OREGON WILD
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19 May 2023

TO: PNW Regional Forester, Objections Reviewing Officer
VIA: https://cara.fs2c.usda.gov/Public/CommentInput?Project=55868

Subject: 36 CFR 218 objection of the Youngs Rock Rigdon Project

Dear Forest Service:

In accordance with 36 CFR 218, Oregon Wild hereby objects to the project described below.

DOCUMENT TITLE: Youngs Rock Rigdon Draft Record of Decision, and Final Environmental Impact Statement.

PROJECT WEBLINK: https://www.fs.usda.gov/project/willamette/?project=55868

PROJECT DESCRIPTION: The proposed action alternative 2 involves:

- 2,608 total acres of commercial logging and fuel reduction
  - 1,419 acres of thinning in mature natural stands
  - 736 acres of thinning in managed stands with ½ ac gaps (including 273 acres in riparian reserves)
  - 531 acres of regeneration harvest in managed stands (shelterwood with reserves)
  - 63 mmbf (~12,600 log truck loads)
  - Logging in: Special Interest Areas, riparian reserves, spotted owl critical habitat
  - 273 acres of thinning in riparian reserves in managed stands
- In managed stands, outer portion of Riparian Reserve will maintain 40% canopy cover and 60 trees per acre. Plus, gaps up to 0.5 acres in riparian reserves outside 1 SPT. No-harvest buffers are as follows: Class 1 streams: 120 feet, Class 2 streams: 75 feet Class 3: 60 feet; Class 4: 30 feet.
- No commercial harvest in riparian reserves in natural stands, but non-commercial snag creation and wood recruitment could reduce canopy cover to 70%.

- 47 miles of roads put in storage
- 12 miles of road decommissioning
- 10 miles temporary road construction (not mapped? rough estimate, because they intend to be very flexible with purchaser on logging systems)
- 127 miles haul road maintenance
- Wet weather log hauling allowed near critical habitat for Chinook salmon and bull trout
- Logging systems: 940 acres helicopter, 1,251 acres skyline, 925 acres ground-based (rough estimate, because they intend to be very flexible with purchaser on logging systems)
- Plan amendment to allow logging in 2 Special Interest Areas
- 2,799 acres of suitable spotted owl nesting, roosting, foraging habitat would be *removed* by regen and early seral creation (not maintained; not degraded; removed)
- 467 total acres of spotted owl dispersal habitat would be *removed*
- 997 total acres of spotted owl dispersal habitat would be *modified but "maintained"*
- Within Spotted Owl critical habitat: 1,561 acres of suitable and 82 acres of dispersal habitat would be removed. Another 377 acres of dispersal habitat would be modified but maintained.
- 2,799 acres (21%) of forest suitable for red tree voles would be affected by early seral forest creation and regeneration harvest treatments
- 152 acres of (non-commercial?) gaps for pine/oak release in natural stands
- 104 acres of non-commercial roadside pine release
- 1,687 acres of fuel reduction outside of commercial logging units
- 276 acres meadow restoration (non-commercial)
- 695 acres floodplain restoration (non-commercial)
- 200 acres of drop and leave thinning in riparian reserves (non-commercial)
- 489 acres strategic fuel reduction (non-commercial)
- 739 roadside understory fuel reduction (non-commercial)
- Various recreation projects
- 133 acres of commercial logging in the Deadhorse and Moon Point Special Interest Areas, requires a one-time amendment to the 1990 Willamette National Forest LRMP.

PROJECT LOCATION (Forest/District): Middle Fork Ranger District, Willamette National Forest, Lane County, Oregon

NAME AND TITLE OF RESPONSIBLE OFFICIAL: David Warnack, Forest Supervisor, Willamette National Forest

LEAD OBJECTOR: Oregon Wild

REQUEST FOR MEETING TO DISCUSS RESOLUTION: Oregon Wild hereby requests a meeting to discuss potential resolution of the issues raised in this objection.

NARRATIVE DESCRIPTION OF THOSE ASPECTS OF THE PROPOSED DECISION ADDRESSED BY THE OBJECTION:
Note: There are many aspects of this project that Oregon Wild supports, including floodplain restoration, meadow restoration, variable thinning of young plantations, recreation enhancements, road decommissioning, road storage, and some of the fuel reduction activities that focus on prescribed fire and removing small fuels near roads. Oregon Wild also supports the *goal* of restoring dry pine and oak sites, but we feel that this can be accomplished in more limited areas that clearly exhibit significant components of the historic pine/oak community, while conserving more of the mature & old-growth forests that help mitigate global climate change and provide important habitat for old-growth species.

We object to the excessive logging of mature & old-growth forests that provide rare and valuable public values such as stable supply of clean water; habitat for spotted owls, red tree voles, and other species that live in late successional forests; carbon storage for climate mitigation; resistant and resilient fuel conditions; and scenic and recreation values.

We object to the flawed NEPA analysis for the Youngs Rock Rigdon Project that fails to provide for informed public comment and informed decision-making; fails to consider alternatives that better harmonize savannah restoration with other important values associated with mature & old-growth forests (carbon, climate, wildlife, water, fire resilience, scenic and recreation); fails to take a hard look at the adverse effects of logging mature & old-growth; fails to consider new information since the Northwest Forest Plan was adopted which indicates the need to conserve more mature & old-growth forests.

We object to the flawed and incomplete compliance with the Endangered Species Act and the spotted owl recovery plan, including RA32.

SUGGESTED REMEDIES THAT WOULD RESOLVE THE OBJECTION:
As noted in prior comments, Oregon Wild respectfully requests that the Forest Service modify this project help achieve a more harmonious mix of public goals for these public lands, including:

- Consider a new alternative that better harmonizes pine/oak persistence on the one hand, versus spotted owl habitat maintenance, avoiding GHG emissions by keeping carbon stored in forests, maintaining canopy cover that helps suppress ladder fuels and maintain fire resilience while reducing long-term maintenance costs, mitigating blow-down risks, and conserving recreation/scenic values,

- Conduct careful legacy tree culturing of pine, oak, and other legacy trees by thinning small/young trees around the dripline of those trees;
- Reduce commercial logging in riparian reserves so that streams and adjacent forests are not deprived of valuable large wood;
- Drop logging of natural stands that have few if any pine trees;
- Amend the definition of "legacy trees" to be protected in harvest units to include all trees over 24" dbh, as well as smaller trees that exhibit old growth characteristics, such as thick/textured/colored bark, large branches, distinctive canopy architecture, tall height, etc.;
- Retain more trees in natural stands (except around pine and oak as described above) to maintain spotted owl habitat, carbon storage, and long-term low-maintenance fire resiliency;
- Avoid stand-scale regen except for structure-rich gaps in managed stands. Wildfire will decide where stands will be regenerated;
- Revise RA32 mapping to reflect actual on-the-ground conditions and protect all RA32 stands;
- Re-issue a draft ROD for public review once ESA Section 7 is complete and the U.S. Fish and Wildlife Service's assessment of the degree of adverse effects resulting from the removal of 2,799 acres of suitable spotted owl habitat is known;
- Minimize road construction and expand non-commercial small tree thinning (which does not require roads) to areas with abundant pine and oak that are not accessible from existing roads;
- Avoid wet season logging and log hauling to protect soil, water quality, and fish;
- Make sure all design features get carried through to marking crews, contractors, etc.
- Conduct thorough monitoring of project implementation and effectiveness, or

Prepare a new EIS to take a hard look at the issues raised in this objection and prior comments, address unresolved conflicts between competing uses of the forest, and fully comply with the requirements of NEPA and the CEQ regulations.

DESCRIBE HOW THE OBJECTIONS RELATE TO PRIOR COMMENTS:
All the issues raised in this objection were raised in Oregon Wild prior comments during scoping and DEIS comment periods, as well as during public meetings and field visits.

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SPECIFIC ISSUES RELATED TO THE PROPOSED ACTION:

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Failure to Complete Consultation on ESA-Listed Species

The draft ROD proposes removing 2,799 acres of spotted owl suitable nesting, roosting, foraging habitat and removing 467 total acres of spotted owl dispersal habitat. 997 total acres of spotted owl dispersal habitat would be modified but "maintained." Some of the suitable habitat removal will occur within spotted owl home ranges. Within Spotted Owl Critical Habitat, 1,561 acres of suitable and 82 acres of dispersal habitat would be removed. Another 377 acres of dispersal habitat would be modified but maintained. This watershed also supports listed Upper Willamette spring Chinook salmon and bull trout, and is potentially home to threatened gray wolves.

The draft ROD asserts that the Forest Service has fulfilled its ESA Section 7 requirements with regard to spotted owls by submitting a Biological Assessment to the U.S. Fish and Wildlife Service (FWS) on February 16, 2023. This is incorrect. The Forest Service's ESA Section 7 obligation to avoid jeopardy or adverse modification of critical habitat remains throughout the duration of a proposed action. Furthermore, until FWS has completed its biological opinion, the ESA Section 7 consultation process remains ongoing and incomplete.

Wildfires that have occurred in recent years, including the 2022 Cedar Creek Fire, significantly changed the habitat suitability and distribution of high quality habitat within the spotted owl's range such that additional impacts, like the proposed removal of 2,799 suitable habitat acres, may affect the species to a greater degree than prior to recent large wildfires. Other pertinent new information about the status of spotted owl populations and competition with barred owls has also come to light since FWS last produced a biological opinion regarding the effects of timber harvest activities within the Willamette National Forest. It is inappropriate for the Forest Service to proceed with the public objection process without either the action agency or the interested public knowing the U.S. Fish and Wildlife Service's (FWS's) assessment of the degree to which the logging treatments proposed will adversely affect species like spotted owls.

The draft ROD also contradicts itself as to whether the proposed logging will result in take. On page 10, the draft ROD says proposed activities "will result in take but not jeopardy," but on page 21 asserts that spotted owls "will be adversely affected but [proposed activities] will not result in disruption or incidental take." The Forest Service cannot credibly state that no jeopardy or incidental take will result before FWS reaches its conclusion in a biological opinion.

In addition, the logging proposed by the Youngs Rock Rigdon Project threatens a violation of the ESA's take prohibition. In a recent decision from the Oregon District Court upholding the BLM's North Landscape Project, Magistrate Judge Clarke noted that "FWS determined that incidental take . . . is not anticipated because timber harvest will not occur in [northern spotted owl] occupied sites." *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, No. 1:19-cv-1810-CL, 2021 WL 5356969, at *5 (D. Or. Aug. 24, 2021). In contrast, here, the Forest Service plans to target suitable habitat for removal *within* spotted owl home ranges.

The Forest Service must also be mindful of the outcome of the recent lawsuit challenging the BLM's Poor Windy Project. There, the Oregon District Court found that, in reaching a determination on the effects of the project on barred owl and spotted owl interaction, FWS offered an explanation that ran counter to the evidence before it. *Klamath-Siskiyou Wildlands Ctr. v. U.S. Fish & Wildlife Serv.*, No. 1:20-cv-952-AA, 2022 WL 4599259, at *10 (D. Or. Sept. 30, 2022). The Final EIS for the Youngs Rock Rigdon Project mentions barred owls just twice, strongly indicating that the Forest Service has completely ignored an important aspect of the problem before the agency.

Page 20 of the draft ROD indicates that the Forest Service intends to rely on a July 2020 letter of concurrence from the National Marine Fisheries Service (NMFS) to satisfy its ESA Section 7 consultation obligations regarding the Youngs Rock Rigdon Project's admittedly *adverse* effects on Upper Willamette spring Chinook salmon and bull trout. Again, the landscape and habitat conditions for these listed species has also changed dramatically since the wildfires of 2020 and more recent times (which occurred *after* the July 2020 letter of concurrence). Reliance on a letter of concurrence or biological assessment that pre-dates these changed conditions does not satisfy the Forest Service's *or* NMFS's and FWS's ESA Section 7 obligations. Consultation must be reinitiated to take account of the changed environmental baseline and any other information that has since arisen.

Furthermore, when an action will *adversely* affect a listed species, a letter of concurrence from NMFS or FWS and a biological assessment do not satisfy Section 7 of the ESA. Federal agencies must initiate formal consultation leading to a biological opinion for proposed actions that the action agency has determined is likely to *adversely* affect any listed species or critical habitat, as is the case here, according to the draft ROD. *See* 50 C.F.R. § 402.14(b)(1).

The Forest Service needs to fully complete ESA consultation with FWS and NMFS on impacts to spotted owls, Upper Willamette spring Chinook, bull trout, and other listed species. As proposed, this project is highly likely to cause spotted owl take and adverse modification of critical habitat, given the dire conditions of spotted owl populations caused by the barred owl invasion, wildfires, and global climate change.

Rather than brush past its ongoing ESA Section 7 duties, the Forest Service should use the consultation process to inform the NEPA process and inform the public. In fact, this is required by NEPA. The Forest Service NEPA Handbook also requires that Decision Notices explain complete[ly] and comprehensive[ly]" how the NEPA decision complies with applicable legal requirements.

> FSH 1909.15 Chapter 40, 43.21 - **Format and Content**
> Decision notices document the conclusions drawn and the decision(s) made based on the analysis in the EA. Decision notices should conform to the following format and content. While sections may be combined or rearranged in the interest of clarity and brevity, the information needs to be complete and comprehensive.
> …
> 6. Findings required by other laws and regulations. Include any findings required by any other laws which apply to the decision being made. Cite the project record or environmental analysis document that contains the information being used to support the findings. Describe how the decision is consistent with applicable laws and regulations. For example, findings regarding consistency with the forest plan (allocation, and standards and guidelines), suitability for timber production, and vegetation management criteria required by the National Forest Management Act and 36 CFR part 219. (emphasis added)

http://web.archive.org/web/20090118192937/http://www.fs.fed.us/im/directives/fsh/1909.15/1909.15_40.doc. Compliance with the Endangered Species Act is among the legal requirements that should be addressed in the NEPA document.

NEPA requires disclosure of information necessary to determine compliance with legal requirements such as the Endangered Species Act, Clean Water Act, National Forest Management Act, and applicable Forest Plan Standards & Guidelines. *See* 40 C.F.R. § 15087.27(b)(10) and *Nw. Indian Cemetery Protective Ass'n v. Peterson*, 795 F.2d 688 (9th Circ. 1986). In this G-O Road case, the NEPA document described water quality changes resulting from a road project in terms of 7-day average changes, whereas the applicable water quality standard was defined by daily peak changes. The court found this to be a NEPA violation. A NEPA document that does not disclose the details of ESA compliance would also violate NEPA.

The USDA Office of General Counsel agrees that project level analysis must document "Project Compliance With Other Laws."

> In addition to consistency with the LRMP each project must be in compliance with NEPA, CWA, CAA and other laws. Simply being consistent with the LRMP does not fulfill the site-specific requirements of Federal law. Project level analysis is to "determine findings for NFMA, to ensure compliance with NEPA, and to meet other appropriate laws and regulations." Forest Service Land and Resource Management Planning, FSM 1920 and Forest Service Handbook 1909.12, 5.31. 53 Fed. Reg. 26807, 26836 (July 15, 1988).

OGC, "Forest Plan and Project Level Decisionmaking— Overview of Forest Planning and Project Level Decisionmaking,"
http://web.archive.org/web/20030111060230/http://www.fs.fed.us/forum/nepa/decisionm/p4.html
http://web.archive.org/web/20060829000705/http://www.fs.fed.us/emc/nfma/includes/overview.pdf

Failure to Consider New Information on Northern Spotted Owls. Failure to Take a Hard Look at Barred Owls and Global Climate Change, and Other Issues.

Significant new information has come to light since the Northwest Forest Plan was adopted and the FS needs to take a hard look at that new information before deciding to remove more than 1,000 acres of suitable spotted owl habitat.

The conservation strategy of the 1994 Northwest Forest Plan requires that spotted owls have ready access to existing suitable habitat, and the expanding area of new suitable habitat as it is recruited. Since the NWFP was adopted in 1994 significant new information has come to light which brings those conservation pillars into question. In particular, the barred owl population has exploded and now occupies and defends large areas of suitable habitat that was assumed to be available to spotted owls. An important part of the strategy to help spotted owls coexist with barred owls is to maximize the availability of suitable habitat. This project conflicts with that goal.

The NEPA analysis in the NWFP needs to be updated to account for this new information. The NEPA analysis for this project does not take a hard look at these issues.

The **barred owl** is dramatically increasing in numbers throughout the range of the spotted owl and causing Competition and displacement of the spotted owl. The Northwest Forest Plan does not account for the effects of barred owls which compete with spotted owls and exclude spotted owls from otherwise suitable habitat. The barred owl is barely mentioned in the 1994 NWFP SEIS. The invasion of the barred owl undermines a critical assumption underlying the Northwest Forest Plan - that all *suitable* owl habitat is *available* to spotted owls. Tens of thousands of acres old forest owl habitat in the Willamette NF (which was in short supply before the barred owl arrived) are now occupied and defended by barred owls to the exclusion of spotted owls. The logical response now is to protect and restore more habitat to reach spotted owl population goals. **Implications:** Based on well-established science regarding species/area relationships the agencies need to protect more suitable owl habitat is needed to ensure that these two owl species can co-exist, and to decrease the likelihood of competitive exclusion. This is corroborated by FWS' Final Recovery Plan for the Northern Spotted Owl, which recommends protection of "substantially all of the older and more structurally complex multi-layered conifer forest" outside of reserves (as well as on non-federal lands). "These forests are characterized as having large diameter trees, high amounts of canopy cover, and decadence components such as broken-topped live trees, mistletoe, cavities, large snags, and fallen trees." See Recovery Action 32. This recovery action is intended to reduce competitive pressures between spotted and barred owls, but unfortunately RA 32 only applies to a subset of all the suitable habitat that could be conserved to further co-existence between the two competing owls, and an analysis has not been done to show *how much* additional habitat needs to be protected to ensure recovery of the spotted owl, and the USFS and BLM have not taken steps to amend their LRMPs to implement this recovery plan element.

The potential effect of **climate change** in terms of longer fire seasons; larger and more intense fires; increased tree mortality from fire, insects, and drought stress, consequently altered regional vegetation patterns and climate patterns; and maybe most significantly, *uncertainty whether suitable habitat can be regrown from altered young stands in an altered climate regime*. Climate change also brings uncertainty in terms of the frequency and duration of inclement weather during the owl breeding season. Franklin et al. (2000) observed that spotted owl populations could decline due solely to weather effects.[1]

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[1] Franklin AB, Anderson DR, Gutierrez RJ, Burnham KP (2000) Climate, habitat quality, and fitness in northern spotted owl populations in northwestern California. Ecol Monogr 70:539–590. See also, DISSERTATION OF Elizabeth M. Glenn. 2009. Local Weather, Regional Climate, and Population Dynamics of Northern Spotted Owls in Washington and Oregon. http://ir.library.oregonstate.edu/jspui/bitstream/1957/11326/1/EGlennDisseration2009.pdf. http://www.naturaloregon.org/2010/08/03/osu-climate-change-may-be-hurting-the-spotted-owl-in-oregon/ ("Climate change models predict Oregon and the Pacific Northwest will experience warmer and drier summers, as well as warmer and wetter winters, because of global warming. Lead researcher Betsy Glenn says both of those trends make it harder spotted owls to survive, but in different ways.

Implications: Uncertainty in the weather creates uncertainty for the owl. This uncertainty can be mitigated by maintaining a larger population which is more resilient to climatic variations. Under a new climate regime, the average age of forests will likely decline, forest establishment will likely become more difficult; we may not be able to regrow new owl habitat in the reserves as assumed in the NW Forest Plan. Existing old forests are relatively resilient to climate change. It is risky to be conducting regen harvest and expect to be able grow new owl habitat in the reserves under an uncertain climate regime. Global climate change also affects local and regional weather. Spotted owl are known to be sensitive to cold and rain during the nesting season. If inclement weather increases during nesting season, spotted owl nesting success will likely be adversely affected. Dense forests provide owls more protection from inclement weather. "*Given that natural resource managers cannot control climate variation and barred owls are likely to persist and increase in the range of the northern spotted owl, maintaining sufficient high quality habitat on the landscape remains the most important management strategy for the conservation of this subspecies."* http://www.naturaloregon.org/2010/08/03/osu-climate-change-may-be-hurting-the-spotted-owl-in-oregon/;.

Greater than expected **loss of habitat to wildfire** over the last several years. The 2022 Cedar Creek Fire burned over 125,000 acres of the Middle Fork Watershed.

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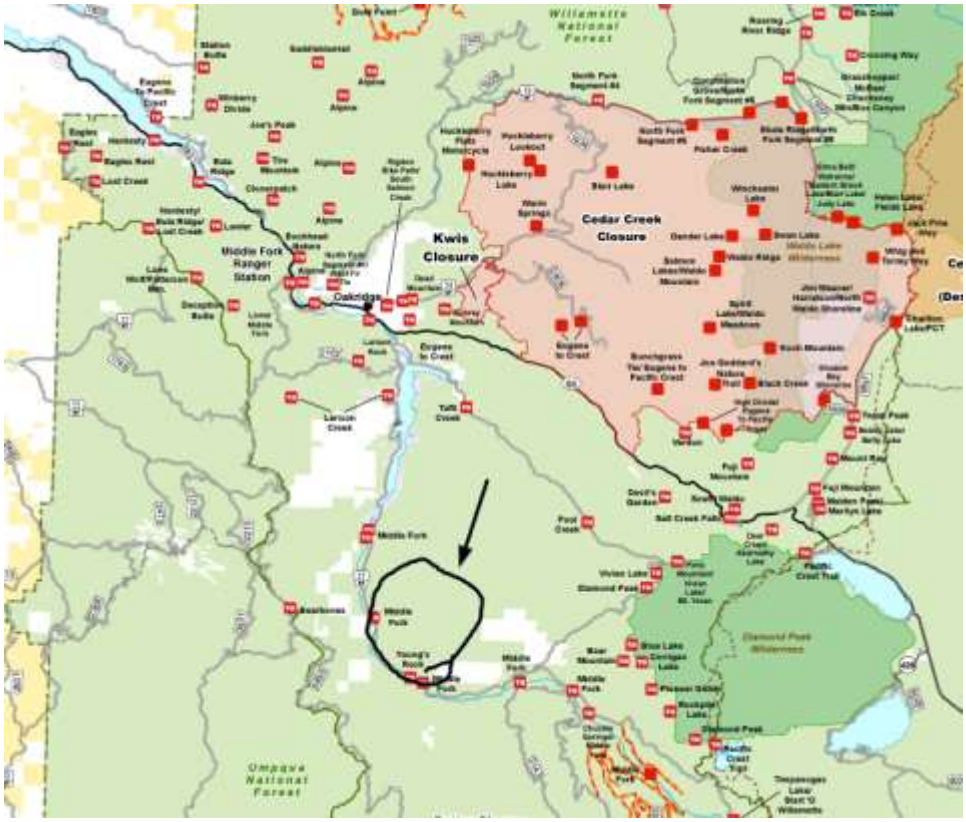
* Unusually dry summers reduce the food supply for spotted owls. That's when you're mostly likely to see big declines in the numbers of northern flying squirrels and other small mammals that spotted owls like to eat. Glenn says less food means lower survival rates for adults and owls won't expand into areas when there's not enough to eat.

* If the spring time nesting season is colder and wetter than normal, Glenn says it hurts the survival chances of owl fledglings.")



Thankfully, not all these acres burned at high severity, but the vast majority of the fire area experienced mortality of 25-90% of the trees in the stand. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1074774.pdf. And, the effects of the fire on spotted owls may continue to worsen before they get better. The Forest Service reports that "Threats include additional loss of habitat in the fire area due to blowdown, mass soil movement, flooding, and insects and disease. Each of these threats could result in additional mortality to remaining live trees and further reduce NSO suitable habitat and usable critical habitat and threaten the viability of nesting territories." Willamette National Forest. Burned Area Emergency Response Summary – Cedar Creek Fire. November 1, 2022. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1074769.pdf; **Implications**: Loss of habitat to fire and the risk of more such losses, makes all remaining habitat more valuable than previously considered in any programmatic NEPA document.

Fuel reduction objectives conflict with owl habitat objectives. Under the false premises of the Healthy Forest Restoration Act, the USFS and BLM are aggressively logging owl habitat to save it from fire. Fuel reduction efforts adversely affect spotted owl habitat characteristics. "Research conducted within and adjacent to the South Cascades LSR network indicates that spotted owls avoid suitable NRF that has been 'degraded'. This effect appears to last for decades." South Cascades LSR Assessment. Scientific support is lacking for fuel reduction logging to benefit species like spotted owls that prefer to live in dense forests - a fuel rich environment. *Surface fuels* provide habitat for owl prey; *ladder fuels* provide owl roosting sites; and *canopy fuels* provide owl nesting habitat; thus, fuel reduction treatments in owl habitat will almost unavoidably

degrade or downgrade some existing owl habitat (or put that habitat at greater risk of fire or barred owl invasion). This means that the remaining owl habitat throughout the owls range becomes more important than previously considered in any programmatic NEPA document. For more information, see Heiken, D. 2010. Log it to save it? The search for an ecological rationale for fuel reduction logging in Spotted Owl habitat. Oregon Wild. v 1.0. May 2010. https://www.dropbox.com/s/pi15rap4nvwxhtt/Heiken_Log_it_to_save_it_v.1.0.pdf?dl=0. The authors of the Northwest Forest Plan expected that 80% of the reserves will become late successional habitat after a period of restoration and recovery.[2] In addition, "[m]eeting the habitat needs of the owl will probably require maintaining a higher proportion of dense, multilayered, old-growth forests than would have occurred historically in many of the dry provinces."[3] However, recent "Science Findings" from PNW Research reveals that in the dry provinces, "requiring landscape treatments to earn a profit negatively impacted both habitat and fire objectives" and fuel reduction objectives are only compatible with owl habitat objectives, if the owl habitat objective is maintained at 40% (half the target of the NWFP). PNW Research Station. 2006. Seeing The Bigger Picture: Landscape Silviculture May Offer Compatible Solutions To Conflicting Objectives. Science Findings. July 2006. http://www.fs.fed.us/pnw/sciencef/scifi85.pdf. **Implications:** The agencies should re-evaluate whether logging in reserves and in owl habitat is compatible with spotted owl conservation; whether the 40% suitable habitat threshold is sufficient to maintain viable populations of owls in the dry provinces, and whether the reserve system should be expanded to ensure that a 40% slice of a bigger pie might better ensure recovery of the owl.

Avian Influenza. Highly pathogenic H5N1 avian influenza may pose a new and significant threat to spotted owls, especially given the low and declining population. Rappole JH, Hubálek Z. Birds and influenza H5N1 virus movement to and within North America. Emerg Infect Dis. 2006;12:1486–1492. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3290932/; APHIS 2016. FAQ on Highly Pathogenic Avian Influenza in North American Wild Birds. https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/ai/faqs.pdf. Erik Stokstad2022. Deadly bird flu establishes a foothold in North America - H5N1 has continued to kill wild birds and poultry this summer. The fall migration could bring it back in force. Science. VOL 377 ISSUE 6609. 26 Aug 2022. https://www.science.org/doi/pdf/10.1126/science.ade5542. **Implications:** The agencies need to consider whether the cumulative effects of avian influenza and all the other threats to spotted owls, necessitates reduced logging of spotted owl suitable habitat.

BLM RMP Revisions - The success of the entire Northwest Forest Plan is premised on the existence of the network of reserves that span the landscape from BLM to Forest Service lands. BLM has revised its six RMPs in western Oregon to significantly modify and reduce large block reserves, riparian reserves, and mitigations for logging. Increased

[2] FEMAT p IV-55.

[3] Spies, Thomas A.; Hemstrom, Miles A.; Youngblood, Andrew; Hummel, Susan. 2006. Conserving old-growth forest diversity in disturbance-prone landscapes. Conservation Biology. 20(2): 351-362. http://www.fs.fed.us/pnw/pubs/journals/pnw_2006_spies001.pdf.

logging will cause further loss of suitable habitat and will have long-term consequences. It is arbitrary and capricious to allow implementation of a plan premised on the existence of reserves if those reserves are going away.[4] One of the biggest problems with the RMP Revisions relates to reduced protection for streams that were intended to benefit spotted owl demography and dispersal. New information now indicates that complex riparian forests are one of the places that spotted owls and barred owls are more tolerant of each other so conservation of these areas is more important than ever. See Wiens, D.J. 2012. Dietary Overlap between Northern Spotted Owls and Barred Owls in Western Oregon, *workshop* What's for Dinner: Spotted Owl Prey 2012 http://ecoshare.info/projects/central-cascade-adaptive-management-partnership/workshops/spotted-owl/; http://ecoshare.info/wp-content/uploads/2012/08/Barred-compared-to-spotted-Owl-diets.ppt. **Implications:** Although the WOPR has been withdrawn by the Secretary of Interior, the timber industry has sued to reinstate the WOPR, and a federal judge has questioned the process used by the Secretary to withdraw the RODs. If there is a chance that NWFP reserves on BLM lands will no longer be protected as part of the interagency reserve strategy, then all remaining suitable habitat must be protected to retain options for the conservation of the Threatened spotted owl, marbled murrelet, and SONC Coho salmon. The spotted owl cumulative effects analysis in the 1994 SEIS is no longer valid and must be reconsidered at the regional scale. No project-level NEPA document can rely on the 1994 effects analysis because the publication of the WOPR NOI, FEIS, and RODs means that elimination of the reserves is a "reasonably foreseeable" action.

Fragmentation has gotten worse not better since the NWFP was adopted. The Northwest Forest Plan was supposed to reduce fragmentation and enhance large blocks of owl habitat, but "Trends in most Washington and Oregon provinces, since 1994, indicate slight increases in habitat fragmentation [from stand-replacing timber harvest and wildfires] based on landscape division indices. The Oregon Coast Range province shows the most increase in fragmentation since 1994, based on the splitting index."[5] Data from 2001 to 2006 show that fragmentation and loss of interior forest conditions within the range of the spotted owl continues to be a concern.[6] **Implications:** To reduce fragmentation and improve habitat conditions for the spotted owl as anticipated by the Northwest Forest Plan, existing mature & old-growth forests should be protected from harvest, and regeneration harvest should be disfavored.

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[4] The BLM Planning Handbook 1601-1 provides, "During the amendment or revision process, the BLM should review all proposed implementation actions through the NEPA process to determine whether approval of a proposed action would harm resource values so as to limit the choice of reasonable alternative actions relative to the land use plan decisions being reexamined. Even though the current land use plan may allow an action, the BLM manager has the discretion to defer or modify proposed implementation-level actions and require appropriate conditions of approval, stipulations, relocations, or redesigns to reduce the effect of the action on the values being considered through the amendment or revision process."

[5] Raymond Davis and Joseph Lint. 2005. Chapter 3: Habitat Status and Trend. in Northwest Forest Plan—the First 10 Years (1994–2003): Status and Trends of Northern Spotted Owl Populations and Habitat. PNW-GTR-648. http://www.fs.fed.us/pnw/publications/pnw_gtr648/pnw-gtr648b.pdf (8/9/12)

[6] Riitters, K.H. & Wickham, J.D. (2012) Decline of forest interior conditions in the conterminous United States. Sci. Rep. 2, 653; DOI:10.1038/srep00653. https://www.srs.fs.fed.us/pubs/ja/2012/ja_2012_riitters_002.pdf.

New information indicates that spotted owl dispersal habitat should be managed for "at least 80%" canopy cover. See Stan G. Sovern, Eric D. Forsman, Katie M. Dugger, Margaret Taylor. 2015. Roosting Habitat Use and Selection By Northern Spotted Owls During Natal Dispersal. The Journal of Wildlife Management 79(2):254–262; 2015; DOI: 10.1002/jwmg.834. http://agsci-labs.oregonstate.edu/duggerka/files/2016/09/Sovern-et-al.-2015.pdf. ("**Roost Site Selection**. In contrast to the assumption that stands with relatively open canopies provide suitable dispersal habitat for spotted owls, our results suggest that dispersing juveniles selected stands for roosting that had relatively high canopy closure (x = 66 ± 2%). … Two hypotheses could explain why dispersing owls selected closed-canopy stands. First, several researchers (Barrows 1981, Forsman et al. 1984, Weathers et al. 2001) have shown that temperature and precipitation appear to influence selection for roost trees and attributes within a roost tree, such as perch height and percent overhead cover. … Second, juvenile northern spotted owls may have selected for closed-canopy forest because their preferred prey were most abundant … **Landscape Scale Selection**. … [O]ur mean estimate of canopy closure from plots at roosts (66%), which was likely an underestimate of canopy cover, was considerably higher than the minimum values recommended by Thomas et al. (1990) [i.e. 50-11-40]. …**Management Implications**. … Based on our study, we recommend that managers should pursue a strategy that exceeds the canopy cover guidelines recommended by Thomas et al. (1990) when managing dispersal habitat for spotted owls. Based on our estimate of mean canopy closure (66%), and our estimate of mean canopy cover from overlaying a dot grid on the same areas (approx. 14% larger), we recommend that the target for canopy cover in stands managed for dispersing spotted owls should be at least 80%.")

New study shows that spotted owl populations can rebound when barred owls are removed, if there is suitable habitat for them to use. J. David Wiens, Katie M. Dugger, J. Mark Higley, et al 2021. Invader removal triggers competitive release in a threatened avian predator. Proceedings of the National Academy of Sciences Aug 2021, 118 (31) e2102859118; DOI: 10.1073/pnas.2102859118. https://www.pnas.org/content/pnas/118/31/e2102859118.full.pdf ("Experimental results indicate that barred owl control can achieve rapid results in benefitting the persistence of northern spotted owls, at least over the short term. This does not suggest that barred owl control alone is sufficient to achieve recovery of spotted owls, as the availability of older forests is a necessary condition for barred owl removal to succeed. The rate of decline of spotted owl populations in control areas by the end of the study was severe (~12% per year), indicating an increasingly high risk of these populations to local extirpations. A number of mechanisms that negatively affect small populations, including environmental stochasticity and Allee effects (11, 41), will make it increasingly difficult to recover spotted owl populations in some regions. Fast-moving development and implementation of management actions for barred owls based on experimental results, coupled with long-term management of suitable forest conditions, will be essential to the recovery and persistence of northern spotted owls … The conservation and restoration of old forests, which has been a chief focus of recovery strategies for the northern spotted owl (19), is a major source of socio-economic controversy in the Pacific Northwest (42). The barred owl invasion has exacerbated this issue, placing an even higher ecological premium on remaining old conifer forests. Barred owls have become widespread and hyperabundant

throughout much of the northern spotted owl's geographic range (27). Even if barred owls can be maintained at low levels in some areas, we believe it is inevitable that the species will continue to exert substantial ecological pressure on spotted owls and other native wildlife. Broad-scale management of barred owls, including lethal removal, would require a long-term resource commitment, as any lapse in management could allow barred owls to quickly recolonize and erode conservation gains. This prospect raises questions about how long removals could and should be perpetuated; public acceptance and values associated with such actions are an important consideration (43)." (emphasis added)).

The FY2014 Annual Report On Northern Spotted Owl Monitoring states:

> There is mounting evidence that barred owls may be negatively impacting the spotted owl population within the KSA [Klamath Study Area]. This is illustrated by several apparent population trends: (1) spotted owl detections have been steadily decreasing (Figure 6) and reached the lowest point in 2014, when barred owl detections reached their highest level; (2) fecundity rates appear to be declining (Figure 8) and in only 2 of the previous 10 years was the rate above the 25 year average; and (3) the fecundity rate for sites with known barred owl presence was lower than at other sites and is continuing to decline. Forsman et al. (2011a) noted that the consistency of the negative associations between spotted owl demographic rates and the presence of barred owls supports the conclusion that barred owls are having a negative effect on spotted owl populations. The recent KSA data, with the combination of decreasing occupancy and reduced fecundity, appears to reinforce this conclusion.

Hollen, Horn, et al 2015. Demographic characteristics of northern spotted owls (*Strix occidentalis caurina*) in the Klamath Mountain Province of Oregon, 1990-2014. http://www.reo.gov/monitoring/reports/nso/KLA%20nso%20demog%20annual%20report%202014.pdf

The agencies have no NEPA analysis to tier to that addresses (on a range-wide scale) how to mitigate the adverse competitive interactions between spotted owls and barred owls. Before the agencies degrade any more suitable owl habitat they must consider a range of NEPA alternative that protects more than just the "structurally complex older forest" in order to increase the chances that spotted owls and barred owls can co-exist.

Barred owls now occupy a large number of spotted owl sites and the agencies need to protect additional habitat to mitigate for this loss of available habitat.

David Wiens has conducted the most thorough research on the influence of barred owls on spotted owls and concluded -

Conservation Implications

- Results emphasize the importance of old conifer forest and moist streamside habitats to resource partitioning.
- Additional loss of older forest can further constrain both species to a common set of limiting resources, thereby increasing competitive pressure

Wiens, D.J. 2012. Dietary Overlap between Northern Spotted Owls and Barred Owls in Western Oregon, *workshop* What's for Dinner: Spotted Owl Prey 2012 http://ecoshare.info/projects/central-cascade-adaptive-management-partnership/workshops/spotted-owl/; http://ecoshare.info/wp-content/uploads/2012/08/Barred-compared-to-spotted-Owl-diets.ppt

The final Recovery Plan for the Northern Spotted Owl has partially addressed the barred owl issue by adopting Recovery Action 32 which urges the FS and BLM to "Maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands outside of MOCAs…" based on the idea that "protecting these forests will not further exacerbate competitive interactions between spotted owls and barred owls as would occur if the amount of shared resources were decreased." (FRP p 34). The revised critical habitat for the northern spotted owl was also expanded to "… increase the likelihood that spotted owls would be able to persist in areas where barred owls are also present. … [A]dditional critical habitat may allow for coexistence of the two species, potentially reducing competition (Dugger et al. 2011; Forsman et al. 2011)." FWS 2012. CHU draft EA, p 53, 62. http://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/Documents/CH_DRAFTEnvAssmnt_6.1.12.pdf. In considering this recommendation the agencies must prepare NEPA analysis which considers the full potential of suitable habitat quantity and quality and its mediating influence on the interactions between spotted owls and barred owls. Maintaining a subset of suitable habitat as recommended by the recovery plan is one option, but the agencies must consider the full benefits of protecting all suitable habitat, not just a subset, and providing additional mitigation in matrix areas such as managing the matrix to enhance habitat for owl prey species. The recovery plan is not a NEPA document and FWS was not required to consider all reasonable alternatives. Action agencies like the FS and BLM on the other hand are required to fully consider alternatives. It would be wise to do so at a range-wide level, but until that is done, the agencies should not adversely modify any suitable habitat. Protection of additional suitable habitat in order to reduce competitive interactions between the two owls is now a recognized tool in the toolbox and represents significant new information about *any* proposal to modify suitable habitat regardless of how far the planning process may have proceeded.

> "The major causes of population and species extinction worldwide are habitat loss and interactions among species. … The most robust generalization that we can make about population extinction is that small populations face a particularly high risk of extinction. … [E]mpirical support for the extinction-proneness of small populations has been found practically wherever this issue has been examined. … The loss of habitat reduced population size …. Larger habitat patches have larger expected population sizes than smaller patches. Therefore, other things being equal, we could expect large habitat patches to have populations with a lower risk of extinction than populations in small patches. … More generally, the relationship between patch size and extinction risk provides a key rule of thumb for conservation: other things being equal it is better to conserve a large than a small patch of habitat or to preserve as much of a particular patch as possible. …

> [T]here are likely to be many complementary reasons why large patches have populations with low risk of extinction. ”

Oscar E. Gaggiotti and Ilkka Hanski. 2004. Chapter 14 - Mechanisms of Population Extinction. *In* Ecology, Genetics, and Evolution of Metapopulations. Elsevier. 2004. http://web.archive.org/web/20070612211945/http://www.eeb.cornell.edu/sdv2/Readings/Gaggiotti&Hanski.pdf

The effects of habitat availability on competing species was explored by expert wildlife population modelers who found —

> The territorial occupancy model developed by Lande (1987), extended here to include two competing species, represents a useful tool for evaluating how equilibrium breeding numbers could be affected by changes in habitat availability, demographic parameters, dispersal behavior and interspecific competition … Its application shows that **increases in the exclusive suitable habitat of each species is the best option to maintain viable populations of territorial competitors** in a same area, given that it reduces competition for territories. Increases in habitat overlap by reducing the exclusive habitat available for one species strongly affected the outcome of competition, resulting in extinction of the species for which exclusive habitat had been eliminated.

Martina Carrete, Jose´ A. Sa´nchez-Zapata, Jose´ F. Calvo and Russell Lande. Demography and habitat availability in territorial occupancy of two competing species. OIKOS 108: 125-136, 2005 http://www.ebd.csic.es/carnivoros/personal/carrete/martina/recursos/13.%20carrete%20et%20al%20%282005%29%20oikos%20108-125.pdf.

From these ecological foundations, one can see that the barred owl, by invading, occupying suitable habitat and excluding spotted owls, has reduced the effective size of the reserves that were established in 1994, and thereby reduces the potential population of spotted owls. Extinction risk is increased by this loss of habitat and smaller population. If we provide more suitable habitat, the population potential increases, and the risk of extinction decreases. The most rational way to respond is to protect remaining suitable habitat, expand and restore the reserve system to provide more suitable habitat to increase the likelihood that the two owl species can co-exist.[7]

This view is corroborated by owl biologist David Wiens who was interviewed on the Lehrer NewsHour. He said: “The more habitat you protect, the more you're going to alleviate the competitive pressure between the species. Rather than reducing it and increasing the competitive pressure between these two species, we need to provide as much habitat as possible for them.” DAVID WIENS. NewsHour interview. “Biologists Struggle to Save the Spotted Owl.” December 18, 2007. http://www.pbs.org/newshour/bb/science/july-dec07/owl_12-18.html. Robert Anthony agrees, “If you start cutting habitat for either bird, you just increase competitive pressure.” Welch, Craig. 2009. The Spotted Owl’s New Nemesis. Smithsonian Magazine.

[7] Put another way, when threatened with extinction, “the best defense is a strong offense” that is, species are more likely to persist if they have a large, well-distributed population size and if we minimize all manageable threats. Dunham, Jason. 2008. Bull trout habitat requirements and factors most at risk from climate change. http://www.fs.fed.us/rm/boise/AWAE/projects/bull_trout/bt_Dunham.html

January 2009. http://www.smithsonianmag.com/science-nature/The-Spotted-Owls-New-Nemesis.html?c=y&page=2 And in the same article Eric Forsman added "You could shoot barred owls until you're blue in the face," he said. "But unless you're willing to do it forever, it's just not going to work."

The YRR Project Violates Recovery Action 32

Subsequent to the adoption of the Northwest Forest Plan, FWS adopted a Recovery Plan for the northern spotted owl that attempts to address adverse competitive interactions with the barred owl by recommending that the federal agencies conserve high quality spotted owl habitat wherever it is found, including the matrix. This requirement is known as Recovery Action 32, or RA32, but it may not be enough to mitigate the effects of the barred owl. Scientists have recommended conservation of a broader, more inclusive, scope of suitable owl habitat. The FS failed ensure protection of RA32 habitat, because it relied on an abstract analysis of LiDAR data of forest conditions, and failed to ensure that stands identified as NOT RA32 were in fact accurately evaluated. There is a significant risk that many areas of high quality owl habitat were misidentified and excluded by the LiDAR analysis.

Oregon Wild's comments on the draft EIS said:

> This project will have significant adverse impacts on the northern spotted owl which is at greater risk due to barred owls and climate change that was recognized when this area was designated as "Matrix" 25 year ago. An important part of the strategy to help spotted owls coexist with barred owls is to maximize the availability of suitable habitat. This project conflicts with that goal.
>
> We are concerned about logging that will remove high-quality (RA32) and other suitable nesting, roosting, and foraging habitat for northern spotted owls. The method used to identify RA32 habitat was not inclusive, and not designed to avoid false negative findings that stands were NOT RA32. Logging and other activities that impact habitat and other life requirements for this species must be carefully balanced with the other goals of this project (like restoring more open, dry forest structure). Suitable NFR habitat should not be degraded, and thinning or other activities surrounding them should be carefully considered to ensure connectivity is maintained or enhanced for both spotted owls and red tree voles.
>
> The FS needs to do a better job of inclusively identifying high quality spotted owl habitat as required by the Revised Recovery Plan for the Spotted Owl. Excessive reliance on modeling and remote sensing is unacceptable. The Forest Service needs to send biologists out to carefully field check the presence or absence of high quality owl habitat in order to avoid accidentally logging owl habitat in violation of the recovery plan.
>
> A 2010 Draft report "Population Demography of Northern Spotted Owls" corroborates the need to protect more than just the highest quality spotted owl habitat as contemplated in the draft Recovery Action 32.

> We also found a negative relationship between recruitment rates and the presence of Barred Owls and a positive relationship between recruitment and the amount of suitable owl habitat in the study areas. Recruitment was higher on federal lands where the amount of suitable owl habitat was generally highest. [p 96] …
>
> While our observational results do not demonstrate cause-effect relationships, they provide support for the hypothesis that the invasion of the range of the Spotted Owl by Barred Owls is at least partly the cause for the continued decline of Spotted Owls on federal lands. Our results also suggest that Barred Owl encroachment into western forests may make it difficult to insure the continued persistence of Northern Spotted Owls (see also Olson et al. 2004). The fact that Barred Owls are increasing and becoming an escalating threat to the persistence of Spotted Owls does not diminish the importance of habitat conservation for Spotted Owls and their prey. In fact, the existence of a new and potential competitor like the Barred Owl makes the protection of habitat even more important, since any loss of habitat will likely increase competitive pressure and result in further reductions in Spotted Owl populations (Horn and MacArthur 1972, Olson et al. 2004, Carrete et al. 2005). [pp 97-98] …
>
> Our results and those of others referenced above consistently identify loss of habitat and Barred Owls as important stressors on populations of Northern spotted Owls. In view of the continued decline of Spotted Owls in most study areas, it would be wise to **preserve as much high quality habitat in late-successional forests for Spotted Owls as possible**, distributed over as large an area as possible. This recommendation is comparable to one of the recovery goals in the final recovery plan for the Northern Spotted Owl (USDI Fish and Wildlife Service 2008), but **we believe that a more inclusive definition of high quality habitat is needed** than the rather vague definition provided in the 2008 recovery plan. Much of the habitat occupied by Northern Spotted Owls and their prey does not fit the classical definition of "old-growth" as defined by Franklin and Spies (1991), and a narrow definition of habitat based on the Franklin and Spies criteria would exclude many areas currently occupied by Northern Spotted Owls. [p 99]...

Eric D. Forsman, Robert G. Anthony, Katie M. Dugger, et al. "Population Demography of Northern Spotted Owls." DRAFT COPY 17 December 2010. This draft manuscript is in press at the University of California Press with a projected publication date of July 2011. It will be No. 40 in Studies In Avian Biology, which is published by the Cooper Ornithological Society. http://www.reo.gov/monitoring/reports/nso/FORSMANetal_draft_17_Dec_2010.pdf. Based on these recommendations, the Forest Service should be prioritizing conservation of suitable spotted owls habitat, rather than converting such habitat into savannas. The FEIS needs to clearly disclose the adverse consequences of ignoring the advice of scientists, i.e. increasing the adverse competitive interactions between spotted owls and barred owls.

> Wiens (2012) has recommended retaining conifer forests older than 120 years of age as a method to reduce interspecific competition between the owl species. Where barred owls occur, he has found that spotted owl survival greatly declines as the percent of forests >120 years of age in the general home range drops below 35%.
>
> USFS 2019. Calapooia EA, Sweet Home Ranger District, Willamette National Forest.
> https://www.fs.usda.gov/nfs/11558/www/nepa/108782_FSPLT3_4527425.pdf

> Yackulic et al (2019) show that continued emphasis on habitat restoration can help mitigate uncertainty about barred owl removal efforts which remain untested. Yackulic, Charles, et al. 2019. The past and future roles of competition and habitat in the range-wide occupancy dynamics of Northern Spotted Owls. Ecological Applications, 2019 DOI: 10.1002/eap.1861. https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/eap.1861. (" ... maintaining or improving habitat condition could be an important factor in promoting persistence of NSO populations over longer time spans and could allow managers to be less reliant on BO removals in the future ... habitat recovery could eventually lessen the need for intensive management actions such as Barred Owl removal. If, on the other hand, managers allow habitat conditions to decline they may have to rely more on BO removal ...") Stated another way, the agencies can reduce uncertainty about the long-term funding and long-term effectiveness of barred owl removal by emphasizing recovery of high quality suitable nesting, roosting, foraging habitat for northern spotted owls.

The Response-to-Comments failed to respond to these comments and never refuted the fact that *de facto* RA32 stands will be logged because the LiDAR tool used by the FS likely failed to accurately identify RA32 habitat, and there are false negatives that won't get fixed before those stands are logged.

The FS has never updated its NEPA analysis of the Northwest Forest Plan to address the adverse effects of the barred owl, nor has it subjected the effectiveness of RA32 (or alternative strategies that might be more effective) to any sort of NEPA analysis.

Nevertheless the FS is required by the LRMP for the Willamette NF to follow the requirements of the recovery plan, including RA32. Relevant standards & guidelines include:

> FW-154 - … Legal and biological requirements for [Proposed, endangered, threatened and sensitive species (PETS)] shall be met.
>
> FW-155 - Habitat for existing federally-classified threatened and endangered species shall be managed to achieve habitat and population objectives of recovery plans.
>
> 1990 Willamette NF LRMP. In this case, the Forest Service is not meeting the biological requirements of the spotted owl (in light of the barred owl and climate change), nor is the

Forest Service managing to achieve the habitat objectives of the spotted owl recovery plan.

Biden Executive Order on Mature & Old-Growth Requires Reconsideration of Logging in Natural Stands

This project destroys one type of mature & old-growth forest ("late seral closed canopy forest") to create another type of forest ("late seral open canopy forest") but this is latter forest type really just a heavily logged condition with little to no suitable habitat for species of concern that rely on dense older forests, less carbon storage, more weeds, and more hazardous fuels close to the ground.

This project is inconsistent with President Biden's April 22, 2022 executive order declaring a policy to conserve mature & old-growth forests on federal land and to manage forests to retain and enhance carbon storage and biodiversity. Conserving the existing late seral close canopy forests (instead of logging them) will better meets the EO's duel goals of biodiversity and climate benefits. Conserving these forests will provide habitat for species of concern associated with mature & old-growth forests, such as spotted owls, red tree voles, and will retain and increase carbon storage for climate mitigation.

The Forest Service should immediately implement these policies.

> Sec. 1. Policy.
> Strengthening America's forests, which are home to cherished expanses of mature and old-growth forests on Federal lands, is critical to the health, prosperity, and resilience of our communities …. Forests provide clean air and water, sustain the plant and animal life fundamental to combating the global climate and biodiversity crises, and hold special importance to Tribal Nations. … Conserving old-growth and mature forests on Federal lands … is critical to protecting these and other ecosystem services provided by those forests. … We can and must take action to conserve, restore, reforest, and manage our magnificent forests … <u>It is the policy of my Administration, … to … conserve America's mature and old-growth forests on Federal lands …</u>
> …
> Sec. 2. Restoring and Conserving the Nation's Forests, Including Mature and Old-Growth Forests.
> <u>My Administration will manage forests on Federal lands, which include many mature and old-growth forests, to promote their continued health and resilience; retain and enhance carbon storage; conserve biodiversity …</u>

Biden, J. 2022. Executive Order on Strengthening the Nation's Forests, Communities, and Local Economies. APRIL 22, 2022. PRESIDENTIAL ACTIONS https://www.whitehouse.gov/briefing-room/presidential-actions/2022/04/22/executive-order-on-strengthening-the-nations-forests-communities-and-local-economies/ (emphasis added). The E.O. also calls for an inventory of mature & old-growth on federal land, an analysis of threats to mature & old-growth forests, and development of policies to address those threats. The agencies do not need to wait for these steps. The official policy of the

federal government is to conserve mature & old-growth forests on federal land and that policy should be implemented here and now.

The fact that this project both removes and degrades mature & old-growth habitat for ESA-listed species (spotted owls) AND the fact that it will emit thousands of tons of greenhouse gases, is strong evidence that this project is inconsistent with the E.O.

The YRR draft ROD (p 23) addresses the Executive Order by saying the Project-

> meets the intent and goals of the Executive Order as the project's purpose includes improving stand and landscape diversity, structure, and resiliency to disturbances such as wildfire. The project seeks to accelerate stands toward late-successional forest (i.e., old growth) by creating late seral open forest structure and the accelerating late seral patch connectivity. While this project includes treatment in older natural stands, it does so to improve stand growth and accelerate the development of large trees and multiple canopy layers to move stands toward late-successional conditions in the long-term (FEIS, pg. 86). Additionally, the project includes protections for old-growth habitat and structures such as dead wood and legacy trees (FEIS pgs 55-82).

These statements are subject to debate and require supplemental NEPA analysis to take the requisite hard look at whether this project fulfills the current policy of the US government as expressed in the EO. For instance:

- Logging mature & old-growth forest undermines the two primary purposes of the E.O. which is to realize the biodiversity and climate benefits of mature & old-growth forests. Logging will remove and degrade habitat for threatened northern spotted owl that depend on maintaining dense forest habitat. Logging will also transfer significant amounts of carbon from the forest to the atmosphere and make global climate change worse instead of better. Protecting these mature & old-growth forests will allow them to continue growing and absorbing more carbon, thus helping to meet climate goals.

- Logging to create open forests does not increase resilience. Mature & old-growth forest that serve as spotted owl habitat tends to be resistant and resilient to fire. See Lesmeister, D.B., Davis, R.J., Sovern, S.G. et al. Northern spotted owl nesting forests as fire refugia: a 30-year synthesis of large wildfires. fire ecol 17, 32 (2021). https://doi.org/10.1186/s42408-021-00118-z; https://fireecology.springeropen.com/counter/pdf/10.1186/s42408-021-00118-z.pdf. See also, objection points below regarding fuel hazards increased by logging. This project reduces forest resilience because it will stimulate the growth of surface and ladder fuels that are far more hazardous and less resilient compared to a mature & old-growth forest with large trees and thick bark, and dense canopy that fosters a cool-moist microclimate, and holds most fuels high above the ground. Creating low density forests also creates a need for perpetual stand maintenance activities (such as prescribed fire) that are highly uncertain to occur because they cost money and the safe window for prescribed fire is smaller and smaller due to global climate change and smoke management constraints.

- The assertion that this project will "accelerate stands toward late-successional forest" might be accurate as applied to variable thinning of dense young plantations, but it is

NOT accurate as it applies to removal of more than 1,000 acres of suitable spotted owl habitat. Existing owl habitat is already late successional forest and has all the building blocks for continued development of high quality habitat and needs no logging intervention.

- The ROD says logging in older stands will "improve stand growth and accelerate the development of large trees and multiple canopy layers to move stands toward late-successional conditions in the long-term." However, existing mature & old-growth forests generally already have large trees and multiple canopies, and they will continue to develop desired conditions without logging. Existing trees will continue to grow if left in the forest. Logging does not improve stand growth; it increases growth on a few trees, but such a shift is not a compelling ecological need, and it comes at the expense of other old forest attributes, such as carbon storage and snag habitat. Multiple canopy layers are typically already present and will continue to develop over time. Logging is not a necessary intervention. Logging mature & old-growth requires sacrificing many existing benefits of those forests for wildlife, carbon/climate, etc. Further NEPA analysis is needed to consider whether those very real and significant trade-offs are clearly off-set by vague goals such as moving "stands toward late-successional conditions in the long-term."

- The ROD says "the project includes protections for old-growth habitat and structures such as dead wood and legacy trees." We agree that dead wood, especially large snags, is a critically important feature of mature & old-growth forests, and a feature that is vastly under-represented compared to the natural conditions that wildlife evolved with. However, the statement in the draft ROD is highly misleading and inaccurate, because logging is much more likely to harm snag habitat than benefit snag habitat. In fact, reducing dead wood values is one of the most significant and long-lasting adverse impacts caused by commercial logging. Every tree that is removed from the forest is a tree that prevented from growing and prevented from ever serving as snag and dad wood habitat. This effect is significant and long-lasting. Every large tree (>20" dbh) is removed from the forest is a direct and immediate and long-lasting tax on mature & old-growth conservation values. Garman et al (2003) found "Results of this study illustrated two important relations between rapid development of late-successional attributes and long-term stand conditions. First, treatments that promote rapid development of an attribute will not necessarily produce the highest levels of the attribute over the course of a rotation. In this study, treatments providing rapid development of live, late-successional attributes generally produced relatively lower densities of shade-tolerant stems, lower amounts of Douglas-fir basal area, and fewer snags and logs over a rotation compared to other treatments." Garman, Steven L.; Cissel, John H.; Mayo, James H. 2003. Accelerating development of late-successional conditions in young managed Douglas-fir stands: a simulation study. Gen. Tech. Rep. PNW-GTR-557. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 57 p. http://andrewsforest.oregonstate.edu/pubs/pdf/pub2722.pdf.
- The draft ROD says that this project is consistent with Biden Executive Order on Mature & Old-growth Forests because this project is intended to enhance mature & old-growth. However, snags and dead wood habitat are essential features of mature &

old-growth habitat (including open late successional forests), and the landscape is suffering from a shortage of snags and dead wood, yet this project will not improve those conditions; it will make them worse, as shown in FEIS Figure 42 below. This conclusion runs counter to the evidence which is arbitrary and capricious.

Natural Stands:

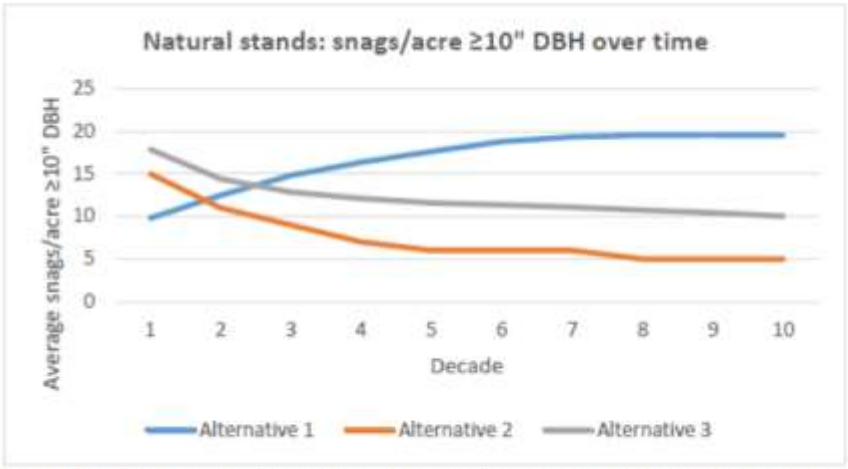


Figure 42: Modeled Snags per Acre with an Average of 10 inches DBH or Greater in Natural Stands Over Time

The FEIS needs to consider information presented in Faison et al (2023) which says that natural processes are likely to develop complexity and resilience, and brings into question the notion that logging increases resilience:

> North America's temperate forests evolved continuously in response to natural disturbances and changes in climate over the past 65 million years (Askins, 2014). Only in the past 10–15,000 years did humans arrive and manage forests with fire and tree removal for subsistence and safety near their settlements (Roos, 2020; Roos et al., 2021), and only in the past two centuries did humans manage forests intensively (including the suppression of natural disturbances like fire) for industry and other values at the regional scale (Williams, 1992).
>
> …
>
> Forest health and resilience are important tenets of adaptation. Yet definitions of forest health focus on the ability of forests to provide direct resources and services to people (Millar & Stephenson, 2015), rather than the ability of ecosystems to persist and adapt per se in the face of changing disturbances. Hence, forest adaptation projects are portrayed as necessary for protecting forest ecosystems from climate change, when these initiatives are often more about resisting and directing change to promote a particular set of natural resource values and objectives, including economic gain.
>
> …
>
> Here we argue that a resist and direct approach to managing forests (e.g., mechanical thinning, prescribed burns, species selection, pre- and post-disturbance salvage/planting, and other fire suppression tactics) is appropriate in some forests intended for resource production, experiments, and human safety in the "wildland–urban interface." However, accepting the capacity of natural

systems to adapt and be self-sustaining with natural stewardship is a critical and cost-effective approach in other forest contexts.

…

Although improved resilience and protection of biodiversity are goals of proposed adaptation management, active management may, in some cases, have little effect on future stand resistance (Morris et al., 2022), is often unnecessary for natural forest resilience (e.g., Cansler et al., 2022; Hart et al., 2015) and biodiversity (Thom & Seidl, 2016; Viljur et al., 2022), and is generally counterproductive to carbon storage, structural complexity, tree diversity, and resistance to invasive species. (Donato et al., 2013; Miller et al., 2018; Patton et al., 2022; Schwilk et al., 2009; Young et al., 2017; Table 1). Moreover, conservation evidence for the effectiveness of management interventions is often lacking or has mixed results (Sutherland et al., 2021), resources for interventions are limited, and management incurs substantial financial and other costs to society (Houtman et al., 2013). Depending on local considerations, and based on multiple values, natural or near natural forest stewardship is an effective approach to developing and sustaining forest complexity, diversity, and functionality and traditional/aesthetic values (Franklin et al. 2002; Miller et al., 2016; Miller et al., 2018; Sze et al., 2022; Waller & Reo, 2018). It is also an insurance policy as we face an uncertain future.

…

From an ecological perspective, it is questionable whether it is even desirable or necessary to reduce the frequency and intensity of fire and other disturbances away from human settlements and forests managed for sustained wood production (e.g., Bradley et al., 2016; Kulakowski, 2016). Even moderate to severe natural disturbances promote structural heterogeneity, create biological legacies and unique habitats, and can increase biodiversity (Carbone et al., 2019; Klaus et al., 2010; Santoro & D'Amato, 2019; Shive et al., 2013; Swanson et al., 2011). And while mechanical thinning may mimic some of the habitat benefits of low to moderate severity fires, it does not emulate the important habitat characteristics of high severity fires (Stephens et al., 2012).

…

A common rationale for forest adaptation management is preventing future tree mortality, species compositional shifts, and carbon loss from natural disturbances. In some cases, thinning has been shown to reduce subsequent tree death from insects and drought compared to untreated areas, thereby promoting stand resistance and maintaining an existing species composition, while procuring sound timber (Hood et al., 2016; Knapp et al., 2021). However, in other cases prescribed burn treatments increased subsequent tree mortality (Knapp et al., 2021; Stark et al., 2013; Youngblood et al., 2009), and thinning and burn treatments generally promote the spread of invasive plants relative to controls (Schwilk et al., 2009; Willms et al., 2017). Additionally, loss of tree basal area and carbon storage from thinning and prescribed burning is often equal to or considerably greater than tree mortality and carbon loss from the disturbances themselves (Campbell et al., 2012; Hood et al., 2016; Knapp et al., 2021; Powers et al., 2010; Yocom-Kent et al., 2015). As a result, treated stands are not objectively more resistant or resilient to tree mortality or carbon loss—and in

> many cases are less so—if losses from the management itself are taken into account. Not surprisingly, natural forests in strictly protected areas store greater amounts of carbon, on average, than managed and unprotected areas (Collins & Mitchard, 2017; Moomaw et al., 2019).
> …
> [M]ost forests still regenerate without interventions, even after severe natural disturbances (Donato et al., 2016; Pielou, 1991; Santoro & D'Amato, 2019; Shive et al., 2013). In fact, natural regeneration often exceeds active restoration efforts (Cook-Patton et al., 2020; Donato et al., 2006), provides greater genetic diversity than planted seedlings (Swanson et al., 2011), and greater stand-level carbon storage in coarse woody debris (Donato et al., 2013).
> …
> Perceived regeneration failures from severe fire, intensive ungulate browsing, or seed source limitations may, in many cases, be patchy or delayed tree regeneration that has other benefits when seedling densities, growth rates, and particular tree species are not primary concerns. As one example, low density regeneration reduces the severity of reburns, facilitating forest recovery (Cansler et al., 2022; Harvey et al., 2016). Heterogeneity of natural regeneration also avoids structural uniformity that occurs with planting and can extend the duration of early successional patches and gaps, there by accelerating the development of spatial and structural complexity (Donato et al., 2012; Reed et al., 2022; Swanson et al., 2011).
> …
> [A]ccepting change with natural stewardship and exposure to natural disturbances and processes generally increases structural complexity, carbon storage, and tree species and other diversity. These accruing benefits, in turn, make forests more resistant and resilient to many future natural challenges and provide mitigation against climate change. Given the limited resources for actively managing forests, the mixed evidence of management promoting young trees and reducing fire and other risks, and little evidence that we can actively resist or direct change in unknown future conditions better than nature can, protecting more forests with natural stewardship is a cost effective way to harness the inherent adaptation and mitigation powers in forests and ensure that they are at their most functional to regulate planetary processes.

Faison, E. K., Masino, S. A., & Moomaw, W. R. (2023). The importance of natural forest stewardship in adaptation planning in the United States. Conservation Science and Practice, e12935. https://doi.org/10.1111/csp2.12935. https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/csp2.12935.

The FEIS not only failed to consider the Biden E.O. on mature and old-growth forests, it also failed to address the extensive comments from the public regarding the value of mature and old-growth, and the disproportionate impacts of logging on such forests. Oregon Wild's comments on the DEIS explained numerous reasons for conserving mature & old-growth forests, and asked the Forest Service to consider the benefits of mature forest conservation in the FEIS. Our comments said:

… there is also lots of new and significant reasons to conserve mature forests. These concerns must be addressed in the FEIS .

…

> "As recognized by FEMAT, a conservation strategy for the Pacific Northwest must consider mature forests as well as OG. Forests are considered to enter maturity when their mean annual increment culminates, following which time they begin developing the characteristics that ultimately produce OG. Mature forests serve various important ecologic functions. They serve as future replacements for old-growth, help protect existing OG by reducing the starkness of age-class boundaries, and provide landscape connectivity and transitional habitat that compensate to some degree for the low levels of OG. Moreover, they are almost certainly more resistant to crown fires than younger forests, and hence contribute to buffering the landscape."

Late-Successional and Old-Growth Forests in the Pacific Northwest. Statement of DAVID A. PERRY Professor Emeritus. Department of Forest Science, Oregon State University, before the Subcommittee on Public Lands and Forests of the Committee on Energy and Natural Resources, United States Senate. March 13, 2008.

Large trees provide a wide variety of important values that are scarce due to decades of logging on public and private lands. Scientists wrote to the Forest Service explaining –

> Primary forests and large, old trees, both living and dead, provide irreplaceable benefits to society that are essential to forestalling the loss of biodiversity and climate change related environmental emergencies. Those forests and trees have elevated conservation status, needing to reach maturation in order to achieve their ecological potential in supporting associated biodiversity, contributing to carbon storage and myriad ecosystem services[ii]. Trees greater than 18 inches dbh (>45 cm) have been declining in forests at all latitudes[iii]. With that decline occurring, occurring, the following values of large trees are of utmost importance in preserving:
>
> ▪ Large, old trees are among the most massive terrestrial organisms on Earth. They are bio-cultural elements of a natural inheritance that is declining globally[iv]
> ▪ The size of a tree increases over time accumulating keystone features that provide large internal cavities and canopy structures for wildlife not present in younger trees.
> ▪ Large, old trees, including snags and downed wood, are needed for nesting, roosting, foraging, denning, and other habitat elements that support numerous lichens, epiphytes, up to 30% of all vertebrates in some forests[v], and invertebrates, many of which are rare, endemic, or endangered[v].

▪ Large, old trees anchor soils through their massive root systems, stabilize slopes, and provide shading and habitat (logs) for aquatic species[vi].
▪ Large, old trees provide nutrients and soil carbon, are associated with high levels of plant varieties, play critical roles in hydrological cycles, and are "blueprints" for restoration[vii].
▪ Large, old trees store a disproportionate amount of carbon with greater leaf surface area for CO2 absorption, and massive carbon-storing tree trunks and roots[viii]. For instance, a recent global study found half of carbon in living above ground biomass is stored in the largest 1% diameter trees[ix].
▪ Large, old trees provide stable microclimates and mitigate soil desiccation[x].
▪ Mycorrhiza fungal networks are more connected and carbon rich as forests age with large trees serving as central nodes in the networks[xi].
▪ Large, old trees are especially valuable when killed individually or in large patches by natural disturbance processes such as insects, forest pathogens, wind storms, and wildfire[xii] that generate "complex early seral forests[xiii]."

DellaSala et al 2020. Open Letter to The Forest Service on the Importance of Large, Old Trees and Forests.
https://drive.google.com/file/d/1oRTRDNoQSngZKXnwz04lITABz85AqS0D/view.

…

The agency needs to recognize the distinction between thinning young plantations and thinning mature forests. Robert Anthony reminded the regional executives in 2013 that:

> The long-term benefits of thinning in young plantations to create forests with characteristics of late-successional forests (e.g. large diameter standing and down wood) may outweigh any short-term negative effects on owls or their prey. However, as the age of forests selected for thinning increases, the short-term negative effects of such activities will likely increase and the benefits decrease. The Northwest Forest Plan specified a maximum age of 80 years for forests that are slated for thinning. The reasons for this guideline were that (1) it was unclear if thinning could actually accelerate the rate at which naturally regenerated mature forests developed old forest conditions, and (2) spotted owls forage in mature forests, and thinning of these forests will likely reduce their quality as spotted owl habitat both in the short and long term. If these young forests are not currently good foraging habitat, they are gradually developing late-successional characteristics that will provide foraging habitat in the near future. Consequently, thinning in riparian forests >80 years old or any younger forests where thinning is not likely to accelerate the development of late-successional forest structure is not recommended. If these young forests are not currently good foraging habitat, they are gradually developing late-successional characteristics that will provide foraging habitat in the near future. Consequently, thinning in riparian forests >80

years old or any younger forests where thinning is not likely to accelerate the development of late-successional forest structure is not recommended.

Anthony, R.G. 2013. "Effects of Riparian Thinning on Marbled Murrelets and Northern Spotted Owls." Part III of the Science Review Team for the identification and interpretation of the best available scientific information to determine effects of riparian forest management. 28 January 2013.

…

The agency must carefully review and document their consideration of all the reasons not to log mature forests set forth in this paper: Doug Heiken 2009. The Case for Protecting Both Old Growth and Mature Forests. Version 1.8 April 2009. https://www.dropbox.com/s/4s0825a7t6fq7zu/Mature%20Forests%2C%20Heiken%2C%20v%201.8.pdf?dl=0.

The FEIS and Response-to-Comments did not respond to these comments.

Failure to Take a Hard Look at the Long-term Adverse Effects of Logging on Snag Habitat and Associated Wildlife

Oregon Wild's comments on the DEIS raised several concerns about the adverse effects of logging on snag habitat and with the effects analysis related to snags and the wildlife that depend on them:

Large snags are critically important habitat elements that benefit a wide range of species and other ecosystem services. Logging large areas of natural forests down to 30 trees per acre will result in a significant loss of snag habitat recruitment, the effects of which will be felt for more than 100 years. This is a significant problem given the fact that the FS is operating under outdated and discredited snag habitat standards, and the DEIS shows that this landscape is already suffering from a significant deficit of snag habitat. "For snags with a minimum diameter of 20 inches, the portion of the landscape lacking snags is more than twice that estimated for reference conditions, while the portion of the landscape with 0 to 6 snags per acre is more than 1.5 times reference conditions. The portions of the landscape with large snags are less than half reference conditions." DEIS p 177.

DEIS Figure 43 (p 189) shows that large snags adversely affected by logging.

The DEIS (e.g., page 194) failed to take a hard look at the long-term adverse consequences of losing so much snag habitat on the wide range of snag-associated species. In the DEIS, DecAID only used to ID "reference" conditions, not wildlife impacts.

The FEIS analysis of snag habitat consequences needs to compare predicted loss of snags from logging to DecAID thresholds for specific wildlife species that are most sensitive to snag abundance.

The FEIS and Response-to-Comments did not address these issues.

As noted above, the draft ROD says that this project is consistent with Biden Executive Order on Mature & Old-growth Forests because this project is intended to enhance mature & old-growth. However, snags and dead wood habitat are essential features of mature & old-growth habitat (including open late successional forests), and the landscape is suffering from a shortage of snags and dead wood, yet this project will not improve those conditions; it will make them worse. The conclusion runs counter to the evidence which is arbitrary and capricious.

The effects analysis for cavity excavator species (FEIS p 196) says "Responses of cavity excavators and pileated woodpeckers to proposed thinning treatments (Alternatives 2 and 3) are expected to be positive over the short-term where snags are created" but the FEIS never comes right out and says that logging is bad for these species over the long term. One has to infer that from the description of effects of the no action alternative "Overall, the greater abundance of future dead wood in proposed treatment units under the no action alternative should support higher populations of cavity excavators and species dependent on downed logs than the harvest treatments under the action alternatives over the next 100 years."

If this large logging project will make a bad situation worse for snag habitat, it requires the agency to carefully analyze the effects on affected wildlife. The agency's use of DecAID was crude at best. Instead of just comparing effects to "reference conditions" the agency needs to look at whether population viability will be maintained of wildlife species that are most sensitive to the absence of abundant snags and dead wood. Conclusory statement are not adequate. A quantitative, evidence-based analysis is required to meet NFMA's wildlife requirements and NEPA's hard look mandate.

Furthermore, effects to snags and cavity excavators does not address a wide variety of other wildlife and resources that rely on abundant dead wood (but do not excavate cavities), such as carbon storage, American marten, spotted owls, spotted owl prey, etc.

Failure to Consider Alternatives That Better Harmonize Restoration of Pine Savannas Versus Conservation of Values Associated with Late Successional Forests

The FEIS fails to consider an alternative that harmonizes the competing interests at issue in this project, in particular:

- the goal to restore rare, low-density, fire-maintained, savannah forests that do not support spotted owls, are expensive to maintain, and pose greater fuel hazards if not maintained;

versus

- the need to recover rare, mature & old-growth habitat for Threatened spotted owls and other wildlife that live in relatively dense forests, the need to maintain and increase carbon storage to mitigate global climate change, and the need to maintain fire-resilient forests with thick bark, high canopies, and cool-moist microclimate.

We feel strongly that these two goals can be met, but the Forest Service has placed far too much emphasis on creating open forests at the expense of dense forests. Throughout this NEPA process Oregon Wild has urged the Forest Service to consider a broader range of alternatives that better harmonize competing objectives. Our 2019 scoping comments said:

> It is important to acknowledge the trade-offs listed above and develop a full range of alternatives that harmonize these trade-offs in different ways.
>
> We urge the FS to develop an alternative that we feel best harmonizes the competing values involved in this project:
>
> - Focus on treating the plantations and the dryer forests. Defer the moist mature forests because they are more valuable as carbon stores and late successional habitat;
> - Scale back the logging to only treat what we are very certain can be maintained over time with prescribed fire. This will reduce the cost of maintenance and avoid the risk that hazardous ladder fuels will develop.
> - Retain all trees >24" dbh, including Douglas fir trees. These trees are valuable habitat and carbon stores and should be retained.
> - Retain all trees with old growth characteristics, regardless of size;
> - Conduct red tree vole surveys and develop a conservation strategy based on the information from those surveys, recognizing the fragmented nature of habitat and dispersal bottlenecks such as private lands and recent logging and recent fires;
> - No commercial logging on riparian reserve stands >80 years old. Commercial sized trees help meet ACS objectives. Removing them violates the ACS;
> - Retain significantly higher basal area in all dry mature forests to reduce the risk of blowdown, retain carbon, mitigate impacts on late successional wildlife.
>
> This alternative will move things *toward* the open forest conditions in dry forests while better mitigating adverse effects by retaining more carbon and more features of late successional forest.

Oregon Wild staff also brought similar alternatives to the collaborative group discussions.

Comments on the 2021 DEIS from Oregon Wild, Cascadia Wildlands, and the Sierra Club said:

- Consider a new alternative that better harmonizes pine/oak persistence on the one hand, spotted owl habitat maintenance, avoiding GHG emissions by keeping carbon stored in forests, maintaining canopy cover that helps suppress ladder fuels and maintain fire resilience while reducing long-term maintenance costs, mitigating blow-down risks, and conserving recreation/scenic values,

- Conduct careful legacy tree culturing of pine, oak, and other legacy trees by thinning small/young trees around the dripline of those trees;
- Drop logging of natural stands that have few if any pine trees;
- Amend the definition of "legacy trees" to be protected in harvest units to include all trees over 24" dbh, as well as smaller trees that exhibit old growth characteristics, such as thick/textured/colored bark, large branches, distinctive canopy architecture, tall height, etc.;
- Retain more trees in natural stands (except around pine and oak as described above) to maintain spotted owl habitat, carbon storage, and long-term low-maintenance fire resiliency;
- Avoid stand-scale regen except for structure-rich gaps in managed stands. Wildfire will decide where stands will be regenerated;
- Minimize road construction and expand non-commercial small tree thinning (which does not require roads) to areas with abundant pine and oak that are not accessible from existing roads;
- Avoid wet season logging and log hauling to protect soil, water quality, and fish;

Our DEIS comments elaborated on appropriate alternative prescriptions:

We urge the FS to retain significantly more trees than in the Jim's Creek Project. See suggested idea for a modified prescription below. This will help mitigate several significant adverse impacts of logging, including blow down risk, late successional habitat quality used by spotted owls and red tree voles, long-term snag habitat recruitment, carbon emissions, soil and hydrologic effects, help suppress ladder fuels, weed spread, scenic and recreation impacts.

This alternative will move things *toward* the open forest conditions in forests that where pine and oak are actually present, and especially where pine and oak are abundant, while better mitigating adverse effects by retaining more carbon and more features of late successional forest, where pine and oak are less prevalent.

Thinning to 30 tpa is too heavy. The FS should consider an alternative for situations where there are fewer than 30 legacy pines, as follows: for where numbers of legacy pine and oak fall short of 30, double the proposed retention of trees in the stand other than pines, favoring those that are largest. For instance, if there are 30 or more legacy pines, retain all legacy pines (plus some skips and recruitment trees); when there are only 20 legacy pines per acre, retain all pines, and thin the remainder of the stand to retain an additional 20 large non-pines (30-20=10 x2=20 additional trees); when there are 10 legacy pines per acre, retain all pines, plus 40 of the largest non-pines (30-10=20 x2=40), etc. This would achieve density reduction to benefit pines in all cases, with the greatest benefit where pines are most abundant, while at the same time mitigating trade-offs and

harmonizing values related to spotted owl habitat, carbon storage, and snag habitat recruitment in stands where pines are less common.

In response to an August 2021 email alert from Oregon Wild, almost 800 people submitted timely comments to the Forest Service urging them to:

> … develop and adopt an alternative that eliminates commercial logging in mature forests where pines are absent or rare, and focuses on reducing stand density under the dripline of old-growth pine and oak trees, while retaining enough trees to maintain suitable spotted owl habitat, except where pine and oak are abundant. This will require retaining far more than the 30 trees per acres as currently prescribed for this project. In additional to conserving spotted owls and other old-growth-associated wildlife, retaining extra trees serves many important purposes: reducing carbon emissions, mitigating the risk of blowdown, helping to suppress the growth of hazardous fuels, mitigating recreation and scenic impacts, etc. The conservation alternative should also avoid road construction and its adverse impacts on chinook and bull trout by focusing commercial logging near existing roads. If necessary, the non-commercial understory fuel treatments can be expanded to reach high priority patches of pine/oak that are inaccessible from existing roads. Alternative 3 in the Environmental Impact Statement moves incrementally in the right direction but does not go far enough to harmonize the diverse goals we have for our public forests.

We are perplexed why these comments do not appear in the "reading room" for this project.

The Response-to-Comments rejected the suggestion to retain more basal area based on the need to meet the purpose and need, but the FS never considered mitigating alternatives that would partially meet the purpose and need, while mitigating effects on wildlife, carbon, fuel hazard, etc.

Considering all reasonable alternatives is not optional. Alternatives are the heart of the NEPA process. Exploring and comparing alternatives help shed light on trade-offs and help the agency find ways of harmonizing competing objectives.

NEPA mandates that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these action upon the quality of the human environment." 40 C.F.R. § 1500.2(e). NEPA also requires the USFS to "study, develop, and describe appropriate alternatives to the recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the Act [NEPA]."40 C.F.R. § 1501.2 (c).

Environmental analysis documents must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the project. 40 C.F.R. § 1502.14(a). The Council on Environmental Quality (CEQ), which promulgated the regulations implementing NEPA, characterizes the discussion of alternatives as "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. A decisionmaker must explore alternatives in sufficient

enough detail to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public." *Id.* § 1502.14. All reasonable alternatives must receive a "rigorous exploration and objective evaluation... , particularly those that might enhance environmental quality or avoid some or all of the adverse environmental effects." *Id*. § 1500.8(a)(4). The analysis of the alternatives must be "sufficiently detailed to reveal the agency's comparative evaluation of the environmental benefits, costs and risks of the proposed action and each reasonable alternative." *Id*.

If the NEPA document considers only a restricted range of alternatives this would violate the very purpose of NEPA's alternative analysis requirement, which is to foster informed decision-making and full public involvement. 42 U.S.C. §§ 4331, 4332(2)(E); 40 C.F.R. § 1508.9(b). *See also Robertson v. Methow Valley Citizen's Council*, 490 U.S. 332, 349 (1989). The Ninth Circuit stated in *California v. Block* that "[a]s with the standard employed to evaluate the detail that NEPA requires in discussing a decision's environmental consequences, the touchstone for our inquiry is whether an EIS's selection and discussion of alternatives fosters informed decision-making and informed public participation." *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982).

The purpose of the multiple alternative analysis requirement is to insist that no major federal project be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means. *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974); *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810 (9th Cir. 1987), *rev'd on other grounds*, 490 U.S. 332 (1989) (agency must consider alternative sites for a project). The Ninth Circuit has concluded that "the existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Alaska Wilderness Recreation & Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir.1995).

Plan Amendments Violate the Implementation Guides for the Special Interest Areas.

YRR FEIS (p 294) says that the required implementation guides for the 2 Special Interest Areas include the following specific goal: "Ensure the composition and structure of the forested stands reflects natural disturbance patterns and fire as a tool and a natural process in an integral part of shaping the landscape." Commercial logging is inconsistent with this goal because it will remove valuable large woody structures that are normally recruited in abundance after fire and other natural disturbances. Commercial logging will in fact make a bad situation worse with respect to snag habitat. Snags are already in short supply, and logging will reduce snag recruitment for many decades.

The plan amendment might be fine if it accomplished the goals of the Special Interest Areas and their Implementation Guides, but the proposed commercial logging will directly undermine one of the specific goals of these SIAs. This is improper. The NEPA analysis fails to disclose this inconsistency, and fails to consider alternatives that would

avid or mitigate this problem, such as restricting management of SIAs to non-commercial thinning and prescribed fire.

Failure to Properly Survey and Manage for Red Tree Voles

The YRR draft ROD calls for logging in riparian reserves in "managed stands" down to 40% canopy cover and 60 tpa. Temporary road construction is allowed to cross streams in managed stands. Non-commercial snag creation and wood recruitment in natural stands in riparian reserves can reduce canopy cover to 70%. And 10% mortality is allowed for prescribed fire in riparian reserves. All these activities may harm red tree vole habitat development. In unmanaged mature & old-growth stands, logging, especially open forest creation, will also fragment and degrade RTV habitat inside and outside riparian reserves by reducing canopy connectivity and exposing vole habitat to heat and drying wind.

The 2016 RTV Management Recommendations (pp 13-14) define RTV habitat as stands containing Douglas-fir that are >20 years old and more than 60% canopy cover, so virtually all of the commercial logging in riparian reserves will reduce canopy connectivity, degrade the microclimate, and harm red tree voles.

The YRR approach to conservation of RTV violates NFMA because it is inconsistent with the guidance adopted pursuant to the 2001 Survey and Manage FEIS ROD, which amends the 1994 Northwest Forest Plan and the 1990 Willamette National Forest Plan. The YRR FEIS (p 399) says the RTV HPS the management approach used by the Forest Service for this project "demonstrates consistency with the established rule sets for land use allocations managed consistent with red tree vole conservation" This is not true.

The 2016 RTV Management Recommendations explicitly identify riparian reserves as among the land allocations expected to be managed consistent with the needs of the red tree vole (p 16), and further states, "High-priority sites do not need to be located within those land-use allocations managed consistent with red tree vole conservation, as management of these areas should not conflict with red tree vole site persistence." (p 19). Much of the proposed logging in riparian reserves is focused on relatively young stands, and the RTV Management Recommendations recognize that forests as young as 20 years old can serve as RTV habitat, and "young forests may play a role in the selection of land-use allocations managed consistent with red tree vole conservation." (RTV MR p 14). However, the YRR project design includes significant logging in potentially suitable red tree vole habitat and does not manage riparian reserves consistent with the needs of red tree voles, even though the NWFP Record of Decision adopted Riparian Reserve Scenario 1 with the explicit intention to benefit red tree voles (and a spotted owls and wide variety of other species) that will be harmed by logging to create open forest conditions. 1994 FSEIS, Appendix B-11, p B-143 -145.

Furthermore, the 2106 RTV Management Recommendations require the FS to identify "land-use allocations managed consistent with red tree vole conservation," and include riparian reserves in this category. The YRR RTV Strategy purportedly developed a list of

"areas with no programmed timber harvest" but the Forest Service failed to identify riparian reserves in that category even though the NWFP does not allow programmed timber harvest in riparian reserves, and in fact prohibits logging in riparian reserves (with limited exceptions).

In fact, the 2016 RTV Management Recommendations (pp 21-22) urge the Forest Service to consider widening riparian reserves, not logging in them:

> Riparian reserves can be widened to accommodate red tree vole dispersal (USDA and USDI 1994a: B-13):
>
> > '... any analysis of Riparian Reserve widths must also consider the contribution of these reserves to other, including terrestrial, species. Watershed analysis should take into account all species that were intended to be benefited by the prescribed Riparian Reserve widths. Those species include fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls.'
>
> Management of riparian reserves as connectivity areas should emphasize red tree vole conservation objectives outlined in the rule set, in addition to aquatic and other riparian species.

The YRR Project's exclusion of riparian reserves from the list of land allocations managed for red tree vole and the effects of logging riparian reserves should have been documented and explained. The 2016 RTV Management Recommendations (p 16) require "Field unit personnel should document assumptions and existing direction for land-use allocations included in this layer, describing how management is consistent with red tree vole persistence."

The FS failure to identify riparian reserves as among the land allocations managed consistent with the needs of red tree vole highlights the extent to which Forest Service management of riparian reserves has diverged from the intent of the Northwest Forest Plan. The prohibition on logging in riparian reserves is being ignored. The exceptions have swallowed the rule. Riparian Reserves are now managed for logging, not for the many species intended to benefit from protection of riparian buffers, including red tree voles, spotted owls, and snag-associated wildlife.

The Forest Service does not appear to recognize they have a choice either to use a high-priority site strategy that allows them to avoid surveys and avoid protecting all known sites, while managing all reserve land allocations for RTV conservation, OR conduct RTV surveys, protect known sites, and thin in riparian reserves outside of known sites. It is not appropriate to rely on high-priority site designation AND log reserves in a way that harms red tree voles.

Oregon Wild raised several concerns with the YRR red tree vole strategy:

> We recommend the Forest Service follow the commitments in the Northwest Forest Plan to survey for rare and uncommon species such as the red tree vole,

and develop a conservation strategy that reflects on-the-ground data on the presence and absence of red tree vole and the connectivity of RTV habitat given barriers to movement such as private lands, young forest, and recently burned areas.

The Red tree vole is a Category C species which includes uncommon species for which pre-disturbance surveys are practical. And sites discovered during surveys will be protected according to a high-priority sites (HPS) strategy developed under the management recommendations (MR).

We have some significant concerns with the proposed plan amendment and red tree vole strategy:

- The DEIS says "YRR IDT made some refinements to the design of some HPS to better align with proposed management actions" This sounds like some high priority sites are going to be logged. This is not appropriate as it will compromise the effectiveness of the HPS strategy, and it violates the letter and spirit of the 2001 Survey and Manage ROD.
- Page 20 of the standards & guidelines for the 2001 survey and manage ROD state that surveys will be conducted and sites will be managed under the HPS strategy. The glossary defines HPS as a subset of known sites. So the FS should be developing a HPS Strategy based on the results of surveys that identify actual known sites of RTV;
- The 2001 standards & guidelines also state that management recommendations may identify “areas” where surveys are no longer necessary, but in the case of the RTV, the management recommendations do not identify “areas” where surveys are not required. The approach being utilized here is not allowed by the 2001 ROD unless the FS uses “in lieu direction subject to further NEPA analysis.” This involves a significant forest plan amendment;
- The proposed strategy does not provide for “well-distributed” habitat. The proposed strategy is designed to leave large “gaps” (>1 km across) within the YRR project area where red tree vole will be unprotected so that logging can proceed;
- All riparian reserves over 80 years old should be retained as part of the red tree vole strategy. Riparian reserves objectives include conservation of red tree vole. Logging for pine habitat is not part of the ACS;
- The YRR Project will create an east-west barrier to RTV connectivity. The project is located in a pinch point between private land and Tumblebug fire area and the river. Federal lands need to mitigate for poor habitat conditions on non-federal lands;
- Conserving the red tree vole requires conserving the older denser forests that they rely on. Fire exclusion and resulting succession over the last

century in the YRR project area is not all bad. It helps mitigate for the high rates of logging and loss of late successional habitat across the landscape.

- There is no assurance that high priority sites identified in the absence of surveys are in fact occupied;
- The RTV strategy should connect and protect and larger subset of suitable habitat, not just RA32.
- 10-25 acre patches don't support viable colonies of red tree vole;
- The FS cannot assume that existing reserves are currently suitable for red tree voles. They may not be due to past logging and fire;
- The "ensemble of models" approach may leave important areas out. If the ensemble must agree before an area received protection, then one incorrect model can veto the correct models. Site-specific information should be used to determine red tree vole habitat;
- There is a low probability that relatively long narrow connectivity corridors will be effective;
- Linear models to identify high priority sites are not ideal.
- The YRR High Priority Site Strategy appeared to rely on RA32 (DEIS p 404). This is not appropriate because RA32is just a small subset of the suitable habitat for red tree vole.

The FEIS Response-to-Comments responded to these comments by simply reiterating the high-priority site strategy.

The Red Tree Vole High-Priority Site Strategy Requires NEPA Analysis, Especially in Light of Recent Wildfires

The YRR FEIS (pp 418-419) describes the High Priority Site Management Recommendations Process for the Red Tree Vole, including "A district review, with Supervisor Office support, would be undertaken to determine if changes are warranted based on any substantial loss of RTV habitat due to natural disturbances, especially wildfire. The review would document what proposed changes are needed and a process for revising the UMFWR and HCR Watersheds High Priority Site Management Recommendations if warranted. The review would be documented in the district's Upper Middle Fork Willamette River and Hills Creek Reservoir Red Tree Vole High Priority Site Management Recommendations folder." The 2022 Cedar Creek Fire in the Middle Fork Watershed burned over 100,000 acres, including a significant amount of red tree vole habitat that was presumed to support viable populations of red tree vole, and enable flexibility elsewhere on the landscape. The fire has changed these assumptions and should trigger a review of whether the high-priority site strategy remains viable, or whether the Forest Service should take fewer risks with red tree voles by surveying suitable habitat and protecting all occupied sites.

The high-priority site strategy for the red tree vole (RTV) is a *de facto* plan amendment that requires NEPA analysis to consider impacts and alternatives. The 2001 Survey and Manage ROD approved the idea of high-priority sites, but the adoption of specific strategies represents a substantive change in forest plan requirements that affects the environment and determines which trees can be cut and which trees will be spared. This exercise of discretion requires NEPA analysis. The strategy for red tree voles needs to be reconsidered in light of significant wildfires that have burned thousands of acres of suitable RTV habitat, and increased the need to conserve remaining occupied RTV habitat.

The Forest Service cannot deviate from the requirements of the NEPA-approved forest plan and rely on an alternative approach to meeting the intent of the forest plan without preparing a forest plan amendment. *See ONRC and HCPC v. Forsgren*, 252 F. Supp. 2d 1088 (D. Or. 2003). In that case, the EA relied on the Lynx Conservation Assessment and Strategy (LCAS) which the court said were *de facto* plan amendments that had not been subject to NEPA or NFMA review and comment. The court held agency cannot rely on these strategies until they have subjected to NEPA and NFMA procedures.

The Northwest Forest Plan adopted the *Survey and Manage* program to protect low-mobility, old-growth dependent species including the red tree vole. The RTV was put in a category requiring pre-disturbance surveys prior to habitat altering activities affecting vole habitat. Sites known to be occupied by RTV were to receive 10+ acre buffers. The Forest Service subsequently adopted (without NEPA compliance) new policies that increase certainty for logging and reduce certainty for red tree voles.[8] The new rules modify the pre-disturbance survey requirements and instead rely on conservation of "high-priority sites" instead of all occupied sites, and waive the requirement to survey and protect RTV in *non*-high-priority sites (where the FS intends to log). Numerous timber sales have been planned and logged under these modified rules.

The high-priority site strategy is based on an outdated *static* view of forest ecosystems. The strategy implicitly assumes that if a network of small patches of RTV habitat are protected from logging they will remain in place indefinitely to ensure RTV viability and connectivity while logging occurs in suitable and occupied stands around those high priority patches. We are very concerned that recent large stand-replacing wildfires in western Oregon may threaten the long-term viability of red tree vole populations and bring into question the efficacy of the FS' modified RTV strategy that relies on conservation of high-priority sites, instead of all occupied sites.

The 2016 High-Priority Site Management Recommendations for the Red Tree Vole indicate that high-priority sites (10-25 acres with >60% conifer canopy cover) must be no less than 1 km apart and connected in three directions to other high-priority sites. Recent

[8] RIEC 2016 and Huff, R. 2016. High-priority site management recommendations for the red tree vole, version 1.0. Portland, OR. U.S. Department of Agriculture, Forest Service Regions 5 and 6, and U.S. Department of the Interior, Bureau of Land Management, Oregon/Washington. 45 p. https://www.fs.fed.us/r6/reo/survey-and-manage/great-gray-owl-red-tree-vole-amphibians.php; https://www.fs.fed.us/r6/reo/survey-and-manage/downloads/red-tree-vole/mr-rtv-hps-201604.pdf.

wildfires in western Oregon have taken tens of thousands of acres of suitable RTV habitat below 60% canopy closure and burned right through many high-priority sites and eliminated necessary connections between them. This directly undermines the RTV HPS strategy and all subsequent timber sale NEPA analyses that rely on it. In a dynamic ecosystem, with large disturbances, protecting small 10-25 acre sites while logging other occupied sites is not effective. It exposes red tree vole to significant risks from the combined effects of logging and large-scale disturbance. Since no one can predict where or when wildfires will strike, the RTV strategy needs more redundancy and less risk tolerance. A better strategy is to survey all RTV habitat in the path of logging and protect all occupied RTV sites.

The extensive, climate-change-driven wildfires that affected western Oregon over the last several years highlight the need to conserve all occupied sites for rare and uncommon species associated with late-successional old-growth forests. The survey and manage program as originally conceived adopts a risk-averse strategy that strives to identify and protect all occupied sites. The HPS strategy is more risk tolerant but is not appropriate in light of recent wildfires and climate change.

The 2016 RTV HPS Management Recommendations say: "... in some watersheds (or portions thereof) it may be difficult to identify non-high priority sites or areas no longer needing pre-disturbance surveys based on low amounts of red tree vole habitat or questions about potential red tree vole occupancy. In those cases, site management and pre-disturbance surveys may need to continue" (p 24). We believe the recent wildfires (and the reasonable expectation of more fires to come) have pushed many 5th field watersheds below the RTV habitat threshold that justifies use of the HPS strategy. In addition, with significant loss of occupied sites and suitable habitat, remaining occupied RTV sites have increased in conservation value, so even in 5th field watersheds that have not yet experienced significant fire, those sites need to be surveyed and protected to mitigate for RTV losses in watersheds that have burned.

The 2016 RTV HPS Management Recommendations indicate that new information can trigger a re-evaluation of the HPS strategy. ("**adaptive management triggers** … should wildfire occur within the watershed, the field unit is expected to conduct a review to determine whether a modification of tree vole management is warranted." p 24.) Now is the time to do that. In fact, the Management Recommendations as a whole are due for a 5-year review ("These high-priority site management recommendations will be reviewed at least every five years to address new species knowledge, scientific findings, habitat information, and results of implementation. Revision may follow the five-year reviews to refine the approach outlined in this document or to address emerging issues." p 30.). The review needs to recognize that some 5th field watersheds have been so severely affected by wildfire that there may be larger scale viability concerns. Remaining suitable vole habitat is now more precious than before the fires. Vole habitat and vole populations should receive greater protection even in 5th field watersheds that are less affected by wildfire. The reanalysis should at least consider fire effects in adjacent 5th field watersheds. The 2016 RTV HPS Management Recommendations accordingly encourages "connectivity to adjacent watersheds" (p 23).

Failure to Properly Survey for Rare and Uncommon Fungi.

The YRR FEIS (p 207) says "To reduce inadvertent loss, strategic surveys or equivalent effort fungi surveys are required prior to habitat-disturbing activities proposed in old-growth forest (generalized as a stand at least 180 years old and having old-growth characteristics, as defined in USDA, USDI 1994 (cited in USDA USDI 2001). The Willamette National Forest chose to use modelled "RA-32" habitat (habitat modeled as suitable for meeting requirements under the Northern Spotted Owl Recovery Action 32 (USDI 2011) as a proxy for old-growth forest, to determine high priority areas for fungi surveys."

The FEIS says "approximately 10% of the [2,947 acres of] mapped RA-32 habitat is in proposed activity areas." Which means that of over 1,400 acres of mature, unmanaged forest proposed for logging, only about 300 acres of the project was surveyed for fungi.

The FS violated the LRMP as amended by the 2001 Survey and Manage ROD by failing to survey all suitable old growth fungi habitat, and instead only performing surveys within a subset of old growth. The FS fungi surveys also focused on "priority areas" instead of all suitable habitat areas as required. The 20212 Fungi Survey Protocol (p 6) requires surveys in old growth as defined in the 2001 S&M ROD Standards & Guidelines (p 79), not the RA32 definition of old growth as estimated by some untested, unverified LiDAR modelling. That 2001 ROD definition is:

> Old-growth forest - An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species, composition, and ecosystem function. More specific parameters applicable to various species are available in the USFS, Region 6, 1993 Interim Old Growth Definitions (USDA Forest Service Region 6, 1993). The Northwest Forest Plan SEIS and FEMAT describe old-growth forest as a forest stand usually at least 180 to 220 years old with moderate-to-high canopy closure; a multi-layered, multi-species canopy dominated by large overstory trees; high incidence of large trees, some with broken tops and other indications of old and decaying wood (decadence); numerous large snags; and heavy accumulations of wood, including large logs on the ground (USDA, USDI 1994a).

This violation is compounded by the fact that the FS failed to ground-truth it's LiDAR modelling method used to identify RA32 habitat, so there may be many areas of high quality fungi habitat that were falsely identified as non-RA32, so they will be logged without required fungi surveys.

The FS essentially used spotted owl habitat as a proxy for fungi habitat, but the habitat requirements of owls and fungi are different. This is improper. The YRR FEIS (p 208) admits that RA32 habitat "shares most [but not all] characteristics with suitable habitats for rare fungi." The FEIS then describes in detailed the features of old growth habitat but

does not describe how well, or how poorly, the LiDAR method works to accurately identify RA32.

Failure to Take a Hard Look at Increased Fuel Hazards Caused by Logging to Create Open Forests

Logging down to 30 tpa will make fuel hazard worse, not better, and cause net adverse effects to biodiversity and climate.

Oregon Wild's comments on the draft EIS said:

> Logging has complex effects on fire and fuels with some effects tending to reduce hazard, and other effects tending to increase hazard. The FEIS needs to recognize that:
>
> - Significant reduction of canopy cover can increase fire hazard by making the stand hotter/dryer/windier, generating more hazardous slash, stimulating the growth of future surface and ladder fuels, and additional roads increase human ignition risks;
> - There is a very low likelihood that fuel treatments will interact with fire, so the benefits are unlikely, while the trade-offs on habitat and carbon are virtually certain to occur;
> - "High overstory density can be resilient" when ladder fuel are sparse and there is a gap between surface and canopy fuels. Terrie Jain (2009) Logic Paths for Approaching Restoration: A Scientist's Perspective, *from* Workshop: Restoring Westside Dry Forests - Planning and Analysis for Restoring Westside Cascade Dry Forest Ecosystems: A focus on Systems Dominated by Douglas-fir, Ponderosa Pine, Incense Cedar, and so on. May 28, 2009. http://ecoshare.info/projects/central-cascade-adaptive-management-partnership/workshops/restoring-westside-dry-forests/

The YRR FEIS (pp 109-110) says:

> The proposed treatments in the late seral open canopy and late seral patch connectivity stands would reduce canopy density and increase spacing between crowns, creating forested stands less susceptible to a sustained crown fire. … Commercial and non-commercial thinning, piling of surface fuels and underburning would result in reduced surface fuels and would reduce risk of crown fire. Proposed gap treatments would promote plant species that are more resilient to effects of fire and as larger trees develop, resiliency to effects of fire increases as well. Immediately following harvest there would be an increased fire risk in stands until fuel reduction activities can take place due to the creation of post-harvest activity generated fuels.

This analysis tells only half the story and fails to take a hard look at the complexities of logging to low density that stimulates the growth of surface and ladder fuels thus increasing fuel hazard over time compared to retaining more dense canopy that helps suppress the growth of surface and ladder fuels. The FS failed to conduct an adequate

analysis that discloses the real risks of creating open forests, and failed to consider reasonable alternatives that would mitigate those risks.

The FEIS dismisses this concern that logging will stimulate the growth of surface and ladder fuels and increase fuel hazard by asserting that maintenance treatments will occur. To avoid the fuel problem, maintenance must be recurring and perpetual. There is no guarantee that funds will be available for this, or that agency priorities will remain focused on the necessary work. Heavy logging to low density demands a very significant long-term commitment to future funding and future agency action. A simple assertion that those funds and those commitment will materialize is not enough. The agency needs to discuss the risk that fuels will at some point grow to dangerous levels.

The Response-to-Comments (p 456) fails to address public comments raising concerns about the low probability that fuel logging will interact with fire and the evaluation of trade-offs: "There is a very low likelihood that fuel treatments will interact with fire, so the benefits are unlikely, while the trade-offs on habitat and carbon are virtually certain to occur." The Response-to-Comments said "To meet purpose and need, a variety of fuels treatments were developed and proposed for the project area in order to start the process of restoration toward a more healthy and resilient landscape that includes different forms of disturbance." This is a non-answer. There is nothing about probability or trade-offs.

The YRR project proposes to remove almost 3,000 acres of suitable spotted owl habitat that science has shown to be more resistant and resilient to wildfire than non-owl habitat. The FS failed to take a hard look at these risks, and the fuels analysis in the FEIS presents a far too rosy picture of the fuel hazards associated with logging versus not logging.

Lesmeister et al (2019)--

> Pre-fire nesting/roosting habitat had lower probability of burning at moderate or high severity compared to other forest types under high burning conditions. Our results indicate that northern spotted owl habitat can buffer the negative effects of climate change by enhancing biodiversity and resistance to high-severity fires, which are predicted to increase in frequency and extent with climate change. Within this region, protecting large blocks of old forests could be an integral component of management plans that successfully maintain variability of forests in this mixed-ownership and mixed-severity fire regime landscape and enhance conservation of many species.

Lesmeister, D. B., S. G. Sovern, R. J. Davis, D. M. Bell, M. J. Gregory, and J. C. Vogeler. 2019. Mixed-severity wildfire and habitat of an old-forest obligate. Ecosphere 10(4):e02696. 10.1002/ecs2.2696.
https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecs2.2696.

Lesmeister et al (2021)--

> We examined the relationship between fire severity and suitable nesting forest in 472 large wildfires (> 200 ha) that occurred in the northern spotted owl range during 1987–2017. … Averaged over all fires, the interior nesting forest burned at lower severity than edge or non-nesting forest. These relationships were

> consistent within the low severity, very frequent, and mixed severity, frequent fire regime areas. … Over the 30-year study, we found a strong positive trend in the proportion of wildfires that burned at high severity in the non-nesting forests, but not in the suitable nesting forest types. Conclusions: Under most wildfire conditions, the microclimate of interior patches of suitable nesting forests likely mitigated fire severity and thus functioned as fire refugia (i.e., burning at lower severity than the surrounding landscape). With changing climate, the future of interior forest as fire refugia is unknown, but trends suggest older forests can dampen the effect of increased wildfire activity and be an important component of landscapes with fire resiliency.

Lesmeister, D.B., Davis, R.J., Sovern, S.G. et al. Northern spotted owl nesting forests as fire refugia: a 30-year synthesis of large wildfires. fire ecol 17, 32 (2021). https://doi.org/10.1186/s42408-021-00118-z; https://fireecology.springeropen.com/counter/pdf/10.1186/s42408-021-00118-z.pdf.

Logging to 30 tpa is essentially a form of *regen* logging which is known to pose fuel hazards. The 2000 National Forest Roadless Area Conservation FEIS (p 3-92 -93) noted the fire hazard associated with regen logging:

> [E]arly successional vegetative growth often forms into dense thickets that create a highly flammable situation. New tree growth, whether from natural regeneration or planted nursery stock, produces needles and twigs that become the fine fuel that contributes to wildland fire spread. … Post-harvest fuel conditions commonly found in some managed forests prompt many scientists to conclude that harvested forests have a higher propensity for large, severe wildland fires than forests that have not been harvested. A recent report by the National Research Council (2000) speaks to the issue of post-harvest fuel management in Pacific Northwest forests.
>
> > "Logging has been proposed as a possible surrogate for fire in reducing fuel accumulation with the added benefit of economic return (Agee 1993), but logging and clearcutting do not necessarily reduce flammable fuels…rapid regeneration of early-successional shrubs and trees can create highly flammable fuel conditions within a few years of cutting. Without adequate treatment of small woody residues, logging may exacerbate fire risk rather than lower it (Agee 1993)…"

USDA FS 2000. National Forest Roadless FEIS. https://web.archive.org/web/20160315152803/http://www.fs.usda.gov/roaddocument/roadless/2001roadlessrule/finalruledocuments

The YRR FEIS also failed to take a hard look at the need for maintenance treatments over the coming decades for the prescribed treatments to have the intended effects, including how regular disturbances (or lack of them) might delay development of late seral forest structure, increase fire hazard, and adversely affect fish and wildlife.

Failure to Provide Site-Specific Analysis.

The YRR FEIS describes large logging units but claims a large fraction of those potential units will not be logged, rather they will be designated as unlogged "skips." However, the

FEIS does not disclose where skips will be located. The FEIS also does not disclose where road construction will occur. Logging mature & old-growth forests and building roads has significant effects on the environment, and the location matters a lot. Members of Oregon Wild tried to go visit many of the proposed logging units and identified areas of concern. When we brought those concerns to the Forest Service they dodged the issue by saying those areas are likely to be designated as skips. Well, that sounds somewhat reassuring, but if the location of actual logging and actual skips is not disclosed in the NEPA document then the purposes of NEPA are deeply undermined. The ability to provide informed comment is undermined. Accountability in undermined.

> The concept of management of our natural resources through "prescription generalization" by type and/or by regions is no longer acceptable because of the wide variability of a given type and the range of demands upon our resources. Rather we need to think literally in terms of acre-by-acre management. The Forest Service agrees that acre-by-acre management is highly desirable.

USFS 1972. FOREST SERVICE RESPONSE TO RECOMMENDATIONS OF FORESTRY DEANS [ABOUT CLEARCUTTING] Made to the Council on Environmental Quality. June 1972. http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/12011/FOR_SER_RES_TO_REC_OF_FOR_DEA.pdf.

> NEPA requires that environmental analysis be specific enough to ensure informed decision-making and meaningful public participation.110 The Project EIS's omission of the actual location of proposed timber harvest and road construction within the Project Area falls short of that mandate. … The Project EIS at issue here … does not delineate harvest units, let alone identify planned activities within them and describe their impacts on localized cognizable values. Nor does the Project EIS allow the public to identify where specific harvest activities will occur in relation to various cognizable values on Prince of Wales Island.119 … [T]he EIS falls short of NEPA's directive to "contain[] a reasonably thorough discussion of the significant aspects of the probable environmental consequences" for each alternative.142 This approach, coupled with the lack of site-specific information in the Project EIS, detracts from a decisionmaker's or public participant's ability to conduct a meaningful comparison of the probable environmental impacts among the various alternatives. … The Project EIS identified a total acreage of potential timber harvest, but not the distribution of the specific acreage authorized by each alternative within these areas. This omission is meaningful given the duration and scale of the project.146 Despite "additional parameters that limit the ultimate selection of units and activities,"147 such as mitigation measures contained in the Activity Cards,148 the Project EIS's structure creates ambiguity about the actual location, concentration, and timing of timber harvest and road construction on Prince of Wales Island.149 By doing so, the Project EIS fails to provide a meaningful comparison of alternatives. By authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review,150 the Project EIS violates NEPA. The Forest Service has not yet taken the requisite hard look at the environmental

> impact of site-specific timber sales on Prince of Wales over the next 15 years. The Forest Service's plan for condition-based analysis may very well streamline management of the Tongass and decrease the amount of falldown acreage associated with each timber sale;151 however, it does not comply with the procedural requirements of NEPA, which are binding on the agency.152 "NEPA favors 'coherent and comprehensive up-front environmental analysis to ensure . . . that the agency will not act on incomplete information, only to regret its decision after it is too late to correct."153

SE Alaska Conservation Council v. U.S. Forest Serv. (D. Alaska 2020). Case No. 1:19-cv-00006-SLG. March 11, 2020. https://earthjustice.org/sites/default/files/files/40-order-granting-msj_3-11-20.pdf.

Failure to disclose the site-specific impacts of road construction is significant. The public and the decision-maker need to know and understand the affected soil types, slopes, aspect, slope position, land allocation, construction methods, decommissioning timing and methods, fuels and fire ignition, forest types and habitat types, proximity to water or sensitive sites, the length of roads and what type of work they will facilitate, etc. So that trade-offs can be evaluated, NEPA also requires exploring reasonable alternatives such as using helicopters, alternate road routes, conducting non-commercial treatments that do not require roads for log removal. There is no way to provide informed comment (or make informed decisions) without this information. Deferring this critical information to a post-decisional process is inconsistent with NEPA.

The FEIS and Response-to-Comments do not address Oregon Wild's comments on the DEIS:

> The DEIS analysis of effects of road construction (p 280) is only one paragraph and does not provide any site specific information so fails it to take the required "hard look." The location of proposed roads needs to be mapped in the FEIS, as well as key information such as length, acres accessed, soil type, slope, number large trees that would need to be removed, proximity to water and other sensitive resources, and the criteria used by managers and specialists to locate and design proposed roads. How can the Forest Service disclose the site-specific impacts of those roads (on legacy trees, presence of sensitive species, soil, water quality, slope stability, weeds, fish, cultural resources, etc) if they don't know where the roads will be built? How can the public comment on the wisdom and effects of proposed road construction if we don't know where it is?
>
> The DEIS says that resource specialists will use site-specific information to locate roads. This is *post hoc* analysis that does not conform to NEPA. Procedures implementing the National Environmental Policy Act ("NEPA") "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b).

Failure to Consider the Costs of Global Climate Change

The YRR FEIS analysis of the economic costs of this project fails to compare economic value of logs vs social and economic costs of GHG emissions and global climate change

caused by logging. The YRR FEIS FEIS analysis of economics effects says "The economic analysis focuses on the direct, indirect, and induced costs and benefits of the alternatives and the connected actions …" This is simply not true. The analysis excludes important costs of GHG emissions that vastly outweigh the $17 million stumpage value of Alternative 2, the $411,668.34 estimated net present value, and the $2 million estimated return to the treasury. (YRR FEIS p 286). A proper analysis require quantifying the magnitude of carbon emissions from logging and then applying a reasonable social cost.

The YRR FEIS, Appendix G (p 389) seems to justify a shoddy analysis of global climate change because the CEQ Guidance on Consideration of Greenhouse Gas Emissions and Climate Change was released between the draft and final EISs ("As the draft EIS for this project was prepared one and a half years before this guidance, and the final EIS was nearing completion just as this guidance was published, this project will proceed with previously existing guidance for climate change analysis and will not apply the January 2023 guidance.") The Forest Service asserts that just too late to do a proper analysis now. This is frankly nonsense. The Forest Service has been put on notice that his is an important issue. The 2023 Guidance is just reaffirming long-standing policy and good practice. Oregon Wild's 2019 scoping comments asked for an analysis of the social costs of climate change.

Six months before the DEIS was published, there was a Biden EO directing consideration of the social cost of carbon dioxide emissions. Public comments on the DEIS brought this to the agency's attention almost 2 years before the CEQ guidance was released. Oregon Wild's August 2021 comments on the DEIS urged the Forest Service to consider the social cost of carbon dioxide emissions caused by logging, citing a January 2021 Biden Administration E.O. saying it is *essential* that federal decision-making consider the full cost of agency actions that may harm the climate:

> **Sec. 5. Accounting for the Benefits of Reducing Climate Pollution**. (a) It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The "social cost of carbon" (SCC), "social cost of nitrous oxide" (SCN), and "social cost of methane" (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions. …
>
> (b) There is hereby established an Interagency Working Group on the Social Cost of Greenhouse Gases …
>
> (ii) Mission and Work. The Working Group shall, as appropriate and consistent with applicable law:

(A) publish an interim SCC, SCN, and SCM within 30 days of the date of this order, which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published;

(B) publish a final SCC, SCN, and SCM by no later than January 2022;

Biden Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis; JANUARY 20, 2021. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/. In fact, one could go back more than 100 years to Gifford Pinchot who said "Where conflicting interests must be reconciled, the question shall always be answered from the standpoint of the greatest good of the greatest number in the long run." The social cost of carbon dioxide emissions is a useful yardstick for measuring "the greatest good to the greatest number" because it allows the agency to compare the centralized economic value of timber to the decentralized economic costs of greenhouse gases emissions from logging.

After the DEIS came out, but before the FEIS came out CEQ issued fresh guidance, but this was simply restating longstanding policy. The Jan. 9, 2023 Federal Register notice says "This interim guidance is effective immediately. … This interim [15] GHG guidance, effective upon publication, builds upon and updates CEQ's 2016 Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews … This guidance applies longstanding NEPA principles to the analysis of climate change effects, which are a well-recognized category of effects on the human environment requiring consideration under NEPA …" https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate. The guidance goes on to say "Agencies should use this guidance to inform the NEPA review for all new proposed actions. Agencies should exercise judgment when considering whether to apply this guidance to the extent practicable to an on-going NEPA process …" In exercising this judgment the Forest Service should take into account the fact that the public raised this issue from the very beginning.

Failure to Make Climate Change Part of the Project Purpose; Failure to Take a Hard Look at the Effects of Logging Related Greenhouse Gas Emissions; Failure to Consider Mitigating Alternatives

Oregon Wild's comments on the DEIS provided a detailed 60-page critique of the DEIS analysis of carbon storage and global climate change. Our analysis provided abundant scientific citations showing that the EIS analysis was either misleading or plain wrong. The FEIS and Response-to-Comments failed to meaningfully respond to public comments regarding the flawed analysis of global climate change, except by repeating some of the incorrect and misleading information.

The most significant errors in the EIS analysis of carbon and climate change are:

1. The EIS improperly minimized the effects of logging related carbon emissions and failed to recognize the fundamental nature of the climate crisis is one of cumulative causation in which all emissions are part of the problem;
2. The FEIS and Response-to-Comments misleadingly imply that some kinds of logging (e.g., deforestation) are bad for the climate and other kinds of logging (e.g., sustainable forestry) are not. This is highly misleading and fails to recognize that all emissions are equally bad for the climate regardless of the labels we place on them;
3. The FEIS and Response-to-Comments suggest that logging is carbon neutral or beneficial because logging will increase forest growth and/or future forest growth will offset current emissions. This is highly misleading because, logging does not increase forest productivity. It decrease forest productivity by damaging soil with heavy equipment, AND future forest growth does not mitigate for warming that occurs during the period of regrowth, nor does it offset the forgone carbon accumulation caused by killing trees that would otherwise continue to growth and accumulate carbon. The Response-to-Comments also confuses tree growth rates and stand growth rates, and ignores the fact that logging causes significant net carbon emissions, even if thinning increases growth on a subset of trees that survive logging. Logging will reduce carbon storage, increase GHG emissions, and future forest growth will never *catch up* with the carbon storage in the unlogged alternative and never fully mitigate for the warming caused by the extra CO_2 in the atmosphere caused by logging;
4. The FEIS and Response-to-Comments assert that logging will benefit the climate by reducing carbon emissions from disturbance. There is no evidence that logging to control disturbance provides net climate benefits. Studies cited in our comments consistently show that the combined emissions from logging plus fire, are greater than the emissions form fire alone. Logging does not mitigate global climate change, even when it is intended to limit emissions from natural disturbance, because in virtually every case, the carbon emissions from logging at a scale necessary to control natural disturbance exceeds the carbon emissions from natural disturbance. The Response-to-Comments says "There is no consensus in the literature on whether thinning to reduce disturbance severity is a net climate benefit or not (McKinley et al. 2011)." However, Campbell and Agar (2013) conducted a sensitivity analysis and found robust results indicating that fuel reduction does not increase forest carbon storage. "… we attempt to remove some of the confusion surrounding this subject by performing a sensitivity analysis wherein long-term, landscape-wide carbon stocks are simulated under a wide range of treatment efficacy, treatment lifespan, fire impacts, forest recovery rates, forest decay rates, and the longevity of wood products… This insensitivity of long-term carbon stocks is due in part by the infrequency of treatment/wildfire interaction and in part by the controls imposed by maximum forest biomass. None of the fuel treatment simulation scenarios resulted in increased system carbon." Campbell, J, Agar, A (2013) Forest wildfire, fuel reduction treatments, and landscape carbon stocks: A sensitivity analysis. Journal of Environmental Management 121 (2013) 124-132

http://fes.forestry.oregonstate.edu/sites/fes.forestry.oregonstate.edu/files/PDFs/Campbell_2013_JEM.pdf;

5. The EIS blurs the distinction and potential conflict between climate change mitigation and climate change adaptation, and fails to consider alternatives that harmonize these competing goals;
6. The EIS says that the climate effects of logging would be "momentary" because the forest and carbon would regrow. This is misleading. Climate effects need to be compared among alternatives, including no action, that is, GHG emissions *with* the project compared to *without* the project, NOT comparing GHG emissions in two time periods. Such an analysis will show that carbon emissions from logging will causes warming during the period when extra CO_2 is in the atmosphere and that warming will not be mitigated after the forest regrows, because the unlogged forest continued to grow and absorb carbon and reduce climate effects during the entire period that the logged forest is trying (and failing) to "catch up" with the unlogged forest. Furthermore, CO_2 has a very long residence time in the atmosphere.
7. The EIS says that wood products are better than carbon emissions from natural mortality. The NEPA analysis must avoid any implication that dead trees emit carbon while wood products store carbon. "Longevity of carbon stocks determines the degree of climate benefit. ... [T]he dead wood generated by fire is longer-lived than 95% of wood products." INTACT Factsheet: Primary Temperate Forests Harbor Unique Biodiversity And Ecosystem Services, Including Climate Regulation. International Action for Primary Forests. https://primaryforest.org/fact-sheets/
8. The EIS says that carbon stored in wood products provides climate benefits. This is wrong. From a climate perspective, wood products represent net carbon emissions, NOT net carbon sequestration, because only a small fraction of the carbon in a logged forest ends up in wood products. Logging to create wood products causes the majority of forest carbon to be transferred to the atmosphere, not to wood products. Science clearly shows that carbon is more safely stored in forests, not in wood products.

Global climate change is a global crisis that requires action at the local level. The Forest Service manages forests that are a critical part of the global carbon cycle and they have a duty to make global climate change part of the project purpose and need. The Forest Service simply cannot meet its legal obligations unless it works to reduce climate change. Those legal obligation emanate from the Forest Service Organic Act, the National Forest Management Act, Multiple-Use Sustained-Yield Act, the Endangered Species Act, and the applicable Land and Resources Management Plan.

"Public forest reservations are established to protect and improve the forests for the purpose of securing a permanent supply of timber for the people and insuring conditions favorable to continuous water flow." 1897 FS Organic Act. https://winapps.umt.edu/winapps/media2/wilderness/NWPS/documents/publiclaws/ORGANIC-ACT-OF-1897.pdf. Climate change is expected to disrupt forest ecosystems and hydrologic systems to an extent that threatens to violate the very foundations of the

agency's Organic Act. Before embarking on a logging project that will emit significant amounts of GHG and make climate change worse, the FS must make every effort to reduce those GHG emissions that exacerbate global climate change.

Global climate change is a clear and present threat to forest ecosystems and watersheds and is preventing the agency from meeting the goals and standards & guidelines described in the applicable Land Resource Management Plan, and other core legal requirements for management of federal lands. The agency cannot meet the LRMP without bringing climate change under control, which requires reducing emissions, including emissions from logging. The agency cannot say that carbon storage is outside the scope of this project or not part of the purpose and need. The agency must include carbon storage as part of the purpose and need for this project.

The Forest Service is required by the National Forest Management Act to faithfully implement its Land Resource Management Plan. Meeting resource management objectives set forth in the LRMP requires properly functioning ecosystems with biophysical conditions and disturbance regimes within the historic range of variability. A few of the relevant goals of the Willamette NF LRMP include: "Provide for plant and animal community diversity and ecological health as the foundation to sustain the long-term productivity of the forest. … Maintain the integrated ecological functions of rivers, streams, wetlands, lakes, and the associated riparian areas Forest-wide. … Recognize and respond to the socio-economic effects of management strategies. Recognize the public with all of its varied needs as partners and participants in managing the Forest through awareness, interaction, and communication." These goals are directly undermined by global climate change and GHG emissions from logging that makes that problem worse. This is why climate change must be part of the purpose and need.

In addition, the FEIS failed to consider alternatives that help mitigate the effects of global climate change by retaining and accumulating more carbon in forests. And, the FEIS failed to consider alternatives that harmonize the competing goals of climate change mitigation and clime change adaption.

The EIS continues to rely on deeply flawed boilerplate NEPA language produced by the regional office and never updated to reflect new information and valid criticisms.

It is notable that April 2019 Zones of Agreement from the Middle Fork Collaborative group said "We encourage the USFS to consider of the effects of proposed management on carbon storage, and to consider the role of forests in storing carbon to help the state of Oregon achieve its carbon emissions reduction and offset goals,…"

New Information Requires Reconsideration of Timber Production in the Matrix.

The Youngs Rock Rigdon Project is based on part on the need to produce timber to meet LRMP objectives. There is a trade-off between ecological objectives and timber objectives, and new information indicates that these trade-offs are becoming more acute.

Before sacrificing older forests in order to produce timber, the agency needs to carefully consider new information developed since the Northwest Forest Plan was adopted in 1994. Several significant new developments indicate a need to increase emphasis on conservation and restoration of more mature & old-growth forests, and reduced emphasis on Matrix objectives such as timber production from logging of mature & old-growth forests. Unfortunately, the agencies have not taken steps to account for new information and has failed to adjust Matrix objectives accordingly.

The Response-to-Comments says this comment is outside the scope of the analysis, but it is most certainly not. The FS is logging in the matrix to produce logs. It's part of the purpose and need. We are offering comments to say that purpose is outdated, and there is significant new information that has not been considered in any NEPA document that undermines the purpose of logging for timber production. The FS cannot rely on the matrix land allocation unless they have a programmatic NEPA document that considers all relevant information supporting the establishment of the Matrix as a source for timber in light of all the trade-offs. And our comments show that they do not.

A few of the most important new issues include:

Barred owls — The threatened spotted owl faces a significant new threat in the form of the barred owl which has recently invaded the range of the spotted owl, uses and similar habitat, and uses many of the same food sources. Hundreds of thousands of acres of suitable owl habitat that were assumed in the NW Forest Plan to be available for spotted owl nesting, roosting, and foraging are now occupied and defended by territorial barred owls to the exclusion of spotted owls. There is an urgent need to protect additional suitable owl habitat (and reduce the loss of existing habitat) in order to increase the likelihood that threatened spotted owls can coexist with newly invading barred owls instead of facing competitive exclusion. More habitat increases the chances that the two owls can co-exist. More discretion and more logging reduce the changes for co-existence and increase the chances for competitive exclusion/extirpation.

FWS has recommended protection of a subset of high quality owl habitat, but whether this subset of habitat is enough to ensure species recovery has never been tested and validated. The habitat modeling done as part of the spotted owl recovery planning process assume that the barred owl population would remain constant, but it is more realistic to expect that the barred owl population will continue to increase for some time. We are a long way from an effective rangewide barred owl control program, and if the program ever gets fully implemented, failure to maintain the program in perpetuity will likely lead to a rapidly resurgent population of barred owls. There are too many preconditions that undercut FWS' modeling assumptions and the effectiveness of relying on a subset of suitable habitat. Spotted owls would be safer if all suitable habitat were protected.

The FS is using Recovery Action 32 to mitigate for the barred owl, but in reality all suitable habitat should be conserved. When the agency discovers that its plans are out of date and adopts new strategies, the agency must follow NEPA and NFMA procedures to amend its forest plan. *ONRC and HCPC v. Forsgren*, 252 F. Supp. 2d 1088 (D. Or.

2003) March 11, 2003. http://law.justia.com/cases/federal/district-courts/FSupp2/252/1088/2424683/ Here, RA 32 is a new strategy that the FS is using as a *de facto* plan amendment to justify logging suitable habitat. This is not allowed without following legal requirements.

Owl dispersal habitat – The matrix was intended to support spotted owl dispersal, and it was assumed that 40% canopy closure of trees 11" dbh would be enough, but new information indicates that spotted owl dispersal habitat should be managed for "at least 80%" canopy cover. Sovern et al (2015) found that

> "**Roost Site Selection**. In contrast to the assumption that stands with relatively open canopies provide suitable dispersal habitat for spotted owls, our results suggest that dispersing juveniles selected stands for roosting that had relatively high canopy closure ($x = 66 \pm 2\%$). … Two hypotheses could explain why dispersing owls selected closed-canopy stands. First, several researchers (Barrows 1981, Forsman et al. 1984, Weathers et al. 2001) have shown that temperature and precipitation appear to influence selection for roost trees and attributes within a roost tree, such as perch height and percent overhead cover. … Second, juvenile northern spotted owls may have selected for closed-canopy forest because their preferred prey were most abundant … **Landscape Scale Selection**. … [O]ur mean estimate of canopy closure from plots at roosts (66%), which was likely an underestimate of canopy cover, was considerably higher than the minimum values recommended by Thomas et al. (1990) [i.e. 50-11-40]. … **Management Implications**. … Based on our study, we recommend that managers should pursue a strategy that exceeds the canopy cover guidelines recommended by Thomas et al. (1990) when managing dispersal habitat for spotted owls. Based on our estimate of mean canopy closure (66%), and our estimate of mean canopy cover from overlaying a dot grid on the same areas (approx. 14% larger), we recommend that the target for canopy cover in stands managed for dispersing spotted owls should be at least 80%."

Stan G. Sovern, Eric D. Forsman, Katie M. Dugger, Margaret Taylor. 2015. Roosting Habitat Use and Selection By Northern Spotted Owls During Natal Dispersal. The Journal of Wildlife Management 79(2):254–262; 2015; DOI: 10.1002/jwmg.834. https://osu-wams-blogs-uploads.s3.amazonaws.com/blogs.dir/2742/files/2016/09/Sovern-et-al.-2015.pdf.

Another owl dispersal concern is that in 2016 Oregon BLM adopted new RMPs that cut riparian reserves in half. Wide riparian reserves established by the Northwest Forest Plan were supposed to serve multiple purposes, including as spotted owl dispersal habitat, but the smaller riparian corridors do not fulfill that function, so the matrix needs to be modified to better meet spotted owl dispersal needs.

Carbon storage — Global climate change is a new and significant threat not only to imperiled species, but also whole forest ecosystems and human communities. To reduce the severity of global climate change requires, among other things, that the global carbon cycle be managed to store more carbon. Carbon-rich ecosystems like mature & old-growth forests of western Oregon present a tremendous opportunity to increase carbon storage and mitigate climate change.

Climate change is a new and significant reason to conserve forests and reduce logging. A science review will show that long-live d forests are a great place to store carbon, while wood products are relatively short-lived and not a good place to store carbon. Also, carbon can't be moved from the forest to durable wood products without causing significant GHG emissions. Alleged benefits of wood products substitution for steel and concrete are vastly over-estimated. All high biomass forests should be conserved, and many young forest should be allowed to grow.

Climate change — A warmer world with more seasonal extremes of wet and dry also creates uncertainty about our ability to sustain older forests, and about whether we can recreate functional old forests starting from young, planted stands. If climate change brings increasing frequency and severity of drought and natural disturbance, it may be harder to sustain existing older forests and harder to establish new forests and sustain them through long periods of forest succession required to reach habitat goals for imperiled species like spotted owls, marbled murrelet, and salmon. This highlights the old adage that "a bird in the hand is worth two in the bush." We should retain all the older forests that we currently have (and carefully nurture likely recruitment forests). Climate uncertainty alone represents an increased risk for spotted owl recovery.

Undisturbed ecosystems and late successional forests are more resistant and resilient to climate change. György Kröel-Dulay et al (2015). Increased sensitivity to climate change in disturbed ecosystems. Nature Communications, 2015; 6: 6682. http://web.ics.purdue.edu/~jsdukes/Kr%C3%B6el-DulayEtAl_NC_2015.pdf. Climate change is a huge new stress on ecosystems that are already stressed. We can help ecosystems better withstand climate change by reducing anthropogenic stress caused by logging, roads, grazing, etc. Climate change is expected to amplify the hydrologic cycle. This calls for increased protection of whole watersheds and especially streams buffers (and reducing road/stream interactions). There may be a need for modest reductions in tree density, but only in limited areas. For wildlife that depend on dense forest conditions (i.e., most of our threatened & endangered species), logging to reduce stress or reduce fire hazard will only make things worse. Wildlife are more threatened by the combined effects of logging plus fire, than by fire alone. See Heiken, D. 2010. Log it to save it? The search for an ecological rationale for fuel reduction logging in Spotted Owl habitat. Oregon Wild. v 1.0. May 2010. https://www.dropbox.com/s/pi15rap4nvwxhtt/Heiken_Log_it_to_save_it_v.1.0.pdf?dl=0

Dead wood standards — Large accumulations of dead wood are essential for meeting objectives for fish & wildlife habitat, water quality, and carbon storage. Past and ongoing forest management has greatly reduced the prevalence of large snags and dead wood. Northwest Forest Plan standards for dead wood are based on an outdated "potential population" methodology which greatly underestimates the amount of snags and down logs needed to meet the needs of a variety of species associated with dead wood. Forests are a dynamic system where the population of all live trees represent the recruitment pool for all dead trees, so if more dead trees are needed over time, that means more live trees need to be retained for long-term recruitment. Before conducting activities like

commercial logging (especially regen logging) that will result in long-term reduction in recruitment of snags and dead wood, the agencies should follow NEPA procedures to amend their management plans, consider alternatives, and adopt new standards that assure objectives are met over time and across the landscape.

Complex early seral forest - There is some concern that clearcuts on non-federal do not provide high quality habitat for wildlife that prefer complex early seral habitat with abundant legacies and diverse non-conifer vegetation. While this habitat may be under-represented, there are no listed species that depend on it because most of the species associated with ephemeral young forests tend to be mobile, generalist, and/or opportunistic. There are a wide variety of policy options for enhancing early seral that do not require that we sacrifice old forests. K. Norm Johnson, Debora L. Johnson. 2007. Policies to Encourage Diverse, Early Seral Forest in Oregon: What Might We Do? http://ecoshare.info/2010/10/04/k-norman-johnson-policies-to-encourage-diverse-early-seral-forest-in-oregon-what-might-we-do/ Climate change is expected to increase the prevalence of early seral forests. Regen logging produces lower quality early seral. We should instead stop salvage logging.

Fire Hazard – New information highlights the fact that heavy thinning and regen logging increases fire hazard for many decades by causing the establishment of dense fuels close to the ground. See Harold S. J. Zald, Christopher J. Dunn. 2018. Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. Ecological Applications. *Online Version of Record before inclusion in an issue*. 26 April 2018. https://doi.org/10.1002/eap.1710. Also, https://phys.org/news/2018-04-high-wildfire-severity-young-plantation.html. This concern is highlighted by climate change which is extending the fire season. Roads also increase roadside ladder fuels and fire ignition risk. Conversely, another study shows that mature forests are more resilient to wildfire, which brings into question the long-held assumption that time-since-fire is an indicator of fuel build-up and increased fire hazard. Lesmeister, D. B., S. G. Sovern, R. J. Davis, D. M. Bell, M. J. Gregory, and J. C. Vogeler. 2019. Mixed-severity wildfire and habitat of an old-forest obligate. Ecosphere 10(4):e02696. 10.1002/ecs2.2696. https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecs2.2696.

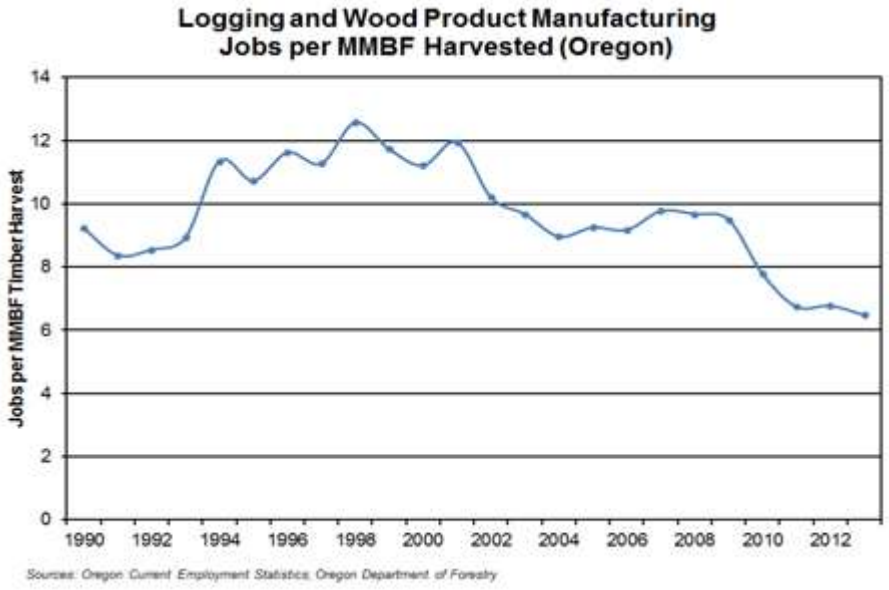
Hydrologic Effects – New information indicates that logging and roads have significant and long-lasting adverse effects on hydrology, including artificial peak flows in the years during storms, especially immediately after logging; as well as artificial low stream flows during summer, which lasts for several decades when dense young conifers establish after logging. Perry & Jones (2016) found "… Long-term paired-basin studies extending over six decades revealed that the conversion of mature and old-growth conifer forests to plantations of native Douglas-fir produced persistent summer streamflow deficits of 50% relative to reference basins, in plantations aged 25 to 45 years. This result challenges the widespread assumption of rapid "hydrologic recovery" following forest disturbance … " Perry, T. D., and Jones, J. A. (2016) Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest, USA. Ecohydrology, doi: 10.1002/eco.1790. http://onlinelibrary.wiley.com/doi/10.1002/eco.1790/full. Jones &

Grant (1996) found “"This study demonstrated that road construction combined with patch clear-cutting ranging from 10 to 25% of basin area produced significant, long-term increases in peak discharges in small and large basins in the western Cascades.... In the western Cascades, clear-cutting and vegetation removal influence water balances by affecting evapotranspiration and possibly snow accumulation and melt, whereas road construction influences hillslope flow paths by converting subsurface flow to surface flow.” Jones, J.A., Grant G.E., "Peak flow response to clear-cutting and roads in small and large basins, western Cascades, Oregon," Water Resources Research, 32(4) 959-974, April 1996 https://www.wou.edu/las/physci/taylor/g473/refs/jones_grant_1996.pdf. The National Climate Assessment concludes that global climate change is expected to reduce the ability of watersheds and ecosystems to regulate water quality and water flow and buffer extreme events. http://nca2014.globalchange.gov/ Efforts toward watershed and riparian conservation should therefore be increased;

Pacific Fisher – In 2014, FWS proposed listing the Pacific fisher as "threatened" under the ESA. A final listing decision is due in Fall 2015. The imminent listing of the fisher requires the agencies to increase connectivity in the NWFP. The current network of reserves was designed more for spotted owls and is not ideal for fishers which have more difficulty in navigating between reserves. William J. Zielinski, et al., Using landscape suitability models to reconcile conservation planning for two key forest predators, Biological Conservation (2006), doi:10.1016/j.biocon.2006.07.003. http://www.sierraforestlegacy.org/Resources/Conservation/SierraNevadaWildlife/CaliforniaSpottedOwl/CASPO-Zielinski06.pdf The agencies need to increase conservation of habitats in the matrix that are suitable or potentially suitable for fisher. This includes mature & old-growth forests and riparian reserves.

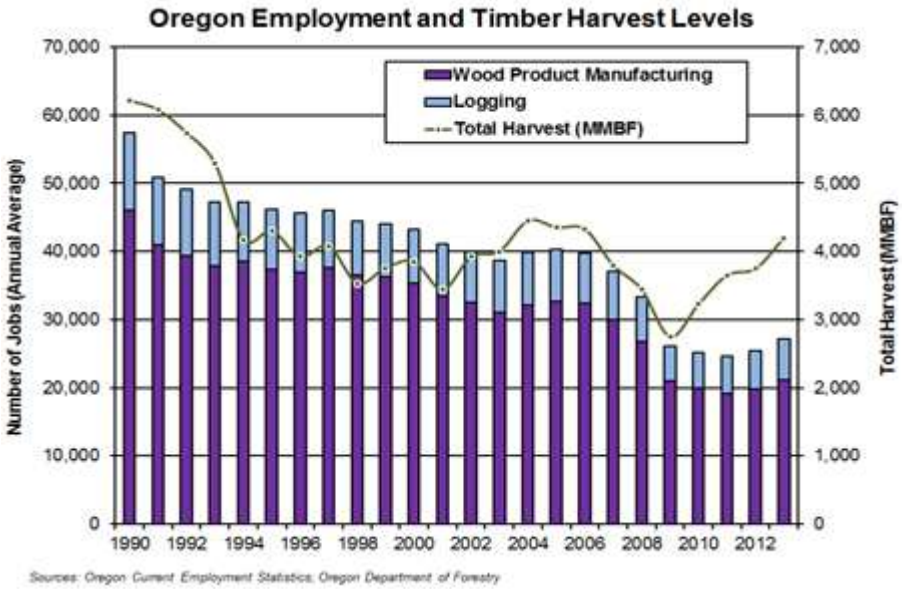
The PNW economy has changed. At the NWFP tenth anniversary conference on April 13, 2004 in Portland, USFS PNW Regional Economist Richard Haynes said that the NW economy has “fundamentally changed” over the last ten years since the NWFP was approved. The changes include: growth and diversification of the overall economy so that the timber industry plays a much smaller role in the overall economy, structural changes in the timber industry both regionally and nationally so that few mills remain dependent upon federal old-growth log supply, and serious decline of the export market so the logs from private lands are now more available to domestic mills. This raises a significant issue about whether the NWFP should continue to log any more late-successional old-growth at all and take continued risks with population viability of late-successional old-growth dependent species. Changed economic circumstances represent significant new information and requires the agency to prepare an EIS to consider protecting all remaining mature and old-growth forests and shifting efforts toward restoration including thinning dense young plantations.

The economic and social benefits of logging are decreasing. As recently as 2001, there were 12 jobs generated per million board feet cut. In 2012, that ratio had declined to 6.5 jobs per million board feet logged. (Oregon Employment Department, July 17, 2014).



https://www.qualityinfo.org/-/jobs-per-board-feet-of-timber-harvests-in-oregon;

Since 2010, timber harvest and jobs have become decoupled. There is no reason to think that increased timber harvest will result in increased employment.

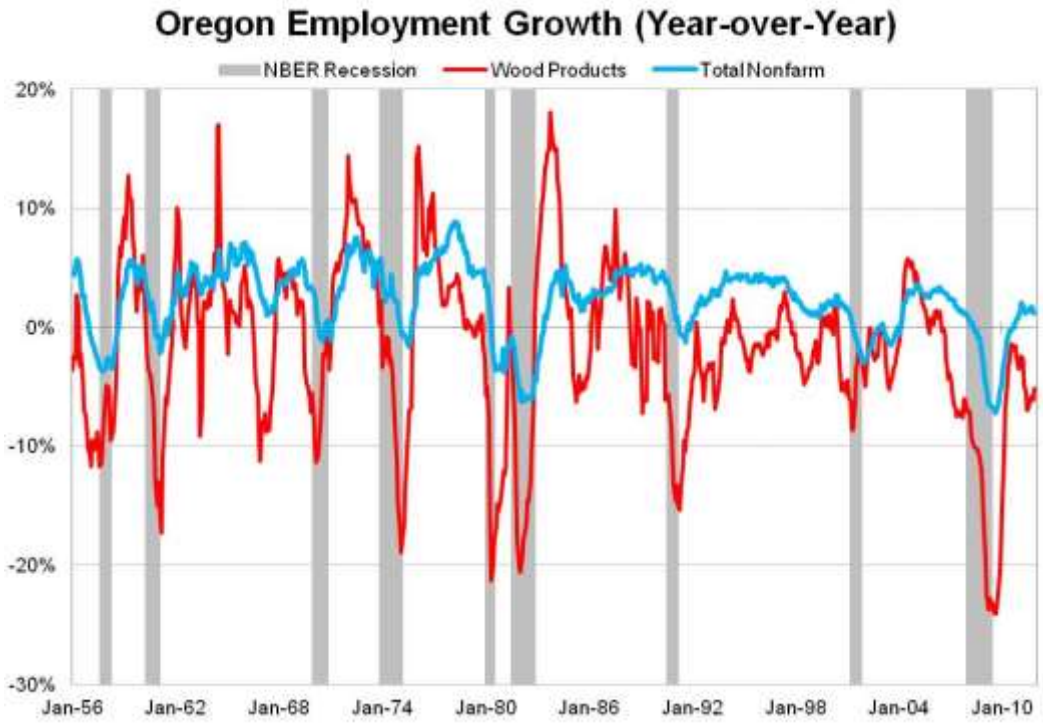


https://www.qualityinfo.org/-/jobs-per-board-feet-of-timber-harvests-in-oregon;

Producing timber from federal lands feeds an inherently volatile industry that perpetuates community instability. There is significant new information indicating that the timber industry is inherently volatile so proving timber from federal lands causes community instability rather than community stability. BLM's 2015 Western Oregon Plan Revision DEIS (p 472) said:

> Over the long-term (1969-2007), timber-based industries nationally exhibited low or negative growth rates with high volatility compared with the United States economy as a whole, indicating that these industries tend to be inherently volatile. Increases in timber industry activity in the planning area could bring additional exposure to greater economic instability.

http://www.blm.gov/or/plans/rmpswesternoregon/deis.php BLM's DEIS acknowledges that the timber industry is far more volatile than other industries so boosting timber jobs does not necessarily translate to community stability. This new information requires a fundamental shift in thinking about the value of federal lands for timber production versus provision of public benefits that do contribute to community stability, such as: clean water, carbon storage and stabilizes the climate, biodiversity, diverse recreation opportunities, scenic values, etc.



Lehner, J. 2012. Historical Look at Oregon's Wood Product Industry. http://oregoneconomicanalysis.com/2012/01/23/historical-look-at-oregons-wood-product-industry/

Timber industry volatility would have its greatest effect in local communities that have the lowest levels of economic diversity, the greatest dependence on commodity production, and would therefore see the greatest fluctuations in jobs and income. The gain and loss of jobs caused by timber industry volatility would cause a variety of social problems related to job insecurity, depression, substance abuse, health care insecurity, domestic abuse, etc. which would in turn cause an increase in the demand for social services that are not adequately funded. If the Forest Service and BLM would emphasize development of less volatile economic sectors through provision of amenities instead of

commodities, the social problems described above would be diminished and the demand for social services would be reduced.

All things being equal, a more diversified economy is a more stable economy. Oregon will always have a timber industry based on non-federal forest lands. The highest and best use of public forest lands, in terms of community stability, is to conserve the resources on those lands to provide a stable flow of ecosystem services such as clean water, carbon storage and recreation opportunities, that will help diversify the economy, and mitigate the economic instability caused by logging on non-federal lands.

"Sustained yield" is based on flawed science. Sustained yield logging in the matrix is premised on the concept of a "regulated forest." As explained in the Days Creek – South Umpqua Harvest Plan EA "The key to achieving sustained yield is to establish a regulated forest with the proper distribution of stand age and size classes so that over time, approximately equal periodic harvests of the desired size and quality are produced. A 'regulated forest' consists of tree sizes in approximately equal parts and age classes that correspond to the size classes. To achieve the desired age class distribution, it is necessary that the harvest type resets the age class or seral stage, i.e. a regeneration harvest of selected stands is necessary, including regeneration harvest of intermediate-age classes. Over time, regeneration harvests can transform or convert an irregular forest structure to a regulated one (Hennes et al., 1971)." Unfortunately, this is only possible on paper. In the real world, none of this is possible, especially if the agency wishes to meet other important objectives such as water quality, climate stability, health populations of fish & wildlife, etc. See Jack Ward Thomas 1997. The Instability of Stability, http://web.archive.org/web/20001201174000/http://coopext.cahe.wsu.edu/~pnrec97/thomas2.htm ("The vision that I was taught in school of the "regulated forest" and the resultant predictable outputs of commodities has turned out to have been a dream. … By now it is becoming obvious that this dream was built on the pillars of the seemingly boundless virgin forest and an ethic of manifest destiny coupled with hubris of being able to predict the response of nature and humans. This was coupled with an inflated sense of understanding of forested ecosystems and of human control. Perhaps it is time to recognize that such stability is not attainable in any western region except for relatively short periods of years or decades. … It is increasingly apparent that ecological processes are not as well understood nor as predictable as had been assumed by natural resource managers steeped in Clementsian ecological theory of orderly and predictable succession of plant communities from bare ground to a mature, steady state. … In summary, the timber supply from federal lands is one drought, one insect and disease outbreak, one severe fire season, one election, one budget, one successful appeal, one loss in court, one listing of a threatened or endangered species, one new piece of pertinent scientific information, one change in technology, one shift in public opinion, one new law, one loss of a currently available technological tool, one change in market, one shift in interest rates, et al, away from "stability" at all times. And, these changes do not come one at a time, they come in bunches like banannas [sic] and the bunches are always changing. So, stability in timber supply from the public lands is simply a myth, a dream that was never founded in reality. It is time to stop pretending."). See also: Donald Ludwig, Ray Hilborn, Carl Waters 1993. Uncertainty, Resource Exploitation, and

Conservation: Lessons from History. Science, New Series, Vol. 260, No. 5104 (Apr. 2, 1993), pp. 17-36.
http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/swrcb/swrcb_ludwig1993.pdf

When we bring all these lines of evidence together one realizes that since the NWFP and the matrix land allocation was adopted there are many more reasons to protect forests and fewer reasons to log them. This needs to be considered in a new EIS. Since these significant new issues were not properly considered in the Northwest Forest Plan FEIS, the agency needs to address them in project level NEPA analyses. Since these significant new issues were not properly considered in the Northwest Forest Plan FEIS, the agency needs to address them here.

Preparation of new NEPA documents is a non-discretionary duty of all federal agencies. The CEQ regulations state that:

> (c) Agencies:
> (1) Shall prepare supplements to either draft or final environmental impact statements if:
> … (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

40 CFR 1502.9(c). This duty applies to both EISs and EAs. ISC v. Alexander (9th Circ. 2000).

"A federal agency has a continuing duty to gather and evaluate new information relevant to the environmental impact of its actions.... [W]hen new information comes to light the agency must consider it, evaluate it, and make a reasoned determination whether it is of significance as to require formal NEPA procedures." *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1023-24 (9th Cir. 1980). "[T]he decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance: If there remains 'major Federal actio[n]' to occur, and if the new information is sufficient to show that the remaining action will 'affec[t] the quality of the human environment' in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared." *Marsh v. ONRC*, 490 U.S. 360, 374, 109 S. Ct. 1851, 1859 (1989). While BLM is making decision to implement the regen harvest and mature forest thinning aspects of its RMP, it must first prepare a new or supplemental EIS to consider all the new information that has arisen over the last two decades. Most of the new information indicates that forest conservation is even more important than previously realized and that logging is less important than previously realized.

Similarly, under both NMFA and FLPMA, the agencies must "… prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values … This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values …" 43 USC 1711 (similar at 16 USC 1603). The resulting inventory shall be used in creating land use plans which are living documents, not a static end result. "The Secretary shall … develop, maintain, and

when appropriate, revise land use plans …" 43 USC 1712 (similar at 16 USC 1604). These provisions, combined with NEPA's action-driven mandate for considering "new circumstances or information," and the multiple-use mandate to utilize resources in the combination that "best meet the present and future needs of the American people" (43 USC 1702, 16 USC 1601) create a non-discretionary duty to keep programmatic plans up to date.

The fact that LRMPs and RMPs are all 20 years old (and well beyond the expected life-span of the plans) just adds to the evidence indicating the need for reconsideration of the emphasis on timber production, when conservation is what's needed.

Sincerely,

Doug Heiken