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Comment on the Forest Plan Amendment for Planning and Management of Northwest Forests Within the Range of the Northern Spotted Owl

We Advocate Thorough Environmental Review is a grassroots nonprofit 501(c)(3) organization dedicated to protecting the Mount Shasta region waters and other natural attributes for the benefit of current and future generations. Our work has clarified for us the reality that the climate crisis is one of the most urgent existential threats to humanity.

For the reasons described below, we find the amendment and the DEIS to be wholly inadequate and must be withdrawn. The Northwest Forest Plan (NWFP) adopted in 1994 has been a failure due to the continuing loss of mature and old-growth forest readily discernible with satellite telemetry, and the proposed amendment will only accelerate and compound this failure. The main goals of the NWFP

included protecting the long-term health of forests, wildlife and waterways based on scientifically sound and ecologically credible strategies and implementation[1]. The NWFP was meant to halt the unsustainable harvesting of old-growth forests and allow mature stands to grow and eventually increase old-growth acreage, providing increased habitat for old-growth obligates. The ESA-listed Northern Spotted Owl (NSO), an old-growth obligate, is considered to serve as an indicator of old-growth forest health. Its precipitous population decline underscores the failure of the NWFP to achieve its goal of protecting forests and wildlife. Just prior to the adoption of the NWFP, environmental groups correctly argued that the NWFP was inadequate and should be strengthened[2].

The NSO is nearly extirpated in Washington State and is declining dramatically in the rest of its domestic range[3]. Unfortunately, alternatives B, C and D of the Amendment all propose to increase logging in older stands up to 120 years old and allow the cutting of trees up to 150 years old. Trees on the very cusp of becoming old-growth will now be targeted for harvest instead of being protected.

> "Providing adequate amounts of suitable forest cover to sustain the subspecies was a major component of the first recovery plan for northern spotted owls (USFWS 1992) and a driver in the basic reserve design and old-forest restoration under the Northwest Forest Plan (NWFP, or Plan) (USDA and USDI 1994)."[4]

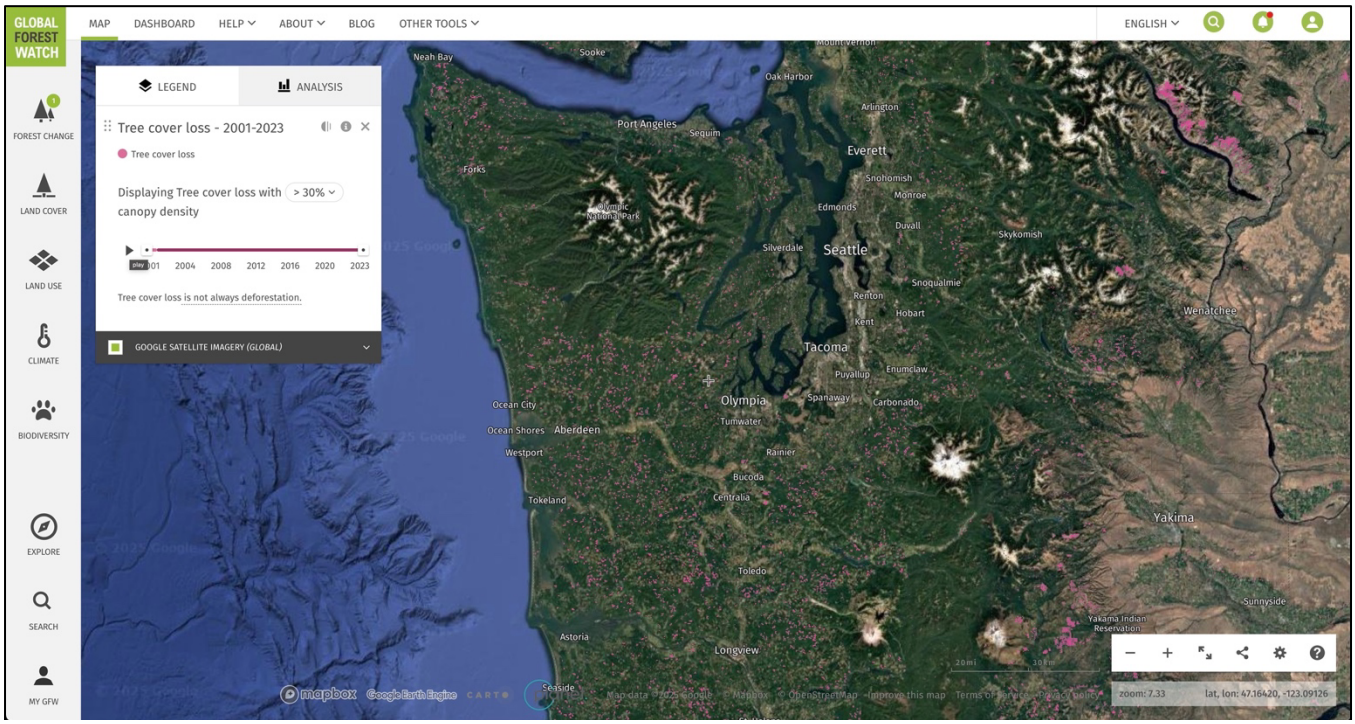

Figure 1 - Tree cover loss (in pink) 2001 – Washington State
Acquired at https://www.globalforestwatch.org/map/

[1] https://forestry.org/event/northwest-forest-plan-informational-winter-webinars/
[2] https://www.sierraclub.org/oregon/blog/2025/02/northwest-forest-plan-then-and-now
[3] Davis, Raymond J.; Lesmeister, Damon B.; et al. 2022. Northwest Forest Plan the first 25 years (1994 2018): status and trends of northern spotted owl habitats. Gen. Tech. Rep. PNW-GTR-1003. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 38 p. https://doi.org/10.2737/PNW-GTR-1003. https://www.fs.usda.gov/pnw/pubs/pnw_gtr1003.pdf
[4] https://www.fs.usda.gov/pnw/pubs/pnw_gtr966_chapter4.pdf

> "Major threats to spotted owls identified at the time of design and initial implementation of the NWFP and species recovery plan included the effects of past and current timber harvest. Studies of associations between spotted owls and forest cover published since 2005 have reinforced previous work indicating **a strong association of nest and roost sites with older forest conditions** and a wider range of forest cover types used for foraging and dispersal."[5] (emphasis added)

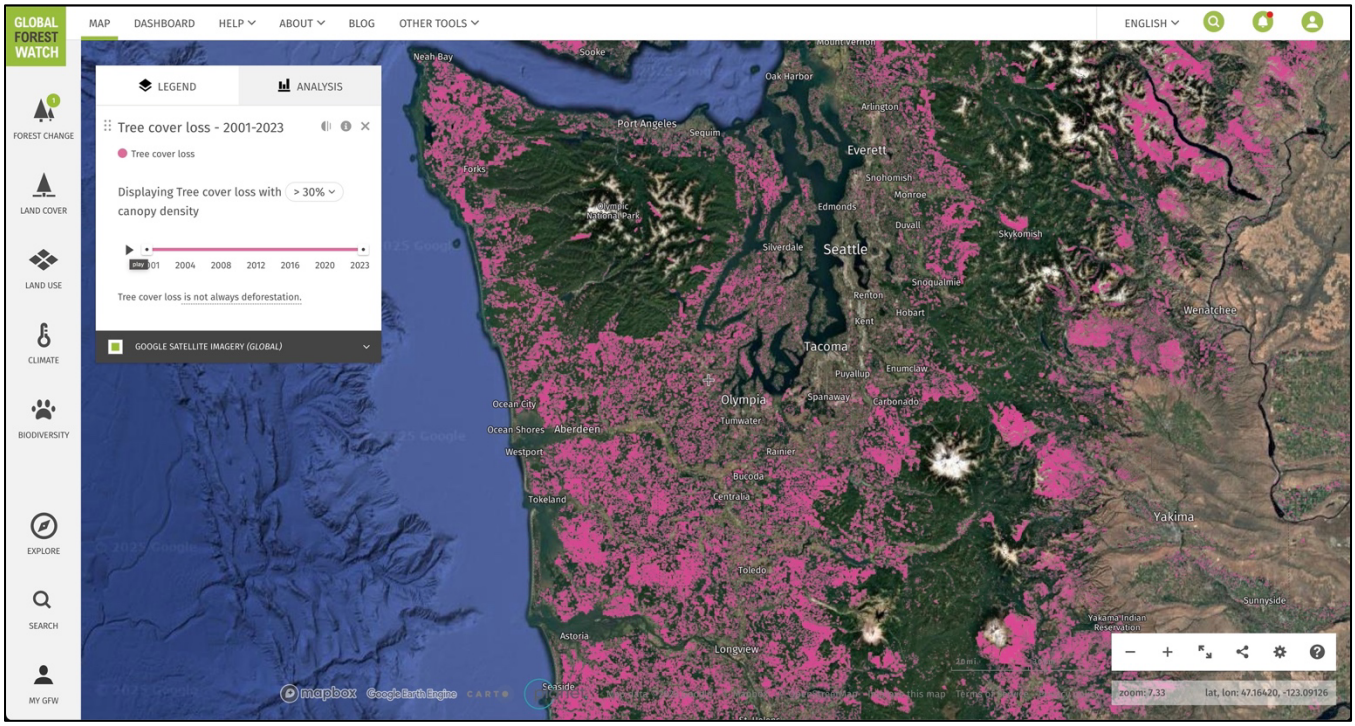

Figure 2 - Tree cover loss (in pink) 2023 – Washington State
Acquired at https://www.globalforestwatch.org/map/

Although there are other stressors to the NSO population, the degree of forest cover loss between Figure 1 and Figure 2 argues powerfully for forest degradation being a major factor, if not the major factor, in NSO decline.

In British Columbia, the situation is even more dire, with only one known NSO female left in the wild. She has not been seen since 2022. Attempts to introduce captive-bred owls have all ended in failure. The near-certain loss of British Columbia's NSO population results from a century of unrelenting logging of old-growth forests, with less than 3% of the most productive big-treed forests left[6].

> "Joe Foy, a campaigner with the Wilderness Committee who has been working on spotted owl conservation for more than 30 years, says the crux of the problem is that provincial governments gave forestry precedence over wildlife conservation. According to British Columbia's Forest and Range Practices Act, timber was always the most important value of the forests, allowing provincial regulations to constrain the impact that habitat protection for

[5] Ibid.
[6] https://veridianecological.ca/wp-content/uploads/2020/05/bcs-old-growth-forest-report-web.pdf

wildlife could have on timber supply. That, Foy says, is why we "ended up with a broken forest, and this species almost gone.""[7]

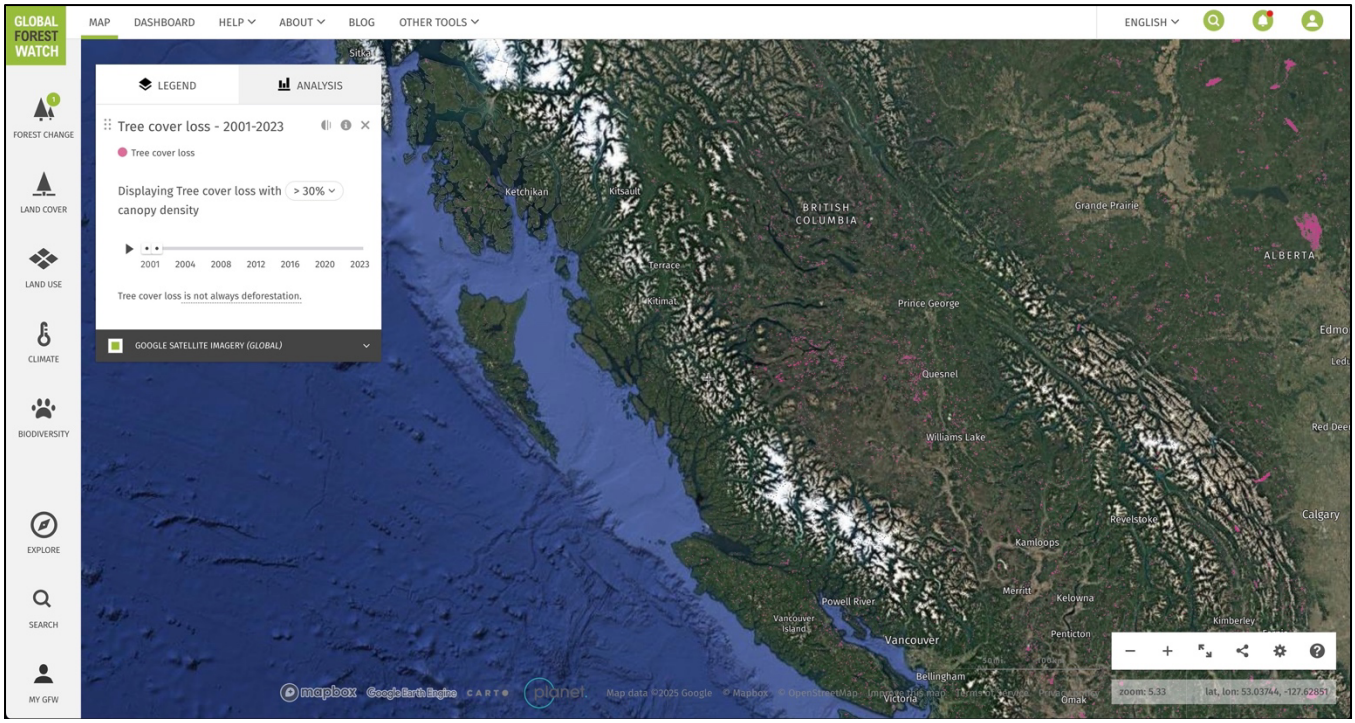

Figure 3 – Tree cover loss (in pink) 2001 – British Columbia
Acquired at https://www.globalforestwatch.org/map/

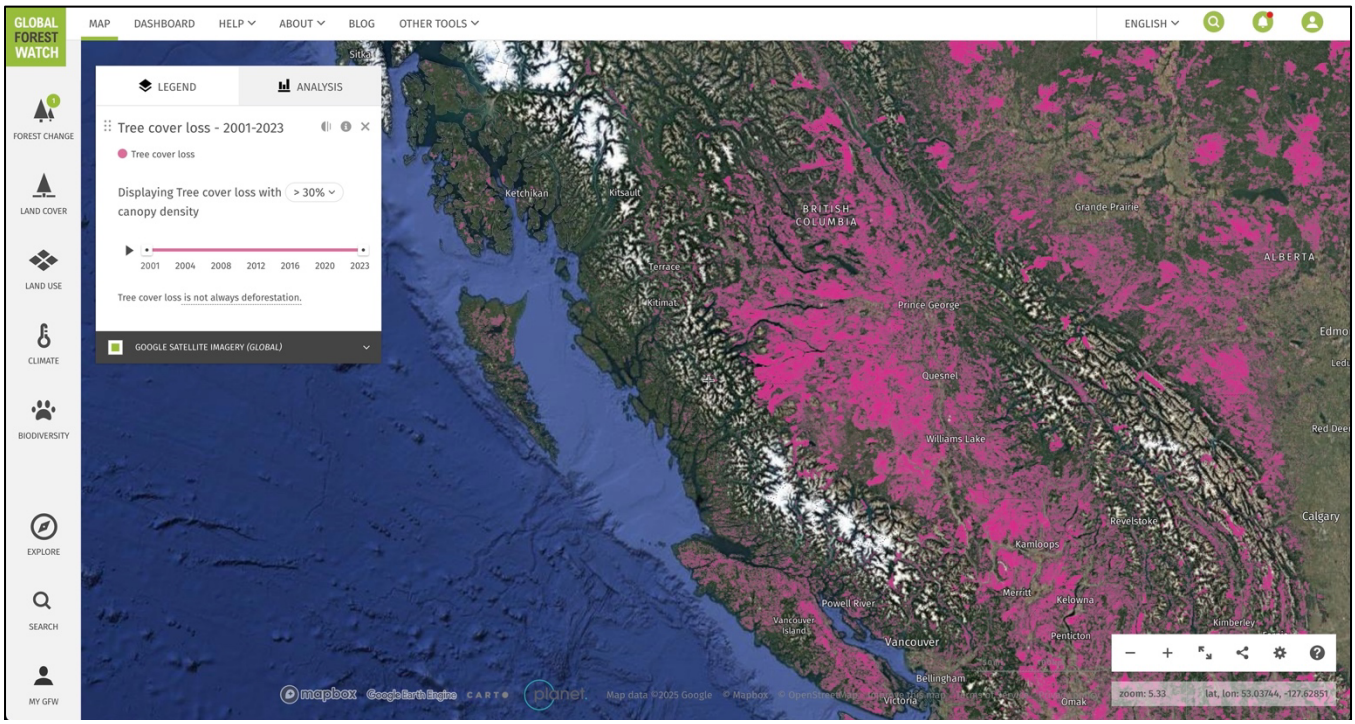

Figure 4 – Tree cover loss (in pink) 2023 – British Columbia
Acquired at https://www.globalforestwatch.org/map/

[7] https://news.mongabay.com/2023/05/one-left-british-columbias-last-chance-on-northern-spotted-owls/

The Barred Owl as Scapegoat

The Barred Owl is also noted as being a significant factor in the decline of the NSO[8]. The Barred Owl reproduces more prolifically than NSO and has spread throughout the range of the NSO. Its population is now orders of magnitude greater than the NSO. The Barred Owl is a slightly larger, more aggressive competitor to the NSO and have been known to kill NSO. However, there is some differentiation between the preferred habitats of the two species.

> "Spotted owls spent a disproportionate amount of time foraging on steep slopes in ravines dominated by old (>120 yr) conifer trees. Barred owls used available forest types more evenly than spotted owls, and were most strongly associated with patches of large hardwood and conifer trees that occupied relatively flat areas along streams. Spotted and barred owls differed in the relative use of old conifer forest (greater for spotted owls) and slope conditions (steeper slopes for spotted owls), but we found no evidence that the 2 species differed in their use of young, mature, and riparian-hardwood forest types.
>
> Availability of old forests and associated prey species appeared to be the most strongly limiting factors in the competitive relationship between these species, indicating that further loss of these conditions can lead to increases in competitive pressure."[9]
>
> "Areas used by barred owls within home ranges differed from availability for all the habitat characteristics we analyzed. Topographic position and slope showed the strongest patterns of selection, with the lowest topographic position and the gentlest slopes being used in proportions more than twice their availability."[10]
>
> "Our results suggested that while both species used tall canopy areas more often than low canopy areas, spotted owls were more commonly found in areas with lower tree cover, more developed understory, and steeper slopes. This is the first evidence of fine-scale partitioning based on structural forest properties by northern spotted owls and barred owls."[11]

It is impossible to refrain from concluding that the logging of old-growth stands in the Pacific Northwest in recent decades is the proximate cause of the Barred Owl spread into NSO territory.

> "Adverse impacts from commercial thinning may be caused by removal of key habitat elements and **creation of forests that are more open** than those likely to be occupied by spotted owls.

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[8] https://www.fs.usda.gov/pnw/pubs/pnw_gtr966_chapter4.pdf

[9] Wiens, J. D., Anthony, R. G. and Forsman, E. D. (2014), Competitive interactions and resource partitioning between northern spotted owls and barred owls in western Oregon. Wildlife Monographs, 185: 1–50. doi:10.1002/wmon.1009 https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/48214/AnthonyRobertFisheriesWildlifeCompetitiveInteractions.pdf

[10] Singleton, P.J.; Lehmkuhl, J.F.; Gaines, W.L.; Graham, S.A. 2010. Barred owl space use and habitat selection in the eastern Cascades, Washington. Journal of Wildlife Management. 74(2): 285-294. https://www.fs.usda.gov/pnw/pubs/journals/pnw_2010_singleton001.pdf

[11] Jenkins, J.M.A., Lesmeister, D.B., Wiens, J.D. et al. (2019). Three-dimensional partitioning of resources by congeneric forest predators with recent sympatry. Sci Rep 9, 6036. https://doi.org/ 10.1038/s41598-019-42426-0 https://www.nature.com/articles/s41598-019-42426-0 - Sec3

> Over 40 years, habitat loss would be far greater than with no thinning because, under a "best case" scenario, thinning reduced 3.4 and 6.0 times more dense, late-successional forest than it prevented from burning in high-severity fire in the Klamath and dry Cascades, respectively. Even if rates of fire increase substantially, the requirement that the long-term benefits of commercial thinning clearly outweigh adverse impacts is not attainable with commercial thinning in spotted owl habitat. It is also becoming increasingly recognized that exclusion of high-severity fire may not benefit spotted owls in areas where owls evolved with reoccurring fires in the landscape."[12] (emphasis added)

NSO territories can extend to over 4,000 hectares[13] depending inversely on the amount of old-growth forest contained within. The extreme fragmentation of the landscape from more than a century of logging and development has made it extremely challenging for NSO to find suitable territory upon dispersal.

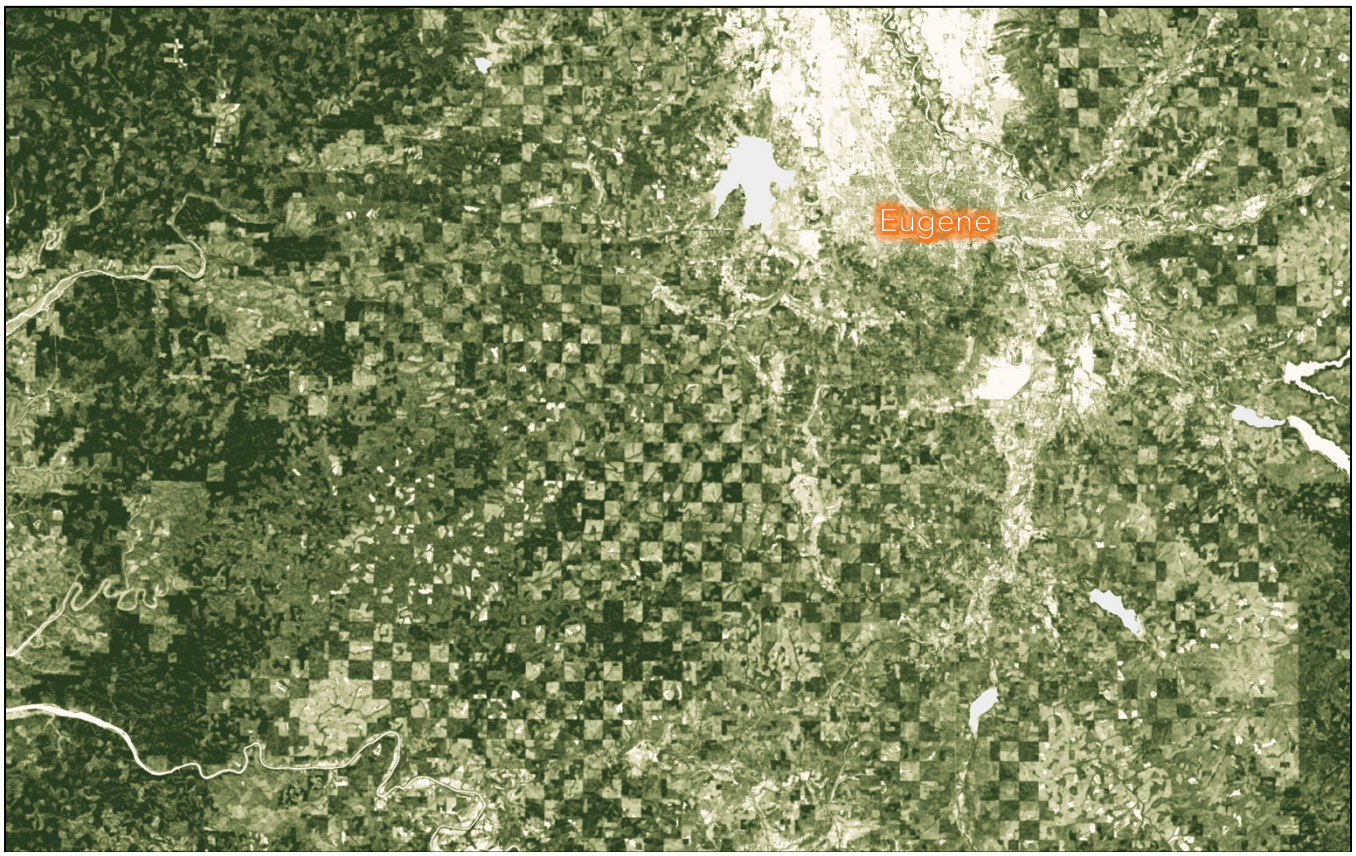

Figure 5 – Canopy height near Eugene, Oregon denoted by gradation of green
Darkest green - ≥50 m
Checkerboard matrix parcels are 1 mile square (259 hectares)
Image acquired at: https://earthobservatory.nasa.gov/images/149793/scientists-show-how-forests-measure-up

[12] Odion, Dennis & Hanson, Chad & Dellasala, Dominick & Baker, William & Bond, Monica. (2014). Effects of Fire and Commercial Thinning on Future Habitat of the Northern Spotted Owl. The Open Orthopaedics Journal. 8. 37-51. 10.2174/1874213001407010037.
https://96a.96e.myftpupload.com/wp-content/uploads/2014/12/ OdionetalOpenEcologyJournal.pdf

[13] Carey, A. B., Reid, J. A., & Horton, S. P. (1990). Spotted owl home range and habitat use in southern Oregon Coast Ranges. The Journal of Wildlife Management, 11-17.
https://www.fs.usda.gov/pnw/pubs/journals/pnw_1991_carey001.pdf

> "Our results show that spotted owls select areas of concentrated old growth in the landscape for their home ranges. Within their ranges, owls strongly select old growth for foraging and roosting (Forsman et al. 1984, Gutierrez et al. 1984, our study). Range lengths and avoidance of all but old-growth stands show that spotted owls travel long distances to use old growth, bypassing young and mature forests."[14]

Fire is not a factor in abandonment of successfully reproducing nests.

> "Spotted Owls in our study population tended to occupy sites where they were more likely to replace themselves. Although fire and postfire logging covariates were associated with reduced site occupancy, the effect sizes of these disturbances in the sites where owls reproduced the previous year were small.
>
> The majority of Spotted Owl core areas in the San Bernadino Mountains and San Jacinto Mountains experienced high-severity fires that were below the critical threshold that reduced occupancy (>50 ha forested area in the 203-ha core), even during this period of extreme drought and elevated fire activity. Severe fire that burned owl core areas throughout the Sierra Nevada from 2000 to 2007 also did not reduce site occupancy, and severely burned forests in the southern Sierra Nevada that were not logged after fire had a greater probability of use by foraging Spotted Owls than unburned forests."[15]

Studies show the NSO successfully ranged from British Columbia to San Francisco before wholesale logging of their habitat. One study propounds an extinction debt for spotted owls resulting from historical logging of large trees that consequently continues to yield long-term declines in old-forest species populations even after policies protecting large trees were enacted, highlighting an urgent need to protect existing old-forest habitat and potential large tree refugia. Since logging was prohibited in National Parks, the study found:

> "Owl populations are declining on all national forest study areas, which contain far less large tree/high canopy cover forest in owl territories than national parks where the owl population is stable."[16]

In an effort that reeks of desperation, the US Fish and Wildlife service is now planning to kill 450,000 Barred Owls over the next 30 years[17]. Whether a misguided Sisyphean task or not, this action will be the consequence of the undeniable failure of the 1994 Northwest Forest Plan to protect the old-growth forests the NSO depended on from commercial logging—the Barred Owl followed the chainsaws.

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[14] Ibid.

[15] Lee, D. E., & Bond, M. L. (2015). Previous year's reproductive state affects Spotted Owl site occupancy and reproduction responses to natural and anthropogenic disturbances. *The Condor: Ornithological Applications*, *117*(3), 307-319. https://www.academia.edu/download/40465538/Previous_years_reproductive_state_affec20151128-29734-1jaer49.pdf

[16] Jones, Gavin & Keane, John & Gutiérrez, R. & Peery, M.. (2018). Declining old-forest species as a legacy of large trees lost. Diversity and Distributions. 24. 341-351. 10.1111/ddi.12682. https://onlinelibrary.wiley.com/doi/10.1111/ddi.12682#ddi12682-bib-0023

[17] Final Barred Owl Management Strategy https://www.fws.gov/sites/default/files/documents/2024-08/final-barred-owl-management-strategy-2024_508.pdf

Wildfire is necessary for the ecosystem

The hysteria ginned up around wildfire these last several years since the Camp Fire incinerated the town of Paradise is being misused to support actions which contribute to the intensity and rate of spread of fire. Logging forests to address wildfire is highly counterproductive. The congressionally mandated Fourth National Climate Assessment (NCA4) 2017/2018[18] released on November 23, 2018 attributes the recent doubling of the cumulative area burned in the western U.S. to climate change (Figure 6). Typically, of the carbon sequestered in a tree, only 6% of the carbon remains in sawn timber, with the remaining 94% of carbon released to the atmosphere, including the 60% of the carbon left on the forest floor after harvesting[19]. An equivalent amount of soil carbon is lost to the atmosphere from harvesting[20,21]. Logging emits carbon to the atmosphere, exacerbating global warming, increasing the area burned by wildfire.

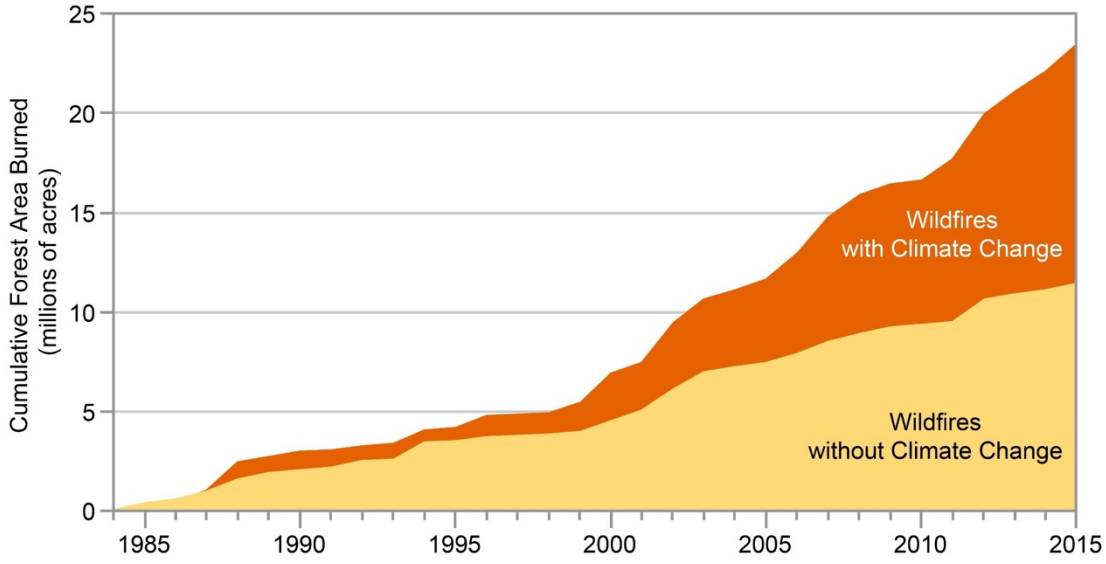

Figure 25.4: The cumulative forest area burned by wildfires has greatly increased between 1984 and 2015, with analyses estimating that the area burned by wildfire across the western United States over that period was twice what would have burned had climate change not occurred. Source: adapted from Abatzoglou and Williams 2016.

Figure 6 - Image acquired from the Fourth National Climate Assessment, Chapter 25

[18] https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf
[19] Swann, T. (2020). The opportunity for Australia's native forests-Jennifer Sanger Jamie Kirkpatrick. https://australiainstitute.org.au/wp-content/uploads/2020/12/P879-Forests-Open-Letter-Supplementary-Brief-Web_0.pdf
[20] Dean, C., Kirkpatrick, J. B., & Friedland, A. J. (2017). Conventional intensive logging promotes loss of organic carbon from the mineral soil. Global Change Biology, 23(1), 1-11. https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.13387
[21] Achat, D., Fortin, M., Landmann, G. et al. Forest soil carbon is threatened by intensive biomass harvesting. Sci Rep 5, 15991 (2015). https://doi.org/10.1038/srep15991 https://www.nature.com/articles/srep15991

There are creatures that have evolved to benefit from wildfire and the resulting burned landscapes. The beetles of the genus Melanophila are equipped with infrared receptors and can detect fires from great distances of more than 60 km[22], and swarm to fires to procreate and deposit their eggs in freshly scorched bark[23]. Black-backed Woodpeckers are noticeable pioneers in the immediate post-fire landscape, their plumage providing excellent camouflage when seen against a backdrop of burned tree bark, underneath which they find their prey—beetle larvae.

> "Researchers have found that Black-backed Woodpeckers play a key role in providing cavities that help other animals repopulate burned forests. These secondary cavity users, including birds such as the Mountain Bluebird and White-breasted Nuthatch, and small mammals such as flying squirrels, help disperse seeds, keep insect populations in check, and serve as prey for larger carnivores during post-fire forest regeneration."[24]

From personal observation, birds are abundant in the early-seral forest regenerating after severe wildfire. A study of the association between listed ESA species and state listed species in relation to early-seral forest ecosystems in the Pacific Northwest concluded that 61 percent of listed native bird species, 80 percent of listed mammal species and 91 percent of listed butterfly and moth species are associated with this early-seral forest habitat. 22 of these species are obligates found only in this type of forest ecosystem[25].

> "Post-disturbance ecosystems are also often rich in biological legacies, including surviving organisms and organically derived structures, such as woody debris. These legacies and post-disturbance plant communities provide resources that attract and sustain high species diversity, including numerous early-successional obligates, such as certain woodpeckers and arthropods. Early succession is the only period when tree canopies do not dominate the forest site, and so this stage can be characterized by high productivity of plant species (including herbs and shrubs), complex food webs, large nutrient fluxes, and high structural and spatial complexity. Management activities, such as post-disturbance logging and dense tree planting, can reduce the richness within and the duration of early-successional ecosystems. Where maintenance of biodiversity is an objective, the importance and value of these natural early successional ecosystems are underappreciated."[26]

Wildfire has always occurred since the advent of trees on Earth changed the composition of the atmosphere by increasing the percentage of oxygen, allowing fire and for life to exist on the surface above the oceans. We all have co-evolved with fire.

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[22] Schmitz H, Bousack H (2012) Modelling a Historic Oil-Tank Fire Allows an Estimation of the Sensitivity of the Infrared Receptors in Pyrophilous *Melanophila*Beetles. PLoS ONE 7(5): e37627. https://doi.org/10.1371/journal.pone.0037627 https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0037627

[23] https://www.vox.com/down-to-earth/23809172/wildfire-beetle-melanophila-sex

[24] https://abcbirds.org/bird/black-backed-woodpecker/

[25] Swanson, M.E., et al. Biological associates of early-seral pre-forest in the Pacific Northwest. Forest Ecol. Manage. (2014), http://dx.doi.org/10.1016/j.foreco.2014.03.046 https://www.sierraforestlegacy.org/Resources/Conservation/Biodiversity/BD-Swanson-etal-EarlySeral2014.pdf

[26] Swanson, M.E.; Franklin, J.F.; Beschta, R.L.; Crisafulli, C.M.; DellaSala, D.A.; Hutto, R.L.; Lindenmayer, D.B.; Swanson, F.J. 2010. The forgotten stage of forest succession: early-successional ecosystems on forest sites. Frontiers in Ecology and the Environment. 9 p. https://www.fs.usda.gov/pnw/pubs/journals/pnw_2010_swanson001.pdf

Figure 7 - Lush, early-seral forest 3 years after the 2021 KNP Complex Fire
Photo by author

It should be noted that even with the increase in area burned by wildfire caused by global warming, even the years with the highest amounts of acreage burned do not compare to the acreage burned in relatively recent history. Wildfire acreage in both 1930 and 1931 surpassed fifty million acres, more than five times the acreage burned in 2020, the most recent high point in wildfire acreage.

This comment cannot be left without noting the futility of fuel reduction treatments for addressing wildfire. Multiple studies show the futility of expecting thinning or thinning with prescribed fire to positively impact future wildfire since the probability of such projects encountering a subsequent wildfire is extremely low, especially within the time span of a treatment's effectiveness. A study examining fourteen years of wildfire encounters with treated forest units resulted in finding only 6.8% of the units encountered wildfire in that time—less than 0.5% a year[27]. The removal of trees for this purpose emits more carbon into the atmosphere, exacerbating global warming and increasing the probability for more wildfire in a vicious cycle.

The only valid use for fuel reduction treatments is in the area immediately adjacent to communities, and only if the structures therein have been fire-hardened. Anything else is futile since fire-lofted, wind-carried embers can travel miles before igniting flammable homes and buildings. And as stated above, fires are not very likely to encounter a fuel reduction treatment.

[27] Barnett, Kevin; Parks, Sean A.; Miller, Carol; Naughton, Helen T. 2016. Beyond fuel treatment effectiveness: Characterizing interactions between fire and treatments in the US. Forests. 7: 237.
https://www.fs.usda.gov/rm/pubs_journals/2016/rmrs_2016_barnett_k001.pdf

In conclusion

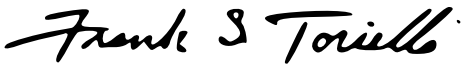
The alternatives proposed in the Northwest Forest Plan Amendment will not correct the inadequacies of the 1994 Northwest Forest Plan implementation. Fuel reduction treatments in NSO territories will only open stands to further incursions of the Barred Owl and will be futile and counterproductive in the face of global warming. The proposals appear to be nothing less than gifts to the timber industry. Satisfying domestic demand for timber could be achieved without logging any of our National Forests if there was the inclination to do so. Alternative A, continuing the management of NSO old-growth habitat under the original 1994 Northwest Forest Plan, has proven a failure at achieving the goals set out for it. The Northwest Forest Plan does need to be revised, but none of the proposals put forward by this amendment are adequate for the purpose.

> "The forest landscape that allowed for owl movement between one reserved area to another became more confined and fragmented. Despite net increases in NSO forests on federal lands during the monitoring period, the population of territorial owls on federal lands decreased by an estimated 61.8 percent."[28]

As a measure of the efficacy of Northwest Forest Plan, the perilous status of the Northern Spotted Owl does not portend well.

For the reasons described above, we find the amendment and the DEIS to be wholly inadequate and must be withdrawn. The premise for enacting this amendment is unsubstantiated.

Thank you for your attention,



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[28] Davis, Raymond J. (2022). Abstract