COMMENTS ON NOTICE OF INTENT (NOI) TO AMEND REGION 5 AND 6 FOREST PLANS UNDER THE NORTHWEST FOREST PLAN AMENDMENT #64745 (88 FR 87393)

Comments from Cynthia L. Bratz, Port Townsend, Washington
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For background, I am a retired Professional Engineer (formerly registered in WA, OR and ID, retired in 2021) with 30 years of experience in water and air pollution prevention projects, mostly for cities and utilities. I have worked on several climate action plans, including the implementation phase, both as a working PE and now in retirement. I understand that maximizing forest carbon sequestration in northwest Washington is an essential form of climate mitigation (our forests are some of the world's most carbon dense, if not ***the*** most) and would like to see the NW Forest Plan amended to reflect this.

I have reviewed comments by Wild Heritage prepared and submitted by Dr. Dominick DellaSala (Chief Scientist, Wild Heritage, Project of Earth Island Institute) et al, on the above referenced NOI. I agree with them in their entirety and urge you to review them deliberately, incorporate their comments, and use their comments to amend and facilitate future policy and guidance for the Northwest Forest Plan. I noted nearly a year ago, from a statement the IPCC included in their Synthesis Report Summary for Policy Makers, "There is a rapidly closing window of opportunity to secure a livable and sustainable future for all (*very high confidence*)." I am asking you to shift your policy to facilitate the highest possible forest carbon sequestration rate, as soon as possible.

In addition to the below Wild Heritage comments, I'll add one more comment: that the USFS Northwest Region subcontract with a forest climate researcher/expert on retainer, to act as a consultant on an as-needed basis – an outside, objective expert. USFS NW Region budget should accommodate the expert subconsultant on a long-term basis, with the subcontract periodically renewable (to allow for adding or changing experts, if needed). Tasks this expert might assist with could include 1) reviewing/commenting on plans, attending kickoff meetings and preliminary activities to ensure that steps are taken in the planned direction (during implementation, after the NWFP amendments are complete); 2) answering questions and providing direction when requested; 3) mentoring key personnel and 4) other essential tasks that only a forest climate research expert could perform. The comments herein will take the USFS in the direction of climate stewardship, and this new direction may require additional expertise to kick-start it, and to keep it on track (although I know that the USFS *does* have climate expertise). There is considerable misinformation regarding forest carbon management, and having a forest climate research/expert available on-call may help keep your work efficient and on track.

I have copied below the first pages of the Wild Heritage comments, so that you can easily locate the complete document (comments) and add my name to those supporting the comments in their entirety. I understand that many knowledgeable persons and organizations have already signed on to these comments. Here are these first pages:

> "We submit these detailed scoping comments regarding the NOI to amend the Northwest Forest Plan (NWFP). Please note hyperlinks to the published materials are for some 113 pdfs when available to download from open access sources. In other cases, publications

have a paywall protection and can only access the abstracts. Our comments are all science-based and focus mainly on underscoring:

(1) Unique ecosystem and carbon accrual benefits from the limitations on logging under the NWFP, a global model in ecosystem management and biodiversity conservation.
(2) Best available science supports the expansion of the reserve network and is consistent with the 2012 planning rule emphasis on science and ecosystem integrity.
(3) Mixed-severity fires and other natural disturbances are key ecosystem processes in maintaining the ecological integrity of forest ecosystems. They should not be grouped together as "threats" with timber harvest given they yield completely different disturbance dynamics, successional trajectories, and impacts to biodiversity and carbon sequestration and storage.
(4) A conservation alternative that builds on the success of NWFP by: (a) additions the reserve network; (b) compliance with the President's Executive Order (EO 14008) on protecting 30% of the nation's lands and waters by 2030 (i.e. 30 x 30); (c) the Paris Climate Agreement emphasis on maintaining carbon sinks and reservoirs; (d) the Glasgow Forest Pledge (signed by President Biden) to end deforestation and forest **degradation;** and (e) the Presidential Executive Order 14072 on conservation of mature and old-growth (MOG) forests.

We note that the following "active management" approaches are but a sample of the **numerous threats to MOG and other ecosystems that degrade their integrity** (we request you acknowledge them):

- Post-disturbance "salvage" and clearcut logging.
- Thinning and selective removal of large (>20 in dbh) trees; thinning that dries out understories, increases wind penetration within stands, and enables invasive species; thinning that type converts closed canopy forests to "park-like" open savannahs; thinning in spotted owl habitat.
- Pile burning that damages soil horizons and mycorrhizae connectivity, thereby facilitating weed invasions.
- All forms of logging/thinning for biomass utilization.
- All forms of road building (temporary or permanent).
- ORVs, mining, and livestock grazing.

All of these threats are typical within the NWFP area, often on the same sites, leading to cumulative degradation of forest ecosystems, loss of integrity, and greatly compromised resilience to climate change. They are much more consequential to forest ecosystems than natural disturbances even as rates of logging have declined on federal lands under the NWFP. The "echo" (residual) of- and ongoing impacts from logging continue to delay ecosystem recovery rates that depart from the 100-year timeline of the NWFP. Eliminating these threats within MOG is the only actual threat abatement that can be accomplished, given limitations regarding the ability to effectively mitigate natural

disturbance process that are beyond your control and are especially damaging to ecosystem processes, as described below.

While the NOI cites both Executive Orders (EO) 14008 ("Tackling the Climate Crisis at Home and Abroad" - i.e., 30 x 30) and 14072 ("Strengthening the Nation's forests, communities, and local Economies"- i.e., the national MOG inventory for "conservation purposes"), it is unclear how the Forest Service will implement these two directives within the purpose and need of the NWFP revision. Therefore, we request that the agency **develop and analyze a conservation alternative** that builds on at least these core issues.

(1) Protect from **logging and related threats as described above all remaining mature and old-growth forests** (e.g., Old Growth Structure Index OGSI ≥ 80 and OGSI ≥200, herein referred to as MOG collectively) on all federal designations to better comply with EO 14008 (30 x 30). This should include a GAP status analysis of MOG in terms of what actually is protected using GAP status codes 1 and 2 to define protection and with respect to the representation of MOG types within and outside protected areas. The conservation alternative should include what the Forest Service and Biden administration can do to elevate protection status to contribute to 30 x 30 targets (GAP 1 and 2 level). Importantly, while Late-Successional Reserves (LSRs) and Inventoried Roadless Areas (IRAs) offer some protections, they do not count as GAP 1 or 2 (or IUCN protection equivalents), as the international standard in protection is not met for these types. However, they, and LSRs without any logging of trees ≥80 years old, may be coded as GAP 2.5 if they are at least as protective as the roadless conservation rule (DellaSala et al. 2022a, DellaSala et al. 2023). This standard of precluding logging of trees ≥80 years old should carry through all plan revisions and all reserve designations be they in wet or dry forests.

(2) Prioritize fire-risk reduction to treatments nearest homes (see Cohen 2000, Schoennagel et al. 2017, Calkin et al. 2023, Law et al. 2023) and in flammable young tree plantations (see Bradley et al. 2016, Zald and Dunn 2018 for high flammability of plantations) where fire risks are highest. MOG should be the lowest priority for mechanical treatments ("thinning") but can be used for some prescribed and cultural burning as these areas serve as irreplaceable climate and wildfire refugia ("resilience" and "resistance" to fires) (see Lesmeister et al. 2019, Lesmeister 2021 for spotted owl habitat as fire refugia).

(3) In MOG, the focus of treatments should be on prescribed and cultural burning practices (not pile burning, which is damaging to soils and below-ground processes). Removing large trees is not necessary prior to conducting burning, which can be introduced under low fire weather to minimize escaped fires (Knapp et al. 2005, Knapp et al. 2006, Knapp et al. 2007 - only the abstract is available online given paywall restrictions) van Mantagem et al. 2011, van Mantagem et al. 2016).

(4) Increase natural wildland fire use for ecosystem benefits under safe conditions, and close and obliterate roads to reduce unwanted ignitions in transportation planning for fire risk reduction (see Balch et al. 2017 for highest fire risks closest to populated areas).

(5) Expand the restoration objectives of the Aquatic Conservation Strategy (ACS, watershed analysis) by increasing road closures, road obliteration, continue restrictions on logging out to at least two-tree heights in Riparian Reserves; designate beavers as a keystone species of conservation concern for water storage, flood abatement, riparian restoration; remove livestock near streams, springs, wetlands, and seeps; expand culvert repair and culvert enlargement for flood abatement; and prohibit post-disturbance "salvage" logging. Logging needs to be reduced at watershed scales - and not just riparian buffers. A central focus of the ACS in revision should be to build on the gains noted in ACS monitoring reports via reduction of logging levels (e.g., riparian functionality, water quality and watershed integrity all have improved because of reduced logging and road removal). Mass wasting events, fire intensities, and ambient temperatures all increase with logging and road building, and this should be acknowledged[1], along with livestock grazing, as the top threats to aquatic systems.
(6) Analyze and reduce cumulative impacts from wildfire suppression (DellaSala et al. 2022b), mining, livestock grazing (Beschta et al. 2012, Kauffman et al. 2022), ORVs, biomass utilization, energy development
(7) Reject any proposal to use the national forests as repositories for pumping carbon underground.

Overall, we anticipate that this alternative would have far lower cumulative impacts than all other alternatives that emphasize intensive "active management" that otherwise lead to forest degradation (damaged integrity) as noted. In this context, natural disturbances are not treated as a "threat" but rather essential to ecosystem integrity. Working with wildland fire for ecosystem benefits under safe conditions, along with prescribed and cultural burning, are emphasized. Any thinning in MOG areas should not be based on economically valued tree removals as this incentivizes forest degradation."

[1] PNW old-growth forests maintain water balance in forested watersheds. Jjang et al. 2019 https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.2692. Also Perry and Jones 2016. Analysis of 60-year records of daily streamflow from eight paired-basin experiments in the Pacific Northwest (Oregon) revealed conversion of old-growth to Douglas-fir plantations had a major effect on summer streamflow (abstract only due to paywall restriction - https://onlinelibrary.wiley.com/doi/10.1002/eco.1790). Average daily streamflow in summer (July through September) in basins with 34- to 43-year-old plantations of Douglas-fir was 50% lower than streamflow from reference basins with 150- to 500-year-old forests. Young Douglas-fir trees, which have higher sapwood area, higher sapflow per unit of sapwood area, higher concentration of leaf area in the upper canopy, and less ability to limit transpiration, appear to have higher rates of evapotranspiration than old trees of conifer species, especially during dry summers. Reduced summer streamflow in headwater basins with forest plantations may limit aquatic habitat and exacerbate stream warming, and it may also alter water yield and timing in much larger basins. https://onlinelibrary.wiley.com/doi/abs/10.1002/eco.1790 (abstract only due to paywall). Also see Frissell in Williams et al. 1997. In general, uncut watersheds with older forests are more functional and with higher levels of biodiversity. https://fisheries.org/bookstore/all-titles/professional-and-trade/x55024xm/ (paywall restricted). Also see Ham 1982. Net precipitation under old growth Douglas-fir in the Bull Run Municipal Watershed (Portland, Oregon) totaled 1739 mm during a 4-week period, 387 mm more than in adjacent clearcut areas. Expressing data on a full water year basis and adjusting gross precipitation for losses due to rainfall interception suggest fog drip could have added 882 mm (35 in) of water to total precipitation during a year when precipitation measured 2160 mm in a rain gage in a nearby clearing. Standard rain gages installed in open areas where fog is common may be collecting up to 30 percent less precipitation than would be collected in the forest. Long term forest management (Le., timber harvest) in the watershed could reduce annual water yield and, more importantly, summer stream flow by reducing fog drip. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1752-1688.1982.tb00073.x (paywall restricted).