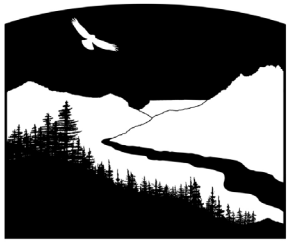


OREGON WILD

Formerly Oregon Natural Resources Council (ONRC)

PO Box 11648 | Eugene OR 97440 | 541-344-0675 | fax 541-343-0996
dh@oregonwild.org | http://www.oregonwild.org/

1 Oct 2019

TO: PNW Regional Forester, Objections Reviewing Officer
VIA: objections-pnw-mthood@usda.gov

Subject: 36 CFR 218 objection of the North Clackamas IRP Objection

Dear Forest Service:

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

DOCUMENT TITLE: Draft DECISION NOTICE And FINDING OF NO SIGNIFICANT IMPACT NORTH CLACK INTEGRATED RESOURCE PROJECT, https://www.fs.usda.gov/project/?project=50475

PROJECT DESCRIPTION: Alternative 2, modified includes:

- 40+ mmbf (enough to fill 8000+ log trucks)
- 341 acres of regen harvest
- 4102 acres of variable thinning
  - 10% gaps and 10% heavy thins within thinned stands
  - 5-10% skips (plus riparian buffers, lees than riparian reserves)
  - Average tree dbh increases 1.7” - 5.8” over 50 years
- 19 miles of temporary road construction
- 63 miles of road maintenance/repair
- 41 miles of road closure, decommissioning, stormproof

PROJECT LOCATION (Forest/District): MT. HOOD NATIONAL FOREST, CLACKAMAS RIVER RANGER DISTRICT, CLACKAMAS COUNTY, OREGON

NAME AND TITLE OF RESPONSIBLE OFFICIAL: Jackie Groce, Clackamas River District Ranger

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:
Oregon Wild objects to regen (clearcut) logging, thinning in stands over 80 years old, and road building.

SUGGESTED REMEDIES THAT WOULD RESOLVE THE OBJECTION:
Oregon Wild respectfully requests that the Forest Service withdraw the recommended project and —

1. Issue a clear decision that avoids regen (clearcut) logging, thinning in stands over 80 years old (and multi-aged stands with legacy trees), and road building, and protects important habitat features for native species of terrestrial and aquatic flora and fauna, or
2. Prepare an EIS to address the significant impacts and unresolved conflicts and fully complies with the requirements of NEPA and the CEQ regulations and addresses the specific concerns expressed below.

DESCRIBE HOW THE OBJECTIONS RELATE TO PRIOR COMMENTS:
As stated in our prior comments (which we incorporate by reference):

> ... Oregon Wild is not opposed to commercial thinning in dense young plantations (outside of stream buffers) when conducted for the primary purpose of ecological restoration, but regen logging (clearcutting by another name) or repeated thinning entries for the primary purpose of timber production do not make sense given all of the evidence supporting the need for greater forest conservation: clean water, stable stream flows, climate change, spotted/barred owls, quality of life, new information on dead wood habitat, etc... The PA does not adequately disclose and consider the trade-offs associated with regen logging and the cumulative effects of repeated thinning entries.
>
> Oregon Wild scoping comments urged the FS to carefully consider several issues:
>
> - The NEPA analysis should address trade-offs between logging and dead wood habitat (especially when logging methods are regen or repeated thinning entries). Section 3.7.5 of the PA provides grossly inadequate analysis of the significant and long-lasting effects of logging on recruitment of dead wood habitat. The entire effects of the proposed action is 4 sentences long and provides no quantification of effects; no analysis showing that the effects of regen are even more significant and long-lasting than the effects of thinning; no disclosure that current LRMP standards for dead wood habitat are outdated and under-estimate the needs of wildlife; no description of effects of repeated thinning versus single entry thinning; no discussion weighing the small gain in individual tree diameter as a result of thinning compared to the significant adverse effects caused by thinning that reduces the population of green trees available for future snag recruitment; no comparison of future snag

recruitment after logging to the dead-wood habitat needs of various wildlife species, e.g. DecAID, an example of which is provided below;

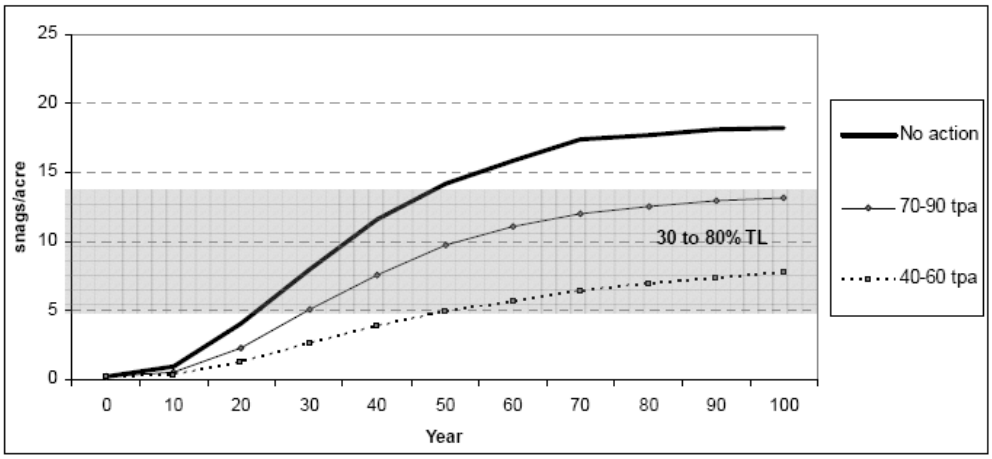


Figure 15. Short and long-term changes to ≥20" dbh snags.
Curran Junetta Thin EA,
http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/32805_FSPLT2_053506.pdf.

- The purpose and need should include carbon to address climate change. There is new information that should lead the FS to question the continued validity of timber production as a goal for these moist/productive public lands with such high potential for carbon storage. See detailed comments below;

- The trade-offs between logging and wood recruitment in riparian reserves. The analysis in Section 3.4.6.3 of the PA is inadequate. It fails to quantify the loss of wood recruitment in thinned vs unthinned riparian reserves. It fails to recognize that logging will sacrifice NWFP goals for riparian reserves that include optimal habitat for upland species that prefer abundant dead wood throughout the extent of the riparian reserves, not just instream. The PA is misleading when it says logging riparian reserves would result in a "slight reduction in the amount of large wood available for natural recruitment into streams." In reality, logging the riparian reserves will cause a significant and long-lasting reduction is wood available for recruitment to riparian reserves. See graphic above from the Curran Junetta Thin EA;

- The need to conserve all mature forests to mitigate for the shortage of those forests as a result of past logging and fires. Early seral forest is not rare. It is highly abundant on non-federal land and in areas affected by fire, which are expected to increase as the planet warms. Meanwhile, accelerated disturbance expected as a result of climate change will make it more and more difficult to conserve and restore mature forests, so conservation of those forest must be a

priority. The PA failed to address the detailed and multi-faceted rationale for conservation of mature forests in Heiken, Doug. 2009. The Case for Protecting Both Old Growth and Mature Forests, Version 1.8. Oregon Wild. https://www.dropbox.com/s/4s0825a7t6fq7zu/Mature%20Forests%2C%20Heiken%2C%20v%201.8.pdf?dl=0;

- Trade-offs between logging and spotted owl conservation, especially in light of new information about the adverse effects of thinning on spotted owl prey (red tree vole, red-backed vole, and flying squirrels). Logging suitable owl habitat also adversely affects the ability of spotted owls to co-exist with competing barred owls that have invaded the range of the spotted owl. Conservation of mature forests is more important today than when the forest plan was adopted. The PA dos not even mention barred owls and the implications for the Northwest Forest Plan. The NWFP reserve system and the rules allowing removal of mature forests in the matrix are based on an assumption that all suitable owl habitat would likely be available for spotted owls to use. The invasion of the barred owl undermines that assumption. Much of the suitable owl habitat that we thought would be available to spotted owls is now occupied and defended by barred owls. This means the reserves are effectively smaller than we assumed in 1994, and the adverse effects of logging mature forest are much greater than assumed in 1994. The PA failed to address this;

- Adverse effects of logging and roads on hydrology, including artificial peak flows during storms; and artificial low flows during summer. 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;

- The PA did not address the trade-offs between regen harvest and fire hazard. "[I]n the landscape we studied, intensive plantation forestry appears to have a greater impact on fire severity than decades of fire exclusion." 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. See also, Carter Stone, Andrew Hudak, Panelope Morgan 2008. Forest Harvest Can Increase Subsequent Forest Fire Severity. PSW-GTR-208, pp 525-534. https://www.fs.fed.us/psw/publications/documents/psw_gtr208en/psw_gtr208en_525-534_stone.pdf, *In* González-Cabán, Armando, tech. coord. 2008. Proceedings of the second international symposium on fire economics, planning, and policy: a global view. Gen. Tech. Rep. PSW-GTR-208, Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 720 p. https://www.fs.fed.us/psw/publications/documents/psw_gtr208en/. BLM's proposed regeneration harvest would leave only 6-8 trees per acre and would, in the short-term, increase fire hazard. AR 2697 ("As the stand develops it would represent a shrub fuel model with an increased fire behavior potential as vegetation occupies the site."). Lower Grave timber sale. *KS Wild v BLM.* (D. Or 2019) Case No.: 1:17-cv-997-CL. Judge Mark Clarke, Findings & Recommendations, Feb 20, 2019. The March 2003 Wildfire Effects Evaluation Project for the Umpqua National Forest clearly documents this disproportionate fire intensity of young managed vs. mature unmanaged stands. ("The young vegetation, including plantations, experienced a disproportionately high amount of stand replacement mortality caused by crown fires as compared to older, unmanaged forests. … Plantations had a tendency to increase the rate of fire spread and increased the overall area of stand replacement fire effects by spreading to neighboring stands." p 4 "This early seral vegetation pattern, and the types and arrangement of fuels present,

increased the fire's rate of spread and the area of stand replacement fire effects." p 64.)
http://web.archive.org/web/20041118062947/http://www.fs.fed.us/r6/umpqua/publications/weep/weep.html.

The FS failed to consider the best available science, failed to develop alternatives to highlight the trade-offs raised in the NEPA process, and failed to take a hard look at these significant impacts of logging and roads. Some of these issues may be partially addressed in the specialists reports but the key information never made it into the PA, which is supposed to fairly and honestly inform the public and the decision-maker, and it can only do that by carefully documenting the all relevant environmental information that needs to be considered by the agency in making its decision, otherwise the decision is arbitrary and capricious.
...
Even well-intentioned logging also has impacts that make ecosystems less resilient to climate change. For instance, (i) roads and soil degradation make watershed less resilient to the expected effects of the amplified hydrologic cycle; (ii) reduction of complex forest structure and dense forest conditions makes certain species populations less resilient to climate change, including species associated with relatively dense forests and species associated with snags and dead wood.

Oregon Wild 4-15-2019 comments on the Preliminary Assessment also included a 40 page refutation of this Project's analysis of carbon and climate change.

SPECIFIC ISSUES RELATED TO THE PROPOSED ACTION:

The FS failed to Adequately Respond to Public Comment

The North Clackamas IRP website includes a link to a document called "Results of Public Involvement" which "highlight a few of the key topics that arose" during scoping, field trips and 30-day comment period. This document fails to adequately respond to the specific concerns raised by the public during the comment period on the Preliminary Assessment, in particular Oregon Wild comments related to:

1. Trade-offs caused by regen harvest and thinning in mature stands over 80 years old, including carbon emissions and climate change; reduced recruitment of mature & old-growth habitat; reduced recruitment of snags and dead wood habitat; adverse effects on spotted owl habitat and owl prey; adverse competitive interactions between spotted owls and barred owls, adverse effects on hydrology (both peak and low flows);

2. Trade-offs caused by road construction, including soil degradation, artificial peak flows, and adverse effects on water quality;

3. Trade-offs caused by logging in riparian reserves, including reduced recruitment of valuable wood to both aquatic and terrestrial ecosystems.

The Forest Service's notice-comment-objection regulations state unambiguously "Consideration of comments. (1) The responsible official shall consider all written comments submitted in compliance with paragraph (a) of this section." 36 CFR 218.25 (b). The rules define "*Specific written comments"* as –

> Written comments are those submitted to the responsible official or designee during a designated opportunity for public participation (§218.5(a)) provided for a proposed project. Written comments can include submission of transcriptions or other notes from oral statements or presentation. For the purposes of this rule, specific written comments should be within the scope of the proposed action, have a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider."

36 CFR 218.2.

In order to assure compliance with the requirements to "consider" comments, it is only logical that the Forest Service must document in writing its fulfillment of the requirement. Without a record of the consideration of comments, administrative and judicial review of these requirements would be impossible, rendering these requirements meaningless. In this case, Oregon Wild did submit detailed comments with supporting reasons for the FS to consider, but the FS did not hold up their end of the bargain.

In failing to respond to comments the FS deprives the public of an opportunity to meaningfully engage with the agencies in the decision-making process, undermines the objection process, and frustrates judicial review. Oregon Wild's public comments present specific concerns about specific features of the proposed action, now we are being asked to object without seeing any meaningful response to our comments. It's hard to have a one-sided conversation. We should not have to repeat our comments in the objection but since the FS failed to respond all of our comments remain pertinent, so we hereby incorporate by reference all of our prior comments. If the FS did respond to comments as required by rule, we could likely narrow the scope of our issues and concerns, but unfortunately we are not able to do that here.

In addition, NEPA has a separate requirement that federal agencies must respond to comments on NEPA documents. "An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement. …" 40 CFR 1503.4(a).

This section is addressed to EISs, but the CEQ regs are in fact applicable to EAs as well. "These regulations, unlike the predecessor guidelines, are not confined to sec. 102(2)(C) (environmental impact statements)." 40 CFR 1500.3.

In City of Davis v. Coleman, 521 F.2d 661 (9th Cit., 1975) the court said that in a statute requiring the social and environmental effects of projects be considered — "considered means to investigate and analyze; 'consideration' encompasses an affirmative duty to investigate and compile data, and a further duty to incorporate that data into a detailed reasoned analysis…"

Finally, independent of NEPA, the APA also requires agencies to adequately respond to all significant public comment as a "fundamental tenet of administrative law" *NRDC v. EPA,* 859 F.2d 156, 188 (D.C. Cir. 1988); *see also ACLU v. FCC,* 823 F.2d 1554, 1581 (D.C. Cir. 1987); *Sierra Club v. EPA,* 353 F.3d 976, 986 (D.C. Cir. 2004); *Am. Iron & Steel Inst. V. EPA,* 115 F.3d 979, 1005 (D.C. Cir. 1997). This principle ensures that agencies consider all material points raised by the public. *NRDC,* 859 F.2d at 188. Failure to respond to public comment can be grounds for invalidation of a decision as arbitrary and capricious. *Id.* A comment is "significant" when "if true, [it] raise[s] points relevant to the agency's decision and which, if adopted, would require a change in an agency's proposed rule." *Home Box Office Inc. v. FCC,* 567 F.2d 9, 35, n.58 (D.C. Cir. 1977). The comment must "step over a threshold requirement of materiality" by explaining why the agency's error is relevant and not "merely stat[ing] that a particular mistake was made." *Portland Cement Ass'n v. Ruckelshaus,* 486 F2d 375, 394 (D.C.Cir. 1973).

Respond to Opposing Viewpoints

Failure to consider public comments also runs afoul of the requirement to consider reasonable opposing viewpoints, especially when public comments raise compelling issues and supporting scientific evidence.

The agency has an obligation to respond in the final NEPA document to responsible opposing viewpoints concerning the consequences of the proposed action. The law requires agencies to include a "reasoned discussion of major scientific objections" to the reasoning that underlies an EIS. Moseley, 798 F. Supp. at 1482. Indeed, NEPA regulations demand that an agency "insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements." 40 C.F.R. § 1502.24.

The Ninth Circuit has repeatedly confirmed that NEPA requires the government to "disclose and discuss" scientific controversy in the NEPA documentation for the proposed project. See Center for Biological Diversity v. Forest Serv., 349 F.3d 1157, 1169 (9th Cir. 2003). When the Forest Service claimed that the northern goshawk was a habitat generalist and failed to respond to comments to the contrary, the Ninth Circuit said—

> While the agency is not required to publish each individual comment in the final statement, Cal. v. Block, 690 F.2d at 773 (internal citation omitted); 40 C.F.R. § 1503.4(a), the regulations clearly state that the agency must disclose responsible opposing scientific opinion and indicate its response in the text of the final statement itself. 40 C.F.R. § 1502.9(b). The mere presence of the information in the record alone does not cure the deficiency here. See False Pass v. Watt, 565 F. Supp. 1123, 1141 (D. Alaska 1983) (holding that neither the administrative record outside of the environmental impact statement itself nor any other evidence may be used to remedy deficiencies in the environmental impact statement) (citing Grazing Fields Farm v. Goldschmidt, 626 F.2d 1068, 1074 (1st Cir. 1980)), aff'd sub nom. False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984).

> Accordingly, we find that the Final EIS fails to disclose and discuss responsible opposing scientific viewpoints in the final statement itself in violation of NEPA and the implementing regulations.

Center for Biological Diversity v. United States Forest Service, No. 02-16481 (9th Cir., Nov. 18, 2003). Available at: http://caselaw.findlaw.com/us-9th-circuit/1173711.html.

In Sierra Club v. Eubanks (Civ. S 03-1238 MCE PAN; E.D. Cal. August 20, 2004) the court rejected an EIS where the Forest Service failed to disclose and consider evidence expressed in scientific studies that logging-generated slash could increase fire hazard. The Forest Service relied on various published scientific papers to support the idea that removal of fuels through logging, regardless of fuel size, would reduce fire hazard, but the court said

> [T]here is no indication that any views they expressed contrary to the logging proposed by the Red Star Project were duly weighed. … [W]hile the FEIS concludes that 'the preponderance of peer reviewed scientific information indicates that the proposed activities will help speed the recovery of the burned areas while also reducing future wildland fire severities.' without proper analysis of all the available scientific literature that conclusion appears suspect. …By failing to adequately consider and evaluate adverse scientific opinion, the Red Star Project FEIS fails to meet NEPA requirements for taking the requisite 'hard look' In Sierra Club v. Bosworth, 199 F. Supp. 2d 971 (N.D. Cal 2002), like the present case the … court concluded that the EIS at issue in that case violated NEPA 'by failing to disclose and analyze scientific opinion in support of and in opposition to the conclusion that the … project will reduce the intensity of future wildfires in the project area.' … NEPA specifically requires Defendants to objectively evaluate and disclose credible scientific evidence that contradicts its proposed course of action. 40 C.F.R. § 1502.9(b).

The Forest Service's 2005 planning regulations require the Forest Service to "document how the best available science was taken into account in the planning process; evaluate and disclose substantial uncertainties in that science; evaluate and disclose substantial risks associated with plan components based on that science and document that the science was appropriately arrogated and applied." 36 C.F.R. § 291.11(a)(1)-(4) (2005).

Clearcutting is rooted in an outdated forest plan

The Forest Service has identified a need for regen/clearcutting under the purpose and need for "health." This is highly misleading. The FS is not being up front with the public hiding clearcuts behind an outdated forest plan then calling it "health."

Since the NWFP was adopted, significant new information has come to light which increases the need for forest conservation and decreases the need for timber production. These include: climate change and the role of forests as either part of the problem or part of the solution, the invasion of the barred owl, the under-appreciated role of dead wood habitat, the adverse effects of logging on fire hazard and hydrology, the role of boom-

bust logging in community instability, the role of intact forests in economic stability, etc. The FS should not be conducting clearcutting/regen logging until they have considered and integrated all this new information.

This project is based on part on the need to produce timber to meet LRMP objectives for Matrix/C1 Timber Emphasis lands. 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.

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 RA32 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.

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.[1] 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.

Fire Hazard – New information highlights the fact that regen logging increases fire hazard for many decades by causing the establishment of homogeneous young conifer stands with 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 concerns 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-upand increase dfire 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;

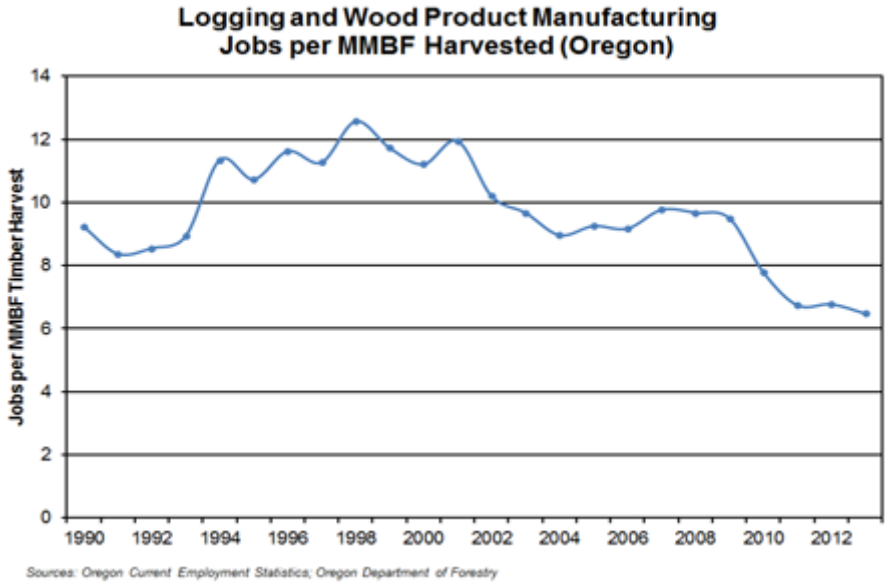
Complex early seral forest - There is some concern that clearcuts on non-federal do not provide high quality habitat for wildlife that prefer complex early seral habitat with abundant legacies and diverse non-conifer vegetation. While this habitat may be under-represented, there are no listed species 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.

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.

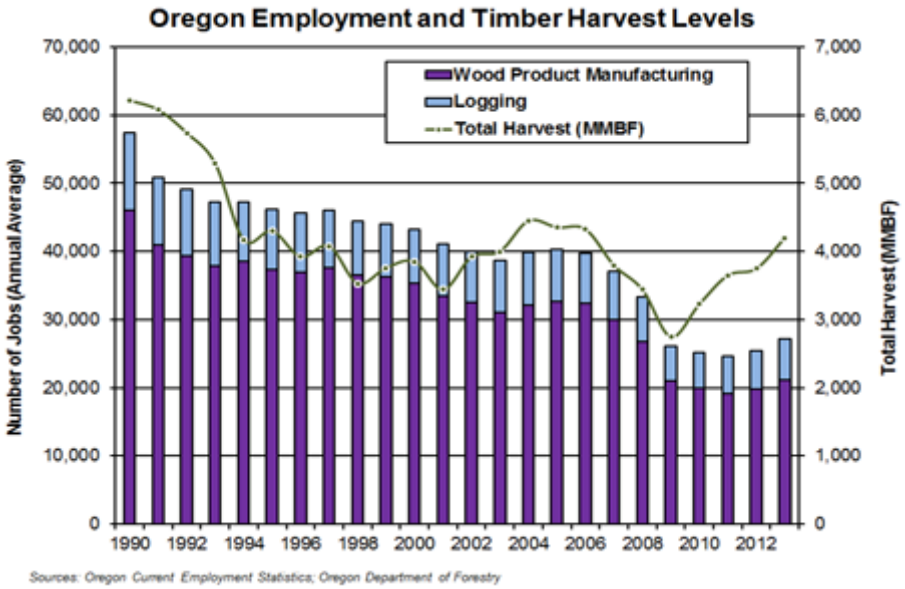
The PNW economy has changed. At the NWFP tenth anniversary conference on April 13, 2004 in Portland, USFS PNW Regional Economist Richard Haynes said that the NW economy has "fundamentally changed" over the last ten years since the NWFP was approved. The changes include: growth and diversification of 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.

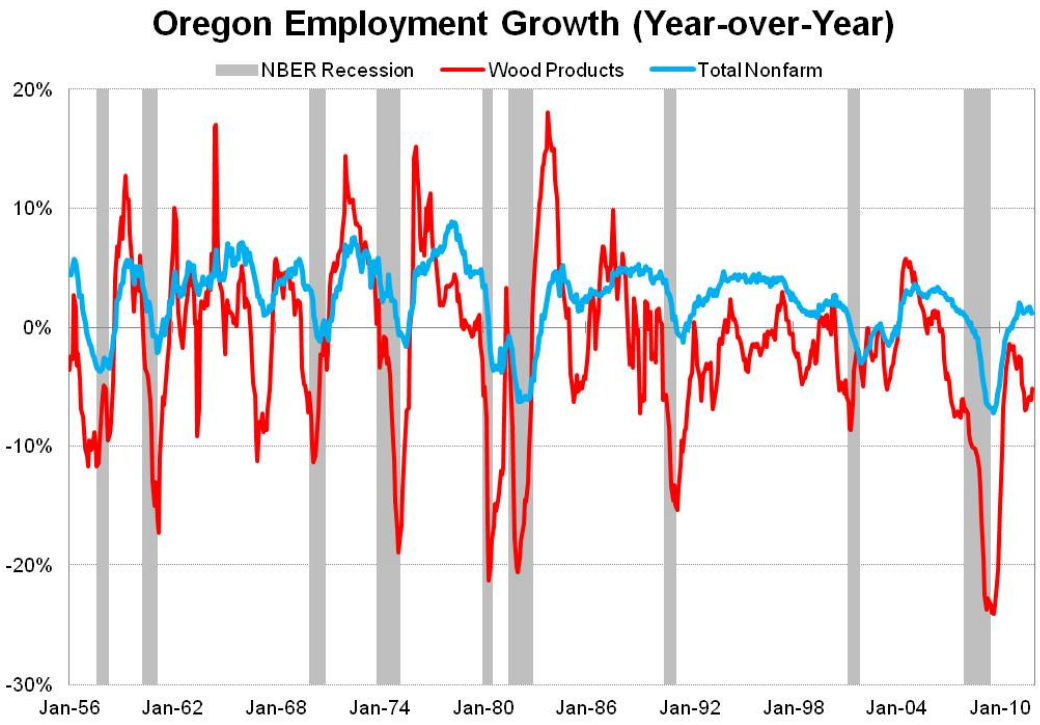


https://www.qualityinfo.org/-/jobs-per-board-feet-of-timber-harvests-in-oregon;

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 25+ 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