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RE: Comments on Amendments to Land Management Plans to Address Old-Growth Forests Across the National Forest System, Draft Environmental Impact Statement

I appreciate the opportunity to comment on the draft environmental impact statement (DEIS) for the Old-Growth Forest Amendment to the USFS NW Forest Plan 2024. I'm a retired environmental engineer and was a registered professional engineer who worked with cities and utilities on planning and design of clean water and climate change related projects during my 30-year career. Preparing EIS's and SEPA documents were part of that work. I was part of the modeling team for the Jefferson County, Washington, Forests and Trees Greenhouse Gas Inventory for 2001-2016 and Next Steps[1], approved 2022. I am commenting here as a private citizen.

Although my comments reference primarily the DEIS, it is assumed that the Forest Service will make the appropriate changes to other documents within the USFS Forest Plan as appropriate to support the revised DEIS for the Old-Growth Forest Amendment. Following are my comments on the DEIS:

1) Section 23001 of the Inflation Reduction Act[2], passed by Congress in 2022, designates $50 million "for the protection of old-growth forests on National Forest System land and to complete an inventory of old-growth forests and mature forests within the National Forest System." Executive Order 14072[3] specifically states, "forests play an irreplaceable role in reaching net-zero greenhouse gas emissions."; and, requires "conservation strategies that address threats to mature and old-growth forests."
2) There is insufficient protection for mature and old-growth forests in the proposed DEIS and amendments, and there are phrases throughout that would allow harvests for various reasons. The Forest Service sites commercial timber industry pseudoscience and disinformation, and in this DEIS and amendments allows timber harvest, even to "enhance old growth forest conditions", calling it "proactive stewardship,". The concensus of scientific findings does not support the use of commercial logging in any form to promote the composition, structure, pattern, or ecological processes necessary for old-growth forests to be resilient and adaptable to stressors and likely future environments. Rather, the peer-reviewed scientific literature suggests that commercial logging, by compacting soils, fragmenting and removing habitat, destroying native

species and introducing invasive species, increasing wildfire risk and driving climate change will make the goal of replenishing and sustaining climate-resilient older forests to the landscape increasingly difficult.

3) Climate impacts from greenhouse gas (GHG) emissions from projected future harvests have not been included, or even mentioned in this DEIS analysis. Climate impacts from GHG removals from leaving as much old-growth area untouched as possible has also not been included. A GHG inventory should be performed in order to provide a baseline level of carbon storage and carbon flux. This baseline GHG inventory can be compared to future carbon storage and flux in order to see the outcomes of USFS management strategies and make adjustments as needed. Tools exist to model or otherwise calculate GHG emissions and removals for this GHG inventory. Revisions to this DEIS should include this GHG inventory analysis and impacts, specifically:

    a. A GHG inventory should be prepared for each Alternative, including modeling/calculation of GHG emissions resulting from harvests, from vehicles and heavy equipment used to build logging roads, haul cut timber and associated activities; and modeling/calculation of GHG removals from old-growth areas left untouched, growing (increasing removals) for the inventory period.

    b. Monetize climate damages using the social cost of carbon, and include the monetized damages in the comparison of alternatives, and in future Plan Monitoring described in Table 1 (see below comment).

    c. P. 35, 51, Table 1, Plan Monitoring 1 (NOGW-FW-PM-01). Periodically incorporate the updated GHG inventory into the Adaptive Strategy for Old-Growth Forest Conservation, when it is "updated as conditions change." The GHG inventory is an excellent metric for monitoring.

    d. Address impacts to clean water, streamflow and water supply. Significant GHG emissions will, over time, continue to contribute to reduced snowfall, quicker snowmelt, higher spring runoff events with dwindling water supply in late summer and fall. This is of particular concern to those in many communities where we are already feeling pressure from development and a finite water supply that is stressed from late summer to fall.

    e. Address impacts to wildfire. As the atmosphere warms, soil moisture content decreases and all lands become more susceptible to wildfire.

    f. Other climate impacts may be more difficult to quantify, but at least should be mentioned in the revised document. These include contributions to sea level rise, increases in invasive species, increased incidence of intense heat events and others.

4) P. 19, 37. It appears that Table 1 is duplicated and the duplicate portion starts on p. 37.

5) P. 28, 45. Table 1, Standard 1 (NOGA-FW-STD-01). This standard discusses definitions and associated criteria for old-growth forests. Since the definition of old-growth forests is not common to all USFS districts or areas, please consider adding to the definition of

Old-Growth as 'forested stands or areas established before 1945'. Industrial scale logging began post-World War II. Forest harvests prior to 1945 were performed using non-mechanized methods, leaving many old, non-conforming (misshapen) trees and understory. The forests harvested before 1945 have regenerated to meet the definition of Mature and Old Growth forests, and they have valuable high-carbon reserves. This edit to Table 1 should be incorporated in the Land Management Plan documentation and other documents as needed.

6) P. 29, 46, Table 1, Standard 2.a (NOGA-FW-STD-02a). Delete all references to timber harvest, which should not be allowed under Alternative 2.

7) P. 30, 47, Table 1, Standard 2.b (NOGA-FW-STD-02b). Delete this standard. Cutting or removal of trees should not be allowed under Alternative 2.

8) P. 59. Carbon. Add a goal statement, "Atmospheric carbon removals and storage are a primary goal of this Amendment and DEIS." This is because old-growth forests are superb at doing this. As Executive Order 14072[3] states, "forests play an irreplaceable role in reaching net-zero greenhouse gas emissions.".

9) p. 75-76. Carbon. This section is rife with commercial timber pseudoscience. Please edit and correct this section to include the following:

    a. The last half of the first paragraph, which begins, "Many management activities…" is based on pseudoscience that promotes the false notion that removing carbon from forests through logging will increase forest carbon storage (DEIS, pp. 75-76; DEIS Ecological Impacts Analysis, p. 44). In a letter to Congress signed by hundreds of climate scientists, these false claims are debunked (with peer-reviewed science documentation).[4]

    b. Regarding use of wood for energy production, please note that emissions from burning wood are higher than for burning coal.[4,5]

    c. The Jefferson County, Washington, Forests and Trees Greenhouse Gas Inventory for 2001-2016 and Next Steps[1] shows data and calculations indicating that 21% of forest carbon removed during harvest is stored long-term in harvested wood products.

    d. *Land use strategies to mitigate climate change in carbon dense temperate forests*[6], includes Figure 2 which shows harvest emissions (including those associated with wood products and bioenergy) to be significantly higher than fire emissions (from data collected in Oregon, for 2001-2005, 2006-2010, and 2011-2015 periods). See also *Supporting Information* link provided at the end of the *Land use strategies* document.

        i. "The net wood product emissions are higher than fire emissions despite carbon benefits of storage in wood products and substitution for more fossil fuel-intensive products."[6] This is also supported by Reference 4 and others.

ii. "Increasing forest carbon on public lands reduced emissions compared with storage in wood products because the residence time is more than twice that of wood products."[6]

iii. "Wood bioenergy production is interpreted as being carbon-neutral by assuming that trees regrow to replace those that burned. However, this does not account for reduced forest carbon stocks that took decades to centuries to sequester, degraded productive capacity, emissions from transportation and the production process, and biogenic/direct emissions at the facility"[6,7]. "Increased harvest through proposed thinning practices in the region has been shown to elevate emissions for decades to centuries regardless of product end use"[6,8]. "It is therefore unlikely that increased wood bioenergy production in this region would decrease overall forest sector emissions."[6]

e. This section, entitled Carbon, should state that setting aside increased acreage of old-growth forest to remain undisturbed by grazing or harvests, will increase atmospheric carbon removals significantly through mid- to late-century. There is no better carbon sequestration method than these large old trees, which require no construction or maintenance.

f. The DEIS Draft Ecological Impacts Analysis Report, June 2024, contains two sections - 7.4.2 Forest Management for Carbon Optimization, and 7.4.3 Carbon in Harvested Wood Products, which need to be heavily edited to reflect the above accurate information.

10) P. 87. The DEIS references, "public uses of resources on National Forest System lands (such as grazing and forest product use)…". Grazing and forest product use are performed by special interests-private business/industry-who profit from using our *public* lands in this damaging way. Please delete the language in parentheses in this sentence. Please remove any language allowing grazing and timber harvests on old-growth areas from this and related documents.

11) P. 98-102. Ecological Consequences Common to All Alternatives. Incorporate results of GHG inventory described above into this writeup.

12) P. 103. Alternative 2, last sentence. This alternative should not include commercial timber harvest activities in old-growth areas. Please delete language throughout that allows this.

13) P. 103-105. Alternative 2 and 3. Second paragraph, NOGA-FW-STD-02b. "NOGA-FW-STD-02b allows for the cutting or removal of trees in old-growth forests…The development of infrastructure or recreation opportunities on or through NFS lands such as pipelines, transmission lines, roads, or ski area runs in which incidental tree cutting or removing is determined to be necessary or appropriate." References to NOGA-FW-STD-02b should be deleted for Alternatives 2 and 3. Old-growth trees should not be cut or harvested. Infrastructure of this type does not belong in an old growth area and trees

should not be cut to accommodate it. The goal here should be optimizing (maximizing) atmospheric carbon removals and storage.

14) P. 109 Effects common to all action alternatives. Fourth paragraph. All action alternatives include NOGA-FW-STD-01, which directs how units will define old-growth and determines where old-growth specific plan components apply. See comment No. 5 above.

15) P. 127-28. 3.3.5. Other Considerations and Effects.

    a. Unavoidable Adverse Environmental Effects states, "No unavoidable, adverse environmental effects…" This is false as this DEIS currently stands. Please delete NOGA-FW-STD-02b from Alternatives 2 and 3; run the GHG Inventory recommended above and rewrite this section. Cutting or removal of trees results in GHG emissions, and it should be a primary goal of this Amendment and EIS to optimize carbon uptake and storage. See comment No. 8 above.

    b. Natural or Depletable Resource Requirements. The last sentence of the first paragraph should be changed as follows, "In addition, there *may* ~~will~~ be ~~no~~ change*s* in ASQ, PTSQ or land suitability *required in order to protect increased acreage of old-growth* as a result of the amendment." The second paragraph should be edited to reflect the fact that in order to protect old-growth ecosystems, livestock grazing should be prohibited. "…logging and livestock grazing have increased tree densities and risk of high-severity fires…"[9]

I hope you find these comments helpful in editing and finalizing the DEIS. Please consider this more scientifically sound direction that supports public health and the environment.

Sincerely,

Cynthia L. Bratz

References

1. Jefferson County, Washington, Forests and Trees Greenhouse Gas Inventory for 2001-2016 and Next Steps, 2022
2. IRA Section 23001(3).
3. The White House Briefing Room, April 22, 2022, Executive Order on Strengthening the Nation's Forests, communities and Local Economies. Section 2. Restoring and Conserving the Nation's Forests, Including Mature and Old-Growth Forests. c.iii
4. Letter to Congress from Scientists concerned about climate and biodiversity impact of logging, 13 May 2020 https://johnmuirproject.org/wp-content/uploads/2020/05/200TopClimateScientistCongressProtectForestsForClimateChange13May20.pdf
5. J. Fanous and W. Moomaw, A Critical Look at Forest Bioenergy, Global Development and Environment Institute at Tufts University (2018)
6. B. E. Law, T. Hudiburg, L. Berner, J. Kent, P. Buotte, M.E. Harmon, Land use strategies to mitigate climate change in carbon dense temperate forests, PNAS (2018)
7. JS Gunn, DJ Ganz, WS Keeton, Biogenic vs. geologic carbon emissions and forest biomass energy production. *GCB Bioenergy* **4**, 239–242 (2011).
8. TW Hudiburg, BE Law, C Wirth, S Luyssaert, Regional carbon dioxide implications of forest bioenergy production. *Nat Clim Chang* **1**, 419–423 (2011).
9. W.L. Baker, T.T. Veblen, R.L. Sherriff. Fire, Fuels and Restoration of Ponderosa Pine-Douglas fir Forests in the Rocky Mountains, USA. J. Biogeogr. 34, 251-269. (2007)