February 20, 2025

**Re**: Northwest Forest Plan (NWFP) Amendment Draft Environmental Impact Statement (DEIS)

Submitted online via https://cara.fs2c.usda.gov/Public//CommentInput?Project=64745

Please accept these detailed comments and supporting pdfs regarding substantive concerns we have about the numerous shortcomings of NWFP Amendment DEIS (herein DEIS). We are submitting 4 combined files in support of our comments: (1) this letter with substantive comments; (2) our prior comments on the NWFP NOI; (3) 613 pages of supporting pdfs; and (4) our prior comments on the science synthesis. We are submitting #2 and #4 because they were ignored by the Forest Service prior and #3 because the DEIS is not based on best available science. We request all this information be used in a major revision to the amendment that embraces the original intent of the NWFP as noted herein.

Wild Heritage (via DellaSala) has maintained a three-decade vested interest in the NWFP conservation outcomes, including attending the forest summit convened by President William Clinton in 1993 that launched FEMAT and NWFP science-based options in response to the Judge Dwyer decision to suspend timber sales for population viability concerns of late-seral species, and we have published dozens of peer-reviewed articles since. The NWFP's was legally and scientifically defensible because it was based on the science of the times (still relevant decades later – DellaSala et al. 2015). The focus on viability of hundreds of late-seral species within the range of the federally listed northern spotted owl was especially noteworthy. And while there have been regulatory changes since the 2012 planning rule affecting the NWFP, there is no legitimate scientific reason for the Forest Service to abandon its obligation as the nation's steward of remaining late-seral forests that are linked to the viability of dependent species. Notably, at the time, the NWFP options were formulated by a team of highly respected FEMAT scientists that operated in the absence of political pressure and were skilled in old forest ecosystems, spotted owls, marbled murrelets, salmonids, and rare species (survey and manage). Most of this necessary NWFP expertise is greatly diminished in the DEIS that represents a major setback in the regional conservation strategy and the use of best available science inherent in the NWFP's origins.

In contrast to the original NWFP that based options on best available science (i.e., FEMAT) and a biodiversity/ecosystem management objective, the DEIS used a hand-picked FAC process that is a substantial departure from the original science emphasis on the plan's core conservation framework. Instead, the DEIS relies on a multi-stakeholder team to construct its



**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ■ (510) 862-5359 ■ www.wild-heritage.org

preferred alternative with most members lacking the relevant expertise in: population viability (not a single FAC member); wildlife management (not a single FAC member); carbon life cycle analysis and carbon dynamics (not a single FAC member); spotted owl and marbled murrelet habitat needs (not a single FAC member); aquatic ecosystems, salmonids, and riparian areas (not a single FAC member); biodiversity as in survey and manage (not a single FAC member); impacts of postfire salvage logging and roads (not a single member); and conservation reserve design (not a single FAC member). Consequently, the ground-breaking science of FEMAT was shoved aside for a process-based approach that largely lacks the relevant expertise and foundational science of the original plan.

The NWFP was built on fundamental principles of conservation biology, including a coarse filter approach anchored by reserve distribution, connectivity, and reserve redundancy principles whereby the loss of late-seral forests in any one place or region (e.g., dry forests) from natural causes would not affect the overall network in that region or across the owls' range (FEMAT, DellaSala et al. 2015). This was supplemented with a fine-filter approach focused on rare and poorly surveyed species (i.e., survey and manage); habitat needs of imperiled species associated with late-seral and intact watersheds (spotted owl, murrelet, salmonids); and watershed analysis to monitor and restore aquatic ecosystem integrity degraded by decades of road building and logging (i.e., the Aquatic Conservation Strategy). As such the NWFP was deemed a global model in ecosystem management and biodiversity conservation and still is (DellaSala et al. 2015). That history of science-based options is clearly absent from the DEIS that rolls back forest protections using a house-of-cards series of questionable scientific and bioregional assessments (e.g., Spies et al. 2018 cited in the DEIS) previously criticized in comments yet ignored by the agency in the DEIS. Due to file size limitations in the Forest Service portal, we have submitted our prior comments again via separate but supportive comments on our concerns ignored in the DEIS. Notably, the agency science assessments were never peer reviewed and yet peer reviewed science that we submitted in our prior comments was ignored.

None of the action alternatives in the DEIS meet the 100-year timeline of the NWFP in restoring the ecological integrity of late-seral forests and dependent species. The recovery of imperiled species and ecosystems hinges on protecting the reserve network from logging and restoring some 40% of the previously degraded reserves recovering from clearcut logging by protecting ALL old trees (≥80 years) from logging (DellaSala et al. 2015). The DEIS instead proposes substantial increases in old tree logging cloaked in highly subjective terms like "resilience," "climate smart," and "stewardship." It further blames forest losses on natural processes like wildfires and insects while downplaying logging as the main threat to ecosystem integrity even if at reduced levels (DellaSala et al. 2022, 2025). The FAC process essentially wiped away decades of underlying science on the 100-year timeline of the NWFP, replacing it with a questionable stakeholder process and agency led biased assessments. In doing so, the DEIS will harm (degrade) forest ecosystems and imperiled species due to increased logging of large trees and roads that would amplify climate-related drivers of ecosystem integrity decline (DellaSala et al. 2022, et al. 2025). Importantly, we disagree with the modeling findings of Davis et al. linking 'declining' spotted owl habitat in dry


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ■ (510) 862-5359 ■ www.wild-heritage.org

forests to wildfires as the Davis models have not been ground-truthed and conflict with the published literature on owl use of high severity burn patches.

We commented previously (the agency science and biodiversity assessments, NWFP scoping) and via the attached published pdfs that document problems with the Davis owl habitat modeling assumptions and flawed studies of Jones et al cited in the DEIS that claim owls avoid severe burn patches even though other published studies showed that most spotted owl territories where fires occurred also experienced multiple before and after fire logging entries that may have enabled barred owl intrusion as the leading causes of spotted owl site abandonment (Clark et al. 2012, Hanson et al. 2018 for the related California spotted owl, Bond et al. 2022). That is – the studies cited in the DEIS to justify treatments in spotted owl territories include confounding factors that cannot separate cause and effect of spotted owl abandonment (the Jones et al studies have tainted owl sample sites confounded by logging). By contrast, spotted owls have been repeatedly reported using high severity burn patches for nesting and foraging (Lee 2018, Hanson et al. 2018, Bond et al. 2022, Chi 2025) yet none of this peer-reviewed literature was even cited in the DEIS. Instead, the agency continues to rely on untested spotted owl habitat models and biased studies that do not comport with on-the ground observations (Lee 2018, Hanson et al. 2018, Bond et al. 2022, Chi 2025). The Forest Service continues to selectively site studies that only support their contention that fire is the problem and logging the solution to owl habitat losses. Rather than basing policy on best science, the DEIS selectively chose the science to support substantial logging in owl territories that will worsen spotted owl declines.

**Some Elements of the DEIS Where We Have Qualified Support**

*Ending logging of old trees in the matrix* - while we support added restrictions to late-seral logging in the matrix, allowing the logging of many more old trees in the reserves (from 80 to 120 years, moist; and up to 150 years dry) would have a net effect of degrading ecosystem integrity across the planning area (DellaSala et al. 2025) and setback spotted owl recovery due to habitat loss from thinning to owls (Odion et al. 2013, Raphael et al. 2013) and prey species (Manning et al. 2012), leading to a potential jeopardy situation. As there were no qualified spotted owl biologists involved in the FAC process this is another reason why that process was biased from the outset and led to false claims that fire and not logging is the problem for spotted owls. The weakening of the NWFP reserve protections in the DEIS also creates the appearance of a compromise that was brokered with the timber industry to meet "sustainable" timber targets rather than having any true "ecologically appropriate" benefit. That tradeoff in allowing more logging in reserves vs less in the matrix comes with co-lateral damages (see below) and carbon costs to old tree removals that would increase emissions from logging, thereby adding to global feedbacks that are driving more extreme fire weather (DellaSala et al. 2022). Not accounting for those feedbacks is a serious omission of the evidence linking extreme fire weather and logging to large, fast moving fires (Zald and Dunn 2018) and the loss of owl habitat (Bond et al. 2022).


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ▪ (510) 862-5359 ▪ www.wild-heritage.org

*Tribal co-management and "stewardship"*– we support the expanded and necessary consultation process with tribes in the DEIS where they align with conservation objectives. However, it is unclear how this will play out with respect to removal of large live and dead trees for tribal or other purposes. The removal of large trees for any reason (cultural or otherwise) remains controversial and is not "ecologically appropriate," "stewardship," "restoration," or "climate friendly" (all terms used in the DEIS) no matter who is doing the removals. Old tree removals for tribal purposes therefore require a hard look at how many, what types, and where these trees would be removed and the associated impacts to imperiled species, aquatics, soils, and logging emissions regardless of who is doing the logging. Such an analysis of large tree removals for tribal reasons is completely lacking in the DEIS. Instead, the DEIS adopts a vague "stewardship" and "co-management" approach on large tree removals through the otherwise necessary consultation process.

The use of cultural burning in the appropriate places and seasons is generally supportable ecologically and culturally (aligns with conservation objectives). The DEIS, however, needs to provide an effects analysis on whether increased smoke from burning may affect wildlife populations (Sanderfoot et al. 2021), particularly nesting songbirds, and therefore how to mitigate that impact.

**Inappropriate Use of Terminology and Concepts that Mask Forest Degradation**

*Ecological integrity concepts are poorly defined, biased, and unverifiable* – As noted, the DEIS uses terms like resilience, restoration, climate friendly, stewardship, and ecoforestry that rely on various forms of commercial logging, including large, old tree removals and road building. Ecoforestry has been questioned as an untested concept in the NWFP area that is damaging to older forests and in no way simulates the development of complex early seral forests generated by stand-replacing natural disturbances (DellaSala et al. 2013). Why wasn't this oppositional research noted in the DEIS on the impacts of ecoforestry? Ecoforestry would make use of commercial thinning in spotted owl habitat yet prior published accounts (DellaSala et al. 2013, Odion et al. 2013, Raphael et al. 2013 – a government report) question the efficacy of such treatments and impacts of commercial thinning given that this species requires closed (>60%) canopy cover (DellaSala et al. 2013) that would be degraded by "ecoforestry" provisions. As noted, we anticipate greatly scaled up logging of large trees especially in reserves that would likely jeopardize owl recovery, bringing the species dangerously close to the brink of extinction given how logging interacts with fire severity (Bradley et al. 2016, Zald and Dunn 2018), how owl old forest habitat is a recognized wildfire refugia (Lesmeister et al. 2019, 2021) compared to logged areas (Thompson et al. 2007, Bradley et al. 2016, Thompson et al. 2017, Zald and Dunn 2018), and how logging may interact with barred owl competition (Dugger et al. 2011, Wiens et al. 2019, 2021, Bond et al. 2022).

What the DEIS is proposing does not support ecosystem integrity conceptually or in practice as defined by independently published studies (Karr et al. 2021, Rogers et al. 2022). Rogers et al. (2022) included well-defined concepts and metrics for determining ecosystem integrity


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ■ (510) 862-5359 ■ www.wild-heritage.org

and the DEIS meets none of those criteria because it would log substantial numbers of large, mature trees and it relies on further road building that is a pervasive and expansive threat to forest and aquatic ecosystem integrity (Ibisch et al. 2016). The DEIS needs to fully disclose how the preferred alternative addresses the integrity concepts and metrics in Rogers et al. (2022) and DellaSala et al. (2025).

As noted, the DEIS needs to assess integrity using a suite of principles, verifiers, and indicators in DellaSala et al. (2025). That approach should be used to contrast treatments to reference areas having relatively high ecological integrity to determine specific effects on treated areas. It is clear to us that based on these published indicators that the preferred alternative would harm and cause irreparable damages to late-seral forest integrity as a form forest degradation. Importantly, the DEIS does not include a reference condition to compare the preferred alternative against treated areas so that the public can assess the level of degradation from forest treatments.

**The DEIS Fails to Take a Hard Look at Carbon Stock Reduction and Emissions from Logging and Road Building**

The DEIS is lacking a hard look using proper carbon accounting and life cycle analysis (Hudiburg et al. 2019) on how the preferred alternative will contribute to substantial releases of carbon that at the scale of the NWFP area would likely eclipse that of the natural disturbances in the region (Campbell et al. 2007, Harris et al. 2016, Hudiburg et al 2019, Harmon 2019, Moomaw et al. 2019, Harmon et al. 2024, Moomaw and Law 2024). The agency needs to conduct a carbon life cycle analysis that appropriately compares the draft alternatives among each other by fully disclosing gross and net emissions from logging and the transport and manufacturing of wood products. As it stands, the DEIS is biased toward reporting on a very small portion of carbon that is retained in wood product pools (Law et al. 2018, Hudiburg et al. 2019) that completely exaggerates wood product pool benefits (Harmon 2019). The DEIS ostensibly concentrates more on declining wood product harvest pools instead of declining carbon stock from logging old forests and large trees even if logging has been occurring at reduced levels. This can only be fixed by comparing DEIS alternatives to each other and then choosing the one with the lowest logging emissions and road building impacts. The DEIS needs to minimize emissions across all alternatives that includes the need to manage the reserve network for carbon stock retention by protecting large trees from logging in addition to their biodiversity and water quality importance (Krankina et al. 2012, 2014, Brandt et al. 2014, Law et al. 2018). Numerous studies show how logging produces far more emissions than natural disturbances (Harris et al. 2016, Law et al. 2018, Hudiburg et al. 2019, Moomaw and Law 2024 to name a few).

It is important to note that several published studies – not included in the DEIS – show that the NWFP has operated as a sink for carbon mainly because of the restrictions on logging since its implementation (Krankina et al. 2012) and the region contains some of the highest carbon densities in the world stored mostly in late-seral forests protected from logging (Krankina et al. 2014). Managing for carbon stores is also a proxy for biodiversity and a suite


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ▪ (510) 862-5359 ▪ www.wild-heritage.org

of ecosystem services (Brandt et al. 2014). These facts should be cited in the DEIS as foundational in contributing to natural climate solutions that help arrest climate impacts in the region (Law et al. 2013, Law et al. 2018, 2021, 2022).

Also clearly missed in the DEIS, large trees (>20 in dbh) in the region contain at least 40% of the above ground carbon stock in dry forests despite representing a small fraction of the total stem density (Mildrexler et al. 2021). As trees mature (>20 in dbh, >80 years generally), they continue to accrue carbon (Stephenson et al. 2014, Birdsey et al. 2023). By increasing the age of logging large trees in the reserves (from 80 to 120 years moist forests, and up to 150 years dry forests), the DEIS did not conduct a science-based carbon analysis on emissions from logging of large trees and road building to support logging infrastructure and it failed to recognize any of the published literature that shows significant carbon emissions would ensue from logging large carbon-dense trees (e.g., Stephenson et al. 2014, Mildrexler et al. 2021, Krankina et al. 2012, 2014, Brandt et al. 2014, Law et al. 2018, 2021, 2022, Harmon 2019, Hudiburg et al. 2019). The DEIS seems to be more preoccupied with harvest wood product pool reductions than actual emissions from its logging and infrastructure programs.

**Undisclosed Impacts of Opening Huge Swaths of Dense Old Forests used by Spotted Owls**

The northern spotted owl is the iconic species upon which the protective elements of the NWFP were built, including restrictions on logging in the reserves. The listing factors for this species are clearly indicated as due to loss and adverse modification of owl habitat by logging and the lack of regulatory protections of owl habitat from logging. The DEIS would adversely modify owl habitat once again by logging old trees using commercial "fuel reduction thinning treatments" that rely on untested ecoforestry concepts and that in many cases will drop canopy thresholds below 60% needed to maintain owl habitat (DellaSala et al. 2013). Odion et al. (2013) and Raphael et al. (2013, a government report) have independently used habitat simulation models to show how thinning as proposed under the USFWS spotted owl recovery plan of 2011 as 'ecoforestry' would degrade far more owl habitat (3-6 times more) than if fires occurred in those same areas, including that of closed canopy prey species (Manning et al. 2012). Yet, the DEIS does not cite that research nor conduct the necessary impacts analysis. Further, the DEIS did not cite other government research (Lesmeister et al. 2019, 2021) documenting the importance of spotted owl habitat as fire refugia because older habitat used by owls tends to burn in lower fire severities even though tree densities and canopy closure is high in these areas. There is no discussion at all of fire refugia properties maintained by unlogged, unthinned owl habitat even though the agencies' own research branch has published on this issue.

Therefore, the DEIS cannot conclude that ecoforestry or any other form of logging in owl habitat would result in greater fire resilience nor will reduce barred owl invasions given that competing species colonizes forests fragmented and degraded by logging (Bond et al. 2023). The best way to contribute to spotted owl recovery is to increase habitat protection in the reserves, add more reserves and habitat protection at the territory scale, and experimentally


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ▪ (510) 862-5359 ▪ www.wild-heritage.org

remove barred owls (Dugger et al. 2011, Wiens et al. 2019, 2021). Thinning has not been shown to increase spotted owl resilience to fires and in fact is counter to these studies. Likewise, increased logging and road building will fragment habitat and likely enable more barred owl invasions of spotted owl territories.

**Impacts of an Expansive Road Network on Wildfire Ignitions and Co-Lateral Ecosystem Damages**

Roads are a major cumulative impact to the NWFP area in many ways, including increased risk of unwanted ignitions (Balch et al. 2017), increased mortality to wildlife (collisions, poaching), impacts to water quality (sediment run off), and spread of invasive species that tend to disperse along roads (e.g., weeds and livestock; Ibisch et al. 2016). The DEIS needs to include more detail on road impacts, including the need to decommission far more problematic roads due to water quality and habitat fragmentation concerns and close roads seasonally to also reduce unwanted human-caused fire ignitions.

Roads and logging would also degrade habitat of marbled murrelets that are sensitive to nest-site predation in logged and roaded areas due to habitat fragmentation and stream-road intersections will degrade habitat of salmonids and other aquatic organisms (i.e., aquatic ecosystem integrity, Ibisch et al. 2016).

**Riparian Area Treatments Would Degrade Not Restore Aquatic Ecosystem Integrity from Cumulative Stressors (commercial logging, roads, livestock, invasives)**

Based on Forest Service NWFP monitoring reports, riparian areas and watersheds in general have been improving as a direct result of reduced timber harvest under the NWFP and road obliterations. The DEIS needs to build on this success story by suspending commercial logging within riparian areas, obliterating more roads on steep slopes/fragile soils, improving failing culverts to handle more rain on snow events, and installing more water bars to limit sediment transport into streams from the road prism. Water quality is still being impaired by roads and other stressors like livestock grazing. The DEIS needs to conduct a proper cumulative impacts analysis on these stressors and the excessive road densities in the area as the preferred alternative would only contribute to these degrading stressors (Beschta et al. 2012, Ibisch et al. 2016).

**Postfire Logging is a Significant Form of Ecosystem Degradation Understated in the DEIS**

The DEIS represents postfire logging as some stalemate in the science literature – i.e., each side can show studies supporting their claims as noted in the DEIS. This is claim is not based on the best available science showing the substantial impacts of postfire logging documented across a broad suite of taxa and effects (Beschta et al. 2004, DellaSala et al. 2006, Lindenmayer and Noss 2006, Noss and Lindenmayer 2006, Thorn et al. 2017, Georgiev et al. 2019); soil compaction from logging machinery; damages to soil horizons and mycorrhizae


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ■ (510) 862-5359 ■ www.wild-heritage.org

networks from pile burning; impacts to water quality especially from roads (Karr et al. 2004); seedling establishment losses from logging equipment; and the increased likelihood of a repeat severe reburn in areas logged (Donato et al. 2006, Thompson et al. 2007 and 2017). The few studies demonstrating a reduction in coarse woody debris show these limited reductions are mainly from the removal of large trees (coarse fuels) yet those removals generate fine fuels (slash) that spread fires in logged areas (Donato et al. 2006). There is simply no ecological reason for post-fire logging in old forests, reserves, or any other high priority conservation area that experienced a stand-replacing natural disturbance (DellaSala and Hanson 2024).

**Conclusions**

The NWFP original was grounded in the science of its time and supported by subsequent analysis of the plan's efficacy over the decades of implementation of a plan meant to span 100 years given how much degradation occurred in the region from logging and road building (DellaSala et al. 2006, 2015). While the threats from barred owls and climate change have increased in that time span, this is no excuse for lifting old tree protections as the DEIS relies on a biased FAC process and selective use of the literature to support activities that are not restorative but degrading to ecosystem integrity. None of the action alternatives meet the original intent of the NWFP as the expansive use of logging will setback the decades progress of the original plan, amplify climate impacts by contributing emissions from logging large trees, cause cumulative impacts from logging, roads, livestock, and invasive species interacting with climate change, damage wildfire and climate refugia properties of the reserves and old forests generally (DellaSala et al. 2022b), and likely result in a jeopardy determination for the northern spotted owl and associated imperiled species. Building a plan amendment on a faulty FAC process and the selective use of the literature including the agency's questionable scientific assessments does a disservice to what the original plan already has accomplished. The amendment should build on the NWFP accomplishments by additions to the reserve network rather than subtractions via allowing more logging in them.

Thank you for considering our comments in the DEIS.

Dominick A. DellaSala, Ph. D
Chief Scientist


**Wild Heritage**
**A Project of Earth Island Institute**
PO Box 9451 Berkeley, CA 94709 ■ (510) 862-5359 ■ www.wild-heritage.org