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March 17, 2025

Comments on Northwest Forest Plan Amendment DEIS
https://www.fs.usda.gov/project/?project=64745

USDA Forest Service
1220 SW 3rd Ave., Ste. G015
Portland, OR 97204

Dear Regional Forester Jacque Buchanan and Regional Forester Jennifer Eberlien:

The Eastside Forest Coalition (EFC) is working to defend the forest ecosystems across the eastern Cascades and the Blue Mountains. We are a coalition of seven organizations that work throughout Oregon on environmental issues and have banded together in our support of the forests of eastern Oregon.

Why do we do this? We currently face climate, civil, and biodiversity crises. The diverse forests of the eastern Cascades and Blue Mountains are landscapes of unique and irreplaceable ecological and cultural value. The region is important on its own merits and big enough to matter as part of a regional, continental, and global conservation system.

Eastside forests provide core habitat and connectivity corridors for wildlife that live and move between the Rockies and Cascades, and across the Great Basin and Columbia Plateau. The region hosts a great variety of fish, wildlife, plants and other life in a landscape composed of dynamic habitats and large elevational gradients. This diversity provides opportunities for species to survive in - and adapt to - a changing climate.

These forests are extremely important to the connectivity and integrity of the ecosystems of the Pacific Northwest region and the adjoining mountain ranges, grasslands, shrublands, rivers, and lakes. Animal migrations and weather patterns are affected by the diverse landscapes across this region.

And the eastside forests are affected by what happens in the westside forests, the forests that are the subject of the Northwest Forest Plan Amendment, Forest Service project 64745. As such, the EFC as well as its independent member organizations have been taking a hard look at the actions the Forest Service (FS) may propose for amending the Northwest Forest Plan.

Outline of Topics in this Comment

Overview of Significant Concerns with the Proposed Amendment

Any amendment to the Northwest Forest Plan must retain if not expand the network of forest reserves where natural processes can flourish, and maintain and recruit habitat needed by imperiled species like spotted owls and marbled murrelets in order to persist and recover. Any amendment must also adequately protect streamside habitat that provides cool, clean water supplies for communities and salmon, while at the same time ensuring our Pacific Northwest forests continue to achieve their potential as carbon sinks that help mitigate climate change. These goals can all be achieved by protecting mature and old-growth forests from logging while supporting Tribal sovereignty and environmental justice.

Unfortunately, none of the action alternatives described in the Draft EIS (DEIS) adhere to these core elements. Instead of focusing on increasing the amount of old growth, which remains at a severe deficit across the landscape, the proposed amendment aims to exploit fear of fire in our forests by doubling – and potentially tripling – commercial logging from current levels. This dramatic increase in logging would occur across an even smaller footprint than the original Northwest Forest Plan, since the Bureau of Land Management has removed all of its 2.6 million acres of Western Oregon forest lands from the protective management scheme. In other words, all the adverse impacts associated with commercial logging – road-building, sediment delivery to streams, loss of carbon storage, disturbance and degradation of species habitat – would be even more concentrated on our national forests.

The Forest Service's fire suppression, fire exclusion, and clearcutting policies have significantly altered forests and degraded frequent fire-adapted ecosystems. To address the threat of wildfire, the agency has focused on increased logging across national forests. Logging mature and old-growth trees, though, is counter-productive to protecting communities and restoring fire to landscape. These trees are the most fire-resilient, and focusing on logging them takes resources away from proven community protection strategies such as creating defensible space and emergency preparedness. The agency should prioritize protecting communities over commercial logging, and establish the strongest possible protections for mature and old-growth trees as part of its wildfire strategy.

The Forest Service’s proposal also shifts the fundamental purpose of the Northwest Forest Plan from developing more old growth across the landscape to, at best, maintaining what little old growth remains. It would open up over 800,000 acres of mature forests to destructive commercial logging that is not ecologically justified, and allow new loopholes to allow logging in reserves meant to protect fish, wildlife, and drinking water. The proposal would also permanently lock existing mature forest stands out of potential protection, which in turn would severely limit recruitment of old-growth to replace what will naturally be lost to disturbance over time. However, despite admissions in the Draft EIS that species that rely on older forests would be adversely affected by these changes, the Forest Service has not offered any measures to ensure protection of vitally needed habitat for spotted owls and murrelets. As proposed, the amendment will not allow the spotted owl to recover, but will instead jeopardize its chance of survival.

We strongly oppose weakening critical environmental protections under the Plan. Mature and old-growth trees and stands are naturally fire-resistant and fire-resilient, as well as carbon-storing champions. The Forest Service must not sacrifice the immediate and near-term biodiversity values and the natural climate solution our older forests provide in exchange for a return to older forest logging and uncertain ecological benefits that may never accrue. We urgently need to increase carbon storage in our national forests to mitigate climate impacts. In addition, the perilous state of coho salmon, spotted owl, and murrelet populations requires maintaining currently available habitat and recruiting additional habitat. Targeting mature and old growth forests for logging, as this proposal does, will only push these species closer to the brink of extinction and undermine efforts to stave off the most damaging effects of climate change.

The challenge for this amendment process to the Northwest Forest Plan (NWFP) will be to strengthen protections, while at the same time addressing any issues that may need adjusted direction that includes and/or relies upon vegetative management.

Increasing the intensity and scope of vegetative management actions, as proposed in the DEIS, will increase the conflict between meeting "primary Plan objectives" (i.e. "Protecting and enhancing biodiversity of mature and old growth ecosystems [that] is a central tenet of the NWFP") and the Forest Service's stated goal of increasing fire resistance in a climate change world.

As provided by the DEIS, expanding logging opportunities by raising or eliminating the stand age direction for no cutting in LSRs to greater than 80 years for allowable cutting, in order to 'improve fire resistance' or increase ecosystem adaptability, conflicts with the objective "to meet the original intent of the NWFP to conserve mature and old-growth ecosystems and habitat for the Northern Spotted Owl and other species, protect riparian areas and waters…"

We are concerned that "clarifying direction" in the DEIS is code for raising the planned cut levels across land use allocations (LUA) where cutting is now prohibited or limited. The findings of the Bioregional Assessments appear to raise the "above all" emphasis of the amendment so as to adjust management direction to permit that the Probable Sale Quantity (PSQ) levels, last adjusted in 2001, may now be amended and adjusted to meet the FS targets in the DEIS.

A major aspect of the rationale in the DEIS for "Strengthening the capacity of NWFP ecosystems to adapt to the ongoing effects of climate change" is to provide greater management flexibility in order to facilitate an increase in cutting levels that allow the 2001 PSQ or greater to be met or to exceed the historic annual cutting levels since the NWFP was adopted in 1994.

Our review of the DEIS and supporting documents which invoke "clarified" management direction, "active management," and/or "nuanced direction", conclude that the changes outlined in the DEIS may **not** "Improve sustainability of mature and old growth ecosystems by providing plan direction to maintain and expand mature and old growth forest conditions and reduce loss risk across all land use allocations" as required under the 1994 NWFP.

We conclude that the changes outlined in the DEIS, the Appendices and the Background Documents (defined below) would effect a wholesale change of the original emphasis of the NWFP. These changes in emphasis from protection of old growth and mature forests will

inevitably lead to further losses of critical habitats essential for many wildlife species, loss of biodiversity and contribute to climate change.

Some Specific Problems with Proposed Management Practices

Endangered and Threatened Species

The DEIS fails to address the following with regard to Endangered and Threatened Species and other late succession and old growth dependent species:

- The impact of the proposed amendments to the NWFP on the protections for the Northern Spotted Owl (NSO) and other Endangered and Threatened late succession and old growth dependent species (*including all species listed on Tables 3.9 and 3.10 of the DEIS)*, as provided in the 1994 NWFP. The DEIS' failures include, but are not limited to, the DEIS not addressing the impact of any amendment on the persistence of Threatened and Endangered species as well as all other late successional and old growth dependent species, which was the focus of the 1993-1994 studies (Gang of 4, SAT 1 & SAT II, and FEMAT). We acknowledge that 'Sensitive Species' were addressed in the DEIS Appendix C, Draft Biological Evaluation, but not Threatened or Endangered Species.
- The increasing risk to the NSO which has even more need of protection now than in 1994, in the following USFW statements in the 2021 update to the 2012 Critical Habitat Rule:
    - The NSO is qualified for Endangered Species status; *see page 96 of the 2021 Rule (which is an update to the 2012 Critical Habitat Rule)*: *https://www.federalregister.gov/documents/2021/11/10/2021-24365/endangered-and-threatened-wildlife-and-plants-revised-designation-of-critical-habitat-for-the*
    - The FS has failed to amend all forest LRMPs in the region of the NWFP to require the protections of Critical Habitat in Matrix as set forth in the 2012 Critical Habitat Rule, as amended in 2021, and the 2011 Revised Recovery Plan. See page 95 of the 2021 Amendment to the 2012 Rule:

> *"…the USFS has not yet revised its forest plans and applied the recommendations of the 2011 Revised Recovery Plan nor expressly taken into consideration the 2012 critical habitat designation into these plans …"*

Also see Page 96 of the 2021 update to the 2012 Critical Habitat Rule:

> *"Additionally, recent scientific findings and our December 15, 2020, finding (and supporting species report) that the northern spotted owl warrants reclassification to endangered status emphasize the importance of maintaining habitat in light of competition with barred owls."* [emphasis added]

Management in moist forest ecosystems

A century ago, the rain-drenched westside forests supported some of the oldest, largest trees in the world (coast Douglas-fir remains the second-tallest tree species in the world). Since the mid-twentieth century, industrial-scale logging on federal land has whittled down these giant

forests to remnant stands. The Northwest Forest Plan halted most old-growth logging in the region and managed to save most old forest remnants. However, logging continues in unprotected stands of mature forests, often in the name of thinning or fuel reduction.

The high productivity of the moist west-side forests creates a continuously layered canopy with a variety of tree species, sizes, and ages, all growing in a moisture-holding environment of downed logs, thick moss, profuse epiphytes, and rich organic soils. They are naturally fire-resistant. Thinning forests compresses the soil, destroys the understory layers, increases susceptibility to erosion and windthrow, accumulates broken branches as fuel, and opens the canopy for more rapid drying. All of this increases fire susceptibility and releases carbon into the atmosphere.

In moist forests of western Oregon and western Washington, thinning doesn't deter wildfire. Because of the abundant rainfall in this ecosystem, a thinned understory will grow back quickly, too quickly to make any difference to the relative infrequency of fire in this region. Dr. Beverly Law (2021)[1] states that west of the Oregon Cascades there is no scientific basis to attempt to reduce fuels because they grow back rapidly; it is not possible to reduce their flammability.

In addition, thinned, open understories provide little shelter for moist-forest species (marbled murrelets; northern spotted owls; red tree voles) and invite an influx of predators (ravens, barred owls, great horned owls) that further threaten these already threatened species. Fragmentation of the understory vegetation as well as the canopy disrupts the movements of many animal species, creating barriers for foraging and migration.

We are concerned that the proposed amendments will degrade LSRs in moist forest ecosystems by removing protections from logging for stands between the ages of 80 and 120 years. This would open 824,000 acres to commercial logging.

We are further concerned that rather than continue to prohibit logging activities in moist LSRs unless they restore or accelerate late-successional or old-growth conditions to benefit ESA-listed species, new exceptions would be added to allow logging to "restore habitat for other species that depend upon younger stands" and to "achieve other desired conditions," all but eliminating the core purpose of LSRs.

We have concerns that moist matrix stands established after 1905 would be open for commercial logging using "ecological forestry" – a vague term that agencies contend includes forms of clearcutting - as well as opening up stands established between 1825 and 1905 for commercial logging under a long list of rationales.

[1] Law, Beverly 2021. Statement to the United States House of Representatives Subcommittee on National Parks, Forests and Public Lands, concerning "Wildfire In A Warming World: Opportunities to Improve Community Collaboration, Climate Resilience, and Workforce Capacity." April 29, 2021.

This shift away from stand age considerations to stand establishment dates essentially means these old stands will never age into protection, severely limiting if not outright curtailing recruitment of additional old growth—especially when combined with new logging loopholes in LSRs.

Management in dry forest ecosystems

In January 2022, Department of Agriculture Secretary Vilsack and Randy Moore, head of the Forest Service, unveiled a 10-year strategy for "confronting America's wildfire crisis through increased logging, thinning and prescribed fires to reduce high fuel loads". Nationwide, the plan calls for "forest health treatments" on an additional 50 million acres of forest land over the next 10 years; that is *twice* the current levels of timber harvest.

The NWFP amendment proposal to log at least one third of dry forest stands across all land allocations (LSR and Matrix) over 15 years–964,000 acres will further harm many eastside fish and wildlife species that depend on intact ecosystems and jeopardize their future existence. The proposal to increase the tree age for nominal protection from logging from 80 years to 150 years cannot be justified as ecologically sound, and is counter to the need to protect mature and old-growth trees. The broad exceptions for "restoration" and "to reduce wildfire risk" are problematic.

Rather than more timber harvest, forest management in dry forests should consider the need to reverse decades of fire exclusion through the managed use of fire, protecting fire resistant mature and old-growth trees, and, only where ecologically necessary, by prioritizing non-commercial silvicultural treatments. This will ensure carbon storage is not lost, and that ecological processes like fire are restored to these forests.

Thinning for Timber Management or Fire Control

There is no definition of "thinning" in the DEIS. This term must be defined wherever it is used in order for the public to understand what is being proposed and in order for managers to carry out the intentions of the DEIS.

In general, thinning as currently performed on FS projects has many detrimental effects including soil compaction, wildlife disturbance, loss of habitat, etc. The DEIS must specify actions to reduce these negative effects, such as:

- Severely limit new roads, even temporary roads.
- Limit road density.
- Require road decommissioning.
- No mechanical thinning in LSRs.
- Specify gaps and skips for security habitat and wildlife movements.
- Specify leaving of woody debris for habitat, soil retention, and nutrient cycling.

Throughout the analysis the DEIS assumes that logging to reduce fire risk will reduce the adverse effects of severe fire and provide benefits to mature and old-growth habitat values. This

assumption cannot be taken at face value. It must be tested. Available evidence shows that logging to control fire causes net negative effects on resources that are best expressed in closed canopy forests, such as carbon storage and habitat for the large number of species that prefer closed canopy forests with large trees and abundant dead wood.

The DEIS fails to accurately describe the adverse effects on thinning on old forest characteristics such as large tree abundance, long-term recruitment of snags and dead wood, closed canopies that serve as microclimate refugia during climate extremes, carbon storage, etc. Importantly, the DEIS makes repeated unsupported claims that any adverse effects of logging for fuel reduction will be short-term and offset by long-term benefits from improved old forest characteristics and from reducing the adverse effects of high severity fire. Neither of these assertions is accurate. Fuel reduction logging has very well documented adverse effects, yet those effects may never be offset by any benefits from fire risk reduction. The location, timing, and severity of wildfires cannot be predicted in advance, so fuel treatments must be widespread across the landscape to increase the chances that treatments will interact with wildfire, but most of the acres treated will never interact with wildfire during the brief period before fuels regrow. The benefits of fuel reduction logging are therefore highly speculative and may only accrue to a small fraction of the acres degraded by fuel-reduction logging. The EIS cannot claim that these trade-offs are unknowable. The DEIS can and must use a state-and-transition model to carefully disclose and weigh the clear risks and alleged benefits of thinning.

Logging in Riparian Reserves

The DEIS calls for increased logging of trees over 80 years in LSRs, riparian reserves, and all dry forests. The DEIS fails to adequately disclose the aquatic impacts of removing large trees from watersheds and riparian reserves. Large trees are already highly functional habitat and will only get better if left in the forest to grow and provide shade and eventually recruit as dead wood. Logging captures mortality and causes a long-term reduction in recruitment of wood to streams and to adjacent uplands that were expected to provide a host of benefits to aquatic AND terrestrial wildlife that thrive in the presence of abundant wood. Logging will also reduce canopy cover and reduce valuable microclimate refugia in streamside settings. Spotted owls use riparian reserves disproportionately compared to random forest locations, and logging will deprive them of nesting, roosting, foraging, and dispersal opportunities. Increased logging in riparian reserves may also require additional road construction and/or perpetuation of the existing road system which is already causing unacceptable cumulative effects on watershed functions and habitat connectivity.

We generally support the Aquatic Conservation Strategy and its goals and objectives. However, strong and enforceable standards are needed for long-term future and recovery of riparian ecosystems and the species that depend upon them. ESA-listed and sensitive riparian and aquatic species in particular require stronger, quantifiable standards. Without those standards, these species will likely face continuing downward population trends, extirpation, and extinction.

Salvage logging

We have grave concerns about the proposed allowance of post-fire, so-called "salvage" logging in moist LSRs under a number of justifications, including "along existing system roads." Even fewer restrictions would be placed on salvage logging in dry LSRs, and no real restrictions would exist in matrix.

Salvage logging post-fire landscapes is like ripping a scab off a wound and converts burned areas into sterile tree farms. The expansion of salvage across both moist and dry LUAs is not ecologically justified. The Forest Service does not provide any justification for removing dead and dying trees from the disturbed areas, nor does the DEIS present and analyze the negative impacts of mechanical removal on soils and remaining live trees and snags. Compacted soils are much harder to regenerate and contribute to erosion and runoff, causing further harm to streams and aquatic species by excess sediment. In addition, the creation of roads to access dead and dying trees, whether formal roads or merely roads created by usage, contributes to runoff and erosion issues.

We are aware of, and believe the Forest Service should be aware of, the well-founded, peer reviewed science that documents the many negative aspects of salvage logging.[2] These negative effects include not only soil compaction and increased erosion, but the loss of organic matter (trees) for rebuilding soil, the loss of habitat for decomposing fungi and insects which are near the bottom of the food chain, and the loss of habitat for woodpeckers and other species that utilize both standing and downed dead timber. Naturally created standing snags have been proved more beneficial to wildlife than any snags created by Forest Service silvicultural practices. Fire has been a part of the healthy forest ecosystem for eons, allowing regeneration and resiliency, and providing necessary gaps that increase the diversity of vegetation and wildlife.

Raising Age of Allowed Harvesting

There is no sound scientific reason for redefining what is considered a mature tree, raising the age of allowed harvesting from 80 to 120 years in reserves.

When the Northwest Forest Plan was being developed, there was a lot of pressure to allow foresters discretion to log mature and old-growth forest to accelerate forest development and improve upon natural processes. The scientists who authored the plan understood that logging is a poor substitute for natural processes. Logging does not mimic natural processes. They understood that forests 80 years or older have all the building blocks necessary for proper forest

[2] Two examples of salvage studies:
Leverkus, A.B., Buma, B., Wagenbrenner, J., et al. "Tamm review: Does salvage logging mitigate subsequent forest disturbances?" (2021) Forest Ecology and Management. Volume 481, 1 Feb. 2021, 118721. https://doi.org/10.1016/j.foreco.2020.118721,
and: Thorn S., Chao, A., Georgiev, K.B. et al. "Estimating retention benchmarks for salvage logging to protect biodiversity." 2020 Nature Communications, Vol. 11, 4762, 21 Sept. 2020 https://doi.org/10.1038/s41467-020-18612-4

development through natural processes, like forest growth and natural mortality events that thin the forest, create valuable small canopy gaps, and recruits dead wood structure. They said that more science would be necessary to show that logging can improve upon those natural processes. That science has not been done. These are complicated science questions involving trade-offs that are hard to resolve and control. There is no compelling science to show that the obvious trade-offs from logging older forests (most notably, reduced large tree abundance, reduced recruitment of dead wood, and degraded microclimate) are offset by ecological benefits that those species need more than large trees, dead wood, and dense canopy. The Forest Service is breaking a promise to make sure that management follows evidence from sound science.

As noted by Van Pelt[3], "In order to identify mature and old forests, the great diversity of environments present in western Washington must be acknowledged." These diverse environments create diverse vegetation zones, with different dominant tree species, and different paths and times to achieve mature tree stands. Van Pelt describes several different maturity levels. The Forest Service supports this complexity with a description of a mature forest as in the 2024 report FS-1215a[4], page 5:

> "Mature forests vary widely in character with age, geographic location, climate, site productivity, relative sense of awe, characteristic disturbance regime, and the values people attribute to or receive from them. Dialogue with stakeholders and Tribal Nations and integration of local and Indigenous Knowledge with evolving scientific understanding are critical in effectively managing mature forests."

The Forest Service report FS-1215a, which is cited in the DEIS, over many pages describes the complex ecology of mature and old-growth forest stands. It is unreasonable for the DEIS to simply state that an LSR stand may be logged if younger than 120 years. In achieving the goal of recruiting additional and maintaining existing mature and old-growth stands, staying with the existing NWFP restriction on harvesting stands and trees 80 years old and older is appropriate. This is, after all, the original intent of the NWFP, to recruit more mature trees, and increasing the age is counter to that intent.

We note that page 2-16 of the DEIS, Table 2.1 states, for LSR in moist forests:

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[3] Van Pelt, Robert. 2007. "Identifying Old Trees and Forests in Western Washington." Olympia, WA: Washington State Department of Natural Resources. https://www.dnr.wa.gov/programs-and-services/forest-resources/habitat-conservation/identifying-mature-and-old-forests.

[4] USDA Forest Service and USDI BLM. 2024. Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management in Fulfillment of Section 2(b) of Executive Order No. 14072. FS 1215a. April 2024 (revised). 82 pp. Available online: https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/Mature-and-OldGrowth-Forests.pdf

> *"Changes authorization for forest management activities in stands less than 80 years old to 120 years old to account for 30 years of time passage since the 1994 NWFP decision."*

This rationalization of increasing the age of allowed harvesting is not the intent of the 1994 NWFP. This rationalization is purely a FS or timber industry effort to increase harvest. Similar rationalizing statements are made regarding raising the age to 150 years, or even 175 years, in dry forests. These increases provide no protection or recruitment for mature and old-growth forest stands.

It has been said that the 80-year threshold was 'arbitrary'. However, in view of the extensive literature supporting the use of an 80-year threshold, there is no validity for such a statement. In fact, raising the age to 120 years is arbitrary and not based on science.

Cutting down 80-120 year-old trees, which are already late successional forests, requires new trees to be started or planted in the cut which over time will become new 80-year-old trees. Cutting down the original 80-120 year-old trees does not create 'opportunities to restore' late-successional forest conditions but merely delays for 80 years the next mature forest transition to Mature and Old Growth. Late-successional forest conditions would never be restored in this scenario. It is simply impossible, and the Forest Service's statement belies the truth. The Forest Service is setting up a perpetual harvest in LSR which will never restore the 80-120-year-old trees and stands, and never provide for transition to mature and old growth.

As an aside, changing from 80 to 120-year threshold will render the results of the 25 Year monitoring report and other scientific literature which relied upon the 80-year threshold meaningless as those reports do not address consequences of reducing mature habitat which is known to be valuable for Critical Habitat, dispersal and transitioning, and for prey habitat, for threatened and endangered (T&E) Species dependent on Late Successional Old Growth habitat, and LSRs. As a result, much of the scientific literature relied upon by the FS for the DEIS as well as other purposes could no longer be relied upon for management.

Note that the Northern Spotted Owl uses trees that have passed the 80 years of age threshold for foraging, and the Marbled Murrelet uses those trees that have passed the 80 years of age threshold for dispersal. Loss of those trees will impact the survivability of each of those species, as well as other species dependent on late succession and old growth ecosystems, threatening their existence despite their listing under the Endangered Species Act.

The FS should instead continue the focus of the 1994 NWFP to Steward and Enhance Old Growth ecosystems, including Mature Trees and Stands, rather than providing merely the insufficient protections as set out in the DEIS.

<u>Mandate to Harvest Trees</u>

The DEIS makes several mandates for cutting trees. For example:

- Objective (FORSTW-MTX-MOI-OBJ), page A1-21:
    - 'treat at least one tenth (65,000 to 81,000 acres per decade) of young stands (established after 1905) in moist forest Matrix'
- Objective (FORSTW-ALL-DRY-OBJ), page A1-22,
    - 'Within 15 years of amendment approval, implement treatments that contribute to ecological resilience on at least one-third of dry forests (527,000 to 643,000

acres per decade or 790,000 to 964,000 acres per 15 years across the Northwest Forest Plan area, not including any additional acres of salvage treatments may occur, while also conserving and retaining older trees and promoting the development of future functional old-growth forest ecosystems appropriate for dry forests.'

- Alternative B would include the following specific actions designed to increase fire resistance and ecosystem resilience within the NWFP area:
    - Treat 150,000 additional acres per decade within community protection areas in addition to the current/historic fuels management of 2,500,000 acres, for a total of 2,650,000 acres per decade across all LUAs. Treatment would include:
        - 1,750,000 acres per decade treated with wildland fire (including prescribed burns, unplanned ignitions, and cultural burning).
        - 900,000 acres per decade treated by mechanical means."

There was no 'mandate to cut' in the 1994 NWFP; and there were no acreage targets in the 1994 NWFP other than the PSQ board footage, which was not a 'mandate'. The language in the DEIS appears to drive a significant program to cut trees, without qualifications for consideration of ecological justification and the continuance of ESA listed species dependent on large trees

We oppose all such mandates. Any cuts, harvests, or treatments must be justified with sound ecological reasons. All treatments must also be subject to change over time as climate and other factors affecting the ecological health of the forest will change over time, often more rapidly than any administrative rule such as this DEIS.

Historic Range of Variability

Use of HRV Goal is Improper

The continued use of Historic Range of Variability (HRV) as a management goal for forested vegetation structural stages by the FS is a frustration to us and others who understand the long-standing science that shows how inappropriate this is. The goal of the DEIS to manage toward forests that are "reflective of historic range of variability" (p. 3-29) does not demonstrate the use of the best available science which shows how climate is driving changes to forest vegetation and how to best manage for future conditions. The guideline for focusing dry forest treatments on vegetation "departed from historical conditions" (p. A1-22) is an improper criteria for such efforts.

HRV is a 30 year old concept has been discounted by the majority of researchers and the best available science for many reasons[5], including because of the current radically changing conditions on this planet. For just one example, see this USDA reference by Millar: https://srs.fs.usda.gov/pubs/47361 [6]. The FS must, instead of looking back, look forward to protecting large and old trees, and allow ecosystems to unfold that will dominate the conditions we will see in the next 100 years. Using passive management and letting natural processes adapt the biota to the changing conditions is the most appropriate approach to achieve this.

[5] This could be expanded to include more details. For example, see https://app.box.com/s/cho8u2hdrr3itzoco2s9gp8u0wc7ivwm

[6] Millar, Constance I. *Historic Variability: Informing Restoration Strategies, Not Prescribing Targets.* Journal of Sustainable Forestry, 33:S28-S42, 2014. https://srs.fs.usda.gov/pubs/47361

The use of HRV for FS management decisions was first promoted in the 1990's. In 2009, Keane *et al.* [7] pointed out weaknesses and pitfalls in using HRV while still holding it as a possible aid, with limitations. The authors state (p. 1034):

> *"To use HRV in an operational context, it must be assumed that the record of historical conditions more or less reflects the range of possible conditions for future landscapes; an assumption that we now know is overly simplistic because of documented climate change, exotic introductions, and human land use."*

And (p. 1035):

> *"If expected biotic responses to climate change come true, tomorrow's landscapes will be so altered by human actions that current management philosophies and policies of managing for healthy ecosystems, wilderness conditions, or historical analogs will no longer be feasible because these objectives will be impossible to achieve in the future."*

Many other scientists concur with this analysis of how to use HRV in forest management. For example, see: *Trees in Trouble,* by Daniel Mathews [8]; *The Treeline,* by Ben Rawlence [9]; and Nonaka, *et al.* [10].

HRV as a management goal also fails to address the forest ecosystem processes that are all important to forest resilience. Resilience is very dependent upon biodiversity and the interactions of a multitude of plants and animals. Other natural processes to consider are natural plant succession and the interactions of flora and fauna, as influenced by the geologic conditions of each site and microsite. Accurate management and control of nature is unlikely. Anthropogenic climate change has resulted in a different range of future possibilities relative to the past. The historic range of variability may be a useful point of reference, but it is an unattainable goal today. We suggest that the agency needs to tolerate more dense stands, as occurs in natural plant succession, while allowing for enough variability so that disturbances are limited by discontinuities on the landscape. The post-disturbance landscapes must be allowed to recover their complexity.

We again note that our forests will continue to be altered by a warming planet, and the forest ecosystems will naturally adapt and change. Further human intervention and manipulation to mimic forest structures under a past climate regime—one that no longer exists and will not exist in any near future—is ill advised. Many published papers and analyses have concluded that global warming warrants new approaches to ecosystem restoration. (For example, *Science*

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7 Keane, Robert E., Paul F. Hessburg, Peter B. Landres, Fred J. Swanson. *The use of historical range and variability (HRV) in landscape management.* Forest Ecology and Management, j.foreco.2009.05.035, May 2009. https://www.fs.usda.gov/research/treesearch/33776

8 Mathews, Daniel. 2020. *Trees in Trouble: Wildfires, infestations, and climate change*.

9 Rawlence, Ben. 2022. *The Treeline: The Last Forest and the Future of Life on Earth*. First edition. New York: St. Martin's Press. https://www.goodreads.com/book/show/56268809-the-treeline.

10 Nonaka, E., and T. A. Spies. "HISTORICAL RANGE OF VARIABILITY IN LANDSCAPE STRUCTURE: A SIMULATION STUDY IN OREGON, USA," *Ecological Applications*, vol. 15, no. 5, pp. 1727–1746, Oct. 2005, doi: 10.1890/04-0902.

News [11].) Even a researcher frequently used and supported by the Forest Service has made the use of HRV a conditional, limited tool (Johnston, et al.[12], pp. 9-10):

> *"Our thinning simulations are designed to inform managers about the effects of thinning at very broad spatial scales. Individual silvicultural prescriptions that consider site specific conditions and other management objectives will be necessary to meet stand-scale restoration objectives."*

Even in the 1994 Eastside Screens there was controversy over this new (at that time) theory for forest management. From the 5 June 1995 Decision Notice [13]:

> *"Concern about the adequacy and propriety of the Historic Range of variability (HRV) process and the rigidity of the complete deferral of timber activities in the riparian areas existed before and after the adoption of the 1994 interim direction."*

Considering that such debates have existed since its inception, it is fair for us to question the use of HRV as a goal for directing treatments and for management objectives. It is also true that forests have changed given ongoing management practices of large diameter timber (high grading) harvest, extensive roading, and intense livestock grazing. Species composition in the ecosystem have also changed with, for example, the extirpation of large predators and new invasive plant species. The FS should drop arguments that a restoration of tree species to HRV composition also restores a resilient forest. If HRV is to be used to return forests to their historic levels of tree composition, levels of human intrusion must also be restored, including reducing road density and other disturbances and modifications (grazing, harvesting), if this is to be an honest goal for management.

Future Range of Variability

The NWFPA cites the concept of "potential natural vegetation" from the work of Spies et al. 2018, but discounted as only a tool to "inform monitoring" (p. 3-15). The DEIS leaves out important work on the future range of vegetative variability as a proper measure for setting goals and management objectives.

> *"To use HRV in an operational context, it must be assumed that the record of historical conditions more or less reflects the range of possible conditions for future landscapes; an assumption that we now know is overly simplistic because of documented climate change, exotic introductions, and human land use."* – Keane et al.[14], p. 1034.

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[11] *Science News*. 2006. "Global Warming May Warrant New Approaches To Ecosystem Restoration," June 15, 2006. https://www.sciencedaily.com/releases/2006/06/060615082745.htm.

[12] Johnston, James D., Skye M. Greenler, Becky A. Miller, Matthew J. Reilly, Amanda A. Lindsay, and Christopher J. Dunn. 2021. "Diameter Limits Impede Restoration of Historical Conditions in Dry Mixed-conifer Forests of Eastern Oregon, USA." *Ecosphere* 12 (3). https://doi.org/10.1002/ecs2.3394.

[13] Lowe, John E. 1995. "Decision Notice for the Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales." Decision Notice, Regional Forester's Amendment No. 2. United States Forest Service. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd972828.pdf.

[14] Keane, Robert E., Paul F. Hessburg, Peter B. Landres, and Fred J. Swanson. 2009. "The Use of Historical Range and Variability (HRV) in Landscape Management." *Forest Ecology and Management* 258 (7): 1025–37. https://doi.org/10.1016/j.foreco.2009.05.035.

And:

> *"Our study results indicate that historical time series should be used in conjunction with simulated future time series as references for managing landscapes."* --- Keane et al.[15]

Areas Needing Improvement

There are some components of the proposed amendment that we support, and some other concerns we want the Forest Service to address.

Supporting Tribal Sovereignty and Environmental Justice

The Northwest Forest Plan encompasses lands occupied and stewarded by over 80 Tribes since time immemorial. As it considers future management of our national forests, the U.S. Forest Service must uphold its obligation to genuinely consult with Tribes during decision-making processes. This includes providing the resources and support necessary to ensure equitable access to these processes and engaging with Tribes in a way that respects their sovereignty and connection to the Pacific Northwest's forests and waters. Further, the agency should prioritize additional Tribal community engagement and support during the planning process. Any changes to the Northwest Forest Plan should support Tribal access to harvest first foods, accommodate cultural burning practices, promote the use of co-stewardship agreements, and support workforce development and youth education.

To address environmental justice concerns, the Forest Service should conduct a comprehensive analysis at the landscape level of any proposed management changes, including assessment of impacts to air quality, water quality and quantity, climate, recreation, and cultural use. To support and protect workers, the Forest Service should ensure safe, sustainable, and equitable working conditions and fair compensation for any forest management work.

Incorporating Traditional Ecological Knowledge, facilitating Tribal involvement, and addressing environmental justice concerns in the management of our national forests, however, does not require weakening the core conservation protections of the original Northwest Forest Plan. We support the Forest Service moving forward with strong Tribal inclusion and environmental justice components. Pairing such components with the Forest Service's plan for weakened environmental protections, however, is a false choice we do not condone.

Focus on Effective Fire Risk Reduction and Prevention

Older, moss-draped forests of the Cascade Mountains and Coast Range are fire resistant. Most fuel reduction projects in the highly productive, moist forests of western Oregon and Washington are ineffective. Instead, these projects reduce carbon storage in these carbon-rich forests, thus

[15] Keane, Robert E., Lisa M. Holsinger, Russell A. Parsons, and Kathy Gray. 2008. "Climate Change Effects on Historical Range and Variability of Two Large Landscapes in Western Montana, USA." *Forest Ecology and Management* 254 (3): 375–89. https://doi.org/10.1016/j.foreco.2007.08.013.

reducing one of our most effective climate mitigation strategies. Promoting natural fire processes and protecting mature and old-growth trees (the most fire-resistant and carbon rich trees) are essential in dry forests as well. We are concerned that focusing on commercial thinning projects directs limited funds away from more effective strategies.

The most effective fire resilience strategy is preservation of mature and old growth stands. These are the most fire resistant. In particular, many dry forest species have evolved with frequent fire and are fire-resistant, cutting them down removes the most fire resilient components in these forests.

Fuel reduction tends to decrease a forests' resilience to fire by removing fire resistant trees, generating hazardous slash, making the stand hotter-drier-windier, and stimulating the growth of surface and ladder fuels. Fuel and fire risk reduction "treatments" can also have negative impacts on wildlife habitat and seldom result in actual risk reduction because fires don't often intersect with fuel reduction areas during conditions when such treatments are effective.

Thinning and fuel treatment must be focused on high-risk locations such as the wildland-urban interface and home ignition zone to protect structures.[16] Forest management for wildfire protection is most effective in the 60-100 feet zone from structures, "defensible space": the home outward strategy (Bevington, 2021)[17].

In addition to restricting such treatments to high-risk forests close to communities, fuel reduction should focus on treating small-diameter surface fuels. Commercial logging for fuel reduction has too many corrupting economic influences that can make fuel conditions worse instead of better, such as by removing large fire resistant trees that shelter surface fuels and vegetation from the sun and wind.

Reducing roads is another important way of reducing fire risk, as most human-caused fires start along roads. Roads are also pathways along which fires progress via flammable, weedy material.

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[16] Cohen, Jack D. 1999. Reducing the wildland fire threat to homes: Where and how much?. In: Gonzales-Caban, Armando; Omi, Philip N., technical coordinators. Proceedings of the Symposium on Fire Economics, Planning, and Policy: Bottom Lines; 1999 April 5-9. San Diego, CA. Gen. Tech. Rep. PSW-GTR-173. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. p. 189-195; *see also* Cohen, Jack D. How Homes Ignite, Building a better defense against wildfire, available at: https://www.fema.gov/pdf/library/woods/117_121.pdf; *see also* Cohen, Jack D., Strohmaier, Dave. 2020. Community destruction during extreme wildfires is a home ignition problem, available at https://wildfiretoday.com/2020/09/21/community-destruction-during-extreme-wildfires-is-a-home-ignition-problem/

[17] Bevington, Douglas. Working from the Home Outward: Lessons from California for Federal Wildfire Policy. Compiled by D. Bevington, PhD, Forest Program Director, Environment Now. May 5, 2021. https://environmentnow.org/wp-content/uploads/2021/05/Home-Outward-report-2021-1.pdf

Beneficial fire use

There are a number of provisions in the draft EIS regarding beneficial fire use that we support. We recognize that fire is a vital and inevitable ecological process that rejuvenates fire-adapted ecosystems, regenerates fire-dependent species, and maintains habitat mosaics that enhance biodiversity. The misguided era of attempted fire exclusion and aggressive fire suppression across public wildlands must be replaced with a new paradigm of fire inclusion and ecological fire management.

Federal resources should support Tribal fire management programs including an expansion of the Tribal wildland fire workforce and elimination of bureaucratic barriers to implementing cultural burn projects.

Mature and old-growth forests are degraded by conventional firefighting operations that include the use of bulldozers, feller bunchers, chemical retardants, and high-intensity backburns. Mature and old-growth forests are better protected with ecological fire use from proactive prescribed burning rather than reactive aggressive firefighting.

Excluded Areas for Fire Treatment

The DEIS must be revised to exclude Fire Treatments, of any nature, from the Congressionally Designated Areas LUAs and the Administratively Withdrawn Areas LUAs. Throughout the DEIS the Forest Service refers to proposed actions applying to All LUAs. However, there are three LUAs from which Fire Treatments should be excluded:

1. The Congressionally Designated Area LUAs include Wilderness Areas, and Wild and Scenic Rivers.
2. Administratively Withdrawn Area LUAs include Inventoried Roadless Areas, which are protected from timber harvest and road construction.
3. Riparian Reserve LUAs.

The DEIS must be revised to clearly state that the FS will no longer suppress wildfire in designated Wilderness Areas and that prescribed burns will not be implemented in Wilderness Areas.

Analysis of Drinking Water Supplies

The DEIS must include an analysis and objectives for the protection of drinking water sources including riparian areas, rivers, springs, wells, and municipal outtakes whose water sources originate on FS lands.

Current Exceptions Are Problematic

The exceptions throughout the DEIS and Appendices, including Guidelines and Standards, are open-ended, with no specific parameters or limitation, resulting in almost meaningless rules

which can be applied with subjective interpretations and lack of consistency across the NWFP region, leading to less protection than implied.

The use of words or phrases that permit exercise of subjective discretion, such as the permitted carveout of 'operational purposes' in the S&G found at page A1-20 of DEIS Appendix A1. 'Operational Purposes' can be quite broadly interpreted and applied, and we request that instead specific examples be utilized and the 'operational purposes' be defined in the Glossary, i.e. Appendix F to the DEIS.

We acknowledge that some exceptions and qualifications may be appropriate, but only so long as additional clarifying language is provided; without clarifying language, the DEIS has provided too much discretion to the Forest Service as well as to agents and contractors for timber harvests.

The Standard (FORSTW-ALL-DRY-STD-01-B) needs to change the word 'should' to the word 'shall'. All Standards under the NWFP are mandatory and require the use of the word 'shall'. All of the other standards in this DEIS do use the word 'shall'.

Failure to Assess Aquatic and Riparian Impacts

A lack of change to the ACS direction and approach does not mean that the DEIS alternatives will not have impacts on aquatic and riparian ecosystems. The DEIS improperly dismisses impacts to aquatic and riparian resources from consideration under the premise that "impacts to water resources would not be expected to change under the Proposed Action and action alternatives because the proposed amendment does not modify the framework of the ACS" (DEIS at 1-12). This is flawed, unsubstantiated, and circular reasoning; effectively, the Forest Service claims that because the ACS Standards and Guidelines will remain in place, there cannot be meaningful effects on aquatic and riparian areas. Yet, the proposed action will explicitly increase logging in riparian reserves ("RRs"), and the proposed one million additional annual acres of logging activity will require road construction and maintenance likely to contribute to increased erosion, sedimentation, and other riparian impacts. Furthermore, the DEIS explicitly admits the possibility of impacts to aquatic species in its inclusion of 11 federally listed fish species "potentially affected by the Proposed Amendment Action or Action Alternatives," including multiple culturally important anadromous fish and sucker species (DEIS at 3-54 to 3-55). In relying on faulty logic and neglecting to disclose and consider the impacts of heavier logging in RRs, the Forest Service has failed to take a hard look at the reasonably foreseeable effects of the proposed actions on aquatic and riparian habitats and resources.

Although the DEIS fails to analyze potential impacts to listed fish and other aquatic species, the likely effects of management approaches such as removing large, old trees in RRs are distinct and well-understood. Large trees are integral to a variety of crucial aquatic and riparian ecosystem functions and processes—both as standing trees and as downed wood (large woody debris)—such as helping to store sediments and nutrients, shaping channel morphology and

instream habitats, supporting groundwater flows, and shading streams.[18] Removal of large riparian trees under the Amendment will trigger foreseeable adverse effects—both direct and indirect—to threatened and endangered aquatic species and their habitat, including (but not limited to): Deficits of large woody debris and pool frequency; increases in stream temperature, peak flows, and sediment delivery; decreases in base flows; and reductions in habitat complexity.

The Forest Service must disclose and consider riparian and aquatic impacts of the proposed action and alternatives and must adopt an alternative that prevents further degradation of ESA-listed species habitats under the NWFP Amendment.

Failure to Analyze the Impact of Roads

The DEIS includes roads on the list of "Other Resources Considered or Dismissed," despite acknowledging:

> It is possible that the forest road networks could be affected by project/treatment-specific actions authorized by the proposed amendment. Potential effects to this resource may include the creation of new roads for logging, impacts to existing roads due to management activities, or construction or alteration of forest roads due to forest thinning or prescribed burns.

(DEIS at 1-12). The DEIS goes on to dismiss this as an issue for consideration because "the scope, extent, and location of these effects cannot be determined at this time, and a project/treatment specific evaluation would be required for impacts to individual roads or road networks" (DEIS at 1-12).

The DEIS further goes on to say that**:**

> [t]he proposed NWFP amendment does not authorize or make any project-level decisions; therefore, the extent and location of project-specific ground-based disturbances (e.g., restoration treatments,

[18] Beschta, R. L., Bilby, R. E., Brown, G. W., Holtby, L. B., & Hofstra, T. D. (1987). Stream Temperature and Aquatic Habitat: Fisheries and Forestry Interactions. In E. O. Salo & T. W. Cundy (Eds.), *Streamside Management: Forestry and Fishery Interactions* (pp. 191–232); Bilby, R. E., & Ward, J. W. (1991). Characteristics and Function of Large Woody Debris in Streams Draining Old-Growth, Clear-Cut, and Second-Growth Forests in Southwestern Washington. *Canadian Journal of Fisheries and Aquatic Sciences*, *48*(12), 2499–2508. https://doi.org/10.1139/f91-291; Frissell, C. (2013). Aquatic resource protections in the Northwest Forest Plan: Evaluating potential consequences of proposed riparian reserve reductions for clean water, streams and fish. Coast Range Association, Corvallis, Oregon. *Corvallis, OR: Report Prepared for the Coast Range Association*. https://www.researchgate.net/publication/266137611_Evaluating_proposed_reductions_of_riparian_reserve_protections_in_the_Northwest_Forest_Plan_Potential_consequence_for_clean_water_streams_and_fish; Pollock, M. M., & Beechie, T. (2014). Does Riparian Forest Restoration Thinning Enhance Biodiversity? The Ecological Importance of Large Wood. *Journal of the American Water Resources Association*, *50*(3), 543–559.

> prescribed burning, cultural burning, timber harvest, and road construction/reconstruction activities) are not known, nor is it possible to obtain this information at this time.

(DEIS at 1-14). Despite this explanation about "why such information cannot be obtained," the DEIS goes on to repeatedly discuss restoration treatments, prescribed burning, cultural burning, and timber harvest within the scope of its proposed activities and Alternatives—all of which it acknowledges would require road construction—but roads themselves remain absent from the analysis.

Extending the logic of excluding roads from the DEIS analysis, any projected targets or analyses of resource impacts in the NWFP planning area should have been dropped from consideration due to inability to determine "scope, extent, and location." If treatment acreage targets can be set in the NWFP amendment, there should be some ability to estimate additional road needs, associated potential habitat impacts, and long-term roadway restoration and decommissioning processes.

Road construction and maintenance are connected actions and must be analyzed in the EIS. The Forest Service has failed to adequately address connected actions. Under NEPA, the Forest Service "shall consider whether there are connected actions, which are closely related Federal activities or decisions that should be considered in the same NEPA review that…cannot or will not proceed unless other actions are taken previously."[19] Here, in order for the Forest Service to proceed with projects to meet the proposed dry forest logging targets outlined under the preferred alternative—logging 790,000 to 964,000 acres every 15 years, not including acres of salvage logging—the Forest Service will first need to conduct road maintenance and construction activities to facilitate logging access. Since increased logging targets and increased road construction and maintenance are necessarily connected, the Forest Service must analyze and disclose the extent, density, and impacts of anticipated road construction under the various alternatives.

Further, the new age thresholds and treatment acreage targets indicate substantially more roads would be necessary in LSR—a reasonably foreseeable effect which the Forest Service fails to address.

The biological impacts of roads are well documented. For example, additional sediment loads over extended periods of time from timber harvest and roads have been known for decades and are well documented in the literature. Bjorn and Reiser (1991) summarized

[19] 40 C.F.R. § 1501 (b)

that:

> Sedimentation affects fish habitat quality by increasing fines which embed gravels and substrates. Embedded gravels reduce spawning habitat by making gravel difficult to lift, reduces dissolved oxygen to incubating eggs, and covers rearing fish. Turbidity affects fish production by reducing production of aquatic insects and plankton, and foraging efficiency of fish. Sediment fills interstitial spaces between rocks in the substrate, reduces habitable area in streams, and when it exceeds 20 percent of the total area on the substrate, can smother fish and frog eggs and increase mortality.[20]

May and Lee (2004) stated that "increases in coarse sediment supply can be associated with sharp reductions in salmonid habitat and productivity" and reported that streams with discontinuous flow caused by sediment increases reduced survival by crowding fish into smaller areas with reduced food availability.[21] The additional bedload of both fine sediments and coarser sediment delivered to streams fills in the channel, decreasing pool depth, channel complexity, and changing the channel profile to a shallow, wide profile.

Recent research by Kampf et al. (2021) on intermittent and ephemeral streams indicates that these nonperennial streams drain almost 60% of forested lands and are the primary connectors with aquatic systems. The authors stated that "land uses that modify flow regimes in these streams can affect sediment and organic matter transport and distribution, stream temperature dynamics, and biogeochemical processing."[22] Even selective logging increases fine sediments along with increased water temperatures and these changes in habitat quality are found decades after logging activities have ceased.[23]

Upland impacts are well known, too. For example, negative effects of motor vehicle use

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[20] Bjornn, T.C. and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. In Meehan, W. (Ed). Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publication 19.

[21] May, C. L., & Lee, D. C. (2004). The Relationships among In-Channel Sediment Storage, Pool Depth, and Summer Survival of Juvenile Salmonids in Oregon Coast Range Streams. *North American Journal of Fisheries Management*, *24*(3), 761–774. https://doi.org/10.1577/M03-073.1

[22] Kampf, S. K., Dwire, K. A., Fairchild, M. P., Dunham, J., Snyder, C. D., Jaeger, K. L., Luce, C. H., Hammond, J. C., Wilson, C., Zimmer, M. A., & Sidell, M. (2021). Managing nonperennial headwater streams in temperate forests of the United States. *Forest Ecology and Management*, *497*, 119523. https://doi.org/10.1016/j.foreco.2021.119523

[23] Guenther, S. M., Gomi, T., & Moore, R. D. (2014). Stream and bed temperature variability in a coastal headwater catchment: Influences of surface-subsurface interactions and partial-retention forest harvesting. *Hydrological Processes*, *28*(3), 1238–1249. https://doi.org/10.1002/hyp.9673

and roads on wildlife include wildlife mortality, decreased reproductive success, direct and indirect loss of habitat, displacement, and reduced habitat connectivity. These negative impacts are the result of a series of factors, including access for predators and people, fragmentation of habitat patches, behavioral changes in response to human use, increased noise, and physical alteration of habitat. Further, motorized use of roads and routes substantially increases movement rates of wildlife, causing a series of cascading effects including higher stress levels, increased energetic costs, and reduced productivity.

The Forest Service must analyze the impacts of road construction and maintenance as part of the same NEPA, including by establishing an accurate environmental baseline of the existing road network within the NWFP area.

Climate Change and Mature and Old-Growth Ecosystems

While the new Trump administration may have rescinded President Biden's Executive Order 14072[24] on Strengthening the Nation's Forests, Communities, and Local Economies, the fundamental facts and science supporting the importance of protecting all mature and old growth (MOG) trees and forests to address climate change remain. The Eastside Forest Coalition is supportive of additional protections for mature and old-growth trees and forests across the country.

Here in the Pacific Northwest, protecting trees that are 80 years or older is important for ecosystem function and has many co-benefits alongside increased carbon storage. An 80-year-old conifer can live for hundreds of more years, absorbing more and more carbon from the atmosphere and storing it in its wood, roots, soil, and supporting diverse wildlife. These are among the most carbon-rich forests in the world, holding more carbon per acre than tropical rainforests. Nowhere else in the *world* are there so many different species of big, long-lived conifers together in one place as in the Pacific Northwest. The NWFP governs the largest natural carbon reserves found in North America and the amendment must prioritize increasing carbon storage.
Researchers throughout the region have documented the value of these forests as carbon reserves because of their massive carbon storage, their fire resistance, and their likelihood to survive for decades or centuries because of their *potential* protection as public forests. In addition, mature and old forests provide the highest proportional area of terrestrial vertebrate habitat for supporting threatened or endangered species. Clearly, these forests are far more valuable standing, holding carbon, cleansing air and water, providing habitat, than being cut for a one-time profit and emitting tons of carbon into the atmosphere.

[24] USFS. Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management Fulfillment of Executive Order 14072, Section 2(b). April 2023.

Law and Moomaw (2024)[25] report that "In the U.S., forests remove 12% of the nation's greenhouse gas emissions annually and store the carbon long term in trees and soils. Mature and old-growth forests, with larger trees than younger forests, play an outsized role in accumulating carbon and keeping it out of the atmosphere. These forests are especially resistant to wildfires and other natural disturbances as the climate warms."

Protecting these older forests can also help contribute to the goal of conserving 30% of land and water by 2030 (30x30). There are nearly 11 million acres of MOG in federal forests in Oregon and Washington (about 19% of the lower 48 states). Despite the important role they play in carbon storage and climate mitigation, only about 24% of MOG on federal land in our two states are fully protected from logging (GAP 1 & 2 designation). The remainder have varied levels of protection, some under the Northwest Forest Plan, in Late Successional Reserves, or in Inventoried roadless areas (which may be subject to post-fire logging.) This analysis was released in a mapping study by DellaSala et al. in 2022.[26]

Law et al (2022) proposes strategic reserves in Oregon forests for biodiversity, water and carbon to mitigate and adapt to climate change[27]. The researchers look at ways of achieving the Executive Order 14008 goal of "conserving 30% of our land and waters by 2030." They also look at preservation targets of 50 x 50 proposed by the Intergovernmental Panel on Climate Change. They state that "*protecting mature and old growth forests on federal lands fulfills an urgent need for protection and provides a low-cost way to simultaneously meet national and international goals*." (*Emphasis added.)* The Pacific Northwest forests, especially on the moist western part, are carbon dense, with a high potential for climate mitigation, and also lower vulnerability to wildfire. Selection of areas for the highest priority for preservation were ranked by aboveground carbon stocks, biodiversity, and climate resilience. They defined landscape resilience as the capacity of a landscape or ecoregion to maintain biological diversity and ecological function despite climate change. They identified areas not currently protected that could be strategically protected at GAP 1 or 2 (USGS ratings). About 10% of Oregon's forests currently are fully protected.

The proposed amendments to the NWFP undermine these goals by allowing increased logging/harvest in MOG forests, leading to increased ecosystem fragmentation and carbon emissions.

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[25] Law. B.E. and W. Moomaw. 2024. Old forests are critically important for slowing climate change and merit immediate protection from logging. The Conversation. https: https://theconversation.com/old-forests-are-critically-important-for-slowing-climate-change-and-merit-immediate-protection-from-logging-220771

[26] DellaSala, Dominick A., Brendan Mackey, Patrick Norman, Carly Campbell, Patrick J. Comer, Cyril F. Kormos, Heather Keith, and Brendan Rogers. Mature and old-growth forests contribute to large-scale conservation targets in the conterminous United States. Frontiers in Forests and Global Change, September 28, 2022. https://www.frontiersin.org/articles/10.3389/ffgc.2022.979528/full

[27] Law BE, Berner LT, Mildrexler DJ, Bloemers RO and Ripple WJ (2022). Strategic reserves in Oregon's forests for biodiversity, water, and carbon to mitigate and adapt to climate change. Front. For. Glob. Change 5:1028401. https://doi.org/10.3389/ffgc.2022.1028401

The EIS makes repeated unsupported claims that fuel reduction logging will help reduce carbon emissions from fire, but the EIS fails to take a hard look at the available science and information, and fails to use available tools (such as state-and-transition modelling) to better understand and explain this issue. The 2018 US Forest Service Northwest Forest Plan Science Synthesis[28] concluded that fuel reduction is unlikely to be an effective climate mitigation strategy.

> Some studies from other regions in the Western United States (i.e., the Southwest and Sierra Nevada) suggest that thinning and fuel reduction can mitigate carbon loss from fire. Fuel reduction may reduce losses of carbon at stand levels compared with the consequences of high-severity wildfire burning in stands with high fuel loads (Finkral and Evans 2008; Hurteau and North 2009; Hurteau et al. 2008, 2011, 2016; North and Hurteau 2011; North et al. 2009, Stephens et al. 2009). However, because the probability of treated areas burning is generally low (Barnett et al. 2016), and most biomass is not consumed by fire, slight differences in losses resulting from combustion in fire compared with losses from fuel reduction are unlikely to make fuel reduction a viable mitigation strategy (Ager et al. 2010, Campbell et al. 2012, Kline et al. 2016, Mitchell et al. 2009, Restaino and Peterson 2013, Spies et al. 2017).

Acknowledge and protect the co-benefits of protecting older forests

Biodiversity is strongly associated with mature and old-growth forests. The Northwest Forest Plan was devised to protect old-growth-dependent threatened and endangered species. Prohibiting logging in MOG forests, as originally defined as 80 years and older, would better protect Threatened & Endangered species, and benefit a wide range of wildlife and plant species.

Harvest prohibition of MOG preserves streamflow and summer flows. Downstream drinking water has better water quality and quantity. One study evaluated the long-term impact of forest harvest on summer low flow deficits in the Oregon Coast Range[29]. The study found streamflow was 50% lower in a 40–43-year-old plantation relative to a nearby 110-year-old forest. Summer low flow deficits persisted over six months or more each year. Thus, logging prohibition of MOG will also provide better habitat for aquatic species.

Retention of water in the stream and riparian zone can also provide a natural fuelbreak, with higher water content of riparian vegetation. The wider riparian zones also serve as wildlife refugia during wildfires.

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[28] USDA 2018. Synthesis of Science to Inform Land Management Within the Northwest Forest Plan Area. General Technical Report. PNW-GTR-966 Vol. 1. June 2018. https://www.fs.usda.gov/pnw/pubs/pnw_gtr966.pdf.

[29] Segura, Catalina, Kevin Bladon, Jeff Hatten ,Julia Jones, Cody Hale, George Ice. Long-term effects of forest harvesting on summer low flow deficits in the Coast Range of Oregon. Journal Of Hydrology, Volume 585, June 2020, 124749. https://doi.org/10.1016/j.jhydrol.2020.124749

Sustainable economic opportunities and communities

It has been more than 30 years since the Northwest Forest Plan drafted a roadmap to help timber-dependent communities create more sustainable economic futures. Most of these mill towns have succeeded in diversifying their economies without cutting the last old forests on public land. The remaining communities have had an entire generation to uncouple their dependence on publicly owned forests. [See also: Beverly Law, "Wildfire in a Warming World: Opportunities to Improve Community Collaboration, Climate Resilience, and Workforce Capacity," Statement to the United States House of Representatives Subcommittee on National Parks, Forests and Public Lands. April 29, 2021.]

The proposed amendment does not adequately recognize that the socioeconomic benefits of the Northwest Forest Plan include much more than wood products. The economic benefits of clean water, biodiversity, watershed protection, climate stability, fire moderation, recreation, and quality of life need to be recognized as first-order economic benefits of forest conservation. We understand that these benefits can be hard to quantify, but they should not be overlooked and they should be weighed accordingly. For example, outdoor recreation on public lands is a growing industry, employing more than 5 million people across the country in 2022[30], whereas the timber industry has a declining fraction of the region's economy.

Ongoing restoration of forests and watersheds is also an important part of the economy in the region. From improving salmon habitat by replacing culverts and removing roads, to non-commercial pruning and thinning adjacent to homes and communities, and prescribed fire in ecologically-appropriate areas, the restoration economy can provide jobs and learning opportunities, and benefit from Indigenous co-management principles.

Many, although not all, of the local economies that are located in the NWFP area have significantly rebounded since 1990, substantially reducing their dependence upon direct timber sectors of the labor economy, since the adoption of the NWFP in 1994. The region has seen:

- Large expansions of the labor economy throughout most of the counties of the NWFP Socioeconomic Region of 72 counties, as defined in the DEIS.
- Substantial reductions of timber dependence in rural NSO counties where in many cases timber jobs have been replaced by gains in other sectors resulting in overall increases in employment.
- Relatively low economic contribution of NF timber programs to the NWFP Socioeconomic Region (as defined in the DEIS, Section 3.8 and utilized solely in Section 3.8 and Section 3.9.2 of the DEIS).

An evaluation of actual economic growth in the NWFP Socioeconomic Region leads to our argument that there is no need to attempt to revive the economies as they existed prior to 1990 as these economies generally no longer exist.

[30] https://headwaterseconomics.org/economic-development/trends-performance/outdoor-recreation-economy-by-state/

The DEIS utilizes a county typology based upon an analytical methodology that relies upon an economic baseline that predates the NWFP implementation in 1994 will not produce a realistic assessment of the importance of the DEIS Amendment effects for the following reasons:

1. The DEIS approach does not account for the significant declines in the size and structure of the 92 or 72-county NWFP Area direct timber sector that have occurred since the 1970's.
2. It does not evaluate direct timber job losses that have occurred since 2000 after the 1994 NWFP had been largely implemented[31].
3. It does not address the total economic growth and diversification that has occurred across all non-timber sectors in the 92-county NWFP Area since 1990.
4. It unduly biases the DEIS socioeconomic analysis to focus on economic conditions that no longer exist within the 92-county NWFP Area, with such conditions unlikely to reappear.

DEIS discussion appears to continually lament the passing of time when massive cuts and old growth liquidation was the order of the day across all ownerships in the region. Furthermore, the DEIS does not specifically identify the 54 counties it refers to and instead proceeds with a discussion of the 72 counties in Table 3-17 and then lists an additional 20 counties Table 3-18 explicitly.

Consequently, there is no rationale to attempt to increase NF timber outputs under the *NWFP Region (consisting of the 17 National Forests covered by the NWFP)* from current levels for socio-economic purposes.

Invalid Argument

Under the section Probable Sale Quantity on page 3-115 of the DEIS, the statement is made:

> "The current PSQ for the NWFP area for NFS and BLM-administered lands combined is 805 MMBF."

This inclusion of BLM-administered land here is irrelevant and confusing in PSQ statements that the DEIS uses to argue for harvest levels on NF lands that are the only lands under the purview of this DEIS.

This inclusion of extraneous data must be removed or explained throughout the DEIS. We note that the use of BLM administered lands is also used in the section presenting data on grazing in the NF starting on page 3-135.

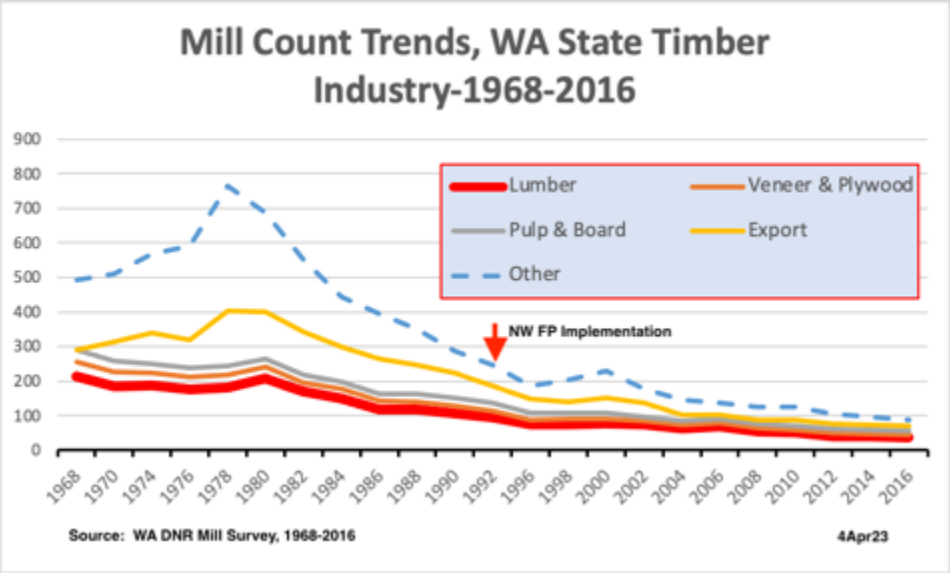
Mill Count Trends

The DEIS attempts to argue that the decline in the timber economy is due to the NWFP. While we can demonstrate in several areas that this is a false argument, we will show the falsehood here in just the trend in mill counts.

The WA Mill Survey Reports also show that the number of sawmills and veneer & plywood operations peaked in 1968, then shrank to 141 operations in 1988, a 45% decline. Such trends predating the NWFP by more than 20 years. Additionally, it must be recognized that these mill

[31] *Synthesis of Science to Inform Land Management Within the Northwest Plan Area* Volume 3, GTR-649, June 2018)

closures continued after 2000, when in WA sawmill and veneer & plywood operations decreased from 91 to 44 by 2016, a further 52% reduction.



The structure of the three mill-count trend figures for all three states of the NWFP Area represents further evidence that the Forest Service, by selective use of mill count data, is perpetuating the myth that the wood products decline across the NWFP Area was instigated by implementation of the 1994 NWFP.

The mill count trends clearly show that the decline in the number of operating mills predates the 1994 NWFP plan by at least 20 years. The mill count data presented suggests that logs from national forests supply all or most of the mills counted in each figure.

The DEIS is deficient in that raw log exports are not addressed in pages 3-122 to 3-125 or elsewhere in the DEIS. In WA State the 2016 Mill Survey shows that 28% of WA's logs bypassed local mills and were exported for overseas manufacturing, representing a "lost" volume equal to twice local national forest and state log production. (source: DNR WA Mill Survey 2016, see Tables 1 and 8a). We believe that the WA mill data also reflects similar circumstances for mills in CA and OR such that far fewer than the 266 mills listed consume national forest logs as suggested by the DEIS. These data again reflect the Forest Service tendency for mischaracterizing the national forest timber contribution as well as the timber industry's contribution to local economies as being more significant than they actually are.

Conclusions Regarding Economic Analysis in DEIS

The DEIS has failed to make the case that implementation of the 1994 NWFP has had significant socioeconomic, financial impacts on communities by ignoring both the minute contribution of the current national forest timber program and the relatively small regional contribution of the existing timber economy to the large, diverse, and ever-expanding regional economy as defined in the DEIS. Furthermore, the DEIS did not evaluate the economic impact of the projected increases in employment driven by the massive increases in national forest timber program relative to the size of the current regional economy. The DEIS does not consider

a future where the relative importance of the projected incremental increases in the regional timber economy is set against the context of future trends in both the timber economy and the regional economy as a whole, where timber will possibly continue to shrink but the total regional economy is projected to continue expanding.

Cumulative Effects Analysis

For all of the reasons stated above in this Comment Letter, the DEIS is arbitrary and capricious because it fails to discuss the direct, indirect, or cumulative impacts, including past, present and reasonably foreseeable future impacts of the proposed action, on the Northern Spotted Owl, the Marbled Murrelet and all other T&E Species populations, of the take that would result from timber harvest and prescribed burning of a significant acreage of Designated Critical Habitat both on Moist Forest and on Dry Forest, as required under NEPA.

In addition the DEIS is arbitrary and capricious because it fails to discuss the direct, indirect, or cumulative impacts, including past, present and reasonably foreseeable future impacts of the proposed action on the ecosystems in the NWFP Region, that would result from a significant increase in timber harvest and the implementation of widespread prescribed fire, resulting in significant exposure of land and dried out lands and ecosystems, erosion and impacts to watersheds and water sources both for wildlife, ecosystems and humans, as required under NEPA.

While the economic impacts analyzed in this DEIS extends beyond the boundaries of the NWFP to include the socioeconomic areas adjacent, as discussed in Section 3.8.1, any discussion of the environmental and biological impacts stop at the borders of the National Forests or the NWFP area. It is well known that environmental effects of forest management extend well beyond the borders of any actions (treatments), as evidenced by natural processes such as wildlife migration, the flow of water into and out of a project area, seed dispersal, and even the effect of evapotranspiration on rainfall in areas downwind. This selective scoping of analysis areas is arbitrary and capricious.

The migration of wildlife over vast areas that extend through and beyond the NWFP Region is well documented in papers and reports such as that by Hausheer[32]. The impact of improper management of forests and landscape in the NWFP Region are therefore of concern to groups whose main focus may be outside of that region, such as ours.

The impact of forests on climate and the water cycle also extends well beyond the NWFP Region. As described in reports such as that by Pearce[33], while looking at deforestation that the

[32] Hausheer, Justine E. 2023. “Migration in Motion: Visualizing Species Movements Due to Climate Change.” February 6, 2023. https://blog.nature.org/2016/08/19/migration-in-motion-visualizing-species-movements-due-to-climate-change/.
[33] Pearce, Fred. 2018. “Rivers in the Sky: How Deforestation Is Affecting Global Water Cycles.” Yale E360. July 24, 2018. https://e360.yale.edu/features/how-deforestation-affecting-global-water-cycles-climate-change.

NWFP Amendment does not propose outright, trees and forests are important to the water cycle and affect rains and moisture in lands well beyond the extent of any treatment. The important biotic pump of atmospheric moisture as described in 2007 by Makarieva and Gorshkov[34] shows how tree harvests proposed by the NWFP Amendment affect the drought conditions in eastern Oregon and Washington and beyond. Such information has been poorly integrated in Forest Service research and elsewhere, as described by Ellison, et al.[35] In this DEIS it must be included in the cumulative effects analysis.

Conclusions

In conclusion, we strongly oppose the elements of the Northwest Forest Plan amendment that significantly expand commercial logging in mature and old-growth forests across the Pacific Northwest. Our region is facing extinction and climate crises, along with habitat reduction due to growing urban pressures; this proposal does nothing to conserve the forests and biodiversity we, as a society, require.

We support reforms that would result in better consultation, co-stewardship, and integration of Indigenous perspectives into the management of our national forests. The Forest Service can and should improve Tribal inclusion and environmental justice in forest management while at the same time preserving and advancing ecological protections in our national forests. However, any amendment to the Northwest Forest Plan that weakens core protections and expansion of mature and old-growth forests and the suite of water quality, species habitat, and carbon storage values they provide should not move forward.

Build Upon Successful Aspects of Northwest Forest Plan

For the past 30 years, the Northwest Forest Plan has provided a global example of a successful and comprehensive large landscape-scale ecological management strategy. Envisioned as a 100-year plan, it has simultaneously conserved and recovered habitat for imperiled species like salmon, northern spotted owls, and marbled murrelets, protected drinking water supplies, and stored immense quantities of carbon from the atmosphere as a natural – if unintended – climate solution.

Thirty years after the Plan's adoption, climate change and biodiversity concerns have only intensified, making protection and recruitment of mature and old-growth forests even more important. One of the most impactful measures the Pacific Northwest region can do to address these crises is to uphold and strengthen the Northwest Forest Plan's conservation directives.

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[34] Makarieva, A. M., and V. G. Gorshkov. 2007. "Biotic Pump of Atmospheric Moisture as Driver of the Hydrological Cycle on Land." *Hydrology and Earth System Sciences* 11 (2): 1013–33. https://doi.org/10.5194/hess-11-1013-2007.

[35] Ellison, David, Cindy E. Morris, Bruno Locatelli, Douglas Sheil, Jane Cohen, Daniel Murdiyarso, Victoria Gutierrez, et al. 2017. "Trees, Forests and Water: Cool Insights for a Hot World." *Global Environmental Change* 43 (March):51–61. https://doi.org/10.1016/j.gloenvcha.2017.01.002.

Hold the Line

This DEIS advances the interests of resource extraction industries. We believe the Forest Service should instead be protecting the rights of all users of our public lands, both the current generation and for those to come. Protect and conserve nature and natural processes on our public lands for the greater public good.

Sincerely,

s/Mathieu Federspiel
Mathieu Federspiel
Juniper Group Executive Committee
Oregon Chapter Sierra Club

s/Paula Hood
Paula Hood
Co-Director
Blue Mountains Biodiversity Project

s/Jamie Dawson
Jamie Dawson
Conservation Director
Greater Hells Canyon Council

s/Amy Stuart
Amy Stuart
Co-Leader, Bitterbrush Broadband
Great Old Broads for Wilderness

s/Fiona Noonan
Fiona Noonan
Wild Lands & Water Program Manager
Central Oregon LandWatch

s/Chris Krupp
Chris Krupp
Public Lands Attorney
WildEarth Guardians

s/Doug Heiken
Doug Heiken
Sr Conservation & Restoration Coordinator
Oregon Wild