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December 18, 2025

Michelle King, District Ranger
Detroit Ranger District
Willamette National Forest
44125 North Santiam Highway SE
Detroit, OR 97342

Via: <https://cara.fs2c.usda.gov/Public/CommentInput?Project=56803>

Subject: Divide Project Comments

Dear District Ranger King,

Please accept the following comments from Oregon Wild concerning the Divide Project (Project) in the Detroit Ranger District as described in the draft Divide Environmental Assessment dated November 2025 (EA). Oregon Wild represents 20,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. Our goal is to protect areas that remain intact while striving to restore areas that have been degraded. This can be accomplished by moving overrepresented ecosystem elements (such as logged and roaded areas) toward characteristics that are currently under-represented (such as roadless areas and complex old forest). Oregon Wild submitted scoping comments for the Project on April 14, 2020. Those scoping comments are incorporated by reference and attached to this comment.

The purpose of this Project is multifold and includes actively managing forest stands to promote growth, diversity, and structural complexity at the landscape scale; managing riparian reserves to control stocking and promote desired vegetation characteristics needed to attain Aquatic Conservation Strategy Objectives; supporting biodiversity by restoring, enhancing, and maintaining special habitats including early seral vegetation, sugar pine, meadows, and wetlands; and providing a sustainable supply of timber products.

The Project would treat 1,918 acres of plantations and naturally regenerated stands. Commercial treatments include a combination of thinning, restoration harvest, skips, gaps, and dominant tree release. Plantations ranging from 33 to 60 years old make up 1,141 acres, or about 60%, of the treatment area while naturally regenerated stands ranging from 105 to 130 years old make up 777 acres, or approximately 40% of the treatment area. The Project also proposes commercial shelterwood regeneration harvest to aid in sugar pine habitat restoration and approximately 488 acres of commercial thinning in Riparian Reserves. Non-commercial treatments are proposed in the Project as well and include approximately 38 acres of fall and leave treatment within

Riparian Reserves, girdling in approximately 12 acres, burning and planting to accomplish sugar pine re-establishment, and approximately 11 acres of treatment in meadows. EA at 7-8. In addition, maintenance, reconstruction, rerouting or realignment activities may occur on approximately 94 miles of existing forest roads. About 5.1 miles of existing temporary roads are expected to require reconstruction while about 3.5 miles of new temporary roads will be constructed. EA at 9.

In general, Oregon Wild does not object to carefully planned and implemented thinning in dense, young plantations under 80 years old. We appreciate that the majority of treatments proposed in this Project focus on thinning young stands ranging from 33 to 60 years old. Oregon Wild also commends the Forest Service for engaging in habitat restoration to support biodiversity and restore, maintain, and enhance special habitats. Oregon Wild is concerned about treatment proposed in the older, naturally regenerated stands ranging from 105 to 130 years old. These stands should be permitted to naturally develop late-successional characteristics without human intervention. Doing so will avoid numerous negative tradeoffs associated with commercial logging and ultimately lead to increased health of the forest.

Please consider the following comments on the Project and draft EA.

Plantation thinning.

The Project proposes to commercially treat 1,141 acres of managed stands that range from 33 to 60 years old. Oregon Wild is generally supportive of carefully planned and implemented thinning in younger plantations and appreciates that the majority of treatment proposed in this project will focus on younger plantations. Thinning in young plantations still involves trade-offs that include but are not limited to carbon emissions that exacerbate global climate change, impacts from road construction and reconstruction, impacts to northern spotted owls and their prey species, long-term impacts to future recruitment of snags and deadwood both in uplands and riparian reserve, spread of invasive plants and weeds, and potential for increased fire hazard due to modified microclimates and increased growth of surface and ladder fuels. Accordingly, all thinning has negative effects that must be compensated by beneficial effects. It is generally accepted that when thinning in very young stands, the benefits outweigh the adverse impacts and net benefits are likely.

In thinning the younger plantations proposed for treatment in this Project, Oregon Wild urges the Forest Service to ensure that snags and downed, dead wood are retained, and that sufficient trees are maintained to develop into future snags. While the EA does contain a project design feature to protect existing snags and provide down wood in all units (PDF Wildlife 4), the EA does not otherwise touch on the creation of conditions conducive to snag recruitment in the young plantations proposed for treatment. Thinning “captures mortality” and removes it from the forest thus preventing those trees from ever becoming snags and dead wood and interrupting the critical process by which forests accumulate dead wood. Snags and dead wood are vital components of the forest ecosystem and serve as important habitat for many species and provide structural complexity. Snags and dead wood also retain carbon in the ecosystem and therefore help to mitigate against the harmful effects of climate change.

The EA states the commercial thinning prescription is designed to reduce tree density and inter-tree competition which would in part result in acceleration of large diameter tree development due to enhanced growth and increased structural diversity. EA at 22-23. While true that thinning may accelerate development of large trees, those same trees may also be more vigorous and less likely to experience mortality, thus reducing the pool of trees to develop into snags, and ultimately slowing development of the standing and downed dead wood components of late-successional forests. To support recruitment of snags and downed dead wood, the Forest Service can include generous skips where density-dependent mortality will naturally play out. The EA states that the Forest Service proposed to leave 324 acres of skips within the commercially treated portions of the project. EA at 24. How many of these 324 acres will occur within the young plantation units? The Forest Service should evaluate if the amount of skips occurring in the young plantations will sufficiently allow for snag recruitment at the project-scale.

Please also refer to pages 26 through 32 of Oregon Wild's scoping comments concerning plantation thinning recommendations.

The Forest Service also should focus thinning in young stands that are currently accessible from existing roads so that destructive road construction is not required. 94 miles of road would be reconstructed or maintained and approximately 0.46 miles of road will be rerouted in this Project. EA at 69. The drivability of these roads is currently poor or, in some cases, has been determined to not be safe for current use. EA at 70. Additionally, 5.1 miles of existing temporary roads will be reconstructed and 3.5 miles of new temporary roads will be constructed. EA at 71. These temporary roads would be decommissioned once activities are completed. *Id.*

Young plantation units proposed for treatment that do not appear to be connected to the current road system based on the maps provided in the EA include: 47, 58, 67, 68, 86, 92, and 97. Please note this list is based on what is visually apparent on the available maps and may not reflect the extent of units not currently accessible from roads, and may also mistakenly include units that are currently accessible from roads. To the extent that these units are not connected to the current road system, temporary road construction should be avoided except for very short spurs that are needed to reach large patches of dense, young stands for which the benefits of treatment will outweigh the negative effects associated with road construction. Road construction poses numerous threats to the ecosystem including soil disturbance, erosion, compaction, and loss of forest productivity; pollution through sedimentation and thermal loading; hydrologic modification through flow interception, accelerated run-off, and modification of peak flows; impaired floodplain function; barrier to movement of wood and spawning gravel; habitat removal and fragmentation leading to wildlife dispersal barriers; reduced recruitment of snags and down wood habitat; and human disturbance in the form of weed vectors, litter, and human-caused fire ignition. Please refer to pages 5 through 7 of Oregon Wild's scoping comments and the "Roads" section of these comments for more information.

Naturally-regenerated stand thinning.

The Project proposes treatments in 777 acres of natural, fire-regenerated stands ranging from 105 to 130 years old. As a preliminary matter, the Forest Service should clarify the true age range of these units which the EA describes as both 105 to 120 and 105 to 130. See EA at 1, 7, 8 and 19 for examples. The EA states that Douglas-fir is the dominant overstory species but that the natural stands also contain a broader mix of species including western redcedar, western hemlock, noble fir, and pacific silver fir. *Id.* Left to natural processes, these stands would develop an uneven-aged structure over the course of decades or centuries, if no further stand level disturbance occurs. EA at 22. Commercial thinning within these stands is designed to reduce tree density and inter-tree competition and is expected to result in maintenance or improvement of stand health and vigor, acceleration of large diameter tree development, increased structural and species diversity, and increased shrub and herbaceous growth developing more understory complexity. EA at 22-23.

Oregon Wild is generally opposed to treatment in stands over 80 years old. The tradeoffs associated with logging in older forests do not generally outweigh the benefits, in particular as those tradeoffs relate to snag and deadwood recruitment and associated species habitat. Concerning thinning in older 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.¹

As also mentioned in the plantation thinning section above, a big concern for thinning in older stands is decreased recruitment of snags and deadwood that provide habitat and stand

¹ Anthony, RG. 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.

complexity, and ultimately characteristics of late-successional forests. Thinning captures mortality and prevents trees from ever becoming snags and deadwood. Anderson (2013) says:

Two common consequences of conventional thinning practices have been increased uniformity of forest structure and composition, and removal or delay in the development of dead wood as snags or down wood to meet decadence and habitat functions...Over the past several decades our ecological understanding of decadence and its importance to habitat and biogeochemical processes has increased substantially, but translation of the fundamental knowledge into coherent goals is lagging.²

Snags and downed dead wood are important habitat for many animal species. Hansen et al. (1991) states:

Many animals in Douglas fir forests are strongly associated with habitat features that are best developed in natural forest, such as large trees snags, and downed logs. The diversity and density of cavity-nesting birds, for example, are positively correlated with the abundance of snags, especially tall and/or large diameter snags (Nelson 1988, Zarnowitz and Manuwal 1985).

...

It is the cycle of structural development through plant growth, and the retention of structural complexity via legacy, that characterizes natural forests in the Coastal Northwest. Intensive wood production practices may alter this cycle both by truncating succession before large structures develop and by removing most existing structures during harvest. Planting and thinning may further promote uniformity in tree species, size, and spacing.

...

Studies in unmanaged forests teach us that natural disturbance maintains structural complexity within stands and that this complexity promotes plant and animal diversity.³

Franklin and Spies (1983) states “Dead wood in the form of snags and downed logs is generally common or abundant. Although a notable part of old-growth stands, such material is actually common in unmanaged stands in all successional stages in the Douglas-fir region.”⁴ Additionally, Spies and Franklin (1991) states:

² Anderson, PD. 2013. Two Decades of Learning about Thinning in the Ecosystem Management Era. In: Anderson, Paul D.; Ronnenberg, Kathryn L., eds. Density management in the 21st century: west side story. Gen. Tech. Rep. PNW-GTR-880. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 1–7.

³ Hansen AJ, Spies TA, Swanson FJ, Ohmann TL. 1991. Conserving biodiversity in managed forests – Lessons from natural forests. *BioScience* 41(6): 382-392.

⁴ Franklin JF and Spies TA 1983. Characteristics of Old-Growth Douglas-fir Forests. Reprinted New Forests for a Changing World. Proceedings of the 1983 SAF National Convention.

Many natural young and mature stands have some of the attributes of old-growth stands that may not be present in young, managed stands. Perhaps the greatest difference between natural and managed stands is the lower number and volume of large snags and logs in managed plantations (Spies and Cline 1988). Many young natural forests less than 80 years old have high amounts of carry-over of woody debris.⁵

Overall, scientific knowledge indicates that snags and downed dead wood are important for species habitat and recruitment of such ecosystem features is negatively impacted by thinning. The Forest Service can let the older stands proposed for treatment develop late-successional characteristics naturally. As stated in the EA,

Eventually small gaps would form in the overstory as trees die from disease, wind throw, or other disturbance. Advanced regeneration of more shade tolerant species, such as western hemlock, would take advantage of these openings and begin growing into the overstory. Gradually structural and species diversity would increase in the stand (Franklin et al. 2002; Oliver & Larson 1996). Left to natural process, an uneven-aged structure would eventually arise if no further stand level disturbance occurs, but it would take many decades or centuries to develop.

EA at 22. There are benefits to letting late-successional characteristics develop naturally. For example, as stated by Michael Pollock and Timothy Beechie in regards to gap creation,

Although active management may create canopy gaps, it is also noteworthy that canopy gaps naturally develop as trees die and fall and knock down neighboring trees, and that the character of natural gaps may differ from artificial gaps, depending in part on whether tree boles are removed during active management (Van Pelt and Franklin, 1999). If a tree dies naturally and falls over to create a gap, it also creates topographical and substrate heterogeneity (e.g., pit and mound topography) that can help increase floristic diversity (Beatty, 1984; Pollock *et al.*, 1998). When trees die and fall, they also may break tops and branches and scrape the boles of adjacent trees. This can create irregularly shaped branches and apical and lateral cavities, all of which are habitat features used by a variety of species and are a useful index of biodiversity (Michel and Winter, 2009).⁶

⁵ Spies TA and Franklin JF. 1991. The Structure of Natural Young, Mature, and Old-Growth Douglas-Fir Forests in Oregon and Washington *in* Ruggiero LF, Aubry KB, Carey AB, Huff MH, tech. eds. 1991. Wildlife and vegetation of unmanaged Douglas-Fir forests. Gen. Tech. Rep. PNW-GTR-285. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 533 p.

⁶ Pollock MM and Beechie TJ. 2014. Does Riparian Forest Restoration Thinning Enhance Biodiversity? The Ecological Importance of Large Wood. Journal of the American Water Resources Association. June 2014.

As depicted in Figures 9, 10, and 11 on page 21 of the EA, it appears that at least some of the natural stands proposed for thinning are already accumulating snag and downed dead wood. These forests are naturally developing late-successional characteristics and will continue to do so over time without human intervention. Also as noted in the EA, these stands already contain a diverse mix of conifer species that will continue to develop as the forest gets older.

Oregon Wild might support removal of small-diameter trees within older forests if the intent is to accelerate development of late-successional characteristics to improve habitat for imperiled species such as the northern spotted owl, and if such treatment was done in a way that minimized the negative effects of commercial logging. Commercial treatment proposed in these units will have negative impacts that outweigh positive effects on the environment, so Oregon Wild does not support the proposal as is.

The Forest Service should analyze various alternatives that include different prescriptions for logging in the older, naturally-regenerated stands, including an alternative that does not propose commercial treatment but may provide for non-commercial restoration work. In any event, the Forest Service should implement various measures to protect the ecological integrity in all of these stands including diameter limits to retain the larger trees in the stands, thinning to a minimum canopy cover of 60-80% to retain northern spotted owl habitat, retention of snags and dead down wood, and retention and creation of heterogeneity in species, size, and structure.

Overall, thinning in stands that range from 105 to 130 years old has the potential to have significant environmental impacts on the environment. Accordingly, the Forest Service should prepare an EIS to evaluate the tradeoffs associated with the proposed treatment in these stands.

Clearcut and Shelterwood Regeneration harvest.

The Project proposes commercial treatments that are accomplished in part through regeneration harvest. The EA indicates that 109 acres of regeneration harvest are proposed. EA at 9, Table 1. Of these 109 acres, clearcut with reserve is proposed in approximately seven acres. EA at 26. The remaining 102 acres are sugar pine shelterwood cuts, as indicated on Table 2. EA at 11. An additional 20 acres of gaps that retain approximately eight trees per acre are proposed in units 8, 44, 46, 52, 130, and 360. EA at 26.

The EA examines the direct and indirect effects of regeneration harvest and gap creation and states that canopy cover would be substantially reduced, allowing more light to reach remaining trees and the forest floor and result in an increase in hardwood, shrub, and forb development as well as increased flowering and fruit production. The EA also states that residual trees and trees on the perimeter of openings would grow to larger diameters and further develop crowns, and numerous wildlife species would benefit from vegetative response including deer, elk, songbirds, cavity nesters, hummingbirds, and other early seral dependent species. *Id.* The shelterwood treatment would leave approximately 20-30 trees per acre and increase the presence of sugar pine on the landscape. EA at 26-27.

Regeneration with reserves is proposed in unit 97. Silvicultural Prescription at 21. The Forest Service should further weigh the impacts of the proposed regeneration treatment against the potential benefits. Regeneration logging may have significant impacts to soil, fire hazard, and habitat. Concerning fire hazard, a new cohort of dense, young trees may pose increased fire risk on the landscape. Regeneration harvesting also removes habitat and captures mortality, thus preventing the recruitment of snags and downed dead wood. The Silvicultural Prescription states that an average of 8 tpa of live larger trees will be left for snag recruitment, and that some snags may also be created from the residual trees. *Id.* However, by removing all other trees, the pool of trees for snag recruitment is significantly reduced.

Shelterwood cuts for sugar pine restoration are proposed for several units spanning 102 acres. Units 77, 78, 96, and 340 appear to contain taller trees in the 100 to 125-foot range based on LIDAR data. Presumably, these units are some of the older, naturally-regenerated stands. The Forest Service should drop proposed shelterwood cuts from these units in an effort to preserve naturally-regenerated stands. Alternatively, the Forest Service should conduct further analysis to weigh the tradeoffs associated with logging in naturally-regenerated stands with the benefits of sugar pine restoration. Older stands are poised to become mature and old-growth forest through natural ecosystem processes which will help mitigate against climate change pressures. Sugar pine is described as an important species to play a part in the future health of the forest due to climate change, but proceeding with shelterwood cuts in these specific stands may be counter-productive to climate change mitigation.

Overall, Oregon Wild is supportive of restoring sugar pine on the landscape. However, Oregon Wild is opposed to clearcutting and regeneration logging. These logging methods have the potential to pose significant environmental impacts on the landscape including increased fire risk, compaction of soil, impacts to species and habitat, and effects on hydrology. The Forest Service should prepare an EIS to analyze the tradeoffs associated with the proposed clearcut and regeneration logging in the Project.

Meadow Restoration.

The proposed action includes treatment in an 11-acre meadow to improve plant diversity, pollinator habitat, wildlife forage, and to restore the native plant community. Restoration activities would consist of piling and burning slash, falling and leaving conifers less than 12" dbh, girdling conifers greater than 12" dbh, planting and seeding native plants where appropriate, and removing encroaching shrubs by manual and mechanical methods and burning. Smaller trees in a patch in the middle of the meadow would be piled in such a way that fire would be allowed to climb a few larger trees, supporting snag creation. EA at 8-9. Additionally, in wet and mesic habitats, restoration activities would be similar to those of meadows and include installation of beaver dam analogue structures in stream channels and historically degraded wet or mesic habitats. EA at 9.

Oregon Wild supports the careful restoration of meadows, including native plant and animal communities and natural hydrology, and urges the Forest Service to balance associated tradeoffs with proactive restoration. Oregon Wild recommends the following for meadow restoration:

- Develop a complete plant list for each meadow and wet and mesic habitat and note where rare plants are found. Buffer rare plants from potential adverse effects.
- Avoid pile burning to the maximum extent possible. Pile burning has extreme effects on soil, plants, and below-ground ecosystems.
- Consider retaining a few patches of slash as per acre habitat features.
- Avoid use of heavy equipment in meadows and machine manipulation of slash.
- Avoid construction of any roads in meadows.
- Consider using multiple alternative means of killing encroaching trees between 12 and 20" dbh such as fire girdling, fungi inoculation, blasting tops in addition to mechanical girdling.
- Retain trees over 20" dbh and let natural processes prevail

Riparian Reserve Treatments.

The Project contains approximately 4,932 acres of Riparian Reserve of which approximately 488 acres are proposed for commercial thinning. EA at 113. An additional 38 acres of Riparian Reserves within treatment units will be treated by falling and leaving conifers on the ground, adjacent to or into stream channels. EA at 8. Riparian Reserves that are proposed for thinning are those for which the Forest Service determined that thinning would improve vegetative diversity and follow Standard and Guideline TM-1(c), and includes both the young plantation stands and older naturally regenerated stands. EA at 113. Oregon Wild is concerned about the impacts to aquatic habitats due to commercial thinning in Riparian Reserves. The negative effects of commercial thinning in Riparian Reserves may very likely outweigh the benefits that the Forest Service purports will occur.

The Northwest Forest Plan discussed the importance of riparian areas:

Riparian areas are widely considered to be important wildlife habitat. Cool air temperatures due to the presence of cool and turbulent surface waters, typically dense vegetative canopy cover, and their location in the lowest portions of watersheds combine to maintain a distinct microclimate along stream channels and in the adjacent riparian area. Maintaining the integrity of the vegetation in these areas is particularly important for riparian-dependent species of amphibians, arthropods, mammals, birds, and bats.

...

Large quantities of down logs are an important component of many streams. Coarse woody debris influences the form and structure of a channel by affecting the profile of a stream, pool formation, and channel pattern and position. The rate at which sediment and organic matter are transported downstream is controlled in part by storage of this material behind coarse woody debris. Coarse woody debris also affects the formation and distribution of habitat, provides cover and complexity, and acts as a substrate for biological activity. Coarse woody debris in

streams comes directly from the adjacent riparian area, from tributaries that may not be inhabited by fish, and from hillslopes.⁷

Oregon Wild values wildlife habitat that supports native species that are threatened and endangered. As noted in the Northwest Forest Plan, an important component of Riparian Reserves is downed dead wood that ends up both in streams and adjacent and nearby to streams. Page 48 of the EA acknowledges that dead wood is important to meeting many aquatic and terrestrial wildlife habitat values. Dead wood is also important for ecological services such as the capture, storage and release of water, sediment and nutrients, including carbon. Most Riparian Reserves are short of dead wood due to past and ongoing logging, roads, and fire suppression. Thinning may negatively affect the development of larger trees and thus the recruitment of large dead wood over the long-term. As stated by Kim Kratz in a position paper to the Interagency Coordinating Subgroup,

Thinning accelerated the development of large diameter trees by about 20 years such that there were more live trees > 18" dbh in the two decades following thinning, relative to the unthinned stand, but this advantage was short-lived. Three decades after thinning, there were more live trees > 18" dbh in the unthinned stand and five decades after thinning there were twice as many live trees >18" dbh in the unthinned stand relative to the thinned stand. A similar trajectory was observed for the live trees > 24" dbh.⁸

Aside from effects on large dead wood recruitment, thinning in Riparian Reserves in general comes with many negative effects. Chris Frissell described issues related to thinning Riparian Reserves:

Riparian thinning proponents consider stand density in riparian areas as a static factor that can be controlled and enhanced by "proper" management--often that is thinning, to benefit a narrowly defined aspect of biodiversity, or to attain a specific stand structural outcome.

In my experience, natural disturbance processes are so diverse, so frequent, so unpredictable, and expressed across a broad enough range of scales in riparian forests that there is little or no justification for imposing additional human disturbance, in the form of thinning, tree tipping, or similar practices, with the expectation of producing a specific stable-state outcome. In fact, the complex and dynamic regime of natural disturbance renders any active human intervention highly unlikely to produce the anticipated or desired outcome for any significant length of time. In truth the interaction of unpredictable natural disturbance with imposed human disturbance makes it far more likely that unanticipated and undesired outcomes will occur (e.g., greatly accelerated and more widespread

⁷ 1994 Northwest Forest Plan FSEIS page 3, 4-61.

⁸ Kim Kratz, Ph.D., Issue Paper for Western Oregon. NMFS, Oregon State Habitat Office. 7-23-2010. Appendix 1. page 38.

windthrow, with resulting floodplain and streambank instability and erosion). This is precisely why FEMAT ACS rules emphasized process-based conservation actions (in terms of both restrictions and outcomes) in riparian forests--not state-based ones.

Riparian thinning proponents often point to homogeneous, low-diversity undesirable vegetation conditions, such as "stunted, overcrowded forests." that in their view demand thinning. I have observed that any syndrome of homogeneity or static supposedly static vegetation state is rather limited to a few locales, with the vast majority of sites showing every sign of natural processes of vegetation succession and natural disturbance generating sufficient diversity of sites, species and growth rates to assure that future forest outcomes, left unaltered, would be just fine and beneficial for water quality and biological diversity outcomes. I note that Pollock and Beechie's (NMFS Northwest Science Center) stand modeling work, based on field-verified processes and rates of tree species recruitment, growth and mortality in the forest types of concern, shows this same outcome (and their simulations don't even include external stand disturbances like wildfire, floods, landslides, or major wind events).⁹

Further, Frissell et al (2014) states that commercial log removal in Riparian Reserves should generally be prohibited:

Thinning and fuels reduction by means of mechanized equipment or for commercial log removal purposes should be generally prohibited in Riparian Reserves and Key Watersheds. Any thinning or fuels treatment that does occur as a restorative treatment in Riparian Reserves (e.g., to remove non-native tree species from a site) should retain all downed wood debris on the ground. Thinning projects that involve road and landing (including those deemed "temporary") construction and/or reconstruction of road segments that have undergone significant recovery through non-use should also be prohibited, due to their long term impacts on critical watershed elements and processes.¹⁰

Thinning in Riparian Reserves is likely to have significant impacts to the environment. The Forest Service should prepare an EIS to further analyze the impacts of the proposed Riparian Reserve treatments and balance the tradeoffs associated with thinning in the proposed units. Such an analysis should consider effects on snag and dead wood recruitment, effects to aquatic and terrestrial habitat, and the effect of roads and sedimentation. Additionally, the Forest Service should conduct the analysis for both the younger plantations and the older, naturally-

⁹ Chris Frissell, personal communication, January 15, 2019.

¹⁰ Frissell, CA, Baker RJ, DellaSala DA, Hughes RM, Karr JR, McCullough DA, Nawa RK, Rhodes J, Scurlock MC, and Wissmar RC. 2014. CONSERVATION OF AQUATIC AND FISHERY RESOURCES IN THE PACIFIC NORTHWEST: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan, FINAL REPORT, July 30, 2014.

regenerated stands. The Forest Service should also consider dropping the approximately 161 acres of naturally regenerated stands in Riparian Reserves from the proposed action. Natural processes of stand growth will reduce the density of these stands and permit large trees to develop, and consequently, allow more dead wood to develop without loss of snag and dead wood recruitment potential. The Forest Service should also consider foregoing the construction or reconstruction of approximately 2 miles of roads within these units.

Roads.

The Project area contains approximately 113 miles of existing roads of which 94 miles of Forest Service system roads were analyzed and proposed for reconstruction or maintenance. EA at 69. 5.1 miles of existing temporary roads would be reconstructed and 3.5 miles of new temporary roads would be built under the proposed action. EA at 71. The Forest Service must conduct a more detailed analysis of the environmental impacts associated with road reconstruction and construction in the Project area because roads can have a significant impact on the environment. Some problems with roads include:

- Soil disturbance, erosion, compaction, and loss of forest productivity.
- Pollution of streams through sedimentation and thermal loading.
- Hydrological modification through flow interception, accelerated run-off, and modification of peak flows.
- Impaired floodplain function.
- Barriers to movement of dead wood and spawning gravel downslope to aquatic habitat.
- Reduced recruitment of snags and down wood in terrestrial habitat.
- Habitat fragmentation and effects to wildlife dispersal.
- Vector for weeds, human-caused fire ignitions, and litter.

Temporary roads also present significant risks to the health of the environment. Although “temporary,” these roads’ impacts last well beyond the implementation of a project. The Forest Service should consider avoiding any reconstruction or construction of temporary roads and instead focus any treatments in units that are already accessible by existing roads. Avoiding temporary roads will also help prevent increased road density in the Project area. The Forest Service road system is already exceedingly large, and as the EA acknowledges, there is a backlog of maintenance work on many of the key and secondary roads in the Project area, including roadside brushing, drainage and ditch cleanout, and road surface repair. EA at 70. The Forest Service should consider whether any roads in the Project area are suitable for decommissioning or storage. Doing so would allow the Forest Service to both reduce the backlog of road work that is needed on the road system and benefit the environment.

Fire.

Oregon Wild is generally supportive of careful thinning of small trees in fire-suppressed forests to reduce fire risk, but thinning should be accomplished in a manner that avoids removal of valuable habitat trees that pose little or no fire hazard and that help retain a cool/moist

microclimate that helps reduce fire risk. While Oregon Wild generally supports thinning in the younger plantations, Oregon Wild does not support thinning in older, naturally-regenerated stands in part because of the increased risk such thinning poses to fire hazards.

The EA states that commercial harvest treatments will decrease canopy bulk density, crown spacing and continuity while raising crown base heights which is beneficial to fire suppression. EA at 57. The beneficial effect of thinning on fire hazard likely depends on how heavy-handed the thinning prescription is, and the effects are likely different for the younger plantations compared to the older, naturally-regenerated stands. Heavy thinning will stimulate the growth of surface and ladder fuels that make future fire hazard worse and will require more frequent and more expensive fuel maintenance. Disturbance of soil through the use of heavy equipment to carry out logging can also stimulate growth of hazardous fuels and weeds that makes fire hazard worse. The EA acknowledges that following timber harvest, there would be an increase in potential wildfire behavior due to an increase in fine fuel loads, and that any potential fires in the harvest areas could be active with high intensities, especially in the areas where direct sunlight is able to reach the forest floor. EA at 60.

Oregon State University Extension Service states that:

Opening up the stand significantly will dry surface fuels due to increased light levels, surface winds and temperatures. This may increase surface fire intensity and rate of spread unless total surface fuel loading is reduced. In addition, thinning that allows significant light to reach the forest floor may result in the regrowth of small trees and shrubs, which over time become new ladder fuels.¹¹

The proliferation of understories after logging has significant implications for fuel hazard and fire control.

[P]otential shrub responses to reduction in stand densities must be considered. Some dry mixed-conifer plant associations have the potential to develop dense shrubby understories when light and moisture are made available by tree thinning; ... Such understories can provide significant ground fuels for wildfires, thereby negating some of the positive effects of thinning on fire behavior. The potential for development of shrubby understories can initially be assessed on the basis of plant association; i.e., plant associations vary significantly in potential understory responses. Current stand conditions provide another important measure. Hence, the potential for developing undesirable levels of understory fuels needs to be assessed on a stand-by-stand basis and prescriptions adjusted so as to reduce the risk of undesirable understory responses. Indeed, in some cases it may be desirable to maintain essentially full overstory cover, treating only ladder fuels, and leaving

¹¹ Fitzgerald S and Bennett M. 2013. A Land Manager's Guide for Creating Fire-Resistant Forests. EM 9087. OSU Extension.

all dominant and co-dominant canopy trees in place rather than risk enhancing ground fuels (e.g., grasses or shrubs).¹²

Crown fire is usually a *passive* fire which relies on the preheating of canopy fuels by burning from below. When surface and ladder fuels are adequately treated *active* crown fire becomes an unlikely outcome except on very steep slopes where preheating is driven by the other crowns burning below. Active crown fire is such a rare event that it should not drive forest management objectives, and the Forest Service should instead focus on reducing surface and ladder fuels and retaining canopy to help create a cool moist microclimate and to help suppress the growth of surface and ladder fuels.

Removing canopy fuels creates canopy gaps and thus “radiation reaching the forest floor and air movement beneath the residual live tree canopy are increased, and both contribute to fuel drying. More open canopies also contribute to greater understory vegetation growth. The consequences of these changes on fire behavior are not fully understood, but such conditions may favor ignition and spread of fire more readily than in forests having few canopy gaps ...”¹³ Further, “Thinning is most effective when it removes understory trees, because larger overstory trees are more resistant to heat injury (Agee and Skinner 2005). In addition, shade and competition from larger trees slows the recruitment of younger trees in the understory.”¹⁴

The Forest Service needs to analyze and disclose the impacts to fire hazard that would arise from the proposed action. The Forest Service should consider alternatives that are more effective for fire risk reduction with fewer tradeoffs, and the alternatives should distinguish between the younger plantations and older, naturally-regenerated stands.

Northern Spotted Owl.

Oregon Wild is concerned about the impacts of the proposed action on northern spotted owl as continued habitat loss and barred owl competition drive the species to extinction. The EA states that approximately 651 acres of suitable habitat would be thinned, of which 622 acres would maintain suitable habitat through moderate thinning while about 29 acres of habitat would be downgraded due to heavy thinning in units 58 and 66. EA at 77. An additional 771 acres of dispersal habitat would be thinned and maintain an average of 40% canopy cover, and 492 acres of habitat capable lands for spotted owls would be managed with commercial thinning,

¹² Johnson KN and Franklin JF 2009. Restoration of Federal Forests in the Pacific Northwest: Strategies and Management Implications.

¹³ Kaufmann MR et al. 2008. The status of our scientific understanding of lodgepole pine and mountain pine beetles – a focus on forest ecology and fire behavior. The Nature Conservancy, Arlington, VA. GFI technical report 2008-2.

¹⁴ Keeley JE, Aplet GH, Christensen NL, Conard SC, Johnson EA, Omi PN, Peterson DL, and Swetnam TW. 2009. Ecological foundations for fire management in North American forest and shrubland ecosystems. Gen. Tech. Rep. PNW-GTR-779. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 92 p.

regeneration, sugar pine restoration, non-commercial girdling and 1-3 acre gaps. *Id.* The EA also states that 29 acres of suitable habitat would be downgraded to dispersal, and thus the proposed action may affect and is likely to adversely affect spotted owl habitat but is not expected to jeopardize the continued existence of the spotted owl or result in any incidental take of spotted owls. *Id.*

Although the EA states that the effects on spotted owl habitat, and the species, would be minimal through the proposed action, it remains true that thinning in suitable habitat has the potential to affect the species. The Forest Service should aim for a higher percentage of canopy cover in any thinned units that aligns with the species' needs. Stands for nesting and roosting are generally characterized by moderate to high canopy cover of 60 to 80 percent.¹⁵ Additionally, foraging habitat for northern spotted owl in the West Cascades/Coast Ranges of Oregon and Washington are also characterized by moderate to high canopy cover of 60 to 80 percent.¹⁶ Stands identified in the EA as important for spotted owl foraging were assigned prescriptions that would retain at least 60% canopy cover. EA at 8. This is on the low end of the species' need and only for a select number of stands. The Forest Service should aim to provide higher canopy cover in all of the older, naturally-regenerated stands.

Logging disrupts behavior of nesting birds and can harm other aspects of their life needs. The BLM has acknowledged that:

Current research has shown that spotted owls are likely to increase the size of their home ranges to utilize untreated stands in preference to newly treated stands both during and after harvest. Factors that reduce the quality of habitat within a home range or cause increased movement by owls in order to meet prey requirements may decrease the survival and reproductive fitness of owls at that site (Meiman *et al.*, 2003).¹⁷

Additionally, Courtney (2004) summarized spotted owl habitat use studies and found positive relationships between spotted owl habitat use and several forest attributes that are detrimentally affected by thinning, including canopy volume, canopy closure, snag basal area or volume, and log volume. Importantly, these relationships appear to hold true whether the owl sites were old growth or non-old growth.¹⁸

Spotted Owl foraging is positively associated with snag volume and dead wood volume, both of which are adversely affected by commercial logging, which has long-term adverse effects on dead wood recruitment.

¹⁵ Endangered and Threatened Wildlife and Plants; Designation of Revised Critical Habitat for the Northern Spotted Owl, 77 Fed Reg. 71876, 71906-7 (Dec. 4, 2012).

¹⁶ *Id.* at 71,907.

¹⁷ Roseburg BLM 2010. Third Elk Commercial Thinning EA.

¹⁸ Courtney SP, Blakesley JA, Bigely RE, Cody ML, Dumbacher JP, Fleischer RC, Franklin AB, Franklin JF, Gutierrez RJ, Marzluff JM, and Sztukowski L. 2004. Scientific evaluation of the status of the Northern Spotted Owl. Sustainable Ecosystems Institute.

Foraging activity is positively associated with tree height diversity (North et al. 1999, p. 524), canopy closure and woody debris (Irwin et al. 2000, p. 180; Courtney et al. 2004, pp. 5-15), snag volume, density of snags greater than 20 in (50 cm) dbh (North et al. 1999, p. 524; Irwin et al. 2000, pp. 179-180; Courtney et al. 2004, pp. 5-15), density of trees greater than or equal to 31 in (80 cm) dbh (North et al. 1999, p. 524), volume of woody debris (Irwin et al. 2000, pp. 179-180), and young forests with some structural characteristics of old forests (Carey et al. 1992, pp. 245-247; Irwin et al. 2000, pp. 178-179). Habitat use is influenced by prey availability. Ward (1990, p. 62) found that spotted owls foraged in areas where the occurrence of prey was more predictable within older forests and near ecotones of old forest and brush seral stages. The availability or abundance of prey can in turn influence reproductive success (Rosenburg et al. 2003, pp. 1720-1723).¹⁹

Commercial thinning also affects prey species that the northern spotted owl relies on. Flying squirrels are an important prey item for northern spotted owls in all parts of the owl's range. Even in SW Oregon where wood rats represent a large part of the owl's diet, flying squirrels are still critically important.²⁰ Given the importance of flying squirrels to the diet of the spotted owl, the Forest Service must ensure that thinning does not significantly reduce the flying squirrel population, but recent evidence shows that thinning does in fact lead to a multi-decade decline in the number of flying squirrels. Manning et al (2011) found that densities of northern flying squirrels are particularly sensitive to thinning in young Douglas-fir forests for at least 12 years after treatment.²¹ Additionally, Wilson and Forsman (2013) found that:

[T]hinning reduces the abundance of some tree-dwelling rodents, especially Northern Flying Squirrels (*Glaucomys sabrinus*) and Red Tree Voles (*Arborimus longicaudus*), that are important prey species for Northern Spotted Owls (*Strix occidentalis caurina*). Recent studies suggest that reductions in Northern Flying Squirrel abundance following thinning may be driven by increased susceptibility to predation created by removal of critical above-ground cover. Predation, lack of canopy connectivity, and reduction in suitable nest substrates may all contribute to reduced Red Tree Vole abundance following thinning. The longterm benefits of some thinning treatments may be positive for both flying squirrels and Red Tree Voles, but may not be realized for several decades or more, as the development of a midstory layer of trees may be critical to the success of thinning in promoting habitat for these species.²²

¹⁹ Fish and Wildlife Service 2024. Sand Lake Biological Opinion.

²⁰ Forsman A and Meslow Z. 2004. Diets and Foraging Behavior Of Northern Spotted Owls In Oregon. *Journal of Raptor Research* 38(3):214-230.

²¹ Manning T, Hagar JC, and McComb BC. 2011. Thinning of young Douglas-fir forests decreases density of northern flying squirrels in the Oregon cascades. *Forest Ecology and Management*, Vol. 261, issue 1. 1 January 2011.

²² Wilson TM and Forsman E. 2013. Thinning effects on spotted owl prey and other forest-dwelling small mammals. In: Anderson PD, Ronnenberg KL, eds. *Density management for the 21st Century: west side story*. Gen. Tech. Rep. PNW-GTR-880. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 79-90.

The Forest Service should further analyze the effects of the proposed action on northern spotted owl prey populations over the short term while negative effects on prey species are present. This analysis should distinguish between the young plantations and older, naturally-regenerated stands. Such an analysis is particularly important because the survival of northern spotted owls is time-sensitive, so the short term impacts must be weighed against the potential long term benefits to owl habitat and prey abundance.

While the Project describes the 29 acres of habitat that would be downgraded as trivial, the Forest Service should preserve as much suitable northern spotted owl habitat in the project area as possible because such habitat may be critical to survival of the species. This is especially true in regards to helping northern spotted owl co-exist with barred owls which is dramatically increasing in numbers throughout the range of the spotted owl causing competition and displacement. The Wildlife Report acknowledges that competition with barred owls has been found to be an important threat to northern spotted owl. Wildlife Report at 9. The Wildlife Report also states that Wiens (2012) has recommended retaining conifer forests older than 120 years of age as a method to reduce interspecific competition between the owl species, and that where barred owls occur, spotted owl survival significantly declines as the percent of forests greater than 120 years of age in the general home range drops below 35%. *Id.* While the Wildlife Report states that the Project does not propose treatments in stands greater than 120 years old, the EA describes in numerous places that the ages of the naturally-regenerated stands are up to 130 years old. As previously states, the Forest Service should clarify the age range of the stands proposed for treatment. Any stands older than 130 years old should be immediately dropped from the Project.

Oregon Wild is also concerned about the Forest Service's methodology in conducting surveys to detect the presence of northern spotted owl. The Wildlife Report indicates that northern spotted owl surveys were conducted in 2018 and 2019 and again in 2023 and 2024. In 2025, the first year of spot checks with ARU surveys occurred. Wildlife Report at 16. It is becoming harder to detect spotted owl presence using traditional survey methods because spotted owls may become less vocal with increasing presence of competing barred owls. New technology is available to more accurately detect spotted owl presence and should be used by the Forest Service to inform its NEPA analysis and ESA consultation. The Forest Service should conduct surveys using ARUs, including in any units that previously did not utilize ARUs. Duchac et al. (2020) stated "ARUs can effectively detect Northern Spotted Owls when they are present, even in a landscape with high Barred Owl density, thereby facilitating the use of passive, occupancy-based study designs to monitor Northern Spotted Owl populations."²³ Additionally, Appel et al (2023) stated:

Given the sensitivity of spotted owls to land management decisions, it is critical that survey methods—especially those designed to inform protection levels by determining pair status—account for imperfect detection of pairs, which are the

²³Duchac LS, Lesmeister DB, Dugger KM, Ruff ZJ, and Davis RJ. 2020. Passive acoustic monitoring effectively detects Northern Spotted Owls and Barred Owls over a range of forest conditions. *The Condor*, Volume 122, Issue 3, 4 August 2020, duaa017, <https://doi.org/10.1093/condor/duaa017>.

most important biological unit in need of protection. The probability of detecting and classifying a pair where present (0.03 at a single station and week) was quite low and suggests that a requirement for detecting both female and male owls to determine pair status with high confidence would require an extensive and onerous survey effort and may be unachievable. We suggest that single detections could be used as an alternative benchmark to ensure protection of sites used by spotted owl pairs.²⁴

The Forest Service should ensure that surveys for northern spotted owl within the Project boundary account for the every individual, not just pairs, in order to help prevent further decline of the species. The Duchac and Appel studies are attached to this comment for reference.

Cumulative Impacts.

Oregon Wild appreciates that the Forest Service conducted a cumulative impacts analysis that incorporates past, present, and reasonably foreseeable projects that overlap in time and space with the Divide project area. Concerning northern spotted owl, the Forest Service should consider other projects that are close to the Divide project area, even if not immediately overlapping. These projects include Tie, Calloway, Fish Lake Fire Resilience, and South Fork Delta Restoration Expansion. Each of these project has the potential to affect northern spotted owl habitat, and as previously stated, the Forest Service should strive to retain as much suitable owl habitat as possible to ensure survival of the species. As stated by Wiens et al. (2014):

[T]he existence of a new and potential competitor like the barred owl makes the protection of old forest habitat even more important because any loss of habitat will likely further constrain the 2 species to the same set of limited resources, thereby increasing competitive pressure and leading to additional negative impacts on spotted owls.²⁵

Accordingly, preserving as much suitable northern spotted owl habitat as possible across the landscape is vital. The Wiens et al. article is attached for reference.

NEPA Analysis.

Under NEPA, an environmental assessment is prepared with respect to a proposed agency action that does not have a reasonably foreseeable significant effect on the quality of the human environment or if the significance of the effect is unknown. The Project is likely to have reasonably foreseeable significant impacts on the human environment, primarily through

²⁴ Appel C L, Lesmeister DB, Duarte A, Davis RJ, Weldy MJ, and Levi T. (2023). Using passive acoustic monitoring to estimate northern spotted owl landscape use and pair occupancy. *Ecosphere*, 14(2), e4421. <https://doi.org/10.1002/ecs2.4421>.

²⁵ Wiens JD, Anthony RG, and Forsman ED. 2014. Competitive Interactions and Resource Partitioning Between Northern Spotted Owls and Barred Owls in Western Oregon. *Wildlife Monographs*, 185:1-50, doi: 10.1002/wmom.1009.

logging in older, naturally-regenerated stands and regeneration logging that cause impacts to habitat, fire risk, threatened and endangered species including the northern spotted owl, and riparian forests. Accordingly, the Forest Service should prepare an EIS that carefully analyzes the tradeoffs of the proposed action using various alternatives to meet the purpose and need of the Project. Doing so will ensure that the Forest Service is in compliance with the law and allow the public to be fully informed as to the Forest Service's ultimate decision for the Project.

Thank you for considering these Oregon Wild's input and for the Forest Service's time and effort spent developing this project and engaging with the public.

Sincerely,

A handwritten signature in black ink, appearing to read "Pablo San Emeterio". The signature is fluid and cursive, with the first name "Pablo" being the most prominent part.

Pablo San Emeterio
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