management practices at multiple scales, ranging from individual sites to watersheds,

and (3) validate whether ecosystem functions and processes have been maintained as predicted. In addition, monitoring will provide feedback to fuel the adaptive management process. How does the FS guarantee that these determinations and validations will take place? Quotes from the Forest Service Manual: 3. "Ecological restoration activities should be planned, implemented, monitored, and evaluated in consideration of current and desired conditions and the potential for future changes in environmental conditions, including climate change." [68-15]

Detailed specifics are needed to understand how assessment, inspection and monitoring (and evaluation) would take place: what staff personnel, what schedule, what budget, etc. How can the FS guarantee that monitoring would take place with implementation of every component and that this information will be accessible to the public in an ongoing basis and that impacts will be addressed in a timely manner? [68-58]

Concern: [Seq#608]

We tend to believe the experts. But if we look deeper at the USFS we notice outdated research touted as "the best available science". [ID#633]

Response: [Seq#608]

The Interdisciplinary Team members have made some effort between the Preliminary EA versions and the final Environmental Assessment to incorporate newer research.

Of the literature cited in the Preliminary EA version sent to the public for comment in early 2017, approximately 13% is prior to 1990, 18% is between 1990 - 1999, 44% is between 2000 - 2010, and 25% is after 2010. The date of the mean of the research used was 2005/2006. [ID#633]

Associated Comments: [Seq#608]

We tend to believe the experts. But if we look deeper at the USFS we notice outdated research touted as "the best available science";.... An environment of legitimacy is created with such a diverse group; amazement that they could reach consensus. However, if logging didn't figure into your cosmology you couldn't join the collaborative. That's a "done deal." [67-40]

Concern: [Seq#609]

The FS must enlist objective, independent peer review to evaluate its proposed management. Such an undertaking would also assist the public, per NEPA direction, in understanding best available science. Schultz (2010) recommends peer review of large-scale assessments and management guidelines, and more robust, scientifically sound monitoring, and measurable objectives and thresholds for maintaining viable populations of all native and desirable non-native wildlife species.

[ID#634]
Response: [Seq#609]

The 2012 Okanogan-Wenatchee National Forest Restoration Strategy (FRS) is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely a few years off since the Forest Monitoring Plan was updated in 2016, but it is expected in 2018 or 2019.

The Amended Okanogan National Forest LRMP contains a monitoring program, which is being implemented.

It is the objective of this analysis to use independently peer reviewed literature appropriate for the local area and not for southern California or opinion pieces in papers or on the internet.

[ID#634]
Associated Comments: [Seq#609]
The FS can cite all the science it wants in the RS or while preparing a NEPA document, but it's another matter entirely whether or not the proposed management actions are consistent with the best available science. The FS must enlist objective, independent peer review to evaluate its proposed management. Such an undertaking would also assist the public, per NEPA direction, in understanding best available science. Schultz (2010) recommends peer review of large-scale assessments and management guidelines, and more robust, scientifically sound monitoring, and measurable objectives and thresholds for maintaining viable populations of all native and desirable non-native wildlife species. [72-23]

Concern: [Seq#610]

Figure 139 displays the design features, best management practices, mitigation measures, and monitoring applicable to this project.

" Applying these design criterion would require some level of assessment, inspection, or monitoring by resource staff before, during, and/or after implementation" Where is the commitment to do this fully stated?

[

[ID#635]

Response: [Seq#610]

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ." If the decision maker includes the mitigation and monitoring as part of their decision, then the Forest Service is committing to do that monitoring.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. Monitoring of the Buck and Wrangle sales on the Methow Valley Ranger District were extensively used in development of this project. The District Leadership Team reviewed both of these projects in the field and discussions took place in the field and the office of the results of that monitoring. Monitoring discussions related to soils place as late as 12-5-2017 as the Interdisciplinary Team is trying to complete the final EA for this project.

The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018 or 2019.

Much of the monitoring is carried out as part of implementation so is funded there. The District Leadership Team, on the Northern Zone of the Forest reviews on the ground a number of projects each year including after fuels treatment activities, after harvest activities, and during the planning process. Other monitoring is completed during project layout and as part of normal Forest Service activities such as invasive species surveys; wildlife, aquatic, soils, and sensitive plant surveys; etc. [ID#635]

Associated Comments: [Seq#610]

Figure 139 displays the design features, best management practices, mitigation measures, and monitoring applicable to this project. " Applying these design criterion would require some level of assessment, inspection, or monitoring by resource staff before, during, and/or after implementation" Where is the commitment to do this fully stated? [68-57]

Concern: [Seq#611]

The Final EA should include how past management practices, such as logging, wildfire suppression and cattle grazing, may have changed controlling environmental factors from "historical conditions".

There is no science to show that the historical conditions that the Forest bases this project on are accurate or would be more resilient to disturbances. [ID#636]

Response: [Seq#611]

The reasons for not itemizing the impacts of previous management activity in the project area are stated on pages 45-46 of the preliminary EA. The cumulative impact of all of the past and ongoing management are identified in the affected environment section of each resource report. The range and scope of impacts of road management, harvest treatment, non-commercial vegetation treatment, soil restoration and underburning, using the design criteria, best management practices and mitigation identified in Appendix D of the preliminary EA, are well known based on previous monitoring of these activities.

There are many and frequent citations of previous management other than fire suppression found in Chapter 3 of the preliminary EA. The affected environment section for Water Resources, Section 3.3, recognizes that fire suppression is but one of the past management practices that have changed vegetation patterns (preliminary EA page 55). The affected environment section for Soils cites previous harvest, shake mill activity and fuels treatments (preliminary EA pages 92-93). The affected environment section for Vegetation refers to previous land management practices that include timber harvest and grazing (preliminary EA pages 108-109). The Affected environment section for Fire/Fuels refers to past timber harvest practices (preliminary EA page 142). The Wildlife section recognizes effects of recent fires

(preliminary EA page 179), existing open roads (preliminary EA pages 174-175) and firewood cutting (preliminary EA page 182).

The Okanogan-Wenatchee Forest Restoration Strategy (FRS) [2012] was used as the "Best Science" that was employed to determine the range of historical conditions that likely took place on Mission landscapes using the Ecosystem Management Decision Support software (EMDS). The 2012 Okanogan-Wenatchee National Forest Restoration Strategy (FRS) is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a formal peer review process. The concepts of landscape resiliency and historical range of variability of vegetation are both explained in the FRS. [ID#636]

Associated Comments: [Seq#611]

The Final EA should include how past management practices, such as logging, wildfire suppression and cattle grazing, may have changed controlling environmental factors from "historical conditions". There is no science to show that the historical conditions that the Forest bases this project on are accurate or would be more resilient to disturbances. [63-27]

Concern: [Seq#612]

The range of alternatives for meeting the Purpose and Needs regarding vegetation management is too narrow. [ID#637]

Response: [Seq#612]

Scoping and Preliminary EA responses for the Mission Forest and Fuels Project show fairly polarized attitudes towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1, 2.1.3, and Figure 5 in the preliminary EA). This was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action).

An alternative that does not require a Forest Plan amendment could have been developed that would have resulted in much fewer acres of harvest, but it was determined that it would not meet several Purpose and Needs (preliminary EA section 2.1.4). The effects of the Forest Plan Amendment, which was presented in more detail in the Revised Preliminary EA shows the effects of harvesting much fewer acres than in Alternatives 2 or 3.

Develop and consider alternatives that would resolve conflicts about the proposal.

Under the CEQ regulations, the Agency is required to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the National Environmental Policy Act (40 CFR 1501.2(c)).

As established in case law, the phrase "all reasonable alternatives" has not been interpreted to require that an infinite or unreasonable number of alternatives be analyzed, but does require a range of reasonable alternatives be analyzed. No specific number of alternatives is required or prescribed. Ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment.

For NEPA documents, the document should document the examination of reasonable alternatives to the proposed action. An alternative should meet the purpose and need and address one or more issues related to the proposed action. Since an alternative may be developed to address more than one issue, no specific number of alternatives is required or prescribed. Develop and consider alternatives that would resolve conflicts about the proposal. [ID#637]

Associated Comments: [Seq#612]

Two of the three alternatives are identical in their inclusion of commercial logging. The third alternative, the "no action" alternative, excludes logging as well as any other actions that could remedy existing environmental problems. All three alternatives would protect the remaining cattle grazing allotment within the project area. Essentially, the FS is presenting a single option regarding the highest-impact components of the project. [63-32]

This entire document basically says that there is one way to meet their fabricated goals: have a commercial timber sale. [68-114]

Concern: [Seq#613]

The Preliminary EA was released, after missing notifications that it would be released in June and then in November of 2016, was finally released in the middle of a winter storms on February 1st, 2017. A week later, the USFS hosted a public meeting about the project. The announced deadline for submitting comments was 22 days after that meeting. The document is hundreds of pages long, confusing, and redundant; it was not written to attract general public review and relevant comment, especially in view of the brief time period allowed.

Chris Frue, a Libby Creek resident, has pointed out that "The release of the of the over 400 page Mission Restoration Project (MRP) EA, with a 30 day window for the public to comment on it, by its size and approach makes intelligent public review of its findings difficult or impossible for those not being paid professionally to do so." That seems a reasonable conclusion. [ID#638]

Response: [Seq#613]

The Forest Service missed releasing the Preliminary EA June and then in November of 2016, was finally released in the middle of a winter storms near February 1st, 2017. On February 8th, the USFS hosted a public information meeting about the project. The announced deadline for submitting comments was about 24 days after that meeting. The length of a comment period for this type of project is set and cannot be changed. Because of the issues about the date of the publication of the notice in the Wenatchee World, a second comment period was held which went through early March. Because this

restoration project is much more than a timber sale with follow-up slash treatment and the increased size of the project area we tried a format that was hopefully easier for the public to understand. Unfortunately, this format is somewhat redundant. With a 3rd comment period on the Revised Preliminary EA in portions of June and July ecause of needing to meet guidelines in the 2012 Planning Rule, adequate time to comment has being provided. [ID#638]

Associated Comments: [Seq#613]

The Preliminary EA was released, after missing notifications that it would be released in June and then in November of 2016, was finally released in the middle of a winter storms on February 1st, 2017. A week later, the USFS hosted a public meeting about the project. The announced deadline for submitting comments was 22 days after that meeting. The document is hundreds of pages long, confusing, and redundant; it was not written to attract general public review and relevant comment, especially in view of the brief time period allowed. [63-2]

Chris Frue, a Libby Creek resident, has pointed out that "The release of the of the over 400 page Mission Restoration Project (MRP) EA, with a 30 day window for the public to comment on it, by its size and approach makes intelligent public review of its findings difficult or impossible for those not being paid professionally to do so." That seems a reasonable conclusion. [63-3]

Concern: [Seq#614]

We believe that this is worthwhile project but we do have concerns about certain aspects and extent of the plan. Our major concerns are: 1. Too much emphasis commercial logging over too short a period of time with no assured progress on implementing non-commercial thinning treatments to benefit forest and aquatic health; 2. Lack of a specified adaptive management plan; 3. The range of alternatives is too narrow; 4. No consideration of grazing and management of shrub-steppe; and 5. There is a need for a clearer description of expected management into the future.

[ID#639]

Response: [Seq#614]

Commercial harvest is planned for about 1,952 acres (Revised Preliminary EA to be slightly modified in the final EA) out of the planned 10,255 acres. Timber harvest is needed when larger trees make up a large percentage of the overstory. The effectiveness of thinning without removing commercial sized trees is shown pages 123-127 and 155-164 of the preliminary EA.

Timber harvest is among the first of many stages of the planned restoration work. The Methow Valley Ranger District has consistently been funded for prescribed fire treatments to reduce thinning debris within harvest units. The district also has a good track record in receiving funding for stream restoration, ladder fuel reduction (LFR) thinning and prescribed fire treatments outside of harvest units, and road decommissioning. Stand alone fuels work such as LFR thinning, young plantation thinning and prescribed burning will be prioritized based on proximity to WUI as funds become available.

The Mission Project would employ an adaptive management for prescribed burning (preliminary EA page 313).

Scoping response for the Mission Forest and Fuels Project showed a fairly polarized attitude towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1 and 2.1.3 in the preliminary EA). This was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action). An alternative that does not require a Forest Plan amendment could have been developed that would have resulted in much fewer acres of harvest, but it was determined that it would not meet several Purpose and Needs (preliminary EA section 2.1.4). The effects of the Forest Plan Amendment, which will be presented in more detail in the revised preliminary EA will show the effects of harvesting much fewer acres than in Alternatives 2 or 3.

Regarding shrub-steppe; In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2014 and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time may not be ripe for additional treatments in this habitat within the next decade. This potential treatment should be considered then when we can better assess the effects of such a treatment.

Livestock management is not within the scope of this EA. The effects of livestock grazing were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (see preliminary EA page 24). That plan includes monitoring of range impacts.

In order to not tie the hands of future decision makers and to limit the scope of the decision, we do not provide "expected management into the future" except that additional fuels treatment will likely be needed in abut 15 years. In the course of the analysis of the effects of the action alternatives, the duration and intensity of the effects of vegetation management are shown (preliminary EA pages 123-127 and 152-162).

[ID#639]

Associated Comments: [Seq#614]

We believe that this is worthwhile project but we do have concerns about certain aspects and extent of the plan. Our major concerns are: 1. Too much emphasis commercial logging over too short a period of time with no assured progress on implementing non-commercial thinning treatments to benefit forest and aquatic health; 2. Lack of a specified adaptive management plan; 3. The range of alternatives is too narrow; 4. No consideration of grazing and management of shrub-steppe; and 5. There is a need for a clearer description of expected management into the future. [78-50]

Concern: [Seq#615]

The FS has not determined the reliability of all the data used as input for the various models used. Since "an instrument's data must be reliable if they are valid" (Huck, 2000) this means the data that is input to a model must accurately measure that aspect of the world it is claimed to measure, or else the data is invalid for use by that model. [ID#640]

Response: [Seq#615]

The methodology for analyzing the landscape is shown on pages 102-140 of the preliminary EA. The process involves photo interpretation conducted by Forest Service personnel with local knowledge of the project area to identify vegetation and landscape attributes. This data was then field verified for accuracy and adjusted accordingly prior to analysis. Reference conditions were determined, in the course of the development of the Interior Columbia Basin Ecosystem Management plan in 1994, using the same process, looking at 1950s era aerial photographs, over a sampling of subwatersheds throughout the Columbia River Basin.

Fire behavior was analyzed using the methods described on pp 133-139 (revised preliminary EA). Photo-interpreted data was reviewed and calibrated through field visits and plot data, then analyzed using EMDS as described above for vegetation and landscape attributes specific to fuels and fire behavior. Potential impacts to air quality were analyzed as described on pp. 287-288 (revised preliminary EA). Models used in addition to EMDS include FireFamilyPlus 4.0, FlamMap 5.0, and Consume 3.1; these models are recognized as standards for evaluating fire behavior and effects and smoke emissions. Fuel configurations used to estimate emissions from prescribed burning come from standardized fuel models, calibrated by over twenty years of prescribed fire planning, modeling, and implementation in similar fuel types and terrain elsewhere on the Methow Valley Ranger District.

Methodologies used to analyze effects for other resources are described in Chapter 3 (revised preliminary EA) under the heading "Methodology" for each resource. [ID#640]

Associated Comments: [Seq#615]

As discussed above, a substantial portion of the EA's analysis relies upon the EMDS, but it also utilizes other models. The FS has not determined the reliability of all the data used as input for the various models used. Since "an instrument's data must be reliable if they are valid" (Huck, 2000) this means the data that is input to a model must accurately measure that aspect of the world it is claimed to measure, or else the data is invalid for use by that model. Also, Beck and Suring, 2011 "remind practitioners that if available data are poor quality or fail to adequately describe variables critical to the habitat requirements of a species, then only poor quality outputs will result. Thus, obtaining quality input data is paramount in modeling activities." And Larson et al. 2011 state: "Although the presence of sampling error in habitat attribute data gathered in the field is well known, the measurement error associated with remotely sensed data and other GIS databases may not be as widely appreciated." [72-25]

Concern: [Seq#616]

Members of the public have voiced interest in the MRP and the majority offered their concerns regarding the removal of commercial overstory timber/logging at the scoping meeting. Libby Creek Watershed Association members and representatives of the Pacific Biodiversity Institute attended a number of meetings with Forest Service staff and addressed concerns about overstory logging. An alternative treatment proposal was submitted by the Pacific Biodiversity Institute. There was never an indication that any modification of the commercial logging plans would be considered.

Forest Service staff began marking units for commercial sale before the scoping process was begun. The District Ranger and IDT leader were contacted, and expressed no concern about the early flagging. [ID#641]

Response: [Seq#616]

Consideration of the alternative developed by Pacific Biodiversity Institute is shown in section 2.1.1 in the preliminary EA. 125 acres of thinning within the WUI were added to the project based on this input.

The marking paint that was noted at the time of the comment was not associated with the Mission Restoration Project. Much of the MRP area includes units identified in the Smith/Elderberry project, which was never sold, and is included in the area where timber harvest is proposed under this project. These areas would be re-marked according to the prescriptions and marking guides in the Mission EA. Flagging and some tags were hung, prior to public scoping, to facilitate reconnaissance and field surveys. Marking is taking place while comments are being addressed. [ID#641]

Associated Comments: [Seq#616]

Members of the public have voiced interest in the MRP and the majority offered their concerns regarding the removal of commercial overstory timber/logging at the scoping meeting. Libby Creek Watershed Association members and representatives of the Pacific Biodiversity Institute attended a number of meetings with Forest Service staff and addressed concerns about overstory logging. An alternative treatment proposal was submitted by the Pacific Biodiversity Institute. There was never an indication that any modification of the commercial logging plans would be considered. Forest Service staff began marking units for commercial sale before the scoping process was begun. The District Ranger and IDT leader were contacted, and expressed no concern about the early flagging. [63-29]

Concern: [Seq#617]

Are purpose and needs described in the EA listed in order of priority? If not, please rectify this and list them in order of priority so that we can understand the rationale for why the commercial logging component of the project is given more immediate attention, and all other management goals take a back seat. [ID#642]

Response: [Seq#617]

The Purpose and Needs Statements (P&N) are not listed in the order of priority. The Need for action discusses the relationship between desired conditions and the existing condition in order to answer the question, "why consider taking any action?" The purpose of an action will be to respond to the stated need. The breadth or narrowness of the need for action has a substantial influence on the scope of the subsequent analysis.

Since this project is a "restoration" project, the purposes and needs for this project are relatively broad. All action alternatives are designed to try and address all purposes and needs to some extent. Alternative 3 was designed to address Purpose and Need #1, Hydrologic Function and Aquatic Habitat, to a greater extent than Alternatives 1 and 2.

Some project actions may be carried out prior to activities addressing the commercial logging (Vegetation Composition and Structure) component of the project, including individual projects to address potions of the other P&N statements. Some activities such as some of the rock armoring of stream crossings as part of the engineering/roads portion of the timber contract. Since the beaver habitat enhancement may be carried out by outside funding, that project may start prior to timber harvest.

This project is currently assumed to be carried out under 2 Stewardship Contracts. Because this project will likely be carried out under two Stewardship Contracts, the first contract is estimated to provide about $395,000 of product net value that can be used to complete other restoration projects once it is received. [ID#642]

Associated Comments: [Seq#617]

Are purpose and needs are described in the EA listed in order of priority? If not, please rectify this and list them in order of priority so that we can understand the rationale for why the commercial logging component of the project is given more immediate attention, and all other management goals take a back seat. [78-7]

Concern: [Seq#618]

The rationale for proposed actions is weakly linked to the purpose and needs Since the relationship of the proposed actions and the purpose and needs is so critical to the justification of the entire project, it would be helpful to alert the reader to where in the document more detail is given. While the purpose and needs are stated in Sec. 1.3, it would be helpful to point the reader to the table that shows which units receiving which treatments are expected to address a specific purpose and need. As best we can decipher, this table is buried in Appendix A on page 303-305.[...]There are seven statements of Purpose and Need (P&N) for this project. These include: hydrologic function and aquatic habitat (#1), soil productivity (#2), vegetation composition and structure (#3), wildlife habitat (#4), sensitive plants and unique habitats (#5), wildfire hazard in the wildland/urban interface (#6), and transportation system (#7). While these seem reasonable, describing in greater detail the direct connection to the proposed treatments and the timeline for implementation would be a welcome addition in the final EA. [ID#643]

Response: [Seq#618]

The rationale for many proposed actions do not seem to be weakly linked to the purpose and needs but to fully understand the links you need to read the complete NEPA document since there are some relatively direct connections and many more indirect connections. Portions of this information is contained in the EA in tables such as Figure 11, Figure 39, Figure 46, Figure 54, Figure 65, Figure 80, Figure 91, Figure 117, Figure 133, Figure 137, and Figure 138.

The timeline for implementation will depend on available funding, the source of that funding, and how it will be implemented. Discussions on potential funding for some of these proposed projects, that can be implemented prior to thinning and fuels treatments, is on-going and several projects will likely be implemented prior to the timber sale contract being awarded. [ID#643]

Associated Comments: [Seq#618]

2. The rationale for proposed actions is weakly linked to the purpose and needs Since the relationship of the proposed actions and the purpose and needs is so critical to the justification of the entire project, it would be helpful to alert the reader to where in the document more detail is given. While the purpose and needs are stated in Sec. 1.3, it would be helpful to point the reader to the table that shows which units receiving which treatments are expected to address a specific purpose and need. As best we can decipher, this table is buried in Appendix A on page 303-305....There are seven statements of Purpose and Need (P&N) for this project. These include: hydrologic function and aquatic habitat (#1), soil productivity (#2), vegetation composition and structure (#3), wildlife habitat (#4), sensitive plants and unique habitats (#5), wildfire hazard in the wildland/urban interface (#6), and transportation system (#7). While these seem reasonable, describing in greater detail the direct connection to the proposed treatments and the timeline for implementation would be a welcome addition in the final EA. [78-21]

Concern: [Seq#619]

Mitchell et al. (2009) also refutes the assertion that logging to reduce fire hazard helps store carbon, and conclude that although thinning can affect fire, management activities are likely to remove more carbon by logging than will be stored by trying to prevent fire. [ID#644]

Response: [Seq#619]

This reference has limited applicability to the Mission Restoration Project planning area. The conclusions state, "Managing forests for the future is a complex issue that necessitates the consideration of multiple spatial and temporal scales and multiple management goals . . . With the exception of some xeric ecosystems in the east Cascades, our work suggests that fuel reduction treatments should be foregone if forest ecosystems are to provide maximum amelioration of atmospheric CO2 over the next 100 years."

The Mission Restoration Project planning process has considered multiple spatial and temporal scales of management actions throughout a 50,000 acre planning area, as well as lack of actions. There are multiple purposes and needs within the planning area and multiple goals set forth in the Okanogan National Forest, Land and Resource Management Plan (1989) in which not implementing fuels reduction

treatments would be contrary. Maximal amelioration of atmospheric CO2 over the next 100 years is not a purpose and need of the Project. The study considered two western Oregon sites and one central Oregon site within the Cascade Range. The Mission Restoration Project site has a more xeric ecosystem than the study considered so the study has little applicability to the project area. [ID#644]

Associated Comments: [Seq#619]

Mitchell et al. (2009) also refutes the assertion that logging to reduce fire hazard helps store carbon, and conclude that although thinning can affect fire, management activities are likely to remove more carbon by logging than will be stored by trying to prevent fire. [72-56]

Concern: [Seq#620]

The Forest Supervisors will review conditions in the area covered by the Forest Plan at least every five years to determine whether significant changes have occurred. A component of this review will be an interagency evaluation of the overall old-growth habitat and riparian strategies. Does the MVRD do this review and if so, it should be provided. [ID#645]

Response: [Seq#620]

The Okanogan National Forest has done periodic monitoring.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. A new monitoring plan for the Okanogan-Wenatchee National Forest was completed in 2016. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely 2018/2019.

Much of the monitoring is carried out as part of implementation so is funded there, such as in Timber Sale inspection reports, Presale Layout Notes, or associated with Burn Plans. The District Leadership Team, on the Northern Zone of the Forest reviews on the ground a number of projects each year including after fuels treatment activities, after harvest activities, and during the planning process. Other monitoring is completed during project layout and as part of normal Forest Service activities such as invasive species surveys; wildlife, aquatic, and sensitive plant surveys; etc.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects.

Monitoring of the Buck and Wrangle sales on the Methow Valley Ranger District were extensively used in development of this project. The District Leadership Team reviewed both of these projects in the field and discussions took place in the field and the office of the results of that monitoring. Monitoring discussions related to soils place as late as 12-5-2017 as the Interdisciplinary Team is trying to complete the final EA for this project.

The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018 or 2019.

[ID#645]

Associated Comments: [Seq#620]

The Forest Supervisors will review conditions in the area covered by the Forest Plan at least every five years to determine whether significant changes have occurred. A component of this review will be an interagency evaluation of the overall old-growth habitat and riparian strategies. Does the MVRD do this review and if so, it should be provided. [68-104]

Concern: [Seq#621]

Alarmingly, the EA cites the results of absolutely none of the monitoring required in the 1989 Okanogan National Forest plan or the 1994 Northwest Forest Plan. The 1989 Forest Plan states:

Effectiveness monitoring will accomplish the following NFMA monitoring requirements:

None of that was addressed in the Mission EA.

[ID#646]
Response: [Seq#621]

A new Monitoring Plan for the Okanogan-Wenatchee National Forest, the Transitional Monitoring Plan, was published in June 2016. This plan revised the 1989 Monitoring Plan that this comment is referencing. This monitoring plan addresses the purpose and scope raised in the 2012 Planning Rule and will address a number of issues that will need to be addressed in preparation for Forest Plan revision. Information for this monitoring report will come from numerous sources such as the National Watershed Condition Framework (WCF) assessment indicators and attributes; individual project level Travel Analysis Process (TAP). INFRA (roads layer); annual road accomplishment reports, individual aquatic landscape evaluation analyses and/or project level analyses; stream temperature monitoring data; stream flow data; stream survey data; NEPA project review to determine consistency with S&Gs for ACS/PACFISH/INFISH; FACTS database; NEPA project review; etc.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. A new monitoring plan for the Okanogan-Wenatchee National Forest was completed in 2016. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely 2018/2019. Additional monitoring is completed for such periodic assessments as the August 2004, Forest Health Assessment.

Monitoring and evaluation may lead to change in practices or, provide a basis for adjustments, or Plan revision. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Monitoring is done to measure progress in Forest Plan Implementation. Monitoring is also the means to determine how well objectives of the Plan are being met, and how appropriate the management standards and guidelines are for meeting the Forest's outputs and environmental protection. Monitoring is also used to determine how well assumptions used in the development of the Forest Plan reflected actual conditions.

Each new project analysis considers monitoring results from previous projects. Much of the monitoring is carried out as part of implementation so is funded there, such as in Timber Sale inspection reports, Presale Layout Notes, or associated with Burn Plans or during project planning. The District Leadership Team, on the Northern Zone of the Forest reviews on the ground a number of projects each year including after fuels treatment activities, after harvest activities, and during the planning process. Other monitoring is completed during project layout and as part of normal Forest Service activities such as invasive species surveys; wildlife, aquatic, and sensitive plant surveys; etc. In preparation of this project, monitoring of the Buck and Wrangle projects were heavily considered. The last monitoring discussion

regarding soils for this project was done on 12-5-2017 in preparation of the Final EA. [ID#646]
Associated Comments: [Seq#621]
Alarmingly, the EA cites the results of absolutely none of the monitoring required in the 1989 Okanogan National Forest plan or the 1994 Northwest Forest Plan. The 1989 Forest Plan states: Effectiveness monitoring will accomplish the following NFMA monitoring requirements: [72-5]

None of that was addressed in the Mission EA. The Forest Plan also states: Monitoring will determine: Again, none of the above requirements were addressed in the Mission EA [72-6]

The Forest Plan includes no less than 14 pages of monitoring items to be used in the evaluation of the Forest Plan and its implementation, for the reasons and purposes cited above, yet there is apparently no connection between the Mission project and what the FS was supposed to have learned in 28 years of Forest Plan-directed monitoring. [72-7]

Concern: [Seq#622]

The EA also fails to address and demonstrate consistency with the related Forest Plan Standard 1-5, which requires: Nor does the EA doesn't consider Forest Plan "Information Needs"-including the FS's apparent failure to acquire much of this information. [ID#647]
Response: [Seq#622]

S&G 1-5 states: "In addition to specific monitoring items discussed in the Forest Plan, Chapter 5, the responsible official and the subordinate line officers shall periodically conduct appropriate management reviews to assure compliance with the standards and guideline contained in this chapter. During these management reviews, the responsible official and the subordinate line officers shall also evaluate and assess monitoring criteria, monitoring efforts, and resulting conclusions where appropriate. Management reviews shall include follow-up to assure completion of action items from previous reviews.

A new Monitoring Plan for the Okanogan-Wenatchee National Forest, the Transitional Monitoring Plan, was published in June 2016. This plan revised the 1989 Monitoring Plan. This updated monitoring plan addresses the need to periodically evaluate and assess monitoring criteria, monitoring efforts, and resulting conclusions. Monitoring and evaluation may lead to change in practices or, provide a basis for adjustments, or Plan revision. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Monitoring is done to measure progress in Forest Plan Implementation. Monitoring is also the means to determine how well objectives of the Plan are being met, and how appropriate the management standards and guidelines are for meeting the Forest's outputs and environmental protection. Monitoring is also used to determine how well assumptions used in the development of the Forest Plan reflected actual conditions.

Monitoring and evaluation may lead to change in practices or, provide a basis for adjustments, or Plan revision. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Monitoring

is done to measure progress in Forest Plan Implementation. Monitoring is also the means to determine how well objectives of the Plan are being met, and how appropriate the management standards and guidelines are for meeting the Forest's outputs and environmental protection. Monitoring is also used to determine how well assumptions used in the development of the Forest Plan reflected actual conditions.

This monitoring plan addresses the purpose and scope raised in the 2012 Planning Rule and will address a number of issues that will need to be addressed in preparation for Forest Plan revision. Information for this monitoring report will come from numerous sources such as the National Watershed Condition Framework (WCF) assessment indicators and attributes; individual project level Travel Analysis Process (TAP). INFRA (roads layer); annual road accomplishment reports, individual aquatic landscape evaluation analyses and/or project level analyses; stream temperature monitoring data; stream flow data; stream survey data; NEPA project review to determine consistency with S&Gs for ACS/PACFISH/INFISH; FACTS database; NEPA project review; etc.

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. A new monitoring plan for the Okanogan-Wenatchee National Forest was completed in 2016. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely 2018/2019. Additional monitoring is completed for such periodic assessments as the August 2004, Forest Health Assessment.

[ID#647]

Associated Comments: [Seq#622]

The EA also fails to address and demonstrate consistency with the related Forest Plan Standard 1-5, which requires: Nor does the EA doesn't consider Forest Plan "Information Needs"-including the FS's apparent failure to acquire much of this information. [72-8]

Concern: [Seq#623]

Harmon, 2009 reviews how the forest ecosystem stores carbon, the issues that must be addressed when assessing any proposed course of action, and some common misconceptions. He also reviews and assesses some of the more common proposals as well as general scientific concerns about the forest system as a place to store carbon [ID#648]

Response: [Seq#623]

This paper used the STANDCARB 2.0 model to examine carbon levels along different scales of tree harvests. The simulations indicated that forests with frequent, but partial removal of lives trees can store as much carbon as those with complete tree harvest on less frequent intervals. This study indicates that there are multiple methods to increase carbon stores in the forest sector including either increasing

the time between harvests or reducing the fraction of trees harvested during each harvest. The Mission Restoration Project proposes non-commercial thinning on about 8,304 acres, commercial thinning on about 1,952 acres, and prescribed fire on about 10,968 acres (Preliminary EA #s) out of a 50,200 acre project area. Furthermore, the treatments would take place over a period of 5 - 10 years (commercial harvest about 3 years for contract award date) from NEPA approval date, and it is estimated that re-entry to the Mission Restoration Project planning area for a large vegetation project-scale proposed harvests and underburning would not take place for approximately 30 years. Fuel reentry would likely not take place for about 15 years.

Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration, considers the effect of climate change caused by this project and

the cumulative impacts resulting from the project and climate change.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades).

The Council on Environmental Quality (CEQ) has withdrawn its final guidance for Federal agencies on how to consider greenhouse gas emissions (GHG) and the effects of climate change IN NEPA reviews for further consideration as directed by Executive Order 13783 "Promoting Energy Independence and Economic Growth" of March 28, 2017 (https://www.gpo.gov/fdsys/pkg/FR-2017-03-31/pdf/2017-06576.pdf). The Forest Service 2009 guidance for Climate Change Considerations in Project Level NEPA Analysis https://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf does not require quantifying GHGs and carbon for project level NEPA. This guidance suggests that quantifying GHGs might only be useful if a project were anticipated to emit relatively large amounts of GHGs (e.g. large-scale oil and gas development or energy related projects). The Mission Restoration Project will not emit a large amount of GHGs therefore we have addressed GHG emissions and carbon qualitatively for

this project. [ID#648]
Associated Comments: [Seq#623]
Harmon, 2009 reviews how the forest ecosystem stores carbon, the issues that must be addressed when assessing any proposed course of action, and some common misconceptions. He also reviews and assesses some of the more common proposals as well as general scientific concerns about the forest system as a place to store carbon. [72-53]

Concern: [Seq#624]

The Idaho Panhandle National Forests plan revision draft EIS defines

carbon sequestration

: "…the process by which atmospheric carbon dioxide is taken up by vegetation through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils. [ID#649]
Response: [Seq#624]

Thank you for your definition of

carbon sequestration,

: "…the process by which atmospheric carbon dioxide is taken up by vegetation through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils."

Section 3.15.4, Climate Change, Greenhouse Gases, and Carbon Sequestration, considers the effect of climate change caused by this project and

the cumulative impacts resulting from the project and climate change.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

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guidance for Climate Change Considerations in Project Level NEPA Analysis https://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf does not require quantifying GHGs and carbon for project level NEPA. This guidance suggests that quantifying GHGs might only be useful if a project were anticipated to emit relatively large amounts of GHGs (e.g. large-scale oil and gas development or energy related projects). The Mission Restoration Project will not emit a large amount of GHGs therefore we have addressed GHG emissions and carbon qualitatively for this project.

[ID#649]

Associated Comments: [Seq#624]

The Idaho Panhandle National Forests plan revision draft EIS defines carbon sequestration: "…the process by which atmospheric carbon dioxide is taken up by vegetation through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils." [72-37]

Concern: [Seq#625]

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO2. The EA doesn't state that simple fact. The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the various types of vegetation cover found on the Okanogan-Wenatchee NF.

Returning to logging, the FS distracts from the emerging scientific consensus that removing wood or any biomass from the forest only worsens the climate change problem. Law and Harmon, 2011 conducted a literature review and concluded … Thinning forests to reduce potential carbon losses due to wildfire is in direct conflict with carbon sequestration goals, and, if implemented, would result in a net emission of CO2 to the atmosphere because the amount of carbon removed to change fire behavior is often far larger than that saved by changing fire behavior, and more area has to be harvested than will ultimately burn over the period of effectiveness of the thinning treatment. [ID#650]

Response: [Seq#625]

The Council on Environmental Quality (CEQ) has withdrawn its final guidance for Federal agencies on how to consider greenhouse gas emissions (GHG) and the effects of climate change IN NEPA reviews for further consideration as directed by Executive Order 13783 "Promoting Energy Independence and Economic Growth" of March 28, 2017 (https://www.gpo.gov/fdsys/pkg/FR-2017-03-31/pdf/2017-06576.pdf). The Forest Service 2009 guidance for Climate Change Considerations in Project Level NEPA Analysis https://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf does not require quantifying GHGs and carbon for project level NEPA. This guidance suggests that quantifying GHGs might only be useful if a project were anticipated to emit relatively large amounts of GHGs (e.g.

large-scale oil and gas development or energy related projects). The Mission Restoration Project will not emit a large amount of GHGs therefore we have addressed GHG emissions and carbon qualitatively for this project.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass

production over the long-term (i.e. decades). Projects like the proposed action that improve forest conditions and capacity to grow trees are positive factors in carbon sequestration.

The Forest Service currently lacks standardized tools for meaningfully estimating GHG emissions and carbon associated with the implementation of the proposed project and alternatives. Current CEQ guidance allows federal agencies flexibility in using the best available scientific information to qualitatively describe emissions and carbon tradeoffs rather than quantifying them in the absence of meaningful available information/tools. For this project we do not have the analyses or information for meaningful quantification at the project level at this point in time. [ID#650]

Associated Comments: [Seq#625]

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO2. The EA doesn't state that simple fact. The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the various types of vegetation cover found on the Okanogan-Wenatchee NF. [72-39]

Returning to logging, the FS distracts from the emerging scientific consensus that removing wood or any biomass from the forest only worsens the climate change problem. Law and Harmon, 2011 conducted a literature review and concluded … Thinning forests to reduce potential carbon losses due to wildfire is in direct conflict with carbon sequestration goals, and, if implemented, would result in a net emission of CO2 to the atmosphere because the amount of carbon removed to change fire behavior is often far larger than that saved by changing fire behavior, and more area has to be harvested than will ultimately burn over the period of effectiveness of the thinning treatment. [72-48]

(Emphasis added.) Van der Werf, et al. 2009 discuss the effects of land-management practices and state: (T)he maximum reduction in CO2 emissions from avoiding deforestation and forest degradation is probably about 12% of current total anthropogenic emissions (or 15% if peat degradation is included) - and that is assuming, unrealistically, that emissions from deforestation, forest degradation and peat degradation can be completely eliminated. ...reducing fossil fuel emissions remains the key element for stabilizing atmospheric CO2 concentrations. (E)fforts to mitigate emissions from tropical forests and peatlands, and maintain existing terrestrial carbon stocks, remain critical for the negotiation of a post-Kyoto agreement. Even our revised estimates represent substantial emissions ... [72-51]

Concern: [Seq#626]

It is difficult to comprehend the rationale for not exploring alternatives that do not include subsidized commercial timber and livestock management that the USFS has identified as contributing to environmental problems that they now propose to solve by logging and continuing cattle grazing. Those industries are well represented by members of the North Central Washington Forest Health Collaborative (NCWFHC) including two logging companies, the Cattlemen's Association, and their County Commissioner supporters. The collaborative had urged their Forest supporters to rush the project past the public and to begin logging in 2016. [ID#651]

Response: [Seq#626]

Range improvement or management was not identified as a purpose and need although it is part of management direction for Management Area 25 (Preliminary EA page 15) and it was a point of concern expressed by Okanogan County Commissioners (EA page 21). There are no proposed activities associated with range management since range management was addressed in a recent NEPA project for the majority of the planning area..

Besides commercial harvest, both action alternatives include about 8,304 acres of non-commercial thinning treatments, 10,968 acres of prescribed fire, 468 acres of soil restoration, replacing 23 culverts, enhancing 6 sites for beaver habitat, replacing one bridge, enhancing 8.2 miles of fish bearing streams with coarse woody debris enhancement, armoring 33 stream crossings, hardening 4 stream crossings, and decommissioning 33.6 miles of roads (56.2 in Alternative 3).

An alternative was considered that did not include timber harvest. It was determined that this alternative would not meet 3 out of the 7 Purpose and Needs. See preliminary EA page 28. Analyzing a project that includes timber harvest is very time consuming and expensive.

An alternative was identified during public scoping that included a limited amount of restoration treatments; increasing the amount of restoration activity in the WUI and shrub-steppe environment; limiting thinning to 6 inches DBH or less (by hand). The IDT modified the thinning and prescribed fire in Alternatives Two and Three based on this input. Restricting thinning to 6 inches DBH or less would not achieve landscape, silvicultural and fuel treatment objectives (See preliminary EA page 27).

The Forest Service also considered, but did not study in detail, an alternative that expanded the road system within the project area (See preliminary EA pages 27-28).

The Forest Service has no control over communications from or within the North Central Washington Forest Health Collaborative.

There never was an intent to begin logging in 2016. Current thinking is to offer 2 Stewardship Contracts. The first contract is currently estimated to contain about 6 MMBF, with the 2nd contract containing about 3 MMBF. The product value for the first contract is estimated at $395,000 which could be utilized to complete restoration work. No estimate of product value for the 2nd contract has been made.

[ID#651]

Associated Comments: [Seq#626]

It is difficult to comprehend the rationale for not exploring alternatives that do not include subsidized commercial timber and livestock management that the USFS has identified as contributing to environmental problems that they now propose to solve by logging and continuing cattle grazing. Those industries are well represented by members of the North Central Washington Forest Health Collaborative (NCWFHC) including two logging companies, the Cattlemen's Association, and their County Commissioner supporters. The collaborative had urged their Forest supporters to rush the project past the public and to begin logging in 2016. [63-11]

Concern: [Seq#627]

EA fails to provide estimates of the total amount of CO2 or other greenhouse gas emissions caused by FS management actions and policies-forestwide, regionally, or nationally. Instead, agency policymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The EA also ignores CO2 and other greenhouse gas emissions from other common human activities related to forest management and recreational uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, recreational motor vehicles, and emissions associated with livestock grazing. The FS is simply ignoring the climate impacts of these management and other authorized or allowed activities.

Fossil fuel emissions created by motor vehicles can be estimated. The Mission EA fails to disclose the fossil fuel emissions caused by recreational activities and resource management activities.

[ID#652]

Response: [Seq#627]

The Council on Environmental Quality (CEQ) has withdrawn its final guidance for Federal agencies on how to consider greenhouse gas emissions (GHG) and the effects of climate change IN NEPA reviews for further consideration as directed by Executive Order 13783 "Promoting Energy Independence and Economic Growth" of March 28, 2017 (https://www.gpo.gov/fdsys/pkg/FR-2017-03-31/pdf/2017-06576.pdf). The Forest Service 2009 guidance for Climate Change Considerations in Project Level NEPA Analysis https://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf does not require quantifying GHGs and carbon for project level NEPA. This guidance suggests that quantifying GHGs might only be useful if a project were anticipated to emit relatively large amounts of GHGs (e.g. large-scale oil and gas development or energy related projects). The Mission Restoration Project will not emit a large amount of GHGs therefore we have addressed GHG emissions and carbon qualitatively for this project.

A project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades). Projects like the proposed action that improve forest conditions and capacity to grow trees are positive factors in carbon sequestration.

The Forest Service currently lacks standardized tools for meaningfully estimating GHG emissions and carbon associated with the implementation of the proposed project and alternatives. Current CEQ guidance allows federal agencies flexibility in using the best available scientific information to

qualitatively describe emissions and carbon tradeoffs rathr than quantifying them in the absence of meaningful available information/tools. For this project we do not have the analyses or information for meaningful quantification at the project level at this point in time. [ID#652]

Associated Comments: [Seq#627]

The EA fails to provide estimates of the total amount of CO2 or other greenhouse gas emissions caused by FS management actions and policies-forestwide, regionally, or nationally. Instead, agency policymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures. [72-38]

The EA also ignores CO2 and other greenhouse gas emissions from other common human activities related to forest management and recreational uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, recreational motor vehicles, and emissions associated with livestock grazing. The FS is simply ignoring the climate impacts of these management and other authorized or allowed activities. [72-41]

Fossil fuel emissions created by motor vehicles can be estimated. The Mission EA fails to disclose the fossil fuel emissions caused by recreational activities and resource management activities. [72-43]

Concern: [Seq#628]

Forest recovery following logging and natural disturbances are usually considered a given. But forests have recovered under climatic conditions that no longer exist. Higher global temperatures and increased levels of disturbance are contributing to greater tree mortality in many forest ecosystems, and these same drivers can also limit forest regeneration, leading to vegetation type conversion. (Bart et al. 2016.) [ID#653]

Response: [Seq#628]

The referenced article is for the Sierra Nevada Mountains of California and is about how vegetation type change may affect stream flow, a critical source of water supply for urban, agriculture, and environmental purposes and looks at stream flow in two lower montane forest watersheds in the Sierra Nevada Mountains. The vegetation was primarily white fir, incense cedar, ponderosa pine, Jeffery pine, sugar pine and mountain whitehorn (Ceanothus cordulatus) with a Mediterranean climate. The paper was looking at tree-to-shrub conversion. The project area is very different from the project area for the Mission Restoration Project with a completely different climate, different evapotranspiration profile and different vegetation thus does not apply. Type conversion is not expected in the Mission Restoration Project area. [ID#653]

Associated Comments: [Seq#628]

Forest recovery following logging and natural disturbances are usually considered a given. But forests have recovered under climatic conditions that no longer exist. Higher global temperatures and increased levels of disturbance are contributing to greater tree mortality in many forest ecosystems, and these same drivers can also limit forest regeneration, leading to vegetation type conversion. (Bart et al. 2016.)

[72-32]

Concern: [Seq#629]

Why is there only one action alternative (logging) presented to the public in 99% of timber sale EAs and EISs? The public expects the impacts of the logging actions to be analyzed against the amenity resource damage that logging will inflict without bias for the Proposed Action. The NEPA requires interdisciplinary input before Responsible Officials consider approving the Proposed Action. NEPA requires the Responsible Official to seriously consider selecting the No Action alternative. [ID#654]

Response: [Seq#629]

The content or scope of other Environmental Assessments regarding vegetation management is outside the scope of the Mission Restoration Project (MRP) Environmental Assessment.

The MRP includes many projects, including thousands of acres of forest vegetation treatment, that do not involve logging. The effects of these on forest resources are presented throughout the preliminary EA, which were written by multiple members of an interdisciplinary team. The effect of no action is presented for each of the disciplines represented on the team.

Scoping and Preliminary EA responses for the Mission Restoration Project show fairly polarized attitudes towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1, 2.1.3, and Figure 5 in the preliminary EA). Not including timber harvest in the project was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action).

An alternative that does not require a Forest Plan amendment could have been developed that would have resulted in much fewer acres of harvest, but it was determined that it would not meet several Purpose and Needs (preliminary EA section 2.1.4). The effects of the Forest Plan Amendment, which was presented in more detail in the Revised Preliminary EA shows the effects of harvesting much fewer acres than in Alternatives 2 or 3.

For NEPA documents, the document should document the examination of reasonable alternatives to the proposed action. An action alternative needs to meet a reasonable portion of the presented Purpose and Need statements and address one or more issues related to the proposed action. Since an alternative may be developed to address more than one issue, no specific number of alternatives is required or prescribed.

Develop and consider alternatives that would resolve conflicts about the proposal.

Under the CEQ regulations, the Agency is required to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the National Environmental Policy Act (40 CFR 1501.2(c)).

As established in case law, the phrase "all reasonable alternatives" has not been interpreted to require that an infinite or unreasonable number of alternatives be analyzed, but does require a range of reasonable alternatives be analyzed. No specific number of alternatives is required or prescribed. Ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment.

For NEPA documents, the document should document the examination of reasonable alternatives to the proposed action. An alternative should meet the purpose and need and address one or more issues related to the proposed action. Since an alternative may be developed to address more than one issue, no specific number of alternatives is required or prescribed. Develop and consider alternatives that would resolve conflicts about the proposal.639 78-50

[ID#654]

Associated Comments: [Seq#629]

Dick Artley, a retired USFS logging engineer offered, many appropriate comments that I support. The IDT members know there are multiple ways to achieve most timber sale P&N goals. Why is there only one action alternative (logging) presented to the public in 99% of timber sale EAs and EISs? The public expects the impacts of the logging actions to be analyzed against the amenity resource damage that logging will inflict without bias for the Proposed Action. The NEPA requires interdisciplinary input before Responsible Officials consider approving the Proposed Action. NEPA requires the Responsible Official to seriously consider selecting the No Action alternative. [63-33]

Concern: [Seq#630]

Kassar and Spitler, 2008 provide an analysis of the carbon footprint of off-road vehicles in California. They determined that: Off-road vehicles in California currently emit more than 230,000 metric tons - or 5000 million pounds - of carbon dioxide into the atmosphere each year. This is equivalent to the emissions created by burning 500,000 barrels of oil. The 26 million gallons of gasoline consumed by off-road vehicles each year in California is equivalent to the amount of gasoline used by 1.5 million car trips from San Francisco to Los Angeles. . . . Off-road vehicles emit considerably more pollution than automobiles. According to the California Air Resources Board, off-road motorcycles and all-terrain vehicles produce 118 times as much smog-forming pollutants as do modern automobiles on a per-mile basis. . . . Emissions from current off-road vehicle use statewide are equivalent to the carbon dioxide emissions from 42,000 passenger vehicles driven for an entire year or the electricity used to power 30,500 homes for one year.

[ID#655]

Response: [Seq#630]

Thank you for your comment. The NEPA document for the Mission Restoration Project does not propose increasing ATV/UTV or snowmobile use, but likely will reduce ATV/UTV and snowmobile use through decommissioning roads or limiting ATV/UTV traffic on a number of road to Administrative Use Only.

This article looks to be a non-peer reviewed article that was prepared to try and influence regulations and laws to curb ATV/UTV, trail bike, and snowmobile use in California. Most of the information sources cited are 2006, or before, and are based on the use of two-stroke off-road equipment which is not the current type of vehicles most often purchased. The exhaust emissions for these type of vehicles have been decreased in the 10 years since this article was created.

Under the "Motorized Travel Management Plan" currently being considered on the Forest, roads/trails/areas open to motorized vehicle use outside of wilderness is being designated. ATV and UTV use is being considered under this analysis which is scheduled to be completed prior to this project. This is the forum that the Forest is using to address concerns such as yours. [ID#655]

Associated Comments: [Seq#630]

Kassar and Spitler, 2008 provide an analysis of the carbon footprint of off-road vehicles in California. They determined that: Off-road vehicles in California currently emit more than 230,000 metric tons - or 5000 million pounds - of carbon dioxide into the atmosphere each year. This is equivalent to the emissions created by burning 500,000 barrels of oil. The 26 million gallons of gasoline consumed by off-road vehicles each year in California is equivalent to the amount of gasoline used by 1.5 million car trips from San Francisco to Los Angeles. . . . Off-road vehicles emit considerably more pollution than automobiles. According to the California Air Resources Board, off-road motorcycles and all-terrain vehicles produce 118 times as much smog-forming pollutants as do modern automobiles on a per-mile basis. . . . Emissions from current off-road vehicle use statewide are equivalent to the carbon dioxide emissions from 42,000 passenger vehicles driven for an entire year or the electricity used to power 30,500 homes for one year. [72-40]

Concern: [Seq#631]

A purpose of this project is to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease,and wildfire events." The historical and future ranges of variability used in this project are an inaccurate model of forest health. Science does not support logging as a method to increase resiliency. [ID#656]

Response: [Seq#631]

Managing for the historical and future ranges of variability is a key concept of the 2012 Okanogan-Wenatchee National Forest Restoration Strategy (FRS), which is based on an extensive body of peer reviewed science. In addition, the FRS document itself, received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed.

The beneficial effects of logging are presented throughout the document and are summarized on pages 36-44.

Increases resiliency to extreme weather conditions

- enhances 6 beaver habitat areas

Increases resiliency to extreme weather (hot and dry summers), insects and fire

- moves towards or maintains DRV for 24 of 28 forest structure categories
- reduces vulnerability to western spruce budworm within 6 of 6 categories on the landscape
- reduces vulnerability to Douglas-fir bark beetles on 7,347 acres
- treats 3,656 acres to promote and maintain medium and large trees
- reduces the vulnerability to dwarf mistletoe on 7,846 acres
- moves the percent of landscape within or towards DRV for risk of crown fire in 5 of 6 categories of
- moves towards or stays within DRV of average patch size of crown fire risk in 3 of 6 categories.
- reduces the percent of the landscape that would burn Medium, High and extreme flame lengths
- reduces the percent of the landscape that would burn as surface and crown fires

Increases infrastructure resilience to wild fire

- reduces the percent of the landscape along Forest Roads 43 and 4340 that would burn with moderate, High and Extreme flame lengths

[ID#656]

Associated Comments: [Seq#631]

A purpose of this project is to maintain and restore forest vegetation characteristics to within estimated historical and future ranges of variability to improve forest resiliency to insect, disease,and wildfire events." The historical and future ranges of variability used in this project are an inaccurate model of forest health. Science does not support logging as a method to increase resiliency. [68-94]

Concern: [Seq#632]

The EA uses the term "historical conditions" many times, but never even once alludes to what those conditions actually are. In my comments on the MPSN I asked not only for you to clarify what those conditions are, so that the public can assess if your proposed project actually does line up with them, but also why those "historical conditions" are the goal. A lot has changed in the last century.

Is it really in the forest's best interest that we carve it up attempting to recreate someone's mythically perfect time of the 1930's?

Clearly link the landscape prescription and outcomes from the EMDS process to the vegetation restoration recommendations.

There is no science to show that the historical conditions that the FS bases this project on are accurate or would be more resilient to disturbances.

[ID#657]
Response: [Seq#632]

The overlap of the historical and expected future range of conditions (Desired Range of Variation-DRV) for the two landscapes are described in terms of ranges of percent of the landscape and the average patch size of forest vegetation (preliminary EA pages 116-117 and 143-144). The definitions of the different forest structure categories are found in the Okanogan-Wenatchee Forest Restoration Strategy (2012).

The restoration promoted by this EA aims to enhance the resiliency and sustainability of forests through treatments that incrementally return the ecosystem to a state that is within a historical range of conditions (Landres et al. 1999) tempered by potential climate change (Millar and Woolfenden 1999). It is the process of assisting the recovery of resilience and adaptive capacity of ecosystems that have been degraded, damaged, or destroyed (FSM 2020.5).

It is assumed that historical vegetation conditions were sustainable and resilient given the presence of historical levels and frequency of disturbance. Purpose and Need #4 calls for sustainable levels of wildlife habitat. This EA proposes treatment that would develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to uncharacteristically lethal fires by increasing resilience of habitats to wildfire.

Indeed much has changed over the last 100 years. For that reason the landscape is divided and characterized by patch, using the oldest aerial photography available. It is well understood that a single 1930's photograph by itself would represent a very arbitrary reference point, however by characterizing the 1930 vegetation patterns across a landscape you are capturing the suite of vegetation composition and patterns shaped by natural processes over hundreds to thousands of years prior to the time of the photo. This is termed a 'substitution of space for time', a sampling method common in ecology. One strength of this process is that when you capture multiple similar landscapes across a large geographic region, a range of conditions can be created. This range of conditions captures landscapes that have developed as a result of the same processes but in different times, different places, and can represent different phases of development. This space for time substitution means that we are referencing a range of conditions (both in time and space) that are in different stages of development, effectively capturing a range of possible landscape evolutions. Unlike other approaches to estimate Historical Range of Variability (HRV) using unverified assumptions, our approach to quantifying HRV is grounded with observed conditions.

[ID#657]

Associated Comments: [Seq#632]

· Clearly link the landscape prescription and outcomes from the EMDS process to the vegetation restoration recommendations. We appreciate your posting of the prescriptions memo on the project page to help draw the connection between the need identified and the recommendations in the scoping letter. We support the need to restore ecological conditions and fire regimes within the Mission Restoration Project. The scoping document emphasizes the need to treat a complex set of vegetation characteristics. [18-9]

The EA uses the term "historical conditions" many times, but never even once alludes to what those conditions actually are. In my comments on the MPSN I asked not only for you to clarify what those conditions are, so that the public can assess if your proposed project actually does line up with them, but also why those "historical conditions" are the goal. A lot has changed in the last century. [29-24]

Trees sequester carbon, give us the air we breathe and hold the earth in place with their roots. Is it really in the forest's best interest that we carve it up attempting to recreate someone's mythically perfect time of the 1930's? [51-4]

There is no science to show that the historical conditions that the FS bases this project on are accurate or would be more resilient to disturbances. [68-47]

Concern: [Seq#633]

What other environmental factors have changed and made an impact on future goals for vegetation since the "historic conditions" occurred? [ID#658]

Response: [Seq#633]

It is not clear what is meant by the question. Many vegetation conditions have changed since white settlers first became established in the Methow Valley, which are presented in the Purpose and Needs 3, 4, 5 and 6, and within the existing condition sections for the preliminary EA (preliminary EA section 3.5.3 and 3.6.3). The description of the current condition as compared to the Desired Range of Variability demonstrates how the existing condition is affected by these vegetation conditions. The effects shown for the No Action alternative show how these vegetation conditions effect the ability of the landscape to attain the Desired Range of Variability into the future.

To date, there is no recognizable change in Environmental Conditions within the landscape, but it is predicted that there will be warmer and drier summers resulting in more drought stress on vegetation (Hessburg et al. 2015).

Hessburg, P.F., Churchill, D.J., Larson, A.J. et al. 2015. *Restoring fire-prone Inland Pacific landscapes: seven core principles*. Landscape Ecology (2015) 30: 1805. doi:10.1007/s10980-015-0218-0.

[ID#658]
Associated Comments: [Seq#633]
What other environmental factors have changed and made an impact on future goals for vegetation since the "historic conditions" occurred? [29-26]

Concern: [Seq#634]

Will heavy equipment be used on these 8,304 acres? [ID#659]
Response: [Seq#634]

Heavy equipment is expected to be utilized where commercial timber harvest is proposed on ground that can be harvested with ground based equipment. This in approximately 1,885 of the 1,952 acres of timber harvest (preliminary EA, Figure 135). The impacts to soil are expected to be mitigated by winter harvest, driving over timber slash and utilizing best management practices (see preliminary EA design criteria numbers 34-54).

Some heavy equipment would potentially be utilized in the machine piling of slash on an additional 64 acres of cable logging with the same BMPs as above.

Of the approximate 8359 acres of non-commercial harvest treatments, an estimated 85 acres would be machine piled using heavy equipment.

[ID#659]
Associated Comments: [Seq#634]
Will heavy equipment be used on these 8,304 acres? [51-47]

Concern: [Seq#635]

Nitrous oxide, a by-product generated by the microbial breakdown of nitrogen in livestock manure, is a potent greenhouse gas completely ignored by the Mission EA. Also, the digestion of organic materials by livestock is a large source of methane emission. Methane is a far more potent substance than CO2 causing climate change. Beschta et al 2012 review some of the science on livestock exacerbation of climate change: Livestock production impacts energy and carbon cycles and globally contributes an estimated 18% to the total anthropogenic greenhouse gas (GHG) emissions (Steinfeld and others 2006). How public-land livestock contribute to these effects has received little study. Nevertheless, livestock grazing and trampling can reduce the capacity of rangeland vegetation and soils to sequester carbon and contribute to the loss of above- and below- ground carbon pools (e.g., Lal 2001b; Bowker and others

2012). Lal (2001a) indicated that heavy grazing over the long-term may have adverse impacts on soil organic carbon content, especially for soils of low inherent fertility. Although Gill (2007) found that grazing over 100 years or longer in subalpine areas on the Wasatch Plateau in central Utah had no significant impacts on total soil carbon, results of the study suggest that ''if temperatures warm and summer precipitation increases as is anticipated, [soils in grazed areas] may become net sources of CO2 to the atmosphere'' (Gill 2007, p. 88). Furthermore, limited soil aeration in soils compacted by livestock can stimulate production of methane, and emissions of nitrous oxide under shrub canopies may be twice the levels in nearby grasslands (Asner and others 2004). Both of these are potent GHGs.

Gerber, et al., 2013 state, "Livestock producers, which include meat and dairy farming, account for about 15 percent of greenhouse gas emissions around the world. That's more than all the world's exhaust-belching cars, buses, boats, and trains combined." [ID#660]

Response: [Seq#635]

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management, as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed Section 3.10, Range, of Chapter 3 and in Appendix D (Design Criteria). Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area so greenhouse gas would not be affected by this project.

Thank you for your comment. This paper talks about all livestock uses, besides other uses, and so the information is not appropriate for range use on the National Forest System, the Okanogan-Wenatchee National Forest, or this project.

[ID#660]

Associated Comments: [Seq#635]

Nitrous oxide, a by-product generated by the microbial breakdown of nitrogen in livestock manure, is a potent greenhouse gas completely ignored by the Mission EA. Also, the digestion of organic materials by livestock is a large source of methane emission. Methane is a far more potent substance than CO2 causing climate change. Beschta et al 2012 review some of the science on livestock exacerbation of climate change: Livestock production impacts energy and carbon cycles and globally contributes an estimated 18% to the total anthropogenic greenhouse gas (GHG) emissions (Steinfeld and others 2006). How public-land livestock contribute to these effects has received little study. Nevertheless, livestock grazing and trampling can reduce the capacity of rangeland vegetation and soils to sequester carbon and contribute to the loss of above- and below- ground carbon pools (e.g., Lal 2001b; Bowker and others 2012). Lal (2001a) indicated that heavy grazing over the long-term may have adverse impacts on soil organic carbon content, especially for soils of low inherent fertility. Although Gill (2007) found that

grazing over 100 years or longer in subalpine areas on the Wasatch Plateau in central Utah had no significant impacts on total soil carbon, results of the study suggest that ''if temperatures warm and summer precipitation increases as is anticipated, [soils in grazed areas] may become net sources of CO2 to the atmosphere'' (Gill 2007, p. 88). Furthermore, limited soil aeration in soils compacted by livestock can stimulate production of methane, and emissions of nitrous oxide under shrub canopies may be twice the levels in nearby grasslands (Asner and others 2004). Both of these are potent GHGs. [72-44]

Gerber, et al., 2013 state, "Livestock producers, which include meat and dairy farming, account for about 15 percent of greenhouse gas emissions around the world. That's more than all the world's exhaust-belching cars, buses, boats, and trains combined." [72-45]

Concern: [Seq#636]

The overstory layer of trees-the large and tall trees, function as an umbrella for the forest. They protect the earth from excess sun in sensitive areas and filter rain more gently to the forest floor. It is debatable whether logging these trees would have any favorable effect on fire behavior.

Eliminating this layer is like throwing out a piece of the puzzle-you don't know what you've got till it's gone…but then it would be too late. [ID#661]

Response: [Seq#636]

Large, tall trees are not the primary target for removal. All trees greater than 24 inches DBH would be retained and most trees between 21 and 24 inches would be retained. The remaining healthy trees would be thinned from below, which means that most of the time, the bigger, healthy trees would remain (preliminary EA Appendix A). See the expected effects to medium and large trees on pages 124-125 of the preliminary EA.

The effects of this overstory harvesting together with understory thinning, and prescribed fire treatments would create a beneficial, long-term, minor effect in re-establishing the desired amount and arrangement of low Crown Fire Risk (preliminary EA page 155) and a resulting beneficial, short-term, minor to moderate effect of reducing flame lengths and limiting crown fire behavior in the WUI (preliminary EA page 159).

The effects of this treatment on the understory and lower canopy trees is expected to be in 20-40 years (preliminary EA pages 123-126, 155-159) depending on the indicator.

The effects of no action would actually have the potential to have a higher impact on existing large and tall trees and the future recruitment of large and old trees than the action alternatives (preliminary EA page 120-121).

[ID#661]

Associated Comments: [Seq#636]

The overstory layer of trees-the large and tall trees, function as an umbrella for the forest. They protect

the earth from excess sun in sensitive areas and filter rain more gently to the forest floor. It is debatable whether logging these trees would have any favorable effect on fire behavior [67-23]

Eliminating this layer is like throwing out a piece of the puzzle-you don't know what you've got till it's gone…but then it would be too late. [67-25]

Concern: [Seq#637]

Campbell et al., 2011 also refutes the notion that fuel-reduction treatments increase forest carbon storage in the western US: It has been suggested that thinning trees and other fuel-reduction practices aimed at reducing the probability of high-severity forest fire are consistent with efforts to keep carbon (C) sequestered in terrestrial pools, and that such practices should therefore be rewarded rather than penalized in C-accounting schemes. By evaluating how fuel treatments, wildfire, and their interactions affect forest C stocks across a wide range of spatial and temporal scales, we conclude that this is extremely unlikely. Our review reveals high C losses associated with fuel treatment, only modest differences in the combustive losses associated with high-severity fire and the low-severity fire that fuel treatment is meant to encourage, and a low likelihood that treated forests will be exposed to fire. Although fuel-reduction treatments may be necessary to restore historical functionality to fire-suppressed ecosystems, we found little credible evidence that such efforts have the added benefit of increasing terrestrial C stocks. [ID#662]

Response: [Seq#637]

The paper discusses emissions from low and high severity fires after fuels reduction treatments and with no other treatments. The authors show that there is a slight lowering of emissions after fuels treatments but question whether it is enough to offset the emissions released in treatments, loss of carbon stocks. The paper does not take into account fire size and that after treatments lower fire size and intensity can more easily be attained which in turn means less emissions and losses of carbon stocks. [ID#662]

Associated Comments: [Seq#637]

Campbell et al., 2011 also refutes the notion that fuel-reduction treatments increase forest carbon storage in the western US: It has been suggested that thinning trees and other fuel-reduction practices aimed at reducing the probability of high-severity forest fire are consistent with efforts to keep carbon (C) sequestered in terrestrial pools, and that such practices should therefore be rewarded rather than penalized in C-accounting schemes. By evaluating how fuel treatments, wildfire, and their interactions affect forest C stocks across a wide range of spatial and temporal scales, we conclude that this is extremely unlikely. Our review reveals high C losses associated with fuel treatment, only modest differences in the combustive losses associated with high-severity fire and the low-severity fire that fuel treatment is meant to encourage, and a low likelihood that treated forests will be exposed to fire. Although fuel-reduction treatments may be necessary to restore historical functionality to fire-suppressed ecosystems, we found little credible evidence that such efforts have the added benefit of increasing terrestrial C stocks. [72-55]

Concern: [Seq#638]

Plant forests. Don't cut them down. You won't have the money to replant once you recognize your error. [ID#663]
Response: [Seq#638]

1,872 acres of the planned 1,952 acres of harvest treatment, in the preliminary EA, would result in thinning. Only 80 acres would be in a temporary non-forested condition (preliminary EA page 310). The value from the sale is expected to pay for the reforestation cost (preliminary EA page 294). In the final EA, only about 59 acres would be in a temporary non-forested condition and would likely require planting. [ID#663]
Associated Comments: [Seq#638]
* Plant forests. Don't cut them down. I can well imagine a few years from now: The USFS looking for volunteers for reforesting when they realize that we really needed the trees for carbon sequestering more than the $, and they still won't have funding. [67-32]

Concern: [Seq#639]

The following statement from the Analysis section is false, misleading and unsubstantiated: "Proposed treatments would re-establish ecological processes, patterns, and functions to restore the Libby and Buttermilk Creek landscapes to be more resilient to disturbances such as wildfire and changing climates, reduce wildfire hazards in the Wildland Urban Interface (WUI), and manage the existing transportation system." There is no evidence provided to support this conclusion.

The management practice that produced the problems will not solve them.

The only treatment the EA can now schedule is commercial logging. [ID#664]
Response: [Seq#639]

The quoted phrase above is from Chapter One of the preliminary EA and is part of a succinct summary of the analysis of the proposed action (preliminary EA page 13). How the proposed action and a similar action alternative achieve the above results is shown in detail be resource throughout Chapter 3 of the preliminary EA.

Not all of the effects of previous management are from commercial logging. There are also landscape departures caused from not allowing fire or from not encouraging fire (as did native American peoples) on the landscape, which resulted in too many multistoried stands as compared to historical conditions. Not all logging has the same effects. Under current regulations and the use of the best management

practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events. There is no other way to achieve that result that is as safe, responsible and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103).

The EA states in many places that project work would take place as funding becomes available. The district has traditionally been able to receive funding for most of the aquatic resource improvement projects including road decommissioning, culvert replacement, rock armoring, coarse woody debris enhancement and stream crossing improvements. Specialists expect that there would be funding available for beaver enhancement and soil restoration projects as well. Fuel reduction projects have been historically funded at 1,000-2,000 acres per year so may take more than 5 years to complete.

This commercial timber harvest portion of this project is currently expected to be completed in 2 Stewardship Contracts. The 1st contract would contain about 6 MMBF, with the 2nd contract estimated at 3 MMBF. The first contract is estimated to create about $395,000 of product value which could be utilized to complete other restoration work such as whip felling in preparation of tree planting, road decommissioning for wildlife and aquatic habitat improvement, rock armoring of the road surface at stream crossings, restoring deficit levels of coarse woody debris in fish-bearing stream channels, replacing culverts where fish barriers exist on fish-bearing streams, culvert replacement where existing culverts are undersized on non-fish-bearing streams, beaver habitat enhancement, and timber stand improvement and ladder fuel reduction thinning and piling to restore large tree habitat. Product value created from the 2nd contract could be used similarly.

[ID#664]

Associated Comments: [Seq#639]

The following statement from the Analysis section is false, misleading and unsubstantiated: "Proposed treatments would re-establish ecological processes, patterns, and functions to restore the Libby and Buttermilk Creek landscapes to be more resilient to disturbances such as wildfire and changing climates, reduce wildfire hazards in the Wildland Urban Interface (WUI), and manage the existing transportation system." There is no evidence provided to support this conclusion. The management practice that produced the problems will not solve them. The only treatment the EA can now schedule is commercial logging. [63-50]

Concern: [Seq#640]

Regarding migratory birds, the EA states: Direction for landbird conservation is provided by the Migratory Bird Treaty Act and Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds and MOU 08-MU-1113-2400-264 Memorandum of Understanding between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. Guidance for landbird conservation is provided by the Landbird Strategic Plan and The Conservation Strategy for Landbirds in Oregon and Washington (Altman 2000a; b,

and Altman and Holmes 2000). However, the EA does not state what this "Direction" or "Guidance" is, or show how the FS is addressing it. [ID#665]
Response: [Seq#640]

Direction provided by Regulatory Framework is summarized in the Preliminary EA in Appendix G.

The purposes of the project include to improve forest resilience; reduce habitat loss to wildfire; develop, maintain, or improve habitat; and enable firefighters to more effectively protect adjacent private land (Preliminary EA at p.12) provide direction for project activities.

The applicable guidelines for landbird conservation include:

Use understory thinning and prescribed burning to reduce fuel

1. Retain all large trees > 20" dbh

2. Retain existing snags and broken top trees

3. Implement road closures where possible

4. Use tree planting where appropriate

5. Limit invasion of noxious weeds

Alternative 2 and 3 incorporate these activities to the degree possible while meeting the objectives related to the other purposes of the project. A table will be added to the Wildlife Report (Glidden, 2017)to display this information.

Figure 69 of the Preliminary EA describes recommendations for specific focal species present in the project area.

Table 17 in the Wildlife Report describes the actions and outcomes for these species. [ID#665]
Associated Comments: [Seq#640]
Regarding migratory birds, the EA states: Direction for landbird conservation is provided by the Migratory Bird Treaty Act and Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds and MOU 08-MU-1113-2400-264 Memorandum of Understanding between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. Guidance for landbird conservation is provided by the Landbird Strategic Plan and The Conservation Strategy for Landbirds in Oregon and Washington (Altman 2000a; b, and Altman and Holmes 2000). (Emphases added.) However, the EA does not state what this "Direction" or "Guidance" is, or show how the FS is addressing it. [72-127]

Concern: [Seq#641]

The EA discloses, "Loss of snags as danger trees during logging would occur." (193.) This is found in the goshawk discussion, but it begs the question, how are protections for any snag- dependent or cavity

nesting/denning species effective if the FS has no idea as to the quantity of snag loss during the project? [ID#666]

Response: [Seq#641]

Snags, snag creation and loss, are discussed in the Preliminary EA at p.140, 145, 150, 151, 153, 154, 158, 159. Snag analysis using DecAid and GNN data was completed for the Forest (Youkey, 2011) to support MIS analysis, and is incorporated by reference into the Wildlife Report (Glidden, 2017). DecAid provided a summary of snag densities used by MIS and wildlife relationships with dead wood, while GNN analysis was used to estimate snag density by vegetation type and to compare current vs historic conditions for snag habitat.

The Wildlife Report at p.86 (Appendix A) discusses snag management and potential snag loss during thinning and fire. [ID#666]

Associated Comments: [Seq#641]

The EA discloses, "Loss of snags as danger trees during logging would occur." (193.) This is found in the goshawk discussion, but it begs the question, how are protections for any snag- dependent or cavity nesting/denning species effective if the FS has no idea as to the quantity of snag loss during the project? [72-129]

Concern: [Seq#642]

The EA downplays the negative effects of cattle grazing in the project area. There protective stance features streambank alteration not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization

.

Stipulation of a current year's effect does not consider the cumulative effects over decades. Stating that "All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions" again does not consider the cumulative effect of those exceptions. [ID#669]

Response: [Seq#642]

The Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) states that the sampling and assessment of these parameters is intended to portray the general condition of banks and riparian vegetation along an individual stream reach within each pasture. It is assumed that there will be some variability in conditions within the reach, including occasional, limited areas of concentrated animal use, such as water gaps or crossings. The standards and guidelines for cattle use have considered that the variability in conditions ("exceptions") will not retard or prevent the attainment of riparian objectives. If riparian management objectives are not met, grazing practices will be adjusted or eliminated under the above AMP. [ID#669]

Associated Comments: [Seq#642]
The EA downplays the negative effects of cattle grazing in the project area. There protective stance features streambank alteration not to exceed 20% current year alteration by livestock and limit allowable use on riparian shrubs to 40% utilization and riparian grasses to 45% utilization. Stipulation of a current year's effect does not consider the cumulative effects over decades. Stating that "All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions" again does not consider the cumulative effect of those exceptions. [63-86]

Concern: [Seq#643]

Also, Sylvester, 2014 provides data on the amount of fossil fuel being consumed by snowmobiles in Montana, from which one can calculate the carbon footprint. The study finds that resident snowmobilers burn 3.3 million gallons of gas in their snowmobiles each year and a similar amount of fuel to transport themselves and their snowmobiles to and from their destination. Non-residents annually burn one million gallons of gas in snowmobiles and about twice that in related transportation. So that adds up to 9.6 million gallons of fuel consumed in the pursuit of snowmobiling each year in Montana alone. Multiply that by 20 pounds of carbon dioxide per gallon of gas (diesel pickups spew 22 pounds per gallon) and snowmobiling releases 192 million pounds (96 thousand tons) of climate-warming CO2 per year into the atmosphere. Can we really afford this? [ID#670]
Response: [Seq#643]

This is outside the scope of the Mission Restoration Project. The Mission Restoration Project does not promote or discourage snowmobiling. [ID#670]
Associated Comments: [Seq#643]
Also, Sylvester, 2014 provides data on the amount of fossil fuel being consumed by snowmobiles in Montana, from which one can calculate the carbon footprint. The study finds that resident snowmobilers burn 3.3 million gallons of gas in their snowmobiles each year and a similar amount of fuel to transport themselves and their snowmobiles to and from their destination. Non-residents annually burn one million gallons of gas in snowmobiles and about twice that in related transportation. So that adds up to 9.6 million gallons of fuel consumed in the pursuit of snowmobiling each year in Montana alone. Multiply that by 20 pounds of carbon dioxide per gallon of gas (diesel pickups spew 22 pounds per gallon) and snowmobiling releases 192 million pounds (96 thousand tons) of climate-warming CO2 per year into the atmosphere. Can we really afford this? [72-42]

Concern: [Seq#644]

Saunois et al., 2016a note "the recent rapid rise in global methane concentrations is predominantly biogenic-most likely from agriculture-with smaller contributions from fossil fuel use and possibly

wetlands. Methane mitigation offers rapid climate benefits and economic, health and agricultural co-benefits that are highly complementary to CO2 mitigation." (Also see Saunois et al., 2016b; Gerber et al., 2013; and the Grist articles "Why isn't the U.S. counting meat producers' climate emissions?" and "Cattle grazing is a climate disaster, and you're paying for it" and Stanford News article "Methane from food production could be a wildcard in combating climate change, Stanford scientist says".) [ID#671]
Response: [Seq#644]

This comment is outside the scope of the Decisions being made in the Mission Restoration Project. Climate change literature indicates that about 12% of GHG are the result of agricultural activities but this project will not change any commercial agricultural activities.

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management, as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed Section 3.10, Range, of Chapter 3 and in Appendix D (Design Criteria). Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area so greenhouse gas would not be affected by this project.

Thank you for your comment. [ID#671]
Associated Comments: [Seq#644]
Saunois et al., 2016a note "the recent rapid rise in global methane concentrations is predominantly biogenic-most likely from agriculture-with smaller contributions from fossil fuel use and possibly wetlands. Methane mitigation offers rapid climate benefits and economic, health and agricultural co-benefits that are highly complementary to CO2 mitigation." (Also see Saunois et al., 2016b; Gerber et al., 2013; and the Grist articles "Why isn't the U.S. counting meat producers' climate emissions?" and "Cattle grazing is a climate disaster, and you're paying for it" and Stanford News article "Methane from food production could be wildcard in combating climate change, Stanford scientist says".) [72-46]

Concern: [Seq#645]

Ripple et al. 2014 provide some data and points out the opportunities available for greenhouse gas reductions via change in livestock policy: · At present non-CO2 greenhouse gases contribute about a third of total anthropogenic CO2 equivalent (CO2e) emissions and 35-45% of climate forcing (the change in radiant energy retained by Earth owing to emissions of long-lived greenhouse gases) resulting from those emissions. · Methane (CH4) is the most abundant non- CO2 greenhouse gas and because it has a much shorter atmospheric lifetime (~9 years) than CO2 it holds the potential for more rapid reductions

in radiative forcing than would be possible by controlling emissions of CO2 alone. · We focus on ruminants for four reasons. First, ruminant production is the largest source of anthropogenic CH4 emissions (Fig. 1c) and globally occupies more area than any other land use. Second, the relative neglect of this greenhouse gas source suggests that awareness of its importance is inappropriately low. Third, reductions in ruminant numbers and ruminant meat production would simultaneously benefit global food security, human health and environmental conservation. Finally, with political will, decreases in worldwide ruminant populations could potentially be accomplished quickly and relatively inexpensively. · Worldwide, the livestock sector is responsible for approximately 14.5% of all anthropogenic greenhouse gas emissions3 (7.1 of 49 Gt CO22e yr-1). Approximately 44% (3.1 Gt CO2e yr-1) of the livestock sector's emissions are in the form of CH4 from enteric fermentation, manure and rice feed, with the remaining portions almost equally shared between CO2 (27%, 2 Gt CO2e yr-1) from land-use change and fossil fuel use, and nitrous oxide (N2O) (29%, 2 Gt CO2e yr-1) from fertilizer applied to feed-crop fields and manure. · Globally, ruminants contribute 11.6% and cattle 9.4% of all greenhouse gas emissions from anthropogenic sources. · Lower global ruminant numbers would have simultaneous benefits for other systems and processes. For example, in some grassland and savannah ecosystems, domestic ruminant grazing contributes to land degradation through desertification and reduced soil organic carbon. Ruminant agriculture can also have negative impacts on water quality and availability, hydrology and riparian ecosystems. Ruminant production can erode biodiversity through a wide range of processes such as forest loss and degradation, land- use intensification, exotic plant invasions, soil erosion, persecution of large predators and competition with wildlife for resources. · Roughly one in eight people in the world are severely malnourished or lack access to food owing to poverty and high food prices. With over 800 million people chronically hungry, we argue that the use of highly productive croplands to produce animal feed is questionable on moral grounds because this contributes to exhausting the world's food supply. * In developed countries, high levels of meat consumption rates are strongly correlated with rates of diseases such as obesity, diabetes, some common cancers and heart disease. Moreover, reducing meat consumption and increasing the proportion of dietary protein obtained from high-protein plant foods - such as soy, pulses, cereals and tubers - is associated with significant human health benefits. * The greenhouse gas footprint of consuming ruminant meat is, on average, 19-48 times higher than that of high-protein foods obtained from plants (Fig. 2), when full life cycle analysis including both direct and indirect environmental effects from 'farm to fork' for enteric fermentation, manure, feed, fertilizer, processing, transportation and land-use change are considered. * In terms of short-term climate change mitigation during the next few decades, if all the land used for ruminant livestock production were instead converted to grow natural vegetation, increased CO2 sequestration on the order of 30-470% of the greenhouse gas emissions associated with food production could be expected. * (D)ecreasing ruminants should be considered alongside our grand challenge of significantly reducing the world's reliance on fossil fuel combustion. Only with the recognition of the urgency of this issue and the political will to commit resources to comprehensively mitigate both CO2 and non- CO2 greenhouse gas emissions will meaningful progress be made on climate change. For an effective and rapid response, we need to increase awareness among the public and policymakers that what we choose to eat has important consequences for climate change. Educate yourselves further: https://www.facebook.com/DavidAvocadoWolfe/videos/10153860126441512/
[ID#672]

Response: [Seq#645]

This is outside of the Decisions being made on the Mission Restoration Project. Range management decisions on the allotment in the project area were previous made in a separate document and this project will not change the number or timing of grazing activities. The Forest Service does not directly manage ruminant numbers (except livestock) on National Forest System lands. The Forest Service manages habitat for other ruminant species such as deer, elk, moose, mountain goats, bighorn sheep, etc. The State of Washington Department of Fish and Wildlife manages ruminant population, except livestock, numbers through managing hunting. [ID#672]

Associated Comments: [Seq#645]

Ripple et al. 2014 provide some data and point out the opportunities available for greenhouse gas reductions via change in livestock policy: · At present non-CO2 greenhouse gases contribute about a third of total anthropogenic CO2 equivalent (CO2e) emissions and 35-45% of climate forcing (the change in radiant energy retained by Earth owing to emissions of long-lived greenhouse gases) resulting from those emissions. · Methane (CH4) is the most abundant non- CO2 greenhouse gas and because it has a much shorter atmospheric lifetime (~9 years) than CO2 it holds the potential for more rapid reductions in radiative forcing than would be possible by controlling emissions of CO2 alone. · We focus on ruminants for four reasons. First, ruminant production is the largest source of anthropogenic CH4 emissions (Fig. 1c) and globally occupies more area than any other land use. Second, the relative neglect of this greenhouse gas source suggests that awareness of its importance is inappropriately low. Third, reductions in ruminant numbers and ruminant meat production would simultaneously benefit global food security, human health and environmental conservation. Finally, with political will, decreases in worldwide ruminant populations could potentially be accomplished quickly and relatively inexpensively. · Worldwide, the livestock sector is responsible for approximately 14.5% of all anthropogenic greenhouse gas emissions3 (7.1 of 49 Gt CO22e yr-1). Approximately 44% (3.1 Gt CO2e yr-1) of the livestock sector's emissions are in the form of CH4 from enteric fermentation, manure and rice feed, with the remaining portions almost equally shared between CO2 (27%, 2 Gt CO2e yr-1) from land-use change and fossil fuel use, and nitrous oxide (N2O) (29%, 2 Gt CO2e yr-1) from fertilizer applied to feed-crop fields and manure. · Globally, ruminants contribute 11.6% and cattle 9.4% of all greenhouse gas emissions from anthropogenic sources. · Lower global ruminant numbers would have simultaneous benefits for other systems and processes. For example, in some grassland and savannah ecosystems, domestic ruminant grazing contributes to land degradation through desertification and reduced soil organic carbon. Ruminant agriculture can also have negative impacts on water quality and availability, hydrology and riparian ecosystems. Ruminant production can erode biodiversity through a wide range of processes such as forest loss and degradation, land- use intensification, exotic plant invasions, soil erosion, persecution of large predators and competition with wildlife for resources. · Roughly one in eight people in the world are severely malnourished or lack access to food owing to poverty and high food prices. With over 800 million people chronically hungry, we argue that the use of highly productive croplands to produce animal feed is questionable on moral grounds because this contributes to exhausting the world's food supply. * In developed countries, high levels of meat consumption rates are strongly correlated with rates of diseases such as obesity, diabetes, some common cancers and heart disease. Moreover, reducing meat consumption and increasing the proportion of dietary protein obtained from high-protein plant foods - such as soy, pulses, cereals and tubers - is associated with significant human health benefits. * The greenhouse gas footprint of consuming ruminant meat is, on average, 19-48 times higher than that of high-protein foods obtained from plants (Fig. 2), when full life cycle analysis including both direct and indirect environmental effects from 'farm to fork' for enteric

fermentation, manure, feed, fertilizer, processing, transportation and land-use change are considered. * In terms of short-term climate change mitigation during the next few decades, if all the land used for ruminant livestock production were instead converted to grow natural vegetation, increased CO2 sequestration on the order of 30-470% of the greenhouse gas emissions associated with food production could be expected. * (D)ecreasing ruminants should be considered alongside our grand challenge of significantly reducing the world's reliance on fossil fuel combustion. Only with the recognition of the urgency of this issue and the political will to commit resources to comprehensively mitigate both CO2 and non- CO2 greenhouse gas emissions will meaningful progress be made on climate change. For an effective and rapid response, we need to increase awareness among the public and policymakers that what we choose to eat has important consequences for climate change. Educate yourselves further: https://www.facebook.com/DavidAvocadoWolfe/videos/10153860126441512/ [72-47]

Concern: [Seq#646]

The document only superficially addresses how many repeated treatments, over how many years would be needed avoid an undesirable build up of fuel [ID#673]

Response: [Seq#646]

Refer to Section 3.6.4.3.1, Effects (page 155). "Where underburning is proposed, the initial entry of thinning and underburning would be followed by a second underburning treatment within approximately 15 years that would reduce surface fuel loading, scorch lower tree branches, and help maintain the open arrangement of understory trees to limit the potential for crown fire initiation." The frequency of needed treatments after the first two treatments is unknown but may be estimated at 20 - 35 years.

Where this type of treatment was previously carried out along Okanogan County Road 3785, the Moses Coulee or Lyman Lake Road, on the Tonasket Ranger District, within the North Star fire, it was found to be very successful. Burn Severity after the North Star fire for this area, within the fire, was classified as "Very Low or Unburned; Low" [ID#673]

Associated Comments: [Seq#646]

The document only superficially addresses how many repeated treatments, over how many years would be needed avoid an undesirable build up of fuel. [68-53]

Concern: [Seq#647]

Beschta et al., 2012 conclude that climate change is causing additional stress to already damaged western rangelands, and make management recommendations to address these implications. Among their observations: * In the western U.S., climate change is expected to intensify even if greenhouse gas emissions are dramatically reduced." [ID#674]
Response: [Seq#647]

This paper discusses the likely effects of removing or reducing livestock and wild and feral ungulate use across public lands in the west. This paper explored the likely ecological consequences of climate change and ungulate use, individually and in combination. Much of the paper seems to be speculation of what likely may happen and the desire for a grand experiment.

The project decision for the Mission Restoration Project will not effect livestock numbers or use in the Project Area. A recent, project NEPA decision on range use within the project area was made in 2011 in a separate document. A short-term effect of this project is a likely increase in transitory range, but this project does not propose any increase in grazing numbers or timing and does not propose to change ungulate use.

The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management, as needed. Eliminating or reducing grazing is outside of the scope of the project because current grazing activities and associated impacts are addressed in the AMP. Any impacts from treatments proposed by this project on current range management practices are discussed Section 3.10, Range, of Chapter 3 and in Appendix D (Design Criteria). Some incidental transitory range (grasses and understory vegetation) would be created in the short-term from project actions, but there is no proposal to increase permitted numbers on the grazing allotment within the project area so greenhouse gas would not be affected by this project. [ID#674]
Associated Comments: [Seq#647]
Beschta et al., 2012 conclude that climate change is causing additional stress to already damaged western rangelands, and make management recommendations to address these implications. Among their observations: * In the western U.S., climate change is expected to intensify even if greenhouse gas emissions are dramatically reduced. [72-65]

Concern: [Seq#648]

Hanson, 2010 addresses some of the false notions often misrepresented as "best science" by agencies, extractive industries and the politicians they've bought: Our forests are functioning as carbon sinks (net sequestration) where logging has been reduced or halted, and wildland fire helps maintain high productivity and carbon storage. Even large, intense fires consume less than 3% of the biomass in live trees, and carbon emissions from forest fires is only tiny fraction of the amount resulting from fossil fuel consumption (even these emissions are balanced by carbon uptake from forest growth and regeneration). "Thinning" operations for lumber or biofuels do not increase carbon storage but, rather,

reduce it, and thinning designed to curb fires further threatens imperiled wildlife species that depend upon post-fire habitat. [ID#675]

Response: [Seq#648]

This paper is not discussing the type of project that the Mission Restoration Project is. It talks about the effects of the removal of most of the larger trees within the forest, while the Mission Restoration Project removes mostly the smaller trees in the Forest canopy.

It talks about "vigorous natural regeneration of conifer seedlings occurring after high-intensity fires." This paper is based on chaparral habitat and tree species such as sugar pine and ponderosa pine which is a different habitat than what occurs locally. Based on the 2014 and 2015 fires on the Methow Valley and Tonasket Ranger Districts many sites did not have good natural regeneration except within several hundred feet of the edge of a fire since Douglas-fir and other local species seed does not travel long distances since the seed is heavy.

The 3% biomass discussed in this article are based upon fire years 2002 - 2003 within the eastern Cascades of Oregon, based on 4 individual fires.

A project of the magnitude of the Mission Project makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

Refer to Section 3.15.4, Climate Change, Greenhouse Gases and Carbon Sequestration. Actions such as those proposed in this project are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic disturbances such as wildfire which can cause large releases of green house gases. The project will enhance carbon stocks (Smith et al., 2014).

This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%; and forestry and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate

change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades). Projects like the proposed action that improve forest conditions and capacity to grow trees are positive factors in carbon sequestration.

[ID#675]

Associated Comments: [Seq#648]

Hanson, 2010 addresses some of the false notions often misrepresented as "best science" by agencies, extractive industries and the politicians they've bought: Our forests are functioning as carbon sinks (net sequestration) where logging has been reduced or halted, and wildland fire helps maintain high productivity and carbon storage. Even large, intense fires consume less than 3% of the biomass in live trees, and carbon emissions from forest fires is only tiny fraction of the amount resulting from fossil fuel consumption (even these emissions are balanced by carbon uptake from forest growth and regeneration). "Thinning" operations for lumber or biofuels do not increase carbon storage but, rather, reduce it, and thinning designed to curb fires further threatens imperiled wildlife species that depend upon post-fire habitat. [72-54]

Concern: [Seq#649]

The Forest Service should also be transparent about the fact that this entire project originated from "the earlier Amended AMP which called for logging the Libby Creek watershed to increase "transitional forage" for cattle." [ID#676]

Response: [Seq#649]

The Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision EA (LLBNP EA) listed the Mission Forest and Fuels Project as one of the Reasonably Foreseeable Future Actions and stated that removal of trees allows more sunlight exposure to the ground, allowing increased levels of

grasses and forbs and that this would increase the amount of transitory range, which helps attract cattle to upland areas, increasing distribution and lessening impacts to riparian areas (LLBNP EA page 3-39). The LLBNP EA indicated that the indirect effects of the Mission project would provide transitory range for cattle, but the EA did not state that this project would be designed to benefit cattle. [ID#676]
Associated Comments: [Seq#649]
The Forest Service should also be transparent about the fact that this entire project originated from [29-20]

The Forest Service should also be transparent about the fact that this entire project originated from "the earlier Amended AMP which called for logging the Libby Creek watershed to increase "transitional forage" for cattle." [63-82]

Concern: [Seq#650]

Best available science supports the proposition that forest policies must shift away from logging if carbon sequestration is prioritized. Forests must be preserved indefinitely for their carbon storage value. Forests that have been logged should allowed to convert to eventual old-growth condition. This type of management has the potential to double the current level of carbon storage in some regions. (

See

Harmon and Marks, 2002; Harmon, 2001; Harmon et al., 1990; Homann et al., 2005; Law, 2014; Solomon et al., 2007; Turner et al., 1995; Turner et al., 1997; Woodbury et al., 2007.)

[[ID#677]
Response: [Seq#650]

A project of the magnitude of the Mission Restoration Project makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. Because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible.

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This restoration project does not fall within any of the main contributors to greenhouse gas emissions: Industry, transportation, and building (41%); energy production (35%); agriculture (12%); and forestry

and other land uses [mostly deforestation (12%). Forested land will not be converted into a developed or agricultural condition. In fact, forest stands are being retained and thinned to maintain a vigorous condition that supports trees, sequesters carbon long-term. U.S. forests sequestered 757.1 megatonnes of carbon dioxide after accounting for emissions from fires and soils in 2010 (US EPA, 2015). Forest stands are being retained and thinned to maintain a vigorous condition that supports trees, and sequesters carbon long-term. The proposed action may result in a short-term release of emissions associated with treatments (thinning, prescribed burning, road maintenance/closures, operations), but leads to increased forest resilience and resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). However there is growing concern over the impacts of climate change on US forests and their current status as a carbon sink. There is strong evidence of a relationship between increasing temperatures and large tree mortality events in forests of the western US. There is widespread recognition that climate change is increasing the size and frequency of droughts, fires, and insect/disease outbreaks, which will have major effect on these forests' role in the carbon cycle (Joyce et al., 2014).

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al., 2014). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/diseases, or a combination of these disturbance types (Millar et al., 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. Actions such as those proposed in this project that are aimed at enhancing forest resilience to climate change by reducing the potential for large-scale, catastrophic, disturbances such as wildfire also prevents release of GHG and enhances carbon stocks (Smith et al., 2014). The residual vegetation composition would maintain or increase biomass production over the long-term (i.e. decades). Projects like the proposed action that improve forest conditions and capacity to grow trees are positive factors in carbon sequestration.

[ID#677]

Associated Comments: [Seq#650]

Best available science supports the proposition that forest policies must shift away from logging if carbon sequestration is prioritized. Forests must be preserved indefinitely for their carbon storage value. Forests that have been logged should allowed to convert to eventual old-growth condition. This type of management has the potential to double the current level of carbon storage in some regions. (See Harmon and Marks, 2002; Harmon, 2001; Harmon et al., 1990; Homann et al., 2005; Law, 2014; Solomon et al., 2007; Turner et al., 1995; Turner et al., 1997; Woodbury et al., 2007.) [72-49]

Concern: [Seq#651]

Within the Libby Creek watershed, the USFS has demonstrated that it is incapable of monitoring the grazing allotment permits which it grants. This has been documented for many years and resulted in the abandonment of one permit and the withdrawal of the current permittee from part of the allotment as a result of fencing difficulties. During the 2016 season the permittee's cattle were still on the allotment, both on public and private lands, at least two months beyond the AMP time period. Residents have notified the USFS and the ranchers of these trespasses several times in the past decade. This suggests that the appropriate staff cannot predict that critical habitat can be protected from cattle grazing being a factor in producing cumulative adverse effects in any of the offered Alternatives. I cannot support any of the current Alternatives since they all include continuing the existing cattle allotment.

[[ID#678]
Response: [Seq#651]

We acknowledge that there were still cattle on the allotment beyond the grazing period in 2016. The late season use was documented. The continued implementation of the 2013 Lookout Mountain AMP with riparian management requirements will help reduce impacts to riparian areas. The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes to livestock management as needed and if riparian management objectives are not met within the critical habitat, grazing practices will be adjusted or eliminated. Alternatives 2 and 3 would have *no-harvest buffers* combined with *winter logging* along Riparian Reserves which would be beneficial in attaining riparian management objectives. The cumulative effects of implementation of the 2013 Lookout Mountain AMP and the Mission project would not be adverse and management objectives would be met to provide for forest health. (EA chapter 3, section 3.10) [ID#678]
Associated Comments: [Seq#651]
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Concern: [Seq#652]

Thirteen scientists discussed the impacts of livestock on national forest lands in their letter commenting on the NFMA regulations Draft EIS (Scientists Letter, 2011). The scientists discuss some of the well-documented, widely known direct, indirect, and cumulative environmental impacts of livestock

grazing on national forest lands, focusing on national forests west of the Rockies. [ID#679]
Response: [Seq#652]

Thank you for your comment. [ID#679]
Associated Comments: [Seq#652]
Thirteen scientists discussed the impacts of livestock on national forest lands in their letter commenting on the NFMA regulations Draft EIS (Scientists Letter, 2011). The scientists discuss some of the well-documented, widely known direct, indirect, and cumulative environmental impacts of livestock grazing on national forest lands, focusing on national forests west of the Rockies. [72-64]

Concern: [Seq#653]

Disturbance could occur as a result of winter logging, and deer may be temporarily displaced from the area being logged. The Forest winter range is higher elevation than the more heavily used areas on private land that are lower elevation and have less snow." (EA 199.) The EA doesn't analyze or disclose these displacement effects to private landowners.

[ID#680]
Response: [Seq#653]

The Wildlife Report at p.50 discusses potential displacement of deer. It is possible that some deer could be temporarily displaced to private land in the area. It is expected that it would be a minor, short-term effect. In the longer term, the additional forage available could reduce deer use of private land. [ID#680]
Associated Comments: [Seq#653]
Disturbance could occur as a result of winter logging, and deer may be temporarily displaced from the area being logged. The Forest winter range is higher elevation than the more heavily used areas on private land that are lower elevation and have less snow." (EA 199.) The EA doesn't analyze or disclose these displacement effects to private landowners. [72-131]

Concern: [Seq#654]

We also strongly support the proposal in Alternative 3 to not replace the bridge over the West Fork of Buttermilk Creek. Please see our scoping letter for an extensive list of concerns about adverse effects of replacing that bridge.

Not replacing the bridge, and not re-opening the road leading to the former bridge, would save money that could be better spent on active road decommissioning. [ID#681]
Response: [Seq#654]

Replacing the bridge and re-opening the road is not likely to cause increased sedimentation to the creek. The area will still be included in the grazing allotment and if the bridge is in place, cattle would not need to ford the stream for access. ATV/UTV's would also not need to ford the stream for access if a bridge is in place reducing sediment delivered to the stream.

Since the land on the other side of the proposed bridge is still proposed for management, management will be more difficult and costly without the bridge. Management of previous harvest units will need to be provided to encourage the growth of the regenerated timber stands.

If a fire starts in this area, access may be needed to be provided to successfully fight such a fire.

Replacing the bridge will provide improved hiker access to Scaffold Ridge.

[ID#681]
Associated Comments: [Seq#654]
We also strongly support the proposal in Alternative 3 to not replace the bridge over the West Fork of Buttermilk Creek. Please see our scoping letter for an extensive list of concerns about adverse effects of replacing that bridge. [30-15]

Concern: [Seq#655]

Throughout, the EA considers wildland fire as a threat to wildlife habitat, and fails to consider the best available science that indicates fire-even high-severity fire-has beneficial effects on habitat for most wildlife. [ID#682]
Response: [Seq#655]

High-severity wildfire has beneficial effects for some species and habitats, particularly for species using snag and open habitats. Fontaine and Kennedy (2012) concluded that the varied responses of taxa to fire and fire surrogate treatments *"makes it clear that the full range of fire-based disturbances (or their surrogates) is necessary to maintain a full complement of vertebrate species, including fire-sensitive taxa. This is especially true for high-severity fire, where positive responses from many avian taxa suggest that this disturbance (either as wildfire or prescribed fire) should be included in management plans where it is consistent with historic fire regimes and where maintenance of regional vertebrate biodiversity is a goal."* The subwatersheds in the project area are characterized by mostly low-severity fires (Preliminary EA at p.99). The wildlife species present in most of the project area evolved in a frequent fire regime, and fire plays a key role in rejuvenation of understory forage and habitat components such as snags and down wood.

The Preliminary EA at p.99-100 describes the changes to forest structure, fire frequency and severities that have occurred in the last century- *"Historically, the areas within the project sub-watersheds that experienced low CFR (crown fire risk) occupied the hot-dry and warm-dry forest areas in the northern portion of the Buttermilk Creek drainage and the northern and eastern portions of Libby Creek drainage. Fire frequency and severity in these environments were typical of Fire Regime I, where fire-return intervals ranged from 0 to 35 years with mostly low-severity fires that replaced < 25% of dominant overstory vegetation (Hardy et al. 1998; Hann and Strohn 2001; Hann et al. 2003). Forest stand structure in these areas would have been more open because wildfires that consumed surface fuels also killed smaller seedlings and saplings and scorched lower tree branches, keeping the likelihood of surface-to-crown fire transition low. Crown fire would have been the exception, with larger trees being highly resilient to wildfire because low-severity wildfire would have been less likely to reach higher tree canopies or penetrate the thick bark common to the dominant tree species of this area. As described in the Vegetation specialist report, past timber harvest in the sub-watersheds have altered the response to wildfires by reducing the proportion of fire-tolerant forest cover types that have been replaced with more shade-tolerant species. This change also caused an increase in tree canopy cover and lowered canopy-base-heights in many dry forested areas, allowing surface fires to more readily carry into overstory crowns. Harvest removed many of the large fire-resistant trees, leaving younger trees that are less tolerant to fire because of thinner bark and lower canopy base heights. Other management activities such as fire suppression (that allowed accumulation of surface fuels and development of understory tree layer) and pre-1970s grazing practices (that created bare soil over large areas and fostered germination of seedlings) helped many of dry forested areas in the Buttermilk drainage to develop a greater CFR than historically. Surface fires have a greater likelihood of transitioning into crown fire, causing uncharacteristic adverse fire effects such as more widespread tree mortality and attendant adverse effects on wildlife and aquatic habitat. Because many of the areas that typically had low CFR now have moderate or high CFR, more of this landscape is at risk for uncharacteristically severe wildfires with detrimental effects to hydrologic and soil processes, as well as terrestrial and aquatic habitat.*

Areas of moderate CFR historically occupied the cool-dry portions of the sub-watersheds and generally experienced mixed-severity fire behavior typical of Fire Regime III, where fire-return intervals ranged from 35 to 200 years (ibid). Mixed-severity fire behavior would have included a mosaic of low to high fire severity. These areas generally lie in mid-elevation in the project area (approximately 3000-4000') and/or on north aspects. Areas of high CFR historically occupied the cool-moist portions of the sub-watersheds that generally lie at higher elevations (approximately 4000' or more) or along narrow perennial stream channels; these areas historically experienced high-severity, or stand-replacement, fires typical of Fire Regime IV, where fire return intervals ranged from 35 to 200 year-intervals (ibid)."

The Mission project seeks to restore a limited amount of the two drainages, approximately 20%, to a more historical condition with more open patchy stands dominated by fire-resistant species, that would be less likely to contribute to the spread of large, high-severity, wildfire. This would provide more open habitat types across the landscape, and introduce more habitat diversity. This habitat has been reduced by fire suppression over the last decade.

[ID#682]

Associated Comments: [Seq#655]

Throughout, the EA considers wildland fire as a threat to wildlife habitat, and fails to consider the best available science that indicates fire-even high-severity fire-has beneficial effects on habitat for most wildlife. [72-134]

Concern: [Seq#656]

The EA indicates livestock grazing would hardly be feasible if logging hadn't already occurred in the project area, and likewise adequate livestock forage would fade away if periodic logging doesn't occur in the future. Also, the EA states that logging roads are needed for "proper grazing distribution." Since these resource extraction activities are connected, the FS errs in conducting separate NEPA analyses. [ID#683]

Response: [Seq#656]

An indirect effect of the Mission project would be an increase in transitory range for cattle, but increasing transitory range is not listed as a purpose of this project. The intent of the Mission project is to evaluate the analysis area and prescribe and implement a set of treatments that will meet the purpose and needs. The treatments would be implemented regardless of the ongoing livestock grazing. The Mission project is a separate action. [ID#683]

Associated Comments: [Seq#656]

The EA indicates livestock grazing would hardly be feasible if logging hadn't already occurred in the project area, and likewise adequate livestock forage would fade away if periodic logging doesn't occur in the future. Also, the EA states that logging roads are needed for "proper grazing distribution." Since these resource extraction activities are connected, the FS errs in conducting separate NEPA analyses. [72-184]

Concern: [Seq#657]

Livestock grazing and trampling degrades soil fertility, stability and hydrology, and makes it vulnerable to wind erosion. This in turn adds sediments, nutrients and pathogens to western streams. [ID#684]

Response: [Seq#657]

Thank you for your comment. The negative grazing attributes you have listed are not identified as being specific to the Mission project area. Within the project area, allotment inspections, resource condition assessments, and mid and end of season monitoring are conducted each year. All monitoring sites

within the project area have been meeting allowable use standards (allowable level of forage use) over the past 10 years with few exceptions, see District records. The standards are indicators that rangeland resources and forest health are adequately protected. (EA chapter 3, section 3.10) [ID#684]
Associated Comments: [Seq#657]
Livestock grazing and trampling degrades soil fertility, stability and hydrology, and makes it vulnerable to wind erosion. This in turn adds sediments, nutrients and pathogens to western streams. [72-70]

Concern: [Seq#658]

The EA does not analyze or disclose the impacts of altered livestock use of riparian areas. [ID#685]
Response: [Seq#658]

Although the EA does not disclose the specific data, it does disclose the impacts of altered livestock use of riparian areas. Within the project area, the Lookout Mountain allotments has designated monitoring areas (DMAs) for monitoring *streambank alteration*. The DMAs are chosen to be representative of a larger stream or meadow area or the most representative upland areas. The allowable use standard for livestock caused streambank alteration is not to exceed 20% current year alteration by livestock. All DMAs within the project area have been meeting allowable use standards over the past 10 years with few exceptions. (EA chapter 3, section 3.10, page 237, and in District files) [ID#685]
Associated Comments: [Seq#658]
The EA does not analyze or disclose the impacts of altered livestock use of riparian areas. [72-176]

Concern: [Seq#659]

Keith et al., 2009 state: Both net primary production and net ecosystem production in many old forest stands have been found to be positive; they were lower than the carbon fluxes in young and mature stands, but not significantly different from them. Northern Hemisphere forests up to 800 years old have been found to still function as a carbon sink. Carbon stocks can continue to accumulate in multi-aged and mixed species stands because stem respiration rates decrease with increasing tree size, and continual turnover of leaves, roots, and woody material contribute to stable components of soil organic matter. There is a growing body of evidence that forest ecosystems do not necessarily reach an equilibrium between assimilation and respiration, but can continue to accumulate carbon in living biomass, coarse woody debris, and soils, and therefore may act as net carbon sinks for long periods. Hence, process-based models of forest growth and carbon cycling based on an assumption that stands are even- aged and carbon exchange reaches an equilibrium may underestimate productivity and carbon accumulation in some forest types. Conserving forests with large stocks of biomass from deforestation

and degradation avoids significant carbon emissions to the atmosphere. Our insights into forest types and forest conditions that result in high biomass carbon density can be used to help identify priority areas for conservation and restoration. [ID#686]

Response: [Seq#659]

This study discovered the world's highest known total biomass carbon density (living plus dead) of 1,867 tons of carbon per hectare (average value from 13 sites) occurs in Australian temperature moist *Eucalptus regnans* forests. It purports that spatially averaged Intergovernmental Panel on Climate Change biome default values are lower than average site values for temperate moist forests, because the temperate biome contains a diversity of forest ecosystem types. The study concludes that conserving forests with large stocks of biomass from deforestation and degradation avoids significant carbon emissions to the atmosphere, irrespective of the source country, and should be among allowable mitigation activities.

This study has relevance only in general terms; as pointed out in the study, climate change biome values differ between local climates due to moisture levels and other factors. This study appears to focuses primarily on a moist temperate forest with different plant association groups, geological conditions, and hydrologic features than what is typically found in the Methow Valley Ranger District. It also does not appear to take into account wildfire regimes in the Pacific Northwest or elsewhere, and what role, if any, wildfire tolerance adaptations in local vegetation might affect contributions toward carbon sequestration or landscape resiliency. [ID#686]

Associated Comments: [Seq#659]

Keith et al., 2009 state: Both net primary production and net ecosystem production in many old forest stands have been found to be positive; they were lower than the carbon fluxes in young and mature stands, but not significantly different from them. Northern Hemisphere forests up to 800 years old have been found to still function as a carbon sink. Carbon stocks can continue to accumulate in multi-aged and mixed species stands because stem respiration rates decrease with increasing tree size, and continual turnover of leaves, roots, and woody material contribute to stable components of soil organic matter. There is a growing body of evidence that forest ecosystems do not necessarily reach an equilibrium between assimilation and respiration, but can continue to accumulate carbon in living biomass, coarse woody debris, and soils, and therefore may act as net carbon sinks for long periods. Hence, process-based models of forest growth and carbon cycling based on an assumption that stands are even- aged and carbon exchange reaches an equilibrium may underestimate productivity and carbon accumulation in some forest types. Conserving forests with large stocks of biomass from deforestation and degradation avoids significant carbon emissions to the atmosphere. Our insights into forest types and forest conditions that result in high biomass carbon density can be used to help identify priority areas for conservation and restoration. [72-52]

Concern: [Seq#660]

Kutsch et al., 2010 provide an integrated view of the current and emerging methods and concepts applied in soil carbon research. They use a standardized protocol for measuring soil CO2 efflux, designed to improve future assessments of regional and global patterns of soil carbon dynamics: Excluding carbonate rocks, soils represent the largest terrestrial stock of carbon, holding approximately 1,500 Pg (1015 g) C in the top metre. This is approximately twice the amount held in the atmosphere and thrice the amount held in terrestrial vegetation. Soils, and soil organic carbon in particular, currently receive much attention in terms of the role they can play in mitigating the effects of elevated atmospheric carbon dioxide (CO2) and associated global warming. Protecting soil carbon stocks and the process of soil carbon sequestration, or flux of carbon into the soil, have become integral parts of managing the global carbon balance. This has been mainly because many of the factors affecting the flow of carbon into and out of the soil are affected directly by land-management practices. [ID#687]
Response: [Seq#660]

This paper is believed to have limited applicability to the Mission Restoration Project since it looks at data sets of biometeorological measurements of ecosystem CO2 flux, combined with harvest and organic fertilizer/manure data from several European cropland data sets which were integrated to provide an assessment of the carbon budget correlated to soil properties. It was looking at such crops as sugar beets or where almost all of the crop is removed at harvest as in the case for maize grown for silage, durum, wheat, corn, sunflowers, soybeans, sorghum, etc. In addition, organic carbon was increased by additions of manure and increasing retention of plant residues with deep ploughing reduced in some years. [ID#687]
Associated Comments: [Seq#660]
Kutsch et al., 2010 provide an integrated view of the current and emerging methods and concepts applied in soil carbon research. They use a standardized protocol for measuring soil CO2 efflux, designed to improve future assessments of regional and global patterns of soil carbon dynamics: Excluding carbonate rocks, soils represent the largest terrestrial stock of carbon, holding approximately 1,500 Pg (1015 g) C in the top metre. This is approximately twice the amount held in the atmosphere and thrice the amount held in terrestrial vegetation. Soils, and soil organic carbon in particular, currently receive much attention in terms of the role they can play in mitigating the effects of elevated atmospheric carbon dioxide (CO2) and associated global warming. Protecting soil carbon stocks and the process of soil carbon sequestration, or flux of carbon into the soil, have become integral parts of managing the global carbon balance. This has been mainly because many of the factors affecting the flow of carbon into and out of the soil are affected directly by land-management practices. [72-50]

Concern: [Seq#661]

Since the analysis process and its assumptions are inaccurate and misguided, it makes the Purpose and Need statements inaccurate and misguided. [ID#688]
Response: [Seq#661]

The analysis process and its assumptions are not inaccurate and misguided and are based on best available science, the Purpose and Need statements are not inaccurate and misguided. Thank you for your comment. [ID#688]

Associated Comments: [Seq#661]

Since the analysis process and its assumptions are inaccurate and misguided, it makes the Purpose and Need statements inaccurate and misguided. [68-17]

Concern: [Seq#662]

The Purpose and Need statement appears to be tailored to justify a pre-determined management strategy, rather than an independent, objective analysis of existing watershed conditions. The inclusion of a variety of "needs" that are treated in the EA as lower priorities (e.g., wildlife habitat and the fisheries issues than ~$100million has already been invested in) and are presented as unfunded at the present time, obfuscates the centrality of commercial timber harvest as this project's "purpose". This creates a veneer of ecological concern that is not reflected in the EA's actual priorities. This trumped up timber sale if initiated would negate millions already invested in restoring and protecting ESA-listed salmonids in the Methow watershed.

[ID#689]

Response: [Seq#662]

As described in Section 1.2.2, Analysis Process, "The intent of this project is to evaluate the analysis area and prescribe and implement a set of treatments that rely on the principles of landscape and stand-level restoration ecology, wildfire hazard reduction, and transportation system management while meeting the direction of the amended Okanogan National Forest Land and Resource Management Plan (1989), as amended, and the Forest Restoration Strategy (2012), to the extent feasible." The Interdisciplinary Team compared the existing vegetation condition to desired conditions that are consistent with the amended Okanogan National Forest Land and Resource Management Plan and other guidance.

The EMDS tool was used to evaluate Libby Creek and Buttermilk sub-watersheds, showing where vegetation characteristics and processes such as stand structure and crown fire risk were outside of the desired range of values, which helped set priorities for where vegetation-related restoration actions should occur.

The Twisp River Watershed Analysis (USDA 1995a) [covers the Buttermilk Creek sub-watershed] and the Libby Creek Watershed Analysis (USDA 1995b) provides much of the background for the Mission Restoration Project. These analyses determined that management activities have influenced watershed vegetation patterns and structures to the point where species composition and some structural stages currently are out of balance with the historical range of variation. Vegetation management recommendations included restoring stand canopy structures and species composition to historic levels by reducing excess understory stocking: maintaining mature, large diameter trees in overstocked stands by reducing excess understory stocking with timber harvest; thinning sub-merchantable trees;

prescribed burning; reducing dwarf mistletoes infection in the understory. The analyses generally identified that 'Management activities in riparian and floodplain areas should maintain hydrologic and riparian functions to minimize increases in peak/base stream flow. Roads were addressed in a general fashion with a desire for a long-term slight decrease in overall open road density and culverts that are better capable of passing storm flows.

The Purpose and Need statements were not tailored to justify a pre-ordained management strategy; they were based on previous watershed condition assessments completed 20 years ago. [ID#689]
Associated Comments: [Seq#662]
The Purpose and Need statement appears to be tailored to to justify a pre-ordained management strategy, rather than an independent, objective analysis of existing watershed conditions. The inclusion of a variety of "needs" that are treated in the EA as lower priorities (e.g., wildlife habitat) and are virtually unfunded at the present time, obfuscates the centrality of commercial timber harvest as this project's "purpose". This creates a veneer of ecological concern that is not reflected in the EA's actual priorities. [49-7]

The Purpose and Need statement appears to be tailored to justify a pre-determined management strategy, rather than an independent, objective analysis of existing watershed conditions. The inclusion of a variety of "needs" that are treated in the EA as lower priorities (e.g., wildlife habitat and the fisheries issues than ~$100million has already been invested in) and are presented as unfunded at the present time, obfuscates the centrality of commercial timber harvest as this project's "purpose". This creates a veneer of ecological concern that is not reflected in the EA's actual priorities. This trumped up timber sale if initiated would negate millions already invested in restoring and protecting ESA-listed salmonids in the Methow watershed. [63-25]

The Purpose and Need statement appears to be tailored to to justify a pre-ordained management strategy, rather than an independent, objective analysis of existing watershed conditions. The inclusion of a variety of "needs" that are treated in the EA as lower priorities (e.g., wildlife habitat) and are virtually unfunded at the present time, obfuscates the centrality of commercial timber harvest as this project's "purpose". This creates a veneer of ecological concern that is not reflected in the EA's actual priorities. [69-6]

Concern: [Seq#663]

There are no measures that will prevent long-term, perhaps irrevocable resource damage. Scoping documents stated the need for amendments to regulations designed to protect Forest resources; they should not be completed. If this project were to move forward there would be "a significant impact on the human environment" and further consideration should require an EIS [ID#690]
Response: [Seq#663]

During the preparation of the Environmental Assessment for this project, all, except one, proposed Forest Plan amendment has been eliminated as not necessary (treatments in Forest Plan old growth) or the proposed actions were modified (not allowing winter logging on certain treatment stands).

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to the Buck EA, South Summit II EA, Light EA, and Annie EA which are recent similar decisions that did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made.

Based on the effects analysis determined in the Preliminary EAs, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where he proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct about 900 feet of hand fireline in an IRA and burn about 2 acres in the IRA so the fire line can be placed in a more defensible location. This use will not substantially alter the IRA. [ID#690]

Associated Comments: [Seq#663]

Whether the proposed action will proceed as proposed, as modified by Alternative 3, or not at all? If it proceeds: - What mitigation measures, design criteria, and monitoring requirements will the Forest Service apply to the project, the effectiveness of these measures, and who/how will these measures be implemented or monitored? - Whether the project requires Forest Plan amendments and if so, how will those amendments be completed?- Whether there is a significant effect on the human environment that would require preparation of an Environmental Impact Statement?(p.20) [There are no measures that will prevent long-term, perhaps irrevocable resource damage. Scoping documents stated the need for amendments to regulations designed to protect Forest resources; they should not be completed. If this project were to move forward there would be “a significant impact on the human environment” and further consideration should require an EIS.] [11-13]

Concern: [Seq#664]

The Mission Project Economical [Environmental?] Analysis should be part of a required EIS that reflects that the benefit of commercial beef production in the Libby Creek watershed is not "economically efficient", as well as contributing to an "adverse impact" resulting from planned activities of the project.] [ID#691]

Response: [Seq#664]

The analysis for the Mission Restoration Project will not be addressing the economical costs and benefits of grazing in the Libby Creek Watershed. A recent, separate environmental analysis was previous done for grazing in the project area and that decision is not proposed to be revisited. Grazing has been previously determined as a legitimate activity on National Forest System land.

In determining whether to prepare an environmental impact statement (EIS) the Forest Service must look at a number of key determinations. Those include:

Does the action normally require an environmental impact statement. Based on previous experience on a number of similar projects, this type of project normally has not required the preparation of an EIS. This project in most ways is similar to the Buck EA, South Summit II EA, Light EA, and Annie EA which are recent similar decisions, with grazing in the project area, that did not require the preparation of an EIS.

If the paragraph above does not apply, Forest Service direction is to prepare an environmental assessment (1508.9). Based on the environmental assessment make a determination whether to prepare an environmental impact statement. Based on the effects determined to this point, the Forest Service needs to determine if a Finding of No Significant Impact (1508.13) can be made. Based on the effects determined to this point, it is believe a Finding of No Significant Impact can be made.

Based on the effects analysis determined in the Preliminary EAs, the proposed action is, or is closely similar to, ones which do not normally require the preparation of an environmental impact statement.

This project is not one of the actions which normally requires preparation of an Environmental Impact Statement such as 1). Applying chemical insecticides by helicopter; 2) A proposal that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area (examples of which would be constructing roads and harvesting timber in an inventoried roadless area where he proposed road and harvest units impact a substantial part of an inventoried roadless area; constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimes may be substantially altered; or approving a plan of operations for a mine that would cause considerable surface disturbance in a potential wilderness area). This project will construct several hundred feet of hand fireline in an IRA and burn about 2 acres in the IRA to a more defensible burn boundary. This use will not substantially alter the IRA. [ID#691]

Associated Comments: [Seq#664]

The Mission Project Economical Analysis should be part of a required EIS that reflects that the benefit of commercial beef production in the Libby Creek watershed is not "economically efficient", as well as contributing to an "adverse impact" resulting from planned activities of the project.] [11-23]

Concern: [Seq#665]

The Record of Decision for the Northwest Forest Plan (NWFP) expresses an assumption about the NWFP itself: (A) spatially-explicit model was run to simulate owl population dynamics for a sample of three of the SEIS alternatives, plus a no-harvest scenario, in order to explore possible northern spotted owl population response under a variety of demographic assumptions. The results are consistent with and generally lend support to the hypothesis that the owl reasonably may be expected to achieve population stability across its range notwithstanding additional loss of its habitat at a conservative rate such as that projected to occur under our decision. (Emphasis added.) Dugger et al., 2015 found that northern spotted owl populations are declining in all parts of their range in the Pacific Northwest. Based on 11 study areas across Washington, Oregon and Northern California, a rangewide decline of nearly 4% per year was estimated from 1985 to 2013. This research indicated that since monitoring began spotted owl populations declined 55- 77% in Washington, 31-68% in Oregon, and 32-55% in California. So the hypothesis of expected population stability forming the basis of the NWFP is disproved. The Mission EA does not address this recent population trend information for the northern spotted owl (NSO). This is strong evidence that the suite of government actions to preserve the NSO-including the NWFP, the NSO Revised Recovery Plan (RRP), state and private land conservation measures, the efforts to control barred owls, and the U.S. Fish & Wildlife Service's conservation measures and terms and conditions in consultation documents-are failing to halt this slide towards extinction. Yet as shown by this Mission project, the FS arbitrarily and capriciously still subscribes to the disproven "hypothesis that the owl reasonably may be expected to achieve population stability across its range notwithstanding additional loss of its habitat" and continues to take risks and facilitate further degradation and destruction of NSO habitat, in the irrational belief that there is enough room for error and management flexibility to commercially log more NSO habitat.

The EA failed to consider the basis for and implications of the fact that the U.S. Fish & Wildlife Service has determined that uplisting the NSO to Endangered may be warranted. In 2015 the U.S. Fish & Wildlife Service stated: "Based on our review of the petition and sources cited in the petition, we find that the petition presents substantial information that the petitioned action may be warranted for the northern spotted owl." [ID#692]

Response: [Seq#665]

Surveys were completed and no responses were received from spotted owls. Effects to spotted owl habitat in matrix and late-successional reserve are discussed in the Preliminary EA at p. 132-133, 141-144. The Recovery Plan is being followed, and suitable habitat would not be downgraded. Consultation with US Fish and Wildlife Service has been initiated and will be completed prior to a decision on the Mission Project. The objective for the (marginally) suitable habitat is to accelerate development of large trees by reducing competition and to reduce risk of wildfire. Mitigation measures have been incorporated to prevent suitable habitat from being downgraded. Treatments will open the 2 stands in the short-term, but in the longer term provide larger tree habitat. [ID#692]

Associated Comments: [Seq#665]

The Record of Decision for the Northwest Forest Plan (NWFP) expresses an assumption about the NWFP itself: (A) spatially-explicit model was run to simulate owl population dynamics for a sample of three of the SEIS alternatives, plus a no-harvest scenario, in order to explore possible northern spotted owl

population response under a variety of demographic assumptions. The results are consistent with and generally lend support to the hypothesis that the owl reasonably may be expected to achieve population stability across its range notwithstanding additional loss of its habitat at a conservative rate such as that projected to occur under our decision. (Emphasis added.) Dugger et al., 2015 found that northern spotted owl populations are declining in all parts of their range in the Pacific Northwest. Based on 11 study areas across Washington, Oregon and Northern California, a rangewide decline of nearly 4% per year was estimated from 1985 to 2013. This research indicated that since monitoring began spotted owl populations declined 55- 77% in Washington, 31-68% in Oregon, and 32-55% percent in California. So the hypothesis of expected population stability forming the basis of the NWFP is disproved. The Mission EA does not address this recent population trend information for the northern spotted owl (NSO). This is strong evidence that the suite of government actions to preserve the NSO-including the NWFP, the NSO Revised Recovery Plan (RRP), state and private land conservation measures, the efforts to control barred owls, and the U.S. Fish & Wildlife Service's conservation measures and terms and conditions in consultation documents-are failing to halt this slide towards extinction. Yet as shown by this Mission project, the FS arbitrarily and capriciously still subscribes to the disproven "hypothesis that the owl reasonably may be expected to achieve population stability across its range notwithstanding additional loss of its habitat" and continues to take risks and facilitate further degradation and destruction of NSO habitat, in the irrational belief that there is enough room for error and management flexibility to commercially log more NSO habitat. [72-135]

The EA failed to consider the basis for and implications of the fact that the U.S. Fish & Wildlife Service has determined that uplisting the NSO to Endangered may be warranted. In 2015 the U.S. Fish & Wildlife Service stated: "Based on our review of the petition and sources cited in the petition, we find that the petition presents substantial information that the petitioned action may be warranted for the northern spotted owl." [72-136]

Concern: [Seq#666]

[comment:72-137]

The EA does not disclose how many acres of the Twisp River Late-Successional Reserve (LSR) or Sawtooth LSR are proposed for treatment, or demonstrate these treatments are consistent with the NWFP, the forest plan, and the RRP. Any treatments within these LSRs must be limited to stands 80 years old or younger and be beneficial to the creation and maintenance of late successional forest conditions (NW Forest Plan ROD, page 8). The NEPA document must clearly demonstrate how any treatment meets this requirement. [ID#693]

Response: [Seq#666]

The Wildlife Report at p.12 (Glidden, 2017) *"89 acres of plantation thinning (of small trees) would occur in the LSR (~ 4% of the LSR). Thinning would accelerate development of small trees into larger trees, and*

is consistent with direction for LSRs." This is in the Sawtooth LSR. The Twisp River LSR boundary is the ridgeline between the Buttermilk and Twisp River drainages. [ID#693]

Associated Comments: [Seq#666]

The EA does not disclose how many acres of the Twisp River Late-Successional Reserve (LSR) or Sawtooth LSR are proposed for treatment, or demonstrate these treatments are consistent with the NWFP, the forest plan, and the RRP. Any treatments within these LSRs must be limited to stands 80 years old or younger and be beneficial to the creation and maintenance of late successional forest conditions (NW Forest Plan ROD, page 8). The NEPA document must clearly demonstrate how any treatment meets this requirement. [72-137]

Concern: [Seq#667]

The EA states, "While surveys done in the 1980's and 1990's have documented the presence of spotted owls in the project area, follow-up visits indicated that they were either transient through the area or resident single birds. No nests or activity centers have been located. Recent surveys have not located spotted owls in the project area." The EA does not provide a sufficient cumulative effects analysis to address the question of whether past management has extirpated the NSO from the project area. The EA also does not consider the effect of barred owls on the NSO. [ID#694]

Response: [Seq#667]

The question of whether past management has extirpated the NSO from the project area is outside the scope of the Mission project.

The Wildlife Report (Glidden, 2017) at p.19- *"The Recovery Plan (2011) states that, currently, the most important range-wide threats to the spotted owl are competition with barred owls, ongoing loss of spotted owl habitat as a result of timber harvest, habitat loss or degradation from stand replacing wildfire and other disturbances, and loss of amount and distribution of spotted owl habitat as a result of past activities and disturbances (U.S. Fish and Wildlife Service, 2011)."* [ID#694]

Associated Comments: [Seq#667]

The EA states, "While surveys done in the 1980's and 1990's have documented the presence of spotted owls in the project area, follow-up visits indicated that they were either transient through the area or resident single birds. No nests or activity centers have been located. Recent surveys have not located spotted owls in the project area." The EA does not provide a sufficient cumulative effects analysis to address the question of whether past management has extirpated the NSO from the project area. The EA also does not consider the effect of barred owls on the NSO. [72-139]

Concern: [Seq#668]

Approximately 2.2 miles of open road intersect NRF habitat in the analysis area, which could cause disturbance to spotted owls." Is there any forest plan or other programmatic direction limiting roads in northern spotted owl nesting, roosting, foraging (NRF) habitat? [ID#695]
Response: [Seq#668]

No. [ID#695]
Associated Comments: [Seq#668]
Approximately 2.2 miles of open road intersect NRF habitat in the analysis area, which could cause disturbance to spotted owls." Is there any forest plan or other programmatic direction limiting roads in northern spotted owl nesting, roosting, foraging (NRF) habitat? [72-140]

Concern: [Seq#669]

The EA states, "The proposed treatments in the action alternatives …are consistent with the revised recovery plan for spotted owls (USFWS 2011), by treating primarily areas that are not currently providing habitat, to better protect habitat from large scale, high-severity fires and to set appropriate stands (which are very limited in the analysis area) on a trajectory to become habitat in the future." (186.) The EA also states, "The amount of dispersal habitat for spotted owls would be reduced by silvicultural treatments in the short and medium term, likely for a minimum of 10 years, (until the medium and large trees released from understory competition grow enough to provide a high canopy closure). This would make the project area even less suitable for spotted owls than it is already." Is that reduction of habitat consistent with the revised recovery plan for spotted owls? [ID#696]
Response: [Seq#669]

The treatment of dispersal habitat is consistent with the Recovery Plan. Dispersal habitat does not necessarily provide suitable nesting, roosting, foraging (NRF) habitat elements. Dispersal habitat consists of stands with adequate tree size and canopy closure to provide protection from avian predators and some foraging opportunities. The Recovery Plan at p.iv states *"Although spotted owls can disperse through highly fragmented forested areas, the stand-level and landscape-level attributes of forests needed to facilitate successful dispersal have not been thoroughly evaluated or described."*

The Recovery Plan continues *"Long-term spotted owl recovery could benefit from forest management where the basic goals are to restore or maintain ecological processes and resilience. Therefore, we recommend application of disturbance-based principles to such decisions (Franklin et al. 2002, 2006, 2007, Drever et al. 2006, Noon and Blakesley 2006, Carey 2007, Long 2009, Swanson et al. 2010). For example, some treatments may accelerate the development of spotted owl nesting habitat (Wimberly et al. 2004, Andrews et al. 2005), even if it temporarily degrades existing dispersal habitat (Franklin et al. 2006)."* [ID#696]
Associated Comments: [Seq#669]
The EA states, "The proposed treatments in the action alternatives …are consistent with the revised recovery plan for spotted owls (USFWS 2011), by treating primarily areas that are not currently

providing habitat, to better protect habitat from large scale, high-severity fires and to set appropriate stands (which are very limited in the analysis area) on a trajectory to become habitat in the future." (186.) The EA also states, "The amount of dispersal habitat for spotted owls would be reduced by silvicultural treatments in the short and medium term, likely for a minimum of 10 years, (until the medium and large trees released from understory competition grow enough to provide a high canopy closure). This would make the project area even less suitable for spotted owls than it is already." Is that reduction of habitat consistent with the revised recovery plan for spotted owls? [72-141]

Concern: [Seq#670]

The EA states, "In east-side habitats of the Washington and Oregon Cascade Range, the only viable conservation strategy is to actively manage fire-prone forests and landscapes to sustain spotted owl habitat (USDA 2012a)." (186.) This begs the question, how did the NSO ever exist in the east-side habitats of the Washington and Oregon Cascade Range prior to active management? [ID#697]
Response: [Seq#670]

This is outside the scope of the project. [ID#697]
Associated Comments: [Seq#670]
The EA states, "In east-side habitats of the Washington and Oregon Cascade Range, the only viable conservation strategy is to actively manage fire-prone forests and landscapes to sustain spotted owl habitat (USDA 2012a)." (186.) This begs the question, how did the NSO ever exist in the east-side habitats of the Washington and Oregon Cascade Range prior to active management? [72-142]

Concern: [Seq#671]

In addition to potentially mitigating the effects of a massive wildfire, the proposed actions in the Mission Forest Restoration Project will benefit a great deal of wildlife, including beaver and several listed fish species. I am in full support of the project. [ID#698]
Response: [Seq#671]

Thank you for your support! [ID#698]
Associated Comments: [Seq#671]
In addition to potentially mitigating the effects of a massive wildfire, the proposed actions in the Mission Forest Restoration Project will benefit a great deal of wildlife, including beaver and several listed fish species. I am in full support of the project. [76-3]

Concern: [Seq#672]

comment:18-69]

We disagree that there is a need for a Forest Plan amendment to exceed the standard for mule deer winter thermal cover retention based on the rationale given on p. 33 of the EA.

The need for restoration of fire as stated above is supported by the EA, p. 34, that states, "Fitkin and Heinlen conclude that unless steps to revitalize shrub growth on winter range and human development is managed, this declining trend can be expected to continue."

Why then, is appropriate shrub- steppe management so lacking in the EA?

[ID#699]

Response: [Seq#672]

Amendment: Based on literature review that failed to find a need for **40%** thermal cover and the landscape analysis that found an overabundance of dense stands, the amendment is needed to improve sustainability of forested stands.

Cook et al. (1998) concluded that their findings, combined with those of other thermal cover studies (e.g., Robinson 1960; Freddy 1986), offered strong evidence that influences of thermal cover on animal performance and, by extension, population dynamics was rarely of consequence. Hobbs (1989) also found thermal cover to have negligible effects on deer during winter. Cook et al. (2005) noted that there are tradeoffs between providing dense forest cover and providing forage resources, and concluded that cover is needed where security is low or where snow accumulations are factors limiting animal performance. They reviewed four experiments on quantitative value of thermal cover on deer and elk, and concluded that the weather-moderating effects of thermal cover were probably insufficient to be of much biological value. Mysterud and Ostbye (1999) found that, although cover is important for habitat selection of temperate ungulates, there is no hard evidence that cover affects demography so much that it limits population growth in forested areas, and that there is no evidence that specific arrangements of food and cover areas confer any large advantage to deer. Coulombe et al. (2011) concluded that deer space use appeared to be based more strongly on forage biomass than on cover, particularly at higher population densities. Findings by Masse and Cote (2009) suggested that habitat selection by white-tail deer at high population densities and in the absence of predators, were driven by forage acquisition rather than a trade-off between forage and cover. Updated literature search (April, 2017) did not locate

additional research on specific cover levels on either winter or other seasonal ranges. I found no references that indicated the need for 40% of the winter range to be in a cover condition.

Local studies of mule deer winter range use in Okanogan and Chelan counties found little use of dense cover stands. Naney and Myers (undated) followed 11 radio-collared deer and made 692 observations representing 1,044 deer in the Methow Valley during two winters. Of the deer observed, 73% were on sites with no conifer crown closure. Five % of the total winter observations were of deer using cover with greater than 60% crown closure. Ninety % of the winter range was dominated by habitat classes dominated by bitterbrush, sagebrush, bunchgrass, and pole-sized trees with undergrowth of shrubs or bunchgrass. In this study, deer did not appear to prefer thermal cover. However, they noted that observations were daylight hours only, and during winters that were warmer and drier than normal. Moore (2003), in a similar study in Chelan county, found that mule deer use was positively associated to areas without cover, and had a negative association to areas of cover. No difference in day and night habitat use was observed.

Appendix A of the Restoration Strategy discusses Forest Plan land allocations, including winter range as follows:

"Deer and Elk Winter Range - Previously, the retention or creation of winter thermal cover was deemed the most important habitat variable for winter survival of deer and elk. However, studies have shown that thermal cover is not as critical as other factors such as forage quality and quantity, and human disturbance (Cook et al. 1996, 1998). The forest plan for the Okanogan National Forest identifies explicit standards for the amount of thermal (snow intercept and winter) cover of 30-40 percent on deer winter range. However, the plan states that where natural forest vegetation is not present to support optimal cover amounts, we should manage existing vegetation to approach cover objectives on a sustained basis (MA5-6B)."

Derek Churchill's analysis of forest restoration needs based on stand structure departures indicated that dense stands were overrepresented in the landscape compared to historical conditions (Preliminary EA at p.64) . These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire.

The amendment would affect about 746 acres (Preliminary EA). In MA 14, up to 516 acres of winter thermal and 813 acres of snow-intercept thermal cover could be changed to a non-cover condition before the amount of cover would fall **below** forest plan standards. So, this amendment would allow treatment of an additional 134 acres of winter thermal and 593 acres of snow-intercept thermal cover in MA 14, for a total of 746 acres of thinning in winter range that would reduce cover below Forest Plan Standards and Guidelines.

The amendment would result in:

- a minor short- to medium-term reduction in deer cover on an additional *MAXIMUM* of 19 acres of MA 26 and 727 acres in MA 14 because these acres would not provide cover for the short-term, until canopies close again.

- a minor short-term positive effect because the stands would provide additional forage, and be more sustainable to loss from wildfire, insects and disease, and
- a minor, medium to long-term benefit because reduced tree competition allows for development of larger trees that are able to provide snow interception and thermal cover.
- Temporary, short-term, minor disturbance to deer on winter range on a maximum of 557 acres proposed for winter logging.

Shrub-steppe Habitat: Some shrub-steppe habitat is included in the landscape burns, in the Libby drainage. A very rough estimate of this is that about 579 acres of shrub-steppe habitat would be included in the burns. This is an attempt to balance the need to reduce fuels (Purpose and Need 1.3.6, Preliminary EA at p.14) with the need to retain winter forage for mule deer (Purpose and Need 1.3.4, Preliminary EA at p.14 *"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".)*

Restoration of shrublands to grasslands was not identified as a major restoration need in the landscape prescription and treatment recommendations for the watershed (Churchill 2016). Field review of the habitat showed that the bitterbrush plants were low-growing, healthy plants with small to medium stems, rather than the large, woody older plants that are less valuable, and less available, as deer browse. Due to the loss of winter browse for mule deer from recent fires, there is a need to retain shrubs that are providing winter forage.

In the Methow Valley, wildfires have burned large areas of deer winter range in the last 5 years. An estimated 51% of the winter range on the Methow Ranger District burned since 2012. Approximately 16% of the winter range burned with moderate to high severity effects to vegetation, which means a loss of winter deer food.

Another 13% of the winter range burned in 2006, for a total of 64% of the Forest winter range in the Methow burned in an 11-year period.

Field reviews of burned sites showed that on severely burned sites, only 12% of the bitterbrush plants were resprouting from the 2014 fire and 14% were resprouting from the 2006 fire. A moderately burned site from the 2006 fire showed 27% of the bitterbrush plants were dead with no resprouting occurring, 11 years post-burn. Other shrubs (serviceberry, ceanothus, willow, snowberry) on the winter range were resprouting on one severely burned site from the 2014 fire, but were small enough that they would not provide much forage during the winter yet. [ID#699]

Associated Comments: [Seq#672]

We disagree that there is a need for a Forest Plan amendment to exceed the standard for mule deer winter thermal cover retention based on the rationale given on p. 33 of the EA. The need for restoration of fire as stated above is supported by the EA, p. 34, that states, “Fitkin and Heinlen conclude that unless steps to revitalize shrub growth on winter range and human development is managed, this declining trend can be expected to continue.” Why then, is appropriate shrub- steppe management so lacking in the EA? [18-69]

Concern: [Seq#673]

Will there be any field verification studies done after the action to validate assumptions about model predictions? This should be part of the overall adaptive management program, which is currently missing from the plan. [ID#700]
Response: [Seq#673]

For wildlife, no formal post-activity research is planned. However, informal field reviews would occur to validate assumptions and to assure that design criteria and mitigations were incorporated. [ID#700]
Associated Comments: [Seq#673]
Will there be any field verification studies done after the action to validate assumptions about model predictions? This should be part of the overall adaptive management program, which is currently missing from the plan. [78-36]

Concern: [Seq#674]

Beaver don't need help. Pick a nice spot where a wetland is needed and drop them off. Being 2nd only to humans in their modifying capabilities, they have it down with what to do. [ID#701]
Response: [Seq#674]

Beaver reintroductions are successful about half the time (John Rohrer, pers. comm.), possibly due to inadequate food source. Beavers have been released in both sites previously. To increase the establishment rate, beaver are currently provided with desired food resources for several weeks after being dropped off. [ID#701]
Associated Comments: [Seq#674]
* Beaver don't need help. Pick a nice spot where a wetland is needed and drop them off. Being 2nd only to humans in their modifying capabilities, they have it down with what to do. [67-9]

Concern: [Seq#675]

While I understand the Forest Service is arguing that a short term adverse effect on factors such as stream sediment and habitat for endangered species is acceptable if it results in a long term positive effect, I have three major objections to this stance. First, there is not sufficient research to support the opinion that the adverse effect will be short term. You can say on paper that it will be short term, but

that doesn't make it true. What evidence do you have of this? [ID#702]
Response: [Seq#675]

Four terrestrial threatened species are considered in the biological assessment (draft), in project files. Effects to these species will be consulted on with U.S. Fish and Wildlife Service to obtain concurrence for the determination of "may affect, not likely to adversely affect" to gray wolves, grizzly bears, lynx and spotted owls. The reasoning for these determinations is provided in the biological assessment and the Wildlife Report (Glidden, 2017). Spotted owls and lynx are also discussed in the Preliminary EA at p.143-150.

Pilliod et al. (2006) summarized the effects of thinning and burning on wildlife in dry forest habitats and provided recovery times for habitat elements that I used in my analysis. Discussions with silviculturists provided information on timeframes for canopy closures and tree growth.

Effects are deemed to be short-term for spotted owls because the project disturbance would be short-term in any area, suitable habitat would not be downgraded, surveys have indicated that there is no active territory, and project components are consistent with the Revised Recovery Plan (2011). While snag loss is a long-term effect, snags would also be created by prescribed burning.

For lynx- effects would be short-term because very little habitat is affected, activities there would be short-term in any area, understory vegetation providing hare food recovers quickly, lynx are not particularly disturbed by human presence, and activities are consistent with the Lynx Conservation and Assessment Strategy (2014).

Bears and wolves are habitat generalists not dependent on a specific habitat type. Effects to prey species (largely deer in the Mission area) are discussed in the Preliminary EA at p. 155. Grasses and forbs (bear foods) recover quickly after thinning and burning, within 1-2 growing seasons, so this is a short-term effect. Shrub recovery is generally 1-10 years, a short to medium term effect.

[ID#702]
Associated Comments: [Seq#675]
While I understand the Forest Service is arguing that a short term adverse effect on factors such as stream sediment and habitat for endangered species is acceptable if it results in a long term positive effect, I have three major objections to this stance. First, there is not sufficient research to support the opinion that the adverse effect will be short term. You can say on paper that it will be short term, but that doesn't make it true. What evidence do you have of this? [29-13]

Concern: [Seq#676]

Has it been evaluated if efforts to improve habitat will be outweighed by negative impacts of timber harvest? [ID#703]
Response: [Seq#676]

Yes. Effects, both positive and negative, have been discussed in the Preliminary EA at p. 128-166, in the Wildlife Report (Glidden, 2017), in project files, and in the biological assessment (draft), in project files. [ID#703]

Associated Comments: [Seq#676]

Has it been evaluated if efforts to improve habitat will be outweighed by negative impacts of timber harvest? [29-16]

Concern: [Seq#677]

Wildlife - The section of the EA that discusses impacts and benefits of the proposed project to wildlife. The comparison of what habitat types and amounts will be affected by the project has been modeled using the EMDS. But since model output is not included in the EA, it is difficult to understand the level of confidence in the model, the margin of error and what species will actually lose in the overall outcome of the project. For example, how will martens fare with so much removal of fuels? Opening of the forest canopy and reducing fuel loading on the forest floor will negatively affect the quality and quantity of their preferred habitats (USDA Science Findings Issue 192, December 2016). [ID#704]

Response: [Seq#677]

Terrestrial species that would be resource indicators (because the project area is appropriate habitat and changes to the habitat would affect them in a positive or negative way) are discussed in the Preliminary EA at p. 128-166. The Wildlife Report (Glidden, 2017), in project files, discussed other threatened, endangered, sensitive, MIS, and focal wildlife species in a spreadsheet on p.12.

The EMDS process modelled habitats for spotted owls, marten, and white-headed woodpecker. Field verification revealed that spotted owl habitat was overrepresented by the model, so field results were relied on to determine suitable habitat.

Project activities are very limited in the mesic habitat used by marten. All old growth stands would be retained, and 50 acres would have understory treatments to protect large trees from wildfire and reduce competition, thus retaining old growth on the landscape for a longer period. Snags and large down wood would be retained except a minor loss of snags as hazard trees and along roads for firewood use (see three-toed woodpecker section, above). 5 acres of small tree thinning and 5 acres of aspen treatments would accelerate development of large tree habitat and increase habitat diversity (Wildlife Report at p.12).

The EMDS model was run for white-headed woodpecker habitat, and was modelled as ponderosa pine cover type with medium or large tree overstory of 30-40% canopy closure and elevations between 3,000' and 4,000'. The EMDS model shows no current high-quality habitat for white-headed woodpeckers in the Buttermilk drainage. Potential habitat occurs across 2% of the landscape, above historic levels which ranged from 0.01% to 0.3%. The mean patch size is slightly above historical levels and patches are closer currently than historically.

In the Libby drainage, the amount of current high-quality habitat for white-headed woodpeckers is within the historic range, although towards the lower end (range is 0.01-4.15%). Patch density, large patch index, and mean patch size are within HRV, although all towards the lower end of the range. Mean nearest neighbor value is below historical levels, which means that patches are closer than they were historically (Preliminary EA at p.136-137).

Effects to white-headed woodpeckers are disclosed in the Preliminary EA at p. 153-154.

[ID#704]

Associated Comments: [Seq#677]

12. Wildlife - The section of the EA that discusses impacts and benefits of the proposed project to wildlife. The comparison of what habitat types and amounts will be affected by the project has been modeled using the EMDS. But since model output is not included in the EA, it is difficult to understand the level of confidence in the model, the margin of error and what species will actually lose in the overall outcome of the project. For example, how will martens fare with so much removal of fuels? Opening of the forest canopy and reducing fuel loading on the forest floor will negatively affect the quality and quantity of their preferred habitats (USDA Science Findings Issue 192, December 2016). [78-35]

Concern: [Seq#678]

Forest plan survey requirements should be followed including monitoring for Survey and Manage Species, Okanogan National Forest Indicator Species and Okanogan National Forest Old Growth. The Northwest Forest Plan Survey and Manage requirements for late- seral species includes requirements to monitor for great gray owls, mountain moonwort and mountain lady's slipper, as well as to document whether other other Survey and Manage species will require surveys or management. [ID#705]

Response: [Seq#678]

Survey and Manage Species: Pre-disturbance surveys are required for species designated as "survey and manage" in all land allocations, if a project within the range of the species would negatively affect the species' habitat. Known sites (locations) for these species are protected. *Great gray owls are a survey and manage species under the Northwest Forest Plan, however surveys are not required because the project area is not within the area recommended for project level surveys* (Wildlife Report at p.7). Other survey and manage species- project is either outside the range for the species, or treatments would not affect their habitat (Wildlife Report, p. 8 and 11), in project files.

There is no survey requirement for the MIS species (except for spotted owls) or for old growth. Protocol surveys were completed for spotted owls in appropriate habitat. No responses from spotted owls were heard. [ID#705]

Associated Comments: [Seq#678]

· Forest plan survey requirements should be followed including monitoring for Survey and Manage Species, Okanogan National Forest Indicator Species and Okanogan National Forest Old Growth. The Northwest Forest Plan Survey and Manage requirements for late- seral species includes requirements to

monitor for great gray owls, mountain moonwort and mountain lady's slipper, as well as to document whether other other Survey and Manage species will require surveys or management. [18-15]

Concern: [Seq#679]

The two action alternatives (2 and 3) differ primarily in their treatment of a bridge over W. Buttermilk Creek and of the lands made accessible by that bridge. From an aquatics health perspective our collaborative would like to wholeheartedly support proposed actions described in Alternative 3. To help us reach consensus on a final action, however, we would like to see a more detailed discussion of the potential impacts to future terrestrial restoration objectives and fire management needs in areas that would remain closed under Alternative 3 but would become open under Alternative 2. While we are supportive of maximizing aquatics restoration opportunities in this project landscape, we believe it is essential to critically analyze the benefits and drawbacks of proposed actions that may have conflicting results for terrestrial and aquatics objectives to inform a final action. We suggest the final EA discuss this potential tradeoff in greater detail and potentially consider a hybrid of Alternatives 2 and 3 to balance these objectives, as needed. [ID#706]

Response: [Seq#679]

Alternatives 2 and 3 differ in a number of ways including: replacement of the bridge across the West Fork Buttermilk Creek to restore motorized access in Alternative 2; the application of rock to road surfacing at approximately 33 stream crossings in alternative 3; the construction of 4 rocked fords on stream crossings in Alternative 3; and differences in road management including the decommissioning of an additional 31.6 miles of roads (refer to figures 6, 7, and 8). Alternative 3 was designing to include additional projects to improve aquatic health.

Section 3.6, Fire/Fuels, indirectly displays the potential long-term impacts to vegetation and fire/fuels of not replacing the West Fork Buttermilk bridge in Figures 58 and 62 through the Resource Indicator of "FS Roads in project area > 0.5 miles" using the Measure of "Percent of FS roads greater than 1/2 miles in length that would remain or be decommissioned. Under Alternative 2, 89% of roads would remain, with 11% decommissioned. Under Alternative 3, 69% of roads would remain with 30% decommissioned.

Section 3.6.4.3.1, Effects, on page 161 of the Preliminary EA states that: "Alternative 2 would have 11% fewer miles of roads greater than 0.5 miles on NFS lands than Alternative 1, resulting in adverse, long-term, minor impacts to access for vegetation and fire management. Most of changes in road status between Alternatives 1 and 2 would be from open to closed, allowing for their continued use during emergency fire suppression or longer-range vegetation and fuels management activities. Decommissioning would occur on roads that access areas that are generally accessible from other roads, or on roads that access areas with limited forest management needs." This is again stated in Section 3.6.4.3.3., "Alternative 2 would implement proposed changes in transportation access that would cause adverse, long-term, minor impacts to road access for vegetation and fire management.

Section 3.6.4.4, Alternative 3, discusses under Section 3.6.4.4.1, Effects, the difference in effects without replacement of the bridge and other proposed road closures/decommissioning. "Alternative 3 would have 31% fewer miles of remaining roads that are greater than 0.5 miles that Alternative 1, resulting in adverse, long-term, moderate impacts to access for vegetation and fire management. Alternative 3 would have three times the amount of decommissioning compared to Alternative 2. The greatest impacts for vegetation and fire management would be approximately 2,645 acres . . .. Current limitations on the harvest technology and uneconomical alternatives such as helicopter or cable logging would further restrict opportunities to conduct treatments such as overstory thinning in future projects. Understory thinning and prescribed fire treatments may still occur in the future, but limited access would increase implementation costs and would increase safety hazards for personnel working in these areas." Fire suppression access would require longer access times with more limited resources (in the case of ground-based resources) or would be more dependent on aerially delivered firefighters.

[ID#706]

Associated Comments: [Seq#679]

The two action alternatives (2 and 3) differ primarily in their treatment of a bridge over W. Buttermilk Creek and of the lands made accessible by that bridge. From an aquatics health perspective our collaborative would like to wholeheartedly support proposed actions described in Alternative 3. To help us reach consensus on a final action, however, we would like to see a more detailed discussion of the potential impacts to future terrestrial restoration objectives and fire management needs in areas that would remain closed under Alternative 3 but would become open under Alternative 2. While we are supportive of maximizing aquatics restoration opportunities in this project landscape, we believe it is essential to critically analyze the benefits and drawbacks of proposed actions that may have conflicting results for terrestrial and aquatics objectives to inform a final action. We suggest the final EA discuss this potential tradeoff in greater detail and potentially consider a hybrid of Alternatives 2 and 3 to balance these objectives, as needed. [33-2]

Concern: [Seq#680]

Roads facilitate increased human intrusion into sensitive areas, resulting in poaching of rare plants and animals,

comment:11-34]

With regard to roads Alternative 3 is more suitable to wildlife than Alternative 2, Alternative 3 requires less road impact, with the exception of riparian areas. Alternative 3, however would increase roads accessible to cattle, as well as more miles of road decommissioned.

[comment:27-22]

8. The Forest Service must consider a broad array of impacts related to forest roads in its NEPA analysis.

The Forest Service should fully disclose the direct, indirect, and cumulative impact from roads in the project area to better inform the public. The agency may not ignore topics if the information is uncertain or unknown. Where information is lacking or uncertain, the Forest Service must make clear that the information is lacking, the relevance of the information to the evaluation of foreseeable significant adverse effects, summarize the existing science, and provide its own evaluation based on theoretical approaches. 40 C.F.R. § 1502.22.

Impacts from Forest Roads

The best available science shows that roads cause significant adverse impacts to National Forest resources. A 2014 literature review from The Wilderness Society surveys the extensive and best available scientific literature—including the Forest Service's General Technical Report synthesizing the scientific information on forest roads (Gucinski 2001)—on a wide range of road-related impacts to ecosystem processes and integrity on National Forest lands.

See

The Wilderness Society,

Transportation Infrastructure and Access on National Forests and Grasslands: A Literature Review

(May 2014)

comment:27-25]

Roads facilitate increased human intrusion into

sensitive areas, resulting in poaching of rare plants and animals [ID#707]
Response: [Seq#680]

The effects of the changes to the road system proposed in alternatives 2 and 3 is disclosed for terrestrial wildlife species in the Preliminary EA at p.146-165.

The Preliminary EA at p.157 discusses cumulative effects *"Road construction has resulted in habitat loss and increased access, which increases potential for disturbance, habitat avoidance, loss of snags through firewood cutting and danger tree management, mortality from collisions, hunting/poaching, trapping, and collecting."*

Appendix A of the Wildlife Report (Glidden, 2017) has been updated to summarize the effects of roads, from compilations by Trombulak and Frissell (2000) and Wisdom et al. (2000),copied below.

"Roads are generally associated with negative effects on both terrestrial and aquatic ecosystems (Trombulak and Frissell, 2000). Trombulak and Frissell list 7 general effects of roads on wildlife species:

- *Mortality from road construction*
- *Mortality from collision with vehicles*
- *Modification of animal behavior*
- *Alteration of the physical environment*

- *Alteration of the chemical environment*
- *Spread of invasive plants and animals.*
- *Increased use of areas by humans.*

Wisdom et al. (2000) summarized road-associated factors that negatively affect habitats or populations of terrestrial vertebrates:

- *Habitat Loss and Fragmentation including negative edge effects - roads can have the direct impact of converting large areas of habitat into non-habitat, while the indirect impacts of noise and exhaust can further reduce habitat quality and create avoidance of additional habitat in the surrounding area. In addition, species that respond negatively to openings or linear edges, such as habitat-interior species, avoid areas near roads.*
- *Disturbance (including noise and human presence), Displacement, Avoidance, Harassment (i.e., chronic negative interactions with humans) - Roads can directly interfere with life functions at specific use sites (e.g., increased disturbance of nest sites, breeding leks, or communal roost sites). This can result in spatial shifts of individuals and populations away from a road in relation to human activities on or near a road.*
- *Collisions - Death or injury resulting from a motorized vehicle running over or hitting an animal on a road.*
- *Over-hunting, Over-trapping, Poaching, and Collection - Roads can facilitate greater access into areas used for hunting and trapping and result in legal and illegal over-harvest of wildlife resources.*
- *Snag and Downed Log Reduction - Roads facilitate firewood collection which can result in a loss of snags and downed logs. Larger snags are typically desired by woodcutters and are also the most beneficial to many wildlife species such as flammulated owls and pileated woodpeckers.*
- *Barriers to Travel or Movement - Preclusion of dispersal, migration, or other movements as posed by a road itself or by human activities on or near a road or road network. Roads act as barriers, either partial or complete, for a variety of species."* [ID#707]

  Associated Comments: [Seq#680]

  Is the road network within the Mission Restoration project area appropriate to protect the habitat needs of big game, for protection and enhancement of resources such as riparian habitat, visual quality, recreation and commercial use, and various other resource needs, objectives, and desired future conditions within the project area?(p.20) [The existing road network is moving toward the desired conditions, however activities planned for this project will negatively impact those conditions.] [11-12]

  With regard to roads Alternative 3 is more suitable to wildlife than Alternative 2, Alternative 3 requires less road impact, with the exception of riparian areas. Alternative 3, however would increase roads accessible to cattle, as well as more miles of road decommissioned.] [11-34]

  8. The Forest Service must consider a broad array of impacts related to forest roads in its NEPA analysis. The Forest Service should fully disclose the direct, indirect, and cumulative impact from

roads in the project area to better inform the public. The agency may not ignore topics if the information is uncertain or unknown. Where information is lacking or uncertain, the Forest Service must make clear that the information is lacking, the relevance of the information to the evaluation of foreseeable significant adverse effects, summarize the existing science, and provide its own evaluation based on theoretical approaches. 40 C.F.R. § 1502.22. Impacts from Forest Roads The best available science shows that roads cause significant adverse impacts to National Forest resources. A 2014 literature review from The Wilderness Society surveys the extensive and best available scientific literature—including the Forest Service's General Technical Report synthesizing the scientific information on forest roads (Gucinski 2001)—on a wide range of road-related impacts to ecosystem processes and integrity on National Forest lands. See The Wilderness Society, Transportation Infrastructure and Access on National Forests and Grasslands: A Literature Review (May 2014). [27-22]

Roads facilitate increased human intrusion into sensitive areas, resulting in poaching of rare plants and animals, [27-25]

Concern: [Seq#681]

Frankly, it is difficult to comprehend the rationale for not exploring other options which do not merely replicate a century of failed forest policy. I also find it curious that members of the North Central WA Forest Health Collaborative (NCWFHC) include two logging companies and that one of the Chairs had previously worked for Vaagen Brothers Logging for some 20 years. Having attended four NCWFHC meetings, it was quite clear that the timber industry representatives had full expectation that the sales would go their way. I cannot imagine that this does not represent a level of partiality and an intent which ignores other courses of action and I feel fairly certain that this would be of great interest to the public at large and those pro-environmental groups who do not support so-called forest health collaboratives. Some might question the legality of inclusion of current and former timber industry representatives in a forest health collaborative. How does this represent a balanced point of view? [ID#708]

Response: [Seq#681]

As described in Section 1.2.2, Analysis Process, "The intent of this project is to evaluate the analysis area and prescribe and implement a set of treatments that rely on the principles of landscape and stand-level restoration ecology, wildfire hazard reduction, and transportation system management while meeting the direction of the amended Okanogan National Forest Land and Resource Management Plan and the Forest Restoration Strategy, to the extent feasible." The Interdisciplinary Team compared the existing condition to desired conditions that are consistent with the amended Okanogan National Forest land and Resource Management Plan and other guidance.

The EMDS tool was used to evaluate Libby Creek and Buttermilk sub-watersheds, showing where vegetation characteristics and processes such as stand structure and crown fire risk were outside of the

desired range of values, which helped set priorities for where vegetation-related restoration actions should occur.

The Twisp River Watershed Analysis (USDA 1995a) [covers the Buttermilk Creek sub-watershed] and the Libby Creek Watershed Analysis (USDA 1995b) provides much of the background for the Mission Restoration Project. These analyses determined that management activities have influenced watershed vegetation patterns and structures to the point where species composition and some structural stages currently are out of balance with the historical range of variation. Vegetation management recommendations included restoring stand canopy structures and species composition to historic levels by reducing excess understory stocking: maintaining mature, large diameter trees in overstocked stands by reducing excess understory stocking with timber harvest; thinning sub-merchantable trees; prescribed burning; reducing dwarf mistletoes infection in the understory. The analyses generally identified that 'Management activities in riparian and floodplain areas should maintain hydrologic and riparian functions to minimize increases in peak/base stream flow. Roads were addressed in a general fashion with a desire for a long-term slight decrease in overall open road density.

The Purpose and Need statements were not tailored to justify a pre-ordained management strategy; they were based on previous watershed condition assessments completed 20 years ago.

The North Central Washington Forest Health Collaborative, was launched in 2013 with facilitation by the Upper Columbia Salmon Recovery Board, is a diverse group of local stakeholders represented by conservation groups, tribal government, elected officials, the timber industry, and local, state and federal land managers working together to obtain the resources and community support to accelerate landscape-scale forest restoration on the Okanogan-Wenatchee National Forest in Chelan and Okanogan counties. The Nature Conservancy, The Wilderness Society, Conservation Northwest, Vaughan Brothers and AFRC are members of this group. The 2012 Planning Rule encourages collaborative type involvement. As can be seen by the list of some of the groups involved in the collaborative is not privatizing portions of the planning and implementation of management activity on federal lands.

The Collaborative helped collect some of the background data for the project area paying for Derek Churchill to run the EMDS timber stand model, and others collecting stream and roads related data. All of this data was reviewed by the Forest Service prior to use in the Environmental Assessment. Many of the potential timber stands identified for possible commercial harvest treatments were not included in the project for multiple reasons including after further review that there was not a need for treatment at the present time, treatment would require the construction of new roads, and/or treatments may be expensive due to the need to use cable yarding systems. Potential habitat identified as potentially suitable for spotted owls use in the EMDS model were reviewed on the ground and determined to not be suitable. As stated above the Collaborative is made up of diverse members with only several of the member organizations representing the timber industry. The chosen contract mechanism allows any suitable bidders to participate.

[ID#708]

Associated Comments: [Seq#681]

Frankly, it is difficult to comprehend the rationale for not exploring other options which do not merely

replicate a century of failed forest policy. I also find it curious that members of the North Central WA Forest Health Collaborative (NCWFHC) include two logging companies and that one of the Chairs had previously worked for Vaagen Brothers Logging for some 20 years. Having attended four NCWFHC meetings, it was quite clear that the timber industry representatives had full expectation that the sales would go their way. I cannot imagine that this does not represent a level of partiality and an intent which ignores other courses of action and I feel fairly certain that this would be of great interest to the public at large and those pro-environmental groups who do not support so-called forest health collaboratives. Some might question the legality of inclusion of current and former timber industry representatives in a forest health collaborative. How does this represent a balanced point of view? [47-3]

Concern: [Seq#682]

comment:11-31]

Alternative 2 was

developed from internal and external input

to address the project's Purpose and Need statements. It includes commercial and non-commercial thinning; prescribed fire; closing, opening, and decommissioning roads; temporary road construction; replacing culverts; bridge replacement; enhancing beaver and coarse woody debris habitat; and soil restoration treatments. Alternative 3 is identical to Alternative 2 except for the bridge replacement across West Fork Buttermilk Creek. (p.29) [

The action that drives these alternatives is the logging of commercial timber

, referred to here as "thinning". Without this element there would be no need for opening closed roads, constructing temporary roads, or much of the other road improvements required for hauling commercial logs. Necessary maintenance and correction of damage resulting from past or existing management decisions could be addressed without logging millions of board feet of timber on 1,952 acres or prescribed fire on over 11,000 acres (see Fig. 6) in the headwaters of two watersheds within a 50,000 acre area. In addition only the commercial logging activities would be initiated until public funding allocations were provided. [ID#710]

Response: [Seq#682]

Thank you for your comment. The purpose and need for the project is described in the Preliminary EA at p.12-14.

The commercial harvest of timber is proposed to be completed through 2 Stewardship Contracts. The 1st contract is estimated to contain 6 MMBF of timber volume and the 2nd contract estimated to contain 3 MMBF of commercial volume. The first contract is estimated to provide a product value of

approximately $395,000 which can be utilized to completed restoration projects. No estimate for the 2nd contract of product value has been made. Any product value generated by this 2nd contract can also be used for restoration activities in the project area. [ID#710]

Associated Comments: [Seq#682]

Alternative 2 was developed from internal and external input to address the project's Purpose and Need statements. It includes commercial and non-commercial thinning; prescribed fire; closing, opening, and decommissioning roads; temporary road construction; replacing culverts; bridge replacement; enhancing beaver and coarse woody debris habitat; and soil restoration treatments. Alternative 3 is identical to Alternative 2 except for the bridge replacement across West Fork Buttermilk Creek. (p.29) [The action that drives these alternatives is the logging of commercial timber, referred to here as "thinning". Without this element there would be no need for opening closed roads, constructing temporary roads, or much of the other road improvements required for hauling commercial logs. Necessary maintenance and correction of damage resulting from past or existing management decisions could be addressed without logging millions of board feet of timber on 1,952 acres or prescribed fire on over 11,000 acres (see Fig. 6) in the headwaters of two watersheds within a 50,000 acre area. In addition only the commercial logging activities would be initiated until public funding allocations were provided.] [11-31]

Concern: [Seq#683]

Lack of an adequate range of alternatives

It is remarkable that when it comes to the commercial timber extraction component of the MRP, two of the three alternatives are identical. The third alternative, the "no action" alternative, is a rhetorical alternative that is almost never selected by the responsible official (has it ever been selected by the Forest Service in Washingon State in an EA decision?) It would be helpful for citizens to know if "no action" is just a baseline for comparison to the preferred alternative, and not actually under practical consideration.

Essentially, the FS is presenting a single option regarding the highest-impact component of the project.

Numerous members of the public have voiced interest in the MRP; the majority have communicated concerns regarding the removal of commercial overstory timber. (see scoping period comments, which unfortunately were not posted online. The OWNF NEPA officer attributed to lack of technical ability to do so). There were multiple meetings with Forest Service personnel that addressed concerns about overstory logging (by the Libby Creek Watershed Association, Pacific Biodivirsity Institute); discussion

occurred at the public meeting held by the FS for scoping; and an alternative treatment proposal was submitted by the Pacific Biodivirsity Institute. At no point was there indication from the FS that any modification of the commercial harvest would be considered.

[ID#711]

Response: [Seq#683]

Scoping and Preliminary EA responses for the Mission Forest and Fuels Project show fairly polarized attitudes towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1, 2.1.3, and Figure 5 in the preliminary EA). Not harvesting timber was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action).

For NEPA documents, the document should document the examination of reasonable alternatives to the proposed action. An action alternative needs to meet a portion of the presented Purpose and Need statements and addressed one or more issues related to the proposed action. Since an alternative may be developed to address more than one issue, no specific number of alternatives is required or prescribed. Develop and consider alternatives that would resolve conflicts about the proposal.

Under the CEQ regulations, the Agency is required to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the National Environmental Policy Act (40 CFR 1501.2(c)).

As established in case law, the phrase "all reasonable alternatives" has not been interpreted to require that an infinite or unreasonable number of alternatives be analyzed, but does require a range of reasonable alternatives be analyzed. No specific number of alternatives is required or prescribed. Ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment.

In a few instances, the No Action Alternative has been selected but this likely was not documented in a decision but in the dropping of a proposed project from consideration at this time.

The no-action alternative provides a baseline for estimating the effect of other alternatives; therefore, include the effects of taking no-action in each environmental analysis. There is no requirement to include a no-action alternative in an EA. In an EA, the effects of a no-action alternative may be analyzed by contrasting the impacts of the proposed action and an alternative(s) with the current condition and expected future condition if the proposed action were not implemented (36 CFR 220.7(b)(2)(ii)).
[ID#711]

Associated Comments: [Seq#683]

Lack of an adequate range of alternatives It is remarkable that when it comes to the commercial timber extraction component of the MRP, two of the three alternatives are identical. The third alternative, the "no action" alternative, is a rhetorical alternative that is almost never selected by the responsible official (has it ever been selected by the Forest Service in Washingon State in an EA decision?) It would be helpful for citizens to know if "no action" is just a baseline for comparison to the

preferred alternative, and not actually under practical consideration. Essentially, the FS is presenting a single option regarding the highest-impact component of the project. [49-11]

Numerous members of the public have voiced interest in the MRP; the majority have communicated concerns regarding the removal of commercial overstory timber. (see scoping period comments, which unfortunately were not posted online. The OWNF NEPA officer attributed to lack of technical ability to do so). There were multiple meetings with forest service personnel that addressed concerns about overstory logging (by the Libby Creek Watershed Association, Pacific Biodivirsity Institute); discussion occurred at the public meeting held by the FS for scoping; and an alternative treatment proposal was submitted by the Pacific Biodivirsity Institute. At no point was there indication from the FS that any modification of the commercial harvest would be considered. [49-18]

alternatives to the Forest Service's singleminded approach should be considered. [67-19]

Three alternatives?: #1 is rarely chosen, #2=logging, #3=logging with a couple amenities thrown in to look generous. [67-45]

Lack of an adequate range of alternatives It is remarkable that when it comes to the commercial timber extraction component of the MRP, two of the three alternatives are identical. The third alternative, the "no action" alternative, is a rhetorical alternative that is almost never selected by the responsible official (has it ever been selected by the Forest Service in Washingon State in an EA decision?) It would be helpful for citizens to know if "no action" is just a baseline for comparison to the preferred alternative, and not actually under practical consideration. Essentially, the FS is presenting a single option regarding the highest-impact component of the project. [69-11]

Concern: [Seq#684]

The discussion of wildfire and fuel reduction in the EA, and the presentation to the public of how the MRP will affect fire behavior, has been misleading, and fails to present a number of key facts. The public's fear of fire is a key selling point for the preferred alternative, but its use in marketing a commercial logging project is inappropriate. Important factors that should be emphasized include: 1) during extreme fire weather, no amount of logging will stop the rapid progression of wildfire; 2) the key to the protection of structures is preparation in the home ignition zone, not logging miles away in remote forest landscapes; 3) overstory treatments are controversial in their effectiveness at modifying fire behavior; 4) logging can increase the speed at which fire travels through the forest; 5) retreatment is necessary on an ongoing basis for any fire resilience gains to be maintained; 6) the Forest Service plans ongoing suppression of naturally ignited wildfires; and 7) although large, severe fires are endemic to the dry western forests of the US, most of the acreage burned historically every year in the Western US is by a relatively small number of these large fires. By not discussing these factors in the EA and public

outreach materials, the public is not given the opportunity to examine the actual realities of wildfire, and how the proposed commercial logging could, and could not, modify its effects

[ID#712]

Response: [Seq#684]

No basis is provided for the statement "the public's fear of fire is a key selling point for the preferred alternative". The EA recognizes the role of fire in the landscapes within the project area (p. 140-141, revised preliminary EA). Several comments received for this project and similar thinning projects from residents, fire ecologists, and organizations including Conservation Northwest, North Central Washington Forest Health Collaborative (comprised of Tribal, Forest Service, environmental groups, forest industry representatives, and others) recognize the ecological role of fire in the forested landscapes within the project area and the great Methow Valley, and express support for the proposed action. The revised preliminary EA describes the purpose & need for proposed action (p. 4-6), effects of taking no action (Chapter 3, various locations in resource reports under heading "Alternative 2 - No Action"), and effects of taking the proposed actions are described in the EA (Chapter 3, various locations in resource reports under heading "Alternatives 2 and 3 - Proposed Action Effects Common to Both Action Alternatives or to Alternative 2 Only"). The effects of taking no action with respect to fire behavior are based on modeled fire behavior specific to the project area's fuels, topography, and typical weather patterns, and are described in terms of risks and effects (p. 133-139, revised preliminary EA).

In response to the "important factors" listed in the comment:

1) The EA recognizes that thinning and prescribed fire treatments may not be effective during periods of extreme fire weather (revised preliminary EA, p. 146-137).

2) Creating defensible space in the home ignition zone is very important in reducing the ignitability of the structure itself (e.g. fireproof roofing, leaf gutter guards, keeping the roof clean of material that will burn, and clearing the immediate surroundings of vegetation that will burn, such as brush, small diameter trees, wood piles, etc.; Firewise USA (http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape/defensible-space.aspx?sso=0)). These actions help suppression resources protect structures, as does the reduction of embers from short-range and long-range spotting, which can be carried over a mile from their source (http://learningcenter.firewise.org/Firefighter-Safety/1-11.php; Koo et al. 2010). Overstory thinning treatments proposed in this project would help reduce the likelihood of crown fire initiation and its resulting production of embers as described in the revised preliminary EA (Figure 61, p. 156).

3) Several peer-reviewed, data-based publications suggest that overstory thinning treatments can effectively modify fire behavior are referenced in the EA (p. 154,168, revised preliminary EA); the citations referenced include multiple references to further studies that are incorporated into this analysis by reference. Further studies supporting the ability of thinning treatments to affect forest structure and thereby fire behavior include Agee and Lolley 2006; Agee and Skinner 2005; Cochrane et al. 2012; Covington 2003); Fule et al. 2012; Graham et al. 2004; Harrod et al. 2007; Kennedy and Johnson 2014; Omi and Martinson 2004; Peterson et al. 2005; Prichard et al. 2010; Safford et al. 2009; Stephens and Moghaddas 2005; Stephens et al. 2009; Valliant et al. 2009; and USDA 2012a.

4) Ecologically robust treatments may often increase the rate of surface spread (Peterson et al., 2005) with the trade-off of decreasing burn severity and reducing the potential for long-range spotting that contributes to rapid fire growth and increase fire size (Cochrane et al. 2012). Decreasing crown fire behavior would reduce burn severity and reduce the potential for long-range spotting, consistent with characteristic fire behavior of forested areas with low crown fire risk such as those described in the project area. Where values such as developments are at risk, keeping fire on the ground is desirable because crown fire behavior generally creates greater fireline intensity that decreases or eliminates the ability to use direct suppression tactics by ground and aerial resources where structures are threatened. The trade-offs between reduced fire intensity and increased rate of spread is further described in the EA (Section 3.6.4.3.1 under heading "*Resource Indicator: Fire Behavior in WUI".*

5) The need for maintenance treatments is recognized and described in the EA (revised preliminary EA, p.157).

6) Fire suppression policy is addressed in the Forest Plan (USDA 1989). Modifying suppression policies was an Alternative Considered but Eliminated from Detailed Study as described in the EA (revised preliminary EA, p. 15-16). would entail amending several Forest Plan standards and guidelines that help inform suppression decisions, and is outside of the scope of this project because this level of change would be addressed through the Forest Plan revision process. Regardless of whether the Forest Plan and fire policy provided for reducing or eliminating suppression, decisions to do so would occur on a case-by-case basis for each wildfire and consider current and expected fire behavior and weather; values at risk (including human, terrestrial, and aquatic habitat; recreation; air quality; etc.); time of year; projected length of fire season; availability of suppression resources locally, regionally, and nationally; potential threats to other ownership such as state, Tribal, or private lands; etc.

7) No reference was provided to support the statement that "large, severe fires are endemic to the dry western forests of the US." Studies of local fire history (Everett et al. 2000) and assessments of western forest fire regimes (Agee 1994; Agee 1998; Hessburg and Agee, 2003) do not support this statement. The connection between the amount of acreage burned in the Western U.S. by large severe fires and the treatments proposed in this project is not explained by the commenters, nor do they distinguish between wildfires burning in forested areas similar to the project area versus those burning in other fuel models such as grass or brush. With respect to fire behavior, the intent of proposed treatments is to help restore resilience to wildfire that is characteristic of dry forests in the project area (described in revised preliminary EA, p.140-141), as well as to reduce the risk of wildfire in the Wildland Urban Interface, including the size of fires in these areas. [ID#712]

Associated Comments: [Seq#684]

The discussion of wildfire and fuel reduction in the EA, and the presentation to the public of how the MRP will affect fire behavior, has been misleading, and fails to present a number of key facts. Since the public's fear of fire is a key selling point for the preferred alternative, that is understandable, but inappropriate. Important factors that should be brought to the forefront include: 1) during extreme fire weather, no amount of logging will stop the rapid progression of wildfire. 2) the key to the protection of structures is preparation in the home ignition zone, not logging miles away in remote forest landscapes. 3) Overstory treatments are controversial in their effectiveness at modifying fire behavior. 4) Commercial thinning can increase the speed at which fire travels through the forest. 5) Retreatment is necessary on an ongoing basis for any fire resilience gains to be maintained. 6) The Forest Service plans ongoing suppression of virtually all naturally ignited wildfires. 7) Large, severe fires are endemic to the

dry western forests of the US. Most of the acreage burned historically every year in the Western US is by a relatively small number of these large fires. By not discussing these factors in the EA and public outreach materials, the public is not given the opportunity to examine the actual realities of wildfire, and how the proposed commercial thinning could, and could not, modify its affects. [49-16]

The discussion of wildfire and fuel reduction in the EA, and the presentation to the public of how the MRP will affect fire behavior, has been misleading, and fails to present a number of key facts. The public's fear of fire is a key selling point for the preferred alternative, but its use in marketing a commercial logging project is inappropriate. Important factors that should be emphasized include: 1) during extreme fire weather, no amount of logging will stop the rapid progression of wildfire; 2) the key to the protection of structures is preparation in the home ignition zone, not logging miles away in remote forest landscapes; 3) overstory treatments are controversial in their effectiveness at modifying fire behavior; 4) logging can increase the speed at which fire travels through the forest; 5) retreatment is necessary on an ongoing basis for any fire resilience gains to be maintained; 6) the Forest Service plans ongoing suppression of naturally ignited wildfires; and 7) although large, severe fires are endemic to the dry western forests of the US, most of the acreage burned historically every year in the Western US is by a relatively small number of these large fires. By not discussing these factors in the EA and public outreach materials, the public is not given the opportunity to examine the actual realities of wildfire, and how the proposed commercial logging could, and could not, modify its effects. [63-70]

The discussion of wildfire and fuel reduction in the EA, and the presentation to the public of how the MRP will affect fire behavior, has been misleading, and fails to present a number of key facts. Since the public's fear of fire is a key selling point for the preferred alternative, that is understandable, but inappropriate. Important factors that should be brought to the forefront include: 1) during extreme fire weather, no amount of logging will stop the rapid progression of wildfire. 2) the key to the protection of structures is preparation in the home ignition zone, not logging miles away in remote forest landscapes. 3) Overstory treatments are controversial in their effectiveness at modifying fire behavior. 4) Commercial thinning can increase the speed at which fire travels through the forest. 5) Retreatment is necessary on an ongoing basis for any fire resilience gains to be maintained. 6) The Forest Service plans ongoing suppression of virtually all naturally ignited wildfires. 7) Large, severe fires are endemic to the dry western forests of the US. Most of the acreage burned historically every year in the Western US is by a relatively small number of these large fires. By not discussing these factors in the EA and public outreach materials, the public is not given the opportunity to examine the actual realities of wildfire, and how the proposed commercial thinning could, and could not, modify its affects. [69-16]

Concern: [Seq#685]

While we can agree on much of the purpose and need of the proposed action, we strongly feel that certain modifications and/or explanations to the proposed project should be made to increase the probability of long-term success and community acceptance. In our earlier comments, we offered a conceptual approach to another alternative that recognized that the forest "health" treatments being

proposed are largely experimental and thus engender much uncertainty about their outcomes on the long term ecology of these public forest and range lands. Our suggested alternative included a robust adaptive management approach to track outcome, and scaled back the area to be actively managed to no more than half of the area currently proposed. We are disappointed that none of the alternatives as proposed reflect any of these important elements. [ID#713]

Response: [Seq#685]

The activities included in an alternative presented by the Pacific Biodiversity Institute (PBI) during public scoping were considered during the alternative development stage of the Mission Restoration Project analysis. 125 acres of proposed treatments in the WUI that were recommended by the PBI were added to both action alternatives. The rationale for declining to further consider the remaining components of the PBI alternative are shown on preliminary EA page 27. [ID#713]

Associated Comments: [Seq#685]

While we can agree on much of the purpose and need of the proposed action, we strongly feel that certain modifications and/or explanations to the proposed project should be made to increase the probability of long-term success and community acceptance. In our earlier comments, we offered a conceptual approach to another alternative that recognized that the forest "health" treatments being proposed are largely experimental and thus engender much uncertainty about their outcomes on the long term ecology of these public forest and range lands. Our suggested alternative included a robust adaptive management approach to track outcome, and scaled back the area to be actively managed to no more than half of the area currently proposed. We are disappointed that none of the alternatives as proposed reflect any of these important elements. [78-2]

Concern: [Seq#686]

The notion that the FS needs to manipulate the stand species, spacing and composition to "restore" it is a fabricated idea not supported by many scientists.

The forest will restore itself if the FS would simply stop doing what it has been doing to make it the way it is: stop roading, logging and letting cows ruin the natural ecological balance.

These are the past management activities that have created much damage, as pointed out by scoping comments and the FS itself,

but there is no alternative given that does not have commercial logging or that addresses range as a huge part of the problem. [ID#714]

Response: [Seq#686]

The proposed vegetation management is in line with the 2012 Okanogan-Wenatchee National Forest Restoration Strategy, (FRS) which is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review

process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques.

The team considered an alternative that does not include timber harvest, but this alternative was not fully developed (see Preliminary EA, page 28). The effects of No Action are addressed throughout the EA and are compared to the effects of Alternatives Two and Three (see EA pages 36-44). Because fuel levels are so much higher than that of historical conditions, unplanned fire (results of No Action) would have much more negative effect on upland and riparian forest habitat as well as to neighboring lands and property than the planned activity (see EA pages 150-170). While some aspects of natural fire in this landscape would be beneficial, there would be many components of the stated Purpose and Need, late and old structure development being just one example, that would not be achieved within a reasonably period of time, but instead would take hundreds of years to establish after the expected uncharacteristic wildfire kills the existing late and old structure in the analysis area (Preliminary EA, pages 120-121).

Not all of the effects of previous management are from commercial logging. There are also landscape departures caused from not allowing fire or from not encouraging fire (as did native American peoples) on the landscape, which resulted in too many multistoried stands as compared to historical conditions. Not all logging has the same effects. Under current regulations and the use of the best management practices described in Appendix D of the EA, the proposed harvest treatments would have the effect of reducing overstory and understory stocking levels and canopy cover to historical levels, while minimizing effects to soils and riparian systems. This activity would provide resiliency to insect, disease and wildfire events. There is no other way to achieve that result that is as safe, responsible and economic as commercial harvest. The target landscape conditions are identified as where the historical and future condition's overlap (Preliminary EA page 103).

The effects of livestock grazing in the project area were addressed in the 2011 Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (see preliminary EA page 24).

[ID#714]

Associated Comments: [Seq#686]

The notion that the FS needs to manipulate the stand species, spacing and composition to "restore" it is a fabricated idea not supported by many scientists. The forest will restore itself if the FS would simply stop doing what it has been doing to make it the way it is: stop roading, logging and letting cows ruin the natural ecological balance. These are the past management activities that have created much damage, as pointed out by scoping comments and the FS itself, but there is no alternative given that does not have commercial logging or that addresses range as a huge part of the problem. [68-39]

Concern: [Seq#687]

Do not do commercial timber harvest; only consider prescribed fire treatments RESPONSE: This approach would not meet the Purpose and Needs (P&N) #3, #5, or #6, and is an Alternative Considered but Eliminated from Detailed Study, section 2.1. Commercial harvest treatments move the existing stand structure towards desired conditions with more resiliency to fires than just prescribed fire treatments alone. **COMMENT: of course it does not meet P&N 3,5 &6 because these are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale.**

[ID#715]
Response: [Seq#687]

This is an opinion. Timber harvest is approximately 1,952 acres of the total of 10,255 acres planned for thinning. The need and effects of timber harvest on effectiveness and duration is found in preliminary EA on pages 123-127 and 155-162. [ID#715]
Associated Comments: [Seq#687]
Do not do commercial timber harvest; only consider prescribed fire treatments RESPONSE: This approach would not meet the Purpose and Needs (P&N) #3, #5, or #6, and is an Alternative Considered but Eliminated from Detailed Study, section 2.1. Commercial harvest treatments move the existing stand structure towards desired conditions with more resiliency to fires than just prescribed fire treatments alone. COMMENT: of course it does not meet P&N 3,5 &6 because these are the fabricated reasons for this project that are not scientifically supported and they give a nice mask to the project really being a timber sale. [68-60]

Concern: [Seq#688]

In adopting the Restoration Strategy (RS) as its management direction, the FS installs an analysis process into the Mission EA which has no demonstrated scientific support or validity for such a purpose.

The EA at p. 12 states: One analysis tool used by interdisciplinary team members in this project was the Ecosystem Management Decision Support (EMDS) modeling tool (EMDS; Hessburg 2013). This tool used photo-interpreted data supported by field verification and professional expertise to compare existing vegetation conditions to both historic reference conditions and to likely future conditions (given conservatively-estimated changes in climate). The EMDS tool evaluated the Libby and Buttermilk Creek sub-watersheds separately, showing where vegetation characteristics and processes such as stand structure and crown fire risk were outside of the desired range of values, and helped set priorities for where vegetation-related restoration actions should occur. **However it's clear from the EA the EMDS is not "one analysis tool"-it is THE analysis tool the FS relies upon to develop the project's purpose and need, and propose vegetation treatments (typically logging and burning). The EA discloses little regarding the limitations of that model for directing this active management and conducting such analyses.** [ID#716]
Response: [Seq#688]

The 2012 Okanogan-Wenatchee National Forest Restoration Strategy (FRS) is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques.

EMDS was used to identify **where** desired conditions (Resilient Forest/Habitat) could best be placed on the landscapes in order to meet Purposed and Need of Vegetation structure, habitat and fuel levels and composition. Other models and known vegetation responses to disturbance show the effectiveness of the treatments (Preliminary EA - pages 124-127 , FlamMap, LANDFIRE, pages 138-140) as well as the effects to forest vegetation patterns (preliminary EA pages 123-127, 136-137).

[ID#716]

Associated Comments: [Seq#688]

In adopting the Restoration Strategy (RS) as its management direction, the FS installs an analysis process into the Mission EA which has no demonstrated scientific support or validity for such a purpose. The EA at p. 12 states: One analysis tool used by interdisciplinary team members in this project was the Ecosystem Management Decision Support (EMDS) modeling tool (EMDS; Hessburg 2013). This tool used photo-interpreted data supported by field verification and professional expertise to compare existing vegetation conditions to both historic reference conditions and to likely future conditions (given conservatively-estimated changes in climate). The EMDS tool evaluated the Libby and Buttermilk Creek sub-watersheds separately, showing where vegetation characteristics and processes such as stand structure and crown fire risk were outside of the desired range of values, and helped set priorities for where vegetation-related restoration actions should occur. However it's clear from the EA the EMDS is not "one analysis tool"-it is THE analysis tool the FS relies upon to develop the project's purpose and need, and propose vegetation treatments (typically logging and burning). The EA discloses little regarding the limitations of that model for directing this active management and conducting such analyses. [72-13]

Concern: [Seq#689]

The range of alternatives is too narrow - While we were heartened to see the addition of a second alternative (to the No Action Alt.) provided in the initial scoping document, the actual differences between the two action alternatives are insufficient to qualify as a meaningful consideration of other paths to take to accomplish the same ecological endpoints. [ID#717]

Response: [Seq#689]

Scoping and Preliminary EA responses for the Mission Forest and Fuels Project show fairly polarized attitudes towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1, 2.1.3, and

Figure 5 in the preliminary EA). Not harvesting timber was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action).

For NEPA documents, the document should document the examination of reasonable alternatives to the proposed action. An action alternative needs to meet a portion of the presented Purpose and Need statements and addressed one or more issues related to the proposed action. Since an alternative may be developed to address more than one issue, no specific number of alternatives is required or prescribed. Develop and consider alternatives that would resolve conflicts about the proposal.

Under the CEQ regulations, the Agency is required to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the National Environmental Policy Act (40 CFR 1501.2(c)).

As established in case law, the phrase "all reasonable alternatives" has not been interpreted to require that an infinite or unreasonable number of alternatives be analyzed, but does require a range of reasonable alternatives be analyzed. No specific number of alternatives is required or prescribed. Ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment.

Alternative 3 was created to increase the scale of aquatic restoration and to address Purpose and Need #1, Hydrologic Function and Aquatic Habitat. Alternative 3 was developed in response to comments received during the scoping period that called for increasing the scale of aquatic restoration in the project area. More specifically the differences are not replacing the West Fork Buttermilk Creek bridge eliminating motorize use of the area, providing additional rock surfacing at 33 stream crossings, rocking open fords on 4 stream crossings, increasing road decommissioning from 33.6 miles to 56.2 miles, and permitting fewer closed roads with administrative access (13.1 miles versus 4.8 miles).

The interdisciplinary team believes the actual differences between the two action alternatives are meaningful due to reduce stream sedimentation, improved wildlife habitat, and impacts on future land management from loss of access including vegetation and fuels management and recreation access. [ID#717]

Associated Comments: [Seq#689]

4. The range of alternatives is too narrow - While we were heartened to see the addition of a second alternative (to the No Action Alt.) provided in the initial scoping document, the actual differences between the two action alternatives are insufficient to qualify as a meaningful consideration of other paths to take to accomplish the same ecological endpoints. [78-23]

Concern: [Seq#690]

"If current practices result in species becoming threatened or endangered, water quality standards being exceeded, or public values and trust violated, then dramatic readjustments to current stewardship

activities are clearly needed. Preserving options is also a way of explicitly acknowledging our incomplete knowledge of complex ecosystems that is, our ignorance of how they function and their interactions with natural and human influenced disturbance regimes and our responsibilities to future human generations. This philosophy is perhaps best encapsulated by focusing more on what we leave behind in exploited ecosystems than on what is taken from them (Committee of Scientists Third draft Preliminary report, July 98)." [ID#718]

Response: [Seq#690]

Scoping and Preliminary EA responses for the Mission Forest and Fuels Project show fairly polarized attitudes towards timber harvest. Either a response supported the proposed action, which included nearly 2,000 acres of timber harvest or it rejected timber harvest outright (See sections 2.1.1, 2.1.3, and Figure 5 in the preliminary EA). Not harvesting timber was determined to not meet most of the vegetation based Purpose and Need statements. An alternative is analyzed in the EA that does not include timber harvest (Alternative 1 - No Action).

Based on project analysis, proposed practices will not result in species becoming threatened or endangered (see Section 3.7.4.3.1, Effects, in the Preliminary EA).

In east-side habitats of the Washington and Oregon Cascade Range, the only viable conservation strategy for spotted owls is to actively manage fire-prone forests and landscapes to sustain spotted owl habitat. The proposed treatments in the action alternatives would achieve this, and are consistent with the revised recovery plan for spotted owl (USFWS 2011), by treating primarily areas that are not currently providing habitat, to better protect habitat from large scale, high-severity fires and to set appropriate stands on a trajectory to become habitat in the future. Alternative 2 and 3 "May affect, but is not likely to adversely affect spotted owls."

Approximately 1,770 acres of treatment would occur in the LAUs in the analysis area. However, only 55 acres occur within the boreal forest area where lynx are expected. These stands have grown out of reach of hares and are no longer providing a food resource for hares. Overstory treatments would result in more open habitat that will generate browse for hares, an important prey item for lynx. Alternative 2 and 3 "May affect, but is not likely to adversely affect lynx."

Alternative 2 and 3 "May Affect, and would likely adversely affect, steelhead and bull trout species and their critical habitat. Adverse impacts would be temporary and negligible to minor in consequence. Habitat conditions for ESA-listed species would move towards desired habitat conditions. This project would contribute towards the recovery of these species across the Upper Columbia Basin (Sections 3.3.4.3.3 and 3.3.4.4.3).

Public values and trust should not be violated. [ID#718]

Associated Comments: [Seq#690]

"If current practices result in species becoming threatened or endangered, water quality standards being exceeded, or public values and trust violated, then dramatic readjustments to current stewardship activities are clearly needed. Preserving options is also a way of explicitly acknowledging our incomplete knowledge of complex ecosystems that is, our ignorance of how they function and their interactions with natural and human influenced disturbance regimes and our responsibilities to future human generations. This philosophy is perhaps best encapsulated by focusing more on what we leave behind in

exploited ecosystems than on what is taken from them (Committee of Scientists Third draft Preliminary report, July 98)." [63-37]

Concern: [Seq#691]

Then there are the "likely future conditions given conservatively-estimated changes in climate" (Id.) which are presented as a range in vegetation conditions based vaguely upon the **FS's questionable interpretation of climate models for the region.** In other words, the vegetation condition arrows are not merely being shot at targets with ranges defined by historic reference conditions (themselves based upon insufficient data and/or of single snapshots in time)-the ranges of these targets are further blurred by estimates of ecosystem changes due to climate change. And without a proper NEPA analysis, we're to believe this methodology will pan out- not resulting in any unforeseen significant impacts on the environment.

The RS is unprecedented management hubris, on a grand scale heretofore not seen. Frissell and Bayles (1996) note: Most philosophies and approaches for ecosystem management put forward to date are limited (perhaps doomed) by a failure to acknowledge and rationally address the overriding problems of uncertainty and ignorance about the mechanisms by which complex ecosystems respond to human actions. They lack humility and historical perspective about science and about our past failures in management. They still implicitly subscribe to the scientifically discredited illusion that humans are fully in control of an ecosystemic machine and can foresee and manipulate all the possible consequences of particular actions while deliberately altering the ecosystem to produce only predictable, optimized and socially desirable outputs. Moreover, despite our well-demonstrated inability to prescribe and forge institutional arrangements capable of successfully implementing the principles and practice of integrated ecosystem management over a sustained time frame an at sufficiently large spatial scales, would-be ecosystem managers have neglected to acknowledge and critically analyze past institutional and policy failures. They say we need ecosystem management because public opinion has changed, neglecting the obvious point that public opinion has been shaped by the glowing promises of past managers and by their clear and spectacular failure to deliver on such promises. [ID#719]

Response: [Seq#691]

The proposed vegetation management is in line with the Forest Restoration Strategy - 2012 (FRS). The 2012 Okanogan-Wenatchee National Forest Restoration Strategy is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques.

The target range of variation is the overlap of the historical range of variability and the likely future range of variability. This ensures that even if climate change models are inaccurate that the resulting stand conditions would still be within or moving towards the historical bounds.

[ID#719]

Associated Comments: [Seq#691]

Then there are the "likely future conditions given conservatively-estimated changes in climate" (Id.) which are presented as a range in vegetation conditions based vaguely upon the FS's questionable interpretation of climate models for the region. In other words, the vegetation condition arrows are not merely being shot at targets with ranges defined by historic reference conditions (themselves based upon insufficient data and/or of single snapshots in time)-the ranges of these targets are further blurred by estimates of ecosystem changes due to climate change. And without a proper NEPA analysis, we're to believe this methodology will pan out- not resulting in any unforeseen significant impacts on the environment. The RS is unprecedented management hubris, on a grand scale heretofore not seen. Frissell and Bayles (1996) note: Most philosophies and approaches for ecosystem management put forward to date are limited (perhaps doomed) by a failure to acknowledge and rationally address the overriding problems of uncertainty and ignorance about the mechanisms by which complex ecosystems respond to human actions. They lack humility and historical perspective about science and about our past failures in management. They still implicitly subscribe to the scientifically discredited illusion that humans are fully in control of an ecosystemic machine and can foresee and manipulate all the possible consequences of particular actions while deliberately altering the ecosystem to produce only predictable, optimized and socially desirable outputs. Moreover, despite our well-demonstrated inability to prescribe and forge institutional arrangements capable of successfully implementing the principles and practice of integrated ecosystem management over a sustained time frame an at sufficiently large spatial scales, would-be ecosystem managers have neglected to acknowledge and critically analyze past institutional and policy failures. They say we need ecosystem management because public opinion has changed, neglecting the obvious point that public opinion has been shaped by the glowing promises of past managers and by their clear and spectacular failure to deliver on such promises. (Emphases added.) [72-17]

Concern: [Seq#692]

In addition, regarding invasive plants the EA states:

The combination of herbicide, biological, and manual treatments would be conducted by the District Weed program with herbicide treatments authorized under the 2000 Okanogan National Forest Integrated Weed Management EA Decision Notices and the recently completed 2017 Forest-wide Site-Specific Invasive Plants Environmental Impact Statement. This EIS provides for invasive plant treatments in the project area and will supersede previous decisions.

The Mission EA cites none of the monitoring results conducted under the direction of the 2000 Okanogan National Forest Integrated Weed Management EA or Decision Notice, and fails to explain how the Mission project is responding to the new Forest-wide Site-Specific Invasive Plants EIS purpose and need [ID#720]

Response: [Seq#692]

The purpose and need for the new Forest-wide Site-Specific Invasive Plants EIS (2017 EIS) is to expand treatment options and expand the treatment area to the entire National Forest to effectively suppress, contain, control and/or eradicate invasive plants species. The purpose of the project is to cost-effectively treat invasive plants, while minimizing risks from treatment. When implemented (2017), the entire Mission project area can be treated under the EIS using the most effective herbicides that minimize treatment risk. Not all sites would be treated with herbicide, manual treatment will be implemented where effective to meet the purpose and need. Under the 2000 Weed EA, only the Buttermilk and Twisp River portion of the project area were covered with currently only 4 New Invader sites in this area. These sites have been effectively controlled with not plants found in recent inspections. No herbicide treatment under the 2000 EA was located within the Libby watershed so there are no monitoring results for herbicide treatment, although there has been some manual treatment of some of the new invader weeds. Bio control agents have been well established on diffuse knapweed in the Libby Creek area. Monitoring results have found that the seed eating weevil, *larinus minutus* continues to retard the knapweed populations with some rather dramatic reductions in density in some years. The knapweed populations swing depending on the weevil populations. (2017 EIS, page 6, EA chapter 3, section 3.11, page 257, 266) [ID#720]

Associated Comments: [Seq#692]

In addition, regarding invasive plants the EA states: The combination of herbicide, biological, and manual treatments would be conducted by the District Weed program with herbicide treatments authorized under the 2000 Okanogan National Forest Integrated Weed Management EA Decision Notices. The Forest is finalizing an environmental analysis (the Forest-wide Site- Specific Invasive Plants Environmental Impact Statement) with a decision expected in 2017. This EIS will provide for invasive plant treatments in the project area and will supersede previous decisions. The Mission EA cites none of the monitoring results conducted under the direction of the 2000 Okanogan National Forest Integrated Weed Management EA or Decision Notice, and fails to explain how the Mission project is responding to the new Forest-wide Site-Specific Invasive Plants EIS purpose and need. [72-9]

Concern: [Seq#693]

We recognize the risk and likelihood of environmental damage from past and ongoing livestock grazing in the Mission project area, and also note the EA's failure to adequately analyze and disclose the cumulative effects of this grazing. With this failure, the FS reveals its bias for accommodating livestock

interests above the needs of the general public, who need to understand how the Mission project activities and impacts interact synergistically and integrate with livestock grazing activities and impacts.

For example, Baker et al., 2006 state:

Livestock grazing may have complex effects, but generally increases tree density in formerly open stands and thereby increases the fine fuels that contribute most to fire intensity and severity. Removal of grass reduces competition, allowing more trees to successfully regenerate, shown experimentally in the Southwest (Pearson, 1942), and also by paired comparisons in other parts of the West, in which mesas subject to livestock grazing have much higher tree density than do comparable nearby ungrazed mesas (Rummell, 1951; Madany & West, 1983). Grazing can also initially reduce the quantity of fine grass fuels needed for surface fires, and the onset of heavy grazing in south-western ponderosa pine landscapes is temporally associated with a marked reduction in surface fires (e.g. Savage & Swetnam, 1990). However, fine fuels are likely not to have remained low for long. Higher tree density increases fine fuels that lead to faster fire spread and increases ladder fuels that lead fire into the canopy (Zimmerman & Neuenschwander, 1984), together increasing the potential for more fires and more severe fires. However, this potential effect is most important in mature and old-growth forests, which are rare today, and in younger forests evidence of tree density increase is difficult to detect or is minor, as explained later.

[

[ID#721]

Response: [Seq#693]

Thank you for your reference on grazing and tree density and fine fuels. The cumulative effects of the Mission project combined with livestock grazing are summarized in section 3.10.4.5 Summary of Effects. Specifically, the effects of the proposed restoration treatment on livestock grazing are discussed in section 3.10.4 Environmental Consequences. Grazing impacts under both the no-action and the action alternatives are analyzed. The interdisciplinary team identified all resource indicators pertinent to the cumulative effects of grazing and project activities. The analysis concluded that management objectives would be met to protect rangeland resources and continue the management of the affected grazing Allotment while providing for forest health. (Draft EA section 3.10, 239-244, 250-252) [ID#721]

Associated Comments: [Seq#693]

We recognize the risk and likelihood of environmental damage from past and ongoing livestock grazing in the Mission project area, and also note the EA's failure to adequately analyze and disclose the cumulative effects of this grazing. With this failure, the FS reveals its bias for accommodating livestock interests above the needs of the general public, who need to understand how the Mission project activities and impacts interact synergistically and integrate with livestock grazing activities and impacts. For example, Baker et al., 2006 state: Livestock grazing may have complex effects, but generally increases tree density in formerly open stands and thereby increases the fine fuels that contribute most to fire intensity and severity. Removal of grass reduces competition, allowing more trees to successfully

regenerate, shown experimentally in the Southwest (Pearson, 1942), and also by paired comparisons in other parts of the West, in which mesas subject to livestock grazing have much higher tree density than do comparable nearby ungrazed mesas (Rummell, 1951; Madany & West, 1983). Grazing can also initially reduce the quantity of fine grass fuels needed for surface fires, and the onset of heavy grazing in south-western ponderosa pine landscapes is temporally associated with a marked reduction in surface fires (e.g. Savage & Swetnam, 1990). However, fine fuels are likely not to have remained low for long. Higher tree density increases fine fuels that lead to faster fire spread and increases ladder fuels that lead fire into the canopy (Zimmerman & Neuenschwander, 1984), together increasing the potential for more fires and more severe fires. However, this potential effect is most important in mature and old-growth forests, which are rare today, and in younger forests evidence of tree density increase is difficult to detect or is minor, as explained later. [72-59]

Concern: [Seq#694]

It us a requirement of the AMP (Allotment Management Plan) to meet allowable use in these riparian areas." (EA 237.) Does the AMP require, or does it merely allow, livestock grazing in ESA-listed fish species' critical habitat? [ID#722]
Response: [Seq#694]

It is not a requirement to graze the riparian areas. The AMP only allows grazing in the critical habitat before or after the ESA-listed fish spawning periods. [ID#722]
Associated Comments: [Seq#694]
"It us a requirement of the AMP (Allotment Management Plan) to meet allowable use in these riparian areas." (EA 237.) Does the AMP require, or does it merely allow, livestock grazing in ESA-listed fish species' critical habitat? [72-177]

Concern: [Seq#695]

The EA states that logging roads are needed for "proper grazing distribution." Is this considered in the minimum roads analysis? How does the FS account for the erosion and weed spread that "grazing distribution" causes to roads? [ID#723]
Response: [Seq#695]

The need to retain livestock access on roads in order to maintain livestock distribution is considered in the minimum roads analysis. The Mission analysis discloses that transportation corridors are considered

to be a primary vector of weed spread with livestock being a secondary vector. It is likely that some of the New Invader populations were introduced by cattle within the Mission Analysis Area, but despite the relatively large number of cattle that are brought in from areas outside the Mission Analysis Area, extensive weed surveys in recent years have not detected any of the weed species listed as Potential Invaders and most invasive populations are along roads (not in the general forest where cattle graze) which suggests that vehicles were the primary vector of spread. To account for weed spread and erosion that "grazing distribution" causes to roads, the FS looks at the miles of roads proposed to be decommissioned as decommissioning would have the greatest effect in reducing the potential for spread of existing weed populations by cattle and potential for erosion. A total of 33.6 and 56.2 miles of road out of a total of 133.92 miles would be decommissioned under Alternatives 2 and 3 respectively. The EA states that the risk of spread of the high priority New Invader weeds from existing populations is relatively low as there are only 19 acres within the project area. Weed spread caused by livestock grazing is expected to be low based on the current new invader weed presence. (EA sections 3.10 and 3.11) [ID#723]

Associated Comments: [Seq#695]

The EA states that logging roads are needed for "proper grazing distribution." Is this considered in the minimum roads analysis? How does the FS account for the erosion and weed spread that "grazing distribution" causes to roads? [72-199]

Concern: [Seq#696]

3.3.4.2.3 Summary of Alternative 1 (No Action) Alternative 1 would have no direct impacts to water quality, fish habitat, and individual fish species. However, the existing road network would continue to contribute excessive fine sediment levels that would maintain high fine sediment levels in Libby Creek.

Fish habitat complexity would continue to improve naturally

, but at a pace that would likely take decades to create suitable habitat conditions. Low base flows would continue to be a limiting factor that reduces fish production. Fish barriers would remain, preventing full habitat access and maximum fish production.

In the long term, taking no action would maintain current at-risk hydrologic processes and aquatic habitat conditions that would impede recovery of ESA-listed fish species

.(p.68) [

These conclusions are apparently based on the assumption that the Forest would take no action to solve existing problems in these watersheds without initiating a commercial logging operation.

Beaver reintroduction is an example of a "restoration" project currently underway; would it be terminated if logging of millions of board feet of timber is not initiated? Necessary road maintenance

and culvert work should go ahead without Alternative 2 or 3 of the Mission Restoration Project. Those actions will occur when allocation of public funding allows without regard to logging.]

[[ID#724]
Response: [Seq#696]

These effects are written based on the Forest Service would take

no action.

Beaver reintroduction is an example of a "restoration" project currently underway. It would not be terminated. These other measures could go ahead under separate NEPA, such as a Categorical Exclusion (CE) if other funding was available. These actions were considered with the vegetation management treatments if funding was available under the Stewardship Contract or from other sources to implement them.

The no-action alternative provides a baseline for estimating the effect of other alternatives; therefore, include the effects of taking no-action in each environmental analysis. There is no requirement to include a no-action alternative in an EA. In an EA, the effects of a no-action alternative may be analyzed by contrasting the impacts of the proposed action and an alternative(s) with the current condition and expected future condition if the proposed action were not implemented (36 CFR 220.7(b)(2)(ii)).
[ID#724]
Associated Comments: [Seq#696]
3.3.4.2.3 Summary of Alternative 1 (No Action) Alternative 1 would have no direct impacts to water quality, fish habitat, and individual fish species. However, the existing road network would continue to contribute excessive fine sediment levels that would maintain high fine sediment levels in Libby Creek. Fish habitat complexity would continue to improve naturally, but at a pace that would likely take decades to create suitable habitat conditions. Low base flows would continue to be a limiting factor that reduces fish production. Fish barriers would remain, preventing full habitat access and maximum fish production. In the long term, taking no action would maintain current at-risk hydrologic processes and aquatic habitat conditions that would impede recovery of ESA-listed fish species.(p.68)
[These conclusions are apparently based on the assumption that the Forest would take no action to solve existing problems in these watersheds without initiating a commercial logging operation. Beaver reintroduction is an example of a “restoration” project currently underway; would it be terminated if logging of millions of board feet of timber is not initiated? Necessary road maintenance and culvert work should go ahead without Alternative 2 or 3 of the Mission Restoration Project. Those actions will occur when allocation of public funding allows without regard to logging.] [11-52]

Concern: [Seq#697]

Logging is an important industry and limited logging will support local jobs and the local economy. However, logging should be limited to areas where roadbuilding and erosion can be easily mitigated,

and logging must be done in a sustainable harvest regime. The Mission Project proposal, again, does not fall under any definition of restoration, in that it radically increases timber harvest in ways that cannot be considered sustainable. [ID#725]

Response: [Seq#697]

The net effect of road management (including the effects of harvest and log haul) in the two action alternative is; a reduction of road density by 18 to 37 percent in Buttermilk Creek and by 28 to 50 percent in Libby Creek; a reduction of road drainage network by 15 to 30 in Buttermilk Creek and by 35 to 48 percent in Libby Creek; reduction of riparian road density by 35 to 42 in Buttermilk Creek and by 17 to 32 percent in Libby Creek; and a reduction in stream crossings per mile by 13 to 34 in Buttermilk Creek and by 38 to 52 percent in Libby Creek (preliminary EA pages 68-82. The Okanogan National Forest Standards and Guidelines and Northwest Forest Plan Standards and Guidelines regarding water quality would be met with both action alternatives and the Project is consistent with the Aquatic Conservation Strategy Objectives (preliminary EA pages 84-87).

The commenter does not provide in what aspect harvest should be sustainable. Typically, sustainability is addressed at regional and forest level, such that this issue is beyond the scope of this analysis.

Restoration Strategy guidance implies that vegetation conditions including the amount and arrangement of dry and moist forest vegetation structures be maintained or restored to levels that are within ranges where the HRV and FRV overlap (the DRV) to provide for more sustainable and resilient forest ecosystems in the project area (preliminary EA page 108). How that would be accomplished through the vegetation management proposed in this project is summarized in Figure 51 of the preliminary EA.

The commenter states that this project "radically increases timber harvest", but does not provide the basis or geographic bounds for this comment. Treatment units with timber proposed harvest included represent about 1,952 out of the 10,255 acres of proposed vegetation management. This represents less than four percent of the project area (50,200 acres in size).

[ID#725]

Associated Comments: [Seq#697]

Logging is an important industry and limited logging will support local jobs and the local economy. However, logging should be limited to areas where roadbuilding and erosion can be easily mitigated, and logging must be done in a sustainable harvest regime. The Mission Project proposal, again, does not fall under any definition of restoration, in that it radically increases timber harvest in ways that cannot be considered sustainable. [73-4]

Concern: [Seq#698]

While claiming to be based on the "best available science", the proposed vegetative treatments, and other components of the proposal, are based on a selective reading of the current literature that

reinforces the desired outcome, rather than an open-minded examination of the current literature and thinking in the field. For example, I include the following quotes and citations:

Our findings suggest that ecological management goals that incorporate successional diversity created by fire may support characteristic biodiversity, whereas current attempts to ''restore'' forests to open, low-severity fire conditions may not align with historical reference conditions in most ponderosa pine and mixed-conifer forests of western North America. -- Odion DC, Hanson CT, Arsenault A, Baker WL, DellaSala DA, et al. (2014)

Examining Historical and Current Mixed-Severity Fire Regimes in Ponderosa Pine and Mixed-Conifer Forests of Western North America. PLoS ONE 9(2): e87852. doi:10. 1371/journal. pone. 0087852 [ID#726]

Response: [Seq#698]

The abstract in the Odion paper cited above states "Our findings suggest that ecological management goals that incorporate successional diversity created by fire may support characteristic biodiversity" The Forest Restoration Strategy, which is the foundation of the proposed activity in this project, does indeed incorporate successional diversity created by all of the known disturbance factors. The concept of Historical Range of Variability incorporates the complete data set from reference subwatersheds, so vegetation patterns of high severity, mixed severity and low severity fire, along with other disturbance processes, would all be represented in the resulting range of variability, within which is the desired forest vegetation condition for this project (Purpose and Need #3, preliminary EA page 13).

The second citation is a re-hash of the first article by the same authors and the response is the same as above.

[ID#726]

Associated Comments: [Seq#698]

While claiming to be based on the "best available science", the proposed vegetative treatments, and other components of the proposal, are based on a selective reading of the current literature that reinforces the desired outcome, rather than an open-minded examination of the current literature and thinking in the field. For example, I include the following quotes and citations: Our findings suggest that ecological management goals that incorporate successional diversity created by fire may support characteristic biodiversity, whereas current attempts to ''restore'' forests to open, low-severity fire conditions may not align with historical reference conditions in most ponderosa pine and mixed-conifer forests of western North America. -- Odion DC, Hanson CT, Arsenault A, Baker WL, DellaSala DA, et al. (2014) Examining Historical and Current Mixed-Severity Fire Regimes in Ponderosa Pine and Mixed-Conifer Forests of Western North America. PLoS ONE 9(2): e87852. doi:10. 1371/journal. pone. 0087852 [69-19]

Concern: [Seq#699]

The FS's strategy to move towards desired future vegetation conditions focuses on achieving static conditions, instead of fostering the natural dynamic characteristics of ecosystems. An abundance of scientific evidence indicates the RS's static desired conditions must be rejected in favor of desired future dynamics to align with best available science. FS researcher Everett 1994) states, "To prevent loss of future options we need to simultaneously reestablish ecosystem processes and disturbance effects that create and maintain desired sustainable ecosystems, while conserving genetic, species, community, and landscape diversity and long- term site productivity."

Hessburg and Agee 2003 also emphasize the primacy of natural processes for management purposes: Ecosystem management planning must acknowledge the central importance of natural processes and pattern-process interactions, the dynamic nature of ecological systems (Attiwill, 1994), the inevitability of uncertainty and variability (Lertzman and Fall, 1998) and cumulative effects (Committee of Scientists, 1999; Dunne et al., 2001). [ID#727]

Response: [Seq#699]

A goal of the FRS is to maintain the potential for natural processes to take place on the landscape, which is attained by restoring and maintaining historical levels and patterns of forest vegetation (FRS page 12). "Desired Future Dynamics" is a term used in the Interior Columbia Basin Ecosystem Management Plan (ICBEMP). The FRS is co-developed by one of the contributors to the ICBEMP who was also instrumental in the development of the Ecosystem Management Decision Support tool (EMDS), which measures the degree to which current vegetation patterns compare to historical patterns on the landscape. To the degree that patterns are within the historical range of forest vegetation structure, determines the potential for future ecological dynamics within the landscape to take place.

Paul Hessburg is a principal contributor to the Okanogan-Wenatchee Forest Restoration Strategy (2012) and a developer of the Ecosystem Management Decision Support (EMDS) software. Both of these resources provide guidance to the process as well as to landscape and stand level prescriptions that are included in this EA that do address natural patterns, patch size distribution, composition, (preliminary EA page 133) fuels and fire regimes (preliminary EA p.164-167). [ID#727]

Associated Comments: [Seq#699]

The FS's strategy to move towards desired future vegetation conditions focuses on achieving static conditions, instead of fostering the natural dynamic characteristics of ecosystems. An abundance of scientific evidence indicates the RS's static desired conditions must be rejected in favor of desired future dynamics to align with best available science. FS researcher Everett 1994) states, "To prevent loss of future options we need to simultaneously reestablish ecosystem processes and disturbance effects that create and maintain desired sustainable ecosystems, while conserving genetic, species, community, and landscape diversity and long- term site productivity." (Emphasis added.) Hessburg and Agee 2003 also emphasize the primacy of natural processes for management purposes: Ecosystem management planning must acknowledge the central importance of natural processes and pattern-process interactions, the dynamic nature of ecological systems (Attiwill, 1994), the inevitability of uncertainty and variability (Lertzman and Fall, 1998) and cumulative effects (Committee of Scientists, 1999; Dunne et al., 2001). [72-19]

Concern: [Seq#700]

The next level of scientific integrity is the notion of "validity." So even if FS data input to its models are reliable, a question remains of the models' validity. In other words, are the models scientifically appropriate for the uses for which the FS is utilizing them? As Huck, (2000) explains, the degree of "content validity," or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process. The validity of the various models utilized in the EA's analyses have not been established for how agency utilizes them. No studies or reviews are cited which establish their content validity, and no independent peer review process has occurred. [ID#728]

Response: [Seq#700]

The proposed vegetation management is in line with the Forest Restoration Strategy - 2012. The 2012 Okanogan-Wenatchee National Forest Restoration Strategy is based on an extensive body of peer reviewed science. In addition, the FRS document itself received substantial input both internally and externally through a peer review process. The FRS establishes an analysis that is consistent with landscape ecology, and it identifies issues for managers to consider, that may enhance resiliency if addressed. Neither the FRS nor the landscape analysis identify specific treatments. Specific treatments are developed utilizing National Environmental Policy Act planning methods, and traditional forest management methods and techniques. [ID#728]

Associated Comments: [Seq#700]

The next level of scientific integrity is the notion of "validity." So even if FS data input to its models are reliable, a question remains of the models' validity. In other words, are the models scientifically appropriate for the uses for which the FS is utilizing them? As Huck, (2000) explains, the degree of "content validity," or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process. The validity of the various models utilized in the EA's analyses have not been established for how agency utilizes them. No studies or reviews are cited which establish their content validity, and no independent peer review process has occurred. [72-26]

Concern: [Seq#701]

Would we expect that subsequent treatments would be required? How much and how often? In 20, 30, or 50 years?

[[ID#729]

Response: [Seq#701]

Maintenance burning that would help maintain low levels of surface fuels and reduce small-diameter understory vegetation would be planned approximately every 15 years (page 157 & 313 Preliminary EA). This second underburning would reduce surface fuel loading, scorch lower tree branches, and help maintain the open arrangement of understory trees to limit the potential for crown fire initiation. Internal resource review of proposed maintenance burning would occur before implementation to assure consideration of any subsequent changes in site conditions and compliance with law or policy.

Additional commercial vegetation treatments could occur in approximately 25 - 50 years, depending on site conditions. [ID#729]

Associated Comments: [Seq#701]

Would we expect that subsequent treatments would be required? How much and how often? In 20, 30, or 50 years? [78-49]

Concern: [Seq#702]

Meet resource and other management objectives adopted in the relevant land and resource management plan;· Meet applicable statutory and regulatory requirements;· Reflect long-term funding expectations; and· Ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance. [ID#730]

Response: [Seq#702]

The statement above is quoting part of 36 CFR 212.5 (b)(1), Identification of Road System, which provides direction on identifying the minimum road system.

An interdisciplinary Transportation Analysis Report (TAR) for this project was completed and is included in project files. A summary of the results of this analysis are included in Appendix B, Transportation Definitions and Proposed Changes, in Figure 136, Alternative 2 and 3 Road Status. [ID#730]

Associated Comments: [Seq#702]

· Meet resource and other management objectives adopted in the relevant land and resource management plan;· Meet applicable statutory and regulatory requirements;· Reflect long-term funding expectations; and· Ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance. [27-10]

Concern: [Seq#703]

The Forest Service should consider narrowing the scope of purpose and need. The seven statements are widely varied. It is very possible that certain outcomes will be consistent with some of the statements, but inconsistent or even work against other outcomes. For example, measures to address wildfire

hazards may conflict with developing, maintaining or enhancing habitat for federally listed and other wildlife species. To ensure a workable outcome that flows from these statements and the relevant analysis, the Forest Service should consider narrowing the scope of the purpose and need. [ID#731]
Response: [Seq#703]

This project is a proposal to authorize landscape and aquatic restoration; wildfire hazard reduction, particularly in the Wildland Urban Interface (WUI); and transportation system management activities. The intent of this project is to evaluate the analysis area and prescribe and implement a set of treatments that rely on the principles of landscape and stand-level restoration ecology, wildfire hazard reduction, and transportation system management while meeting current management direction. The Interdisciplinary Team emphasized the restoration of natural processes, functions, and patterns across the landscape to build more resilient ecosystems. The need for aquatic and soil restoration treatments was based on field verification of impacts from past forest management practices. Proposed changes in the transportation network were developed during an Interdisciplinary Transportation Analysis Process.

The need for action discusses the relationship between the desired condition and the existing condition in order to answer the question, "why consider taking any action?" "Purpose" and "Need" are normally discussed as one because the purpose of an action will be to respond to the stated need. The purpose and need statement defines the scope and objectives of the proposal (landscape restoration). The purpose and need statement reflects the difference between the existing condition and the desired condition. Certain outcomes may be consistent with some of the purpose and need statements, but not fully consistent with other purpose and need statements. The second action alternative was developed to more fully address the restoration and maintenance of the aquatic and hydrologic processes impacted by management.

[ID#731]
Associated Comments: [Seq#703]
Second, the Forest Service should consider narrowing the scope of purpose and need. The seven statements are widely varied. It is very possible that certain outcomes will be consistent with some of the statements, but inconsistent or even work against other outcomes. For example, measures to address wildfire hazards may conflict with developing, maintaining or enhancing habitat for federally listed and other wildlife species. To ensure a workable outcome that flows from these statements and the relevant analysis, the Forest Service should consider narrowing the scope of the purpose and need. [27-21]

Concern: [Seq#704]

Shrub-steppe within the project area is susceptible to extreme fire behavior. Historically, this vegetative community burned often. We believe some careful prescribed burning in this community should be considered.

In addition to the forested landscape in the project area, there are high value shrub-steppe habitats. Most of the area east of Ben Canyon and north of Libby Creek is dominated by shrub lands, where we would like to see a significant shrub-steppe management component for vegetation including thinning, pruning and prescribed fire. We understand the need for temporary mule deer forage until areas burned by the 2014 and 2015 fires recover, but this will take less than a decade. Until then the lack of treatments in the shrub-steppe will not meet the project's Purpose and Needs of wildfire hazard reduction and wildlife habitat enhancement. Until the shrub-steppe fire regime is restored, uncharacteristically dense shrub lands can negate the value of other fuel reduction objectives because they support rapidly spreading, running crown wildfires that can't be controlled well with ground crews. A possible scenario from not treating the shrub-steppe in this project could involve fast-moving shrub-steppe fires spreading north into McClure Peak. This is confirmed by the fire sending map in the EMDS report by Derek Churchill (Figure 3). This scenario occurred in the first few days of the Carlton Complex Fire, when the fire jumped the Methow River near Gold Creek and moved northward via shrub-steppe into Libby Creek, destroying buildings on the Hirschstein property within hours. The tragic loss of life in the Twisp River Fire also involved rapidly changing fire behavior in shrub-steppe vegetation. In addition to the important wildfire hazard reduction goals, direct restorative management of shrub-steppe vegetation will positively affect wildlife that are adapted to grasslands including mule deer, western gray squirrel, and gray flycatchers. [ID#732]
Response: [Seq#704]

Treatments in the shrub-steppe habitat creates several concern factors including the spread of invasive species, the effects on wildlife forage, and fire/fuels effects on rates of potential spread during a wildfire. Based on scoping comments, the Interdisciplinary Team for the project increased treatments in shrub-steppe habitat near private land that was not in the original project proposal at time of scoping.

In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2006, 2014, and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time is not ripe for additional treatments in this habitat within about the next decade. That a prescribed burning treatment should be considered then when we can better assess the effects of such a treatment on wildlife habitat.

Some shrub-steppe habitat is included in the landscape burns, in the Libby drainage. A very rough estimate of this is that about 579 acres of shrub-steppe habitat would be included in the landscape underburns. This is an attempt to balance the need to reduce fuels (Purpose and Need 1.3.6, Preliminary EA at p.14) with the need to retain winter forage for mule deer (Purpose and Need 1.3.4, Preliminary EA at p.14 *"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".)* The effects of proposed treatments on wildlife species that use dry forested and shrub-steppe landscapes are described on p. 195-199 (revised preliminary EA).

Restoration of shrublands to grasslands was not identified as a major restoration need in the landscape prescription and treatment recommendations for the watershed (Churchill 2016). Field review of the

habitat showed that the bitterbrush plants were low-growing, healthy plants with small to medium stems, rather than the large, woody older plants that are less valuable, and less available, as deer browse. Due to the loss of winter browse for mule deer from recent fires, there is a need to retain shrubs that are providing winter forage.

In the Methow Valley, wildfires have burned large areas of deer winter range in the last 5 years. An estimated 51% of the winter range on the Methow Valley Ranger District burned since 2012. Approximately 16% of the winter range burned with moderate to high severity effects to vegetation. Another 13% of the winter range burned in 2006, for a total of about 64% of the Forest winter range in the Methow burned in an 11-year period. Field reviews of burned sites showed that on severely burned sites, 12% of the bitterbrush plants were resprouting from the 2014 fire and 14% were resprouting from the 2006 fire. A moderately burned site from the 2006 fire showed 27% of the bitterbrush plants were dead with no resprouting occurring, 11 years post-burn. Other shrubs (serviceberry, ceanothus, willow, snowberry) on the winter range were resprouting on one severely burned site from the 2014 fire, but were small enough that they would not provide much forage during the winter yet.

Figure 58, on pages 153 and 154 of the Preliminary EA indicates that 57% of the flame lengths in the WUI are rated as low (0 - 4', personnel can generally attack fire directly at the head or flanks of the fire) and 32% are rated as moderate (5 - 8' flame lengths, fires are too intense for direct attack on the head using hand tools). Where shrub-steppe areas in the project area are treated with underburning and thinning (mostly in Libby Creek), rate of spread would likely continue to be rapid as vegetation (grasses and shrubs) regenerated within 3-5 years because the grass-shrub fuel type, steep slopes, and lack of wind reduction from an overstory canopy tend to create this type of fire behavior. The sparse arrangement of these fuels, however, would help limit rate of spread. [ID#732]

Associated Comments: [Seq#704]

Shrub-steppe within the project area is susceptible to extreme fire behavior. Historically, this vegetative community burned often. We believe some careful prescribed burning in this community should be considered. [30-20]

In addition, we suggest reconsideration of the decision not to include in the project treatment of shrub-steppe habitat. [30-25]

In addition to the forested landscape in the project area, there are high value shrub-steppe habitats. Most of the area east of Ben Canyon and north of Libby Creek is dominated by shrub lands, where we would like to see a significant shrub-steppe management component for vegetation including thinning, pruning and prescribed fire. We understand the need for temporary mule deer forage until areas burned by the 2014 and 2015 fires to recover, but this will take less than a decade. Until then the lack of treatments in the shrub-steppe will not meet the project's Purpose and Needs of wildfire hazard reduction and wildlife habitat enhancement. Until the shrub-steppe fire regime is restored, uncharacteristically dense shrub lands can negate the value of other fuel reduction objectives because they support rapidly spreading, running crown wildfires that can't be controlled well with ground crews. A possible scenario from not treating the shrub-steppe in this project could involve fast-moving shrub-steppe fires spreading north into McClure Peak. This is confirmed by the fire sending map in the EMDS report by Derek Churchill (Figure 3). This scenario occurred in the first few days of the Carlton Complex Fire, when the fire jumped the Methow River near Gold Creek and moved northward via

shrub-steppe into Libby Creek, destroying buildings on the Hirschstein property within hours. The tragic loss of life in the Twisp River Fire also involved rapidly changing fire behavior in shrub-steppe vegetation. In addition to the important wildfire hazard reduction goals, direct restorative management of shrub-steppe vegetation will positively affect wildlife that are adapted to grasslands including mule deer, western gray squirrel, and gray flycatchers. [33-7]

I would second the comments of the Methow Valley Citizen's Council in regard to the shrub-steppe environment, and urge you to take a second look at prescribed fire opportunities within that environment as well. [64-3]

Shrub-steppe within the project area is susceptible to extreme fire behavior. Historically, this vegetation community burned often. We believe prescribed burning in this community should be included in the project. We understand that the shrub-steppe is important deer wintering habitat, but some shrub-steppe should be treated to reduce the probability of extreme fire behavior and deleterious impacts....The planning horizon for implementation is 15 years. We believe that at least some of the shrub-steppe should be included in prescribed fire planning. It will ultimately improve range/forage for both cattle and deer. [78-44]

Concern: [Seq#705]

Belsky and Blumenthal, 1997 investigate the effects of livestock grazing on stand dynamics and soils of upland forests of the Interior West [ID#733]
Response: [Seq#705]

Thank you for your reference investigating the effects of livestock grazing on stand dynamics and soils of upland forests of the Interior West. [ID#733]
Associated Comments: [Seq#705]
Belsky and Blumenthal, 1997 investigate the effects of livestock grazing on stand dynamics and soils of upland forests of the Interior West. [72-63]

Concern: [Seq#706]

Domestic livestock now use more than 70 percent of the lands managed by the BLM and Forest Service, and their grazing may be the major factor negatively affecting wildlife in 11 western states. In the West, about 175 taxa of freshwater fish are considered imperiled due to habitat-related causes [ID#734]

Response: [Seq#706]

The respondents comment from Beschta et al., 2012 is noted. [ID#734]
Associated Comments: [Seq#706]
Domestic livestock now use more than 70 percent of the lands managed by the BLM and Forest Service, and their grazing may be the major factor negatively affecting wildlife in 11 western states. In the West, about 175 taxa of freshwater fish are considered imperiled due to habitat-related causes. [72-73]

Concern: [Seq#707]

Federal land managers have begun to adapt to climate-related impacts, but not the combined effects of climate and hooved mammals, or ungulates. [ID#735]
Response: [Seq#707]

The respondents comment from Beschta et al., 2012 is noted. [ID#735]
Associated Comments: [Seq#707]
Federal land managers have begun to adapt to climate-related impacts, but not the combined effects of climate and hooved mammals, or ungulates. [72-67]

Concern: [Seq#708]

Among the threats facing ecosystems as a result of climate change are invasive species, elevated wildfire occurrence, and declining snowpack. [ID#736]
Response: [Seq#708]

The respondents comment from Beschta et al., 2012 is noted. [ID#736]
Associated Comments: [Seq#708]
Among the threats facing ecosystems as a result of climate change are invasive species, elevated wildfire occurrence, and declining snowpack. [72-66]

Concern: [Seq#709]

Climate impacts are compounded from heavy use by livestock and other grazing ungulates, which cause soil erosion, compaction, and dust generation; stream degradation; higher water temperatures and pollution; loss of habitat for fish, birds and amphibians; and desertification [ID#737]
Response: [Seq#709]

The respondents comment from Beschta et al., 2012 is noted. [ID#737]
Associated Comments: [Seq#709]
Climate impacts are compounded from heavy use by livestock and other grazing ungulates, which cause soil erosion, compaction, and dust generation; stream degradation; higher water temperatures and pollution; loss of habitat for fish, birds and amphibians; and desertification. [72-68]

Concern: [Seq#710]

The NWFP requires the FS to (GM-1) "Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing." The EA does not demonstrate consistency with GM-1. [ID#738]
Response: [Seq#710]

The respondent states that the EA does not demonstrate consistency with NWFP GM-1. The respondent seems to indicate that the effects of the Mission EA would require the adjustment of grazing practices to meet the Aquatic Conservation Strategy objectives. The effects of livestock grazing in the project area were analyzed in the recent Libby, Little Bridge, Newby, and Poorman Allotment Management Plan (AMP) Revision (USDA 2011a). The AMP contains a comprehensive monitoring plan to ensure critical resource values are protected. Mechanisms in this plan provide for making changes (or adjustments) to livestock management as needed (to meet NWFP GM-1). Any impacts from treatments proposed by this project on current range management practices are discussed in the Range section (Chapter 3) and in Appendix D (Design Criteria). (EA Page 24, Chapter 1, Figure 5. Mission Restoration Project Issues.) This project does not propose to make any decisions about management of livestock. [ID#738]
Associated Comments: [Seq#710]
The NWFP requires the FS to (GM-1) "Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing." The EA does not demonstrate consistency with GM-1. [72-169]

Concern: [Seq#711]

The soil disturbed by project activities in harvest units adjacent to the perennial streams would be seeded with grasses which would help draw cattle away from perennial riparian areas." (EA 244.) Does the FS have monitoring or research results to verify that claim? [ID#739]
Response: [Seq#711]

Thank you for your response.

A clarification has been made. The seeding would be done to revegetate the disturbed soil to meet erosion control and invasive plant competition objectives and to restore disturbed soil to native plants (Design Features in Appendix D). The effect of the successful seeding of disturbed soil would be that the understory vegetation would be reestablished. The thinning treatments would increase the productivity and distribution of understory vegetation (including the reestablished vegetation) by increasing light levels to the understory and more soil resources available, which would help draw cattle away from the riparian areas (EA section 3.10, page 240-241). [ID#739]
Associated Comments: [Seq#711]
The soil disturbed by project activities in harvest units adjacent to the perennial streams would be seeded with grasses which would help draw cattle away from perennial riparian areas." (EA 244.) Does the FS have monitoring or research results to verify that claim? [72-174]

Concern: [Seq#712]

Many of the commercial and non-commercial forest restorations simply benefit logging and cattle grazing, while these two industries contribute to catastrophic fire. These priorities are convoluted, unsound and unsafe. [ID#740]
Response: [Seq#712]

It is inferred that the concern is that timber companies benefit from timber harvest activities in the restoration project. Dense patches of overstory trees of harvestable size are a major part of the fuels problem and make up a considerable part of the lower canopy trees in the uncharacteristically abundant multiple canopied structures in the landscape. Timber harvest allows the government to remove these undesired trees at no cost to the taxpayer. The timber industry and forest land owners have a symbiotic relationship; forest land owners have trees that need to be removed; the industry has a workforce and mill in place to facilitate that service and makes a profit while doing so. Neither party can function without the other. The economic effects of the project are found in the preliminary EA on page 293-295.

The effects of the vegetation treatments proposed in the action alternatives are considered to be positive in regards to reducing the risk of crown fire (preliminary EA page 155, 158), fire behavior in the WUI (preliminary EA page 159), and fire behavior in the vicinity of routes of egress (preliminary EA page 161).

Many resources, besides the ones mentioned in the comment, benefit from the vegetation management proposed in this project;

It creates beaver habitat (preliminary EA pg 76)

ACS Objective 1 - *Maintain and restore the distribution, diversity, and complexity of watershed and landscape features to ensure protection of aquatic systems to which species, populations, and communities are uniquely adapted (preliminary EA pages 86)*

Long term supply of coarse woody debris in riparian systems (preliminary EA page 88).

Brings forest structure towards more historic stocking levels, composition and diversity of structure (preliminary EA pages 123-124)

Preserves medium and large trees (preliminary EA pages 124-125)

Reduces vulnerability to western spruce budworm, Douglas-fir bark beetles and dwarf mistletoe (preliminary EA pages 125-127).

Re-establishes the desired amount of low and moderate Crown Fire Risk and reduced flame lengths within the project area resulting in an increased likelihood of successfully direct suppression tactics and provides for a safer environment for firefighters and developments (preliminary EA pages 155-159.

Provides safer ingress and egress along principal routes within the project area (EA page 161)

Reduces potential impact of fire on Northern Spotted Owl habitat and maintains key components of nesting, roosting and foraging habitat (preliminary EA page 186-188)

Increases forage production that would benefit snowshoe hare (lynx primary prey) and deer (preliminary EA page 192, 198)

Maintains habitat for Northern Goshawk, White-headed Woodpecker (preliminary EA pages 193, 196-197).

Improves environmental conditions for *B. crenulatum* populations (preliminary EA page 227). [ID#740]
Associated Comments: [Seq#712]
Many of the commercial and non-commercial forest restorations simply benefit logging and cattle grazing, while these two industries contribute to catastrophic fire. These priorities are convoluted, unsound and unsafe. [51-23]

Concern: [Seq#713]

Do not do commercial timber harvest; only consider prescribed fire treatments. Commercial harvest treatments move the existing stand structure towards desired conditions with more resiliency to fires than just prescribed fire treatments alone.(p.23) [**There is no clear evidence in "best available science" to support this claim**.] [ID#741]
Response: [Seq#713]

The statement quoted on page 23 (of the Mission preliminary EA) is a summarized response to the comment. As noted on page 23, section 2.1 discusses the context of the issue regarding of "noncommercial only". The effectiveness of stand-alone treatments (no commercial component) or understory treatments is discussed in the preliminary EA in regards to; changing forest structure (page 123); effects to large and medium trees (page 124); western spruce budworm vulnerability (page 125); vulnerability to Douglas-fire bark beetle (EA page 126); crown fire risk (pages 155-158); and fire behavior in the WUI (page 159). In each case, the duration and intensity of beneficial impact is inferior to a combination of commercial and non-commercial activity. [ID#741]
Associated Comments: [Seq#713]
Do not do commercial timber harvest; only consider prescribed fire treatments. Commercial harvest treatments move the existing stand structure towards desired conditions with more resiliency to fires than just prescribed fire treatments alone.(p.23) [There is no clear evidence in “best available science” to support this claim.] [11-18]

Concern: [Seq#714]

In consideration of alternatives, the FS completely avoids any examination of a long term natural recovery of vegetative stands that are not near private property or public infrastructure.. Neither does it examine restoration that includes decommissioning roads, placing culverts, thinning near private properties with some prescribed fire, but does not include commercial logging. The FS states that the reason for this is it wouldn't meet Purpose and Need #3, 5 or 6. [ID#742]
Response: [Seq#714]

Alternative 1, No Action, provides a consideration of allowing the project area to recover naturally. Under the No Action alternative, new disturbances would not be approved in this Environmental Assessment. Selection of this alternative would not meet the Purpose and Need statements for this project. The effects of selecting No Action are included in the effects analysis for each resource in Chapter 3 of the EA.

Focusing thinning treatments solely adjacent to private property or public infrastructure would not meet Purpose and Need statements #1, 2, 3, 4, or 5. Alternatives 2 and 3 were modified to include more hazard fuels reduction treatments adjacent to private lands in Libby Creek. Ladder fuel reduction with hand piling and burning was also considered in the Twisp River drainage near Buttermilk Creek adjacent to private land.

A proposed action is a proposal by the Forest Service to authorize, recommend, or implement an action to meet specific purpose and needs. An alternative based on the comment would not meet the purposes and needs for this project. [ID#742]

Associated Comments: [Seq#714]

In consideration of alternatives, the FS completely avoids any examination of a long term natural recovery of vegetative stands that are not near private property or public infrastructure.. Neither does it examine restoration that includes decommissioning roads, placing culverts, thinning near private properties with some prescribed fire, but does not include commercial logging. The FS states that the reason for this is it wouldn't meet Purpose and Need #3, 5 or 6. [68-18]

Concern: [Seq#715]

The Mission Restoration assessment area is principally the Libby Creek and Buttermilk Creek drainages including Smith Canyon, Elderberry Canyon, Ben Canyon, Chicamun Canyon, Mission Creek, Black Pine Creek, Nickel Canyon, and Hornet Draw. The project area also includes a small portion of the Twisp River watershed that was added at the request of adjacent private land owners to reduce wildfire hazards on National Forest lands adjacent to private lands, bringing the project size to approximately 50,200 acres.(p.10) [Considering the area covered what was the rationale for calling it the "Mission" project? The Buttermilk Creek watershed is not a small portion; it is a significant portion of the Twisp River watershed (see Fig. 1, p.11)] [ID#743]

Response: [Seq#715]

The project was given the name because of the prominent local feature of Mission Mountain in the portion of the project area outside of wilderness. The names of Libby and Buttermilk have been used in various forms for numerous past projects. [ID#743]

Associated Comments: [Seq#715]

The Mission Restoration assessment area is principally the Libby Creek and Buttermilk Creek drainages including Smith Canyon, Elderberry Canyon, Ben Canyon, Chicamun Canyon, Mission Creek, Black Pine Creek, Nickel Canyon, and Hornet Draw. The project area also includes a small portion of the Twisp River watershed that was added at the request of adjacent private land owners to reduce wildfire hazards on National Forest lands adjacent to private lands, bringing the project size to approximately 50,200 acres.(p.10) [Considering the area covered what was the rationale for calling it the “Mission” project? The Buttermilk Creek watershed is not a small portion; it is a significant portion of the Twisp River watershed (see Fig. 1,p.11)] [11-2]

Concern: [Seq#717]

The

tables

that are provided in the text are co-mingled with

figures

, and acronyms used in both are not provided in the accompanying legend.

Please also include a list of definitions and a guide to all acronyms used in the document, as there are many and finding out what they mean is another roadblock to easily understanding of the message you are trying to convey. [ID#745]
Response: [Seq#717]

An appendix with definitions and acronyms has been created for the final document. Many resource reports contain definitions of terms used in that report. [ID#745]
Associated Comments: [Seq#717]
The tables that are provided in the text are co-mingled with figures, and acronyms used in both are not provided in the accompanying legend. [78-18]

Please also include a list of definitions and a guide to all acronyms used in the document, as there are many and finding out what they mean is another roadblock to easily understanding of the message you are trying to convey. [78-19]

Concern: [Seq#718]

I am writing to express my enthusiastic support for the Mission Restoration Project. As a fire ecologist with the University of Washington School of Environmental and Forest Sciences, I reviewed an early draft of the Okanogan-Wenatchee Forest Restoration Strategy and was impressed by its scientific credibility and in particular, its use of landscape ecology principles to guide restoration projects. While small in scope compared to the vast areas in need for restoration, the Mission Project represents one of the first comprehensive projects to implement the Restoration Strategy. My previous research on the efficacy of fuel reduction treatments in the the 2006 Tripod Complex area showed that canopy and surface fuel reductions through coordinated thinning and prescribed burning can make forests more resilient to subsequent wildfire events. With a rapidly warming climate and increasingly severe wildfire seasons, the need for large-scale restoration projects has never been greater. [ID#746]
Response: [Seq#718]

Thank you for your support.

We believe the principles used in developing this project provide scientific credibility and uses landscape ecology principles to guide this restoration project. We believe that the research behind implementing the Mission Project represents the efficacy of fuel reduction treatments through reduction of canopy closure and surface fuels reductions through coordinated thinning and prescribed burning can make forests more resilient to subsequent wildfire events. With a rapidly warming climate and increasingly severe wildfire seasons, the need for large-scale restoration projects has never been greater.

We saw the efficacy of this type of project in reducing fire damage during the 2015 North Star fire along Okanogan County Road # 3785, Lyman Lake Road, on the Tonasket Ranger District where the burn severity map indicates that the majority of the area was "low or unburned;low' even though it was within the area that burned in the fire. This was also seen in some areas within the 2014 Carlton Complex fire where previously similar treatments had been implemented. [ID#746]

Associated Comments: [Seq#718]

I am writing to express my enthusiastic support for the Mission Restoration Project. As a fire ecologist with the University of Washington School of Environmental and Forest Sciences, I reviewed an early draft of the Okanogan-Wenatchee Forest Restoration Strategy and was impressed by its scientific credibility and in particular, its use of landscape ecology principles to guide restoration projects. While small in scope compared to the vast areas in need for restoration, the Mission Project represents one of the first comprehensive projects to implement the Restoration Strategy. My previous research on the efficacy of fuel reduction treatments in the the 2006 Tripod Complex area showed that canopy and surface fuel reductions through coordinated thinning and prescribed burning can make forests more resilient to subsequent wildfire events. With a rapidly warming climate and increasingly severe wildfire seasons, the need for large-scale restoration projects has never been greater. [58-1]

Concern: [Seq#719]

* A forest isn't supposed to look like a park. A park lives in the city and the people are lucky to even have just that postage stamp of nature. But a forest is a big bulky wild thing that goes on and on, a place where wild animals live and natural processes happen in mysterious, complex ways that are unfathomable. A place where people should only come with deep reverence. Such places do not need management and should never be mistaken for a park. [ID#747]

Response: [Seq#719]

After proposed treatments the Forest will not look like a park. The Forest will be a big bulky wild thing where wild fish and animals live that functions in complex ways. [ID#747]

Associated Comments: [Seq#719]

* A forest isn't supposed to look like a park. A park lives in the city and the people are lucky to even have just that postage stamp of nature. But a forest is a big bulky wild thing that goes on and on, a place where wild animals live and natural processes happen in mysterious, complex ways that are unfathomable. A place where people should only come with deep reverence. Such places do not need management and should never be mistaken for a park. [67-1]

Concern: [Seq#720]

There is no timeline for implementation of proposed actions described in the EA - Other than the sketchy description of a timeline on the summary sheet handed out at the recent public meeting, there is no clear description of a reasonable timeline to implement either of the alternatives proposed. It would be useful to describe how that timeline might change if circumstances of available funding are different than expected. [ID#748]

Response: [Seq#720]

The timeline for implementation will depend on available funding, the source of that funding, and how it will be implemented. Discussions on potential funding for some of these proposed projects, that can be implemented prior to thinning and fuels treatments, is on-going and several projects will likely be implemented prior to the timber sale/stewardship contract being awarded such as possibly beaver habitat enhancement and soil restoration by sub-soiling areas of previously-compacted soil.

Commercial harvest would be expected to be completed in 3 - 5 years, with most fuels treatment completed in an additional 5 - 10 year period. Follow up fuels treatments are proposed about 15 years after the initial fuels treatments. Follow-up vegetation treatments might be considered in 35 - 50 years. Looking at fuels treatment in shrub/steppe habitat may be looked at in 10 - 15 years.

This project is proposed to be implemented through two Stewardship Contracts. The first contract is expected to include Libby Creek with a proposed removal of about 6 MMBF of commercial timber. The second contract is proposed to include Buttermilk Creek with the removal of about 3 MMBF of commercial timber. Estimated product value (net) from the first contract is estimated at about $395,000 which could be used to fund other restoration projects. A very preliminary plan may be to include whip felling for preparation for tree planting; road decommissioning for wildlife and aquatic habitat improvement; timber stand improvement and ladder fuel reduction thinning and piling to restore large tree habitat; etc. Until final layout and cruising take place, the estimated product value from the second contract has not been estimated. [ID#748]

Associated Comments: [Seq#720]

3. There is no timeline for implementation of proposed actions described in the EA - Other than the sketchy description of a timeline on the summary sheet handed out at the recent public meeting, there is no clear description of a reasonable timeline to implement either of the alternatives proposed. It would be useful to describe how that timeline might change if circumstances of available funding are different than expected. [78-22]

Concern: [Seq#721]

I do note that of the literature cited in the EA (Appendix E: Literature Cited, pp. 375-392), some is not very current, the oldest going back 66 years! Surely a landscape-scale project can, and should, be required to have significantly more contemporary research to support its implementation [ID#749]
Response: [Seq#721]

Of the literature cited in the Preliminary EA approximately 13% of the citations were prior to 1990, 18% between 1990 - 1999, 42% between 2000 - 2009, and 28% since 2010. Contemporary research was used to support implementation of this landscape restoration project. The median age of the citations was estimated to be 2005/2006.

In the Revised Preliminary EA, additional citations were added but the % per time period changed by about 1%. [ID#749]
Associated Comments: [Seq#721]
I do note that of the literature cited in the EA (Appendix E: Literature Cited, pp. 375-392), some is not very current, the oldest going back 66 years! Surely a landscape-scale project can, and should, be required to have significantly more contemporary research to support its implementation [65-4]

Concern: [Seq#722]

I am concerned about multiple issues being lumped in with a commercial timber sale. For example, I strongly support the introduction of beavers but feel it is wrong to tie this to a plan that involves years of commercial harvest before that can even happen. I also support looking at environmentally appropriate plans for repairing or replacing the West Fork Buttermilk Bridge, but once again, why is this linked to commercial harvest that has potentially devastating long term impacts for forest health? [ID#750]
Response: [Seq#722]

The introduction of beavers is not tied to a commercial timber sale except indirectly. Once the NEPA is completed, beaver could be introduced at any point that there is adequate funding to do so. If there is not adequate funding from other sources, and there has been in the past, beaver introduction may be funded through the two Timber Stewardship contract sate's receipts which can contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems, and provide a continuing source of local income and employment. Stewardship contracts allow the Forest Service to apply the value of timber or other forest products removed as an offset against the cost of services received, applying excess receipts from a project such as Mission Restoration to other authorized stewardship projects. Stewardship contracts may be used for treatments to improve, maintain, or restore forest and rangeland health; restore or maintain water quality; improve fish and wildlife habitat; noxious weed abatement; road and stream restoration; road improvement and culvert replacement; and reduce hazardous fuels that pose risks to communities and ecosystem values.

Discussions have also been taking place with State agencies, tribal governments, and others as possible funding sources for non-timber contract work.

Repairing or replacing the West Fork Buttermilk Bridge may be partially linked to future commercial vegetation treatments in the area across the bridge since this may increase the priority for its replacement. Many other uses or management of the area are not depended on having the bridge in place. [ID#750]

Associated Comments: [Seq#722]

I am concerned about multiple issues being lumped in with a commercial timber sale. For example, I strongly support the introduction of beavers but feel it is wrong to tie this to a plan that involves years of commercial harvest before that can even happen. I also support looking at environmentally appropriate plans for repairing or replacing the West Fork Buttermilk Bridge, but once again, why is this linked to commercial harvest that has potentially devastating long term impacts for forest health? [79-2]

Concern: [Seq#723]

1.5.3 Public Scoping The Methow Valley Ranger District sent a scoping letter to the public, interested agencies, and adjacent landowners on April 28, 2016, detailing proposed management activities on 50,200 acres of National Forest System lands in the Mission Restoration Project area. A news release inviting the public to the open house on May 23rd and extending the Comment Period until June 10th was released in May 2016. (p.21) [This process was initiated after two years of development by the Forest Ranger District and the collaborative with logging originally proposed for 2015. Even with the naming and announcement of project "scoping" the apparent intent was to avoid public involvement. The Mission Creek drainage is a very small portion of the project area, while using the designation "Mission Project" suggested a very localized and limited area with knowledge of its location and impact known by very few. The effort to rush this project's actions is reflected in the original plan for an EA by August 2016 and logging initiated during 2017. [ID#751]

Response: [Seq#723]

Work on this project, the pre-NEPA phase, was commenced in June 2012 with the issuance of the Project Initiation Letter (PIL) which started with the process for recommending the areas of greatest restoration needs across the landscape (PLTA identification).

Prior to the initiation of the NEPA analysis, represented by scoping in April 2016, the North Central Washington Forest Health Collaborative partnered with the Methow Valley Ranger District to gather field data (the pre-NEPA analysis phase). The Collaborative funded an external consultant to develop and present draft landscape prescriptions and treatment areas from initial EMDS modeling results (Page 20 - 21 Preliminary EA). In addition the Collaborative provided funding and personnel for stand data verification under the supervision of the District Silviculturist and a report on aquatic conditions. Volunteers from the Collaborative also helped gather data on existing roads, such as location of culverts and user-created roads. Information gathered by the Collaborative was reviewed, along with information gathered by the Interdiscplinary Team during the initial assessment of the project area and

combined with other District data and expertise to develop the Purpose and Need and Proposed Action for the Mission Restoration Project.. There was no effort to avoid public input.

The vegetation management contract will likely be entered into between June - September 2018. This project is currently planned to be done under 2 Stewardship contracts. The first in Libby Creek to contain about 6 MMBF and the 2nd in Buttermilk to contain about 3 MMBF. The estimated product value (net) from the first contract is currently estimated as $395,000. [ID#751]

Associated Comments: [Seq#723]

1.5.3 Public Scoping The Methow Valley Ranger District sent a scoping letter to the public, interested agencies, and adjacent landowners on April 28, 2016, detailing proposed management activities on 50,200 acres of National Forest System lands in the Mission Restoration Project area. A news release inviting the public to the open house on May 23rd and extending the Comment Period until June 10th was released in May 2016. (p.21) [This process was initiated after two years of development by the Forest Ranger District and the collaborative with logging originally proposed for 2015. Even with the naming and announcement of project "scoping" the apparent intent was to avoid public involvement. The Mission Creek drainage is a very small portion of the project area, while using the designation "Mission Project" suggested a very localized and limited area with knowledge of its location and impact known by very few. The effort to rush this project's actions is reflected in the original plan for an EA by August 2016 and logging initiated during 2017.] [11-16]

Concern: [Seq#724]

Under Alternative 1, no thinning, prescribed fire, road decommissioning, road closures, culvert replacement, or road reconstruction or road maintenance by a timber sale purchaser would take place. No treatments to maintain or restore large and old trees or Riparian Reserves would occur. Beaver habitat and large woody debris habitats would not be enhanced. Existing culverts would continue to block habitat continuity for listed fish species and create risks of road failure during projected storm events. Sediment production from the current road system would remain at high levels or increase as road conditions continue to degrade. Soil restoration activities would not occur in areas affected by past management activities. Current activities permitted by previous Forest project decisions would be on-going and future activities such as routine road maintenance, firewood gathering, cattle grazing, noxious weed control, and recreation uses such as camping, horseback riding, snowmobile, and ATV use would be expected to occur. (p.29) [The opposition reasons presented for opposing this and the no amendments alternative should be adequate to stop this project. Listed above are some of the reasons presented for why an extensive commercial logging operation must be initiated to correct problems created by previous management decisions. This presentation documents existing problems and suggests the only management activity to maintain old trees is to log them and to reduce high sedimentation is a logging operation which would increase sedimentation. Without a logging operation it is suggested that the existing beaver enhancement program, as well as other required maintenance, would end. Those arguments should not be accepted. [ID#752]

Response: [Seq#724]

This comment is addressed individually in response to prior comments by the individual. This is a summary comment to their prior comments.

This project provides the NEPA documentation for restoration projects besides commercial timber harvest and a funding mechanism to complete some of those projects if outside funding is not secured. To meet 3 of the 7 Purpose and Need statements vegetation management, including fuels treatment, would need to take place. [ID#752]

Associated Comments: [Seq#724]

Under Alternative 1, no thinning, prescribed fire, road decommissioning, road closures, culvert replacement, or road reconstruction or road maintenance by a timber sale purchaser would take place. No treatments to maintain or restore large and old trees or Riparian Reserves would occur. Beaver habitat and large woody debris habitats would not be enhanced. Existing culverts would continue to block habitat continuity for listed fish species and create risks of road failure during projected storm events. Sediment production from the current road system would remain at high levels or increase as road conditions continue to degrade. Soil restoration activities would not occur in areas affected by past management activities. Current activities permitted by previous Forest project decisions would be on-going and future activities such as routine road maintenance, firewood gathering, cattle grazing, noxious weed control, and recreation uses such as camping, horseback riding, snowmobile, and ATV use would be expected to occur. (p.29) [The opposition reasons presented for opposing this and the no amendments alternative should be adequate to stop this project. Listed above are some of the reasons presented for why an extensive commercial logging operation must be initiated to correct problems created by previous management decisions. This presentation documents existing problems and suggests the only management activity to maintain old trees is to log them and to reduce high sedimentation is a logging operation which would increase sedimentation. Without a logging operation it is suggested that the existing beaver enhancement program, as well as other required maintenance, would end. Those arguments should not be accepted.] [11-29]

Concern: [Seq#725]

■

AFRC questions the effectiveness of your proposed fuels reduction efforts. The chart below is taken from your draft EA and shows the amount of crown fire risk that will remain once treatments have been completed. Sixty-one percent of the Buttermilk watershed and 34% of the Libby watershed will still be in either moderate or high risk to crown fires. This level of risk could be greatly reduced by doing more mechanical thinning across the landscape.

■

Low Crown Fire Risk

Buttermilk = 39% (increased 7%)

Libby = 65% (increased 12%)

Moderate Crown Fire Risk

Buttermilk = 23% (decreased 4%)

Libby = 21% (decreased 11%)

High Crown Fire Risk

Buttermilk = 38% (decreased 3%)

Libby = 14% (decreased 2%) [ID#753]
Response: [Seq#725]

Commercial thinning treatments are proposed as forest restoration treatments, not as fuel reduction treatments. Most of the areas with high crown fire risk that would remain post-treatment in the Buttermilk and Libby Creek watersheds are in designated wilderness (and therefore not available for commercial thinning), in an Inventoried Roadless Area (and so not accessible except perhaps by helicopter logging if approved by the Regional Forester), or are in steep unroaded areas that would require a cable logging system. The project silviculturist, aquatics biologist, and wildlife biologist reviewed the areas in this last category and determined that commercial thinning in these areas would not be viable due to habitat concerns and lack of volume. In addition, many of the areas in this last category are within a high-severity fire regime with a longer fire return interval, and so are historically subject to stand-replacing fires; thinning for the purpose of forest restoration would not be applicable in these areas because the stand structure and arrangement is within historic/future ranges of variability. [ID#753]
Associated Comments: [Seq#725]
5. AFRC questions the effectiveness of your proposed fuels reduction efforts. The chart below is taken from your draft EA and shows the amount of crown fire risk that will remain once treatments have been completed. Sixty-one percent of the Buttermilk watershed and 34% of the Libby watershed will still be in either moderate or high risk to crown fires. This level of risk could be greatly reduced by doing more

mechanical thinning across the landscape. Low Crown Fire Risk Buttermilk = 39% (increased 7%) Libby = 65% (increased 12%) Moderate Crown Fire Risk Buttermilk = 23% (decreased 4%) Libby = 21% (decreased 11%) High Crown Fire Risk Buttermilk = 38% (decreased 3%) Libby = 14% (decreased 2%) [14-5]

Concern: [Seq#726]

While we do not represent ourselves as experts in forest management, the goal of restoring a healthier and more resilient in a forest close to our home seems long overdue. Having experienced active wildfires nearby our residence and being evacuated in 2015, it becomes clear that decades of wildfire suppression have created an overabundance of densely stocked stands of trees too close to one another posing the threat of a large and unmanageable forest fire close by [ID#754]

Response: [Seq#726]

Field review and modeling through EMDS and FlamMap confirm that many of the stands in the hot-dry/warm-dry portions of the project area are more dense than in historical conditions, and are at risk for uncharacteristically severe fire behavior. [ID#754]

Associated Comments: [Seq#726]

While we do not represent ourselves as experts in forest management, the goal of restoring a healthier and more resilient in a forest close to our home seems long overdue. Having experienced active wildfires nearby our residence and being evacuated in 2015, it becomes clear that decades of wildfire suppression have created an overabundance of densely stocked stands of trees too close to one another posing the threat of a large and unmanageable forest fire close by. [16-2]

Concern: [Seq#727]

While no one can argue the devastating effect fires have had on our region in the past couple of years, there is no evidence that logging a forest will prevent fires in the future. In fact, some studies have shown the opposite to be true. [ID#755]

Response: [Seq#727]

Commercial thinning proposed in this project is not intended to prevent forest fires. No portion of the analysis for this project makes this claim. [ID#755]

Associated Comments: [Seq#727]

While no one can argue the devastating effect fires have had on our region in the past couple of years, there is no evidence that logging a forest will prevent fires in the future. In fact, some studies have shown the opposite to be true. [17-1]

Concern: [Seq#728]

Spatially define the Wildland Urban Interface (WUI) and how treatments will differ in this space adjacent to homes and roads from those outside of the WUI. If it is the WUI as defined in the Okanogan County Community Wildfire Protection Plan, please reference to this definition. [ID#757]
Response: [Seq#728]

The boundary of the WUI used for analysis in this project is from the Okanogan County Community Wildfire Protection Plan CWPP) (Bloch et al. 2013a; 2013b). See Rev. Prelim. EA, p. 5, 136, 146; and Fig. 58 on p. 148. The citations for the CWPP are listed in Appendix E. Some commercial thinning would occur in WUI for the purpose of promoting forest vegetation structure and arrangement that are within the historic and future range of variability, but the treatment proposed specifically for WUI hazard reduction includes noncommercial thinning treatments (primarily using the ladder fuel reduction thinning prescription) that would both promote forest vegetation structure and arrangement that are within the historic and future range of variability and also reduce the likelihood of surface fires moving into overstory canopy layers; and prescribed burning to consume existing accumulations of surface fuel, reduce slash created by thinning, and to scorch lower tree branches. [ID#757]
Associated Comments: [Seq#728]
Spatially define the Wildland Urban Interface (WUI) and how treatments will differ in this space adjacent to homes and roads from those outside of the WUI. If it is the WUI as defined in the Okanogan County Community Wildfire Protection Plan, please reference to this definition. [18-14]

Concern: [Seq#729]

Will you identify forestry opportunities for landowners and locals that would be appropriate under the stewardship authorities, for instance cooperative landscape burning on adjacent ownerships, or subcontracting options for local crews. [ID#758]
Response: [Seq#729]

Identifying forest management and specific job opportunities for locals and landowners are not a part of this project's purpose and need. Staff from the Washington State Department of Natural Resources are available to provide forest management input to private landowners. Cooperative landscape burning on adjacent ownerships may only occur under very limited constraints and with approval of the landowner.

Local crews can seek opportunities for contracts or sub-contracts when they are advertised. [ID#758]
Associated Comments: [Seq#729]
Will you identify forestry opportunities for landowners and locals that would be appropriate under the stewardship authorities, for instance cooperative landscape burning on adjacent ownerships, or subcontracting options for local crews. [18-32]

Concern: [Seq#730]

Of the over 30 miles of fireline constructed for this project describe construction considerations for mechanically built firelines including equipment to be used, length of time they will remain on the landscape, and special considerations to ensure they do not become new travel routes [ID#759]
Response: [Seq#730]

Approximately 2.6 miles of machine fireline is proposed in this project (Rev. Preliminary EA, p. 325). Machine fireline would be in about eight segments ranging from 0.1 to 0.8 miles long, and would be created with an excavator or dozer with a 3' to 5' wide blade/shovel. On average, this fireline would remain on the landscape from 1-3 years from the time it is constructed prior to planned ignition until it is rehabilitated after the prescribed burn is declared controlled and out. Design criteria #6 specifies that, when accessible from existing roads and trails, fireline would be rehabilitated using methods that would help prevent public use of firelines as hiking, biking, motorcycle, and/or ATV/UTV routes. Methods may include scattering rocks/brush along the first part of the fireline or blocking the fireline with a berm. [ID#759]
Associated Comments: [Seq#730]
Of the over 30 miles of fireline constructed for this project describe construction considerations for mechanically built firelines including equipment to be used, length of time they will remain on the landscape, and special considerations to ensure they do not become new travel routes. [18-31]

Concern: [Seq#731]

The EA liberally throws around the term "uncharacteristic wildfire" however it provides no definition for how wildland fire can be-or has been-measured to be "uncharacteristic."

Clare Bresnahan (LCWA) expressed concern for a lack of clarity in the EA regarding the confusing use of terminology in discussing the nature, types, character, and impacts of fires. She noted that the EA did nothing to alleviate this problem after her scoping comment request. With regard to the references to "uncharacteristic wildfires" she requested the following: "Before proceeding with this project, please explain why such fire is more undesirable than fires that exist as a normal and natural part of the ecosystem. Why is crown fire behavior undesirable? What evidence do you have that crown fire increases risk to life and property?" Jack Cohen's research at the USDA Forest Service Missoula Fire Sciences Laboratory, is referenced showing that "risk to private properties is mostly determined by preparation for wildfire in the "home ignition zone" (the area immediately surrounding structures, likely on private land). With that in mind, how can you demonstrate that this project would actually make the public safer in the event of a fire?"

[[ID#760]
Response: [Seq#731]

"Uncharacteristic fire behavior" is defined in the preliminary EA (p. 137) and the revised prelim. EA (p. 135). An explanation of uncharacteristic fire behavior and effects and reasons why these are undesirable are provided (Rev. Prelim. EA, pp. 140-141, 145, 150, 175, and 186). The type of fire behavior described as "uncharacteristic" is not the same as "fire that has always been here", which in itself varies widely depending on environmental zones. The information on p. 140-141 (Overview of Crown Fire Risk) describes "normal and natural" historical fire behavior in the project area, distinguishing three separate types of historical fire behavior in the hot-dry/warm dry, cool-dry, and cool-moist portions of the project area. Examples of wildfires in the project area that may not be a threat to human life and property in cases include instances where the fire was contained by unburnable barriers (i.e. snow, rock) with low risk of spread to developed areas, or are burning later in fire season (summer/early fall) with little potential for spread. [ID#760]
Associated Comments: [Seq#731]
In my comments on the Mission Project Scoping Notice (MPSN) I requested that you define "uncharacteristic wildfire" and "uncharacteristic fire effects". To my dismay, the EA provides no such explanation. [29-2]

Without a definition of the term, it is literally impossible to determine whether this project will have an effect on whatever it is. Also, there has still been no further clarification of why "uncharacteristic" equals "bad". [29-3]

Before proceeding with this project, please explain why such fire is more undesirable than fires that exist as a normal and natural part of the ecosystem. [29-4]

Clare Bresnahan (LCWA) expressed concern for a lack of clarity in the EA regarding the confusing use of terminology in discussing the nature, types, character, and impacts of fires. She noted that the EA did nothing to alleviate this problem after her scoping comment request. With regard to the references to "uncharacteristic wildfires" she requested the following: "Before proceeding with this project, please explain why such fire is more undesirable than fires that exist as a normal and natural part of the ecosystem. Why is crown fire behavior undesirable? What evidence do you have that crown fire

increases risk to life and property?" Jack Cohen's research at the USDA Forest Service Missoula Fire Sciences Laboratory, is referenced showing that "risk to private properties is mostly determined by preparation for wildfire in the "home ignition zone" (the area immediately surrounding structures, likely on private land). With that in mind, how can you demonstrate that this project would actually make the public safer in the event of a fire?" [63-71]

"1.4.5 Does uncharacteristic wildfire pose a mitigatable threat to human life and property adjacent to and within the project area?" Where is the definition of uncharacteristic wildfire and is that really different than what has always been here? Also, when would wildfire in much of this area not potentially be a threat to human life and property? This is just another FS statement to justify an industrial intervention. [68-5]

The EA liberally throws around the term "uncharacteristic wildfire" however it provides no definition for how wildland fire can be-or has been-measured to be "uncharacteristic." [72-77]

Concern: [Seq#732]

human-ignited wildfires. [ID#762]
Response: [Seq#732]

In regards to roads facilitating human entry into forested areas and then increasing the number of wildfires: thank you for your comment. [ID#762]
Associated Comments: [Seq#732]
human-ignited wildfires, [27-26]

Concern: [Seq#733]

Why is crown fire behavior undesirable? What evidence do you have that crown fire increases risk to life and property? [ID#763]
Response: [Seq#733]

An explanation of uncharacteristic fire behavior (such as crown fire) and fire effects, and reasons why these are undesirable are provided (Rev. Prelim. EA, pp. 140-141, 145, 150, 175, and 186). It is an accepted phenomenon that torching trees generally produce greater fireline intensity and spotting

embers that can be carried downwind or downslope. The more trees that torch, the more embers are produced. Standard fire behavior models such as Behave 5.0 demonstrate that torching trees producing spotting embers create multiple ignition sources that can increase fire growth and create additional fireline intensity. The potential for spotting to exacerbate fire danger is well accepted and is incorporated into fire danger ratings used by state and federal agencies to communicate with the public. Spotting embers may stay ignited for several minutes and travel thousands of feet before landing (http://learningcenter.firewise.org/Firefighter-Safety/1-11.php). The risk to life and property closest to crown fire behavior comes from the increase in fireline intensity that may injure people or damage property. The degree of fireline intensity produced by surface and/or crown fires may also restrict suppression response to aircraft only (if available), although aerial retardant has limited effectiveness in stopping crown fires. Further away from the location of a crown fire, the risk to life and property comes from embers that may start multiple ignitions points ahead of the main fire front, which can cause fire to spread in many locations at once. When spotting occurs in an area with developments, it can further impact evacuation and suppression efforts.

[ID#763]

Associated Comments: [Seq#733]

Why is crown fire behavior undesirable? What evidence do you have that crown fire increases risk to life and property? [29-5]

Concern: [Seq#734]

Jack Cohen's research at the USDA Forest Service Missoula Fire Sciences Laboratory has shown that risk to private properties is mostly determined by preparation for wildfire in the "home ignition zone" (the area immediately surrounding structures, likely on private land). With that in mind, how can you demonstrate that this project would actually make the public safer in the event of a fire? [ID#764]

Response: [Seq#734]

No specific research citation was provided in this comment. Cohen indicates that ignitability around homes is influenced by the characteristics of the home and its immediate surroundings (Cohen, J. 2000). Part of the structure survival process he models includes the components of ignition sources and effective suppression (ibid), both of which are influenced by surrounding fire behavior. This project proposes thinning and prescribed fire treatments within the WUI that would contribute to reducing ignition sources originating as embers from crown fires, and would also reduce fireline intensity along key ingress/egress routes such as FS Roads 43 and 4340 (see rev. prelim. EA, p.158-160), in addition to other roads that access homes in the Smith Canyon. Fireline intensity along access routes to homes and near buildings also directly impacts the effectiveness of suppression efforts. Public safety is increased by reducing the likelihood of wildfires on National Forest lands moving on to private lands, and by

improving the likelihood of an evacuation route being usable during a wildfire, and by increasing the ability of suppression resources to access the area during a wildfire to help ensure evacuations. [ID#764]

Associated Comments: [Seq#734]

Jack Cohen's research at the USDA Forest Service Missoula Fire Sciences Laboratory has shown that risk to private properties is mostly determined by preparation for wildfire in the "home ignition zone" (the area immediately surrounding structures, likely on private land). With that in mind, how can you demonstrate that this project would actually make the public safer in the event of a fire? [29-6]

Concern: [Seq#735]

Forested land makes up a relatively small percentage of the Methow Valley lands that have burned in recent years. The Carlton Complex fires of 2014 were 75% in shrub-steppe and open country. The Twisp River fire of

2015 was at least 90% in shrub-steppe and open country. No amount of logging is going to make any difference in these wildfires.

Also, there is evidence that the main factor in fire severity is weather (wind and moisture content) and not available fuels. Given these facts, I do not believe that timber harvest would have any notable positive impact on fire risk. [ID#765]

Response: [Seq#735]

Commercial thinning treatments proposed in this project are intended to affect fire behavior on forested National Forest lands. Approximately 33% of the 2014 Carlton Complex and 45% of the 2015 Twisp Fire burned on NF lands, primarily in forested areas. Commercial thinning treatments in portions of both fire areas contributed to a reduction of fire intensity. Thinning stands to reduce crown fire potential is a primary means of reducing fire hazard (Graham et al. 1999, 2004; Agee and Skinner, 2005; Reinhardt et al, 2008, Ziegler et al, 2017). Based on Ziegler et al. (2017) "Treatments reduced all measures of fire behavior across all wind speeds tested. Fire rate of spread was lower after treatment for all wind speeds (p=0.007), with an average reduction of 24%. . . . . Similarly, treatments reduced fireline intensity across all wind speeds (p=0.009) by an average of 177%." [ID#765]

Associated Comments: [Seq#735]

Forested land makes up a relatively small percentage of the Methow Valley lands that have burned in recent years. The Carlton Complex fires of 2014 were 75% in shrub-steppe and open country. The Twisp River fire of 2015 was at least 90% in shrub-steppe and open country. No amount of logging is going to make any difference in these wildfires. [29-7]

Also, there is evidence that the main factor in fire severity is weather (wind and moisture content) and not available fuels. Given these facts, I do not believe that timber harvest would have any notable positive impact on fire risk. [29-8]

Ms. Bresnahan also reminded us that forested land makes up a relatively small percentage of the lands that have burned in recent years and that forest stand density has not been a primary factor in their severity. "The Carlton Complex fires of 2014 were 75% in shrub-steppe and open country. The Twisp River fire of 2015 was at least 90% in shrub-steppe and open country. No amount of logging is going to make any difference in these wildfires. [63-73]

Concern: [Seq#736]

You claim that the proposed project would help with suppression opportunities, but I do not believe it is a given that suppression is an advantageous strategy. Please provide data on how the proposed action would impact fire behavior and why such an impact is preferable. [ID#767]

Response: [Seq#736]

See rev. prelim. EA, pp.154-166 for effects of proposed action on fire behavior. Altering fire behavior as described is desirable because it promotes a fire-resilient forest within the historic and future ranges of variability that would be more likely to experience a low-severity wildfire that produced less torching and had a greater post-fire survival of trees (Agee and Skinner, 2005, Ziegler et al. 2017). Increasing the ability to successfully suppress wildfires is advantageous because even when a fire is burning within the characteristic range of fire behavior and effects, it may pose a threat to values such as WUI or habitat for T&E species. Results of modeling existing and post-treatment fire behavior shows that the percentage of the landscape that would experience low flame lengths (0 to 3.3') and surface fire would increase by approximately 4% or more, with a corresponding decrease in the amount of the landscape that would experience higher flame lengths (3.3 to 9.8' or more) and crown fire. [ID#767]

Associated Comments: [Seq#736]

You claim that the proposed project would help with suppression opportunities, but I do not believe it is a given that suppression is an advantageous strategy. Please provide data on how the proposed action would impact fire behavior and why such an impact is preferable. [29-9]

Also, there is evidence that the main factor in fire severity is weather (wind and moisture content) and not available fuels. Given these facts, I do not believe that timber harvest would have any notable positive impact on fire risk. You claim that the proposed project would help with suppression opportunities, but I do not believe it is a given that suppression is an advantageous strategy. Please provide data on how the proposed action would impact fire behavior and why such an impact is preferable." [63-74]

Concern: [Seq#737]

Aside from whether the proposed action would have a positive impact on fire risk, have potential negative impacts been considered? How would reduced canopy impact moisture content of fuels and wind speeds, two wildfire factors that are more significant than quantity of fuels? I asked this in my comments on the MPSN but it did not get addressed in the EA.

In this analysis, two fire characteristics that contribute to wildfire intensity were analyzed: crown fire behavior and flame length." (138.) Since the EA claims to be addressing risk of catastrophe due to wildland fire, why wouldn't rate of fire spread matter. [ID#768]

Response: [Seq#737]

See description of effects of proposed treatments on fire behavior that includes increasing rate of surface spread (revised preliminary EA, pp 156). Ecologically robust treatments may often increase the rate of surface spread (Reinhardt et al, 2005) with the trade-off of decreasing burn severity and reducing the potential for long-range spotting that contributes to rapid fire growth and increase fire size. Decreasing crown fire behavior would reduce burn severity and reduce the potential for long-range spotting, consistent with characteristic fire behavior of forested areas with low crown fire risk. Where values such as developments are at risk, keeping fire on the ground is desirable because crown fire behavior generally creates greater fireline intensity that decreases or eliminates the ability to use direct suppression tactics by ground and aerial resources where structures are threatened.

Based on Ziegler et al. (2017) Treatments similar to what is proposed reduced all measures of fire behavior across all wind speeds tested. Fire rate of spread was lower after treatment for all wind speeds (p=0.007), with an average reduction of 24%. . . . . Similarly, treatments reduced fireline intensity across all wind speeds (p=0.009) by an average of 177%." [ID#768]

Associated Comments: [Seq#737]

Aside from whether the proposed action would have a positive impact on fire risk, have potential negative impacts been considered? How would reduced canopy impact moisture content of fuels and wind speeds, two wildfire factors that are more significant than quantity of fuels? I asked this in my comments on the MPSN but it did not get addressed in the EA. [29-10]

"In this analysis, two fire characteristics that contribute to wildfire intensity were analyzed: crown fire behavior and flame length." (138.) Since the EA claims to be addressing risk of catastrophe due to wildland fire, why wouldn't rate of fire spread matter? [72-97]

Also worth noting is the fact that partial cutting that opens up a closed-canopy stand will result in warmer, drier understory conditions and increased surface wind speeds. These changed conditions have been documented to increase fire severity and spread. This can be counterproductive if fire hazard reduce is a goal. [78-6]

Concern: [Seq#738]

Other national forests that propose to apply herbicides tell the public the herbicide brand name and formulation. Mr. McFetridge, you chose to hide this critically important information from the public. At page 45 of the EA you write: "Invasive Plant Treatments: Weed populations continue to be treated annually by spot-spraying with herbicide, hand-pulling, or bio-control agents. The 2000 Noxious Weed Integrated Weed Management EA covers portions of the project area." Your Invasive Plant Report even hides this information. A word search of this report for glyphosate came up with nothing. You tell the public your invasive plant treatments will follow the guidance in Okanogan National Forest Integrated Weed Management Environmental Assessment (USDA-FS 2000). This document at page 5 allows the use of herbicides that contain glyphosate. Have you ever watched someone die who had so much more to accomplish in life. Read the obituaries. Most people died from cancer. When you read an obituary in 5 to 10 years where the diseased died of cancer you might be responsible if you apply glyphosate. An intelligent person would read the science below and choose an alternative to glyphosate application in the blink of an eye. Do you trust Monsanto to put safety ahead of profit? The ability to make independent decisions and not respond to pressure to do the wrong thing is the trait of a real leader. Not spewing poison on public land where families camp, hike and picnic is the sign of a human being. Do any of you believe Monsanto's claim that it's safe to drink Roundup? Many carefully designed studies link glyphosate to horrendous bodily harm. How will you be at ease with yourself over the rest of your life knowing you planted the cancer seed where families will camp or hike? Your choice to apply glyphosate will be a litmus test that determines whether you are a sadist or a public servant. The science that would convince any intelligent, caring human being to use an alternative to herbicides that contain glyphosate is contained in the Glyphosate 1 attachment. I hope the other USFS employees who use Roundup at home take the time to read this attachment. Believe me, you will be glad you did. Request for changes to be made to the final NEPA document: Assure it states "herbicides that contain glyphosate will not be applied." The DN must also contain this quote. You know failure to specifically tell the public this chemical will not be applied to public land leaves the door open for glyphosate application. This violates: 18 U.S.C. § 1001(c) because the Responsible Official relied on a single (emphasis added) research conclusion that glyphosate is safe made by a lab with possible ties to Monsanto (Syracuse Environmental Research Associates--SERA) knowing the research conducted by hundreds of independent scientists reveals glyphosate exposure may cause birth defects, miscarriages, premature births, cancer - non-Hodgkin's lymphoma and hairy cell leukemia, DNA damage, autism, irreparable kidney and liver damage, infertility, learning disabilities, ADHD and other neurological disorders (especially in children), mitochondrial damage, cell asphyxia, endocrine disruption, bipolar disorder, skin tumors, thyroid damage, decrease in the sperm count and chromosomal damage 40 CFR 1501.2 (b), 40 CFR 1502.16(a) and (b), and 40 CFR 1508.8(b) because Chapter 3 omits important environmental effect disclosures related to glyphosate research (i.e. glyphosate exposure is statistically correlated to birth defects, miscarriages, premature births, cancer - non-Hodgkin's lymphoma and hairy cell leukemia, DNA damage, autism, irreparable kidney and liver damage, infertility, learning disabilities, ADHD and other neurological disorders (especially in children), mitochondrial damage, cell asphyxia, endocrine disruption, bipolar disorder, skin tumors, thyroid damage, decrease in the sperm count and chromosomal damage cancer) 40 CFR §1508.27(b)(2) because the intensity discussion fails to discuss the degree to which the proposed action affects public health or safety. The Apr. 21, 1997 Executive Order No. 13045 because the Responsible Official does not ensure that this project will not disproportionately

expose children to environmental health risks and safety risks. 40 CFR §1508.27(b)(2) because the FOIA intensity discussion fails to discuss the degree to which the proposed action affects public health or safety. [ID#769]

Response: [Seq#738]

The Mission Restoration Project does not propose to authorize any herbicide treatments. Herbicide treatments are only considered in this project as a potential cumulative effect. All herbicide treatments are authorized under existing NEPA documents including the recently completed Forest-wide Site Specific Invasive Plant Management EIS (2017), and the previously completed Pacific Northwest Region Invasive Plant Program (2005) and the 2000 Noxious Weed Integrated Weed Management EA.

[ID#769]

Associated Comments: [Seq#738]

Other national forests that propose to apply herbicides tell the public the herbicide brand name and formulation. Mr. McFetridge, you chose to hide this critically important information from the public. At page 45 of the EA you write: "Invasive Plant Treatments: Weed populations continue to be treated annually by spot-spraying with herbicide, hand-pulling, or bio-control agents. The 2000 Noxious Weed Integrated Weed Management EA covers portions of the project area." Your Invasive Plant Report even hides this information. A word search of this report for glyphosate came up with nothing. You tell the public your invasive plant treatments will follow the guidance in Okanogan National Forest Integrated Weed Management Environmental Assessment (USDA-FS 2000). This document at page 5 allows the use of herbicides that contain glyphosate. Have you ever watched someone die who had so much more to accomplish in life. Read the obituaries. Most people died from cancer. When you read an obituary in 5 to 10 years where the diseased died of cancer you might be responsible if you apply glyphosate. An intelligent person would read the science below and choose an alternative to glyphosate application in the blink of an eye. Do you trust Monsanto to put safety ahead of profit? The ability to make independent decisions and not respond to pressure to do the wrong thing is the trait of a real leader. Not spewing poison on public land where families camp, hike and picnic is the sign of a human being. Do any of you believe Monsanto's claim that it's safe to drink Roundup? Many carefully designed studies link glyphosate to horrendous bodily harm. How will you be at ease with yourself over the rest of your life knowing you planted the cancer seed where families will camp or hike? Your choice to apply glyphosate will be a litmus test that determines whether you are a sadist or a public servant. The science that would convince any intelligent, caring human being to use an alternative to herbicides that contain glyphosate is contained in the Glyphosate 1 attachment. I hope the other USFS employees who use Roundup at home take the time to read this attachment. Believe me, you will be glad you did. Request for changes to be made to the final NEPA document: Assure it states "herbicides that contain glyphosate will not be applied." The DN must also contain this quote. You know failure to specifically tell the public this chemical will not be applied to public land leaves the door open for glyphosate application. This violates: 18 U.S.C. § 1001(c) because the Responsible Official relied on a single (emphasis added) research conclusion that glyphosate is safe made by a lab with possible ties to Monsanto (Syracuse Environmental Research Associates--SERA) knowing the research conducted by hundreds of independent scientists reveals glyphosate exposure may cause birth defects, miscarriages, premature births, cancer - non-Hodgkin's lymphoma and hairy cell leukemia, DNA damage, autism, irreparable kidney and liver damage, infertility, learning disabilities,

ADHD and other neurological disorders (especially in children), mitochondrial damage, cell asphyxia, endocrine disruption, bipolar disorder, skin tumors, thyroid damage, decrease in the sperm count and chromosomal damage 40 CFR 1501.2 (b), 40 CFR 1502.16(a) and (b), and 40 CFR 1508.8(b) because Chapter 3 omits important environmental effect disclosures related to glyphosate research (i.e. glyphosate exposure is statistically correlated to birth defects, miscarriages, premature births, cancer - non-Hodgkin's lymphoma and hairy cell leukemia, DNA damage, autism, irreparable kidney and liver damage, infertility, learning disabilities, ADHD and other neurological disorders (especially in children), mitochondrial damage, cell asphyxia, endocrine disruption, bipolar disorder, skin tumors, thyroid damage, decrease in the sperm count and chromosomal damage cancer) 40 CFR §1508.27(b)(2) because the intensity discussion fails to discuss the degree to which the proposed action affects public health or safety. The Apr. 21, 1997 Executive Order No. 13045 because the Responsible Official does not ensure that this project will not disproportionately expose children to environmental health risks and safety risks. 40 CFR §1508.27(b)(2) because the FOIA intensity discussion fails to discuss the degree to which the proposed action affects public health or safety. [2-3]

Concern: [Seq#739]

Logging alone does NOT provide protection for homes and communities from wildfires in ANY WAY! [ID#770]

Response: [Seq#739]

This project proposes several types of treatments (commercial thinning, noncommercial thinning, and prescribed burning) for the purposes of forest restoration and hazard reduction that would affect fire behavior near and adjacent to homes. See rev. prelim. EA, pp. 152-161.

Some research seems to indicate up to a 24% reduction in rate of spread and over a 170% reduction in intensity from somewhat similar treatments as are proposed in this project (Zieglar et al. 2017). [ID#770]

Associated Comments: [Seq#739]

Logging alone does NOT provide protection for homes and communities from wildfires in ANY WAY! [42-4]

Concern: [Seq#740]

Fear of catastrophic fire is being used to manipulate valley citizens to get behind this project. [ID#771]
Response: [Seq#740]

The analysis does not characterize wildfire as "catastrophic". The current conditions on the landscape in the project area were assessed by field review, photo interpretation, modeling, and professional experience. The effects of no treatment on the landscape (Alternative 1) and proposed treatments (Alternatives 2 and 3) were assessed through a combination of professional experience, best available science, monitoring information, and a variety of models. [ID#771]
Associated Comments: [Seq#740]
Fear of catastrophic fire is being used to manipulate valley citizens to get behind this project. [51-26]

* Truth, not fear. The MRP is a wake-up call for the Methow Valley. I believe the fear of "Catastrophic Fire!" is being used to manipulate citizens to get behind this project. We should be motivated by the truth and the best interests of the valley rather than by fear. We deserve more and real choices. [67-39]

Concern: [Seq#741]

Providing "hotlinks" within the text to supporting resource specialist documents cited in the text would be a welcome addition. [ID#772]
Response: [Seq#741]

Thank you for your suggestion.

Resource reports are available on the Forest website for projects. [ID#772]
Associated Comments: [Seq#741]
Providing "hotlinks" within the text to supporting resource specialist documents cited in the text would be a welcome addition. [78-20]

Concern: [Seq#742]

By the Forest Service's own account, their previous land management actions have degraded fish and wildlife habitat, and increased both the risk and intensity of fires. As a result, the existing Forest Plan contains a number of provisions designed to maintain ecological health and decrease fire danger. The Mission Project proposes eight amendments to the extant Forest Plan (FP) that exempt the Forest

Service from complying with these regulations "in the short term" in order to theoretically improve long term forest health. Since the Mission Project does not provide convincing evidence that these exemptions will, in fact, provide long term benefits, I am concerned that the plan will adversely impact wildlife, fish and forest health in both the short and long term [ID#773]

Response: [Seq#742]

All but one proposed Forest Plan amendment has been dropped. The beneficial and adverse effects of the remaining amendment are described in the revised prelim. EA (pp 24-27, 307-311, and elsewhere as referenced on these pages). [ID#773]

Associated Comments: [Seq#742]

By the Forest Service's own account, their previous land management actions have degraded fish and wildlife habitat, and increased both the risk and intensity of fires. As a result, the existing Forest Plan contains a number of provisions designed to maintain ecological health and decrease fire danger. The Mission Project proposes eight amendments to the extant Forest Plan (FP) that exempt the Forest Service from complying with these regulations "in the short term" in order to theoretically improve long term forest health. Since the Mission Project does not provide convincing evidence that these exemptions will, in fact, provide long term benefits, I am concerned that the plan will adversely impact wildlife, fish and forest health in both the short and long term. [52-2]

Concern: [Seq#743]

Reduction in the risk of large scale wildfires - This is a laudable goal that we support, but we would like to see more emphasis on the use of prescribed burning and letting natural ignition wildfires away from human structures, be allowed to burn naturally. Suppression of natural fires in areas where there is no immediate threat to life and property flies in the face of all conventional science on the role and risk of wildfire in areas far away from private properties.

Please clarify the federal, state and local statutes that prohibit this practice from being done. [ID#774]

Response: [Seq#743]

Refer to Chapter 2 and Appendix 3 of Okanogan County Community Wildfire Protection Plan (CWPP, Bloch et al., 2013) for description of the risk assessment models and planning processes used to identify the boundary of Wildland Urban Interface used in the CWPP and in this analysis. This document assesses threats to life and property from wildfires in Okanogan County using site-specific data and local weather history, and specifically identifies an area within the Libby Creek drainage as a high-priority treatment area.

The Okanogan National Forest Land and Resource Management Plan (USDA Forest Service, 1989) provides the standards and guidelines for the management areas outside of wilderness within the project boundary, and requires consideration of recreation, visual, wildlife, and other resources for managing fuels to reduce the risk of wildfire and limit burned areas. Changing fire suppression policies

would require forest plan amendments and is outside of the scope of this analysis, but even if allowing wildfires to burn unchecked was under consideration, one of the first factors that would be assessed for every ignition is the current and expected fire behavior under existing and expected weather conditions. This is a standard operating procedure for any wildland firefighter and land manager during initial and ongoing risk management assessment while working on any fire, even if it isn't suppressed. The 90th percentile conditions weather and moisture conditions used for modeling expected fire behavior in this analysis, developed using decades of data from local Remote Access Weather Stations, was specifically used because it includes the most common weather conditions under which fires burn in this area. This modeling demonstrates that the risk of high-severity fire behavior extends well beyond the area immediately adjacent (i.e. within 200 feet) to private lands in the project area. [ID#774]

Associated Comments: [Seq#743]

8. Reduction in the risk of large scale wildfires - This is a laudable goal that we support, but we would like to see more emphasis on the use of prescribed burning and letting natural ignition wildfires away from human structures, be allowed to burn naturally. Suppression of natural fires in areas where there is no immediate threat to life and property flies in the face of all conventional science on the role and risk of wildfire in areas far away from private properties. [78-29]

Please clarify the federal, state and local statutes that prohibit this practice from being done. [78-30]

Concern: [Seq#744]

The ONLY part of this plan that is funded is the logging. The PROTECTION elements of fuel reduction are NOT funded and are just window dressing. [ID#775]

Response: [Seq#744]

Fuel reduction treatments to treat slash created by commercial thinning activities would be funded by the timber sale purchaser. Other restoration and hazard reduction thinning treatments may be funded by stewardship receipts received from the sale of timber associated with this project or through appropriated funds received yearly by the district that is earmarked for such work. In the past decade, the district has received funds to complete anywhere from 600 to 2000 acres of noncommercial ladder fuel reduction thinning per year.

The commercial thinning portion of this project is proposed to be completed using two Stewardship contracts. The 1st contract for the Libby Creek portion of the project is estimated to contain about 6 MMBF of commercial timber volume and have product value (net) of about $395,000. The 2nd contract will be in the Buttermilk Creek portion of the project and is estimated to contain about 3 MMBF. No estimated product value has been established. [ID#775]

Associated Comments: [Seq#744]

The ONLY part of this plan that is funded is the logging. The PROTECTION elements of fuel reduction are NOT funded and are just window dressing. [42-3]

Concern: [Seq#745]

Richard Everett et al. (2011) Continuity in Fire Disturbance Between Riparian and Adjacent Sideslopes in the Douglas-fir Forest Series. PNW lab, Wenatchee WA.

The purpose and need uses the term "uncharacteristic" to refer to the susceptibility of wildfire in riparian areas where thick patches of conifers occur. It is not clear what the term refers to, but if it was more severe fire, then the best available science indicates that riparian areas characteristically burn more thoroughly but with greater cohort survival than adjacent uplands, but that fires are patchy (see attached Everett reference). The objectives need more clarification [ID#777]

Response: [Seq#745]

The stands of conifers described in Purpose and Need #1 are those in the drier drainages (such as portions of YoYo, Smith, Elderberry, Ben, and Chicamun Creeks) with intermittent channels that would more likely have experienced the frequent, low-intensity fire regime that dominated these areas historically rather than the more severe fire the commenter refers to. Because wildfires would have most likely occurred later in the summer when these channels were drier, the riparian areas would not have retained adequate moisture to act as barriers to fire spread. The Everett et al reference acknowledges that fire disturbance regimes of sideslope and riparian forests are interconnected through shared fire disturbance events. Thinning and prescribed fire treatments proposed in these areas would not significantly alter the inherent disturbance regime or patch dynamics of either the riparian or sideslope forests. Additional description of the types of drier drainages that this P&N reference has been added to P&N #1. [ID#777]

Associated Comments: [Seq#745]

· The purpose and need uses the term “uncharacteristic” to refer to the susceptibility of wildfire in riparian areas where thick patches of conifers occur. It is not clear what the term refers to, but if it was more severe fire, then the best available science indicates that riparian areas characteristically burn more thoroughly but with greater cohort survival than adjacent uplands, but that fires are patchy (see attached Everett reference). The objectives need more clarification. [18-1]

1 Richard Everett et al. (2011) Continuity in Fire Disturbance Between Riparian and Adjacent Sideslopes in the Douglas-fir Forest Series. PNW lab, Wenatchee WA. [18-46]

Concern: [Seq#747]

Destroying habitat to restore habitat is an oxymoron. [ID#779]
Response: [Seq#747]

Effects to wildlife and terrestrial habitats are discussed in the Revised Preliminary EA at p.182-214.

The Mission project seeks to restore a limited amount of the two drainages, approximately 20%, to a more historical condition with more open patchy stands dominated by fire-resistant species, that would be less likely to contribute to the spread of large, high-severity, wildfire. This would provide more open habitat types across the landscape, and introduce more habitat diversity. This habitat has been reduced by fire suppression over the last decade.

The wildlife species present in most of the project area evolved in a frequent fire regime, and fire plays a key role in rejuvenation of understory forage and habitat components such as snags and down wood. Pilliod et al. (2006) report that, in general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from fuel reduction activities, while species that are closely associated with closed canopy forests or dense understory, will likely be negatively affected by fuel reductions. Deer would be benefitted by increased forage quantity and quality, particularly on winter range. Species' responses to project activities depend on the species and habitats used. Focal species are discussed in the Wildlife Specialist Report. Retaining key habitat components- snags, large trees and down wood, mitigates negative effects, as does maintaining untreated areas adjacent to treated areas.

The large proportion of dense stands across the landscape in the Buttermilk and Libby drainages are not in a sustainable condition, and are at risk of mortality from insects, disease and wildfire. Derek Churchill's analysis of forest restoration needs for the watershed, based on stand structure departures, indicated that dense stands were overrepresented in the landscape compared to historical conditions (Churchill, 2016). These stands provide deer cover, and it can be assumed that this, too, is overrepresented compared to the amount that occurred across the landscape historically. Hayden et al. (2008), in the Western Association of Fish and Wildlife Agencies' "Habitat Guidelines for Mule Deer", suggests a "thin from below" approach to maintain snow interception capacity in the short term while promoting increase stand vigor and tree forms of greater value to deer in the long term. [ID#779]
Associated Comments: [Seq#747]
Destroying habitat to restore habitat is an oxymoron. [67-8]

Concern: [Seq#748]

Fire suppression looked like a good idea: Save people, homes and community from death and destruction. Who would argue with that? But as people moved to the forest they came into direct conflict with wildfire. Even though fire had been igniting as a natural and integral process of renewal for forests since time immemorial. Fire suppression is detrimental to long-term ecosystem health.

Suppression delays fire but does not stop it. Fire will come and bigger because of accumulated fuel. [ID#780]

Response: [Seq#748]

Modifying fire suppression goals for the project area would take a forest plan revision to permanently alter the suppression-related standards and guidelines and is outside of the scope of this project. Altering fire suppression policy at the local, state, and federal levels is also outside of the scope of this project. Even if standards and guidelines and suppression policy allow for a response other than 100% suppression, multiple factors would also be considered when deciding how to respond to a fire. These include (but are not limited to) public and firefighter safety, likelihood of success, length of fire season remaining, and the resilience of the landscape to wildfire. The treatments proposed by this project are intended to promote low-intensity wildfire behavior in portions of the project area that historically experienced similar fire behavior. The greater the likelihood for fire behavior within the historic range of variability, the more likely a response other than full suppression could be as long as other factors (values at risk, current and expected fire behavior, length of fire season remaining, etc.) allow for such consideration.

[ID#780]

Associated Comments: [Seq#748]

The legacy of ill-conceived prior forest management efforts has been partially acknowledged by the USFS. In the case of ill-forest health, the perfect storm comes from 1) fire suppression, 2) commercial logging, 3) grazing allotments, and 4) road-building. Of the four, the USFS has only directly acknowledged the problematic nature of fire suppression. At some of the USFS-hosted meetings in which I was in attendance, this was unequivocally stated. However, there is no current plan to change it and the plan is for 100% fire suppression. To first allow that there is a direct correlation between the practice and the problem only to then persist with the same damaging practice is irresponsible and reckless- a misuse of public funds and human resources. It perpetuates the very practice which you concede to be one of the roots of the problem and which you state that this project aims to mitigate. [47-4]

Fire suppression looked like a good idea: Save people, homes and community from death and destruction. Who would argue with that? But as people moved to the forest they came into direct conflict with wildfire. Even though fire had been igniting as a natural and integral process of renewal for forests since time immemorial. Fire suppression is detrimental to long-term ecosystem health. Suppression delays fire but does not stop it. Fire will come and bigger because of accumulated fuel. [48-5]

Fire suppression looked like a good idea: Save people, homes and community from death and destruction. Who would argue with that? But as people moved to the forest they came into direct conflict with wildfire. Even though fire had been igniting as a natural and integral process of renewal for forests since time immemorial. Fire suppression is detrimental to long-term ecosystem health. Suppression delays fire but does not stop it. Fire will come and bigger because of accumulated fuel. [51-9]

Concern: [Seq#749]

"A growing literature indicates that the cost of suppressing a fire nearly always includes damage to ecosystems. In a system of fire management that attempts to weigh the costs of fire suppression against potential losses due to fire, the ecological cost is often not acknowledged, despite the fact that adverse effects from suppression activities may be substantial and persistent and, in some instances, may exceed impacts attributable to the fires themselves (Pyne 1984; Mohr 1989). In some cases, it may also be difficult or impossible to differentiate the effects of fires from those of suppression activities." (p. 938, G.R. McPherson, Ph.D. et al., 2004, Impacts of Fire-Suppression Activities on Natural Communities, in Conservation Biology, Vol. 18, No. 4, August 2004). The paper cites environmental/elemental impacts and their sources associated with fire-suppression activities. These include, but are not limited to the following:

Earth is affected through soil compaction, erosion, non-native species, litter/waste, reduction of habitat, and soil contamination potentially caused by fire camps, fire lines, helibases, incident command posts, road construction, snag removal, contour-felled trees, fire lines, fuel spillage, extinguished fuses, line explosives, aerial ignition devices, and rehabilitation activities. Air is affected through air pollution, noise pollution, visual pollution potentially caused by fossil fuel emissions from aircraft, transport, machinery, aerial support, increased air traffic. Water is affected through sedimentation, disturbance, fish mortality, pollution potentially caused by contour-felled logs, channels, fire camps, fire lines, road construction, amphibious aircraft, removal of water for suppression activities, fire retardant, fuel spillage, and use of synthetic rehabilitation materials.

I do not regard any of those impacts to represent "restoration", none are acceptable trade-offs. "Fire-suppression activities begin to affect natural communities as soon as initial attack forces are deployed to the fire, and direct and indirect impacts on the environment can continue long after fire crews have departed." (p. 943, ibid.)

[

[ID#781]

Response: [Seq#749]

The impacts of fire suppression are noted. Altering fire suppression policies to change the impacts of suppression are outside of the scope of this project.

The treatments proposed by this project are intended to promote low-intensity wildfire behavior in portions of the project area that historically experienced similar fire behavior. The greater the likelihood for fire behavior within the historic range of variability, the more likely a response other than full suppression would be, and the greater the likelihood that suppression effects would be reduced. [ID#781]

Associated Comments: [Seq#749]

"A growing literature indicates that the cost of suppressing a fire nearly always includes damage to ecosystems. In a system of fire management that attempts to weigh the costs of fire suppression against potential losses due to fire, the ecological cost is often not acknowledged, despite the fact that adverse effects from suppression activities may be substantial and persistent and, in some instances, may exceed impacts attributable to the fires themselves (Pyne 1984; Mohr 1989). In some cases, it may also be difficult or impossible to differentiate the effects of fires from those of suppression activities." (p. 938, G.R. McPherson, Ph.D. et al., 2004, Impacts of Fire-Suppression Activities on Natural Communities, in Conservation Biology, Vol. 18, No. 4, August 2004). The paper cites environmental/elemental impacts and their sources associated with fire-suppression activities. These include, but are not limited to the following: Earth is affected through soil compaction, erosion, non-native species, litter/waste, reduction of habitat, and soil contamination potentially caused by fire camps, fire lines, helibases, incident command posts, road construction, snag removal, contour-felled trees, fire lines, fuel spillage, extinguished fuses, line explosives, aerial ignition devices, and rehabilitation activities. Air is affected through air pollution, noise pollution, visual pollution potentially caused by fossil fuel emissions from aircraft, transport, machinery, aerial support, increased air traffic. Water is affected through sedimentation, disturbance, fish mortality, pollution potentially caused by contour-felled logs, channels, fire camps, fire lines, road construction, amphibious aircraft, removal of water for suppression activities, fire retardant, fuel spillage, and use of synthetic rehabilitation materials. I do not regard any of those impacts to represent "restoration", none are acceptable trade-offs. "Fire-suppression activities begin to affect natural communities as soon as initial attack forces are deployed to the fire, and direct and indirect impacts on the environment can continue long after fire crews have departed." (p. 943, ibid.) [47-6]

Concern: [Seq#750]

In the natural history of the western United States there have always been large fires. Many plant and animal species possess evolutionary adaptations and benefit from periodic large fires. In the absence of historical blazes, such evolutionary adaptations would not have developed in the first place. Fire is affected by climatic variables. These include the moisture of a preceding year and El Nino and Pacific Decadal Oscillations (Taylor and Beatty, 2005; Norman and Taylor, 2003; Morgan et al., 2008; Skinner et al., 2008.) In fact, fire is so strongly determined by such climatic factors that land management seems to

play only a very minor role in regional fire patterns. [ID#782]
Response: [Seq#750]

The comments about past fire patterns and the influence of climate on fire patterns are noted. Full citations were not provided, and I was unable to access literature from the references provided. Treatments proposed by this project do not seek to alter regional fire patterns; they are intended to alter the way fire behaves within the project area boundary. [ID#782]
Associated Comments: [Seq#750]
In the natural history of the western United States there have always been large fires. Many plant and animal species possess evolutionary adaptations and benefit from periodic large fires. In the absence of historical blazes, such evolutionary adaptations would not have developed in the first place. Fire is affected by climatic variables. These include the moisture of a preceding year and El Nino and Pacific Decadal Oscillations (Taylor and Beatty, 2005; Norman and Taylor, 2003; Morgan et al., 2008; Skinner et al., 2008.) In fact, fire is so strongly determined by such climatic factors that land management seems to play only a very minor role in regional fire patterns. [47-5]

Concern: [Seq#751]

The Fuels and Fire specialist report cited numerous authorities that would address treatment of these shrublands, for instance (p. 9), "Restoration or maintenance of fire behavior to within the desired range of variability." A careful reading of the fuels and fire report indicates a possible source for the omission of shrub treatments. The priorities for treatment were analyzed by fire behavior models that considered crown fire potential of

tree

s

. Shrub lands are typically regarded as non- forest and do not enter into modeled crown potential, even though shrubland fires are crown fires by definition. Also the standard fire models are generalized over the western US and they do not account for specific fire behavior of bitterbrush, which can have 50-foot flame lengths. In some parts of the project area shrub density is so tall and dense that the fuel model is more like chaparral than shrub- grassland. [ID#783]
Response: [Seq#751]

The inclusion or exclusion of shrub-steppe areas within proposed thinning and prescribed fire units occurred with consultation with interdisciplinary-team wildlife biologist and botanist. Approximately 579 acres of shrub-steppe were included in some proposed landscape-scale treatments, while other areas were excluded in an attempt to balance the need to reduce fuels (Purpose and Need 1.3.6, Preliminary EA at p.14) with the need to retain winter forage for mule deer (Purpose and Need 1.3.4, Preliminary EA

at p.14 *"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".)* In addition, restoration of shrublands to grasslands was not identified as a major restoration need in the landscape prescription and treatment recommendations for the watershed (Churchill 2016). Field review of the habitat showed that the bitterbrush plants were low-growing, healthy plants with small to medium stems, rather than the large, woody older plants that are less valuable, and less available, as deer browse. Due to the loss of winter browse for mule deer from recent fires, there is a need to retain shrubs that are providing winter forage.

Additional shrub/steppe habitat treatments could be considered 10 - 15 years in the future when existing habitat has recovered from past wildfires over the past 20 years.

[ID#783]

Associated Comments: [Seq#751]

The Fuels and Fire specialist report cited numerous authorities that would address treatment of these shrublands, for instance (p. 9), "Restoration or maintenance of fire behavior to within the desired range of variability." A careful reading of the fuels and fire report indicates a possible source for the omission of shrub treatments. The priorities for treatment were analyzed by fire behavior models that considered crown fire potential of trees. Shrub lands are typically regarded as non- forest and do not enter into modeled crown potential, even though shrubland fires are crown fires by definition. Also the standard fire models are generalized over the western US and they do not account for specific fire behavior of bitterbrush, which can have 50- foot flame lengths. In some parts of the project area shrub density is so tall and dense that the fuel model is more like chaparral than shrub- grassland. [18-58]

Concern: [Seq#753]

[comment:18-60]

A likely scenario from not treating the shrub- steppe in this project could involve a fast- moving shrub-steppe fire spreading north of McClure Peak and then becoming a plume- dominated fire on the doorsteps of Twisp. The first part of this scenario is confirmed by the fire sending map in the EMDS report by Derek Churchill (Figure 4).

[...] [ID#785]

Response: [Seq#753]

Approximately 6482 acres of WUI (one-third of the WUI in the project area) are within proposed treatment units where hazard fuel reduction objectives would be met by proposed thinning and prescribed burning treatments, including about 579 acres of shrub-steppe in the Libby Creek area. Concerns expressed by the project wildlife biologist and botanist (including the potential for widespread spread of cheatgrass and further loss of browse for deer) limited inclusion of more shrub-steppe in

proposed treatment units. Shrublands in the Libby Creek area were not identified as a restoration objective in the landscape analysis completed by Churchill (January 2016). However, a field review by the project botanist and wildlife biologist indicate scattered low-growing shrubs interspersed with native grasses that are used by wildlife for browse. These areas can have a high probability of fires burning through them and spreading into other areas, in part because of the steep underlying topography. In order to substantially change the fuel profile and alter this fire-sending characteristic, a high-intensity underburn would be needed to kill many of the shrubs. Until other shrub-steppe areas burned in the recent 2014-15 wildfires have recovered sufficiently, the project wildlife biologist recommended that further treatment in this ecotype in the project area be deferred. The capacity of this area to send fire uphill and into the forested landscape above the town of Twisp will likely always be present because of the fuel types that would occupy this area. [ID#785]

Associated Comments: [Seq#753]

Until shrub- steppe restoration occurs, the hazardous fuels objectives of this project are largely compromised. Uncharacteristically dense shrublands can negate the value of other fuel reduction objectives because they support rapidly spreading, dangerous running wildfires in the crowns of the shrubs that sometimes can't be safely controlled with ground crews. [18-59]

A likely scenario from not treating the shrub- steppe in this project could involve a fast- moving shrub-steppe fire spreading north of McClure Peak and then becoming a plume- dominated fire on the doorsteps of Twisp. The first part of this scenario is confirmed by the fire sending map in the EMDS report by Derek Churchill (Figure 4).... Figure 4. Fire sending map [18-60]

Concern: [Seq#754]

Rapidly moving shrub- steppe fires present a significant component of fire behavior omitted from serious consideration in the EA. The high cost of ignoring the potential for high spreading rates and uncharacteristic behavior was clearly shown during the first few days of the Carlton Complex Fire, when the fire jumped the Methow River near Gold Creek and moved northward via shrub- steppe into Libby Creek, destroying buildings on the Hirschstein property within hours. The tragic loss of life in the Twisp River Fire also involved rapidly changing fire behavior in shrub- steppe vegetation and many other recent fires caused costly damage in the shrub- steppe (Virginia Lakes, Chelan Complex). [ID#786]

Response: [Seq#754]

Rapid spread rates are common in shrub-steppe fuel types, especially in the steep topography present in the Libby Creek area and described in the comment. During the extremely dry conditions present during the period of the Carlton Comples described in the comment, probability of ignitions and energy release components were extremely high. Fuel reduction treatments proposed in this project in shrub-steppe are not meant to alter fire behavior in this fuel type under these conditions. In addition, it is common for hazard reduction treatments to help contribute to rate of spread because thinning proposed in the WUI would result in a more open canopy where understory herbaceous fuels will likely increase

post-treatment, with a more open stand structure that would allow winds to affect rate of spread (revised preliminary EA, p. 158).

The fire behavior that contributed to the fatalities that occurred on the Twisp River fire was a result of a wind event accelerating rate of spread and fire intensity in a timber understory fuel type during extremely dry conditions.

Other recent fires listed occurred during the same period of a severe short-term drought. Wind events on these fires also contributed to large-scale fire growth by directly accelerating fire growth and by promoting long-range spotting of more than 1/2 mile. Ecologically robust fuel reduction treatments would not likely alter rate of spread under these conditions.

[ID#786]

Associated Comments: [Seq#754]

Rapidly moving shrub- steppe fires present a significant component of fire behavior omitted from serious consideration in the EA. The high cost of ignoring the potential for high spreading rates and uncharacteristic behavior was clearly shown during the first few days of the Carlton Complex Fire, when the fire jumped the Methow River near Gold Creek and moved northward via shrub- steppe into Libby Creek, destroying buildings on the Hirschstein property within hours. The tragic loss of life in the Twisp River Fire also involved rapidly changing fire behavior in shrub- steppe vegetation and many other recent fires caused costly damage in the shrub- steppe (Virginia Lakes, Chelan Complex). [18-61]

Concern: [Seq#755]

What if the USFS were to spend its resources helping those valley residents that need assistance in fireproofing their properties and create wide fire boundaries around communities and towns.

How do you define wildland-urban interface? Where does this interface end?

Where will natural ignitions be allowed to burn? [ID#787]

Response: [Seq#755]

USDA Forest Service, FEMA, and other federal funds have been allocated for use in funding fuel reduction projects on private lands for more than ten years. In Washington State, the state Department of Natural Resources (DNR) manages these funds through the FireWise program, using Fuel Mitigation grants. See http://www.dnr.wa.gov/firewise under the heading "Washington Firewise". In the Methow Valley, past emphasis areas for receiving these funds have included the greater Mazama, Winthrop, Twisp, and Carlton vicinities. The goal of these efforts is not to fire-proof properties; this is an unrealistic expectation for most people living in fire-prone areas. For approximately twenty years, fuels reduction projects on National Forest System lands in the Methow Valley have included lands adjacent to private ownership. The combination of hazard fuel reduction efforts in the WUI in the Mission Project, along

with thinning and prescribed burning associated with restoration goals, would help create a buffer near many of the private lands and improvements within the project boundary. Within this buffer, treatments would contribute to a reduced risk of crown fire initiation and lower fire intensities, which helps minimize spotting potential and contributes to more successful suppression efforts. These treatments would also help move the expected fire behavior in the lower-elevation, hot-dry and warm-dry environmental zones of the project area towards their historical norm of primarily frequent, low-severity fires. The current fire behavior expected in these zones is inconsistent with the historical norms (Rev. Prelim. EA, p. 140-146).

The boundary for Wildland Urban Interface (WUI) used in this project comes from the 2013 and previous editions of the Okanogan Community Wildfire Protection Plan (CWPP) (Rev. Prelim. EA, pp 5, 136, 146, 162, 436). A map of WUI in the project boundary is shown in Figures 58 (Rev. Prelim. EA, p. 148) and 62 (ibid, p. 159). See also Bloch, Vaiden, T. R. King, and B. Tucker. *Lead Authors.* 2013. Okanogan County, Washington, Community Wildfire Protection Plan. Northwest Management, Inc., Moscow, Idaho. Pp 125; and Bloch, Vaiden, T. R. King, and B. Tucker. *Lead Authors.* 2013. Okanogan County, Washington, Community Wildfire Protection Plan Appendices. Northwest Management, Inc., Moscow, Idaho. Pp 38.

Natural ignitions are not defined by the commenter, but are understood to mean lightning-caused fires for the purposes of this response. The current Okanogan National Forest Land and Resource Management Plan (Forest Plan; USDA 1989) provides for these types of ignitions to burn within designated wilderness areas (MA-15), semiprimitive motorized and non-motorized recreation areas (MA-4 & 4M), North Cascades Scenic Highway (MA-7), Research Natural Areas (MA-8), and Mountain Goat Habitat (MA-10) as long as resource concerns are being met, which may include wildlife habitat, concerns of adjacent agencies or countries, etc. Other factors considered in these conditions include expected fire behavior, time of season, resources available, and regional or national direction.

[ID#787]

Associated Comments: [Seq#755]

Our ecosystem here in the Methow Valley is fire-prone, that is no surprise. Our emotional response to fire should not be confused with the natural process and function of fire. It is sad when homes and property are destroyed and altered by fire. As humans we become very attached to our homes and vistas. It is tragic when firefighters, other community members, and animals are killed by fire. We must remember that we chose to live in such a fire-prone area, thus it is up to each of us to learn to live with fire and to make the necessary adaptations to do so. It is up to each homeowner to do their utmost in fire-wising their homes and property. [47-8]

We have chosen to live in this valley surrounded by forest. That makes each homeowner responsible for making their properties fire-defensible. No firefighter should lose their life to defend a property that isn't fire-wised sufficiently. Life is more precious than property. What if the USFS were to spend its resources helping those valley residents that need assistance in fireproofing their properties and create wide fire boundaries around communities and towns. How do you define wildland-urban interface? Where does this interface end? Where will natural ignitions be allowed to burn? [48-14]

Until we are able to accept fire as an integral part of nature and restore the natural fire regime that has existed since time began we will be continuously trying to manage wildfire and suffering the inevitable immense losses. [51-6]

What if the USFS were to spend its resources helping those valley residents that need assistance in fireproofing their properties and create wide fire boundaries around communities and towns. [51-35]

How do you define wildland-urban interface? Where does this interface end? [51-36]

Where will natural ignitions be allowed to burn? [51-37]

* How is the Wild Land Urban Interface defined? The definition appears to be more than where they meet but continues on for an undefinable distance into the wild land. With an ambiguous definition, reinstating a wildfire regime would be impossible and create an expansively daunting jurisdiction for firefighters. [67-26]

There needs to be a full definition of WUI, especially considering that the County government considers it to be almost the entire forest. [68-97]

Concern: [Seq#756]

To exacerbate this issue the combination of fire suppression, cattle allotments and logging have brought us to this crossroads. Should we continue to perform the same actions that caused the problem and that threatens the safety and wellbeing of the Methow? A sustainable future could be ours if the USFS of the Methow Valley Ranger District would take the high road and abandon these three practices.

In a time of widespread public support for environmental protection there is no excuse for the promulgation of activities which lead to further environmental collapse. It is unethical and misleading to say that a project such as the MRP is being pursued for those Purposes and Needs identified in the Environmental Assessment [MISSION RESTORATION PRELIMINARY ENVIRONMENTAL ASSESSMENT, OKANOGAN-WENATCHEE NATIONAL FOREST - METHOW VALLEY RANGER DISTRICT 12 JANUARY 2017, 1.3 Purpose and Need for Action, pp. 12-14)] when, in reality, it represents yet another example of the commodification of nature, i.e., the framing of nature as a natural resource, dependent on top-down control and contingent upon a managerial model and profitable exploitation of the natural environment within the bounds of public lands. Additionally, what is proposed serves to increase, rather than reverse or neutralize, greenhouse gases and anthropogenic carbon dioxide emissions. [ID#788]

Response: [Seq#756]

Multiple-Use Sustained -Yield Act of 1960 - "It is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." "'Multiple Use' means the management of all the various renewable surface resources of

the National Forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions, . . "

As can be seen from the above public law, the National Forests are to be established and administered for multiple uses of which two are range and timber management.

Scientific studies have shown the forest is experiencing uncharacteristically severe fires, insect infestations, disease epidemics, habitat loss, and hydrologic events. Scientists generally agree active, landscape-scale restoration is needed if the Forest is to become resilient to these threats. The Restoration Strategy activities including prescribed fire, repairing or closing roads, thinning forests, removing invasive species, and much more as described in the Mission Restoration Project Environmental Assessment.

Proposed burning is part of a larger effort to return good fire to the dry-fire adapted landscape of the eastern Cascades. After many years of fire exclusion, as requested by the public, an ecosystem that needs fire periodically becomes unhealthy. Trees are stressed by overcrowding; fire-dependent species disappear; and flammable fuels build up and become hazardous. However, the right fire at the right place at the right time helps maintain healthy forests, communities, and watersheds and this management is part of what is trying to be accomplished in the Mission Restoration Project.

Range management is not part of this proposed project. Management of range in the project area was decided in 2011 and that management is not being proposed to be changed in this project. [ID#788]
Associated Comments: [Seq#756]
To exacerbate this issue the combination of fire suppression, cattle allotments and logging have brought us to this crossroads. Should we continue to perform the same actions that caused the problem and that threatens the safety and wellbeing of the Methow? A sustainable future could be ours if the USFS of the Methow Valley Ranger District would take the high road and abandon these three practices. [51-8]

In a time of widespread public support for environmental protection there is no excuse for the promulgation of activities which lead to further environmental collapse. It is unethical and misleading to say that a project such as the MRP is being pursued for those Purposes and Needs identified in the Environmental Assessment [MISSION RESTORATION PRELIMINARY ENVIRONMENTAL ASSESSMENT, OKANOGAN-WENATCHEE NATIONAL FOREST - METHOW VALLEY RANGER DISTRICT 12 JANUARY 2017, 1.3 Purpose and Need for Action, pp. 12-14)] when, in reality, it represents yet another example of the commodification of nature, i.e., the framing of nature as a natural resource, dependent on top-down control and contingent upon a managerial model and profitable exploitation of the natural environment within the bounds of public lands. Additionally, what is proposed serves to increase, rather than reverse or neutralize, greenhouse gases and anthropogenic carbon dioxide emissions. [65-14]

Concern: [Seq#757]

I am primarily concerned about prescribed fire because of the effect it has on air quality, especially for elders, children and people with pulmonary conditions. I understand that prescribed fire is not a substitute for real fire because it is not possible to allow a prescribed burn to get large enough for it is uncontrollable and too costly; and because of its small-scale size it cannot duplicate the fuel consumption, thus rendering it fairly ineffective.

Prescribed fire also has the unfortunate reputation of getting out of control.

Burning in the spring impacts the rearing of young wildlife too detrimentally;

while in the summer with drought, winds, and lightning it becomes prohibitive.

I am most curious about when the transition will begin for good fire to return to the landscape? [ID#789]

Response: [Seq#757]

See Rev. Prelim. EA, p. 289-295 and references therein for discussion on impacts of proposed prescribed burning to air quality. No basis is provided to support the assertion that prescribed fire is not a substitute for real fire, to quantify "large enough", "too costly", "small-scale size", or otherwise qualifying why a prescribed burn is ineffective. Prescribed burns have been successfully used for more than twenty years on the Methow Valley Ranger District to meet a range of objectives identical to those achieved by wildfires, including fuel consumption, creating openings in the tree canopy, scorching lower branches, causing mortality in young, small-diameter trees; reducing conifer encroachment in aspen stands; promoting aspen resprouting; etc. Burn units have ranged from 5 to 5000 acres, and several have effectively changed fire behavior post-treatment during subsequent wildfires. Prescribed burns are as susceptible to terrain and weather influences as wildfire, and as such may spot across control lines. Prescribed burns proposed in this project would be surrounded by control lines such as existing roads, hand fireline, and/or dozer fireline. Local experience shows that these events generally cause small spots (less than 0.1 acres) that are rapidly caught. Pre-burn planning considers the likelihood of escape, and determines control and contingency resources needed to respond to such events. Prescribed burns that are declared wildfires are a rare event when considering acres burned; in the past twenty years, for example, no prescribed burns have been declared wildfires on the Methow Valley Ranger District.

The term "good fire" is not defined in comment 48-18 and 51-45; without understanding what the commenters meant by this term, a response cannot be provided. Prescribed burns may occur during the summer to achieve specific objectives.

Prescribed burning is often used to restore forest habitats and to reduce risk of wildfire. Spring burns may remove grass and shrubs that provide forage and cover for small mammals, birds, ungulates and invertebrates, but in general, burn cooler than fall burns, so fewer trees and large logs are lost (Pilliod, 2006). Spring burning will affect some animals in a positive way, and others, negatively. Direct mortality of wildlife due to equipment, incineration or asphyxiation during fuel reduction burning is considered to be low, but that is anecdotal information (Pilliod et al. 2006). Spring burning during the breeding season may result in mortality of ground- and shrub-nesting bird nestlings and species living within litter such as small mammals, reptiles, amphibians and invertebrates (Pilliod et al. 2006). Pilliod et al. conclude that "it

should be recognized that a planned burn will likely kill some individuals and mortality can be significant for some populations", and that species with limited distributions need special consideration. Post-burn changes in structure and composition of vegetation will affect species, as well. Species' response depends on many things, including age, life history and species' mobility, availability of refugia, burning conditions and timing.

[ID#789]

Associated Comments: [Seq#757]

I am concerned about the effects of prescribed burning from the poor air quality that not only effects humans but also the wildlife. In addition the noise pollution will also adversely effect the diversity of wildlife in these areas. [17-3]

I am primarily concerned about prescribed fire because of the effect it has on air quality, especially for elders, children and people with pulmonary conditions. I understand that prescribed fire is not a substitute for real fire because it is not possible to allow a prescribed burn to get large enough for it is uncontrollable and too costly; and because of its small-scale size it cannot duplicate the fuel consumption, thus rendering it fairly ineffective. Prescribed fire also has the unfortunate reputation of getting out of control. Burning in the spring impacts the rearing of young wildlife too detrimentally; while in the summer with drought, winds, and lightning it becomes prohibitive. I am most curious about when the transition will begin for good fire to return to the landscape? [48-18]

I am primarily concerned about prescribed fire because of the effect it has on air quality, especially for elders, children and people with pulmonary conditions. I understand that prescribed fire is not a substitute for real fire because it is not possible to allow a prescribed burn to get large enough for it is uncontrollable and too costly; and because of its small-scale size it cannot duplicate the fuel consumption, thus rendering it fairly ineffective. [51-41]

Prescribed fire also has the unfortunate reputation of getting out of control. [51-42]

while in the summer with drought, winds, and lightning it becomes prohibitive. [51-44]

I am most curious about when the transition will begin for good fire to return to the landscape? [51-45]

Concern: [Seq#758]

Every living thing is connected to every other living thing. Trees are more than a commodity to be bought and sold. Trees are the earth's lungs. Our priorities in this world have become so convoluted that money has become more important than life itself. [ID#790]

Response: [Seq#758]

Thank you for your comment. [ID#790]
Associated Comments: [Seq#758]
* Every living thing is connected to every other living thing. Trees are more than a commodity to be bought and sold. Trees are the earth's lungs. Our priorities in this world have become so convoluted that money has become more important than life itself. [67-11]

Concern: [Seq#759]

What an EA is supposed to do: The Council on Environmental Quality regulations define an environmental assessment as a concise public document that includes brief discussions of the need for the proposal, of alternatives to the proposal, of environmental impacts of the proposed action, and a listing of agencies and persons consulted (40 CFR 1508.9). In its present form, reading and understanding this document is quite difficult because of its unnecessary length, poor organization, heavy reliance on the use of unexplained acronyms and lack of a concise, coherent executive summary.

The document is poorly organized and written - The Draft EA presents a significant challenge to members of the public who want to understand the overarching goals and objectives of the proposed project. It is poorly organized, plagued with redundancy and generally hard to read. The EA is well over 400 pages long with an additional ~ 1000 pages of individual topic resource background reports (some of which are in very rough form). [ID#791]
Response: [Seq#759]

An Appendix H has been added to the document to explain Acronyms and to provide a glossary of definitions used in the NEPA document.

The format of the document has been somewhat changed from previous environmental documents to incorporate information that nearly always needs to be included in the document and to improve the quality of our analysis documentation. The content of the document is drawn from Resource Specialists Reports and has attempted to summarize evidence, findings, and conclusions of those reports trying to use vocabulary appropriate for the non-technical reader. This NEPA document is trying to follow regional protocol, standards, analysis, methodology, modeling, while adequately describing the existing condition and recognizing the special and unique qualities of the specific area. The document must tie to Forest Plan requirements, other guidance documents, and other relevant laws, regulations, policies, and Plans. This document tries to rely on professional judgment rather than personal bias.

The document has tried to use more figures (tables and figures), 160, to make the information more understandable which has added to the length of the document. [ID#791]
Associated Comments: [Seq#759]
What an EA is supposed to do: The Council on Environmental Quality regulations define an environmental assessment as a concise public document that includes brief discussions of the need for the proposal, of alternatives to the proposal, of environmental impacts of the proposed action, and a listing of agencies and persons consulted (40 CFR 1508.9). In its present form, reading and

understanding this document is quite difficult because of its unnecessary length, poor organization, heavy reliance on the use of unexplained acronyms and lack of a concise, coherent executive summary. [78-3]

1. The document is poorly organized and written - The Draft EA presents a significant challenge to members of the public who want to understand the overarching goals and objectives of the proposed project. It is poorly organized, plagued with redundancy and generally hard to read. The EA is well over 400 pages long with an additional ~ 1000 pages of individual topic resource background reports (some of which are in very rough form). [78-15]

Concern: [Seq#760]

It is disturbing to read that the results of the monitoring required in the 1989 Forest Plan are not included. What was learned by the previous 28 years of planning that was required in the Forest Plan? Will a similar lack of analysis result from this project? Alarmingly, the EA cites the results of none of the monitoring required in the 1989 Forest Plan for the Okanogan National Forest. What information will be acquired from this project? Will it meet the same fate as the information required by the Forest Plan? Once again, and EIS should be done in order to include analysis of the monitoring required by the Forest Plan - and this analysis should be used in the planning for this project. [ID#792]

Response: [Seq#760]

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018/2019. The results of this past Forest monitoring has been incorporated into this NEPA document, including discussions on soils as recently as 12-05-2017.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for

the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

. [ID#792]

Associated Comments: [Seq#760]

It is disturbing to read that the results of the monitoring required in the 1989 Forest Plan are not included. What was learned by the previous 28 years of planning that was required in the Forest Plan? Will a similar lack of analysis result from this project? Alarmingly, the EA cites the results of none of the monitoring required in the 1989 Forest Plan for the Okanogan National Forest. What information will be acquired from this project? Will it meet the same fate as the information required by the Forest Plan? Once again, and EIS should be done in order to include analysis of the monitoring required by the Forest Plan - and this analysis should be used in the planning for this project. [70-7]

Concern: [Seq#761]

Implementation of a forest ecosystem restoration plan of this scale has seldom been done in the Pacific NW, and the treatments applied at this scale are largely experimental. Given that this approach will become the norm for future forest health projects, it behooves the FS to track very carefully how well their predictions of the overall effectiveness of individual treatments comport with documented outcomes, and to develop a contingency plan if expectations are not realized. It would be a serious failure to bypass this opportunity to learn from application of these treatments by not providing for an adequate monitoring program. [ID#793]

Response: [Seq#761]

Implementation of a forest ecosystem restoration plan of this scale is becoming the norm. This project will likely be implemented through two Stewardship Contracts; one in Libby Creek and the other contract the remaining portion of the project area.

The project area is approximately 50,200 acres of which approximately 31% is within designated wilderness, Congressionally Reserved. Approximately 5% is in Late Successional Reserves which is managed to protect and enhance conditions of late-successional and old growth forest ecosystems. In addition the project area contains about 3300 acres of the Sawtooth Inventoried Roadless Area where

the only proposed treatment is <2 acres of underburning and construction of about 900' of fireline . Most of the proposed treatments are not experimental. Most of these same treatments have been conducted on this Forest or other Forests throughout the West for many years or are commercially available. The North Zone of the Okanogan-Wenatchee National Forest started implementing some of the concepts of ecosystem restoration in, or before 2006 in such projects as Mutton, Buck, South Summit II, Bailey Restoration, etc.

The most experimental of the treatments are: 1) Up to 468 acres of soil restoration. Similar soil restoration treatments have been done on the forest in the past and on other National Forest lands in the West. The main difference is in the design of the bucket of the excavator being used for the treatment. 2) The production of "Bio-Char" has not been done on this Forest in the past but is a commercial process used for to produce a soil amendment. "Bio-Char" can be purchased in some garden stores and on-line. 3) The allowing of timber harvest treatments on slopes up to 45% has not been done in the recent past on this Forest, but is done on the Colville National Forest and on other forest lands. Numerous safeguards are being put in place if soil damage is taking place to terminate this harvest treatment. All of these three treatments will be adequately monitored.

[ID#793]

Associated Comments: [Seq#761]

Implementation of a forest ecosystem restoration plan of this scale has seldom been done in the Pacific NW, and the treatments applied at this scale are largely experimental. Given that this approach will become the norm for future forest health projects, it behooves the FS to track very carefully how well their predictions of the overall effectiveness of individual treatments comport with documented outcomes, and to develop a contingency plan if expectations are not realized. It would be a serious failure to bypass this opportunity to learn from application of these treatments by not providing for an adequate monitoring program. [78-13]

Concern: [Seq#762]

I believe the project has too large a scope and should be scaled back to a small area for a trial action.

Much of the logging in our state has been devastating to soils, habitat, and forest health. I have seen large areas of

erosion, water contamination loss of habitat.

It seems that an area of 100 acres would be reasonable to start with thinning, removal of insect and mistletoe infected trees

and could be located near some of the adjacent landowners who are interested in fuel reduction around their homes.

This could be a test of the company chosen to see what type of equipment they would use and the extent of the damage. [ID#794]

Response: [Seq#762]

The Methow Valley Ranger District has many years of previous experience in designing timber harvest and fuels management projects in landscapes that include large trees. Ongoing monitoring has provided the opportunity to make adjustments to planning, contracts and contract administration for restoration projects. Appendix D of the Preliminary EA includes the planned monitoring for Mission Restoration Project. Recent examples include South Summit II, Wrangle, and Buck. [ID#794]

Associated Comments: [Seq#762]

I believe the project has too large a scope and should be scaled back to a small area for a trial action. Much of the logging in our state has been devastating to soils, habitat, and forest health. I have seen large areas of erosion, water contamination loss of habitat. It seems that an area of 100 acres would be reasonable to start with thinning, removal of insect and mistletoe infected trees and could be located near some of the adjacent landowners who are interested in fuel reduction around their homes. This could be a test of the company chosen to see what type of equipment they would use and the extent of the damage. [66-1]

Concern: [Seq#763]

The Forest Service is ignoring current research within its own agency that proves the that the Mission Project would be detrimental to aquatic conditions, fire risk, and habitat of Endangered Species Act listed animals. [ID#795]

Response: [Seq#763]

It is difficult to respond to this comment since it lacks specifics of what current research is being referenced.

Impacts to aquatic habitat are displayed in Section 3.3, Water Resources. Impacts to fire risk are displayed in Section 3.6, Fire/Fuels. Impacts to habitats of Threatened, Endangered, and Sensitive Species are displayed in Sections 3.3, Water Resources, 3.7, Wildlife, and 3.9, Botany, besides in individual resource reports for these resources and the project Draft BA, in project files.

Alternatives 2 and 3 would have a long-term moderate beneficial impact to *B. crenulatum*.

The project is expected to result in an increase of fish production at the sub-watershed scale and directly contribute to the recovery of at-risk ESA listed fish species.

For wildlife species you need to refer to Section 3.7 of the EA and the Wildlife Resource Report for specific species information. Consultation with U.S.F.W.S. has not been completed, but will be in the future and you can refer to that when completed. A draft BA has been completed for consultation with consultation scheduled for February. [ID#795]

Associated Comments: [Seq#763]
The Forest Service is ignoring current research within its own agency that proves the that the Mission Project would be detrimental to aquatic conditions, fire risk, and habitat of Endangered Species Act listed animals. [29-36]

Concern: [Seq#764]

Figure 3. Controlled burning in Mission Project (orange) omits most of the significant landscape that is covered in shrub- steppe vegetation.

Most of the area east of Ben Canyon and north of Libby Creek is dominated by shrublands and invading conifers that historically would have been dominated by grasses under a frequent fire regime (Figure 2). [ID#796]
Response: [Seq#764]

Treatments in the shrub-steppe habitat creates several concern factors including the spread of invasive species, the effects on wildlife forage, and fire/fuels effects on rates of potential spread during a wildfire. Based on scoping comments, the Interdisciplinary Team for the project increased treatments in shrub-steppe habitat near private land that was not in the original project proposal at time of scoping.

In the short-term, the greatest concern relates to providing wildlife forage due to wildfires in 2006, 2014, and 2015. In many previously wildfire burned areas, bitterbrush is only starting to return after about 20 years. We have determined that the time is not ripe for additional treatments in this habitat within about the next decade. That a prescribed burning treatment should be considered then when we can better assess the effects of such a treatment on wildlife habitat.

Some shrub-steppe habitat is included in the landscape burns, in the Libby drainage. A very rough estimate of this is that about 579 acres of shrub-steppe habitat would be included in the landscape underburns. This is an attempt to balance the need to reduce fuels (Purpose and Need 1.3.6, Preliminary EA at p.14) with the need to retain winter forage for mule deer (Purpose and Need 1.3.4, Preliminary EA at p.14 *"A purpose of this project is to develop, maintain, and/or enhance habitat for federally listed and other wildlife species and reduce the risk of large-scale habitat loss to fires by increasing resilience of habitats to wildfire".)*

Restoration of shrublands to grasslands was not identified as a major restoration need in the landscape prescription and treatment recommendations for the watershed (Churchill 2016). Field review of the habitat showed that the bitterbrush plants were low-growing, healthy plants with small to medium stems, rather than the large, woody older plants that are less valuable, and less available, as deer

browse. Due to the loss of winter browse for mule deer from recent fires, there is a need to retain shrubs that are providing winter forage.

In the Methow Valley, wildfires have burned large areas of deer winter range in the last 5 years. An estimated 51% of the winter range on the Methow Valley Ranger District burned since 2012. Approximately 16% of the winter range burned with moderate to high severity effects to vegetation. Another 13% of the winter range burned in 2006, for a total of about 64% of the Forest winter range in the Methow burned in an 11-year period. [ID#796]

Associated Comments: [Seq#764]

Figure 3. Controlled burning in Mission Project (orange) omits most of the significant landscape that is covered in shrub- steppe vegetation. Most of the area east of Ben Canyon and north of Libby Creek is dominated by shrublands and invading conifers that historically would have been dominated by grasses under a frequent fire regime (Figure 2). [18-55]

Concern: [Seq#765]

Inclusion of prescribed burns on some of the over 9000 acres of shrub-steppe habitat within the Mission Project Area would do more to reduce the risk of large-scale wildfires than most of the other actions proposed in the EA. [ID#797]

Response: [Seq#765]

Treatments in the shrub-steppe habitat creates several concern factors including the spread of invasive species, the effects on wildlife forage, and fire/fuels effects on rates of potential spread during a wildfire. Based on scoping comments, the Interdisciplinary Team for the project increased treatments in shrub-steppe habitat near private land that was not in the original project proposal at the time of scoping.

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Field reviews of burned sites showed that on severely burned sites, 12% of the bitterbrush plants were resprouting from the 2014 fire and 14% were resprouting from the 2006 fire. A moderately burned site from the 2006 fire showed 27% of the bitterbrush plants were dead with no resprouting occurring, 11 years post-burn. Other shrubs (serviceberry, ceanothus, willow, snowberry) on the winter range were resprouting on one severely burned site from the 2014 fire, but were small enough that they would not provide much forage during the winter yet.

Figure 58, on pages 153 and 154 of the Preliminary EA indicates that 57% of the flame lengths in the WUI are rated as low (0 - 4'), personnel can generally attack fire directly at the head or flanks of the fire) and 32% are rated as moderate (5 - 8' flame lengths, fires are too intense for direct attack on the head using hand tools). [ID#797]

Associated Comments: [Seq#765]

Inclusion of prescribed burns on some of the over 9000 acres of shrub-steppe habitat within the Mission Project Area would do more to reduce the risk of large-scale wildfires than most of the other actions proposed in the EA. [78-31]

Concern: [Seq#766]

Wildfire is a natural component of the community in the forest.

When wildfire is prevented, the forest suffers for lack of that natural process that would contribute to resiliency and all the other living creatures of the forest are negatively impacted by that deficit. When the stewards of the forest make a mistake, and the mistake is admitted, then the mistake should be corrected. Let's reinstate natural wildfire ignitions to heal our forest. Logging does not equal wildfire.

Pay now or pay later.

The longer fire suppression is the law of the land more and more ladder fuel is building up in the forest while climate change is warming up the planet. Better to allow natural fire ignitions now to avoid a bigger and more destructive fire later.

The FS clearly states that fire suppression has been a big management factor in why the forest is in the condition it is in, but there is absolutely no discussion of what the forest would be like if full fire suppression was not the main approach to wildfire.

The FS should be seeking pubic support for proactive use of managed fires and should be part of the revision of the Forest Plan

[ID#798]

Response: [Seq#766]

The EA acknowledges the presence and role of fire on the landscapes in the project area (p. 140-141, revised preliminary EA); proposed treatments are not intended to eliminate wildfire but to promote the amount and arrangement of wildfire behavior in certain parts of the landscape that is consistent with desired historical and future ranges of variability. Treatments proposed in this project are designed to help restore inherent fire regimes especially in the dry forested portions of the project that have departed from their range of variability in terms of expected fire severity, which influences landscape stability and resilience. Allowing unchecked wildfire behavior in these areas would result in severe fire behavior and effects that would likely severely damage terrestrial and aquatic habitat (see revised preliminary EA, Chapter 3 resource reports for various resources, under Environmental Consequences, Alternative 1 - No Action).

This project does not propose to change fire suppression policy to eliminate suppression actions or minimize them because this action would be outside of the scope of this project. Eliminating fire suppression would not meet the purpose and needs described in EA (p.4-6, revised preliminary EA) because in the dry forested landscapes in the project, the risk of high-severity fire is above the desired range of variability (revised preliminary EA, p. 140-148) with attendant risks to habitat and values within the Wildland Urban Interface. Changing fire suppression policy or dividing the landscape into zones for fire management strategies would require forest plan amendments and would be more appropriately considered at the forest plan revision level, as well as during formation of local, regional, and national wildfire response policies. Commercial thinning proposed in this project is intended as a tool to meet the restoration objectives described in the Purpose and Need statements; forest restoration projects would enhance the safety and well-being of local residents by helping to create a more resilient forested landscape that are more likely to withstand wildfires with greater retention of large trees and other important components of habitat. No claim has been made in the proposed action or analysis that

logging is equivalent to wildfire. Grazing practices have been modified substantially to minimize impacts caused by this activity by reducing the number of cattle, controlling timing of use, rotating use between pastures, fencing sensitive areas, etc. Wildfire will continue to occur in forests in the project area; activities proposed in this project are not intended to prevent wildfires. No claim has been made in this analysis that logging equals wildfires in their intensity or scope.

Zeigler et al. (2017) in their research of somewhat similar types of vegetation treatments found that those treatments reduce fire spread by about 24% and fire line intensity by about 177%. [ID#798]

Associated Comments: [Seq#766]

Until we are able to accept fire as an integral part of nature and restore the natural fire regime that has existed since time began we will be continuously trying to manage wildfire and suffering the inevitable immense losses. One hundred years of excluding fire has gotten us into this untenable position-an overabundance of fuel and the conundrum of what to do with it. Wildfire is an active part of the forest ecosystem contributing productivity, health and resilience.Forests need fire. To exacerbate this issue the combination of fire suppression, cattle allotments and logging have brought us to this crossroads. Should we continue to perform the same actions that caused the problem and that threatens the safety and wellbeing of the Methow? A sustainable future could be ours if the USFS of the Methow Valley Ranger District would take the high road and abandon these three practices. [48-4]

One hundred years of excluding fire has gotten us into this untenable position-an overabundance of fuel and the conundrum of what to do with it. Wildfire is an active part of the forest ecosystem contributing productivity, health and resilience.Forests need fire. [51-7]

The EA has stated that fire suppression has been a big management factor in why the forest is in the condition it is in, but there is absolutely no discussion of what the forest would be like if full fire suppression was not the main approach to wildfire. [63-76]

* Wildfire is a natural component of the community in the forest. When wildfire is prevented, the forest suffers for lack of that natural process that would contribute to resiliency and all the other living creatures of the forest are negatively impacted by that deficit. When the stewards of the forest make a mistake, and the mistake is admitted, then the mistake should be corrected. Let's reinstate natural wildfire ignitions to heal our forest. Logging does not equal wildfire. [67-3]

* Pay now or pay later. The longer fire suppression is the law of the land more and more ladder fuel is building up in the forest while climate change is warming up the planet. Better to allow natural fire ignitions now to avoid a bigger and more destructive fire later. [67-4]

The FS should be considering, as pointed out in scoping, plans that divide the broader landscape into zones for different fire management strategies. This approach is used by Parks Canada. (MP North, SL Stephen, et al, Reform Forest Fire Management, Science Magazine, Sept 2015) [68-34]

The FS clearly states that fire suppression has been a big management factor in why the forest is in the condition it is in, but there is absolutely no discussion of what the forest would be like if full fire suppression was not the main approach to wildfire. [68-42]

The FS should be seeking pubic support for proactive use of managed fires and should be part of the revision of the Forest Plan. [68-43]

Consider and implement a fire use program and stop suppression of all fires. RESPONSE: This is outside the scope of this project because it would require changing agency fire policy. Forest Plan amendments would have to undergo separate environmental analysis to consider this proposal. Consideration of this proposal would occur during a Forest Plan revision, not planning at the project level. COMMENT: This response is outrageous considering that one of the primary reasons for this project stated over and over is to reduce wildfire risk. Much can be done to design and implement a fire program without changing agency fire policy. And, before implementing a terrible project like this, do change agency fire policy. This separate environmental analysis is exactly what was commented on in scoping and should be done before implementing this project. Forest Plan revision, long overdue, must come first. [68-63]

Concern: [Seq#767]

I agree that thinning of forested areas of second growth trees with 1/4 mile of homes is important to maintain the preservation of these structures.

I believe low-impact thinning, such as horse or small operation cutting is sufficient to reduce the fire risk and disease risk. Removal of mistletoe infestation and diseased tress with 1/4 mile of structures seems acceptable.

[ID#799]

Response: [Seq#767]

Conducting thinning treatments as described would contribute to meeting Purpose and Need #6 (Wildfire Hazard in the Wildland Urban Interface), but would not meet Purpose and Needs #1, 3, 4, or 5. Dry forest stand structure and arrangement and response to disturbances such as wildfire would not move to the desired range of variability; unique habitats (aspen and wetlands) would still experience conifer encroachment; hardwoods would continue to be shaded out by conifers in some drainages. [ID#799]

Associated Comments: [Seq#767]

I agree that thinning of forested areas of second growth trees with 1/4 mile of homes is important to maintain the preservation of these structures. I believe low-impact thinning, such as horse or small operation cutting is sufficient to reduce the fire risk and disease risk. Removal of mistletoe infestation and diseased tress with 1/4 mile of structures seems acceptable. [54-3]

Concern: [Seq#768]

The Mission Project (alternatives 2 and 3) as I understand it seems to me to be largely an appropriate response to current forest and road conditions. It is true, as some commentators have stated, that the proposed actions will not provide any kind of absolute protection against extreme fire events. But they would shift the landscape back toward much greater fire resilience and forest and watershed health, while providing an opportunity to correct many of the problems that are degrading or threatening these watersheds.

Also, some commentators seem to imply that the reliance on commercial timber activities somehow taints the integrity of this project. To the extent that these activities are carried out in a careful and environmentally responsible way (including as much over-snow logging as possible), I strongly disagree with this position. Timber harvest is an appropriate and sometimes necessary part of the mix. [ID#800]

Response: [Seq#768]

Thank you for your support of the proposed treatments. The treatments proposed in this project would help increase resilience to the impacts of wildfires by using thinning and prescribed fire, high-severity fires in areas that typically experienced low to moderate severity fire behavior. Thinning and prescribed fire close to infrastructure would help reduce the likelihood of high-severity fires and the risk of fire coming of National Forest System lands onto private lands. Mitigations to protect large, old trees and riparian areas would be effective to maintain terrestrial and aquatic habitat. [ID#800]

Associated Comments: [Seq#768]

I am writing in support of the Mission Restoration Project. I think it is important that we address the new threat of mega fires by thinning and mimicking historic fire intervals and helping the ecosystem back into a state of resilience. Extremely hot fires, such as the recent ones in the Methow and Okanogan valleys damage the soil profiles and change the nature of the ecosystem in fundamental ways. This project is an opportunity to prevent such devastating impacts from future fires. I hope to see it carried forward. [59-1]

I'm writing to voice my support for the restoration of healthy ecosystems through thinning and prescribed burns. Our region has suffered extensively from catastrophic wildfires, and controlled burns that leave large healthy trees are the best way to protect our forests and communities from another disastrous conflagration. Thank you. [60-1]

I am in support of fire-wising residences and areas close to infrastructure. Thinning of trees and removal of brush directly adjacent to these would be a constructive use of fiscal resources. Firefighters should not be placed at risk to defend areas which have not been fire-wised. [61-4]

The Mission Project (alternatives 2 and 3) as I understand it seems to me to be largely an appropriate response to current forest and road conditions. It is true, as some commentators have stated, that the proposed actions will not provide any kind of absolute protection against extreme fire events. But they would shift the landscape back toward much greater fire resilience and forest and watershed health, while providing an opportunity to correct many of the problems that are degrading or threatening these watersheds. [64-1]

The mitigations and protections that the scoping documents listed for protecting old-growth stands and the riparian areas is critical. The wildfires of the last 11 years are proof that we need habitat for survival. This includes soil stability, lack of roads, and clean water. [66-2]

While I agree with Mr. Frue's assertion that these treatments will probably not stop the massive fires during extreme fire weather, thinning and prescribed burning can decrease the likelihood that these massive fires will develop and make fires easier and safer to fight in areas near private lands. [75-3]

The proposed actions in the Mission Forest Restoration Project could decrease the likelihood that a massive fire will develop within its project areas and make fires that do develop safer to fight. I live just north of Lookout Mountain, in the Alder Creek drainage. The heavy buildup of fuels between my current property and the project areas leaves me wondering if I am at risk from a massive fire in the Libby Creek watershed. [76-2]

Concern: [Seq#769]

The stated need to " modify the structure, composition, and patterns of forest stands within and adjacent to the wildland/urban interface (WUI)" does not make it clear that the entire area under consideration, as well as the overwhelming majority of the Twisp district, is designated WUI. Essentially, this is a blank check for forest stand manipulation that is completely divorced from a meaningful definition of a "wildland/urban interface". [ID#801]

Response: [Seq#769]

While the purpose and need statement does not describe where WUI is within the project area, the fuels analysis describes where the WUI boundary came from and displays maps of where WUI lies within the project boundary (Preliminary EA, pp. 138, 147-149). For further information on how the Community Wildfire Protection Plan (CWPP) was developed for Okanogan County, including how the boundary for WUI was developed, refer to the CWPP documents cited in the EA (Tucker and Bloch, 2013a and 2013b). Chapter 4 of the CWPP describes the processes used to determine WUI and the authority of the CWPP to use this definition. As a cooperating agency in the development of the CWPP, Forest Service staff are obliged to consider the local definition of WUI during land management planning. The presence of WUI has not allowed for unlimited forest stand manipulation as proposed by this project, nor is this type of

action authorized by the county CWPP. The commercial thinning treatments proposed in this project are intended to meet forest restoration goals, and are not designated as "WUI" treatments. [ID#801]

Associated Comments: [Seq#769]

The stated need to " modify the structure, composition, and patterns of forest stands within and adjacent to the wildland/urban interface (WUI)" does not make it clear that the entire area under consideration, as well as the overwhelming majority of the Twisp district, is designated WUI. Essentially, this is a blank check for forest stand manipulation that is completely divorced from a meaningful definition of a "wildland/urban interface". [49-9]

Concern: [Seq#770]

I understand that you want to focus on these drainages because they tend to burn more severely than other ecosystems. However, you have to consider that these areas burn more heavily because they are more brushy by nature, not because of the presence of mature trees. Logging these drainages would therefore not only compromise the health of the watershed but also increase the growth of brush because of the lack of appropriate canopy cover. This would only make conditions worse, not better [ID#802]

Response: [Seq#770]

The "tendency to burn more severely" was not the reason for focusing on Libby and Buttermilk Creek drainages. The primary consideration for looking at these drainages were the ecosystem indicators for these areas were outside the desired ranges of historic/future variability for stand structure, composition, and arrangement, especially in dry forested areas (See Preliminary EA, Ch. 3, "Affected Environment" sections at pp 107-113, 142-147, etc.) with resulting impacts on habitat, fire behavior, and so on. Proposed thinning treatments would move these dry forested areas towards the desired range of variability which would include more open stand arrangement (similar to historical conditions), which would have included more shrubs and grasses than exist presently). The term "appropriate" would be more applicable to these historic reference conditions than to existing conditions. [ID#802]

Associated Comments: [Seq#770]

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Concern: [Seq#771]

In design features, Aquatics and Hydrology there are 19 potential negative impacts listed. All but one require monitoring for the design feature to mitigate the problem to be even potentially effective, yet funding for monitoring any of the project components other than commercial harvest, is nonexistent. [ID#803]

Response: [Seq#771]

Monitoring is done annually by USFS personnel. The hydrologist, fish biologist, wildlife biologist and the soil scientist do monitoring as part of their base program of work.

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018/2019. The results of this past Forest monitoring has been incorporated into this NEPA document, including discussions on soils as recently as 12-05-2017.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their

requirements, and thus making rapid adaptions to monitoring results somewhat difficult. [ID#803]
Associated Comments: [Seq#771]
In design features, Aquatics and Hydrology there are 19 potential negative impacts listed. All but one require monitoring for the design feature to mitigate the problem to be even potentially effective, yet funding for monitoring any of the project components other than commercial harvest, is nonexistent. [63-92]

Concern: [Seq#772]

The objectives of the Aquatic Conservation Strategy will be met when monitoring determines if 1) Best Management Practices have been implemented, 2) effectiveness of management practices at multiple scales, ranging from individual sites to watersheds, has been demonstrated, and 3) that ecosystem functions and processes have been maintained as predicted. "The EA includes no assurance this level of monitoring will occur. [ID#804]
Response: [Seq#772]

Monitoring is done annually by USFS personnel. The hydrologist, fish biologist, wildlife biologist and the soil scientist do monitoring as part of their base program of work. The Sale Administrator monitors implementation of the Stewardship contract while commercial operations are on-going to see that the purchaser is fulfilling the terms of their contract.

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

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Concern: [Seq#773]

I contend that thus far there has been a lack of credible information regarding aquatics and watershed analysis and that further monitoring at any stage of this project is inadequately addressed. [ID#805]

Response: [Seq#773]

There is a full analysis of the existing condition at the watershed level and the expected impacts from the proposed action in the EA. Monitoring is done annually by USFS personnel. The hydrologist, fish biologist, wildlife biologist and the soil scientist do monitoring as part of their base program of work. The Sale Administrator monitors the implementation of the Stewardship contract to see that the terms and conditions of the contract are being met.

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

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Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult. [ID#805]

Associated Comments: [Seq#773]

I contend that thus far there has been a lack of credible information regarding aquatics and watershed analysis and that further monitoring at any stage of this project is inadequately addressed. [68-9]

Concern: [Seq#774]

Fishery and watershed resource health should be at least as important to restore as "historic forest stand composition". The EA documents that the "thinning"/commercial logging will result in long term adverse effects to those public resources. How can this commercial timber sale, with its long term adverse natural resource damage, be designated a restoration project when all of the actions presented as restoration will not be initiated unless public funds are allocated?. [ID#806]

Response: [Seq#774]

There is no long-term adverse effect analyzed in the Mission EA for Aquatic Resources. There are minor, temporary adverse effects to sediment from vegetation treatments from log haul, road construction/decommissioning, prescribed burning and aquatic project implementation. There is a net

beneficial impact to this indicator in the long term. The aquatic projects will be implemented as funding becomes available. Outside partners are very interested in funding aquatic restoration work.

This project will likely be implemented under 2 Stewardship contracts. The first contract is estimated to provide approximately $395,000 of product value (net) which can be utilized to fund restoration type work. The three types of projects that may be funded includes road decommissioning for wildlife and aquatic habitat improvement; whip felling for preparation for tree planting; and timber stand improvement and ladder fuel reduction treatments and piling to restore large tree structure. [ID#806]

Associated Comments: [Seq#774]

"Fishery and watershed resource health should be at least as important to restore as "historic forest stand composition". The EA documents that the "thinning"/commercial logging will result in long term adverse effects to those public resources. How can this commercial timber sale, with its long term adverse natural resource damage, be designated a restoration project when all of the actions presented as restoration will not be initiated unless public funds are allocated? [63-36]

Concern: [Seq#775]

Even where measurable lowering of water quality is being prevented, anti degradation rules require that no activity cause or contribute to a violation of the numeric turbidity criteria or harm the existing or designated uses established in the state standards for the specific water bodies." Logging and log hauling will cause degradation of the waterways. [ID#807]

Response: [Seq#775]

A full analysis of impacts to sediment and compliance with all applicable laws is discussed in Section3.3, Water Resources, and Appendix G, Regulatory Framework. [ID#807]

Associated Comments: [Seq#775]

"Even where measurable lowering of water quality is being prevented, anti degradation rules require that no activity cause or contribute to a violation of the numeric turbidity criteria or harm the existing or designated uses established in the state standards for the specific water bodies." Logging and log hauling will cause degradation of the waterways. [63-56]

Concern: [Seq#776]

Proposed reductions in effective groundcover in RRs have been avoided, minimized, and mitigated by project design to limit bare soil creation near surface water areas."[This suggests incorrectly that prescribed burning of 10,000 acres can avoid areas near where surface water ways exist. [ID#808]

Response: [Seq#776]

Page 51 Aquatic Resource Report:

Potential direct and indirect effects to hydrologic processes and water quality from non-commercial fuels treatments and prescribed fire are mitigated through BMPs and standards and guidelines. These limit fire intensity and severity, ground-disturbing activities (including firelines), and retain adequate groundcover. Fuels reduction treatments on 16% of the Buttermilk and 25% of the Libby sub-watersheds in the proposed action would increase landscape resiliency to large-scale wildland fire and would mitigate potential effects to hydrologic function and water quality.

The project hydrologist expects some sediment delivery to streams from the proposed fuels treatments. Following the design criteria of no active lighting within 25 feet of intermittent streams and 100 feet of perennial streams would limit the amount of created bare soil. Riparian under burning would have a resource objective of maintaining 95% survival of over story trees, 2/3s or 66% of the understory, and 50% of the ground cover. If these objectives cannot be met, the area would be excluded. During ignition, if these objectives are being exceeded, lighting would cease and conditions reassessed. Burning is not expected to remove the duff layer that would maintain a protective cover over bare, inorganic soils. During pile burning, protective buffers of 25 feet along intermittent streams and 50 feet along perennial streams would be used. These design criteria would limit bare soil production and potential sediment delivery. These actions would result in a negligible negative impact to instream fine sediment levels. In the long-term fuels would be reduced in the project area that would decrease the potential for high intensity wildfire. Forest fires, especially high severity ones, can lead to high soil erosion rates in the following years that tend to substantially increase stream sediment loading and compromise fish habitat. [ID#808]

Associated Comments: [Seq#776]

"Proposed reductions in effective groundcover in RRs have been avoided, minimized, and mitigated by project design to limit bare soil creation near surface water areas."[This suggests incorrectly that prescribed burning of 10,000 acres can avoid areas near where surface water way exist. [63-57]

Concern: [Seq#777]

The following paragraph from CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan Final Report, July 30, 2014, indicates the need for stronger protections for riparian reserves and aquatic resources and points to the known adverse effects of mechanical thinning and fuel reduction activities on these resources: Observed and anticipated effects of climate change, and of cumulative anthropogenic stressors operating in the nonfederal lands surrounding NFP lands strongly indicate the need to strengthen, not weaken key ACS protections. Roads and ground disturbance associated with mechanical thinning and fuels reduction activities, especially within Riparian Reserves, cause adverse environmental impact that generally offset or exceed presumed restorative benefits. Headwater streams warrant wider riparian forest buffers than current ACS provisions to ensure effective retention of sediment and nutrients derived from upslope logging, fire, and landslides. [ID#809]

Response: [Seq#777]

The impacts have been analyzed in Section 3.3, Water Resources, and the project will be in compliance with all applicable laws. Also see Appendix G, Regulatory Framework for reference to laws and guidelines. [ID#809]

Associated Comments: [Seq#777]

The following paragraph from CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan Final Report, July 30, 2014, indicates the need for stronger protections for riparian reserves and aquatic resources and points to the known adverse effects of mechanical thinning and fuel reduction activities on these resources: Observed and anticipated effects of climate change, and of cumulative anthropogenic stressors operating in the nonfederal lands surrounding NFP lands strongly indicate the need to strengthen, not weaken key ACS protections. Roads and ground disturbance associated with mechanical thinning and fuels reduction activities, especially within Riparian Reserves, cause adverse environmental impact that generally offset or exceed presumed restorative benefits. Headwater streams warrant wider riparian forest buffers than current ACS provisions to ensure effective retention of sediment and nutrients derived from upslope logging, fire, and landslides. [63-66]

Concern: [Seq#778]

Thinning, harvest activities, and fuels treatments should generate no measurable increase in sediment yield due to buffers and other design criteria." There is no reason to believe this statement; it is contradicted elsewhere. [ID#810]

Response: [Seq#778]

A full analysis of impacts to sediment and compliance with all applicable laws in discussed in Section3.3, Water Resources. [ID#810]

Associated Comments: [Seq#778]

"Thinning, harvest activities, and fuels treatments should generate no measurable increase in sediment yield due to buffers and other design criteria." There is no reason to believe this statement; it is contradicted elsewhere. [63-84]

Concern: [Seq#779]

The Forest Plan states that riparian reserve restoration shall restore large conifer canopy, not cut it down. [ID#811]
Response: [Seq#779]

The only riparian harvest not associated with beaver release sites is incidental on the periphery of the reserve adjacent to roads. It would cause more resource damage to build a temporary road instead of using the existing road. Pg.13 and pg. 48 from Hydrologic/Aquatic Resource Report. There is ~14 acres of incidental harvest.

Beaver release sites will open up the canopy to promote hardwood regeneration as a food source for beavers and the construction of dams which will have a beneficial impact to riparian reserves. There is ~38 acres of beaver enhancement harvest. I am not aware of any specific requirement to restore large conifer canopy in riparian areas. Forest Plan Standard and Guideline (S&G) 2-2 states: "When management activities occur in riparian ecosystems, they shall be designed to rehabilitate, maintain, or enhance the riparian ecosystems, and the adjoining aquatic ecosystem." S&G 2-4 states: "Maintain vegetation on streambanks that is needed to provide cover and streambank stability." [ID#811]
Associated Comments: [Seq#779]
The Forest Plan states that riparian reserve restoration shall restore large conifer canopy, not cut it down. [68-49]

Concern: [Seq#780]

]

In design features, Aquatics and Hydrology there are 19 potential negative impacts listed. All but one require monitoring for the design feature to mitigate the problem to be even potentially effective, yet funding for monitoring any of the project components other than commercial harvest, is non existent [ID#812]
Response: [Seq#780]

Monitoring is done annually by USFS personnel. The hydrologist, fish biologist, wildlife biologist and the soil scientist do monitoring as part of their base program of work.

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018/2019. The results of this past Forest monitoring has been incorporated into this NEPA document, including discussions on soils as recently as 12-05-2017.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult. [ID#812]

Associated Comments: [Seq#780]

In design features, Aquatics and Hydrology there are 19 potential negative impacts listed. All but one require monitoring for the design feature to mitigate the problem to be even potentially effective, yet funding for monitoring any of the project components other than commercial harvest, is non existent. [68-59]

Concern: [Seq#781]

Harvest in Riparian Reserves will degrade the Riparian Reserves.

RESPONSE: Impacts to Riparian Reserves (RRs) are fully addressed in the effects analysis in Chapter 3 for the various resources and in the design

criteria, mitigation measures, and monitoring for the project (in Appendix D) of the Environmental Assessment

COMMENT: will the funding and staff for executing all of Appendix D be available when Riparian Reserve harvest is implemented? [ID#813]
Response: [Seq#781]

Impacts to Riparian Reserves (RRs) are fully addressed in the effects analysis in Chapter 3 for the various resources and in the design criteria, mitigation measures, and monitoring for the project (in Appendix D) of the Environmental Assessment.

Monitoring is done annually by USFS personnel. The hydrologist, fish biologist, wildlife biologist, botanist, and the soil scientist do monitoring as part of their base program of work. The Sale Administrator is funded to monitor the implementation of the contract and that all of the provisions in the contract are implemented on the ground. During implementing the contract, the Sale Administrator, or a Harvest Inspector, generally visit the contract site at least 2 - 3 times a week during harvest operations. During road construction, reconstruction, an Engineer frequently visits the site. Monitoring of all fuel treatments are monitored by an individual with a TSI, piling, or burning background.

Monitoring is defined as a systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.

Forest Service Handbook 1909.15.54 provides the following direction: Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. "Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. . . ."

Monitoring reports for the Okanogan Forest Plan were published in 2001, 2002, 2003, 2004, 2005, 2006. 2007, 2008, and 2010. The public will be kept informed of monitoring results on the Forest in published monitoring reports which are periodically completed. The date of the next Forest monitoring report is likely in 2018/2019. The results of this past Forest monitoring has been incorporated into this NEPA document, including discussions on soils as recently as 12-05-2017.

Appendix D: Design Features, Best Management Practices, Mitigation, and Monitoring includes approximately 78 implementation monitoring measures that the Forest Service is committing to complete for this project. Based on these implementation monitoring measures, the Interdisciplinary Team will be able to review and improve implementation (adaptive management) of future projects. The Forest also has an Okanogan-Wenatchee National Forest Transition Monitoring Plan - 2016 which looks at monitoring on a larger scale to address effectiveness and validation of assumptions such as for the Restoration Strategy. Much of this monitoring is to be carried out at the wider scale, Forest level, by such individuals as the Forest Hydrologist, Forest Fisheries Biologist, Road Manager-Engineering, Forest Fire Ecologist, Forest Fuels Program Manager, etc. The potential data sources for some of this monitoring are the National Watershed Condition Framework, individual project level Travel Analysis Processes (TAP), BMP database and monitoring reports, stream temperature monitoring, stream flow data, stream survey data, NEPA project review to determine consistency with Forest Plan Standards and

Guidelines, INFRA database, FACTS database, treatment acres, PIBO monitoring for rangeland health, riparian vegetation condition and trend transects, survey and manage data collection, etc. Much of this Forest-wide monitoring data is collected at the project level and combined and analyzed at the Forest level which is used to adapt Forest-wide management. The Forest Service tries to learn to modify policy and management Some regulations, such as NEPA and ESA, are relatively inflexible in their requirements, and thus making rapid adaptions to monitoring results somewhat difficult.

[ID#813]

Associated Comments: [Seq#781]

Harvest in Riparian Reserves will degrade the Riparian Reserves. RESPONSE: Impacts to Riparian Reserves (RRs) are fully addressed in the effects analysis in Chapter 3 for the various resources and in the design criteria, mitigation measures, and monitoring for the project (in Appendix D) of the Environmental Assessment COMMENT: will the funding and staff for executing all of Appendix D be available when Riparian Reserve harvest is implemented? [68-68]

Concern: [Seq#782]

Temperature.

Water Resource Fig 11 is completely inadequate. It should include not just base flow, but seasonal flow. It should also include stream temperatures taken at different times of the year. [ID#814]

Response: [Seq#782]

Base flow is only analyzed for beaver enhancement areas. Effects to temperature and seasonal flow were deemed to small to measure. Figure 2 Hydrologic/Aquatic Resource Report.

Figure 11, Comparison of Alternatives by Resource Indicator, is included in chapter 2 to provide a comparison between the alternatives for all of the different resources. Figure 26, Water Resources Considered but Not Analyzed in Detail includes an explanation of why Water Quality (temperature) was not carried through the analysis. [ID#814]

Associated Comments: [Seq#782]

Water Resource Fig 11 is completely inadequate. It should include not just base flow, but seasonal flow. It should also include stream temperatures taken at different times of the year. [68-79]

Concern: [Seq#783]

Temperature.

Pg 55 "The Methow River near the confluence with the Columbia River is listed as impaired for pH and water temperature." This fact is highly significant given that the Buttermilk and Libby Creek drainages have a direct impact on the Methow and Columbia River Basins. [ID#815]
Response: [Seq#783]

This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature. Thinning and prescribed fire ignitions are either located outside of Riparian Reserves or have design criteria to minimize any impact to this indicator. Figure 2 Hydrologic/Aquatic Resource Report. The project should have no impact on pH. [ID#815]
Associated Comments: [Seq#783]
Pg 55 "The Methow River near the confluence with the Columbia River is listed as impaired for pH and water temperature." This fact is highly significant given that the Buttermilk and Libby Creek drainages have a direct impact on the Methow and Columbia River Basins. [68-80]

Concern: [Seq#784]

Water Quality.

Pg 55 "Washington State Water quality parameters specific to aquatic habitat that are most susceptible to change by thinning and prescribed fire treatments are turbidity, fine sediment, and temperature. This project would not impact these parameters where the sampling locations exist."

The above statement is a false declaration. Stream temperature data is inadequate. My guess is that the sampling locations are inadequate and/or too few. Stream temperature variation due to flow should be recorded. Fine sediment from this project will have a significant impact and without the

project :"Fine sediment within the Libby Creek drainage is Functioning At Risk and below desired levels for fish production." (pg 58)

[[ID#816]
Response: [Seq#784]

Impacts to these indicators are fully addressed in the effects analysis in Chapter 3 for the various resources and in the design criteria, mitigation measures, and monitoring for the project (in Appendix D) of the Environmental Assessment.

This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature. Thinning and prescribed fire ignitions are either located outside of Riparian Reserves or have design criteria to minimize any impact to this indicator. Figure 2 Hydrologic/Aquatic Resource Report.

There may be some short-term negative effects to stream turbidity and fine sediment while reclamation projects are being implemented such as culvert replacement, beaver habitat enhancement, adding coarse woody debris to 8.2 miles of streams, rocking up to 33 stream crossings, and constructing rocked open fords on, up to, 4 stream crossings, etc., but the long-term effects should show decreases in turbidity and stream sediment. [ID#816]

Associated Comments: [Seq#784]

Pg 55 "Washington State Water quality parameters specific to aquatic habitat that are most susceptible to change by thinning and prescribed fire treatments are turbidity, fine sediment, and temperature. This project would not impact these parameters where the sampling locations exist." The above statement is a false declaration. Stream temperature data is inadequate. My guess is that the sampling locations are inadequate and/or too few. Stream temperature variation due to flow should be recorded. Fine sediment from this project will have a significant impact and without the project :"Fine sediment within the Libby Creek drainage is Functioning At Risk and below desired levels for fish production." (pg 58) [68-81]

Concern: [Seq#785]

Temperature.

The ACS has four components: RRs, Key Watersheds, Watershed Analysis, and Watershed Restoration. ACS objectives (USDA and USDI 1994b :B-11) most pertinent to the desired conditions and riparian management objectives within the project area, and that were tracked through the analysis, are maintain and restore water quality, sediment regime, instream flows, and species composition and diversity of plant communities.

DID NOT SELECT STREAM TEMPERATURE AS AN OBJECTIVE [ID#817]

Response: [Seq#785]

Correct. It was analyzed and dropped from further consideration due to immeasurable effect. Figure 2, Hydrologic/Aquatic Resource Report. This is also displayed in Figure 26, Water Resources Considered but Not Analyzed in Detail of the Preliminary Revised Environmental Assessment. [ID#817]

Associated Comments: [Seq#785]

The ACS has four components: RRs, Key Watersheds, Watershed Analysis, and Watershed Restoration. ACS objectives (USDA and USDI 1994b :B-11) most pertinent to the desired conditions and riparian

management objectives within the project area, and that were tracked through the analysis, are maintain and restore water quality, sediment regime, instream flows, and species composition and diversity of plant communities. DID NOT SELECT STREAM TEMPERATURE AS AN OBJECTIVE [68-83]

Concern: [Seq#786]

Water Quality.

Even where measurable lowering of water quality is being prevented, anti degradation rules require that no activity cause or contribute to a violation of the numeric turbidity criteria or harm the existing or designated uses established in the state standards for the specific water bodies."

Logging and log hauling will cause degradation of the waterways.

y [ID#818]
Response: [Seq#786]

Design Criteria, mitigation and BMPs are all addressed regarding water quality pertaining to log haul. Temporary increases in turbidity are allowed for permitted activities. Short-term adverse effects with long-term beneficial effects are permitted under Washington State Department of Ecology guidelines. [ID#818]
Associated Comments: [Seq#786]
Even where measurable lowering of water quality is being prevented, anti degradation rules require that no activity cause or contribute to a violation of the numeric turbidity criteria or harm the existing or designated uses established in the state standards for the specific water bodies." Logging and log hauling will cause degradation of the waterways. [68-117]

Concern: [Seq#787]

DOE CRITERIA FOR TEMP, TURBIDITY, AND FECAL COLIFORM

Classification and designation of water quality uses and standards for the area encompassed by the project area is extracted from the State of Washington ?Use designations - Fresh Waters? (WAC173-201-600) (Washington 2011).

The EA should state what the criteria are.

" In the long term, taking no action would maintain current at-risk hydrologic processes and aquatic habitat conditions that would impede recovery of ESA-listed fish species.(p.68)

This exactly why aquatic restoration, including road decommissioning, without commercial logging, should have been an Alternative considered.

This is an opinion with no reference to any scientific citations. Refer to Section 3.3, Water Resources for a discussion of water quality. Refer to Figure 26 of the Revised Preliminary EA for a discussion of Water Quality (temperature). Activities on this project should have no effect on fecal coliform. [ID#820]
Response: [Seq#787]

Thanks for comment, would not meet purpose and need. [ID#820]
Associated Comments: [Seq#787]
DOE CRITERIA FOR TEMP, TURBIDITY, AND FECAL COLIFORM Classification and designation of water quality uses and standards for the area encompassed by the project area is extracted from the State of Washington ?Use designations - Fresh Waters? (WAC173-201-600) (Washington 2011). The EA should state what the criteria are. " In the long term, taking no action would maintain current at-risk hydrologic processes and aquatic habitat conditions that would impede recovery of ESA-listed fish species.(p.68) This exactly why aquatic restoration, including road decommissioning, without commercial logging, should have been an Alternative considered. [68-118]

Concern: [Seq#788]

Temperature.

Water Quality (temperature) This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will no decrease shading or increase temperature."

COMMENT: water temperature should be analyzed in detail. This project will definitely have an affect on water temperature which is an extremely important water quality factor for fish. It is irresponsible for the FS to make this claim. Also, how many over story trees will be cut and at what locations regarding

riparian reserve? [ID#821]
Response: [Seq#788]

Thank you for comment, a full analysis of riparian harvest, design criteria, purpose and need and effects are discussed in detail in the EA in Section 3.3, Water Resources, and Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring. Appendix A, Proposed Thinning and Prescribed Fire Treatments, summarizes proposed silvicultural prescriptions when harvest is proposed in riparian reserves. [ID#821]
Associated Comments: [Seq#788]
Water Quality (temperature) This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will no decrease shading or increase temperature." COMMENT: water temperature should be analyzed in detail. This project will definitely have an affect on water temperature which is an extremely important water quality factor for fish. It is irresponsible for the FS to make this claim. Also, how many over story trees will be cut and at what locations regarding riparian reserve? [68-119]

Concern: [Seq#789]

In Fig 3 It is questionable that the resource measures are accurate or are the correct or complete measure. For sediment the FS used acres of bare soil and # of lowered catchment rankings which are added measures for sediment.

They look at 3 here: aquatic habitat, sediment and base flow

The Mission Project MRA fisheries/hydrology risk prioritization methodology used four primary risk factors:

Shallow Landslide potential associated with roads

Roads that intersect channel floodplains and ESA critical habitat floodplains Erosion risk related to road density upslope from stream reaches

The potential for roads to divert streams

I contend that the choice of risk factors here and the methodology are not close to adequate. [ID#822]
Response: [Seq#789]

Thank you for comment. We feel the road analysis was robust and complete with regards to impacts to aquatic resources. Your opinion does not seem to be backed by any cited references. [ID#822]
Associated Comments: [Seq#789]
In Fig 3 It is questionable that the resource measures are accurate or are the correct or complete measure. For sediment the FS used acres of bare soil and # of lowered catchment rankings which are add measures for sediment. They look at 3 here: aquatic habitat, sediment and base flow The Mission Project MRA fisheries/hydrology risk prioritization methodology used four primary risk factors: Shallow Landslide potential associated with roads Roads that intersect channel floodplains and ESA critical habitat floodplains Erosion risk related to road density upslope from stream reaches The potential for roads to divert streams I contend that the choice of risk factors here and the methodology are not close to adequate. [68-121]

Concern: [Seq#790]

Sediment.

Harvest and fuels activities are designed to maintain effective groundcover and utilize existing roads, skid trails, and landings to minimize the creation of more disturbed soil. ~272 acres (8 acres bare soil) of under burning would occur in RRs.Design criteria and objectives of low to moderate fire behavior, short-term fine sediment generation potential is low. This should not substantially impact riparian buffer efficacy and sediment delivery to streams should be minimal from treatment units. There should not be any measurable increase in fine sediment from the proposed treatments.

This is an unsubstantiated claim and includes many "shoulds". [ID#823]
Response: [Seq#790]

Thanks for comment. If riparian reserve goals are not being met during underburning, ignition will stop if possible and if unintended impacts occur a mitigation plan will go into effect as outlined in design criteria in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring, See measure 89. [ID#823]
Associated Comments: [Seq#790]
Harvest and fuels activities are designed to maintain effective groundcover and utilize existing roads, skid trails, and landings to minimize the creation of more disturbed soil. ~272 acres (8 acres bare soil) of

under burning would occur in RRs.Design criteria and objectives of low to moderate fire behavior, short-term fine sediment generation potential is low. This should not substantially impact riparian buffer efficacy and sediment delivery to streams should be minimal from treatment units. There should not be any measurable increase in fine sediment from the proposed treatments. This is an unsubstantiated claim and includes many "shoulds". [68-129]

Concern: [Seq#791]

Sediment

About 60 percent of the harvest within RRs would occur over frozen ground with little ground disturbance and no sediment delivery to streams.

There will be sediment delivery when the snow melts and the ground thaws. You cannot run feller-bunchers over the ground, even if frozen, and not have disturbed soil and, when it rains, run off sediment. [ID#824]

Response: [Seq#791]

Winter conditions for harvest are outlined in design criteria 38. Riparian Reserve harvest has no-treatment buffers which are deemed adequate for eliminating sediment delivery. Figure 26. Hydrologic/Aquatic Resource Report. [ID#824]

Associated Comments: [Seq#791]

About 60 percent of the harvest within RRs would occur over frozen ground with little ground disturbance and no sediment delivery to streams. There will be sediment delivery when the snow melts and the ground thaws. You cannot run feller-bunchers over the ground, even if frozen, and not have disturbed soil and, when it rains, run off sediment. [68-131]

Concern: [Seq#792]

Sediment.

The proposed road maintenance, construction (temporary roads), decommissioning, closure, and log hauling would increase sediment yield.

Yet, previously the FS claims that the treatments will cause no sediment.

[ID#825]
Response: [Seq#792]

A full analysis for sediment was completed for the EA. See Section 3.3, Water Resources, and 3.4, Soils, in Chapter 3 of the EA. Sediment delivery is fully addressed between the 2 sections. [ID#825]
Associated Comments: [Seq#792]
The proposed road maintenance, construction (temporary roads), decommissioning, closure, and log hauling would increase sediment yield. Yet, previously the FS claims that the treatments will cause no sediment. [68-132]

Concern: [Seq#793]

Water Quality.

From

The Impact of Timber Harvest on Soil and Water Resources

, George W Brown: Water Quality

Three key characteristics of the water are usually used to judge the impact of logging activity on water quality and fish production: sediment, temperature, and dissolved oxygen.

Why did the FS not choose temperature or dissolved oxygen?

[[ID#826]
Response: [Seq#793]

This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will not decrease shading or increase temperature. Thinning and prescribed fire ignitions are either located outside of Riparian Reserves or have design criteria to minimize any impact to this indicator.

There are no mechanisms in this project that would impact dissolved oxygen in a measurable way. It was not analyzed for that reason. [ID#826]
Associated Comments: [Seq#793]
From The Impact of Timber Harvest on Soil and Water Resources, George W Brown: Water Quality
Three key characteristics of the water are usually used to judge the impact of logging activity on water quality and fish production: sediment, temperature, and dissolved oxygen. Why did the FS not choose temperature or dissolved oxygen? [68-134]

Concern: [Seq#794]

Sediment.

The EA states, "NetMap identified each road segments as being at low, moderate, or high risk for erosion or other effects to aquatic resources based on …four primary factors." However, the EA's ratings of risk are not in any way correlated to measures of sediment or other impacts to aquatic habitat, in order for compliance with the forest plan to be judged [ID#827]
Response: [Seq#794]

The indicators for sediment describe the potential for delivery to streams. A detailed, thorough analysis of sediment was completed in Chapter 3, Section 3.3, Water Resources. The analysis is adequate to judge compliance with the Forest Plan. [ID#827]
Associated Comments: [Seq#794]
The EA states, "NetMap identified each road segments as being at low, moderate, or high risk for erosion or other effects to aquatic resources based on …four primary factors." However, the EA's ratings of risk are not in any way correlated to measures of sediment or other impacts to aquatic habitat, in order for compliance with the forest plan to be judged. [72-165]

Concern: [Seq#795]

Water quality.

Similarly, the EA relies upon "miles of road that are hydrologically connected to the stream network" as a "proxy for degree of hydrologic impact from the road system." But nowhere does the EA establish any correlation of miles of road with actual impacts on water quality and fish habitat. [ID#828]

Response: [Seq#795]

Thank you for comment. That is what a proxy does. It is something that can be used to represent the value of something in a calculation. [ID#828]

Associated Comments: [Seq#795]

Similarly, the EA relies upon "miles of road that are hydrologically connected to the stream network" as a "proxy for degree of hydrologic impact from the road system." But nowhere does the EA establish any correlation of miles of road with actual impacts on water quality and fish habitat. [72-166]

Concern: [Seq#796]

LW additions.

The EA relies upon "Stream Channel Complexity" as an indicator of watershed integrity, explained thus: "Large wood is important for reducing river energy, forming pools, and adding overall habitat complexity. The desired density of wood present in a stream is 105 to 270 pieces/mile of wood greater than 6 inches diameter along with 2-5 pieces/mile of larger wood greater than 18 inches and 35 feet long." (52.) For the existing condition, the EA states:

The amount of large wood in stream channels ranges from 44.6 to 221.2 pieces per mile at 6 inches diameter and greater. Large log pieces greater than 12" in diameter and over 35 feet in length totaled from 0.7 to 9.7 pieces per mile. The main stem Buttermilk Creek, West Fork Buttermilk Creek, Black Pine Creek, Libby Creek, and North Fork Libby Creek have reaches with coarse wood levels below desired levels, resulting in limited channel complexity that creates desired aquatic habitat.

For an Alternative 2, the EA's analysis of this indicator reads:

In this alternative, small to large diameter trees would be hand felled on eight miles of fish streams in the project area and left onsite, rapidly increasing coarse woody debris levels and thereby improving conditions in important spawning and rearing streams. Once historical levels of stream channel complexity were reached, natural recruitment rates would maintain the amount of coarse woody materials at appropriate levels. The increase in stream complexity would improve a substantial portion of spawning and rearing habitat in the project area and would lead to beneficial, long-term, moderate effects to habitat quality.

However, the EA doesn't say where these 8 miles are located, or if they even correspond to the "reaches with coarse wood levels below desired levels." So the conclusion of "beneficial, long- term, moderate effects to habitat quality" comes off as entirely arbitrary [ID#829]
Response: [Seq#796]

The project file has a map of the reaches and they correspond with areas where LW is below desired levels. See Figures 155, 156, and 157 for the locations of the six project areas. [ID#829]
Associated Comments: [Seq#796]
The EA relies upon "Stream Channel Complexity" as an indicator of watershed integrity, explained thus: "Large wood is important for reducing river energy, forming pools, and adding overall habitat complexity. The desired density of wood present in a stream is 105 to 270 pieces/mile of wood greater than 6 inches diameter along with 2-5 pieces/mile of larger wood greater than 18 inches and 35 feet long." (52.) For the existing condition, the EA states: The amount of large wood in stream channels ranges from 44.6 to 221.2 pieces per mile at 6 inches diameter and greater. Large log pieces greater than 12" in diameter and over 35 feet in length totaled from 0.7 to 9.7 pieces per mile. The main stem Buttermilk Creek, West Fork Buttermilk Creek, Black Pine Creek, Libby Creek, and North Fork Libby Creek have reaches with coarse wood levels below desired levels, resulting in limited channel complexity that creates desired aquatic habitat. For an Alternative 2, the EA's analysis of this indicator reads: In this alternative, small to large diameter trees would be hand felled on eight miles of fish streams the project area and left onsite, rapidly increasing coarse woody debris levels and thereby improving conditions in important spawning and rearing streams. Once historical levels of stream channel complexity were reached, natural recruitment rates would maintain the amount of coarse woody materials at appropriate levels. The increase in stream complexity would improve a substantial portion of spawning and rearing habitat in the project area and would lead to beneficial, long-term, moderate effects to habitat quality. However, the EA doesn't say where these 8 miles are located, or if they even correspond to the "reaches with coarse wood levels below desired levels." So the conclusion of "beneficial, long- term, moderate effects to habitat quality" comes off as entirely arbitrary. [72-167]

Concern: [Seq#797]

Is there an imbalance or deficiency in forbs, grasses, or shrubs where Riparian Reserves are proposed for treatment? If so, what are the numbers that document this imbalance or deficiency? [ID#830]
Response: [Seq#797]

Conifer shading has reduced the hardwood component in the Riparian Reserves that have thinning proposed associated with beaver enhancement. There are no numbers that were collected just visual, qualitative, professional judgment. A larger component of hardwoods is need to provide hardwoods necessary for beaver survival. [ID#830]
Associated Comments: [Seq#797]

Is there an imbalance or deficiency in forbs, grasses, or shrubs where Riparian Reserves are proposed for treatment? If so, what are the numbers that document this imbalance or deficiency? [72-173]

Concern: [Seq#798]

Decommissioning roads.

The EA states, "Decommissioning riparian roads would reduce the fine sediment delivery to streams. Fine sediment levels in Libby Creek would be expected to have a net reduction in the long-term." (84.) Please explain why this is a reasonable conclusion, given that elsewhere the EA indicates funding for road decommissioning is not guaranteed [ID#831]

Response: [Seq#798]

Some roads will be decommissioned by the project after timber harvest. An immediate net-reduction will occur. There is much interest from partners and collaborators in funding road decommissioning in the future. Roads will continue to be decommissioned as funds become available. [ID#831]

Associated Comments: [Seq#798]

The EA states, "Decommissioning riparian roads would reduce the fine sediment delivery to streams. Fine sediment levels in Libby Creek would be expected to have a net reduction in the long-term." (84.) Please explain why this is a reasonable conclusion, given that elsewhere the EA indicates funding for road decommissioning is not guaranteed. [72-178]

Concern: [Seq#799]

The EA (86) states: The proposed road maintenance, construction (temporary roads), decommissioning, closure, and log hauling would increase sediment yield. Due to hydrologic connectivity with roads, sediment could reach fish habitat. This increase would last an estimated 1-3 years following treatment. Design Features and Mitigation Measures listed in Appendix D would minimize sediment delivery to streams. Measures like rock armoring perennial stream crossings prior to log hauling and working under dry weather conditions would minimize fine sediment mobilization. The amount of sediment reaching streams, using design features and (Best Management Practices) would be minor.

But the EA doesn't disclose effectiveness of mitigations it employs, and doesn't define "minimize" or "minor." This is not an analysis. [ID#832]

Response: [Seq#799]

Thank you for comment. A thorough analysis was completed regarding sediment delivery. Chapter 3.3, Water Resources. Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring, provides the "Efficacy" of Design Features, Mitigation that is proposed and also includes the "Consequences of Not Applying". Section 3.3, Water Resources, under Section 3.3.2., Intensity Level Definitions defines "minor". "Minimize" is as defined in the dictionary:" to reduce to a minimum". [ID#832]

Associated Comments: [Seq#799]

The EA (86) states: The proposed road maintenance, construction (temporary roads), decommissioning, closure, and log hauling would increase sediment yield. Due to hydrologic connectivity with roads, sediment could reach fish habitat. This increase would last an estimated 1-3 years following treatment. Design Features and Mitigation Measures listed in Appendix D would minimize sediment delivery to streams. Measures like rock armoring perennial stream crossings prior to log hauling and working under dry weather conditions would minimize fine sediment mobilization. The amount of sediment reaching streams, using design features and (Best Management Practices) would be minor. But the EA doesn't disclose effectiveness of mitigations it employs, and doesn't define "minimize" or "minor." This is not an analysis. [72-179]

Concern: [Seq#800]

Outside Scope. Specifically analyzing and making recommendations to address any impacts of campgrounds and trails in the project area that are contributing sediment where it is a concern or impairing riparian function. [ID#833]

Response: [Seq#800]

This is outside the scope of the project. BMPs regarding sediment delivery exist for campgrounds and trails if resource concerns are detected. Mitigation will occur. We did not identify any locations where campgrounds or trails were contributing sediment to anadromous fish bearing streams. [ID#833]

Associated Comments: [Seq#800]

o Specifically analyzing and making recommendations to address any impacts of campgrounds and trails in the project area that are contributing sediment where it is a concern or impairing riparian function. [18-8]

Concern: [Seq#801]

]

Therefore, in the environmental analysis for the project, we request:

· A developed suite of actions to meet a purpose of the project "to restore and maintain aquatic and hydrologic processes impacted by management, improve habitat for Threatened and Endangered aquatic species, and increase watershed resiliency to existing and anticipated disturbances". We support the project's effort to reduce the impact of the road system on hydrologic function and aquatic health of the watershed [ID#835]

Response: [Seq#801]

Thank you for support. This project proposes a number of reclamation projects to restore and maintain aquatic and hydrologic processe [ID#835]

Associated Comments: [Seq#801]

Therefore, in the environmental analysis for the project, we request: · A developed suite of actions to meet a purpose of the project “to restore and maintain aquatic and hydrologic processes impacted by management, improve habitat for Threatened and Endangered aquatic species, and increase watershed resiliency to existing and anticipated disturbances”. We support the project’s effort to reduce the impact of the road system on hydrologic function and aquatic health of the watershed. [18-4]

Concern: [Seq#802]

These conditions also make some riparian areas more susceptible to uncharacteristic harmful effects caused by wildfires." The FS does not adequately determine what makes more "susceptibility" nor does it define what the "uncharacteristic harmful effects" of wildfire would be nor what would make them so terribly harmful [ID#836]

Response: [Seq#802]

The risk of high intensity/severity wildfire upon riparian resources and watershed function is described in detail in Chapter 3 of the EA, including Section 3.3, Water Resources and Section 3.6, Fire/Fuels.

Thinning and associated prescribed burning proposed in established riparian management zones (Riparian Reserves) would use design criteria, listed in Appendix D, Design Features, Best Management Practices, Mitigation, and Monitoring, including buffers, retention objectives, and prescribed fire intensity objectives that would provide for maintenance or restoration of the ecological integrity of riparian areas. [ID#836]

Associated Comments: [Seq#802]

These conditions also make some riparian areas more susceptible to uncharacteristic harmful effects caused by wildfires." The FS does not adequately determine what makes more "susceptibility" nor does it define what the "uncharacteristic harmful effects" of wildfire would be nor what would make them so

terribly harmful. [68-36]

Concern: [Seq#803]

Above ground carbon sequestration.

The importance of trees for carbon capture will rise especially if, as recent evidence suggests, hopes for soils as a carbon sink may be overly optimistic. (He et al., 2016.) Such a potentially reduced role of soils doesn't mean that forest soils won't have a role in capture and storage of carbon, rather it puts more of the onus on aboveground sequestration by trees, even if there is a conversion to unfamiliar mixes of trees. [ID#837]

Response: [Seq#803]

Above ground carbon sequestration is limited in potential due to removal from fire in unnatural fuel loading from fire prevention. Recent mega-fires in the Oka-Wen removed any C sequestration from above ground biomass. Below ground Carbon storage is where the most storage resides.

The project is in line with the suggested practice of reducing forest disturbance effects found in the National Climate Assessment for public and private forests (Joyce et al. 2007). Here specifically, the project proposes to thin forests to maintain or restore vegetation stand structure and growth patterns to increase resistance to insect mortality, wildfire, and drought. The release of carbon associated with this project is justified given the overall change in condition increases forest resistance to release of much greater quantities of carbon from wildfire, drought, insects/disease, or a combination of these disturbance types (Millar et al. 2007). This project falls within the types of options presented by the IPCC for minimizing the impacts of climate change on forest carbon, and represents a potential synergy between adaption measures and mitigation. [ID#837]

Associated Comments: [Seq#803]

The importance of trees for carbon capture will rise especially if, as recent evidence suggests, hopes for soils as a carbon sink may be overly optimistic. (He et al., 2016.) Such a potentially reduced role of soils doesn't mean that forest soils won't have a role in capture and storage of carbon, rather it puts more of the onus on aboveground sequestration by trees, even if there is a conversion to unfamiliar mixes of trees. [72-33]

Concern: [Seq#804]

Soil Compaction.

Soil compaction needs to include specific descriptions of why compaction problems are so severe as to require the use of a subsoiler on 468 acres. [ID#838]
Response: [Seq#804]

Please read the full soil report for this information. Treatments will not be done on all 468 acres. Portions of these areas included cedar manufacturing sites that are severely compacted. Harvest activities and heavy traffic associated with past shake mills have created long-term (> 50 years) detrimental soil disturbance and is primarily the result of past ground-based yarding. In some cases, subsurface compaction persists 6 to 12 inches below the soil surface. In areas with persistent compaction, soil restoration methods will be applied to break up soil compaction while leaving subsurface roots and rocks in place o prevent soil horizon mixing. [ID#838]
Associated Comments: [Seq#804]
Soil compaction needs to include specific descriptions of why compaction problems are so severe as to require the use of a subsoiler on 468 acres. [18-24]

Concern: [Seq#805]

sub-soiling impacts.

Subsoilers require expensive mitigation measures because they can increase the spread of noxious weeds, require heavy planting of cultivars in order to prevent the spread of weeds, and negatively impact woody plants with shallow root systems, such as huckleberries and aspens. [ID#839]
Response: [Seq#805]

The subsoiling proposed does not need expensive mitigation. There are known weed sites that will be avoided and areas that are treated will be monitored for weeds. There is a seeding plan in place and the design of the subsoiler greatly reduces the impacts to shallow rooted plants. [ID#839]
Associated Comments: [Seq#805]
Subsoilers require expensive mitigation measures because they can increase the spread of noxious weeds, require heavy planting of cultivars in order to prevent the spread of weeds, and negatively impact woody plants with shallow root systems, such as huckleberries and aspens. [18-25]

Concern: [Seq#806]

soil erosion.

On page 75 the EA claims that "proposed activities would cause a temporary increase in approximately 102 acres of bare soil over the life of this project". Please elaborate on how 1,952 acres of commercial logging, 8,304 acres of non-commercial thinning, 468 acres of sub-soiling, and 10,968 acres of prescribed burn would create only temporary increase of 102 acres bare soil (disturbance of ground cover) and would not result in significant soil erosion. I believe that this claim is erroneous and requires further explanation. [ID#840]

Response: [Seq#806]

There is not a continuous blanket of bare soil created by project activities. All activities proposes have soil Best Management Practices included such as winter conditions for ground based logging, rolling on slash mats, and seeding to reduce the acres of bare soil created. [ID#840]

Associated Comments: [Seq#806]

On page 75 the EA claims that "proposed activities would cause a temporary increase in approximately 102 acres of bare soil over the life of this project". Please elaborate on how 1,952 acres of commercial logging, 8,304 acres of non-commercial thinning, 468 acres of sub-soiling, and 10,968 acres of prescribed burn would create only temporary increase of 102 acres bare soil (disturbance of ground cover) and would not result in significant soil erosion. I believe that this claim is erroneous and requires further explanation. [29-34]

Concern: [Seq#807]

sub soiling.

The proposed use of a subsoiler to address soil compaction would introduce a controversial, invasive technology to address a problem not clearly documented. A mistake in timing or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear evidence of surface runoff caused by compaction in the planned treatment areas other than the roads themselves. Closing the main roads that traverse these units and using the subsoiler on them would be the only meaningful utilization of this approach. [ID#841]

Response: [Seq#807]

Please read the full soil report. Soil best management practices, including seeding, are used to reduce or eliminate soil erosion from this practice and the subsoiler being presented for use is not controversial, It

is an industry standard. Many forests use this system with great success. [ID#841]
Associated Comments: [Seq#807]
The proposed use of a subsoiler to address soil compaction would introduce a controversial, invasive technology to address a problem not clearly documented. A mistake in timing or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear evidence of surface runoff caused by compaction in the planned treatment areas other than the roads themselves. Closing the main roads that traverse these units and using the subsoiler on them would be the only meaningful utilization of this approach. [63-47]

Concern: [Seq#808]

sediment, roads in RR

"Harvest and fuels activities are designed to maintain effective groundcover and utilize existing roads, skid trails, and landings to minimize the creation of more disturbed soil. ~272 acres (8 acres bare soil) of under burning would occur in RRs. Design criteria and objectives of low to moderate fire behavior, short-term fine sediment generation potential is low

.

This should not substantially impact riparian buffer efficacy and sediment delivery to streams should be minimal from treatment units. There should not be any measurable increase in fine sediment from the proposed treatments." This is an unsubstantiated claim and includes many "shoulds" This suggests, contrary to planning, that there will be no new or reopened roads, skid trails, or landings. Potential for long-term (by definition not short-term) fine sediment generation is acknowledged to exist, eventhough it is expected to be low if fire behavior cooperates. There should be no (substantial or otherwise) impact on this "critical habitat", although elsewhere in the EA "adverse" long-term effects are acknowledged.

[[ID#842]
Response: [Seq#808]

Thanks for your comment. There are not going to be any new roads in riparian reserves, the sediment potential refers to road removal within riparian reserves. The fire effects will have limited impacts to sedimentation based on field observations of prescribed burns.

Riparian road density would decrease by about 35% in the Libby sub-watershed and 17% in the Buttermilk sub-watershed. At the catchment scale, riparian road density rankings in Buttermilk would not change while nine catchments in Libby Creek would drop in density rankings, indicating an improvement for reducing road-stream interactions.

In the averaged catchment/riparian road density rankings, moderate to high riparian road density would decrease in key areas around North Fork and South Fork Libby Creek, Ben Canyon, and Hornet Draw, resulting in fewer road-stream interactions.

The road drainage network would decrease by about 30% across the project area. At the sub-watershed scale, Buttermilk would decrease by 15% and Libby by 35%. A reduction in the road drainage network would improve watershed conditions and move the system towards a more natural flow regime. [ID#842]

Associated Comments: [Seq#808]

"Harvest and fuels activities are designed to maintain effective groundcover and utilize existing roads, skid trails, and landings to minimize the creation of more disturbed soil. ~272 acres (8 acres bare soil) of under burning would occur in RRs. Design criteria and objectives of low to moderate fire behavior, short-term fine sediment generation potential is low. This should not substantially impact riparian buffer efficacy and sediment delivery to streams should be minimal from treatment units. There should not be any measurable increase in fine sediment from the proposed treatments." This is an unsubstantiated claim and includes many "shoulds" This suggests, contrary to planning, that there will be no new or reopened roads, skid trails, or landings. Potential for long-term (by definition not short-term) fine sediment generation is acknowledged to exist, eventhough it is expected to be low if fire behavior cooperates. There should be no (substantial or otherwise) impact on this "critical habitat", although elsewhere in the EA "adverse" long-term effects are acknowledged. [63-58]

Concern: [Seq#809]

It is erroneous to state that there would be no sediment from the logging. Winter logging will produce sediment when the snow melts. Summer logging will produce sediment-this is has been commonly proved in many studies. Also, log hauling will produce significant sediment on roads that, primarily, run along streams and creeks. Sediment will undoubtedly go into these waterways, especially after a rain, or after a slide that log haul use of these roads is very likely to cause. These roads have documented slides from previous logging and the major haul road discussed had a wash out just a few years ago that kept it closed for over a year [ID#843]

Response: [Seq#809]

The EA never states there would be no sedimentation from logging, but it is associated with the road system. There is very little or no erosion created from logging using soil BMPs. The soils in the Mission project area have high infiltration rates with little overland flow on native soil surfaces....roads are not considered part of the productive land base and are not considered functional soil. [ID#843]

Associated Comments: [Seq#809]

It is erroneous to state that there would be no sediment from the logging. Winter logging will produce sediment when the snow melts. Summer logging will produce sediment-this is has been commonly proved in many studies. Also, log hauling will produce significant sediment on roads that, primarily, run

along streams and creeks. Sediment will undoubtedly go into these waterways, especially after a rain, or after a slide that log haul use of these roads is very likely to cause. These roads have documented slides from previous logging and the major haul road discussed had a wash out just a few years ago that kept it closed for over a year. [68-93]

Concern: [Seq#810]

bare soil.

This document claims there would be only 105 acres of bare soil from the entire project. Harvesting 6.3 million board feet of timber, even in winter, will not leave only 105 acres of bare soil and that does not account for all of the disturbance from thinning and burning. [ID#844]
Response: [Seq#810]

Soil BMPs are in place to greatly reduce or eliminate bare soil. slash is used to cover the soil surface to avoid wind and water erosion. There will be some bare soil created by the mosaic pattern of prescribe fire.

There is not a continuous blanket of bare soil created by project activities. All activities proposes have soil Best Management Practices included such as winter conditions for ground based logging, rolling on slash mats, and seeding to reduce the acres of bare soil created. [ID#844]
Associated Comments: [Seq#810]
This document claims there would be only 105 acres of bare soil from the entire project. Harvesting 6.3 million board feet of timber, even in winter, will not leave only 105 acres of bare soil and that does not account for all of the disturbance from thinning and burning. [68-126]

Concern: [Seq#811]

soil compaction

The stated need to treat soil compaction from previous management activities suggests that a significant problem exists; that is not clear at all from inspection of the proposed treatment areas, or from evidence presented in the EA. [ID#845]
Response: [Seq#811]

Thanks for your comment. See photos and a description of the area in the Soils Resource Report in project files. [ID#845]

Associated Comments: [Seq#811]

The stated need to treat soil compaction from previous management activities suggests that a significant problem exists; that is not clear at all from inspection of the proposed treatment areas, or from evidence presented in the EA. [69-1]

Concern: [Seq#812]

subsoiling.

The proposed use of the subsoiler to address soil compaction suggests using a controversial, invasive technology to address a problem that is not clearly documented. A mistake in timing, or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear presence of surface runoff caused by compaction in the planned treatment areas, other than the roads themselves. Closing the main roads that traverse these units, and using the subsoiler on them would be the only meaningful utilization of this approach [ID#846]

Response: [Seq#812]

The subsoiler being used is the industry standard. The conditions are documented with pictures and descriptions in the soil project folder, in project records, and there are soil BMPs, Appendix D, in place to minimize any erosion from treated areas. Some roads will be fully decommissioned but not all roads. [ID#846]

Associated Comments: [Seq#812]

Soil Compaction Treatment The proposed use of the subsoiler to address soil compaction suggests using a controversial, invasive technology to address a problem that is not clearly documented. A mistake in timing, or an extreme weather event could result in erosion from the freshly ripped areas. There is no clear presence of surface runoff caused by compaction in the planned treatment areas, other than the roads themselves. Closing the main roads that traverse these units, and using the subsoiler on them would be the only meaningful utilization of this approach. [69-12]

Concern: [Seq#813]

soil management

The EA at p. 88 notes:

Physical properties of concern

include structure, density, porosity, infiltration, permeability, water holding capacity, depth to water table, surface horizon thickness, and organic matter size, quantity, and distribution.

Chemical properties

include changes in nutrient cycling and availability.

Biological concerns

commonly include abundance, distribution, and productivity of the many plants, animals, microorganisms that live in and on the soil and organic detritus.

However, in terms of regulatory mechanisms, the FS only recognizes limits to physical properties. This represents a violation of NFMA. [ID#847]
Response: [Seq#813]

Geophysical, chemical, and biological interactions are intricately connected in healthy soils and are seen as a suite of characters using modern soil science. The NFMA was written in 1976 and does state to use the best available science. That's what I'm doing with the best soil science of 2017. [ID#847]
Associated Comments: [Seq#813]
The EA at p. 88 notes: Physical properties of concern include structure, density, porosity, infiltration, permeability, water holding capacity, depth to water table, surface horizon thickness, and organic matter size, quantity, and distribution. Chemical properties include changes in nutrient cycling and availability. Biological concerns commonly include abundance, distribution, and productivity of the many plants, animals, microorganisms that live in and on the soil and organic detritus. (Emphases added.) However, in terms of regulatory mechanisms, the FS only recognizes limits to physical properties. This represents a violation of NFMA. [72-148]

Concern: [Seq#814]

soil disturbance

The EA doesn't disclose that the detrimental soil disturbance (DSD) limits in the R6 Soil Quality Standards had little to do with compliance with NFMA and mostly to do with operational feasibility. USDA Forest Service, 2016a admits that there's no strong empirical connection between what FS Soil Quality Standards focus on as a proxy (detrimental soil disturbance) for what NFMA requires

(maintaining productivity). USDA Forest Service, 2016a also acknowledges therefore the FS can't really address its commitments for "sustained yield." It also admits that ripping for soil compaction mitigation isn't necessarily best available science: "A compacted soil will not be 100% mitigated immediately after shallow ripping. It takes time for soil processes to become re-established and native vegetation to reclaim a site. Indirect effects noted above of accelerated soil erosion or noxious weed infestations have the potential to derail the entire land restoration process." [ID#848]
Response: [Seq#814]

Thanks for your comment. Maintaining soil productivity is a suite of characters, some of which are represented by the DSD protocol. Please see the full soil report, in project files, for more info. [ID#848]
Associated Comments: [Seq#814]
The EA doesn't disclose that the detrimental soil disturbance (DSD) limits in the R6 Soil Quality Standards had little to do with compliance with NFMA and mostly to do with operational feasibility. USDA Forest Service, 2016a admits that there's no strong empirical connection between what FS Soil Quality Standards focus on as a proxy (detrimental soil disturbance) for what NFMA requires (maintaining productivity). USDA Forest Service, 2016a also acknowledges therefore the FS can't really address its commitments for "sustained yield." It also admits that ripping for soil compaction mitigation isn't necessarily best available science: "A compacted soil will not be 100% mitigated immediately after shallow ripping. It takes time for soil processes to become re-established and native vegetation to reclaim a site. Indirect effects noted above of accelerated soil erosion or noxious weed infestations have the potential to derail the entire land restoration process." [72-149]

Concern: [Seq#815]

effectiveness

The EA doesn't disclose the effectiveness of any soil mitigations

[ID#849]
Response: [Seq#815]

Please see the full soil report and lit review, in project files, for more info on effectiveness. [ID#849]
Associated Comments: [Seq#815]
The EA doesn't disclose the effectiveness of any soil mitigations. [72-150]

Concern: [Seq#816]

compaction

Soil compaction in the project area limits native plant growth, reduces soil biological activity and water infiltration, limits soil productivity, and reduces the resiliency of plant communities to climactic and biological changes over time." (EA 13.) The EA doesn't even demonstrate that the project activities will be consistent with the R6 Soil Quality Standards. Livestock impacts in treatment units aren't quantified at all. DSD from temporary, unauthorized, or decommissioned roads isn't properly quantified as per the R6 methodology. The same is true for motorized recreation impacts. [ID#850]
Response: [Seq#816]

Please read the full soil report. in project files, all impacts of this nature are captured in the existing conditions table of current DSD acres. [ID#850]
Associated Comments: [Seq#816]
"Soil compaction in the project area limits native plant growth, reduces soil biological activity and water infiltration, limits soil productivity, and reduces the resiliency of plant communities to climactic and biological changes over time." (EA 13.) The EA doesn't even demonstrate that the project activities will be consistent with the R6 Soil Quality Standards. Livestock impacts in treatment units aren't quantified at all. DSD from temporary, unauthorized, or decommissioned roads isn't properly quantified as per the R6 methodology. The same is true for motorized recreation impacts. [72-151]

Concern: [Seq#817]

data collection]

The EA doesn't disclose the reliability (accuracy) of the DSD measurements used. [ID#851]
Response: [Seq#817]

Please read the full soil report and DSD documentation in project files. Protocol was followed per handbook direction. [ID#851]
Associated Comments: [Seq#817]
The EA doesn't disclose the reliability (accuracy) of the DSD measurements used. [72-152]

Concern: [Seq#818]

sub soiling

A total of 455 acres of soil treatments are proposed within the grazing units." (EA 243.) What are the causes of the soil damage for which treatments are needed?

[[ID#852]
Response: [Seq#818]

Please read the full soil report in project files. There are legacy impacts from old shake mills, logging, grazing, and roads in the area. [ID#852]
Associated Comments: [Seq#818]
A total of 455 acres of soil treatments are proposed within the grazing units." (EA 243.) What are the causes of the soil damage for which treatments are needed? [72-153]

Concern: [Seq#819]

soil analysis

The soils analysis adopts the same scare propaganda used for other resources-no logging, the fire will come and ruin the soils. Logging-no such problem. It even makes scientifically challenged statements such as logging makes soil develop faster, and livestock grazing enhances site productivity.

[ID#853]
Response: [Seq#819]

Please read the full soil report, in project files. No where in there did I say logging creates soil faster nor did I say that livestock grazing enhances site productivity. I did note that when proper grazing techniques are used there CAN be an increase in nutrient cycling, but it is never a given. Poor grazing practices can negatively impact site conditions...it just depends. [ID#853]
Associated Comments: [Seq#819]
The soils analysis adopts the same scare propaganda used for other resources-no logging, the fire will come and ruin the soils. Logging-no such problem. It even makes scientifically challenged statements such as logging makes soil develop faster, and livestock grazing enhances site productivity. [72-154]

Concern: [Seq#820]

soil nutrients

Removal of potassium in whole tree harvests is modest in comparison to soil reserves according to (Jurgensen et al. 1981)." (98.) Has the FS measured the potassium balance as affected by previous logging/fuels treatment on the Forest?

[[ID#854]
Response: [Seq#820]

This is outside of the scope of the project. Residual slash on site and natural weathering creates enough plant available potassium (K) in forest soils. [ID#854]
Associated Comments: [Seq#820]
Removal of potassium in whole tree harvests is modest in comparison to soil reserves according to (Jurgensen et al. 1981)." (98.) Has the FS measured the potassium balance as affected by previous logging/fuels treatment on the Forest? [72-155]

Concern: [Seq#821]

sub soiling

"Doing no treatments would continue the long-term, adverse, major impacts on soil compaction in the identified areas." Since other areas outside the treatment units and roads (where the EA doesn't consider DSD) have similarly compacted soils, why does the EA ignore those land productivity, sustained yield, and hydrologic impacts? [ID#855]
Response: [Seq#821]

The impacts are not ignored, but are less than the areas identified for subsoiling and are not of highest priority. Roads are not considered part of the productive land base and are captured in the DSD protocol if they run through a unit. [ID#855]
Associated Comments: [Seq#821]
"Doing no treatments would continue the long-term, adverse, major impacts on soil compaction in the identified areas." Since other areas outside the treatment units and roads (where the EA doesn't consider DSD) have similarly compacted soils, why does the EA ignore those land productivity, sustained yield, and hydrologic impacts? [72-156]

Concern: [Seq#822]

soil productivity

Soils across the project area are derived primarily of volcanic ash over glacial till and glacial fluvial outwash. …Physical characteristics of this volcanic ash include low bulk density (0.65 to 0.90), a dominance of silt and very fine sand-sized particles with weak structural development." (90.) The EA states that such soils are highly susceptible to erosion and displacement, but doesn't disclose their extreme sensitivity to productivity losses due to compaction. [ID#856]
Response: [Seq#822]

Thanks for your comment, but compaction is addressed in Section 3.4, Soils, of the Revised Preliminary EA and is a concern from a project design and soil BMP aspect (Appendix D). [ID#856]
Associated Comments: [Seq#822]
Soils across the project area are derived primarily of volcanic ash over glacial till and glacial fluvial outwash. …Physical characteristics of this volcanic ash include low bulk density (0.65 to 0.90), a dominance of silt and very fine sand-sized particles with weak structural development." (90.) The EA states that such soils are highly susceptible to erosion and displacement, but doesn't disclose their extreme sensitivity to productivity losses due to compaction. [72-157]

Concern: [Seq#823]

site productivity.

(R)esource fluxes though ectomycorrhizal (EM) networks are sufficiently large in some cases to facilitate plant establishment and growth. Resource fluxes through EM networks may thus serve as a method for interactions and cross-scale feedbacks for development of communities, consistent with complex adaptive system theory." (Simard et al., 2015.) Has the FS ever considered how management-induced damage to EM networks causes site productivity reductions? [ID#857]
Response: [Seq#823]

There has been some research and the importance of EM and soil productivity is important. Retaining organic matter horizon and adding fine woody material is important and is a project soil BMP (Appendix D, Preliminary Revised EA) . [ID#857]
Associated Comments: [Seq#823]
"(R)esource fluxes though ectomycorrhizal (EM) networks are sufficiently large in some cases to facilitate plant establishment and growth. Resource fluxes through EM networks may thus serve as a method for interactions and cross-scale feedbacks for development of communities, consistent with complex adaptive system theory." (Simard et al., 2015.) Has the FS ever considered how management-induced damage to EM networks causes site productivity reductions? [72-158]

Concern: [Seq#824]

soil fungi.

"The big trees were subsidizing the young ones through the fungal networks. Without this helping hand, most of the seedlings wouldn't make it." (Suzanne Simard:

http://www.ecology.com/2012/10/08/trees-communicate/)

"Disrupting network links by reducing diversity of mycorrhizal fungi… can reduce tree seedling survivorship or growth (Simard et al, 1997a; Teste et al., 2009), ultimately affecting recruitment of old-growth trees that provide habitat for cavity nesting birds and mammals and thus dispersed seed for future generations of trees." (Simard et al., 2013.) Has the Okanogan-Wenatchee NF ever determined if management activities have reduced the diversity of mycorrhizal fungi in any treatment area? If not, such action should be undertaken. [ID#858]

Response: [Seq#824]

Thanks for you comment. I agree, we need more data on this subject. I did incorporate what has been studied into soil BMP design criteria (Appendix D, Preliminary Revised EA). [ID#858]

Associated Comments: [Seq#824]

"The big trees were subsidizing the young ones through the fungal networks. Without this helping hand, most of the seedlings wouldn't make it." (Suzanne Simard: http://www.ecology.com/2012/10/08/trees-communicate/) "Disrupting network links by reducing diversity of mycorrhizal fungi… can reduce tree seedling survivorship or growth (Simard et al, 1997a; Teste et al., 2009), ultimately affecting recruitment of old-growth trees that provide habitat for cavity nesting birds and mammals and thus dispersed seed for future generations of trees." (Simard et al., 2013.) Has the Okanogan-Wenatchee NF ever determined if management activities have reduced the diversity of mycorrhizal fungi in any treatment area? If not, such action should be undertaken. [72-159]

Concern: [Seq#825]

soil productivity.

The proposed actions, design criteria, and mitigation measures are in compliance with the Okanogan National Forest Land and Resource Management Plan (LRMP) standards and guidelines 13-9 and 13-10 by

reducing

the amount of soil displacement, compaction, and puddling." (101, emphasis added.) Here, as in other places, the EA confuses "reduce" with mitigate. The project increases DSD, it does not reduce it. The FS has no monitoring results from the Forest indicating soil rehabilitation actions have taken soils in a DSD condition and made them no longer DSD [ID#859]

Response: [Seq#825]

Thanks for your comment. Soil BMPs in Appendix D, Preliminary Revised EA, address this. This is also addressed through proposed subsoiling of previously compacted areas on up to 468 acres. Section 3.4, Soils and as summarized in Figure 11, in the Preliminary Revised EA, indicate that there could be up to 3% additional detrimental surface erosion (percent of total unit). [ID#859]

Associated Comments: [Seq#825]

The proposed actions, design criteria, and mitigation measures are in compliance with the Okanogan National Forest Land and Resource Management Plan (LRMP) standards and guidelines 13-9 and 13-10 by reducing the amount of soil displacement, compaction, and puddling." (101, emphasis added.) Here, as in other places, the EA confuses "reduce" with mitigate. The project increases DSD, it does not reduce it. The FS has no monitoring results from the Forest indicating soil rehabilitation actions have taken soils in a DSD condition and made them no longer DSD. [72-160]

Concern: [Seq#826]

implementation.

If the purchaser can implement a harvesting plan that meets the winter soil management objectives then snowplowing and hauling would not take place in winter." (EA 97.) The FS needs to be the entity creating this technically-based plan, since the FS's analysis is relying upon it. [ID#860]

Response: [Seq#826]

The Forest Service does have the final say on the technical proposal during the "Technical Evaluation Board Meeting" before the contract to do restoration work or allowing non-winter harvest is awarded. [ID#860]

Associated Comments: [Seq#826]

"If the purchaser can implement a harvesting plan that meets the winter soil management objectives then snowplowing and hauling would not take place in winter." (EA 97.) The FS needs to be the entity creating this technically-based plan, since the FS's analysis is relying upon it. [72-161]

Concern: [Seq#827]

roads.

Also, we've observed instances where the FS plans to use essentially naturally recovered roads during the project without analyzing the impacts of all the soil and hydrological disturbance required to make them drivable: "During project activities, some currently closed NFS roads and unauthorized roads would be opened and maintenance and/or reconstruction activities would occur." (EA at 214.) [ID#861]
Response: [Seq#827]

Thanks for your comment. The effects of re-opening and using these roads is displayed in the resource sections of Chapter 3 in the Revised Preliminary EA, particularly Section 3.3, Water Resources. [ID#861]
Associated Comments: [Seq#827]
Also, we've observed instances where the FS plans to use essentially naturally recovered roads during the project without analyzing the impacts of all the soil and hydrological disturbance required to make them drivable: "During project activities, some currently closed NFS roads and unauthorized roads would be opened and maintenance and/or reconstruction activities would occur." (EA at 214.) [72-191]

Concern: [Seq#828]

soil water.

The EA states on page 228 that "Thinning and prescribed fire treatments would open up the tree canopy in the analysis area, allowing more light to get to the ground and less competition for soil resources such as water." This is false and contradictory. Increased light (and heat) to the ground means less moisture in the soil, so how does that lead to less competition for water? [ID#862]
Response: [Seq#828]

Less canopy means more rain and snow that hits the ground and more water infiltration into the soil. Trees also remove water from the soil through transpiration. [ID#862]
Associated Comments: [Seq#828]
The EA states on page 228 that "Thinning and prescribed fire treatments would open up the tree canopy in the analysis area, allowing more light to get to the ground and less competition for soil resources such as water." This is false and contradictory. Increased light (and heat) to the ground means less moisture in the soil, so how does that lead to less competition for water? [29-11]

Concern: [Seq#829]

cows and soil.

Grazing and trampling reduces the capacity of soils to sequester carbon, and through various processes contributes to greenhouse warming. [ID#863]
Response: [Seq#829]

Thanks for your comment. I would not argue against that statement but it is out of the scope of this project since grazing management is not being addressed in the NEPA document. Grazing was addressed in a recent, previous, separate document. [ID#863]
Associated Comments: [Seq#829]
Grazing and trampling reduces the capacity of soils to sequester carbon, and through various processes contributes to greenhouse warming. [72-72]

Concern: [Seq#830]

My confidence in the USFS's managements abilities is called into question due to the cows and the logging and the fire suppression. The stewardship of the forest is an awesome responsibility that must be carried out with the highest ethics and skill to be of the most benefit to the forest and to the most people. How can the Mission Restoration Project, with a stated primary goal of ecosystem restoration, hope to restore the health of the forest and aquatic ecosystems using the same human activities that have created the current problems? Fear of catastrophic fire is being used to manipulate valley citizens to get behind this project. I would prefer to be motivated by the truth and the valley's best interests rather than by fear. We need to have more transparent discussion before this project is instituted [ID#864]
Response: [Seq#830]

The proposed treatments in the Mission Restoration project would use the tools of thinning and prescribed fire to achieve specific purposes as described in the EA. The thinning prescriptions described in Appendix A of the EA vary widely from the prescriptions used in some past projects that had different goals than the Mission project and helped contribute to current conditions. The EA does not address fire as "catastrophic", instead using the terms "characteristic" and "uncharacteristic" in reference to historic frequency and intensity of fires in the various environmental zones in the project area. [ID#864]

Associated Comments: [Seq#830]
My confidence in the USFS's managements abilities is called into question due to the cows and the logging and the fire suppression. The stewardship of the forest is an awesome responsibility that must be carried out with the highest ethics and skill to be of the most benefit to the forest and to the most people. How can the Mission Restoration Project, with a stated primary goal of ecosystem restoration, hope to restore the health of the forest and aquatic ecosystems using the same human activities that have created the current problems? Fear of catastrophic fire is being used to manipulate valley citizens to get behind this project. I would prefer to be motivated by the truth and the valley's best interests rather than by fear. We need to have more transparent discussion before this project is instituted. [48-9]

Concern: [Seq#831]

I have read several comments to the local Methow Valley News from concerned citizens who generally oppose logging and the limited road construction proposed in the draft EIS. These citizens have cited some controversial papers that suggest that high-severity fires are within the range of historic variability for mixed conifer forests. The majority of the fire ecology community, including myself, consider these recent citations to be quite biased (against the USFS and logging in general) and unsupported by the broader scientific literature.

[ID#865]
Response: [Seq#831]

Thank you for your comment. The science behind the restoration strategy used in the Mission Restoration project is based on peer-reviewed science, as are the models and research supporting the proposed actions. [ID#865]
Associated Comments: [Seq#831]
I have read several comments to the local Methow Valley News from concerned citizens who generally oppose logging and the limited road construction proposed in the draft EIS. These citizens have cited some controversial papers that suggest that high-severity fires are within the range of historic variability for mixed conifer forests. The majority of the fire ecology community, including myself, consider these recent citations to be quite biased (against the USFS and logging in general) and unsupported by the broader scientific literature. [58-2]

Concern: [Seq#832]

Thank you for the opportunity to comment on the Mission Project. I agree that several areas are in critical need of care, with lots of young trees growing extremely close together, and I do believe that we can be a beneficial force in restoring the health of those forests. Unfortunately, I do not see how the current proposed actions will achieve that goal. From my observations of fire behavior the last few years I have become convinced that the type of logging proposed by the Forest Service has actually negative consequences on the fire resilience of the system.

For example, the forests that had been heavily logged in the Omak-Okanogan area resulted in more mature trees than the ones in the Libby Creek/Buttermilk Creek area but also large stands of thick brush, including snowberry, which burned very hot and helped ignite the mature trees overhead. Without the presence of such dense brush those trees would have probably survived. Modern research, fire fighters, and the indigenous people who have lived here for over ten thousand years point to the fact that, if the forest canopy is opened too much, brush moves in and creates large amounts of fuel that is much more easily ignitable than a tree. And because brush grows relatively fast, the amount of maintenance necessary to keep brush down after logging would be overwhelming. Historically, according to ethnoecological research and indigenous elders, sagebrush environments had to be prescribed burned every two to four years in order to keep fuel loads down. Where would funding for such regular treatment come from? [ID#866]

Response: [Seq#832]

Without site-specific information as to the location cited in this comment, it's difficult to know how it compares to the conditions in the Mission project area, or whether that area was at risk for uncharacteristic fire behavior prior to any commercial thinning. See revised prelim. EA (pp 140-141) for descriptions of characteristic fire behavior within the project area. The frequent fire return interval in the dry forested areas would have supported a more open forested stand structure than presently exists, which would have likely had more brush and grass present. Frequent fires would likely have maintained low levels of brush. The initial prescribed fire treatment planned post-thinning, along with the proposed maintenance burning following up approximately 10 years later, would also help maintain low levels of brush. The thinning proposed in this project is not intended to create a sagebrush environment that would need to be maintained by prescribed fire. The location and goals of burning carried out by past indigenous peoples as cited in the comment are unknown; their reasons for burning so frequently may have been for other reasons such as promoting wildlife habitat for food sources rather than as a component of forest restoration. Funding for prescribed burning generally comes from appropriated funding, and from funds collected from timber sales to treat slash associated with that activity. [ID#866]

Associated Comments: [Seq#832]

Thank you for the opportunity to comment on the Mission Project. I agree that several areas are in critical need of care, with lots of young trees growing extremely close together, and I do believe that we can be a beneficial force in restoring the health of those forests. Unfortunately, I do not see how the current proposed actions will achieve that goal. From my observations of fire behavior the last few years I have become convinced that the type of logging proposed by the Forest Service has actually negative

consequences on the fire resilience of the system. [62-1]

For example, the forests that had been heavily logged in the Omak-Okanogan area resulted in more mature trees than the ones in the Libby Creek/Buttermilk Creek area but also large stands of thick brush, including snowberry, which burned very hot and helped ignite the mature trees overhead. Without the presence of such dense brush those trees would have probably survived. Modern research, fire fighters, and the indigenous people who have lived here for over ten thousand years point to the fact that, if the forest canopy is opened too much, brush moves in and creates large amounts of fuel that is much more easily ignitable than a tree. And because brush grows relatively fast, the amount of maintenance necessary to keep brush down after logging would be overwhelming. Historically, according to ethnoecological research and indigenous elders, sagebrush environments had to be prescribed burned every two to four years in order to keep fuel loads down. Where would funding for such regular treatment come from? [62-2]

Concern: [Seq#833]

Commercial logging is not necessary to reduce wildfire risk. Changing fire behavior to reduce threat to life and property does not have to involve commercial logging of forests that are miles away from said life and property. [ID#867]

Response: [Seq#833]

Commercial thinning in the Mission Project is proposed for forest restoration purposes. While it may also contribute to hazard reduction in the Wildland Urban Interface within the project area, this activity is tied to other purpose and needs of the project as described in Appendix A (see Figure 138 for purpose of each commercial thinning prescription). All proposed treatments are within approximately 3.5 miles of private, non National Forest System lands. [ID#867]

Associated Comments: [Seq#833]

Commercial logging is not necessary to reduce wildfire risk. Changing fire behavior to reduce threat to life and property does not have to involve commercial logging of forests that are miles away from said life and property." [63-49]

Concern: [Seq#834]

Thinning of small diameter trees in dense, young forests may be appropriate and result in reduction of wildfire risk to human communities in certain situations. The most appropriate place to apply forest thinning is in dry forest types adjacent to human communities threatened by wildfires Many researchers and scientists agree that the best way to reduce wildfire risk in the rural-forest interface is through the reintroduction of fire to many natural ecosystems (Walstad, et al. 1990, Mutch 1994, USDA/USDI 1995, Arno 1996, Frost 1999). [ID#868]

Response: [Seq#834]

The "LFR", or Ladder Fuel Reduction, thinning prescription (described in Figure 138 in Appendix A) targets small-diameter trees in Young Forest Multi-Story (YFMS) stands for the purposes of reducing wildfire risks (Purpose and Need #5), as well as for the purpose of restoring vegetation composition and structure (Purpose and Need #3) and promoting more resilient wildlife habitat (Purpose and Need #4). This project includes approximately 7400 acres of underburning, mostly in dry-forest types that would have experienced frequent fire, and much of which is in landscape-scale units. [ID#868]

Associated Comments: [Seq#834]

Thinning of small diameter trees in dense, young forests may be appropriate and result in reduction of wildfire risk to human communities in certain situations. The most appropriate place to apply forest thinning is in dry forest types adjacent to human communities threatened by wildfires Many researchers and scientists agree that the best way to reduce wildfire risk in the rural-forest interface is through the reintroduction of fire to many natural ecosystems (Walstad, et al. 1990, Mutch 1994, USDA/USDI 1995, Arno 1996, Frost 1999). [63-69]

Concern: [Seq#835]

Please see: Hanson, C.T. 2010. The myth of "catastrophic" wildfire: a new ecological paradigm of forest health. John Muir Project Technical Report 1. (John Muir Project of Earth Island Institute, Cedar Ridge, California) for a review of "best available science", references, and the conclusions included below.

The Forest Service appears to be more concerned about supporting more fire suppression and logging that contributed to the problems than restoration to an improved ecosystem. The focus on fire suppression is consuming federal resources at a clip that can't be sustained.

Hanson in discussing his research and others found that forests with the biggest trees saw less severe fires than forests with smaller trees. Those findings indicate that commercial logging will not prevent severe fires.

[ID#869]
Response: [Seq#835]

Commercial thinning proposed in this project is not intended to prevent severe fire as described by Hanson; it is intended to promote low to moderate severity fires in the dry forested areas within the project that would have historically experienced this type of fire behavior, and to reduce the risk of high-severity fire in these same forest types that would have been historically atypical of these areas. High-severity fire will still occur in the project area in upper-elevation forests where this type of fire behavior is expected. By removing smaller-diameter trees in dry forests, commercial thinning proposed in this project would also help promote the development of the larger, more fire-resilient trees referenced by Hanson. Many of the studies cited by Hanson are specific to the Sierra Nevada, southern Oregon, Montana, or Colorado, areas that differ widely from the Mission Restoration project area in forest type and disturbance history. [ID#869]
Associated Comments: [Seq#835]
Please see: Hanson, C.T. 2010. The myth of "catastrophic" wildfire: a new ecological paradigm of forest health. John Muir Project Technical Report 1. (John Muir Project of Earth Island Institute, Cedar Ridge, California) for a review of "best available science", references, and the conclusions included below. The Forest Service appears to be more concerned about supporting more fire suppression and logging that contributed to the problems than restoration to an improved ecosystem. The focus on fire suppression is consuming federal resources at a clip that can't be sustained. Hanson in discussing his research and others found that forests with the biggest trees saw less severe fires than forests with smaller trees. Those findings indicate that commercial logging will not prevent severe fires. [63-75]

Concern: [Seq#836]

In conclusion, I urge you to consult with the indigenous people of the area who have been very successful at using prescribed fires to increase the resilience of the ecosystem they've been reliant on for more than ten thousand years. Their knowledge and wisdom on the subject cannot be understated. At the very least, please consult with the ethnoecological literature to see what practices have shown to be effective at limiting the risks of overly destructive wildfires (see Keeping It Living edited by Deur and Turner for the Pacific Northwest, and Tending the Wild by Anderson for California). These sources of information are confirmed by the more up-to-date independent research available on fire management [ID#870]
Response: [Seq#836]

The references listed in the comment are available for purchase only, and were not investigated further. Research completed by Barrett and Arno (1999) suggest that "Indian ignitions substantially increased fire occurrence in lower elevation forests" in western Montana. Anecdotal accounts tell of using fire to improve huckleberry patches, help with flushing animals during hunting, improving browse for game, or

keeping brushy areas clear (Boyd 1999). Williams (2002) identifies eleven key reasons that native peoples used fire. In many instances, frequent, low-intensity fire was used, but in some cases these fires also burned through the summer and damaged habitat because of their severity and duration. For the purposes of this project, "indigenous people of the area" is considered to be members of the Colville Confederated Tribes and members of the Yakama Nation because they include peoples with territorial use of the Methow, Okanogan, and nearby valleys. Both Tribal governments currently use a combination of commercial thinning, noncommercial thinning, and prescribed fire to manage their landscapes. [ID#870]

Associated Comments: [Seq#836]

In conclusion, I urge you to consult with the indigenous people of the area who have been very successful at using prescribed fires to increase the resilience of the ecosystem they've been reliant on for more than ten thousand years. Their knowledge and wisdom on the subject cannot be understated. At the very least, please consult with the ethnoecological literature to see what practices have shown to be effective at limiting the risks of overly destructive wildfires (see Keeping It Living edited by Deur and Turner for the Pacific Northwest, and Tending the Wild by Anderson for California). These sources of information are confirmed by the more up-to-date independent research available on fire management. [62-7]

Concern: [Seq#837]

Alternative 1 does not include any harvesting or selling Forest Products. The impact of Alternative 1 would be adverse, long-term, and minor because without continued treatments, previous investments and the gains that have been achieved are at an increased risk of loss through widespread uncharacteristic fire behavior, insects, and disease. Large-scale stand replacement fires, especially in areas where they are not characteristic of the inherent fire regime can cause substantial damage to both private and public."

The referenced increased risk of loss is simply not true. The FS cannot assume that if a fire came through that it would be a"large-scale stand replacement" fire, which makes their case for dropping Alternative 1 invalid.

[

[ID#871]

Response: [Seq#837]

The estimated fire behavior that would occur with Alternative 1 is not an assumption. It is based on decades of experience, accepted fire behavior modeling programs, and modeling scenarios that use actual known fire weather values, fuels, and topography in the project area. The reasons why this type

of fire behavior is more likely to occur with the No Treatment alternative are described in the Fuels section of the EA (pp 149-151). [ID#871]

Associated Comments: [Seq#837]

Alternative 1 does not include any harvesting or selling Forest Products. The impact of Alternative 1 would be adverse, long-term, and minor because without continued treatments, previous investments and the gains that have been achieved are at an increased risk of loss through widespread uncharacteristic fire behavior, insects, and disease. Large-scale stand replacement fires, especially in areas where they are not characteristic of the inherent fire regime can cause substantial damage to both private and public." The referenced increased risk of loss is simply not true. The FS cannot assume that if a fire came through that it would be a"large-scale stand replacement" fire, which makes their case for dropping Alternative 1 invalid. [68-115]

Concern: [Seq#838]

A purpose of this project is to modify the structure, composition, and patterns of forest stands within and adjacent to the wildland/urban interface (WUI) as defined by the 2013 Okanogan Community Wildfire Protection Plan, enabling the use of more direct firefighting strategies to protect life and personal property." Being that Okanogan county has defined the WUI as the entire forest, this statement is mis-leading. If the purpose stated that it was to firesafe around private property and public infrastructure it would be acceptable, but the FS, very deceptively, uses the term WUI when it actually means most of the forest. [ID#872]

Response: [Seq#838]

The definition of WUI used in this analysis from the Okanogan County Community Wildfire Protection Plan (CWPP) has no bearing on the amount of WUI present in the Twisp area or in the greater Methow Valley. Rather than being "completely divorced from any meaningful definition", the interagency group of experts and private entities defined WUI based on Okanogan County fuels, topography, weather, values at risk, and other components that contribute to fire risk (Tucker & Bloch, 2013). The need to treat WUI within the project area is described in the Fuels analysis (136-139, 146-147). The WUI boundary used in this analysis is clearly displayed in Figure 58. [ID#872]

Associated Comments: [Seq#838]

A purpose of this project is to modify the structure, composition, and patterns of forest stands within and adjacent to the wildland/urban interface (WUI) as defined by the 2013 Okanogan Community Wildfire Protection Plan, enabling the use of more direct firefighting strategies to protect life and personal property." Being that Okanogan county has define the WUI as the entire forest, this statement is mis-leading. If the purpose stated that it was to firesafe around private property and public infrastructure it would be acceptable, but the FS, very deceptively, uses the term WUI when it actually means most of the forest. [68-112]

The stated need to " modify the structure, composition, and patterns of forest stands within and adjacent to the wildland/urban interface (WUI)" does not make it clear that the entire area under consideration, as well as the overwhelming majority of the Twisp district, is designated WUI. Essentially, this is a blank check for forest stand manipulation that is completely divorced from a meaningful definition of a "wildland/urban interface". [69-2]

Concern: [Seq#839]

It is a myth that logging is a substitute for fire. The removal of biomass by logging does not reduce wildfire danger. Logging encourages dense growth. The ecological difference between mechanized thinning and natural fire is that with mechanized thinning the trees are removed from the forest but with fire the ash is left behind providing nutrients for the forest for decades. Snags removed could have provided homes for cavity-dwelling species and trees fallen into streams improve aquatic habitat. Heat and smoke kills some plant pathogens while logging introduces insects and exotic weeds, tree diseases, compacts soil and increases erosion and sedimentation. Logging roads are an invitation to poaching and off-road vehicles. Is reforestation an integral and guaranteed part of the Mission Restoration Project?

Forest wide fuel reduction through mechanical means, as a strategy, is not effective, economically or ecologically.

The Pacific Biodiversity Institute provided this analysis including "best available science". Silvicultural thinning (i.e., logging of small-diameter trees to reduce tree densities and/or underbrush) has been posited as a possible treatment method for reducing wildfire risk. Although thinning to reduce fuel load has received much media attention recently, it is controversial among the scientific community and remains largely untested (Henjum, et al. 1994, DellaSala, et al. 1995, SNEP 1996). There have been few empirical studies looking at the effectiveness of thinning as a treatment for reducing wildfire hazard (Frost 1999). The studies that have been conducted have reported highly variable results. Some studies indicate that thinning treatments designed to reduce fire risk actually increase the risk and severity of the fires (Huff, et al. 1995, van Wegtendonk 1996, Weatherspoon 1996). Although these treatments may reduce the flammable biomass in the area, they also lead to drier forests and higher winds (Countryman 1955, Agee 1997). [ID#873]

Response: [Seq#839]

Design criteria that use Best Management Practices are listed in Appendix D. These actions would prevent or limit resource impacts on sediment, soil, habitat, and invasive species. Effects of proposed

commercial thinning on these resources are further described in the Soils, Vegetation, Aquatic Resources, and Invasive Species sections of Chapter 3 of the EA.

Closed and open roads that would be used for commercial haul purposes are already used by hunters, who are responsible for following state game laws. This project would not build permanent roads, and would use funds generated from commercial thinning (as well as from other sources) to close and decommission roads, which would result in fewer roads available for hunters.

The thinning methods and prescriptions used in this project are similar in nature to those used in projects on this district and adjacent districts over several years. Past thinning projects have removed greater numbers of trees than this project proposes to remove, and the effects of these actions are known through monitoring and research. Effects of thinning are described in resource sections of Chapter 3 of the EA.

Analysis of fire history on lands managed by the U.S. Forest Service and Washington State Department of Natural Resources in the Libby Creek drainage shows that of the 25,850 acres in this subwatershed, approximately 7% (1868 acres) has burned in wildfires since 1910. Most of this (1617 acres) burned in 2001 and 2014. Of the 1000 acres burned in 2014, approximately 100 acres experienced moderate to high soil burn severity with likely mortality to overstory trees. Therefore, very little of the timber in the Libby Creek drainage has been affected by wildfires since 1910.

Section 3.15.4 (p. 303-305) of the revised preliminary EA addresses the impact of thinning on greenhouse gases and carbon sequestration.

At the end of preparation of the EA, a Finding of No Significant Impact (FONSI) will be prepared if a project is determined to not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. If a determination cannot be made that there is not a significant effect, then an EIS would be prepared. Based on the effects determinations to this point, no significant effects has been identified.

Reforestation proposed in this project and the funding mechanism for it are described in the revised preliminary EA (p. 298, 301, 322-323).

[ID#873]

Associated Comments: [Seq#839]

It is a myth that logging is a substitute for fire. The removal of biomass by logging does not reduce wildfire danger. Logging encourages dense growth. The ecological difference between mechanized thinning and natural fire is that with mechanized thinning the trees are removed from the forest but with fire the ash is left behind providing nutrients for the forest for decades. Snags removed could have provided homes for cavity-dwelling species and trees fallen into streams improve aquatic habitat. Heat and smoke kills some plant pathogens while logging introduces insects and exotic weeds, tree diseases, compacts soil and increases erosion and sedimentation. Logging roads are an invitation to poaching and off-road vehicles. Is reforestation an integral and guaranteed part of the Mission Restoration Project? [48-7]

It is a myth that logging is a substitute for fire. The removal of biomass by logging does not reduce wildfire danger. [51-14]

The Pacific Biodiversity Institute provided this analysis including "best available science". Silvicultural thinning (i.e., logging of small-diameter trees to reduce tree densities and/or underbrush) has been posited as a possible treatment method for reducing wildfire risk. Although thinning to reduce fuel load has received much media attention recently, it is controversial among the scientific community and remains largely untested (Henjum, et al. 1994, DellaSala, et al. 1995, SNEP 1996). There have been few empirical studies looking at the effectiveness of thinning as a treatment for reducing wildfire hazard (Frost 1999). The studies that have been conducted have reported highly variable results. Some studies indicate that thinning treatments designed to reduce fire risk actually increase the risk and severity of the fires (Huff, et al. 1995, van Wegtendonk 1996, Weatherspoon 1996). Although these treatments may reduce the flammable biomass in the area, they also lead to drier forests and higher winds (Countryman 1955, Agee 1997). [63-67]

A required EIS should definitively answer that question after considering all sources of "best available science". Forest wide fuel reduction through commercial thinning/logging, as a strategy, is not effective, economically or ecologically. [63-72]

Best science does not conclusively support logging as a way to lower the risk of wildfire. [68-20]

Forest wide fuel reduction through mechanical mean, as a strategy, is not effective, economically or ecologically. [68-33]

From Pacific Biodiversity Institute: Silvicultural thinning (i.e., logging of small-diameter trees to reduce tree densities and/or underbrush) has been posited as a possible treatment method for reducing wildfire risk. Although thinning to reduce fuel load has received much media attention recently, it is controversial among the scientific community and remains largely untested (Henjum, et al. 1994, DellaSala, et al. 1995, SNEP 1996). There have been few empirical studies looking at the effectiveness of thinning as a treatment for reducing wildfire hazard (Frost 1999). The studies that have been conducted have reported highly variable results. Some studies indicate that thinning treatments designed to reduce fire risk actually increase the risk and severity of the fires (Huff, et al. 1995, van Wegtendonk 1996, Weatherspoon 1996). Although these treatments may reduce the flammable biomass in the area, they also lead to drier forests and higher winds (Countryman 1955, Agee 1997). Additionally, silvicultural treatments, even when conducted carefully, can lead to the following adverse conditions (excerpted from Frost 1999): • Damage to soil integrity through increased erosion, compaction, and loss of litter layer (Harvey, et al. 1994, Meurisse and Geist 1994). • Increased mortality of residual trees due to pathogens and mechanical damage to boles and roots (Hagle and Schmitz 1993, Filip 1994) • Creation of sediment that may eventually be delivered to streams (Beschta 1978, Grant and Wolff 1991) • Increased levels of fine fuels and near-term fire hazard (Fahnestock 1968, Weatherspoon 1996, Wilson and Dell 1971, Huff, et al. 1995) • Dependence on roads, which result in numerous adverse effects (Henjum, et al. 1994, Megahan, et al. 1994) • Reduced habitat quality for sensitive species associated with cool, moist micro-sites or closed-canopy forests (FEMAT 1993, Thomas, et al. 1993) [68-87]

The No Action alternative would result in no short-term resource impacts such as increased sediment, surface erosion, and decreased water quality because no additional area would be disturbed by harvest, fuels, and road work. There would be no long-term benefits from restoration of currently compacted areas or reduced risk of high severity fire due to fuel reduction treatments. Again, the FS falsely claims that their treatments will reduce risk of high severity fire which is not scientifically agreed upon. [68-123]

Enormous fires were a part of our ecosystem many years before the white man entered these communities. Are logging and thinning actually an acceptable mitigation for the lack of wildfire in the past 100 years? They do not accomplish what wildfire (nor prescribed burning) can accomplish and it is highly questionable that the forests would become more resilient as a result of logging and thinning. The reduction of forest canopies has not yet been proven to be effective in controlling the behavior of wildfires. More research should be done before we plunge into cutting such a large number of trees that are currently doing their part to reduced the load of CO2 in our atmosphere and before they have a large impact upon the human environment of especially Libby Creek. At the very least, the elements of this sale should be staged with years in between, so that the effects of our actions have time to demonstrate either effectiveness toward the goals has occurred or whether more actual more harm has been done by loss of so many trees in this ecosystem. Libby Creek in particular has been hit by such large fires over the past couple of decades that much timber has already been removed by fire. [70-9]

Concern: [Seq#840]

The FS does not explain, as requested in scoping, what is undesirable about low elevation stand replacing fires. This is critical information for justifying this project. [ID#874]
Response: [Seq#840]

See revised preliminary EA, pp 14-141 and 149-151 for overview on crown fire risk and discussion of effects of fire behavior in the absence of treatments proposed by this project. [ID#874]
Associated Comments: [Seq#840]
The FS does not explain, as requested in scoping, what is undesirable about low elevation stand replacing fires. This is critical information for justifying this project. [68-46]

Concern: [Seq#841]

"Some viable fuel treatments may actually result in an increased rate of spread under many conditions (Lertzman et al, 1998; Agee et al, 2000) Thinning to reduce crown fire potential can result in surface litter becoming drier and more exposed to wind. It can also result in increased growth of grasses and understory shrubs which can foster a rapidly moving surface fire. How will the FS guarantee against such surface litter and increased grasses and shrubs? [ID#876]

Response: [Seq#841]

The analysis on the effects of thinning treatments includes recognition of the potential for increased grasses and shrubs (revised preliminary EA, p. 158). Such fuel loadings would have existed in dry forested areas under the range of historic variability when a more frequent fire return intervals occurred (either from anthropogenic or lightning ignitions). The project includes maintenance burning at a 10-15 year interval after the initial thinning and prescribed fire treatment to help maintain low fuel loadings. [ID#876]

Associated Comments: [Seq#841]

"Some viable fuel treatments may actually result in an increased rate of spread under many conditions (Lertzman et al, 1998; Agee et al, 2000) Thinning to reduce crown fire potential can result in surface litter becoming drier and more exposed to wind. It can also result in increased growth of grasses and understory shrubs which can foster a rapidly moving surface fire. How will the FS guarantee against such surface litter and increased grasses and shrubs? [68-21]

Concern: [Seq#842]

]

Wildfire Science Insights: a Resource for Wildfire Policy Discussions from Headwaters Economics, 2016:

"Fuel reduction on federal lands will do little to reduce acreage burned and homes lost."

Nearly all of the acreage burned annually in the Northern Rockies and Pacific Northwest is the few large fires burning under severe weather/climate conditions. So, even if fuel reductions were effective- a questionable assumption-they do little to halt the very large fires that pose the greatest threat to homes and communities. [ID#877]

Response: [Seq#842]

The reference listed in this comment acknowledges that thinning treatments can help reduce fire severity and aid in suppression efforts, as is stated in the fuels analysis for this project (revised preliminary EA, pp 151-161). The effectiveness of fuel reduction treatments has been documented in

peer-reviewed research (see references listed on p. 154, revised preliminary EA). In the Mission project area, most of the private land in forested areas is directly adjacent to or close to National Forest System lands where treatments can affect fire behavior and impacts to private lands. The section of the reference cited in this comment ends with the statement "

prioritizing federal fuel treatments around communities and creating better mechanisms for reducing fuels on private land can help reduce home loss and better protect communities."

As discussed in the revised preliminary EA at p. 146, this project responds to the Okanogan County Community Wildfire Protection Plan's identification of the Libby Creek area as a "potential hotspot" by prioritizing treatments that are designed to reduce the threat of wildfires that may come off of National Forest System lands towards private lands. The "very large fires" referenced in this citation generally occur during environmental conditions that few fuel hazard reduction treatments, including those proposed in this project, are designed to withstand (i.e. combinations of high winds, low fuel moistures, low humidities, limited resources, etc.).

[ID#877]

Associated Comments: [Seq#842]

Wildfire Science Insights: a Resource for Wildfire Policy Discussions from Headwaterseconomics, 2016: "Fuel reduction on federal lands will do little to reduce acreage burned and homes lost." Nearly all of the acreage burned annually in the Northern Rockies and Pacific Northwest is the few large fires burning under severe weather/climate conditions. So, even if fuel reductions were effective- a questionable assumption-they do little halt the very large fires that pose the greatest threat to homes and communities. [68-24]

Concern: [Seq#843]

The following statement from the Analysis section is false, misleading and unsubstantiated: "Proposed treatments would re-establish ecological processes, patterns, and functions to restore the Libby and Buttermilk Creek landscapes to be more resilient to disturbances such as wildfire and changing climates, reduce wildfire hazards in the Wildland Urban Interface (WUI), and manage the existing transportation system." [ID#878]

Response: [Seq#843]

The statement cited in the comment is substantiated by analysis contained in Chapter 3 in revised preliminary EA. Several resource sections have demonstrated an improvement in resource indicators, including but not limited to an increase in the amount of coarse woody material and ground cover (pp 94-97); a decrease in road density and stream crossings, and an increase in stream channel complexity and accessible stream habitat increased (pp 63-78); an increase in the likelihood of the type of fire behavior characteristic of the dry forested landscape (pp 149-166) and so on. As explained in the

"Methodology" sections of each resource section in Chapter 3, and there associated resource reports, these resource indicators were selected because they are directly tied to ecological processes, patterns, and functions inherent to the project area. [ID#878]
Associated Comments: [Seq#843]
The following statement from the Analysis section is false, misleading and unsubstantiated: "Proposed treatments would re-establish ecological processes, patterns, and functions to restore the Libby and Buttermilk Creek landscapes to be more resilient to disturbances such as wildfire and changing climates, reduce wildfire hazards in the Wildland Urban Interface (WUI), and manage the existing transportation system." [68-35]

Concern: [Seq#844]

The FS offers 3 alternatives. The no action alternative, of course, does not meet their Purpose and Need because the Forest has fabricated these needs out of pressure to do something about fire. [ID#879]
Response: [Seq#844]

The purpose and need statements for this project were developed by assessing current conditions and comparing them to a range of historical and desired future conditions on the landscapes within the project area. The basis for the "needs" described in these statements is further substantiated in the "Affected Environment" sections for each resource in Chapter 3 of the revised preliminary EA. The desire to "do something about fire" from both landscape restoration and WUI hazard reduction perspectives is described in the fire/fuels section of the EA (revised preliminary EA, p. 140-149). [ID#879]
Associated Comments: [Seq#844]
The FS offers 3 alternatives. The no action alternative, of course, does not meet their Purpose and Need because the Forest has fabricated these needs out of pressure to do something about fire. [68-37]

Concern: [Seq#845]

No significant negative affects of even "catastrophic" wildfire are defined in this document. That is because, if no life or property are lost, there aren't any. [ID#880]
Response: [Seq#845]

Fire behavior is not described as "catastrophic" in this analysis, but rather as "characteristic" or uncharacteristic" (definition, revised preliminary EA, p. 135) with examples of these types of fire

behavior applicable to different environments within the landscape (revised preliminary EA, pp 140-146). The consequences of having uncharacteristic types of fire behavior are described in the effects of Alternative 1 (revised preliminary EA, p. 149-151), and are phrased in terms of impacts to habitat, aquatic and terrestrial species, and developments in the WUI. Consideration of these elements demonstrates their importance in this analysis. The degree to which the effects of uncharacteristic wildfire are "significant" can be inferred by the effects on resource indicators in terms of type, context, duration, and intensity. In several instances, the effects of Alternative 1 (no action) has been described as having adverse, minor-to-major, long-term effects. [ID#880]

Associated Comments: [Seq#845]

No significant negative affects of even "catastrophic" wildfire are defined in this document. That is because, if no life or property are lost, there aren't any. [68-45]

Concern: [Seq#846]

Create fire breaks on the landscape, either without other forest thinning or as part of proposed thinning activities.

RESPONSE: Some fuel breaks would be created by proposed thinning along FS Roads 43 and 4340 and in other areas in the project. In other locations,

creating fuel breaks alone would not meet many of the Purpose and Needs for this project. This project proposes to treat fuels on approximately 10,000 acres of the landscape to make potential future fires easier to contain/control.

COMMENT: these fire breaks are exactly what the Forest should be planning and paying attention to as requested in scoping. This is saying that in other locations just creating fuel breaks would not allow the project to have a timber sale.

[ID#881]

Response: [Seq#846]

Fuel breaks are defined as a wide strip or block of land on which the vegetation has been permanently modified to a low volume fuel type so that fires burning into it can be more readily controlled (NWCG, 2006). They are generally placed at defensible locations (i.e. along ridges or possibly adjacent to values at risk such as private developments or specific habitat features) to allow suppression resources to stop the spread of fire. This type of treatment design is responsive to Purpose and Need #6 (Wildfire Hazard

in the Wildland Urban Interface) because there is a desire to prevent fire from damaging developments. Using fuelbreaks alone is not responsive to Purpose and Need #1 (Hydrologic Function & Aquatic Habitat), #3 (Vegetation Composition and Structure), or #4 (Wildlife Habitat), which recognize the historical role and future likelihood of wildfires on the landscapes within the project area. Permanently modifying vegetation to a low volume fuel type would not help restore vegetation to the desired structure and composition. [ID#881]

Associated Comments: [Seq#846]

Create fire breaks on the landscape, either without other forest thinning or as part of proposed thinning activities. RESPONSE: Some fuel breaks would be created by proposed thinning along FS Roads 43 and 4340 and in other areas in the project. In other locations, creating fuel breaks alone would not meet many of the Purpose and Needs for this project. This project proposes to treat fuels on approximately 10,000 acres of the landscape to make potential future fires easier to contain/control. COMMENT: these fire breaks are exactly what the Forest should be planning and paying attention to as requested in scoping. This is saying that in other locations just creating fuel breaks would not allow the project to have a timber sale. [68-71]

Concern: [Seq#847]

Large prescribed burns are commonly used in Western Australia that provide a network of anchors which allows 6%-8% of the forest to be burned annually. (RJ Sneeuwjagt et al, Fire Ecology9.14. (2013) [ID#882]

Response: [Seq#847]

Several landscape-scale burns ranging in size from several hundred to over 1000 acres are proposed in Alternatives 2 and 3 of this project. For the past 20 or more years, prescribed fire has been used at varying locations on the district to reintroduce the effects of fire in dry forests, on units up to 5000 acres. Where stand structure and composition was departed from historical conditions, as is the case in many areas within the Mission project boundary, prescribed burning resulted in high-severity fire effects because surface fire readily moved into the overstory canopy, creating large patches of mortality. Thinning and prescribed fire used together allow for a more predictable result by decreasing crown density, increasing canopy base height, and reducing surface fuels, creating a more fire-resilient forest (Agee and Skinner, 2005). Once this result is achieved, prescribed fire alone may be used successfully to maintain the desired stand structure and arrangement. [ID#882]

Associated Comments: [Seq#847]

Large prescribed burns are commonly used in Western Australia that provide a network of anchors which allows 6%-8% of the forest to be burned annually. (RJ Sneeuwjagt et al, Fire Ecology9.14. (2013) [68-44]

Concern: [Seq#848]

First, many plant and animal species use, and have sometimes evolved to depend on, severely burned forest conditions for their persistence.

Second, evidence from fire history studies also suggests that a complex mosaic of severely burned conifer patches was common historically in the West.

Third, to maintain ecological integrity in forests born of mixed-severity fire, land managers will have to accept some severe fire and maintain the integrity of its aftermath.

Lastly, public education messages surrounding fire could be modified so that people better understand and support management designed to maintain ecologically appropriate sizes and distributions of severe fire and the complex early-seral forest conditions it creates.

--Hutto, R.

L.

, R.

E.

Keane, R.

L.

Sherriff, C.

T.

Rota, L.

A.

Eby, and V.

A.

Saab.

2016.

Toward a more ecologically informed view of severe forest fires.

Ecosphere 7(2):e01255. [ID#883]

Response: [Seq#848]

The citation provided recommends that forest management practices recognize that all fire regimes contain some degree of high-severity fire. The analysis on fire and fuels completed for this project recognizes that fire regimes in the project area, including the dry forested area where most thinning and prescribed fire treatments are proposed, included some degree of high-severity fire (revised preliminary EA, p. 140-143). While the authors of this citation completed their assessment using national-level data, the analysis for this project and the identification of fire regimes was done on a project-specific basis. The thinning and prescribed fire treatments proposed in this project would not eliminate high-severity fire from the landscape, even in the dry forest types where this type of fire behavior was less common. [ID#883]

Associated Comments: [Seq#848]

We use the historical presence of high-severity fire patches in mixed-conifer forests of the western United States to make several points that we hope will encourage development of a more ecologically informed view of severe wildland fire effects. First, many plant and animal species use, and have sometimes evolved to depend on, severely burned forest conditions for their persistence. Second, evidence from fire history studies also suggests that a complex mosaic of severely burned conifer patches was common historically in the West. Third, to maintain ecological integrity in forests born of

mixed-severity fire, land managers will have to accept some severe fire and maintain the integrity of its aftermath. Lastly, public education messages surrounding fire could be modified so that people better understand and support management designed to maintain ecologically appropriate sizes and distributions of severe fire and the complex early-seral forest conditions it creates. --Hutto, R. L. , R. E. Keane, R. L. Sherriff, C. T. Rota, L. A. Eby, and V. A. Saab. 2016. Toward a more ecologically informed view of severe forest fires. Ecosphere 7(2):e01255. [69-20]

Concern: [Seq#849]

Wind and drought are the 2 major agents of wildfire over which we have no control.

However, there are anthropogenic actions and choices that could be made differently so as not to exacerbate the situation. Eliminate: fire suppression, cattle grazing, logging and road-building, even if labeled as temporary. [ID#884]

Response: [Seq#849]

Eliminating fire suppression would require changes in agency policy that are outside of the scope of this project; doing so would not meet forest restoration goals and would place terrestrial, aquatic, and human habitat at risk. The commenter provides no basis for how the elimination of cattle grazing, logging, and road building would affect wildfire. Cattle grazing helps limit the accumulation of dried fine grasses that are easily ignitable during wildfires; in addition, changes to existing range allotment plans within the project area is outside of the scope of this project. Logging (commercial thinning) provides a tool that is proposed to achieve the desired arrangement and structure in forested areas in the project area; thinning has also been demonstrated to modify fire behavior (USDA 2012b; Agee and Skinner 2005; Covington 2003; Prichard et al. 2010; Stephens et al. 2012). This project proposes to construct 1.2 miles of temporary roads that would be decommissioned post-project; the construction of these roads is tied to thinning proposed to restore vegetation structure and composition with the further impact of increasing resilience to wildfire. [ID#884]

Associated Comments: [Seq#849]

* Wind and drought are the 2 major agents of wildfire over which we have no control. However, there are anthropogenic actions and choices that could be made differently so as not to exacerbate the situation. Eliminate: fire suppression, cattle grazing, logging and road-building, even if labeled as temporary. [67-22]

Concern: [Seq#850]

This plan is a big mistake and could set a precedent for future projects. The FS could create much more effective and economically viable plans to deal with fires if they would listen to other points of view. [ID#885]

Response: [Seq#850]

Thinning and prescribed fire treatments proposed in this project have already been implemented on this district and on neighboring districts for decades and have been shown to increase resilience during wildfires (see Fuels section of revised preliminary EA, p. 151-161, for discussion on effects of proposed treatments on wildfire behavior). "Dealing with wildfires" is not the sole purpose of this project; treatments are proposed to move towards several goals as described in the Purpose and Need statements (revised preliminary EA, p. 4-5, and further developed in the Affected Environment sections for each resource in Chapter 3). Public scoping and three comment periods have been held for this project to date, and suggestions and issues that were raised during these periods have been specifically addressed in the revised preliminary EA (p. 19-21). [ID#885]

Associated Comments: [Seq#850]

This plan is a big mistake and could set a precedent for future projects. The FS could create much more effective and economically viable plans to deal with fires if they would listen to other points of view. [68-38]

Concern: [Seq#851]

It would be more appropriate to follow aquatic restoration principles using aquatic disturbance regimes, because the two regimes are based on different principles. There is a lack of scientific studies on riparian area fires combined with a need to be more careful in sensitive areas, partly due to past overharvest that reduced the amount of refugial structures. According to Everett et al. (2011) "disturbance within riparian areas may be a required ecological process to provide coarse woody debris and multiple riparian successional states for the proper functioning of the aquatic-land interface." But this is not to say that managed intervention can necessarily replace the functions of a natural fire regime superimposed on an aquatic disturbance regime. So perhaps the purpose and need under "Hydraulic Function and Aquatic Habitat" could be rewritten to reflect the desire to

apply careful alteration of disturbance regimes, in line with Everett et al. 2011, who concluded:

"Improved

riparian forest integrity may be achieved by reestablishing inherent disturbance effects and establishing areas of old growth riparian refugia where it has a high probability of occurrence under the inherent fire regime for the area. The successful management of riparian buffer zones to protect fisheries and water

quality requires the incorporation of knowledge of the dynamics of the riparian ecosystem and the forest matrix in which it exists."

[ID#886]

Response: [Seq#851]

The treatments proposed in Riparian Reserves within this project area have been evaluated for their consistency with the Aquatic Restoration Strategy, which recognizes that some level of disturbance occurs within the aquatic habitat in these management zones (and consistent with Everett et al. 2011 as referenced in this comment). Proposed thinning and prescribed fire treatments in riparian zones were designed for this project in consideration of local disturbance regimes (primarily fire). Best Management Practices are described in Appendix D (revised preliminary EA, p. 353-387) to help maintain shade, sediment buffers, and coarse woody debris. [ID#886]

Associated Comments: [Seq#851]

It would be more appropriate to follow aquatic restoration principles using aquatic disturbance regimes, because the two regimes are based on different principles. There is a lack of scientific studies on riparian area fires combined with a need to be more careful in sensitive areas, partly due to past overharvest that reduced the amount of refugial structures. According to Everett et al. (2011) “disturbance within riparian areas may be a required ecological process to provide coarse woody debris and multiple riparian successional states for the proper functioning of the aquatic-land interface.” But this is not to say that managed intervention can necessarily replace the functions of a natural fire regime superimposed on an aquatic disturbance regime. So perhaps the purpose and need under “Hydraulic Function and Aquatic Habitat” could be rewritten to reflect the desire to apply careful alteration of disturbance regimes, in line with Everett et al.1 who concluded: “Improved riparian forest integrity may be achieved by reestablishing inherent disturbance effects and establishing areas of old growth riparian refugia where it has a high probability of occurrence under the inherent fire regime for the area. The successful management of riparian buffer zones to protect fisheries and water quality requires the incorporation of knowledge of the dynamics of the riparian ecosystem and the forest matrix in which it exists.” [18-2]

Concern: [Seq#852]

If no action were taken in this project, restoration of desired ranges of CFR would experience adverse, long-term, minor to major impacts. Fire behavior in WUI and fire hazards along FS Roads 43 and 4340 would experience adverse, short-term to long-term, minor to moderate"

The FS cannot just say what fire behavior will do. They don't know. Perhaps a beautiful mosaic fire would go through and leave everything perfect. [ID#887]

Response: [Seq#852]

The modeling methodology and intensity level definitions used to evaluate post-project effects on fire behavior is described in the revised preliminary EA (p. 133-140). The weather conditions used to model post-treatment fire behavior were taken from local weather stations near the project area. The estimated fire behavior is conservative in that it was not modeled with wind, which further increases spread rates and long-range spotting. [ID#887]

Associated Comments: [Seq#852]

"If no action were taken in this project, restoration of desired ranges of CFR would experience adverse, long-term, minor to major impacts. Fire behavior in WUI and fire hazards along FS Roads 43 and 4340 would experience adverse, short-term to long-term, minor to moderate" The FS cannot just say what fire behavior will do. They don't know. Perhaps a beautiful mosaic fire would go through and leave everything perfect. [68-116]

Concern: [Seq#853]

D.

, Western Washington University, testimony to Congress: "Simply put, we can't cut our way out of this.

Additionally, much of the 400 million acres that need treatment are in steep, rugged terrain that is difficult to work in.

Even if we could do it, cutting and thinning is expensive to subsidize in many of these areas, it can have harsh ecological consequences, and done poorly it actually exacerbates fire hazards in the future. [ID#888]

Response: [Seq#853]

Comment reflects a generalized opinion that is not backed by research. Proposed treatments in this project would follow Best Management Practices designed to minimize "harsh ecological consequences". Treatments in this project are not proposed in the "steep rugged terrain that is difficult to work in". [ID#888]

Associated Comments: [Seq#853]

Michael Medler, Ph. D. , Western Washington University, testimony to Congress: "Simply put, we can't cut our way out of this. Additionally, much of the 400 million acres that need treatment are in steep, rugged terrain that is difficult to work in. Even if we could do it, cutting and thinning is expensive to

subsidize in many of these areas, it can have harsh ecological consequences, and done poorly it actually exacerbates fire hazards in the future. " [69-21]

Concern: [Seq#854]

The FS should provide either example photos (from other commercial harvests) or pictorial representations of how the commercial units would look after implementation. [ID#889]
Response: [Seq#854]

A set of narrated pictures or a power point presentation will be available on the NEPA sharepoint site. [ID#889]
Associated Comments: [Seq#854]
The FS should provide either example photos (from other commercial harvests) or pictorial representations of how the commercial units would look after implementation. [68-54]

Concern: [Seq#855]

Assumptions that "dry" forests did not experience stand-replacing fires, that fire regimes were frequent and nonlethal, and that such stands were open and dominated by large well-spaced trees are not supported by science. [ID#890]
Response: [Seq#855]

The process used to determine the historic range of variability for dry forest stand structure and composition used in this analysis is described in the EA (revised preliminary EA, pp 99-104) and is supported by science-based review of the Okanogan-Wenatchee National Forest Restoration Strategy (USDA Forest Service, 2012a). The analysis of fire behavior used in this project recognizes that all of the fire regimes within the project area contain some degree of high-severity (stand-replacing) fires (revised preliminary EA, p. 140-141). [ID#890]
Associated Comments: [Seq#855]
Assumptions that "dry" forests did not experience stand-replacing fires, that fire regimes were frequent and nonlethal, and that such stands were open and dominated by large well-spaced trees are not supported by science. [72-96]

Concern: [Seq#856]

The EA claims that the FS is "emphasizing the restoration of natural processes, functions, and patterns across the landscape to build more resilient ecosystems that would be responsive to projected changes in climate." (Id.) But building ecosystems is not a human endeavor. Any claim to be doing so is delusional. Ecosystems are largely defined by the functioning of natural processes. It would be good if the FS were in fact "emphasizing the restoration of natural processes" with this project, however that statement is false on the face of it. The FS apparently doesn't understand what a natural process is, in one place defining it (Id.) as "crown fire risk." The FS perhaps confuses crown fire risk (a model output) with wildland fire, a process which has shaped the project area for millennia. And as this EA demonstrates, the FS has no plan to allow wildland fire as a process to operate in the project area-in fact the RS is all about forever replacing wildland fire with management manipulations [ID#891]

Response: [Seq#856]

The phrase "build more resilient ecosystems" applies because the proposed treatments would accelerate the development of ecosystems that are currently not resilient to the effects of projected changes in climate (described in USDA 2012a. p. 6) at a faster rate than would occur if no action were taken.

This analysis recognizes that wildfires are a natural process that exist in the project area (revised preliminary EA, p. 10). Crown fire risk is described as a landscape characteristic, an attribute of fire that can be used to describe how the process of wildfire behaves on the landscape. This characteristic is described in more detail to illustrate how considering it ties into how the process of wildfire ties into its characteristic functions (revised preliminary EA, p. 134-136). [ID#891]

Associated Comments: [Seq#856]

The EA claims that the FS is "emphasizing the restoration of natural processes, functions, and patterns across the landscape to build more resilient ecosystems that would be responsive to projected changes in climate." (Id.) But building ecosystems is not a human endeavor. Any claim to be doing so is delusional. Ecosystems are largely defined by the functioning of natural processes. It would be good if the FS were in fact "emphasizing the restoration of natural processes" with this project, however that statement is false on the face of it. The FS apparently doesn't understand what a natural process is, in one place defining it (Id.) as "crown fire risk." The FS perhaps confuses crown fire risk (a model output) with wildland fire, a process which has shaped the project area for millennia. And as this EA demonstrates, the FS has no plan to allow wildland fire as a process to operate in the project area-in fact the RS is all about forever replacing wildland fire with management manipulations. [72-18]

Concern: [Seq#857]

The EA doesn't demonstrate that the claimed fire risk reduction and other alleged benefits from logging 10% (Buttermilk Creek) and 20% (Libby Creek) of the Riparian Reserves balances out the known damages from sediment, reductions of shade and water temperature response, weed propagation, etc. And though the Forest Plan requires dead tree habitat shall be managed to maintain primary excavator populations at 100% of their biological potential in riparian areas, the EA didn't bother to conduct such an analysis. If fire suppression is causing the Riparian Reserves to not meet this 100%, then why hasn't the FS conducted a NEPA analysis to address this? [ID#892]

Response: [Seq#857]

Regarding logging in Riparian Reserves and the "known damages from sediment, reductions of shade and water temperature response, weed propagation, etc.": see EA for discussion of effects of proposed thinning on stream temperature and sediment and for design criteria (revised preliminary EA, p. 61, p. 82-83, and p. 353-387). The use of site-specific prescriptions and design criteria utilizing best management practices (BMPs) would result in thinning treatments that would not reduce shade or increase stream temperature and would be unlikely to contribute sediment to streams. Approximately 60% of commercial thinning proposed in Riparian Reserves would occur during winter months, with little ground disturbance and little potential for spread of invasive plants (revised preliminary EA, p. 267). In the remaining 40% of proposed thinning in Riparian Reserves, BMPs would be used to limit disturbed soil and reseed where bare soil occurred (revised preliminary EA, p. 70).

Dead tree habitat is discussed in the Preliminary EA at p.140, 145,150, 151, 153,154,158,159, and in Appendix A of the Wildlife Report (p.88). Snag analysis using DecAid and GNN data was completed for the Forest (Youkey, 2011) to support MIS analysis, and is incorporated by reference into the Wildlife Report (Glidden, 2017). DecAid provided a summary of snag densities used by MIS and wildlife relationships with dead wood, while GNN analysis was used to estimate snag density by vegetation type and to compare current vs historic conditions for snag habitat. The Wildlife Report at p.88 (Appendix A) discusses snag management and potential snag loss during thinning and fire.

[ID#892]

Associated Comments: [Seq#857]

The EA doesn't demonstrate that the claimed fire risk reduction and other alleged benefits from logging 10% (Buttermilk Creek) and 20% (Libby Creek) of the Riparian Reserves balances out the known damages from sediment, reductions of shade and water temperature response, weed propagation, etc. And though the Forest Plan requires dead tree habitat shall be managed to maintain primary excavator populations at 100% of their biological potential in riparian areas, the EA didn't bother to conduct such an analysis. If fire suppression is causing the Riparian Reserves to not meet this 100%, then why hasn't the FS conducted a NEPA analysis to address this? [72-180]

Concern: [Seq#858]

The EA fails to map or quantify the amount of the project area that falls within fire regimes of fire return intervals of 35-200 years. For these areas, deviations from HRV could not have happened due to fire suppression [ID#893]

Response: [Seq#858]

An assessment of fire regime groups in the project area and within proposed treatment units was completed using Landfire 2010 data (LANDFIRE, 2010). Approximately 96% of the proposed thinning and prescribed fire units lie within Fire Regime 1; 3% is within Fire Regime III; less than 1% is within Fire Regime IV. The arrangement of Fire Regimes III and IV within proposed thinning units is scattered and in small amounts less than 10 acres; fire return intervals in these small, highly dispersed areas would likely be overridden by the fire return interval of the surrounding Fire Regime I that experienced fire more frequently. Further details are available in the analysis file. [ID#893]

Associated Comments: [Seq#858]

The EA fails to map or quantify the amount of the project area that falls within fire regimes of fire return intervals of 35-200 years. For these areas, deviations from HRV could not have happened due to fire suppression. [72-101]

Concern: [Seq#859]

Furthermore, it is likely that when the other 90% of fire conditions exist, the fire will be suppressed anyway, so what use is this analysis, anyway [ID#894]

Response: [Seq#859]

The decision to suppress or not suppress a fire has no bearing on the use of 90th percentile conditions to model expected fire behavior with and without proposed treatments. [ID#894]

Associated Comments: [Seq#859]

Furthermore, it is likely that when the other 90% of fire conditions exist, the fire will be suppressed anyway, so what use is this analysis, anyway? [72-99]

Concern: [Seq#860]

The EA states that the desired condition is "fire can function as a natural process on the landscape…" (19). However, this is absurd since, as the EA discloses, the overriding management emphasis of the project area, especially outside the Wilderness, is all-out fire suppression. [ID#895]
Response: [Seq#860]

Current suppression policies do not drive the desired future conditions for this project, which include promoting a landscape in which fire functions within its characteristic range of effects. For dry forest types in the project area, this includes primarily low-severity fire behavior with concurrent low-severity impacts to habitat. [ID#895]
Associated Comments: [Seq#860]
The EA states that the desired condition is "fire can function as a natural process on the landscape…" (19). However, this is absurd since, as the EA discloses, the overriding management emphasis of the project area, especially outside the Wilderness, is all-out fire suppression. [72-76]

Concern: [Seq#861]

If the Vegetation analysis is accurate and relevant, the Fire/Fuels section should be redundant and irrelevant. This is because the Vegetation section grinds one through an HRV/DRV/FRV analysis to make a case that the action alternatives make the forest resilient to the effects of fire. [ID#896]
Response: [Seq#861]

The fuels analysis used resource indicators to focus on specific fire behavior indicators. Since several scoping comments expressed concerns about the effects of the proposed action on wildfire behavior, it was deemed necessary to analyze the effects of the proposed action on specific resource indicators tied to wildfire. [ID#896]
Associated Comments: [Seq#861]
If the Vegetation analysis is accurate and relevant, the Fire/Fuels section should be redundant and irrelevant. This is because the Vegetation section grinds one through an HRV/DRV/FRV analysis to make a case that the action alternatives make the forest resilient to the effects of fire. [72-95]

Concern: [Seq#862]

DellaSala, et al. (1995) are skeptical about the efficacy of intensive fuels reductions as fire- proofing methods. Veblen (2003) states:

The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on summary fire statistics such as mean fire interval and rotation period.

[

[ID#897]

Response: [Seq#862]

None of the treatments proposed in this project are intended to "fireproof the forest" as expressed by DellaSalla et al. Even as he makes the case for carefully studying the fire regime inherent to a landscape, Veblen points out that "forest ecosystem types with demonstrated historic fire regimes of frequent surface fires and fuel building during the fire exclusion period should be targeted for ecological restoration, which may also converge with the reduction of fire hard to property and humans." (Veblen 2003). Fire return interval studies completed on the Methow Valley Ranger District in similar low-elevation dry forest types suggest that these areas experienced wildfires every 9-16 years (Schellhaas et al. 2003), indicating that these areas meet the definition of a frequent fire regime. The EMDS assessment performed for this project demonstrates that the dry forested landscape has departed from its historic range of variability with many areas of denser stands (i.e. fuel buildup).
[ID#897]

Associated Comments: [Seq#862]

DellaSala, et al. (1995) are skeptical about the efficacy of intensive fuels reductions as fire- proofing methods. Veblen (2003) states: The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on summary fire statistics such as mean fire interval and rotation period. [72-79]

Concern: [Seq#863]

The EA states, "The risk of crown fire initiation and spread and associated fire effects are greater than historical conditions, particularly in the Buttermilk watershed, due to increased tree density and development of forest stands with multiple and closed canopy layers across the landscape." (13.) Again, the EA fails to support this claim of "greater than historical conditions" with any scientifically robust evidence.

[[ID#898]
Response: [Seq#863]

See EA for description of methods and data used to determine levels of departure from historic vegetation conditions (revised preliminary EA, p. 99-101, 134-136). The EMDS modeling methods have been found to be substantiated by scientific review (USDA 2012a). [ID#898]
Associated Comments: [Seq#863]
The EA states, "The risk of crown fire initiation and spread and associated fire effects are greater than historical conditions, particularly in the Buttermilk watershed, due to increased tree density and development of forest stands with multiple and closed canopy layers across the landscape." (13.) Again, the EA fails to support this claim of "greater than historical conditions" with any scientifically robust evidence. [72-87]

Concern: [Seq#864]

The EA does not consider the temporal gradient post-project as the fuel and fire risk conditions eventually revert back to unacceptable given that fire suppression is planned to be successful. Breaking things into short-term (up to 15 years) and long-term (15+ years) is hardly meaningful.

[[ID#899]
Response: [Seq#864]

The temporal context used to evaluate the effects of proposed treatments is described in the EA (revised preliminary EA, p. 161). The 15-year time period is midway through the 10-20 year time period that many researchers consider to be the time it takes after treatment before the return of fuels to pre-treatment levels (Rhodes and Baker, 2008; Graham et al., 2004; Agee and Skinner, 2005). [ID#899]
Associated Comments: [Seq#864]
The EA does not consider the temporal gradient post-project as the fuel and fire risk conditions eventually revert back to unacceptable given that fire suppression is planned to be successful. Breaking things into short-term (up to 15 years) and long-term (15+ years) is hardly meaningful. [72-100]

Concern: [Seq#865]

The Fire/Fuels analysis "exclude(s) 10% of the more severe conditions such as wind events or drought that contribute to extreme fire behavior." Thereby the EA excludes from analysis the effects of the fires which typically burn most of the acreage during fire season. Thereby the FS invalidates the EA's analysis of this issue. [ID#900]

Response: [Seq#865]

The purpose of selecting 90th percentile conditions is described in the EA (revised preliminary EA, p. 136-137). The analysis recognizes that thinning and prescribed fire treatments are less effective at changing extreme fire behavior, defined as greater than 90th percentile conditions. Describing the conditions under which proposed treatments would change fire behavior does not invalidate the analysis or the treatment proposals, especially when these conditions include the environmental settings under which most fires occur. [ID#900]

Associated Comments: [Seq#865]

The Fire/Fuels analysis "exclude(s) 10% of the more severe conditions such as wind events or drought that contribute to extreme fire behavior." Thereby the EA excludes from analysis the effects of the fires which typically burn most of the acreage during fire season. Thereby the FS invalidates the EA's analysis of this issue. [72-98]

Concern: [Seq#866]

There has been extensive research in forests about the ecological benefits of mixed-severity (which includes high-severity) fire over the past two decades, so much so that in 2015 science and academic publishing giant Elsevier published a 400-page book, The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix which synthesizes published, peer-reviewed science investigating the value of mixed- and high-severity fires for biodiversity (DellaSala and Hanson, 2015). This book includes research documenting the benefits of high-intensity wildfire patches for wildlife species, as well as a discussion of mechanical "thinning" and its inability to reduce the chances of a fire burning in a given area, or alter the intensity of a fire, should one begin under high fire weather conditions, because overwhelmingly weather, not vegetation, drives fire behavior (DellaSala and Hanson, 2015, Ch. 13, pp. 382-384). [ID#901]

Response: [Seq#866]

The publication cited in this comment is available for purchase only and was not acquired in response to this comment. An abstract and the table of contents, and some of the cited sources were reviewed. A review of this publication found that its conclusions are based on a "small subset of published work", contributors use "unpublished data to counter published studies", and that it "omits or discredits

information contrary to the author's perspectives" (Sieg 2016). Much of the data cited is from the Sierra Nevada of California and the Klamath-Siskiyou of northern California and southwest Oregon and not from north-central Washington. Many of the conclusions reached relate more to fires over 400 hectares in size on tribal, military, and private lands. Two of the main conclusions is that treatment of fire-prone tree plantations and prioritizing fuels treatments adjacent to homes along with specific measures that reduce fire risks to home structures should be the priority.

The types of fire severity in the project area are described in the revised preliminary EA; all of the fire regimes identified in the project area contain some level of mixed-severity fires(pp. 140-141). The EMDS analysis performed for each subwatershed in this project determined that, in the Buttermilk subwatershed, less acreage and smaller patches of the landscape would experience low crown fire risk (i.e. less potential for high fire severity) than would occur in the historical range of variability. This finding indicates that greater portions of this landscape are at risk for experiencing more mixed/high severity fire than would have occurred historically, creating greater likelihood of adverse impacts to the Libby subwatershed, the amount of low crown fire risk was within the desired historical range of variability, but the patch size of this type of fire behavior was smaller. This finding indicates that larger patches of the landscape would experience higher crown fire risk, resulting in greater likelihood of adverse impacts to wildlife that depend on habitat influenced by a fire regime that included less mixed-severity fire. The effects of taking no action with respect to various wildlife habitats in the project area are in the revised preliminary EA (p. 183-185)

Treatments proposed in this project are not intended to affect the chances of a fire burning in a given area because the primary ignition source in the project area, lightning, is not controllable. The history of ignitions in the project area demonstrate that lightning-caused fires start on an average of twice each year, with as many as five ignitions per year occurring several times in a 50-year period. Ignitions will likely continue to happen in the project area, resulting in wildfires of varying sizes. With proposed treatment, the percent landscape in Buttermilk subwatershed would still be above the desired range and within the desired range in Libby subwatershed for high crown fire risk and the percent landscape for (page 164-165 in the revised preliminary EA). The average patch size of High crown fire risk, after treatment, would still be above the desired range for both subwatersheds. Therefore, it could be indisputably inferred that the effects associated with high crown fire potential, presented on page 142 of the preliminary EA, would be abated by treatment but would still persist post-treatment.

While thinning and prescribed fire treatments have been shown to be effective in changing fire behavior under certain conditions (Stephens and Moghaddas 2005, Agee and Lolley 2006, Harrod et al. 2007a, Harrod et al. 2007b, Harrod et al. 2009, Fule et al. 2011), this analysis recognizes that the treatments proposed in this project would not likely change extreme fire weather conditions (90th percentile conditions as applied in FlamMap modeling to show effects of proposed treatments in the Wildland Urban Interface; revised preliminary EA, p.136-137). While it is well known that short-term fluctuations in weather can strongly influence fire behavior, Thompson & Spies (2010) and Collins & Stephens (2010) found that, while weather was clearly a factor, self-reinforcing dynamics resulting from fire history (e.g. departure from historic fire return intervals) and vegetation type were more important determinants of fire severity.

Since this document was not available in the public domain, other publications on mixed-severity fire regimes completed by the contributors to this citation and other authors were considered (Odion et al. 2014; Hutto et al. 2016; Perry et al. 2011; Hessburg et al. 2007). [ID#901]

Associated Comments: [Seq#866]

There has been extensive research in forests about the ecological benefits of mixed-severity (which includes high-severity) fire over the past two decades, so much so that in 2015 science and academic publishing giant Elsevier published a 400-page book, The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix which synthesizes published, peer-reviewed science investigating the value of mixed- and high-severity fires for biodiversity (DellaSala and Hanson, 2015). This book includes research documenting the benefits of high-intensity wildfire patches for wildlife species, as well as a discussion of mechanical "thinning" and its inability to reduce the chances of a fire burning in a given area, or alter the intensity of a fire, should one begin under high fire weather conditions, because overwhelmingly weather, not vegetation, drives fire behavior (DellaSala and Hanson, 2015, Ch. 13, pp. 382-384). [72-82]

Concern: [Seq#867]

"(Rhodes and Baker paper cited above).

The EA does not integrate the positive values of severe fire into its analysis, or acknowledge the body of research on high severity fire.

"Severe fires are NOT disasters when removed from the context of human structures-they are ecologically important disturbance events.

Although it's hard to swallow, severe fires are necessary if we are at all interested in maintaining the ecological integrity of our mixed-conifer forests.

Thus, massive efforts devoted to the reduction of fire severity outside the wildland-urban interface may be well intentioned, but may not really be in our best interest.

"

[ID#902]
Response: [Seq#867]

The Hutto statement has no citation provided for reference. An internet search of this statement brought up an editorial opinion piece written submitted by Hutto and published in the *Missoulian* newspaper (June 6, 2015). Hutto provides no scientific context or support for his opinion in this editorial. In a later article authored by Hutto and others ("Towards a more ecologically informed view of severe forest fires"; Hutto et al. 2016), he acknowledge that "it is not the presence of a particular fire severity, but the proportion (and, presumably, the distribution and patch sizes) of each severity component that distinguishes regimes." The presence of some degree of high-severity fire within all fire regimes is recognized in EMDS modeling and described in the fuels analysis (revised preliminary EA, p. 140-141). The characterization of primarily low-severity fire behavior in the dry forests in the project area is supported by Agee (1994), Everett et al. (2000; 2008), Harrod et al. (1999), and Schellhaas et al. (2002; 2003). This project proposes treatments in these areas because the risk for high-severity fire is inconsistent with the characteristic fire behavior in these forest types as measured by acres and by arrangement of patches of high-severity fire through EMDS modeling. Because of this departure from the desired range of fire behavior, treatments are proposed to help move these landscapes towards the desired range of more low-severity fire behavior. If the amount and arrangement of high-severity crown fire risk in the project area were inconsistent with the desired range of variability, this project may have proposed treatments to affect changes in these areas and discussed the value of high-severity fire.

Patches of high-severity fire behavior will continue to occur across the project area; areas that would historically experience more mixed to high-severity fire will continue to do so post-project, especially at high elevations where stand-replacement fires are characteristic. High-severity fires will likely continue to occur within the project area during periods of drought or extreme weather (beyond 90th percentile conditions as described in revised preliminary EA, p. 137). The current risk for uncharacteristic high-severity fire in dry forested landscapes in the project area and the range of fire behavior expected in more moist and/or cooler portions of the project area are described in the revised preliminary EA (p. 140-146).

[ID#902]
Associated Comments: [Seq#867]
Value of high severity fires Scientific evidence is clear that there are many ways that high severity fire is beneficial to watersheds, aquatic ecosystems, and is a "key process for the restoration of structural heterogeneity in forests, which is important for biodivirsity. "(Rhodes and Baker paper cited above). The EA does not integrate the positive values of severe fire into its analysis, or acknowledge the body of research on high severity fire. Richard Hutto is a Professor Emeritus in Biological Sciences at the University of Montana. "Severe fires are NOT disasters when removed from the context of human structures-they are ecologically important disturbance events. Although it's hard to swallow, severe fires are necessary if we are at all interested in maintaining the ecological integrity of our mixed-conifer forests. Thus, massive efforts devoted to the reduction of fire severity outside the wildland-urban interface may be well intentioned, but may not really be in our best interest. " [69-18]

Concern: [Seq#868]

Therefore, the necessary, but not sufficient, condition for fuel treatment effectiveness is that a fire affects a treated area while the fuels that contribute to high-severity fire have been reduced.

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. our results indicate that if treatments were repeated every 20 years across all USFS lands in the West, it would take about 720 years (36 cycles of treatments), on average, before it is expected that high-severity fire affects slightly more than 50% of treated areas while fuels are reduced.

Treatment would have to be repeated at 20-year intervals for 340 years (17 cycles of treatments) before high-moderate serverity fire is expected to encounter more than 50% of treated areas.

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Even in ponderosa pine forests that burn relatively frequently, our regional analysis indicates that after 17 cycles of treatments, only slightly more than 50% of treated areas could potentially have fire severity reduced, on average.

Nor does it address the window of potential effectiveness for the proposed treatment.

The environmental and economic costs of re-treatment are not considered. [ID#903]

Response: [Seq#868]

The paper cited in this comment estimates the probability that fuels treatments will be affected by fire during the period when fuels have been reduced, using a 20-year time period for fuel treatment effectiveness in order to "provide a broad-scale bounding of treatment effectiveness and potential return from the fiscal and environmental costs of fuel treatments". Probabilities were estimated on a western U.S.-wide basis and on a regional basis. Site-specific information applicable to the project area comes from examining past ignition records to assess past fire frequency. Between 1900-2013, 180 ignitions were recorded with over 90% started by lightning. An average of approximately 22 ignitions per decade (44 per 20-year time period) occurred over the past 50 years; ignitions occurred 1 to 8 ignitions per year. These records establish the high likelihood of an ignition occurring in the project area over the life that Rhodes and Baker consider for fuels treatment effectiveness. Past local wildfires on the Methow Valley Ranger District have entered recently treated areas with high-severity fire several times in the past 14 years: the 2003 Farewell fire burned into Doe Mtn. underburn treatment within 3 months of treatment; the 2007 Tripod fire burned into Solar/Soaker and Ramsey thinning and underburn treatments within 3 months to 2 years of treatments; the 2012 Leecher Mtn. fire burned into Leecher Thin and Yockey underburn treatments within 5 years of treatments; the 2014 Little Bridge fire and 2015 Twisp River fire burned into TPR thinning/underburning units within 5 years of treatments; the 2014 Carlton Complex fire burned into Finley Bottom, Hungry Hunter, and Cougar thinning and Yockey, McFarland, Squaw LSR, Finley Mtn., and Finley Canyon underburn units within 1-10 years of treatment; and the 2015 Black Canyon fire burned into Hungry Hunter thinning and Douglas II underburn units within 10 years of treatment. In all of these instances, fuel treatments contributed to providing multiple suppression opportunities and reduced high-severity fire effects in dry forests to some degree.

For each subwatershed in the project area, the likelihood of moderate to high-severity fire can be inferred from the results of crown fire risk modeling done in EMDS that show the departure of the amount and arrangement of these types of fire behavior. The analysis indicates that the amount and arrangement of low, moderate, and high crown fire risks in the project area's subwatersheds are generally outside of the desired range of variability, and that the likelihood of uncharacteristic fire behavior in the dry forested areas in particular is greater than desired (revised preliminary EA, p.140-158). Rhodes and Baker describe several adverse impacts (environmental costs) that may occur by implementing fuel reduction treatments; the EA addresses how these impacts would be minimized or eliminated in the Environmental Consequences sections of each resource section in Chapter 3, based on the use of best management practices described in the Design Criteria included in Appendix D. For this project, the findings of resource specialists analyzing the proposed actions indicate that adverse effects of uncharacteristic wildfire are greater than adverse effects of implementing proposed treatments. [ID#903]

Associated Comments: [Seq#868]

Rebound of fuels after treatment According to Jonathan Rhodes and William Baker in their paper in The Open Forest Science Journal, 2008,1,1-7, "Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U. S. Public Forests", Fuels rebound after treatment, eventually negating treatment effects. Therefore, the necessary, but not sufficient, condition for fuel treatment

effectiveness is that a fire affects a treated area while the fuels that contribute to high-severity fire have been reduced. . . . our results indicate that if treatments were repeated every 20 years across all USFS lands in the West, it would take about 720 years (36 cycles of treatments), on average, before it is expected that high-severity fire affects slightly more than 50% of treated areas while fuels are reduced. Treatment would have to be repeated at 20-year intervals for 340 years (17 cycles of treatments) before high-moderate serverity fire is expected to encounter more than 50% of treated areas. . . . Even in ponderosa pine forests that burn relatively frequently, our regional analysis indicates that after 17 cycles of treatments, only slightly more than 50% of treated areas could potentially have fire severity reduced, on average. The EA does not discuss re-treatment at all, let alone re-treatment over a number of cycles, or even the expected interval before an initial re-treatment. Nor does it address the window of potential effectiveness for the proposed treatment. The environmental and economic costs of re-treatment are not considered. [69-17]

Concern: [Seq#869]

A major thrust of the project is to save everything from the future possibility that it might burn. Almost anything is "at risk" of burning. The FS does not adequately assess the chance that the treated areas would encounter a fire at any time that they claim their treatment remains effective. The FS does not adequately reveal what exactly is the risk. Burned trees? Soil sterilization? (if this, then how much soil and why is it bad and aren't there ways to deal with seed sterilization?) Fire is necessary for nurturing biodiversity. Commercial logging is not necessary to reduce wildfire risk. Changing fire behavior to reduce threat to life and property does not have to involve commercial logging of forests that are miles away from said life and property. As pointed out in scoping, what is needed is safe firefighter ingress and egress, well planned fire lines and breaks, thinning near homes and support for homeowners to fire-wise their homes. [ID#904]

Response: [Seq#869]

The purposes of proposed treatments are described in the EA (p. 4-6, revised preliminary EA) and do not include any intent to save the landscape from burning. The role of fire as an historical landscape disturbance agent is acknowledged in the Okanogan-Wenatchee Restoration Strategy (upon which restoration treatments proposed in this project are based) (USDA Forest Service 2012a). The role of fire in different landscape types in the project area are further described on p. 134-149 and 140-146 (revised preliminary EA), as are characteristic types of fire behavior and effects of uncharacteristic fire behavior. A review of fire ignition history that demonstrates the regular and frequent pattern of ignitions and likelihood of future ignitions has been added to the final EA (Section 3.6.3). The risks of uncharacteristic wildfire behavior (defined in the revised preliminary EA, p. 135) are described in Chapter 3 sections on Environmental Consequences, under the subheading "Alternative 1". Effects of uncharacteristic wildfire behavior is described to the extent that it would affect the resource indicators used for this analysis. Although it would help reduce risk to life and property by reducing spotting potential that contributes to

rapid fire growth and fireline intensity that can limit suppression access and effectiveness, commercial thinning is proposed primarily to promote restoration of forested landscapes by improving resilience to wildfire and insect & disease outbreaks (p. 120-128, revised preliminary EA). In general, treatments that include both thinning and surface fuel reduction are the most effective at moderating wildfire behavior (Evans et al. 2011, Collins et al. 2013, Martinson and Omi 2013).

Understory thinning and prescribed fire treatments proposed along FS Roads 43 and 4340 would help reduce flame lengths and promote safer ingress/egress during wildfires (p. 153, 160; revised preliminary EA). Thinning and prescribed fire treatments are proposed near homes in the project area within the WUI, including the high-priority Libby Creek drainage, as defined by the Okanogan County Community Wildfire Protection Plan (Bloch et al. 2013); effects of these treatments are described on p. 153, 158-59 of revised preliminary EA. Support for homeowners to Firewise their homes is provided by using federal funds provided in part by the USDA Forest Service and administered by the Washington State Department of Natural Resources (https://www.dnr.wa.gov/firewise); this state agency provides an annual opportunities for homeowners in selected areas to apply for funding through fuel mitigation grants to reduce wildfire risks near their homes. Past funding cycles in the Methow Valley area have included the Pine Forest, Edelweiss, upper Methow River west of Winthrop, Twisp River, and middle Methow areas (including the Libby Creek area). Firewise assessments that help homeowners identify actions they can take to reduce wildfire risks are available to any homeowner free of charge through WA DNR or Okanogan County Conservation District (https://www.okanogancd.org/). [ID#904]

Associated Comments: [Seq#869]

A major thrust of the project is to save everything from the future possibility that it might burn. Almost anything is "at risk" of burning. The FS does not adequately assess the chance that the treated areas would encounter a fire at any time that they claim their treatment remains effective. The FS does not adequately reveal what exactly is the risk. Burned trees? Soil sterilization? (if this, then how much soil and why is it bad and aren't there ways to deal with seed sterilization?) Fire is necessary for nurturing biodiversity. Commercial logging is not necessary to reduce wildfire risk. Changing fire behavior to reduce threat to life and property does not have to involve commercial logging of forests that are miles away from said life and property. As pointed out in scoping, what is needed is safe firefighter ingress and egress, well planned fire lines and breaks, thinning near homes and support for homeowners to fire-wise their homes. [68-32]

Concern: [Seq#870]

Many researchers and scientists agree that the best way to reduce wildfire risk in the rural-forest interface is through the reintroduction of fire to many natural ecosystems (Walstad, et al. 1990, Mutch 1994, USDA/USDI 1995, Arno 1996, Frost 1999). [ID#906]

Response: [Seq#870]

The 1990 Walstad citation refers to a collection of articles on natural and prescribed fire in Pacific Northwest Forests. The introduction *to this book describes that wildfire-related risks to human life and*

property can be avoided by using "a variety of silvicultural techniques designed to mimic the beneficial effects of wildfire without incurring the disastrous consequences" and lists prescribed fire as a multi-purpose tool that can reduce fuel loads, including slash created by thinning. There is no specific reference in this book to the "rural-forest interface" or the best way to reduce hazards in these areas. The only section of the book that specifically addresses hazard reduction defines this activity as "the planned treatment or manipulation of naturally growing vegetation" and lists several strategies to accomplish these goals, including thinning (Deeming, John. 1990.)

Mutch (1994) does not make any statement with respect to prescribed fire being the best tool for any objective. His strategy for restoring forest health "involves managing for considerably lower tree densities" using a "combination of silvicultural partial cutting treatments and prescribed fire."

The USDA/USDI 1995 citation refers to an outdated document (Guidance for Federal Wildland Fire Management Policy). This document was updated in 2001 (USDOI et al. 2001) and again in 2009 (USDA & USDOI, 2009). This document makes no statement regarding any tactic or treatment as "the best way to reduce wildfire risk in the rural-forest interface". The guiding principles of this document acknowledge the link between fire management and ecosystem sustainability, stating that "The full range of fire management activities will be used to help achieve ecosystem sustainability", and further stating that this "full range of fire management activities" may include any vegetative management treatment tool, which includes thinning. This document stresses that fire management activities must be consistent with the Land/Resource Management Plan's (LRMP) direction; in the case of the Mission Restoration project, the LRMP is the 1989 Okanogan National Forest Land and Resource Management Plan (ONFLRMP). The activities analyzed in this project are consistent with the ONFLRMP.

Arno (1996) does not state that prescribed fire is "the "the best way to reduce wildfire risk in the rural-forest interface". Arno specifically acknowledges that "the severity of wildfires could be reduced by accomplishing fuel treatments in strategically selected areas having the greatest probability of success". The term "fuel treatments" in his publication includes both thinning and prescribed fire activities.

The Frost (1999) reference was not obtainable through an internet search of research publications. A search was performed on the subject of this citation, "managing fire and fuels in national forest roadless areas"; no results were obtained. The title of this citation implies that the focus of the document is how to use treatments to manage fire and fuels in roadless areas. While no research is readily available to inform this topic, the analysis for this project includes the effects of proposed treatments in the Sawtooth Inventoried Roadless area and unroaded areas within the project boundary.

[ID#906]

Associated Comments: [Seq#870]

Many researchers and scientists agree that the best way to reduce wildfire risk in the rural-forest interface is through the reintroduction of fire to many natural ecosystems (Walstad, et al. 1990, Mutch 1994, USDA/USDI 1995, Arno 1996, Frost 1999). [68-89]

Concern: [Seq#871]

Collins and Stephens (2007) suggest direction to implement restoring the process of wildland fire by educating the public, which means explaining the inevitability of wildland fire, teaching about fire ecology, and identifying landowners' primary responsibility for protecting their properties. Not surprisingly, since proper education conflicts with the RS's manipulate-and control management paradigm, we don't see it in the Mission project. [ID#907]

Response: [Seq#871]

The citation provided refers to management of wildland fire in wilderness areas. The authors suggest that allowing natural fires to burn in wilderness areas using a "Wildfire Use" approach could be more politically acceptable if the public is encouraged to recognize that suppressing all natural fires in wilderness defers the risk of a fire escaping and causing damage into the future, and that allowing natural fires to burn under certain conditions would probably mitigate these risks. Allowing wildfires to burn in the wilderness is not a proposed action in this project; the Okanogan National Forest Land and Resource Management Plan (USDA 1989) allows naturally caused ignitions to burn under certain conditions, consistent with the suggestion made by the authors. Regarding the suggestion that the public be educated as to the role of fires in the local ecosystem and the use of this tool in restoration and hazard reduction projects, the prescribed fire staff on the Methow Valley Ranger District have been informing the public on this topic since the late 1990s through twice-yearly news releases, a yearly prescribed fire brochure mailed to every boxholder in the valley, spring and fall radio broadcasts, and articles in the *Methow Valley News* throughout each spring and fall burn season. Past forest thinning and prescribed fire projects that have gone through public scoping and comment periods on the local ranger district (including projects such as South Summit Forest and Fuels, Buck Forest and Fuels, Eightmile Vegetation Management; Lost Driveway Hazard Fuels Reduction, McClure Hazard Fuel Reduction, Yockey Natural Fuels, and Hungry Hunter Ecosystem Management) have provided news releases and opportunities for the public to be engaged on the topic of fire ecology. Local Forest Service fire management staff work with environmental education classes in the elementary and high schools and with staff from Washington State Department of Natural Resources, Okanogan County Fire District #6, Methow Conservancy, and the Natural Resource Conservation Service to educate the public on the role of wildfire in the local ecosystem, Firewise principles, and landowner responsibilities regarding hazard reduction. The topics mentioned in this comment have a long history of being thoroughly addressed by local Forest Service staff and their counterparts. [ID#907]

Associated Comments: [Seq#871]

(Emphasis added.) Collins and Stephens (2007) suggest direction to implement restoring the process of wildland fire by educating the public, which means explaining the inevitability of wildland fire, teaching about fire ecology, and identifying landowners' primary responsibility for protecting their properties. Not surprisingly, since proper education conflicts with the RS's manipulate-and control management paradigm, we don't see it in the Mission project. [72-20]

Concern: [Seq#872]

Kauffman (2004) identifies wildland fires as beneficial and suggests current FS fire suppression policies are the catastrophe:

Large wild fires occurring in forests, grasslands and chaparral in the last few years have aroused much public concern. Many have described these events as "catastrophes" that must be prevented through aggressive increases in forest thinning.

Yet the real catastrophes are not the fires themselves but those land uses, in concert with fire suppression policies that have resulted in dramatic alterations to ecosystem structure and composition

. The first step in the restoration of biological diversity (forest health) of western landscapes must be to implement changes in those factors that have resulted in the current state of wildland ecosystems. Restoration entails much more than simple structural modifications achieved through mechanical means.

Restoration should be undertaken at landscape scales and must allow for the occurrence of dominant ecosystem processes, such as the natural fire regimes achieved through natural and/or prescribed fires at appropriate temporal and spatial scales.

(Emphases added.)

[

[ID#908]

Response: [Seq#872]

Kauffmann promotes the idea that "a landscape-level approach that increases the land area burned by natural (lightning-caused) fires and/or prescribed fires (purposeful ignitions) will be essential to restoring and/or conserving native forest and rangeland ecosystems." Kauffmann also recognizes that "the manipulation of forest overstory via selective tree (or shrub) removal can be an important initial step in the restoration of forest stands affected by decades of fire exclusion and land use", also recommending that follow-up treatment occur. His recommendation to increase land area burned by natural fires is outside of the scope of the Mission Restoration project because this step would require amending the existing land and resource management plan, which places limitations on allowing natural ignitions to burn because of resource concerns (USDA 1989), and because wildfire threats to developments in the wildland urban interface within and adjacent to the project area would likely have strong consideration for protection from wildfire over allowing wildfire to burn for the purposes of ecosystem health. The combination of proposed thinning and prescribed fire treatments (along with the proposed maintenance prescribed fire treatments that would occur 10-15 years post-thinning) would move forest stand structure and composition closer to the desired range of variability and promote fire behavior and effects that are aligned with the relative severity in the dry forests within the project area;

these types of treatments have been shown to effectively mimic wildfire effects (Harrod et al. 2009; Fule et al. 2011; Omi and Martinson 2004). [ID#908]

Associated Comments: [Seq#872]

Kauffman (2004) identifies wildland fires as beneficial and suggests current FS fire suppression policies are the catastrophe: Large wild fires occurring in forests, grasslands and chaparral in the last few years have aroused much public concern. Many have described these events as "catastrophes" that must be prevented through aggressive increases in forest thinning. Yet the real catastrophes are not the fires themselves but those land uses, in concert with fire suppression policies that have resulted in dramatic alterations to ecosystem structure and composition. The first step in the restoration of biological diversity (forest health) of western landscapes must be to implement changes in those factors that have resulted in the current state of wildland ecosystems. Restoration entails much more than simple structural modifications achieved through mechanical means. Restoration should be undertaken at landscape scales and must allow for the occurrence of dominant ecosystem processes, such as the natural fire regimes achieved through natural and/or prescribed fires at appropriate temporal and spatial scales. (Emphases added.) [72-80]

Concern: [Seq#873]

As Table 58 shows, the project has miniscule-to meaningless beneficial effects on crown fire risk (and would even be detrimental in multiple cases) anyway [ID#909]

Response: [Seq#873]

The effects of proposed treatments are described in Figure 59 (revised preliminary EA, p. 152-153). In areas of low, moderate, and high Crown Fire Risk in both Buttermilk and Libby Creeks, the proposed treatments either moved more of the landscape toward the desired range of each type of crown fire risk, or maintained the proportion of the landscape in the desired range. Regarding the average patch sizes in each type of crown fire risk, treatments moved patch sizes not within the desired range and proposed treatments would move it slightly further away in both Buttermilk and Libby Creeks (68 acres/98 acres respectively). While the commenter may regard these changes as insignificant, the percentages and acres of change applicable to the dry forested landscape within the project area would make a difference in moving more of the landscape towards a more resilient condition as described in the direct and indirect effects (revised preliminary EA, p.151-158). [ID#909]

Associated Comments: [Seq#873]

As Table 58 shows, the project has miniscule-to meaningless beneficial effects on crown fire risk (and

would even be detrimental in multiple cases) anyway. [72-102]

Concern: [Seq#874]

19-9 In stands managed as future old growth, fuels treatment including prescribed fire

shall provide for the retention of all key components of old growth.

From Ok Forest Plan 1989

Old Growth

- A forest comprised of many large trees, large snags and numerous large down logs, having a multi-layered canopy of several tree species, the trees showing signs of decadence; the last stage in forest succession

[comment end] [ID#910]
Response: [Seq#874]

Large diameter trees (25 inches DBH or larger) are not included in any proposed harvest treatments. Most healthy trees over 21 inches DBH would remain. All leave trees would be identified with tracer orange paint at breast height and at the butt. See page 317 of the Revised Preliminary EA.

Aerial photo interpretation with field verification (outside of Wilderness and Roadless areas) was used to identify late successional patches (patches of at least 10 acres in size with an overstory of at least 40% crown cover and average DBH of 25 inches or larger) for the entire project area. This is not equivalent to Forest Plan Old Growth. All thinning units were screened for Okanogan Forest Plan Old Growth (a minimum of 30 acres with at least fifteen 18-inch trees or larger per acre). No Forest Plan Old Growth was found within proposed treatment units. An Old Growth inventory is only needed in order to determine if Replacement Old Growth (stands capable of becoming Old Growth within a reasonable time) are needed to attain the target of 5% Old Growth on the landscape. As was presented in the Preliminary EA and Revised Preliminary EA, the effects of the treatment on medium (16-25 inch DBH) and large (25 inch or larger) trees, which are candidates for Replacement Old Growth, were beneficial such that 36% and of Libby Creek subwatershed and 18% of Buttermilk Creek subwatershed would be treated as Replacement Old Growth. Thus no project area Old Growth mapping is needed. Snags would be retained during thinning and prescribed fire treatments unless they posed a hazard. Large downed logs (greater than 9" diameter) would not be directly ignited. Thinning would retain a multi-layered canopy. [ID#910]
Associated Comments: [Seq#874]

19-9 In stands managed as future old growth, fuels treatment including prescribed fire shall provide for the retention of all key components of old growth From Ok Forest Plan 1989 Old Growth - A forest comprised of many large trees, large snags and numerous large down logs, having a multi-layered canopy of several tree species, the trees showing signs of decadence; the last stage in forest succession [68-103]

Concern: [Seq#875]

Road Construction Opposing View #29 - "Forest fragmentation, as scientists call the intentional felling of woodland, is actually two processes. In populated areas such as the Atlantic seaboard, it means reduction in the size of forest tracts, usually due to suburbanization and development. In less inhabited areas--northern New England, for example--forest fragmentation refers to isolation of one patch of forest from another by logging, or by the building of roads or power lines." Lawren, Bill 1992 "Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species" National Wildlife http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx

Road Construction Opposing View #36 - "Overall, roads had a greater impact on landscape structure than logging in our study area. Indeed, the 3-fold increase in road density between 1950-1993 accounted for most of the changes in landscape configuration associated with mean patch size, edge density, and core area." McGarigal, Kevin Ph.D., William H. Romme Ph.D. Michele Crist Ph.D.and Ed Roworth Ph.D. "Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)" Landscape Ecology, Volume 16, Number 4 / May, 2001 http://www.springerlink.com/content/w12557624742tv77/

[ID#911]

Response: [Seq#875]

There would be no new roads added to the forest road system. Only 1.2 miles of temporary roads would be created by either action alternative. There would be from 33.6 to 56.2 miles of road decommissioned through the Mission project.

The effect of vegetation management treatments, including timber harvest, on fragmentation of the landscape is addressed in the EA (See discussion on average patch size of dry and moist structures). Out of the 7 structure types in the Moist Forest Type, the effects of the vegetation management in Alternatives Two and Three would be a slight decrease in the average patch size in the Understory Re-initiation Structure for both subwatersheds, which would push it further out of the Desired Range of Variability. For all of the other structure types in the Moist Forest type and for all of the structure types in the Dry Forest Type, the average patch size would either stay within the desired range of variability or improve in comparison to the Desired Range of Variability (see figure 51 in the Preliminary EA).

There are more components of the effects on the pattern of forest structure and stand composition in the analysis file.

The information that was intended to be presented in the URL (80-29) in the comment is no longer on the web site (dated 1992). It is very unlikely that it would have been considered "New Science" by the Mission Project Interdisciplinary Team.

The article presented in the URL provided in comment 80-36 is in agreement with Purpose and Need statement #3 in the Mission EA. The action alternatives were developed to address the issue of restoring the pattern of vegetation structure, species composition and spatial patterns in comparison to historical conditions.

[ID#911]

Associated Comments: [Seq#875]

Road Construction Opposing View #29 - "Forest fragmentation, as scientists call the intentional felling of woodland, is actually two processes. In populated areas such as the Atlantic seaboard, it means reduction in the size of forest tracts, usually due to suburbanization and development. In less inhabited areas--northern New England, for example--forest fragmentation refers to isolation of one patch of forest from another by logging, or by the building of roads or power lines." Lawren, Bill 1992 "Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species" National Wildlife http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx [80-29]

Road Construction Opposing View #36 - "Overall, roads had a greater impact on landscape structure than logging in our study area. Indeed, the 3-fold increase in road density between 1950-1993 accounted for most of the changes in landscape configuration associated with mean patch size, edge density, and core area." McGarigal, Kevin Ph.D., William H. Romme Ph.D. Michele Crist Ph.D.and Ed Roworth Ph.D. "Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)" Landscape Ecology, Volume 16, Number 4 / May, 2001 http://www.springerlink.com/content/w12557624742tv77/ [80-36]

Concern: [Seq#876]

Road Construction Opposing View #1 -

"Fragmentation has been considered as one of the most major factors that lead to the decline of many wildlife species (Brittingham and Temple 1983, Yahner 1988, Winslow et al. 2000) because fragmentation tends to decrease population productivity (Robinson et al. 1995). Therefore, Meffe states that "fragmentation has become a major subject of research and debate in conservation biology" (Meffe et al. 1997, p. 272). Forest fragmentation usually occurs when large and continuous forests are divided

into smaller patches as a result of road establishment, clearing for agriculture, and human development (Robinson et al. 1995, Meffe et al. 1997)." (Pg. 1)

"Generally, habitat fragmentation is an ecological process in which a large patch of habitat is divided into smaller patches of habitats. Usually, this process is caused by human activities (roads, agriculture, and logging). It also reduces the value of the landscape as habitat for many species (plants and animals). Fragmentation alters natural habitat in many ways, including reduction of patches' sizes, increment of distances between similar patches, and increment of edges and predation (Brittingham and Temple 1983, Robinson et al. 1995)." (Pp. 2 and 3)

Road Construction Opposing View #15 -

"A huge road network with vehicles ramifies across the land, representing a surprising frontier of ecology. Species-rich roadsides are conduits for few species. Roadkills are a premier mortality source, yet except for local spots, rates rarely limit population size. Road avoidance, especially due to traffic noise, has a greater ecological impact. The still-more-important barrier effect subdivides populations, with demographic and probably genetic consequences. Road networks crossing landscapes cause local hydrologic and erosion effects, whereas stream networks and distant valleys receive major peak-flow and sediment impacts. Chemical effects mainly occur near roads. Road networks interrupt horizontal ecological flows, alter landscape spatial pattern, and therefore inhibit important interior species. Thus, road density and network structure are informative landscape ecology assays. Australia has huge road-reserve networks of native vegetation, whereas the Dutch have tunnels and overpasses perforating road barriers to enhance ecological flows. Based on road-effect zones, an estimated 15-20% of the United States is ecologically impacted by roads." [ID#912]

Response: [Seq#876]

Effects of roads are discussed by species in the Preliminary Environmental Assessment, the Revised Environmental Assessment (in chapter 3, Wildlife section), and the Wildlife Report (Glidden, 2017). This project would make changes to project area roads to reduce negative effects to fish and wildlife, and to adjust to current management needs. However, the effects of the district road network are beyond the scope of this document. [ID#912]

Associated Comments: [Seq#876]

Road Construction Opposing View #1 - "Fragmentation has been considered as one of the most major factors that lead to the decline of many wildlife species (Brittingham and Temple 1983, Yahner 1988, Winslow et al. 2000) because fragmentation tends to decrease population productivity (Robinson et al. 1995). Therefore, Meffe states that "fragmentation has become a major subject of research and debate in conservation biology" (Meffe et al. 1997, p. 272). Forest fragmentation usually occurs when large and continuous forests are divided into smaller patches as a result of road establishment, clearing for agriculture, and human development (Robinson et al. 1995, Meffe et al. 1997)." (Pg. 1) "Generally, habitat fragmentation is an ecological process in which a large patch of habitat is divided into smaller

patches of habitats. Usually, this process is caused by human activities (roads, agriculture, and logging). It also reduces the value of the landscape as habitat for many species (plants and animals). Fragmentation alters natural habitat in many ways, including reduction of patches' sizes, increment of distances between similar patches, and increment of edges and predation (Brittingham and Temple 1983, Robinson et al. 1995)." (Pp. 2 and 3) Al-jabber, Jabber M. 2003 "Habitat Fragmentation: Effects and Implications" http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf [80-1]

Road Construction Opposing View #14 - "Fragmentation caused by roads is of special interest because the effects of roads extend tens to hundreds of yards from the roads themselves, altering habitats and water drainage patterns, disrupting wildlife movement, introducing exotic plant species, and increasing noise levels. The land development that follows roads out into rural areas usually leads to more roads, an expansion process that only ends at natural or legislated barriers." "Forest Fragmentation and Roads" Eastern Forest Environmental Threat Assessment Center U.S. Forest Service - Southern Research Station http://www.forestthreats.org/publications/su-srs-018/fragmentation [80-14]

Road Construction Opposing View #15 - "A huge road network with vehicles ramifies across the land, representing a surprising frontier of ecology. Species-rich roadsides are conduits for few species. Roadkills are a premier mortality source, yet except for local spots, rates rarely limit population size. Road avoidance, especially due to traffic noise, has a greater ecological impact. The still-more-important barrier effect subdivides populations, with demographic and probably genetic consequences. Road networks crossing landscapes cause local hydrologic and erosion effects, whereas stream networks and distant valleys receive major peak-flow and sediment impacts. Chemical effects mainly occur near roads. Road networks interrupt horizontal ecological flows, alter landscape spatial pattern, and therefore inhibit important interior species. Thus, road density and network structure are informative landscape ecology assays. Australia has huge road-reserve networks of native vegetation, whereas the Dutch have tunnels and overpasses perforating road barriers to enhance ecological flows. Based on road-effect zones, an estimated 15-20% of the United States is ecologically impacted by roads." Forman, Richard T. and Lauren E. Alexander "Roads and their Major Ecological Effects" Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998 http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.29.1.207?cookieSet=1&journalCode=ecolsys.1 [80-15]

Road Construction Opposing View #24 - "Roads remove habitat, alter adjacent areas, and interrupt and redirect ecological flows. They subdivide wildlife populations, foster invasive species spread, change the hydrologic network, and increase human use of adjacent areas. At broad scales, these impacts cumulate and define landscape patterns." Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D. "Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937-1999" Ecological Applications: Vol. 16, No. 3, pp. 1222-1237. http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap [80-24]

Road Construction Opposing View #37 - "Road construction in remote areas appears to be the major long term impact of resource extraction industries and the most significant problem facing grizzly bears in most locations. Open roads are an influence in all 5 ways that people affect bears. Vehicles on roads can harass bears, displace them from quality habitats, and cause reduced bear use of altered habitats, such as cutting units. Bears that are displaced from roads may cause social disruption in areas away from roads. Finally, roads permit access for many people and some of these will shoot bears." (Pg. 62) McLellan, Bruce N. "Relationships between Human Industrial Activity and Grizzly Bears" Bears: Their Biology and Management, Vol. 8 International Conference on Bear Research and Management February 1989 (1990), pp. 57-64 http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf [80-37]

Road Construction Opposing View #40 - "Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity - habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting - are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals." "Most public agencies disregard the ecological impacts of roads, and attempt to justify timber roads as benefiting recreation and wildlife management. Even when a land manager recognizes the desirability of closing roads, he or she usually contends that such closures would be unacceptable to the public." "The Forest Service and other public agencies will claim that road closures, revegetation, and other restorative measures are too expensive to be implemented on a broad scale. But much of the approximately $400 million of taxpayers' money squandered annually by the Forest Service on below-cost timber sales goes to road-building. Road maintenance is also expensive. Virtually all of this money could be channeled into road closures and associated habitat restoration. This work would be labor-intensive, and providing income to the many laid off loggers, timber sale planners, and road engineers -- for noble jobs, rather than jobs of destruction!" Noss, Reed F., Ph.D. 1995. "The Ecological Effects of Roads or the Road to Destruction" Wildlands CPR http://www.wildlandscpr.org/ecological-effects-roads [80-40]

Road Construction Opposing View #42 - "Increasingly, previously extensive, continuous tracts of forest are being reduced to widely dispersed patches of remnant forest vegetation by logging and road-building, but few measures of the effects of roads on forest fragmentation are available. Fragmentation affects animal populations in a variety of ways, including decreased species diversity and lower densities of some animal species in the resulting smaller patches. This study seeks to quantify the effects of roads and logging activities on forest habitat." "Roads precipitate fragmentation by dissecting previously large patches into smaller ones, and in so doing they create edge habitat in patches along both sides of the road, potentially at the expense of interior habitat. As the density of roads in landscapes increases, these effects increase as well. McGurk and Fong (1995) considered the additive effects of clearcuts and roads, but did not measure the amount of associated edge habitat. Thus a more direct measurement of the impacts of roads on landscapes is needed." Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. "Contribution of Roads to Forest Fragmentation in the Rocky Mountains."

Conservation Biology 10: 1098-1106.
http://cpluhna.nau.edu/Research/contribution_of_roads_to_forest_.htm [80-42]

Road Construction Opposing View #47 - "Early studies of elk were among the first to address effects of roads on wildlife, establishing a precedent for subsequent research on a wide range of terrestrial and aquatic species. These early elk-roads studies included those reported in a symposium on the topic in 1975 (Hieb 1976), the seminal studies of Jack Lyon in Montana and northern Idaho (Lyon 1979, 1983, 1984), the Montana Cooperative Elk-Logging Study (Lyon et al. 1985), and work by Perry and Overly (1977) in Washington and Rost and Bailey (1979) in Colorado. As research and analysis techniques have become more sophisticated, particularly with the advent of geographic information systems (GIS) and high-resolution remote imagery, the study of effects of roads on terrestrial and aquatic communities has evolved into a unique discipline of "road ecology" (Forman et al. 2003). Road effects are far more pervasive than originally believed and include such disparate consequences as population and habitat fragmentation, accelerated rates of soil erosion, and invasion of exotic plants along roadways. Indeed, "in public wildlands management, road systems are the largest human investment and the feature most damaging to the environment" (Gucinski et al. 2001:7). Summaries of the effects of roads on wildlife habitats and biological systems in general have been compiled by Forman and Alexander (1998), Trombulak and Frissell (2000), Gucinski et al. (2001), Forman et al. (2003) and Gaines et al. (2003)." Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger 2005. "Effects of Roads on Elk: Implications for Management in Forested Ecosystems." Pages 42-52 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group. http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf [80-47]

Road Construction Opposing View #48 - "The consequences of road construction to wildlife are generally negative. Roads result in increased human access, habitat fragmentation, disturbance, and in some cases direct mortality due to vehicle collisions." "Research has documented an 80% decline in grizzly bear habitat use within 1 km of open roads used by motorized vehicles in Montana9. This has been ascribed either to bears avoiding humans or to the selective over-harvest of bears habituated to humans that would otherwise more fully use areas heavily influenced by people." Schwartz, Chuck Ph.D. - March 1998 "Wildlife and Roads" The Interagency Forest Ecology Study Team (INFEST) newsletter http://www.sf.adfg.state.ak.us/sarr/forestecology/fsroads.cfm [80-48]

Road Construction Opposing View #51 - "More subtle causes of habitat loss include the construction of roads and power lines. These linear barriers also have been correlated with a decline in neotropical migrant songbirds (Berkey 1993; Boren et al. 1999; Ortega and Capen 2002). Whether by forest conversion or the construction of roads and power lines, fragmentation subdivides habitat into smaller and smaller parcels. The result is an increase of edge habitat, or the boundary between intact forest and surrounding impacted areas. Small forests with large amounts of edge habitat are a hostile landscape for nesting neotropical migratory songbirds. In these areas, songbirds face two great threats: 1) the loss of eggs and nestlings to predators and, 2) parasitism by cowbirds." Switalski, Adam "Where Have All the Songbirds Gone?Roads, Fragmentation, and the Decline of Neotropical Migratory Songbirds" Wildlands CPR, September 8, 2003 http://www.wildlandscpr.org/node/213 [80-51]

Road Construction Opposing View #52 - "Roads are a widespread and increasing feature of most landscapes. We reviewed the scientific literature on the ecological effects of roads and found support for the general conclusion that they are associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems. Roads of all kinds have seven general effects: mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotics, and increased use of areas by humans. Road construction kills sessile and slow-moving organisms, injures organisms adjacent to a road, and alters physical conditions beneath a road. Vehicle collisions affect the demography of many species, both vertebrates and invertebrates; mitigation measures to reduce roadkill have been only partly successful. Roads alter animal behavior by causing changes in home ranges, movement, reproductive success, escape response, and physiological state. Roads change soil density, temperature, soil water content, light levels, dust, surface waters, patterns of runoff, and sedimentation, as well as adding heavy metals (especially lead), salts, organic molecules, ozone, and nutrients to roadside environments. Roads promote the dispersal of exotic species by altering habitats, stressing native species, and providing movement corridors. Roads also promote increased hunting, fishing, passive harassment of animals, and landscape modifications. Not all species and ecosystems are equally affected by roads, but overall the presence of roads is highly correlated with changes in species composition, population sizes, and hydrologic and geomorphic processes that shape aquatic and riparian systems. More experimental research is needed to complement post-hoc correlative studies. Our review underscores the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota." Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. "Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities" Conservation Biology, Volume 14, No. 1, Pages 18-30, February 2000 http://www.transwildalliance.org/resources/200922144524.pdf [80-52]

Road Construction Opposing View #53 - "Roads are a major contributor to habitat fragmentation because they divide large landscapes into smaller patches and convert interior habitat into edge habitat. As additional road construction and timber harvest activities increase habitat fragmentation across large areas, the populations of some species may become isolated, increasing the risk of local extirpations or extinctions (Noss and Cooperrider 1994)." "Habitat fragmentation creates landscapes made of altered habitats or developed areas fundamentally different from those shaped by natural disturbances that species have adapted to over evolutionary time (Noss and Cooperrider 1994 in Meffe et al. 1997). Adverse effects of habitat fragmentation to both wildlife populations and species include: "Increased isolation of populations or species, which leads to: * Adverse genetic effects; i.e. inbreeding depression (depressed fertility and fecundity, increased natal mortality) and decreased genetic diversity from genetic drift and bottlenecks, * Increased potential for extirpation of localized populations or extinction of narrowly distributed species from catastrophic events such as hurricanes, wildfires or disease outbreaks, * Changes in habitat vegetative composition, often to weedy and invasive species, * Changes in the type and quality of the food base, * Changes in microclimates by altering temperature and moisture regimes, * Changes in flows of energy and nutrients, * Changes in the availability of cover and increases edge effect, bringing together species that might otherwise not interact, potentially increasing rates of predation, competition and nest parasitism, and * Increased opportunities for exploitation by humans, such as poaching or illegal collection for

the pet trade." Watson, Mark L. "Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats." Background and Literature Review 2005. http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf [80-53]

Road Construction Opposing View #54 - "Our analysis also indicated that >70 percent of the 91 species are affected negatively by one or more factors associated with roads." "Roads in forested areas increase trapping pressures for martens and fishers, resulting in significantly higher captures in roaded versus unroaded areas (Hodgman and others 1994) and in logged versus unlogged areas, in which the difference was again attributed to higher road densities in logged stands (Thompson 1994). Secondary roads also might increase the likelihood that snags and logs will be removed for fuel wood. This could impact fishers, martens and flammulated owls, and also could have a negative effect on the prey base for goshawks (Reynolds and others 1992)." "An additional, indirect effect of roads is that road avoidance leads to underutilization of habitats that are otherwise high quality." Wisdom, Michael J., Richard S. Holthausen Ph.D. Barbara C. Wales Ph.D., Christina D. Hargis Ph.D. Victoria A. Saab Ph.D., Danny C. Lee Ph.D. Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland, Wally J. Murphy, and Michelle R. Eames "Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications Volume 2 - Group Level Results." USDA Forest Service, PNW-GTR-485, May 2000. http://maps.wildrockies.org/ecosystem_defense/Science_Documents/Wisdom_et_al_2000/Vol_2a.pdf [80-54]

Road Construction Opposing View #56 - "Fires do not leave a large road network in place (assuming the blaze was not suppressed otherwise there may be dozer lines, etc.). Logging creates roads that fragment habitat and generally increase human access, both of which affect the use of the land by wildlife. Moreover, roads and logging equipment can become vectors for the dispersal of weeds." Wuerthner, George 2008 "Ecological Differences between Logging and Wildfire" http://wuerthner.blogspot.com/2008/12/ecological-differences-between-logging.html [80-56]

Road Construction Opposing View #57 - "Forest fragmentation occurs when large, contiguous blocks of forest are broken up into isolated islands by development, roads, or clearing for agriculture. Just as inbreeding among the royal families of Europe spread hemophilia, forest fragmentation negatively impacts the long term sustainability of both plant and animal communities. Geographic isolation results in inbreeding and diminishes biodiversity." Zimmerman, E.A. and P.F. Wilbur "A Forest Divided" New Roxbury Land Trust newsletter, 2004 http://www.ourbetternature.org/forestfrag.htm [80-57]

Concern: [Seq#877]

Plot-level studies have demonstrated the ability of forest roads to intercept and route both subsurface and surface overland flow more efficiently to the stream network. Significant amount of subsurface through flow can be intercepted by the road, as a function of the road cut depth and the current

saturation deficit, and then redirected, concentrating the flow in particular areas below the road. Road drainage concentration increases the effective length of the channel network and strongly influences the distribution of erosional processes. The concept of wetness index has been used in the study as a surrogate for subsurface throughflow, and the effect of forest roads on subsurface through flow rerouting has been assessed by evaluating the changes in terms of draining upslope areas. A threshold model for shallow slope instability has been used to analyse erosional impacts of drainage modifications. In the model, the occurrence of shallow landsliding is evaluated in terms of drainage areas, ground slope and soil properties (i.e., hydraulic conductivity, bulk density, and friction angle). The model has been used to generate hypotheses about the broader geomorphic effect of roads. Modelling results have been compared with available field data collected in north-eastern Italy."

Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi

"

Evaluating the Effects of Forest Roads on Shallow Landsliding

"

Geophysical Research Abstracts

, Vol. 5, 13312, 2003

http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf [ID#913]
Response: [Seq#877]

This study is very difficult to apply to a project on the Okanogan-Wenatchee National Forest on the Methow Valley Ranger District as there is very little relevance of this reference to the proposed project area. The landscape, climate, soils, and geology of Italy are so different that there is almost no correlation that could be reached. However, the general concepts of subsurface flows. are discussed in the Water Resource section, 3.3, of the EA beginning on page 42 and the likelihood of mass wastage are described in the Soils section on page 84. The probability of mass wasting from proposed activities are low. [ID#913]
Associated Comments: [Seq#877]
Road Construction Opposing View #4 - "Plot-level studies have demonstrated the ability of forest roads to intercept and route both subsurface and surface overland flow more efficiently to the stream network. Significant amount of subsurface throughflow can be intercepted by the road, as a function of the road cut depth and the current saturation deficit, and then redirected, concentrating the flow in particular areas below the road. Road drainage concentration increases the effective length of the channel network and strongly influences the distribution of erosional processes. The concept of wetness index has been used in the study as a surrogate for subsurface throughflow, and the effect of forest roads on subsurface throghflow rerouting has been assessed by evaluating the changes in terms of draining upslope areas. A threshold model for shallow slope instability has been used to analyse erosional impacts of drainage modifications. In the model, the occurrence of shallow landsliding is

evaluated in terms of drainage areas, ground slope and soil properties (i.e., hydraulic conductivity, bulk density, and friction angle). The model has been used to generate hypotheses about the broader geomorphic effect of roads. Modelling results have been compared with available field data collected in north-eastern Italy." Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi "Evaluating the Effects of Forest Roads on Shallow Landsliding" Geophysical Research Abstracts, Vol. 5, 13312, 2003 http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf [80-4]

Concern: [Seq#878]

A large scale land use experiment has taken place over the last 40 years in the mountainous areas of the northwestern U.S. through timber harvesting. This land use change effects the hydrology of an area through two mechanisms:

■

Clear-cut logging which causes changes in the dynamics of Rain-On-Snow (ROS) events due to changes in the accumulation and ablation of snow caused by vegetation effects on snow interception and melt; and

■

Construction and maintenance of forest roads which channel intercepted subsurface flow and infiltration excess runoff to the stream network more quickly."

Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins

"

Predicting the Effects of Forest Roads on Streamflow using a

Distributed Hydrological Model

"

from a poster presented at the fall meeting of the American Geophysical

Union, San Francisco, CA, December 1996.

http://www.ce.washington.edu/~lxb/poster.htm [ID#915]
Response: [Seq#878]

The two items listed in this opposing view are addressed in Section 3.3, Water Resources section of the EA.

Classic rain-on-snow events like those described in this paper are a rare occurrence in Northeastern Washington. Peak flow in general is an integral part of the water resource analysis and much of the spring peak flow is attributed to snow melt sometimes influenced by rainfall. However, the amount of rainfall in the spring is typically not sufficient or of a long enough duration to cause stream scouring or damage to drainage structures. Most stream scouring damage is from thunderstorm events during the summer.

Channel intercepted subsurface flow is also addressed in Section 3.3, Water Resources beginning on page 42. The maintenance of hillsloe hydrological function in the presence of roads can be successful with the installation of sufficient cross-drainage features and by minimizing the depth of road cut during construction. No new system roads are proposed for construction as part of this project. 1.2 miles of temporary, short-duration, roads are proposed for construction as part of this project, but those roads will not generally be open to the public. Well established, best management practices will be followed throughout this proposed project.

[ID#915]
Associated Comments: [Seq#878]
A large scale land use experiment has taken place over the last 40 years in the mountainous areas of the northwestern U.S. through timber harvesting. This land use change effects the hydrology of an area through two mechanisms: * Clear-cut logging which causes changes in the dynamics of Rain-On-Snow (ROS) events due to changes in the accumulation and ablation of snow caused by vegetation effects on snow interception and melt; and * Construction and maintenance of forest roads which channel intercepted subsurface flow and infiltration excess runoff to the stream network more quickly." Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins "Predicting the Effects of Forest Roads on Streamflow using a Distributed Hydrological Model" from a poster presented at the fall meeting of the American Geophysica Union, San Francisco, CA, December 1996.
http://www.ce.washington.edu/~lxb/poster.html [80-5]

Concern: [Seq#879]

Road Construction Opposing View #13 -

"Few marks on the land are more lasting than roads."

"The negative effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented. Unwanted or non-native plant species can be transported on vehicles and clothing by users of roads, ultimately displacing native species. Roads may fragment and degrade habitat for wildlife species and eliminate travel corridors of other species. Poorly designed or maintained roads promote erosion and landslides, degrading riparian and wetland habitat through sedimentation and changes in streamflow and water temperature, with associated reductions in fish habitat and productivity. Also, roads allow people to travel into previously difficult or impossible to access areas, resulting in indirect impacts such as ground and habitat disturbance, increased pressure on wildlife species, increased litter, sanitation needs and vandalism, and increased frequency of human-caused fires."

EPA entry into the Federal Register: March 3, 2000 (Volume 65,

Number 43) Page 11675,

"National Forest System Road Management."

http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm

[ID#916]

Response: [Seq#879]

The statement in its entirety was: "*Few marks on the land are more lasting than roads. Yet, forest roads are essential for forest use and often serve as the backbone of rural transportation networks."*

The concepts discussed in the opposing view are all well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource Sections of Chapter 3 of the Environmental Assessment. No new System roads are proposed to be constructed with this project. 1.2 miles of temporary roads are proposed to be constructed for short-term use during harvest activities. Alternative 2 proposes 34.8/33.6 miles of road closures/road decommissioning and Alternative 3 proposed 33.8/56.2 miles of road closures /road decommissioning. [ID#916]

Associated Comments: [Seq#879]

Road Construction Opposing View #13 - "Few marks on the land are more lasting than roads." "The negative effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented. Unwanted or non-native plant species can be transported on vehicles and clothing by users of roads, ultimately displacing native species. Roads may fragment and degrade habitat for wildlife species and eliminate travel corridors of other species. Poorly designed or maintained roads promote erosion and landslides, degrading riparian and wetland habitat through sedimentation and changes in streamflow and water temperature, with associated reductions in fish habitat and productivity. Also, roads allow people to travel into previously difficult or impossible to access areas, resulting in indirect impacts such as ground and habitat disturbance, increased pressure on wildlife species, increased litter, sanitation needs and vandalism, and increased frequency of human-caused fires." EPA entry into the Federal Register: March 3, 2000 (Volume 65, Number 43)

Page 11675, "National Forest System Road Management."
http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm [80-13]

Concern: [Seq#880]

Road Construction Opposing View #22 -

"Fires in the roaded areas are more intense, due to drier conditions, wind zones on the foothill/valley interface, high surface-fuel loading, and dense stands."

Hann, W.J. et al. 1997

Landscape dynamics of the Basin. Pp. 337-1,055

in: Quigley, T.M. and S.J. Arbelbide (eds.)

An Assessment of Ecosystem Components in the

Interior Columbia Basin and Portions of the Klamath

and Great Basins

: Volume II. USDA Forest Service, PNW-GTR-405

http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf

[ID#917]

Response: [Seq#880]

A thorough review of PNW-GTR-405, An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II revealed that the opposing view quote is not likely contained in the document. Further, the author (Robert Keane) of the section mostly likely to contain the quote, Trends and Ecology of Wildland Fire, has previously confirmed that the quote would not likely be found in the Columbia Basin assessment as the use of the term "intense" is incorrect and should have been "severe."

A response to this opposing view is not possible without an understanding of the context to which the quote is attributed. [ID#917]

Associated Comments: [Seq#880]

Road Construction Opposing View #22 - "Fires in the roaded areas are more intense, due to drier conditions, wind zones on the foothill/valley interface, high surface-fuel loading, and dense

stands." Hann, W.J. et al. 1997 Landscape dynamics of the Basin. Pp. 337-1,055 in: Quigley, T.M. and S.J. Arbelbide (eds.) An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service, PNW-GTR-405 http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf [80-22]

Concern: [Seq#881]

Road Construction Opposing View #2 -

"Debris slides over a 20-year period were inventoried on 137,500 acres of forested land in the Klamath Mountains of southwest Oregon. Frequency during the study period was about one slide every 4.3 years on each 1,000 acres-an erosion rate of about 1/2 yd

3

per acre per year. Erosion rates on roads and landings were 100 times those on undisturbed areas, while erosion on harvested areas was seven times that of undisturbed areas. Three-quarters of the slides were found on slopes steeper than 70 percent and half were on the lower third of slopes."

"Soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests."

Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr

and R. R. Ziemer Ph.D.

"Logging and forest roads related to

increased debris slides in southwestern Oregon."

Journal of Forestry

Vol. 83, No. 4. 1985.

http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF

[ID#918]

Response: [Seq#881]

The findings presented in view #2 were developed from analysis of aerial photographs taken between 1956 and 1976 in the coastal mountains of southwest Oregon, with annual precipitation ranging from over 50 to 150". Many of slides documented were on private, industrial timber lands and not on National Forest System lands. In contrast, the Mission Restoration project area receives less than 25 inches of annual precipitation. Field review of the project area documented little past mass wasting in the project area. Slopes on most of the project area are more gentle than those analyzed from the aerial photos (mostly 60%+). The concluding sentence from the referenced abstract reads as follows: "Results serve as a guide to appraising slide risk associated with planned timber harvest or road construction on forested slopes." In 10 years working on the Oregon Coast, I completed many headwall inventories for the potential for slope failure.

The study area geomorphology and climate are completely different from that of the project area of Mission Restoration. Most important to notes, however, is the fact that high rates of slope stability were observed during field investigations of all proposed activity areas. The Environmental Assessment acknowledges the potential effects roads on erosion (sedimentation). These effects are disclosed in the EA in the Water Resources (Section 3.3) and Soils (Section 3.4) sections. [ID#918]

Associated Comments: [Seq#881]

Road Construction Opposing View #2 - "Debris slides over a 20-year period were inventoried on 137,500 acres of forested land in the Klamath Mountains of southwest Oregon. Frequency during the study period was about one slide every 4.3 years on each 1,000 acres-an erosion rate of about 1/2 yd3 per acre per year. Erosion rates on roads and landings were 100 times those on undisturbed areas, while erosion on harvested areas was seven times that of undisturbed areas. Three-quarters of the slides were found on slopes steeper than 70 percent and half were on the lower third of slopes." "Soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests." Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr and R. R. Ziemer Ph.D. "Logging and forest roads related to increased debris slides in southwestern Oregon." Journal of Forestry Vol. 83, No. 4. 1985. http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF [80-2]

Concern: [Seq#882]

Road Construction Opposing View #16 -

"Questions to consider: Roads dramatically alter forest ecosystems

1. Does the management prescription account for the ecological effects of the road construction and maintenance activities associated with carrying out such activities?

2. Have alternatives to road building been considered? How does the plan attempt to address the effects of roads?" (page 37)

Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David

Montgomery Ph.D. and Christopher Frissell Ph.D. 2000.

"Simplified Forest

Management to Achieve Watershed and Forest Health: A Critique."

A National Wildlife Federation publication sponsored by the Bullitt Foundation

http://www.coastrange.org/documents/forestreport.pd

[ID#919]

Response: [Seq#882]

The Mission Project proposes to construct no new system roads. 1.2 miles of, short-term, temporary roads are proposed to be constructed for project. Numerous miles of road closures and decommissioning are proposed.

The ecological effects of road construction and the maintenance of those roads are thoroughly analyzed in the applicable resource sections of Chapters 3 of the Environmental Assessment. Alternatives to road building were not investigated since no system roads were proposed for construction. Several potential units for commercial timber harvest were dropped from consideration due to high road construction costs on steep slopes or consideration for helicopter yarding systems due to the inherently high cost for these systems and the volume of the proposed harvest units not being able to support the high costs of access. [ID#919]

Associated Comments: [Seq#882]

Road Construction Opposing View #16 - "Questions to consider: Roads dramatically alter forest ecosystems 1. Does the management prescription account for the ecological effects of the road construction and maintenance activities associated with carrying out such activities? 2. Have alternatives to road building been considered? How does the plan attempt to address the effects of roads?" (page 37) Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. "Simplified Forest Management to Achieve Watershed and Forest Health: A Critique." A National Wildlife Federation publication sponsored by the Bullitt Foundation

http://www.coastrange.org/documents/forestreport.pdf [80-16]

Concern: [Seq#883]

Road Construction Opposing View #17 -

"The authors warned that cutting roads into current roadless areas could bring much more harm to wildlife, soil and fisheries than the beetle-killed trees pose to the forest."

Frey, David "

Logging Won't Halt Beetles, Fire, Report Says

"

NewWest.net

, 3-03-10

http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41 [ID#920]
Response: [Seq#883]

The opposing view is not relevant to the Mission Restoration Project. No commercial timber harvest is proposed in Inventoried Roadless Areas (IRA). The only proposed treatments in Inventoried Roadless Areas is about 2 acres of underburning with several hundred feet of hand fireline construction and up to 2 acres of ladder fuel reduction. These activities are being proposed since small portions of the IRA boundary were drawn below the ridgetop, which creates a difficult burn boundary to protect. It is proposed to underburn to the ridgetop, which includes about 2 acres of the IRA.

The referenced document is a website article about a report regarding logging of pine bark beetle-killed trees in western states. It does not provide best available science or specific information related to the Mission Restoration Project; nor does the comments demonstrate any specific connection to this project. [ID#920]
Associated Comments: [Seq#883]
Road Construction Opposing View #17 - "The authors warned that cutting roads into current roadless areas could bring much more harm to wildlife, soil and fisheries than the beetle-killed trees pose to the

forest." Frey, David "Logging Won't Halt Beetles, Fire, Report Says" NewWest.net, 3-03-10 http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/ [80-17]

Concern: [Seq#884]

The present road system constitutes a legacy of current and potential sources of damage to aquatic and riparian habitats, mostly through sedimentation, and to terrestrial habitats through fragmentation and increased access" (Amaranthus et all 1985)."

"The failure of the Report to properly address mitigation costs associated with the ecological effects is a serious problem that needs to be addressed in future drafts. Similarly, passive-use values need to be taken seriously and considered throughout the Roads Report. In order to rectify these problems, most of the Socio-Economic Effects subsections will have to be reworked. Failing to do so, the Roads Report will paint an incomplete picture of the costs and benefits associated with the Forest Service's road program."

Brister, Daniel.

"A Review and Comment on:

Forest Service Roads:

A Synthesis of Scientific Information

, 2nd Draft, USDA Forest Service."

December 1998.

http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific-information-socio-economic-impacts [ID#921]

Response: [Seq#884]

The Aquatic/Hydro Resource Report addresses the roads impact upon these resources in great detail. Please see report for a more full description of the WWRP [Whole Watershed Restoration Procedures Methodology (Roads)]; the road assessment procedure used in the Draft Okanogan-Wenatchee Whole Watershed Restoration Procedures (WWRP) (USDA 2015). This process identifies where road-stream

impacts potentially exist and roads or groups of roads that would benefit hydrologic process to remove or hydrologically close.

This opposing view is of the same nature and scope as previous opposing views found elsewhere in the response to comments. Please also see the response to opposing views #4 (Concern/Response 913).

Negative effects from road activities are not anticipated, primarily due to location and design of the roads and the use of appropriate erosion control measures, including well-established Best Management Practices (BMPs). The cost of implementing the road related BMPs are included in the general road maintenance, reconstruction, and road construction costs for temporary roads (no system roads are proposed to be constructed with this project) discussed in the Travel analysis report.

The Economic section (Section 3.14 of Chapter 3 in the EA). states that amenity values are not analyzed in the EA due to difficulty and controversy of assigning values. As a result, the Mission Restoration Project analysis does not reflect amenity benefits regarding wildlife habitat, aquatic habitat, improvement in recreation amenities, improved forest health, reduced wildfire risk, or improved water quality. [ID#921]

Associated Comments: [Seq#884]

"The present road system constitutes a legacy of current and potential sources of damage to aquatic and riparian habitats, mostly through sedimentation, and to terrestrial habitats through fragmentation and increased access" (Amaranthus et all 1985)." "The failure of the Report to properly address mitigation costs associated with the ecological effects is a serious problem that needs to be addressed in future drafts. Similarly, passive-use values need to be taken seriously and considered throughout the Roads Report. In order to rectify these problems, most of the Socio-Economic Effects subsections will have to be reworked. Failing to do so, the Roads Report will paint an incomplete picture of the costs and benefits associated with the Forest Service's road program." Brister, Daniel. "A Review and Comment on: Forest Service Roads: A Synthesis of Scientific Information, 2nd Draft, USDA Forest Service." December 1998.
http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific-information-socio-economic-impacts [80-7]

Concern: [Seq#885]

Road Construction Opposing View #11 -

"Forested watersheds typically release clean water, yet forest roads and trails can drastically impact water quality. Increased stream sedimentation from road and skid trail crossings represent the most significant water quality threat associated with forestry operations."

From

Forest Roads and Sediment Project

PROJECT

DURATION:1

January 2011 to 30 November 2019

Published by Virginia Tech University

By W. Mike Aust,Ph.D., Kevin McGuire, Ph.D., M. Chad Bolding, Ph.D. and Scott Barrett, Ph.D.

http://hydro.vwrrc.vt.edu/research/projects/forest-roads-and-sediment-project/ [ID#923]
Response: [Seq#885]

This paper, for which we could only obtain an abstract, reported on the influence of logging roads on amphibian movements and habitat use in central Maine. The effects of a wide, heavily used logging road surrounded by forest activity managed for industrial production and dominated by regenerating softwoods, were compared to those of narrower (5m), less-used forest tracks (roads). Generally, frog habitat use and movements were unaffected even by larger roads, but the larger road appeared to inhibit movement by salamanders. This paper is not relevant to the Mission Restoration Project because its research was conducted in very different habitats and on species that do not occur in North Central Washington. The EA acknowledges that some amphibian species can find roads difficult to cross, and that roads could have impacts on riparian habitats used by amphibians. [ID#923]
Associated Comments: [Seq#885]
Road Construction Opposing View #11 - "Forested watersheds typically release clean water, yet forest roads and trails can drastically impact water quality. Increased stream sedimentation from road and skid trail crossings represent the most significant water quality threat associated with forestry operations." From Forest Roads and Sediment Project PROJECT DURATION:1 January 2011 to 30 November 2019 Published by Virginia Tech University By W. Mike Aust,Ph.D., Kevin McGuire, Ph.D., M. Chad Bolding, Ph.D. and Scott Barrett, Ph.D.
http://hydro.vwrrc.vt.edu/research/projects/forest-roads-and-sediment-project/ [80-11]

Concern: [Seq#886]

Road Construction Opposing View #26 -

"Although disturbance patches are created by peak flow and debris flow disturbances in mountain landscapes without roads, roads can alter the landscape distributions of the starting and stopping points of debris flows, and they can alter the balance between the intensity of flood peaks and the stream network's resistance to change.

"

Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D.,

Beverley C. Wemple Ph.D., and Kai U. Snyder.

"Effects of

roads on hydrology, geomorphology, and disturbance

patches in stream networks."

Conservation Biology

14, No. 1. 2000.

http://www.jstor.org/stable/2641906 [ID#924]

Response: [Seq#886]

The impacts of roads in mountain landscapes on peak flows is well understood by the project hydrologist and well documented in Section 3.3, Water Resources of Chapter 3 of the EA. Additional information is included in the Aquatic/Hydro Resource Report in project files. Debris flows are a rare occurrence in the streams of the project area due to the relatively small size of the streams and the implementation of *PACFISH* Riparian Habitat Conservation Areas that buffer the streams from unnatural debris input. This project includes management within the default buffers in *PACFISH* to help return hardwoods to the riparian areas and increase stream flow. [ID#924]

Associated Comments: [Seq#886]

---------- Road Construction Opposing View #26 - "Although disturbance patches are created by peak flow and debris flow disturbances in mountain landscapes without roads, roads can alter the landscape distributions of the starting and stopping points of debris flows, and they can alter the balance between the intensity of flood peaks and the stream network's resistance to change." Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D. Beverley C. Wemple Ph.D., and Kai U. Snyder. "Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks." Conservation Biology 14, No. 1. 2000. http://www.jstor.org/stable/2641906 [80-26]

Concern: [Seq#887]

Road Construction Opposing View #31 -

"Almost everywhere people live and work they build and use unimproved roads, and wherever the roads go, a range of environmental issues follows."

"Among the environmental effects of unimproved roads, those on water quality and aquatic ecology are some of the most critical. Increased chronic sedimentation, in particular, can dramatically change the food web in affected streams and lakes."

"The nearly impervious nature of road surfaces (or treads) makes them unique within forested environments and causes runoff generation even in mild rainfall events, leading to chronic fine sediment contributions."

"If we look at the issue of what we need to learn or the research priorities for forest road hydrology, I would argue that the areas of cutslope hydrology and effectiveness of restoration efforts are perhaps most critical."

"At a few sites in the mountains of Idaho and Oregon a substantial portion of the road runoff (80-95%) came from subsurface flow intercepted by the cutslope (Burroughs

et al

., 1972; Megahan, 1972; Wemple, 1998)."

Luce, Charles H. Ph.D., 2002.

"Hydrological processes and

pathways affected by forest roads: what do we still need to learn?"

Hydrologic Processes

: 16, 2901-2904.

http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf [ID#925]
Response: [Seq#887]

This commentary piece on forest road hydrology was written to call for prioritizing research in areas of the effects of roads on hillslope hydrological functions and on the effectiveness of eliminating the effects of roads during restoration activities.

Since this commentary was written, a considerable amount of research has been conducted and published regarding hillslope hydrology and forest roads. Some of these research articles were used and cited in Section 3.3, Water Resources, in the Environmental Assessment in Chapter 3 of the EA beginning on page 42 of the Revised Preliminary EA. Please also read the Aquatic/Hydro Resource Report, in project files, for a thorough analysis of the transportation system impacts and proposed mitigation. [ID#925]

Associated Comments: [Seq#887]

Road Construction Opposing View #31 - "Almost everywhere people live and work they build and use unimproved roads, and wherever the roads go, a range of environmental issues follows." "Among the environmental effects of unimproved roads, those on water quality and aquatic ecology are some of the most critical. Increased chronic sedimentation, in particular, can dramatically change the food web in affected streams and lakes." "The nearly impervious nature of road surfaces (or treads) makes them unique within forested environments and causes runoff generation even in mild rainfall events, leading to chronic fine sediment contributions." "If we look at the issue of what we need to learn or the research priorities for forest road hydrology, I would argue that the areas of cutslope hydrology and effectiveness of restoration efforts are perhaps most critical." "At a few sites in the mountains of Idaho and Oregon a substantial portion of the road runoff (80-95%) came from subsurface flow intercepted by the cutslope (Burroughs et al., 1972; Megahan, 1972; Wemple, 1998)." Luce, Charles H. Ph.D., 2002. "Hydrological processes and pathways affected by forest roads: what do we still need to learn?" Hydrologic Processes: 16, 2901-2904.
http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf [80-31]

Concern: [Seq#888]

Road Construction Opposing View #32 -

"Roads in the watershed contribute to sediment production by concentrating runoff, thereby increasing sediment load to the stream network. Most unimproved (dirt) roads connect either directly or indirectly with streams and, therefore, act as extensions of stream networks by effectively increasing watershed drainage density and subsequently sediment loads to streams. In the South Fork subwatershed of Squaw Creek, road connectivity has resulted in an increase in effective drainage density of approximately 250%. Throughout the Squaw Creek watershed, it is estimated that dirt roads potentially contribute as much as 7,793 metric tons/year to the watershed sediment budget."

Maholland, Becky and Thomas F. Bullard Ph.D.,

"Sediment-Related

Road Effects on Stream Channel Networks in an Eastern Sierra

Nevada Watershed."

Journal of the Nevada Water Resources

Association

, Volume 2, Number 2, Fall 2005.

http://www.nvwra.org/docs/journal/vol_2_no_2/NWRAjournal_fall2005_article4.pdf

[[ID#926]
Response: [Seq#888]

Thank you for your comment.. Please read the Aquatic/Hydro Resource Report, in Project Files for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources of the Environmental Assessment for a discussion of road effects on hydrology And Appendix D for Design Criteria and Best Management Practices.

Responses to opposing views regarding sediment production from forest roads are found throughout the Concern/Response document. Please see the responses to opposing views #3 and #18 (Concern/Response 939 and 943). The impacts of roads in mountain landscapes on sediment production to streams is well understood by the project hydrologist and fisheries biologists and well documented in Section 3.3, Water Resources, of Chapter 3 of the Environmental Assessment.

[ID#926]
Associated Comments: [Seq#888]
Road Construction Opposing View #32 - "Roads in the watershed contribute to sediment production by concentrating runoff, thereby increasing sediment load to the stream network. Most unimproved (dirt) roads connect either directly or indirectly with streams and, therefore, act as extensions of stream networks by effectively increasing watershed drainage density and subsequently sediment loads to streams. In the South Fork subwatershed of Squaw Creek, road connectivity has resulted in an increase in effective drainage density of approximately 250%. Throughout the Squaw Creek watershed, it is estimated that dirt roads potentially contribute as much as 7,793 metric tons/year to the watershed sediment budget." Maholland, Becky and Thomas F. Bullard Ph.D., "Sediment-Related Road Effects on Stream Channel Networks in an Eastern Sierra Nevada Watershed." Journal of the Nevada Water Resources Association, Volume 2, Number 2, Fall 2005. http://www.nvwra.org/docs/journal/vol_2_no_2/NWRAjournal_fall2005_article4.pdf [80-32]

Concern: [Seq#889]

Road Construction Opposing View #33 -

"One of the greatest impacts of roads and (especially motorized) trails is their effect on the hydrology of natural landscapes, including the flow of surface and ground water and nutrients. These hydrologic effects are responsible for changes to geomorphic processes and sediment loads in roaded areas (Luce and Wemple 2001)." (pg. 12)

Malecki, Ron W. "

A New Way to Look at Forest Roads: the

Road Hydrologic Impact Rating System (RHIR)

"

The Road-RIPorter

, Autumn Equinox, 2006

http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf [ID#927]

Response: [Seq#889]

Thank you for your comment.. Please read the Aquatic/Hydro Resource Report, in Project Files for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources of the Environmental Assessment for a discussion of road effects on hydrology and Appendix D for Design Criteria and Best Management Practices that are proposed to be utilized on this project. This project does not proposed to construct any new System roads and only 1.2 miles of temporary roads.

Responses to opposing views regarding hillslope hydrological effects from forest roads are found throughout the Concern/Response document. Please see the responses to opposing views #5 and #31. The impacts of roads in mountain landscape on hillslope hydrology is well understood by the project hydrologist and fisheries biologist and is well documented in Section 3.3, Water Resources, of Chapter 3 of the EA beginning on page 42 of the Revised Preliminary EA.

[ID#927]

Associated Comments: [Seq#889]

Road Construction Opposing View #33 - "One of the greatest impacts of roads and (especially motorized) trails is their effect on the hydrology of natural landscapes, including the flow of surface and ground water and nutrients. These hydrologic effects are responsible for changes to geomorphic processes and sediment loads in roaded areas (Luce and Wemple 2001)." (pg. 12) Malecki, Ron W. "A New Way to Look at Forest Roads: the Road Hydrologic Impact Rating System (RHIR)" The Road-RIPorter, Autumn Equinox, 2006
http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf [80-33]

Concern: [Seq#890]

Road Construction Opposing View #35 -

"Research has shown that roads can have adverse impacts on the water quality on the forest landscape (Authur et al. 1998; Binkley and Brown 1993; Megahan et al. 1991). The forest road system has been identified by previous research as the major source of soil erosion on forestlands (Anderson et. al 1976; Patric 1976; Swift 1984; Van Lear et al. 1997). Furthermore, roads are cited as the dominant source of sediment that reaches stream channels (Packer 1967; Trimble and Sartz 1957; Haupt 1959)."

McFero III, Grace, J.

"Sediment Plume Development from

Forest Roads: How are they related to Filter Strip Recommendations?"

An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004.

http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf

[

[ID#928]

Response: [Seq#890]

Thank you for your comment. Please read the Aquatic/Hydro Resource Report, in the project files, for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources in the EA and Appendix D, which includes Design Features and Best Management Practices.

The referenced material discusses the effects of filter strips and their use to control sedimentation. The study was completed in Alabama and Georgia, which have substantially different soils, climate, and forest conditions. They also have different road building practices that are unique from how the Forest Service builds and maintains roads in North Central Washington. The paper is useful in that filter strips are an integral part of some Best Management Practices utilized on this project. [ID#928]

Associated Comments: [Seq#890]

Road Construction Opposing View #35 - "Research has shown that roads can have adverse impacts on the water quality on the forest landscape (Authur et al. 1998; Binkley and Brown 1993; Megahan et al. 1991). The forest road system has been identified by previous research as the major source of soil erosion on forestlands (Anderson et. al 1976; Patric 1976; Swift 1984; Van Lear et al. 1997). Furthermore, roads are cited as the dominant source of sediment that reaches stream channels (Packer 1967; Trimble and Sartz 1957; Haupt 1959)." McFero III, Grace, J. "Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?" An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004.
http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf [80-35]

Concern: [Seq#891]

Road Construction Opposing View #38 -

"Erosion from forest roads can be a large source of sediment in watersheds managed for timber production."

Megahan, Walter F. Ph.D. "

Predicting Road Surface Erosion from

Forest Roads in Washington State

"

from a presentation presented at the 2003 Geological Society of America meeting.

http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm

[ID#929]

Response: [Seq#891]

Thank you for your comment.. Please read the Aquatic/Hydro Resource Report, in Project Files for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources of the Environmental Assessment for a discussion of road effects on hydrology and sedimentation and please see Appendix D for Design Criteria and Best Management Practices that are proposed to be utilized on this project. This project does not proposed to construct any new System roads and only 1.2 miles of temporary roads.

With Design Criteria, Best Management Practices, and proposed aquatic projects, that should not sedimentation issues from this project.

Responses to opposing views regarding sediment production from forest roads are found throughout the Concern/Response document. Please see the responses to opposing views #3 and #18. The impacts of roads in mountain landscapes on sediment production to steams is well understood by the project hydrologist, fisheries biologists, and soil scientist and well documented in Section 3.3, Water Resources, and 3.4, Soils, of Chapter 3 of the EA.. [ID#929]

Associated Comments: [Seq#891]

Road Construction Opposing View #38 - "Erosion from forest roads can be a large source of sediment in watersheds managed for timber production." Megahan, Walter F. Ph.D. "Predicting Road Surface Erosion from Forest Roads in Washington State" from a presentation presented at the 2003 Geological Society of America meeting. http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm [80-38]

Concern: [Seq#892]

Road Construction Opposing View #39 -

"Today, addressing the adverse impacts of forest roads is consistently identified as one of the highest watershed restoration priorities in U.S. forests—in many forested watersheds in the western United States there is a greater road density than stream density. It is simply irrational to spend millions of dollars subsidizing further forest road construction when we are simultaneously spending millions of dollars to offset detrimental effects associated with similar actions in the past."

Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli

about S. 977 and HR 1376), the Act to Save America's Forests

April 28, 1998, U.S. Capitol

http://www.saveamericasforests.org/news/ScientistsStatement.htm [ID#930]
Response: [Seq#892]

Please read the Aquatic/Hydro Resource Report in project files, for a thorough analysis of the transportation system impacts. Appendix D of the EA includes proposed mitigation, design criteria, and best management practices.

This opposing view is beyond the scope of project level planning such as the Mission Restoration Project as the view is more directed at national level budgetary priority setting.

Forest Service policy at the national level concerning road management is in part found in the Code of Federal Regulations and Forest Service Manual (FSM) direction. FSM 7710.1 states:

1. Travel Management (36 CFR Part 212, Subparts , B, and C) Subpart A of these regulations establishes requirements for administration of the forest transportation system, including roads, trails, and airfields, and and contains provisions for acquisition of rights-of-way. subpart A also requires identification of the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands and use of a science-based roads analysis at the appropriate scale in determining the minimum road system. Subpart B describes the requirements for designation roads, trails, and areas on a motor vehicle use map (MVUM). Subpart C provides for regulation of use of over-snow vehicles on NFS roads, on NFS trails, and in areas on NFS lands.

FSM 7712, Travel Analysis, states:

Travel analysis assesses the current forest transportation ystem and identifies issues and assesses benefits, problems, and risks to inform decisions related to identification of the minimum road system per 36 CFR Part 212.5(b)(1) and designation of roads, trails, and areas for motor vehicle use per 36 CFR Part 212.51. Travel analysis is not a decision-making process. Rather, travel analysis informs decisions relating to administration of the forest transportation system and helps to identify proposals for changes in travel management direction (ex. 01).

Project level planning regarding transportation management was conducted using this travel analysis process. The Travel Analysis for the Mission Restoration Project is contain in project files. [ID#930]
Associated Comments: [Seq#892]
Road Construction Opposing View #39 - "Today, addressing the adverse impacts of forest roads is consistently identified as one of the highest watershed restoration priorities in U.S. forests—in many forested watersheds in the western United States there is a greater road density than stream density. It is simply irrational to spend millions of dollars subsidizing further forest road construction when we are simultaneously spending millions of dollars to offset detrimental effects associated with similar actions in the past." Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm [80-39]

Concern: [Seq#893]

Erosion on roads is an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest. Runoff rates and sediment concentrations from 10 road segments subject to a variety of traffic levels were monitored to produce sediment rating curves and unit hydrographs for different use levels and types of surfaces. These relationships are combined with a continuous rainfall record to calculate mean annual sediment yields from road segments of each use level. A heavily used road segment in the field area contributes 130 times as much sediment as an abandoned road. A paved road segment, along which cut slopes and ditches are the only sources of sediment, yields less than 1% as much sediment as a heavily used road with a gravel surface."

Reid, L. M. Ph.D. and T. Dunne (1984), "

Sediment Production from Forest

Road Surfaces

,"

Water Resour. Res.

, 20(11), 1753-1761.

http://www.agu.org/pubs/crossref/1984/WR020i011p01753.shtml

[ID#931]

Response: [Seq#893]

This study found that traffic level on gravel surfaced roads was the primary factor determining the amount of sediment produced from the road surface. Rainfall mobilized the fines brought to the surface, delivering the fines to cross drain culverts. The study was conducted in western Washington where annual precipitation during the study averaged greater than 150 inches.

This nearly 30 year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proven to provide superior reductions in sediment delivery to streams. Papers like his are useful in that they formed the basis for the modern Best Management Practices utilized today. The effectiveness of the BMPs is well documented in Section 3.3, Water Resources, of Chapter 3 of the EA and in the Aquatic/Hydro Resource Report in project files. [ID#931]

Associated Comments: [Seq#893]

Road Construction Opposing View #43 - "Erosion on roads is an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest. Runoff rates and sediment concentrations from 10 road segments subject to a variety of traffic levels were monitored to produce

sediment rating curves and unit hydrographs for different use levels and types of surfaces. These relationships are combined with a continuous rainfall record to calculate mean annual sediment yields from road segments of each use level. A heavily used road segment in the field area contributes 130 times as much sediment as an abandoned road. A paved road segment, along which cut slopes and ditches are the only sources of sediment, yields less than 1% as much sediment as a heavily used road with a gravel surface." Reid, L. M. Ph.D. and T. Dunne (1984), "Sediment Production from Forest Road Surfaces," Water Resour. Res., 20(11), 1753-1761.
http://www.agu.org/pubs/crossref/1984/WR020i011p01753.shtml [80-43]

Concern: [Seq#894]

Road Construction Opposing View #44 -

"Roads are associated with high sediment inputs and altered hydrology, both of which can strongly influence downstream channel habitats. Roads are also important as a source of indirect human impacts and as an agent of vegetation change and wildlife disturbance."

"Any ground disturbance increases the potential for erosion and hydrologic change, and roads are a major source of ground disturbance in wildlands. Compacted road surfaces generate overland flow, and much of this flow often enters the channel system, locally increasing peak flows. Localized peak flows are also increased where roads divert flow from one swale into another, and where roadcuts intercept subsurface flows."

"Overland flow from the road surface is a very effective transport medium for the abundant fine sediments that usually are generated on road surfaces. Road drainage also can excavate gullies and cause landslides downslope in swales. Cut and fill slopes are often susceptible to landsliding, and road-related landsliding is the most visible forestry-related erosional impact in many areas."

Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss

1994.

"What do we know about Roads?"

USDA Forest Service.

http://www.fs.fed.us/psw/publications/reid/4Roads.htm

[ID#932]
Response: [Seq#894]

Thank you for your comment. Please read the Aquatic/Hydro Resource Report, in project files, for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources of the Environmental Assessment.

This opposing view is of the same nature and scope as previous opposing views found elsewhere in Concern/Responses. The concepts discussed in the opposing view are all well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource sections of chapter 3 of the EA. Please also see the responses to opposing views #3, 4, 5, and 18 (Concern/Responses 939, 913, 915 and 943). [ID#932]
Associated Comments: [Seq#894]
Road Construction Opposing View #44 - "Roads are associated with high sediment inputs and altered hydrology, both of which can strongly influence downstream channel habitats. Roads are also important as a source of indirect human impacts and as an agent of vegetation change and wildlife disturbance." "Any ground disturbance increases the potential for erosion and hydrologic change, and roads are a major source of ground disturbance in wildlands. Compacted road surfaces generate overland flow, and much of this flow often enters the channel system, locally increasing peak flows. Localized peak flows are also increased where roads divert flow from one swale into another, and where roadcuts intercept subsurface flows." "Overland flow from the road surface is a very effective transport medium for the abundant fine sediments that usually are generated on road surfaces. Road drainage also can excavate gullies and cause landslides downslope in swales. Cut and fill slopes are often susceptible to landsliding, and road-related landsliding is the most visible forestry-related erosional impact in many areas." Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss 1994. "What do we know about Roads?" USDA Forest Service.
http://www.fs.fed.us/psw/publications/reid/4Roads.htm [80-44]

Concern: [Seq#895]

Road Construction Opposing View #41 - "Numerous studies have reported lower densities of breeding Ovenbirds (Seiurus aurocapillus) adjacent to forest edges. However, none of these studies has considered habitat use and reproductive success to address mechanisms underlying the observed pattern, and most were conducted in fragmented landscapes and ignored juxtapositions of forest with narrow openings such as roads. We studied the influence of forest roads on Ovenbird density in an extensively forested region of Vermont, evaluating habitat use and reproductive success relative to mechanisms proposed to explain the density-edge relationship. Territory densities on seven study plots were 40% lower within edge areas (0 to 150 m from unpaved roads) than within interior areas (150 to 300 m from roads). We simulated the distribution of Ovenbird territories and concluded that passive displacement, where birds perceive habitat interfaces as boundaries and limit their territories entirely to forest habitat, did not account for the observed density-edge pattern. Territory size was inversely

related to distance from roads, providing an alternative explanation for reduced densities near edges and suggesting that habitat quality was higher away from roads. Pairing success was lower within edge areas than within interior zones, but the difference was not statistically significant. The proportion of males that produced fledglings did not differ between edge and interior areas. We conclude that habitat quality for Ovenbirds may be lower within 150 m of unpaved roads in extensive forested landscapes, affecting territory density and possibly reproductive success." Ortega, Yvette K.; Capen, David E. 1999. "Effects of forest roads on habitat quality for Ovenbirds in a forested landscape" Auk. 116(4): 937-946. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_ortega_y001.html

[ID#933]

Response: [Seq#895]

The referenced journal article analyzed the effects of roads and associated edge effects on ovenbird populations. The document concluded that *"habitat quality for ovenbirds may be lower within 150 meters of unpaved roads in extensive forested landscapes, affecting territory density and possibly reproductive success."* Effects to the ovenbird (*Seiures aurocapillus)* were not analyzed in the Mission Restoration project as the species is not typically found on the Okanogan-Wenatchee National Forest. However, the focus of this document is primarily the negative edge effects of roads on forest interior species. Effects of roads on wildlife species, including threatened, sensitive and focal bird species are discussed in the Preliminary EA at p.171- 209. Changes to the road miles are a measure used to compare the two alternatives for several of these species. [ID#933]

Associated Comments: [Seq#895]

Road Construction Opposing View #41 - "Numerous studies have reported lower densities of breeding Ovenbirds (Seiurus aurocapillus) adjacent to forest edges. However, none of these studies has considered habitat use and reproductive success to address mechanisms underlying the observed pattern, and most were conducted in fragmented landscapes and ignored juxtapositions of forest with narrow openings such as roads. We studied the influence of forest roads on Ovenbird density in an extensively forested region of Vermont, evaluating habitat use and reproductive success relative to mechanisms proposed to explain the density-edge relationship. Territory densities on seven study plots were 40% lower within edge areas (0 to 150 m from unpaved roads) than within interior areas (150 to 300 m from roads). We simulated the distribution of Ovenbird territories and concluded that passive displacement, where birds perceive habitat interfaces as boundaries and limit their territories entirely to forest habitat, did not account for the observed density-edge pattern. Territory size was inversely related to distance from roads, providing an alternative explanation for reduced densities near edges and suggesting that habitat quality was higher away from roads. Pairing success was lower within edge areas than within interior zones, but the difference was not statistically significant. The proportion of males that produced fledglings did not differ between edge and interior areas. We conclude that habitat quality for Ovenbirds may be lower within 150 m of unpaved roads in extensive forested landscapes, affecting territory density and possibly reproductive success." Ortega, Yvette K.; Capen, David E. 1999. "Effects of forest roads on habitat quality for Ovenbirds in a forested landscape" Auk. 116(4): 937-946. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_ortega_y001.html [80-41]

Concern: [Seq#896]

Road Construction Opposing View #45 -

"Disturbances from roadbuilding and logging changed the sediment/discharge relationship of the South Fork from one which was supply dependent to one which was stream power dependent, resulting in substantial increases in suspended sediment discharges."

"Road construction and logging appear to have resulted in increases in average turbidity levels (as inferred from suspended sediment increases) above those permitted by Regional Water Quality Regulations."

Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman.

1979.

"Watershed's Response to Logging and Roads: South Fork

of Caspar Creek, California, 1967-1976."

USDA Forest Service,

Research Paper PSW-146

.

http://www.fs.fed.us/psw/publications/rice/Rice79.pdf [ID#934]

Response: [Seq#896]

This 34 year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proven to provide superior reductions in sediment delivery to streams. Papers like this are useful in that they formed the basis for the modern Best Management Practices utilized on projects today. The effectiveness of the BMPs is well documented in Section 3.3, Water Resources of Chapter 3 of the EA, in Appendix D, Deign Features, Best Management Practices, Mitigation, and Monitoring, and Aquatic/Hydro Resource Report, in project files. for a thorough analysis of the transportation system impacts and proposed mitigation. The "Efficacy" of these Design Features and "Consequences of Not Applying" are displayed in Appendix D. [ID#934]

Associated Comments: [Seq#896]

Road Construction Opposing View #45 - "Disturbances from roadbuilding and logging changed the sediment/discharge relationship of the South Fork from one which was supply dependent to one which was stream power dependent, resulting in substantial increases in suspended sediment

discharges." "Road construction and logging appear to have resulted in increases in average turbidity levels (as inferred from suspended sediment increases) above those permitted by Regional Water Quality Regulations." Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. 1979. "Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976." USDA Forest Service, Research Paper PSW-146. http://www.fs.fed.us/psw/publications/rice/Rice79.pdf [80-45]

Concern: [Seq#897]

Road Construction Opposing View #46 -

"Sediment eroded from gravel roads can be a major component of the sediment budget in streams in this region (Van Lear, et al, 1995)."

Riedel, Mark S. Ph.D. and James M. Vose Ph.D.,

"Forest Road

Erosion, Sediment Transport and Model Validation in the Southern

Appalachians."

Presented at the Second Federal Interagency Hydrologic

Modeling Conference, July 28 - August 1, 2002.

http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf [ID#935]
Response: [Seq#897]

Thank you for your comment. Please read the Aquatic/Hydro Resource Report for a thorough analysis of the transportation system impacts and proposed mitigation.

This reference from Georgia and Tennessee discusses different sediment sources associated with watershed restoration planning. Although the landscape for this project in Washington is different than that of the southeastern U.S, the process used to develop this project is similar. The installation of new culverts, the maintenance and reconstruction of existing system roads, the construction of 1.2 miles of temporary roads, armoring of stream crossings, hardening stream fords, etc. will decrease the effects roads in the project area have on the stream network and sediment contributions.

This opposing view is of the same nature and scope as previous opposing views found in other Concern/Responses. The concepts discussed in the opposing view are all well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource sections of Chapter 3 of the EA. Please also see the response to opposing views #3, #4, #5, and #18 (Concern/Responses 913, 915, 939, and 943). [ID#935]

Associated Comments: [Seq#897]

Road Construction Opposing View #46 - "Sediment eroded from gravel roads can be a major component of the sediment budget in streams in this region (Van Lear, et al, 1995)." Riedel, Mark S. Ph.D. and James M. Vose Ph.D., "Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians." Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 - August 1, 2002. http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf [80-46]

Concern: [Seq#898]

Road Construction Opposing View #49 -

"The effects of forest roads on hydrology are related to the effects of forest clearing. Most logging requires road access, and the roads often remain after the logging, so there are both short and long-term effects.

94

Forest road surfaces are relatively impermeable. Water readily runs over the road surface and associated roadside ditches, often directly to a stream channel, with the net effect of extending channel networks and increasing drainage density.

95

In addition to providing conduits for overland flow, forest roads involve slope-cuts and ditching that may intersect the water table and interrupt natural subsurface water movement.

96

This diversion of subsurface water may be quantitatively more important than the overland flow of storm water in some watersheds.

97

The importance of roads in altering basin hydrology has been underscored in paired-watershed studies and recent modeling studies.

98

" (Pgs. 730 and 731)

Shanley, James B. and BeverleyWemple Ph.D.

"

Water Quantity and Quality in the Mountain Environment

"

Vermont Law Review

, Vol. 26:717, 2002

http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf [ID#936]
Response: [Seq#898]

Thank you for your comment. Please read the Aquatic/Hydro Resource Report, in project files, for a thorough analysis of the transportation system impacts on hydrology and proposed mitigation.

The reference discusses hydrology in mountains in a general textbook approach presenting a number of accepted traits associated with wildland hydrology. The excerpt deals with the effects forest roads can have on hydrology based on a few other cited sources. The Environmental Assessment fully acknowledges these effects and discusses them in detail in Section 3.3, Water Resources, of Chapter 3 beginning on page 42 of the Revised Preliminary Environmental Assessment and in the Aquatic/Hydro Resource Report in project files. The road maintenance and reconstruction work, including rock armoring and culvert replacement, that will be completed prior to project implementation addresses the most critical effects the road system is having on project streams by applying BMPs, which decrease the effects of roads in the project area have on the stream network [ID#936]
Associated Comments: [Seq#898]
Road Construction Opposing View #49 - "The effects of forest roads on hydrology are related to the effects of forest clearing. Most logging requires road access, and the roads often remain after the logging, so there are both short and long-term effects.94 Forest road surfaces are relatively impermeable. Water readily runs over the road surface and associated roadside ditches, often directly to a stream channel, with the net effect of extending channel networks and increasing drainage density.95 In addition to providing conduits for overland flow, forest roads involve slope-cuts and ditching that may intersect the water table and interrupt natural subsurface water movement.96 This diversion of subsurface water may be quantitatively more important than the overland flow of storm water in some watersheds.97 The importance of roads in altering basin hydrology has been underscored in paired-watershed studies and recent modeling studies.98 " (Pgs. 730 and 731) Shanley, James B. and BeverleyWemple Ph.D. "Water Quantity and Quality in the Mountain Environment" Vermont Law Review, Vol. 26:717, 2002 http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf [80-49]

Concern: [Seq#899]

Road Construction Opposing View #55 -

"According to the DEIS, the Forest now manages a total of 5,914 miles of roads across the Forest. Scientific literature has established that roads have numerous widespread, pervasive and, if left untreated, long-lasting biological and physical impacts on aquatic ecosystems that continue long after completion of construction. (Angermeier et al. 2004). Roads increase surface water flow, alter runoff patterns, alter streamflow patterns and hydrology, and increase sedimentation and turbidity. Roads are the main source of sediment to water bodies from forestry operations in the United States. (US EPA 2002). Road construction can lead to slope failures, mass wasting and gully erosion. Road crossings can act as barriers to movement for fish and other aquatic organisms, disrupting migration and reducing population viability. (Schlosser and Angermeier 1995). Chemical pollutants that enter streams via runoff, such as salt and lead from road use and management, compound these impacts. Most of these adverse effects are persistent and will not recover or reverse without human intervention. The techniques for road remediation are well established, agreed upon and readily available. (Weaver et al. 2006)." (Pg. 2)

Wright, Bronwen, Policy Analyst and Attorney Pacific Rivers Council

Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou

National Forest Travel Management Team

http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pd [ID#937]

Response: [Seq#899]

The citation is a comment letter to the Forest Service on travel management in the Oregon Cascade Mountains which is a different climate and setting than the Methow Valley Ranger District. The letter cites other literature that discusses the adverse effects of roads on aquatic environments.

This opposing view is of the same nature and scope as previous opposing views by this author found elsewhere is this response document. The concepts discussed in the opposing view are all well understood by the ID Team and were considered in the environmental effects analysis in the resource

sections of Chapter 3 of the EA. Please read the Aquatic/Hydro Resource Report in project files for a thorough analysis of the transportation system impacts and proposed mitigation. Also see Section 3.3, Water Resources of Chapter 3 of the EA. [ID#937]

Associated Comments: [Seq#899]

* Road Construction Opposing View #55 - "According to the DEIS, the Forest now manages a total of 5,914 miles of roads across the Forest. Scientific literature has established that roads have numerous widespread, pervasive and, if left untreated, long-lasting biological and physical impacts on aquatic ecosystems that continue long after completion of construction. (Angermeier et al. 2004). Roads increase surface water flow, alter runoff patterns, alter streamflow patterns and hydrology, and increase sedimentation and turbidity. Roads are the main source of sediment to water bodies from forestry operations in the United States. (US EPA 2002). Road construction can lead to slope failures, mass wasting and gully erosion. Road crossings can act as barriers to movement for fish and other aquatic organisms, disrupting migration and reducing population viability. (Schlosser and Angermeier 1995). Chemical pollutants that enter streams via runoff, such as salt and lead from road use and management, compound these impacts. Most of these adverse effects are persistent and will not recover or reverse without human intervention. The techniques for road remediation are well established, agreed upon and readily available. (Weaver et al. 2006)." (Pg. 2) Wright, Bronwen, Policy Analyst and Attorney Pacific Rivers Council Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou National Forest Travel Management Team
http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pdf [80-55]

Concern: [Seq#900]

Commenter is concerned about harvest effects to stream temperature and that it should be analyzed in detail.

The EA contents that "Water Quality (temperature) This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will no decrease shading or increase temperature." Water temperature should be analyzed in detail. There has been no data provided for seasonal variation in flows, sediment, temperature, or dissolved oxygen all are important

factors in fish productivity. The public hasn't been told exactly where the 6.3 million board feet of timber will be cut nor how many is a few. [ID#938]

Response: [Seq#900]

The project proposes some commercial harvest in the outer edge of some riparian reserves. No commercial harvest would occur closer than one site potential tree. All shade inside this distance would be maintained and studies show that maintaining full shade in this zone would protect stream temperature (FEMAT 1993). See aquatics resource report on page 61 of the Revised Preliminary EA. [ID#938]

Associated Comments: [Seq#900]

The EA contents that "Water Quality (temperature) This project will not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration and the removal of a few overstory trees along fish streams will no decrease shading or increase temperature." Water temperature should be analyzed in detail. There has been no data provided for seasonal variation in flows, sediment, temperature, or dissolved oxygen all are important factors in fish productivity. The public hasn't been told exactly where the 6.3 million board feet of timber will be cut nor how many is a few. [63-64]

Concern: [Seq#901]

The commenter is concerned about the proposed road construction and suggested some articles that discuss the environmental risks associated with forest roads for review.

Road Construction Opposing View #3 -

" 'Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained. The sediment contribution to streams from roads is often much greater than that from all other land management activities combined, including log skidding and yarding.'

(Gibbons and Salo 1973)

. Research by

Megahan and Kidd

in 1972 found that roads built in areas with highly erosive soils can contribute up to 220 times as much sediment to streams as intact forests."

"

Applying Ecological Principles to Management of the U.S. National Forests

"

Issues in Ecology

Number 6 Spring 2000

http://www.watertalk.org/wawa/ecosci.html [ID#939]
Response: [Seq#901]

We thank you for your comment and suggested articles to review. The project fish biologist reviewed the articles and feel the risks associated with forest roads discussed in these documents was considered in the development of the Mission Project and specifically in the proposed road activities. No permanent road construction is proposed. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas. The proposed locations are in low risk areas with insignificant impact streams. See the EA page 69 in the revised preliminary EA, for more details.

[ID#939]
Associated Comments: [Seq#901]
Road Construction Opposing View #3 - " 'Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained. The sediment contribution to streams from roads is often much greater than that from all other land management activities combined, including log skidding and yarding.' (Gibbons and Salo 1973). Research by Megahan and Kidd in 1972 found that roads built in areas with highly erosive soils can contribute up to 220 times as much sediment to streams as intact forests." "Applying Ecological Principles to Management of the U.S. National Forests" Issues in Ecology Number 6 Spring 2000 http://www.watertalk.org/wawa/ecosci.html [80-3]

Concern: [Seq#902]

The commenter is concerned about the proposed road construction and suggested review of the Scientist Statement by Dr. Seth Reice regarding the aquatic risks posed by forest roads and how it limits ecosystem function.

Road Construction Opposing View #6 -

"American rivers and streams face destruction by sedimentation. Clearcutting, along with the vast network of logging roads, result in sedimentation and soil erosion into our national forest's rivers and

streams. Sedimentation degrades the water quality, impairs the habitat for fish and macroinvertebrates, and limits the ecosystem functions and services of streams.

By Dr. Seth Reice is Associate Professor of Biology in the Department of Biology and Curriculum in Ecology, University of North Carolina.

From Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol

regarding the proposed

Act to Save America's Forests

(S. 977, HR 1376)

[[ID#940]
Response: [Seq#902]

We thank you for your comment and suggested review of Dr. Seth Reice's statement on road risks. The project fish biologist reviewed the statement and Dr. Reice's expertise and feel the risks described by him were considered in the development of the Mission Project and specifically in the proposed road activities. No permanent road construction is proposed. The project only proposes minor temporary road construction in low risk areas and several miles of road decommissioning and road closure. these actions would result in insignificant short-term impacts to streams and long-term beneficial effects. See the EA, Section 3.3, Water Resources, starting on age 42 of the Preliminary Revised EA for more details.

Negative effects from road maintenance and reconstruction activities are not anticipated, primarily due the use of appropriate erosion control measures, including well-established Best Management Practices (BMPs). The cost of implementing these BMPs are included in the cost estimates of the above activities. [ID#940]
Associated Comments: [Seq#902]
"American rivers and streams face destruction by sedimentation. Clearcutting, along with the vast network of logging roads, result in sedimentation and soil erosion into our national forest's rivers and streams. Sedimentation degrades the water quality, impairs the habitat for fish and macroinvertebrates, and limits the ecosystem functions and services of streams. By Dr. Seth Reice is Associate Professor of Biology in the Department of Biology and Curriculum in Ecology, University of North Carolina. From Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol regarding the proposed Act to Save America's Forests (S. 977, HR 1376) [80-6]

Concern: [Seq#903]

The commenter is concerned about the proposed road construction and suggested some article that discuss the environmental risks associated with forest roads for review.

Road Construction Opposing View #9 -

"The road construction and right-of-way logging were immediately detrimental to most aquatic invertebrates in South Fork Caspar Creek"

"Salmonid populations decreased immediately after the road construction."

"Sustained logging and associated road construction over a period of many years do not afford either the stream or the 'fish population a chance to recover."

Burns, James W.,

"Some Effects of Logging and Associated Road

Construction on Northern California Streams."

Transactions of the

American Fisheries Society

, Volume 1, Number 1, January 1972.

http://www.fs.fed.us/psw/publications/4351/Burns72.pdf [ID#941]
Response: [Seq#903]

We thank you for your comment and suggested article to review. The project fish biologist reviewed the articles and feel the risks associated with forest roads discussed in this report was considered in the development of the Mission Project and specifically in the proposed road activities. No permanent road construction is proposed. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas. The locations of the temporary roads are in low risk areas that will not result in effects described in the Burns report. See the EA, Section 3.3, Water Resources, starting on page 42 for more details on effects of proposed actions to project area fish species.

In the project referenced, 66 kilometers of new road were constructed, including 4 crossings, within 76 meters of the stream. The entire area between the road and stream was logged and dozers disturbed over 41 percent of the stream length in the stream to remove slash and skid trees. Total biomass of invertebrates did not decrease. Recolonization occurred within 2 years and total biomass increased over the control stream (North Fork Caspar). Salmonid populations recovered to within 20 percent of preconstruction level with 2 years. The author stated that most damage was caused by dozers operating in the stream. The relevance of this article to the Mission Restoration Project is something of a "lessons learned" tale about the importance of minimizing ground disturbance in and near streams. The practices described in the paper from 1972 are avoided during modern forest management activities. [ID#941]

Associated Comments: [Seq#903]

Road Construction Opposing View #9 - "The road construction and right-of-way logging were immediately detrimental to most aquatic invertebrates in South Fork Caspar Creek" "Salmonid populations decreased immediately after the road construction." "Sustained logging and associated road construction over a period of many years do not afford either the stream or the 'fish population a chance to recover." Burns, James W., "Some Effects of Logging and Associated Road Construction on Northern California Streams." Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972. http://www.fs.fed.us/psw/publications/4351/Burns72.pdf [80-9]

Concern: [Seq#904]

The commenter is concerned about the proposed road construction and suggested review of Dr Dombeck's comment about the ecological impacts of roads.

Road Construction Opposing View #12 -

"Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road."

Dombeck, Mike Ph.D., US Forest Service Chief, 1997-2001;

Remarks made to Forest Service employees and retirees

at the University of Montana. February 1998.

https://www.uwsp.edu/cnr/gem/Dombeck/MDSpeeches/CD%20COPY/Chief%20Mike%20Dombeck%27s%20Remarks%20to%20Forest%20Service%20Employees%20and%20.htm [ID#942]

Response: [Seq#904]

We thank you for your comment and suggested comment from Dr Dombeck. The project fish biologist reviewed the articles and acknowledges the expertise of Dr Dombeck. The Mission project team considered the broad scope of risks associated with forest roads and road construction in development of the project. No permanent road construction is proposed. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas. The proposed locations are in low risk areas with insignificant impact streams. See the EA page 69 for more details.

This speech advocated, in part, for a more carefully managed National Forest transportation system. Specifically: 1) More carefully considered decisions to build new roads, 2) Eliminate old unneeded roads, 3) Upgrade and maintain the roads important to public access, and 4) Develop new and dependable funding for forest road management. The concepts advocated in items 1, 2, and 3 above are used in the analysis documented in the Environmental Assessment and Decision Notice. No new system roads are proposed to be constructed in the project; a travel analysis process was implemented to propose elimination of unneeded roads; and the timber sale contract will include road reconstruction and road maintenance provisions. Item 4 is outside the scope of this project. [ID#942]

Associated Comments: [Seq#904]

Road Construction Opposing View #12 - "Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road." Dombeck, Mike Ph.D., US Forest Service Chief, 1997-2001 Remarks made to Forest Service employees and retirees at the University of Montana. February 1998.
https://www.uwsp.edu/cnr/gem/Dombeck/MDSpeeches/CD%20COPY/Chief%20Mike%20Dombeck%27s%20Remarks%20to%20Forest%20Service%20Employees%20and%20.htm [80-12]

Concern: [Seq#905]

The commenter is concerned about the proposed road construction and suggested an article that discuss the aquatic risks associated with forest roads for review.

Road Construction Opposing View #18 -

"Rarely can roads be designed and built that have no negative impacts on streams. Roads modify natural drainage patterns and can increase hillslope erosion and downstream sedimentation. Sediments from road failures at stream crossings are deposited directly into stream habitats and can have both on-site and off-site effects. These include alterations of the channel pattern or morphology, increased

bank erosion and changes in channel width, substrate composition, and stability of slopes adjacent to the channels."

"All of these changes result in important biological consequences that can affect the entire stream ecosystem. One specific example involves anadromous salmonids, such as salmon and steelhead, that have complex life histories and require suitable stream habitat to support both juvenile and adult life stages."

"A healthy fishery requires access to suitable habitat that provides food, shelter, spawning gravel, suitable water quality, and access for upstream and downstream migration. Road-stream crossing failures have direct impacts on all of these components."

Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan

"Diversion Potential at Road-Stream Crossings."

USDA Forest

Service.

9777 1814—SDTDC.

December 1997.

http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf [ID#943]
Response: [Seq#905]

We thank you for your comment and suggested article to review. The project fish biologist reviewed the article and acknowledges the risks roads present to streams. In order to minimize impacts from the limited temporary road construction, there would be no stream crossings and they would be fully outside riparian areas. The proposed locations are in low risk areas with insignificant impacts streams. See the Revised Preliminary EA, page 69, for more details.

Water quality and the effects of roads on sedimentation, drainage network, change in peak flows, and slope stability were analyzed and are found in Section 3.3, Water Resources, and 3.4, Soils, of the Mission Restoration Project Revised Preliminary EA.

All proposed activities would follow proven Best Management Practices. Discussion regarding effects on fisheries and aquatic habitat is in Section 3.3, Water Resources, of the Revised Preliminary EA, starting on page 42.

The items listed in the opposing view for a healthy fishery are all found in the fish bearing streams of the project. Each of the road-stream crossings on anadromous drainages were evaluated for their aquatic organism passage (AOP) effectiveness. A feature of the selected alternatives is to improve fish and aquatic organism passage at the sites identified as AOP limiting. [ID#943]

Associated Comments: [Seq#905]

Road Construction Opposing View #18 - "Rarely can roads be designed and built that have no negative impacts on streams. Roads modify natural drainage patterns and can increase hillslope erosion and downstream sedimentation. Sediments from road failures at stream crossings are deposited directly into stream habitats and can have both on-site and off-site effects. These include alterations of the channel pattern or morphology, increased bank erosion and changes in channel width, substrate composition, and stability of slopes adjacent to the channels." "All of these changes result in important biological consequences that can affect the entire stream ecosystem. One specific example involves anadromous salmonids, such as salmon and steelhead, that have complex life histories and require suitable stream habitat to support both juvenile and adult life stages." "A healthy fishery requires access to suitable habitat that provides food, shelter, spawning gravel, suitable water quality, and access for upstream and downstream migration. Road-stream crossing failures have direct impacts on all of these components." Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan "Diversion Potential at Road-Stream Crossings." USDA Forest Service. 9777 1814—SDTDC. December 1997. http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf [80-18]

Concern: [Seq#906]

The commenter is concerned about the proposed road construction and suggested an article that discuss the environmental risks associated with forest roads for review.

Road Construction Opposing View #19 -

"Barry Noon, a professor of wildlife ecology at Colorado State University, noted that scientific research has consistently shown the adverse effects of roads on hydrologic processes and fish and wildlife populations.

" "One of the key things to recognize is the effects of the roads extend far beyond their immediate footprint," Noon said. For example, "in terms of hydrology, the roads are leading to faster runoff of water, often with great increases in sedimentation, particularly following storm events, and roads in watersheds often lead to increases in the intensity of floods."

These changes degrade fish habitat because of the increased sedimentation that leads to decreases in water quality, Noon said. And roads fragment wildlife habitat and create areas that animals avoid, often as result of increased hunting, he said."

Gable, Eryn "Battling beetles may not reduce fore risks - report"

Land Letter

, March 4, 2010

http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/ [ID#944]
Response: [Seq#906]

We thank you for your comment and suggested article to review. The project fish biologist reviewed the article and feel the risks associated with forest roads discussed in this report were considered in the development of the Mission Project and specifically in the proposed road activities. No permanent road construction is proposed and several riparian roads would be permanently removed from the project area, resulting in a positive effect to fish habitat. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas. The proposed locations are in low risk areas with insignificant impact streams. See the EA starting on page 42 for more details.

The cited article discusses a seven year old report addressing the mountain pine beetle epidemic in Colorado and how to best manage forests in the context of limited funding and roadless area designations. The Mission Restoration Project proposes 2 acres of underburning in an IRA/unroaded area.

Please see the response to opposing views #1 and #11 (Concern/Responses 912, 923) for information on how transportation and road management was considered in the Mission Restoration Project area for affecting wildlife and wildlife habitat and opposing views #2, #3, #5, and #18 (Concern/Responses 918, 939, 915, and 943) for affecting water quality and aquatic organisms. [ID#944]
Associated Comments: [Seq#906]
Road Construction Opposing View #19 - "Barry Noon, a professor of wildlife ecology at Colorado State University, noted that scientific research has consistently shown the adverse effects of roads on hydrologic processes and fish and wildlife populations. " "One of the key things to recognize is the effects of the roads extend far beyond their immediate footprint," Noon said. For example, "in terms of hydrology, the roads are leading to faster runoff of water, often with great increases in sedimentation, particularly following storm events, and roads in watersheds often lead to increases in the intensity of floods." " These changes degrade fish habitat because of the increased sedimentation that leads to decreases in water quality, Noon said. And roads fragment wildlife habitat and create areas that animals avoid, often as result of increased hunting, he said." Gable, Eryn "Battling beetles may not reduce fore risks - report" Land Letter, March 4, 2010
http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/ [80-19]

Concern: [Seq#907]

The commenter is concerned about the proposed road construction and suggested an article by Gucinski et al. (2001) that discuss the environmental risks associated with forest roads for review.

Road Construction Opposing View #21 -

"Roads have well-documented, short- and long-term effects on the environment that have become highly controversial, because of the value society now places on unroaded wildlands and because of wilderness conflicts with resource extraction."

"(Road) consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping, illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity."

Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D.

and Martha H. Brookes, Editors. 2001.

"Forest Roads: A Synthesis of Scientific Information."

USDA Forest Service, General Technical Report

PNW-GTR-509

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http://www.fs.fed.us/pnw/pubs/gtr509.pdf [ID#945]

Response: [Seq#907]

We thank you for your comment and suggested article to review. The project fish biologist reviewed the article and feels the risks associated with forest roads discussed in this report was considered in the

development of the Mission Project and specifically in the proposed road activities. No permanent road construction is proposed and several riparian roads would be permanently removed from the project area, resulting in a positive effect to fish habitat. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas. The proposed locations are in low risk areas with insignificant impact streams. See the EA, Section 4.3, Water Resources, starting on page 42 for more details.

PNW-GTR-509 describes the effects roads have on ecosystems. It is a companion paper to "Roads Analysis: Informing Decisions About Managing the National Forest Transportation System" (USDA FS 1999). The report details the known issues related to road impacts on physical and biological resources, road impacts at various scales, and the socio-economics of roads. The report then describes the known science surrounding these issues. The focus of the report is to help the reader understand how roads function in the landscape. The concepts discussed are all well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource sections of Chapter 3 of the EA. [ID#945]

Associated Comments: [Seq#907]

Road Construction Opposing View #21 - "Roads have well-documented, short- and long-term effects on the environment that have become highly controversial, because of the value society now places on unroaded wildlands and because of wilderness conflicts with resource extraction." "(Road) consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping, illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity." Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D. and Martha H. Brookes, Editors. 2001. "Forest Roads: A Synthesis of Scientific Information." USDA Forest Service, General Technical Report PNW-GTR-509. http://www.fs.fed.us/pnw/pubs/gtr509.pdf [80-21]

Concern: [Seq#908]

The commenter is concerned about the proposed road construction and suggested an statement by Dr. Karr and others that discusses the environmental risks associated with forest roads for review.

Road Construction Opposing View #28 -

"It is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a

policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts, the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine-fuels reductions in unburned forests."

Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J.

Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D.

Excerpt from a letter to the Subcommittee on Forests & Forest Health

U.S. House of Representatives

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3 July, 2002

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http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm [ID#946]
Response: [Seq#908]

We thank you for your comment and suggested statement to review. The project fish biologist reviewed the piece and feels the risks associated with forest roads discussed in this report was considered in the development of the Mission Project and specifically in the proposed road activities. This project does not involve fire salvage. No permanent road construction is proposed and several riparian roads would be permanently removed from the project area, resulting in a positive effect to fish habitat. Only 1.2 miles of temporary road construction is proposed, outside of any riparian areas and this is on slopes of less than 35%. The proposed locations are in low risk areas with insignificant impact streams. See the EA, Section 3.3, Water Resources, starting on page 42 of the Revised Preliminary EA, for more details.

The referenced document is an excerpt from a letter, which is a rebuttal to the Forest Service Chief's testimony regarding the "Beschta report" which pertains to post fire salvage logging. The opposing view has little relevance to the Mission Restoration projects as the project does not include fire salvage operations, nor does it include commercial harvest treatments in roadless areas. About 2 acres of proposed underburning is included in an IRA so that a ridgetop burn boundary can be utilized. [ID#946]
Associated Comments: [Seq#908]
Road Construction Opposing View #28 - "It is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts,

the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine-fuels reductions in unburned forests." Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J. Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D. Excerpt from a letter to the Subcommittee on Forests & Forest Health U.S. House of Representatives. 3 July, 2002.
http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm [80-28]

Concern: [Seq#909]

Erosion and sediment from roads.

Road Construction Opposing View #8 -

"Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized "mass movements," such as landslides. Forest practices can increase the rate at which both processes occur. Most sediment from forestry arises from landslides from roads and clearcuts on steep slopes, stream bank collapse after riparian harvesting, and soil erosion from logging roads and harvested areas. Roads, particularly those that are active for long periods of time, are likely the largest contributor of forestry-induced sediment (Furniss et al. 1991)."

"Sediment can increase even when roads comprise just 3% of a basin (Cederholm et al. 1981)."

"More than half the species present in the study area will likely be negatively impacted by sedimentation from logging roads."

"In areas made highly turbid (cloudy) from sedimentation, the foraging ability of adults and juveniles may be inhibited through decreased algal production and subsequent declines in insect abundance, or, for visual-feeding taxa dependent on good light, through their inability to find and capture food. Highly silted water may damage gill tissue and cause mortality or physiological stress of adults and juveniles."

Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004,

"Evaluating effects of large-scale salvage logging for mountain

pine beetle on terrestrial and aquatic vertebrates."

Mountain Pine Beetle Initiative Working Paper 1

. Canadian Forest Service.

http://warehouse.pfc.forestry.ca/pfc/25154.pdf [ID#947]
Response: [Seq#909]

The risk of soil erosion either from rilling/gullying or mass movement landslides was analyzed for in the full Soil report, in project files, and soil BMPs are designed to reduce or eliminate erosion from project activities. There is no doubt most of the sedimentation comes from the road prism and that analysis is found in the hydrology report.

This opposing view is not very useful for comparison to the Mission Restoration Project as the evaluation of the mountain pine beetle salvage logging projects in Canada is in general, substantially different in both the forest management practices employed as well as many of the environmental conditions. The forest management actions on the Okanogan-Wenatchee National Forest, including the application of Best Management Practices, are well demonstrated to minimize the amount of sediment reaching streams. The EA fully discloses how the impacts from the selected alternative would maintain and often improve aquatic habitat. [ID#947]
Associated Comments: [Seq#909]
Road Construction Opposing View #8 - "Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized "mass movements," such as landslides. Forest practices can increase the rate at which both processes occur. Most sediment from forestry arises from landslides from roads and clearcuts on steep slopes, stream bank collapse after riparian harvesting, and soil erosion from logging roads and harvested areas. Roads, particularly those that are active for long periods of time, are likely the largest contributor of forestry-induced sediment (Furniss et al. 1991)." "Sediment can increase even when roads comprise just 3% of a basin (Cederholm et al. 1981)." "More than half the species present in the study area will likely be negatively impacted by sedimentation from logging roads." "In areas made highly turbid (cloudy) from sedimentation, the foraging ability of adults and juveniles may be inhibited through decreased algal production and subsequent declines in insect abundance, or, for visual-feeding taxa dependent on good light, through their inability to find and capture food. Highly silted water may damage gill tissue and cause mortality or physiological stress of adults and juveniles." Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004 "Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial

and aquatic vertebrates." Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service. http://warehouse.pfc.forestry.ca/pfc/25154.pdf [80-8]

Concern: [Seq#910]

Road Construction Opposing View #10 - "

Road construction in the steep, often unstable terrain of Oregon's mountains is both, difficult and hazardous. It is also costly, both in terms of direct construction and damage to the aquatic environment. We know that in Oregon, forest roads are our greatest source of problems with mass soil movement (Brown and, Krygier, 1971;Fredriksen, 1970; Dyrness, 1967). Yet we do not understand the processes well enough to be able to predict with reasonable certainty where road failures will occur or how alternative road designs will affect mass movements except in the most obvious places."

Brown, George W. Ph.D.,

The Impact of Timber Harvest

on Soil and Water Resources,

Dr. BROWN is the Forest Hydrologist, School of Forestry, Oregon State University.

http://andrewsforest.oregonstate.edu/pubs/pdf/pub1695.pdf. [ID#948]
Response: [Seq#910]

Thanks for your comment. There are no new roads being built in this project and temp roads are not on slopes in excess of 35%.

The cited paper generally discusses kinds of soil and water problems associated with timber harvest in western Oregon. The author is a Forest Hydrologist from Oregon State University. As stated "Because of this complexity, this diversity, and this interaction, generalizations about man's impact upon the forest and its soil and water resources are difficult and dangerous to make. Difficult, because it is usually possible to find as many instances where the generality does not apply as when it does. Dangerous, because such generalizations may delude us into accepting one solution or one prescription for all of the complicated problems of land management." The conclusion of this paper was that "the impact of timber harvest varies widely from site to site." That each logging operation, each road system, must be judged independently.

This 45 year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proven to provide superior reductions in erosion, mass wasting, and

sediment delivery to streams. Papers like this are useful in that they formed a basis for the modern Best Management Practices utilized today. The effectiveness of BMPs is well documented in Section 3.3, Water Resources, 3.4, Soils, and Appendix D of the Revised Preliminary EA. [ID#948]

Associated Comments: [Seq#910]

Road Construction Opposing View #10 - "Road construction in the steep, often unstable terrain of Oregon's mountains is both, difficult and hazardous. It is also costly, both in terms of direct construction and damage to the aquatic environment. We know that in Oregon, forest roads are our greatest source of problems with mass soil movement (Brown and, Krygier, 1971;Fredriksen, 1970; Dyrness, 1967). Yet we do not understand the processes well enough to be able to predict with reasonable certainty where road failures will occur or how alternative road designs will affect mass movements except in the most obvious places." Brown, George W. Ph.D., The Impact of Timber Harvest on Soil and Water Resources Dr. BROWN is the Forest Hydrologist, School of Forestry, Oregon State University http://andrewsforest.oregonstate.edu/pubs/pdf/pub1695.pdf [80-10]

Concern: [Seq#911]

Erosion and roads

Road Construction Opposing View #20 -

"Roads and skid trails have been identified as a major contributor to increased turbidity of water draining logging areas resulting in increases from 4 to 93 parts per million (Hoover, 1952). Forest roads have been found to have erosion rates from one to three orders of magnitude greater than similar undisturbed areas (Megahan, 1974) and perhaps account for as much as 90 percent of all forest erosion (Megahan, 1972). Forest roads can also cause soil erosion and stream sedimentation, which adversely impact on the nation's water quality (Authur et al., 1998).

Grace, Johnny M. III Ph.D. 2003.

"Minimizing the impacts of the forest

road system."

In: Proceedings of the conference 34 international erosion

control association; ISSN 1092-2806. [Place of publication unknown]:

International Erosion Control Association: 301-310.

http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf [ID#949]
Response: [Seq#911]

Thanks for your comment. Please see Section 3.4,Soils, of the Revised Preliminary EA and the Soil Resource Report, in project files, for a discussion on this topic.

The opposing view cites several very old research articles that formed the basis for the modern Best Management Practices utilized today. Some of the erosion control techniques advocated in the research publication are employed in Best Management Practices used in Washington and in the Mission Restoration Project. [ID#949]
Associated Comments: [Seq#911]
Road Construction Opposing View #20 - "Roads and skid trails have been identified as a major contributor to increased turbidity of water draining logging areas resulting in increases from 4 to 93 parts per million (Hoover, 1952). Forest roads have been found to have erosion rates from one to three orders of magnitude greater than similar undisturbed areas (Megahan, 1974) and perhaps account for as much as 90 percent of all forest erosion (Megahan, 1972). Forest roads can also cause soil erosion and stream sedimentation, which adversely impact on the nation's water quality (Authur et al., 1998). Grace, Johnny M. III Ph.D. 2003. "Minimizing the impacts of the forest road system." In: Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. [Place of publication unknown]: International Erosion Control Association: 301-310. http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf [80-20]

Concern: [Seq#912]

Road Construction Opposing View #23 -

"Many forested landscapes are fragmented by roads, but our understanding of the effects of these roads on the function and diversity of the surrounding forest is in its infancy. I investigated the effect of roads in otherwise continuous forests on the macroinvertebrate fauna of the soil. I took soil samples along transects leading away from the edges of unpaved roads in the Cherokee National Forest in the Southern Appalachian mountains of the United States. Roads significantly depressed both the abundance and the richness of the macroinvertebrate soil fauna. Roads also significantly reduced the depth of the leaf-litter layer. These effects persisted up to 100 m into the forest. Wider roads and roads with more open canopies tended to produce steeper declines in abundance, richness, and leaf-litter depth, but these effects were significant only for canopy cover and litter depth. The macroinvertebrate fauna of the leaf litter plays a pivotal role in the ability of the soil to process energy and nutrients. These macroinvertebrates also provide prey for vertebrate species such as salamanders and ground-foraging birds. The effect of roads on the surrounding forest is compounded by the sprawling nature of the road system in this and many other forests. My data suggest that even relatively narrow roads through

forests can produce marked edge effects that may have negative consequences for the function and diversity of the forest ecosystem."

Haskell, David G. Ph.D. 1999 "

Effects of Forest Roads on

Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains

"

http://www.jstor.org/stable/2641904 [ID#950]
Response: [Seq#912]

Thanks for your comment. There is a discussion in Section 3.4, Soils, of the Revised Preliminary EA and in he Soil Resource report, in project files, about roads and how they are not considered part of the productive land base due to physical and biological changes.

This opposing view is not relevant to the Mission Restoration Project. This study took place in Tennessee in the Southern Appalachian Mountains with hardwood tree species; a substantially different ecosystem than that of the project area. The type of lead litter produced and the macroinvertebrates found in Tennessee is not comparable to the montane coniferous forests of North Central Washington, Methow River Valley. In summary, the author found that roads significantly depressed the abundance and diversity of macroinvertebrates, due to a reduction in leaf litter.

Though we do not inventory macroinvertebrates as a matter of course in field surveys, complying with Region 6 Soil Quality Standards would limit soil disturbance within the proposed harvest units. The opposing view's statement that even relatively narrow roads can produce edge effects that may have negative consequences was considered by each of the applicable resource specialists in the Environmental Assessment. The environmental effects of the existing road system were thoroughly considered in Chapter 3 of the EA. [ID#950]
Associated Comments: [Seq#912]
Road Construction Opposing View #23 - "Many forested landscapes are fragmented by roads, but our understanding of the effects of these roads on the function and diversity of the surrounding forest is in its infancy. I investigated the effect of roads in otherwise continuous forests on the macroinvertebrate fauna of the soil. I took soil samples along transects leading away from the edges of unpaved roads in the Cherokee National Forest in the Southern Appalachian mountains of the United States. Roads significantly depressed both the abundance and the richness of the macroinvertebrate soil fauna. Roads also significantly reduced the depth of the leaf-litter layer. These effects persisted up to 100 m into the forest. Wider roads and roads with more open canopies tended to produce steeper declines in abundance, richness, and leaf-litter depth, but these effects were significant only for canopy cover and litter depth. The macroinvertebrate fauna of the leaf litter plays a pivotal role in the ability of the soil to process energy and nutrients. These macroinvertebrates also provide prey for vertebrate species such as salamanders and ground-foraging birds. The effect of roads on the surrounding forest is compounded by

the sprawling nature of the road system in this and many other forests. My data suggest that even relatively narrow roads through forests can produce marked edge effects that may have negative consequences for the function and diversity of the forest ecosystem." Haskell, David G. Ph.D. 1999 "Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains" http://www.jstor.org/stable/2641904 [80-23]

Concern: [Seq#913]

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Road Construction Opposing View #27 -

"In the Pacific Northwest, the two main processes that contribute to sediment production are mass failure and surface erosion from forest roads (Fredriksen 1970, Reid and Dunne 1984). In the Clearwater River basin in the State of Washington, as much as 40 percent of the sediment produced in the watershed was attributed to logging roads (Reid 1980)."

Kahklen, Keith.

"A Method for Measuring Sediment Production

from Forest Roads."

Pacific Northwest Research Station, USDA,

Forest Service. Research note

PNW-RN-529

, April 2001

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ttp://www.fs.fed.us/pnw/pubs/rn529.pdf [ID#951]
Response: [Seq#913]

Thanks for your comment. Please see the soil report and aquatic/hydrology report for a discussion on this topic. [ID#951]
Associated Comments: [Seq#913]
Road Construction Opposing View #27 - "In the Pacific Northwest, the two main processes that contribute to sediment production are mass failure and surface erosion from forest roads (Fredriksen 1970, Reid and Dunne 1984). In the Clearwater River basin in the State of Washington, as much as 40 percent of the sediment produced in the watershed was attributed to logging roads (Reid 1980)." Kahklen, Keith. "A Method for Measuring Sediment Production from Forest Roads." Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001. http://www.fs.fed.us/pnw/pubs/rn529.pdf [80-27]

Concern: [Seq#914]

roads, compaction, soil physical and biological processes.

Road Construction Opposing View #30 -

"The compaction of forest road soils is known to reduce aeration, porosity, infiltration rates, water movement, and biological activity in soils. Research indicates that soil bulk density, organic matter, moisture, and litter depths are much lower on roads than on nearby forest lands. Macropores, which provide soil drainage and infiltration, have been shown to significantly decrease in size as a result of road construction and use. Reduced infiltration and increased compaction promote soil erosion, especially during the seasonal southwestern monsoon rains (Elseroad 2001)."

"Physical disturbances caused by road construction and vehicle use create ideal conditions for colonization by invasive exotic plant species. The use of roads by vehicles, machinery, or humans often aids the spread of exotic plant seeds. Once established, they can have long-term impacts on surrounding ecosystems and can be difficult to remove."

"Roads are known to cause habitat fragmentation. Many create ecological 'edges' with different plant species, light levels, and hiding cover, all of which may alter animal survival, reproductive success, and movement patterns. The introduction of exotic plants can disrupt the availability of native vegetation used by wildlife for food and shelter (Trombulak and Frissell 1999)."

"Forest roads often develop a water-repellent soil layer caused by lack of vegetative cover and changes in soil composition. This can substantially influence how runoff is processed. Erosion, the formation of water channels beside the road, and increased sediment loads in nearby streams are common results of this process (Baker 2003)."

"Because they provide easier access to many forest tracts, forest roads often allow more human-caused fires to be ignited."

Lowe, Kimberly Ph.D.,

"

Restoring Forest Roads."

A Northern Arizona University Ecological Restoration Institute publication,

Working Paper 12

. June, 2005.

http://www.eri.nau.edu/en/information-for-practitioners/restoring-forest-roads [ID#952]
Response: [Seq#914]

Thanks for your comment. Please see the Soil and the Aquatics/Hydrology resource reports, in project files, for a discussion on this topic. Also please section Sections 3.3, Water resources, and 3.4, Soils, in the Revised Preliminary EA.

The cited reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context that roads can contribute to habitat fragmentation, the spread of invasive species, and increased human use or presence.

Sectin 3.4, Soils, of Chapter 3 of the EA and the Forest Service Manual for Soil Management both acknowledge a forest road experiences changed properties of reduced aeration, porosity, infiltration rates, water movement, and biological activity. A water-repellant layer caused by lack of vegetative cover and soil composition is common and expected. Forest Service system roads are not considered part of the productive vegetative land base and function of the road surface for the qualities described in the opposing view are not managed for or included in Forest Plan outputs.

Please see the response of opposing view #1 (Concern/Response 912) for more specifics on how effects to wildlife and wildlife habitat were addressed in the EA.

The invasive plant and wildland fire ignition concepts discussed in the opposing view are well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource sections of Chapter 3 of the EA.

[ID#952]

Associated Comments: [Seq#914]

Road Construction Opposing View #30 - "The compaction of forest road soils is known to reduce aeration, porosity, infiltration rates, water movement, and biological activity in soils. Research indicates that soil bulk density, organic matter, moisture, and litter depths are much lower on roads than on nearby forest lands. Macropores, which provide soil drainage and infiltration, have been shown to significantly decrease in size as a result of road construction and use. Reduced infiltration and increased compaction promote soil erosion, especially during the seasonal southwestern monsoon rains (Elseroad 2001)." "Physical disturbances caused by road construction and vehicle use create ideal conditions for colonization by invasive exotic plant species. The use of roads by vehicles, machinery, or humans often aids the spread of exotic plant seeds. Once established, they can have long-term impacts on surrounding ecosystems and can be difficult to remove." "Roads are known to cause habitat fragmentation. Many create ecological 'edges' with different plant species, light levels, and hiding cover, all of which may alter animal survival, reproductive success, and movement patterns. The introduction of exotic plants can disrupt the availability of native vegetation used by wildlife for food and shelter (Trombulak and Frissell 1999)." "Forest roads often develop a water-repellent soil layer caused by lack of vegetative cover and changes in soil composition. This can substantially influence how runoff is processed. Erosion, the formation of water channels beside the road, and increased sediment loads in nearby streams are common results of this process (Baker 2003)." "Because they provide easier access to many forest tracts, forest roads often allow more human-caused fires to be ignited." Lowe, Kimberly Ph.D.,"Restoring Forest Roads." A Northern Arizona University Ecological Restoration Institute publication Working Paper 12. June, 2005. http://www.eri.nau.edu/en/information-for-practitioners/restoring-forest-roads [80-30]

Concern: [Seq#915]

Road Construction Opposing View #34 -

"A study was made on 344 miles of logging roads in northwestern California to assess sources of erosion and the extent to which road-related erosion is avoidable. At most, about 24 percent of the erosion measured on the logging roads could have been prevented by conventional engineering methods. The remaining 76 percent was caused by site conditions and choice of alignment. On 30,300 acres of commercial timberland, an estimated 40 percent of the total erosion associated with management of the area was found to have been derived from the road system."

McCashion, J. D. and R. M. Rice Ph.D. 1983.

"Erosion on logging

roads in northwestern California: How much is avoidable?"

Journal of Forestry

8(1): 23-26.

http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf [ID#953]

Response: [Seq#915]

Thanks for your comment. There are road treatments proposed to prevent the sort of thing you describe. I would suggest reading the Soil and the Aquatics/Hydrology Resource Reports, in project files, for a detailed discussion. Also please refer to Sections 3.3, Water Resources, and 3.4, Soils, in the Revised Preliminary EA.

This 30 year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proven to provide superior reductions in sediment delivery to streams. Papers like this are useful in that they formed the basis for the modern Best Management Practices utilized today.

[ID#953]

Associated Comments: [Seq#915]

Road Construction Opposing View #34 - "A study was made on 344 miles of logging roads in northwestern California to assess sources of erosion and the extent to which road-related erosion is avoidable. At most, about 24 percent of the erosion measured on the logging roads could have been prevented by conventional engineering methods. The remaining 76 percent was caused by site conditions and choice of alignment. On 30,300 acres of commercial timberland, an estimated 40 percent of the total erosion associated with management of the area was found to have been derived from the road system." McCashion, J. D. and R. M. Rice Ph.D. 1983. "Erosion on logging roads in northwestern California: How much is avoidable?" Journal of Forestry 8(1): 23-26. http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf [80-34]

Concern: [Seq#916]

Road Construction Opposing View #50 -

"Roads are often the major source of soil erosion from forested lands (Patric 1976)."

"Generally, soil loss is greatest during and immediately after construction."

Swift Jr., L. W.

"Soil losses from roadbeds and cut and fill

slopes in the Southern Appalachian Mountains."

Southern Journal of Applied Forestry

8: 209-216. 1984.

http://cwt33.ecology.uga.edu/publications/403.pdf [ID#954]
Response: [Seq#916]

There are no new roads being proposed. Please see the Soils and Aquatics/Hydrology Resource Reports, in project files, for an existing roads discussion and the impacts to the project area. Also review Sections 3.3, Water Resources, and 3.4, Soils, in the Revised Preliminary EA.

This opposing view is of the same nature and scope as previous opposing view found elsewhere in the Concerns/Responses in CARA. The concepts discussed in the opposing view are all well understood by the Interdisciplinary Team and were considered in the environmental effects analysis in the resource sections of Chapter 3 of the EA. Please also see the response to opposing views #3, #4, #5, and #18 (Concern/Response 939, 913, 915 and 943).

[ID#954]
Associated Comments: [Seq#916]
Road Construction Opposing View #50 - "Roads are often the major source of soil erosion from forested lands (Patric 1976)." "Generally, soil loss is greatest during and immediately after construction." Swift Jr., L. W. "Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains." Southern Journal of Applied Forestry 8: 209-216. 1984. http://cwt33.ecology.uga.edu/publications/403.pdf [80-50]

Concern: [Seq#917]

Road Construction Opposing View #25 -

"Last winter was unusually wet in the Pacific Northwest. The result was landslides all over caused by logging roads; five people died, spawning streams were ruined, water supplies were contaminated and the flooding was tremendously aggravated. According to David Bayles, conservation director of the Pacific Rivers Council, aerial surveys documented more than 650 landslides in February in Washington and Oregon alone. The stupidest and most dangerous practice is allowing logging roads on steep slopes — that's really asking for it.

You may ask yourself why the taxpayers are expected to pony up to build roads for profitable logging companies. Build roads for the timber companies in order to stimulate the U.S. logging, paper and building industries. There's just one problem. A lot of U.S. logs get shipped overseas, mostly to Japan. We're actually subsidizing Japanese companies while doing terrible damage to our environment and not helping the U.S. job scene much except when it comes to cutting

Start with the assumption that the U.S. Forest Service a component of the Department of Agriculture, is simply an auxiliary branch of the timber industry and you'll pretty much have the picture of what's going on. Last winter, the Forest Service refused a bid at a timber auction from an environmentalist who wanted to save, not harvest, a stand of evergreens in the Okanogan National Forest in Washington. Instead, the Forest Service accepted a bid of $15,000 from a logging company that cut 3.5 million board-feet of lumber in that stand. Try to find a price like that at Home Depot."

Ivins, Molly,

Creators Syndicate, August 3 1997 08 03

http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html

[ID#955]

Response: [Seq#917]

The geomorphology and climate of western Washington and Oregon is different from that of the Mission Restoration Project area. Most important to note, however is the fact that high rates of slope instability were not observed during field investigation of the Mission Restoration Project area, refer to Section 3.4, Soils, of the Revised Preliminary EA.

As to exporting logs overseas, 36 CFR 223.188 (Prohibitions against exporting unprocessed Federal timber) specifically prohibits the exporting of unprocessed federal timber:

No person who acquires unprocessed timber originating from Federal lands west of the 100th meridian in the contiguous 48 States may export such timber from the United States, or sell, trade, exchange, or otherwise convey such timber from the United States, or sell, trade, or exchange, or otherwise convey such timber to any other person for the purpose of exporting such timber from the United States. This prohibition does not apply to specific quantities of grades and species of such unprocessed Federal timber that the Secretary of Agriculture determines to be surplus to domestic manufacturing needs.

The environmentalist who bid on a timber sale on the Okanogan National Forest defaulted on the contract when he was not able to comply with the terms of the contract.

[ID#955]

Associated Comments: [Seq#917]

Road Construction Opposing View #25 - "Last winter was unusually wet in the Pacific Northwest. The result was landslides all over caused by logging roads; five people died, spawning streams were ruined, water supplies were contaminated and the flooding was tremendously aggravated. According to David Bayles, conservation director of the Pacific Rivers Council, aerial surveys documented more than 650 landslides in February in Washington and Oregon alone. The stupidest and most dangerous practice is allowing logging roads on steep slopes — that's really asking for it. You may ask yourself why the taxpayers are expected to pony up to build roads for profitable logging companies. Build roads for the timber companies in order to stimulate the U.S. logging, paper and building industries. There's just one problem. A lot of U.S. logs get shipped overseas, mostly to Japan. We're actually subsidizing Japanese companies while doing terrible damage to our environment and not helping the U.S. job scene much except when it comes to cutting Start with the assumption that the U.S. Forest Service a component of the Department of Agriculture, is simply an auxiliary branch of the timber industry and you'll pretty much have the picture of what's going on. Last winter, the Forest Service refused a bid at a timber auction from an environmentalist who wanted to save, not harvest, a stand of evergreens in the Okanogan National Forest in Washington. Instead, the Forest Service accepted a bid of $15,000 from a logging company that cut 3.5 million board-feet of lumber in that stand. Try to find a price like that at Home Depot." Ivins, Molly Creators Syndicate, August 3 1997 08 03 http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html [80-25]

Concern: [Seq#918]

Fear of fire is used by the USFS for their own gains.

If the residents of the Methow are so afraid of fire and lack understanding that the forest needs fire as an integral part of forest ecology then the MRP will look like a good idea. But it's not.

[ID#956]

Response: [Seq#918]

No basis is provided by the commenter for the claim that "fear of fire is being used by the USFS for their own gains". The EA recognizes the role of fire in the landscapes within the project area (p. 140-141, Revised Preliminary EA). Several comments received for this project and similar thinning projects from residents, fire ecologists, and organizations including Conservation Northwest, North Central Washington Forest Health Collaborative (comprised of Tribal, Forest Service, Environmental groups, forest industry representatives, and others) recognize the ecological role of fire in the forested landscapes within the project area and the greater Methow Valley, and express support for the proposed action. The Revised Preliminary EA describes the purpose & need for proposed action (p. 4-6), effects of taking no action (Chapter 3, various locations in resource reports under heading "Alternative 2 - No Action"), and effects of taking the proposed actions are described in the EA (Chapter 3, various locations in resource reports under heading "Alternatives 2 and 3 - Proposed Action Effects Common to Both Action Alternatives or to Alternative 2 Only"). The effects of taking no action with respect to fire behavior are based on modeled fire behavior specific to the project area's fuels, topography, and typical weather patterns, and are described in terms of risks and effects (p. 133-139, Revised Preliminary EA). [ID#956]

Associated Comments: [Seq#918]

* Fear of fire is used by the USFS for their own gains. If the residents of the Methow are so afraid of fire and lack understanding that the forest needs fire as an integral part of forest ecology then the MRP will look like a good idea. But it's not. [67-30]