Forest Health

Sierra Club/Alliance for the Wild Rockies

Objectors contend:

1. The FEIS states higher fuel levels and tree mortality has amplified the severity of forest fires. This conflicts with scientific evidence that weather conditions are what govern the behavior of fires affecting the most forest acreage on an annual basis.

The wildfire behavior triangle demonstrates that there is a strong relationship between weather, fuels, and topography that governs wildfire behavior. The FEIS acknowledges that fuel is a partial component of severity (FEIS at page 465 and others). Fire severity is defined in the FEIS as, "The degree to which a site has been altered or disrupted by fire. A product of fire intensity, fuel consumption, and residence time." Intensity, fuel consumption, and residence time are all partially controlled by characteristics of the fuels (FEIS at page 864).

2. The LMP provides no way of measuring the resilience of ecosystems or how projects might influence forest ecosystem resilience. FS also discusses ecosystem resilience as a product of forest management (as opposed to it being a naturally occurring condition), which the objector rejects.

The desired condition for vegetation (FW-DC-VEG-03) promotes forest resilience and compatibility with maintaining characteristic disturbance processes such as wildland fire, insects and diseases. The proposed Forest Plan provides a monitoring program for tracking conditions on the Forest to ensure forest conditions are improving. Forest management is used to attain the desired conditions. Treatments can include timber harvest, fuels treatments, and prescribed burning. Under preferred alternative (P) there would be a 17 percent increase in recommended wilderness, where forest management is restricted.

3. The FEIS states that the Desired Conditions for vegetation are designed around the Historic Range of Variability (HRV). Since climate change scenarios indicate changes to temperature, weather patterns, and precipitation that differ from the "historical disturbance regimes", it does not make sense for the LMP to rely on static Desired Conditions to "increase resilience against climate change."

Science indicates promoting ecological processes and diversity in vegetation composition and structure, as in the proposed plan, is also likely to lead to ecosystems more adapted to climate change and improved forest resilience (Millar et al. 2007, DeRose and Long 2014). According to Keane et al. 2009, moving forest structure across the landscape toward HRV is one way to increase resilience for managing lands where future climate is uncertain. Note that the proposed plan also provides additional flexibility in responding to climate change impacts by having management areas that allow a variety of management options to address unforeseen impacts, including climate change.

4. The LMP and FEIS fail to cite any scientific study or dataset the agency used to set desired condition for forest structure (HRV) percentages. Other vegetation Desired Conditions have no basis in sound science or reliable data (e.g., Table 6, Table 7, Table 8). This violates NEPA's requirements for scientific integrity.

Vegetation Desired Conditions are supported by science. Several recent studies in the geographic area have used the same structure class definitions that are used in the plan, and the Nature Conservancy, as well as the R6 have used these definitions. Vegetation data products that are used for analysis and monitoring in the revised plan (such as GNN, LiDAR, etc) also use these structure classes. Barrett et al.

(2010) and Haugo et al. (2015) used a similar approach to defining structure classes, and the GNN data (2012) defines structure classes this way (reference info below).

Haugo, R., Chris Zanger, Tom DeMeo, Chris Ringo, Ayn Shlisky, Kori Blankenship, Mike Simpson, Kim Mellen-McLean, Jane Kertis, Mark Stern. 2015. A new approach to evaluate forest structure restoration needs across Oregon and Washington, USA. Forest Ecology and Management, Volume 335.

Barrett, S., Havlina, D., Jones, J., Hann, W.J., Frame, C., Hamilton, D., Schon, K., DeMeo,T., Hutter, L., Menakis, J., 2010. Interagency Fire Regime Condition Class (FRCC) Guidebook, version 3.0. In: USDA Forest Service, US Department of the Interior, and The Nature Conservancy. <http://www.frcc.gov/>.

GNN data webpage: https://lemma.forestry.oregonstate.edu/data/structure-maps

5. The FEIS fails to acknowledge that mixed-severity and even low-severity fire regimes result in variable stand conditions across the landscape through time.

Resulting variable stand conditions are a fact derived from the type of wildland fire regime. Mixed and low severity wildfires do result in variable conditions. The FEIS discusses this in the section about vegetation historical range of variability (FEIS pages 92 to 94). Even the stands dominated by stand-replacement fire regimes exhibit degrees of stand variability.

6. Assumptions that drier forests do not experience stand-replacing fires, that fire regimes are frequent and nonlethal, that these stands are open and dominated by large well-spaced trees, and that fuel amounts determine fire severity (the false thinning hypothesis that fails to recognize climate as the overwhelming main driver of fire intensity) are not supported by science (see for example Baker and Williams 2015, Williams and Baker 2014, Baker et al. 2006, Pierce et al. 2004, Baker and Ehle 2001, Sherriff et al. 2014; see objection 8-87).

The FEIS discusses current and historical conditions in the section about vegetation historical range of variability (FEIS pages 92 to 94). A large degree of variability is acknowledged. As discussed above, fuel is an important component of fire severity. The distinctions between fire behavior, fire severity, and fire intensity are explained in the FEIS glossary starting at page 857.

"Climate" is never a "driver" of fire intensity. Fire intensity is a general term relating to the heat energy released by a fire. Fire intensity is a function of (1) the heat yield of fuel \, (2) amount of fuel per unit area and (3) the rate of forward spread of fire front.

7. The assumption that fuel treatments under the LMP will result in predictable wildland fire effects is of considerable scientific doubt (Rhodes and Baker, 2008).

That assumption does not appear to be part of the LMP or the FEIS. However the LMP and the FEIS do disclose the relationship between fire regimes and wildfire effects. While not "predictable" a clear trend is evident that reduced hazardous fuel and more frequent wildland fire can moderate wildfire impacts in some fire regimes (FEIS at pages 136, 143, 178-9, 317, 432, and several of the research documents in the references).

8. The LMP demonizes the natural agents and processes of tree mortality (see objection 8-87). Minimizing these effects, a priority stated in the LMP, is inconsistent with best available science.

Treatments that establish and maintain disease-tolerant, site-suited tree species can reduce losses and are the most cost efficient means of overcoming root disease. Root disease prevention reduces establishment is sound practice that has been conducted for many decades. Once established these pathogens persist for

decades in the roots of stumps and dead trees in the stand. If left unchecked, they represent a long term threat to natural regeneration and planted seedlings. Forest management practices affect root disease spread and intensification. Repeated partial harvests and sanitation-salvage cutting can result in severe losses, even the loss of the site for timber production. In developed recreation areas, root diseases reduce site desirability by killing trees and making them hazardous to people and property.

Prudent treatment of dwarf mistletoe can increase long-term productivity. Management decisions should be based on the specific needs and objectives for each area, but within a framework that considers the overall landscape and forest condition. Extent of damage caused by mistletoe depends on severity of infection, site quality, stand density, and forest structure. Losses tend to be greatest in stands that are infected early. Seedlings and saplings weakened by branch infections cannot compete with healthy trees, and those with stem infections usually die. Mistletoes are an example of where you can have too much of a good thing. Where possible, it is nice to consider the benefits of mistletoe, but when necessary, management can be the key to successful management as a balanced approach. (FEIS Volume 1, pp. 96)

Thus, we do not see a problem in legally managing root disease or dwarf mistletoe to improve forest health.

9. The FEIS does not disclose the limitations of its vegetation models, which is required by NEPA.

On page 97-98 of the FEIS there is a section where the methodology of using a state and transition model is discussed, with a short paragraph describing how models are only an approximation of complex systems. This paragraph includes a reference to Turner et al. 2001 which has an in-depth discussion of state and transition modeling limitations. Appendix G (page 1277) describes the modeling in more depth with descriptions of the parameters used and other information that was fed into the model. Turner reference is "Turner, M. G., R. H. Gardner, and R. V. O'Neill. 2001. Landscape Ecology in Theory and Practice. New York: Springer-Verlag. 401 p."

10. There is no indication that the vegetation type categories or the structure class definitions used in the FEIS are, scientifically speaking, valid for the purposes for which the Forest Service employs them.

Vegetation Desired Conditions are supported by science. Several recent studies in the geographic area have used the same structure class definitions that are used in the plan, and the Nature Conservancy, as well as the R6 have used these definitions. Vegetation data products that are used for analysis and monitoring in the revised plan (such as GNN, LiDAR, etc) also use these structure classes. Barrett et al. (2010) and Haugo et al. (2015) used a similar approach to defining structure classes, and the GNN data (2012) defines structure classes this way (reference info below).

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11. The LMP's Desired Conditions are based on vegetation models that have not been examined for reliability, validity, or limitations, and do not consider the potential impact of climate change.

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The FEIS contradicts itself. In some places it indicates that large trees in the Eastside Screens can only be managed by fire, while in other places it indicates they can be cut to achieve management objectives.

12. Alternative R in the FEIS prioritizes cutting as a management alternative, giving timber interests special privilege (see objection 8-88).

In the revised Colville Land Management Plan the Eastside Screens are replaced through desired conditions (FW-DC-VEG-03) that generally guides the forest towards larger size classes across the forest, and there is a large tree management guideline (FW-GDL-VEG-03) that gives the Forest a set of criteria for removing larger trees. ~~Thus, comments on the Eastside Screens is not as important.~~

13. The objector is wrong saying that the FEIS contradicts itself. Large trees can be managed by fire in some places, and in other places they can be cut to achieve management objectives.

Alternative R in the FEIS is not the preferred alternative. Preferred alternative is P.

14. LMP prescribes management treatments without adequately demonstrating that the treatment effects would mimic the landscape pattern or reference conditions. Ultimately, the LMP has very limited data to describe the reference condition of landscapes.

The effects of prescribed management treatments may or may not result in the reference conditions. That is why monitoring is essential for tracking conditions on the Forest compared to reference conditions. Reference conditions may characterize the "best available" and perhaps the "best attainable" conditions based on current data and information, they do not necessarily represent "natural" or "pristine" conditions.

15. The CNF does not use scientifically-validated or peer reviewed metrics to describe the complex landscape pattern created by fire. The CNF therefore cannot make assurances that its management actions will result in habitat conditions that promote wildlife viability and adequately compensate for the adverse effects of proposed mechanical treatments.

The CNF LMP is a proposal to manage for a diverse mix of conditions across the landscapes. Those conditions are disclosed in the Desired Conditions portion of the LMP. The pattern of those conditions across the landscape will largely be the result of site-specific analysis and documentation. Undoubtedly this pattern will shift and change over time.

16. By prioritizing Desired Conditions for vegetation, the LMP fails to factor in many other components of the landscape that have highly adverse effects on the landscape, including:
    a. Road density
    b. Noxious weed occurrence
    c. Miles of long-term stream channel degradation ("press" disturbance) zero Culverts

d. Human-induced detrimental soil conditions <1%
e. Maximum daily decibel level of motorized devices zero Acres of significantly below HRV snag levels for many decades [8-89]

Desired conditions are not only for vegetation but also for road densities, snag habitat, and livestock grazing. The desired structure and diversity of native herbaceous plant communities are maintained or enhanced through proper livestock management principles. Plant communities with no invasive plant species are desired as they are resilient to disturbance events. Rangelands with significant non-native plant components have stable or improving soil stability.

17. Over the 15-year life of the revised LMP, only 180,000 acres would be manipulated by active management. The FEIS fails to disclose the impact that would result from so little acreage meeting desired conditions (which elsewhere are described as being achieved through active management).

The vegetation objective (FW-OBJ-VEG-01) calls for initiating management on 6,000-12,000 acres per year over the next 15 years. The objective was influenced by the budget and staffing, and was based on averages over the past 15 years. The number could be exceeded if staffing and budget were to increase.

18. The natural process category "catastrophe" in FW-STD-VEG-04 is undefined.

Use of "Catastrophe" in FW-STD-VEG-04 is consistent with NFMA. NFMA limits clearcutting and other even-aged harvest to situations where:

(iv) there are established according to geographic areas, forest types, or other suitable classifications the maximum size limits for areas to be cut in one harvest operation, including provision to exceed the established limits after appropriate public notice and review by the responsible Forest Service officer one level above the Forest Service officer who normally would approve the harvest proposal: Provided, That such limits shall not apply to the size of areas harvested as a result of **natural catastrophic conditions** such as fire, insect and disease attack, or windstorm.

Definition is not necessary.

The objector misunderstands the standard. FW-STD-VEG-04 relates an NFMA requirement limiting the use of regeneration harvest openings greater than 60 acres. The second sentence in the standard means that openings larger than 60 acres created by wildfire, insects and disease, or windthrow, which may be managed with tree salvage, are not subject to the NFMA requirement.

CONCLUSION: There is no problem in legally managing root disease or dwarf mistletoe to improve forest health. The objector states lack of science to support this position, both diseases have solid scientific standing upon from which to manage.

The plan decision is compliant with law, regulation and policy.