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Submitted via: https://www.fs.usda.gov/project/?project=63158

RE: Cedar Gales Roadside Risk Reduction EA—Scoping

Please accept the following comments from Cascadia Wildlands and Oregon Wild concerning the 2021 Wildfire Roadside Danger Tree Mitigation Project, https://www.fs.usda.gov/project/?project=63158. Cascadia Wildlands defends and restores Cascadia's wild ecosystems in the forests, in the courts, and in the streets. We represent 12,000 members and supporters who envision vast old-growth forests, rivers full of salmon, wolves howling in the backcountry, a stable climate, and vibrant communities sustained by the unique landscapes of the Cascadia bioregion. 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.

The Willamette National Forest's (WNF) project "seeks to reduce the risks posed by fire-killed and injured trees that have fallen across or remain standing along important access routes of the Cedar Creek and Gales fire-affected road system so that access to and through the burned area can be restored. The risks of primary concern in this project include: public and forest worker safety when using roads, firefighter access to new ignitions, usability of potential evacuation routes, hazardous fuel loads, the functionality of roads as potential fire control lines, and road infrastructure damages and failures." Scoping Letter.

We understand the importance of the U.S. Forest Service (FS) efficiently removing fire-impacted trees that pose genuine hazards. Restoring public access to forest in the project area in a safe, ecologically-sensible manner is of the utmost importance. However, the trees that the FS deems as dangerous are also significant carbon stores and highly valued habitat features that play critical roles in hydrology, soil development, nutrient cycling, sediment routing, and more. Fire is an important ecological process that shapes our forests and the benefits we obtain from it. We acknowledge that this is a complex project with many difficult decisions regarding where and whether to remove danger trees or whether to retain the ecological values associated with natural disturbance and natural recovery. Logging degrades the natural beauty and ecological functions of mature and old growth forests that burn in wildfires and impedes the future development of a diverse forest understory. How will the FS consider adverse effects, weigh and balance trade-

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offs, and harmonize competing objectives associated with this project? The FS can and should execute a project that protects public safety *and* important ecological values.

I. Site-Specific Information

Based on the level of access need along the route and the concentration of fire-killed and injured trees that may fall on the segment of road, WNF proposes to fell trees along 90 miles of roads, though this may change based on public feedback. The scoping notices includes maps of the project area along with a table of roads proposed for treatment that notes each segment's Operational Maintenance Level, management recommendation, and justification(s) for treatment. Thank you for presenting this information early in the planning process and for taking public feedback into consideration.

To aid in the submission of our site-specific feedback, please clarify the following:

- If the 2015 Road Investment Strategy recommended that a road "Remain Open" but that the WNF "Analyze for Closure," what is WNF's plan of action? Has the WNF analyzed these roads for closure and, if not, when will these analyses take place?
- Road 1845000 (Gales Fire): This road is closed and experienced largely low burn severity. It includes small fragments of roads and is recommended to remain closed. What project is being planned here?
- Roads 5871327 and 5871329 (Cedar Creek Fire): These roads burned at very low severity and have small, scattered sections proposed for treatment. The 2015 Road Investment Strategy Recommendation for these roads and others was to "Defer Recommendation." Defer to whom and/or until when?
- Please provide additional details regarding what process the FS is using to evaluate each road and its current status, particularly in those areas that burned at a low- or mixed-severity: Are roads are remote and infrequently accessed, on steep slopes, overgrown with vegetation, etc.?
- How many total acres are proposed for treatment?
- The scoping proposal states, "Where 25% or more of the tree basal area was killed or injured by the fire, a result of the catastrophic nature of the wildfires, there remains a high concentration of trees which are likely to fall onto roads." What is the basis for using a 25% basal mortality threshold to determine roads included in the proposal? Does this take tree species into consideration? We are concerned this threshold may be overinclusive.
- Will mature or old growth trees be targeted for removal or otherwise impacted? WNF should refrain from logging large diameter dead trees, which have a low likelihood of failure but provide habitat benefits.
- The scoping proposal states: "No trees will be removed solely for the purpose of timber production, nor will removed trees be used as a commercial product where that is prohibited by Forest Plan direction." Will some trees be removed in part for timber production purposes? Please clarify.
- Are there are any gate closures or other access issues for road segments included in the project proposal that would prohibit us from field checking the project area? Please disclose these.

II. Project Scope and Prioritization Process

We strongly support genuine efforts to protect public safety and restore access to public forests and acknowledge the complexity of accomplishing these objectives. There are numerous other important objectives against which the felling of hazard trees must be balanced, such as wildlife habitat, carbon storage, water quality/stream shade, minimizing fire ignition risk associated with open roads, reducing fire hazard associated with plantations, minimizing habitat fragmentation, reducing road density, limiting cumulative effects, minimizing the future snag gap caused by stand replacing fire, limiting carbon emissions associated with logging and wood products processing, reducing soil degradation associated with heavy equipment and biomass removal, avoiding weeds, and retaining habitat diversity associated with snag-rich, complex early seral vegetation. Ultimately, commitments to public safety protection must not merely veil logging projects that maximizes commercial gain and stifle forest recovery.

We recommend undertaking a conservative hazard-tree removal process that removes true hazard trees and reopens necessary roads while minimizing the volume of wood removed from the forest. Accordingly, the FS should consider scaling back the scope of the project proposal as much as possible to prioritize a transportation system that is manageable and maintainable.

A. Guidance Documents and Project Implementation

The proposal refers to two guidance documents used to identify danger trees. Specifically, the FS proposed to establish its danger tree identification criteria based on Region 6 Danger Tree Policy Guidelines, which were developed using *Field Guide for Danger-Tree Identification and Response along Forest Roads and Work Sites in Oregon and Washington* (Filip et al. 2016) and *Post-fire Assessment of Tree Status and Marking Guidelines for Conifer in Oregon and Washington* (Hood et al. 2020). Along with the road segments identified for treatment, the danger tree criteria are central to the proposal. The environmental impacts of the proposal turn on the tree selection criteria—the more trees that are selected to be cut, the greater the environmental impacts will be. However, these guidance documents have not undergone NEPA analysis, meaning members of the public, Tribes, other agencies, and other interested parties have not had the opportunity to review and provide feedback on the proposal's danger tree criteria. Whether or not the criteria accurately predict that trees actually pose a hazard risk has never been vetted in accordance with NEPA's procedural safeguards.

Further, the tree selection criteria indicates that "[t]rees identified by a qualified danger tree Forest Service specialist and painted with Blue, Yellow, or Green Tracer paint are identified to be cut." Will Forest Service specialist be identifying/marking all trees to be cut based on the proposed criteria? Does this criterion pertain to the tree selection process in general or allow for additional marking outside of the criteria? Please clarify. Additionally, WNF should specify that the entity who determines what trees are to be cut should not have a financial relationship to that decision. If any trees are to be cut in part for timber production purposes, the WNF should ensure that all potential for bias on cutting decisions is eliminated.

Finally, what are the anticipated timelines for treatment and post-activity inspections for project implementation? While field checking, we have observed slash piles that remain in place years after logging activity, which only increases fire risks.

B. The Forest Service Can and Should Be More Risk-Tolerant

The FS should allow for a reasonable level of risk tolerance as well as ensure adequate attention is given to other obligations like threated and endangered species, climate and carbon, water quality protection, etc. The agency should only fall trees that pose an imminent hazard to the public. There is little need to fell trees that lean away from the road. Trees more than 100 feet from the road have a low probability of falling on the road, even if they are taller than 100 feet. In addition, snags fall in stages. Many dead treetops break off and fall close to the base of the tree, leaving a shorter snag with a more limited zone of hazard. Felling trees more than 100 feet from roads is unnecessarily risk averse, and unjustifiably sacrifices environmental values such as snag habitat, dead wood habitat, and soil health.

The risk of a dead tree falling and striking someone is extremely remote and must be put in perspective. For instance, the agency allows the public to use thousands of miles of roads where the risk of death or injury from collisions or other accidents is far higher than the risk of being hit by a falling tree. The agency also allows boating and swimming in dangerous waterbodies, winter camping, mountain climbing, off-road vehicle use, and hunting with dangerous weapons. The agency also *promotes* dangerous occupations such as logging, firefighting, and piloting aircraft used for a variety of forest management activities. Furthermore, public use of public lands is skewed toward the summer months, while the extreme weather that tends to cause trees to fall is skewed toward the winter months.

The hazards from trees falling are also mitigated by time. Most of the affected roads are not high use roads. The chance that an employee or member of the public will be under a falling tree when the tree falls is very low. If the purpose of this project is to increase public safety, please consider all the alternative ways in which safety might be enhanced.

Sometimes the motivation for eliminating hazards is based on a misunderstanding of legal liabilities. The FS is not liable if someone is injured so long as the FS thoughtfully balances the competing interests of safety and environmental conservation. The NEPA analysis needs to acknowledge that the public assumes certain risk when recreating on public lands, so not every hazardous tree on every dead-end spur road needs to be felled and removed. The PNW Region of the Forest Service distributes an educational brochure titled "Getting Around on National Forest Roads," which says of low standard roads: "If you choose to drive these roads, plan to encounter rocks and boulders, road washouts, downed trees and brush encroaching on the roadway. For safety, … carry extra equipment such as axe, shovel, gloves…."[1] The public expects some inconvenience when driving remote forest roads and would willingly trade some risk of inconvenience and small chance of encountering safety hazards for viable populations of native wildlife supported by maintenance of snag habitat and downed woody material.

[1] See "Getting Around on National Forest Roads" R6-ENG-RG-01-01. https://babel.hathitrust.org/cgi/pt?id=umn.31951002920989g&view=1up&seq=2.

Also, the Federal Tort Liability Act provides the government some degree of immunity in exercising their discretionary functions like hazard tree management. For instance, a court found the National Park Service not liable for failing to remove a tree weakened by root rot that fell and killed a recreational motorist at Great Smokey Mountains National Park, even when the road involved was a high use paved road near a visitor center and when the tree species at issue (Black Locust) was known by the Park Service to be prone to fall. The court deferred to the agency's balancing of public safety and preserving natural areas and granted the agency immunity from liability for the death of the motorist.[2]

With regard to employee safety, relevant Occupational Safety and Health Administration (OSHA) regulations state:

> (c) Danger tree. A standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem or limbs, and the direction and lean of the tree.
>
> **…**
>
> (d)(vi) Each danger tree shall be felled, removed **or avoided**. Each danger tree, including lodged trees and snags, shall be felled or removed using mechanical or other techniques that minimize employee exposure before work is commenced in the area of the danger tree. If the danger tree is not felled or removed, it shall be marked and no work shall be conducted within two tree lengths of the danger tree unless the employer demonstrates that a shorter distance will not create a hazard for an employee.
>
> (vii) Each danger tree shall be carefully checked for signs of loose bark, broken branches and limbs or other damage before they are felled or removed. Accessible loose bark and other damage that may create a hazard for an employee shall be removed or held in place before felling or removing the tree.[3]

The agency has discretion to weigh the value of snags for wildlife and other ecosystem services and need not reflexively cut down every hazard tree.

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[2] Autery v. United States, 992 F.2d 1523 (11th Cir. 1993), https://web.archive.org/web/20051203012108/http://classweb.gmu.edu/erodger1/prls560/content/autery.htm (To decide on a method of inspecting potentially hazardous trees, and in carrying out the plan, the Park Service likely had to determine and weigh the risk of harm from trees in various locations, the need for other safety programs, the extent to which the natural state of the forest should be preserved, and the limited financial and human resources available. Indeed, the district court recognized this when it criticized the Park Service for elevating the overriding policy considerations of protecting the trees and the natural state of the area over the safety of humans using the park roadway.") See also ORS §§ 105.672(3), 105.682(1) and Brewer v. ODFW, 2 P.3d 418, 167 Or.App. 173. http://www.publications.ojd.state.or.us/A103245.htm.

[3] 29 CFR § 1910.266 (emphasis added; available at http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9862).

C. USFS Roads Policy and Meeting Road Density Targets

The environmental analysis must address important USFS roads policies, including the road density targets in the Willamette LRMP and the requirements of the National Forest Roads Policy[4]:

> **7702 - OBJECTIVES**
> …
> 2. To manage a forest transportation system within the environmental capabilities of the land.
> 3. To manage forest transportation system facilities to provide user safety, convenience, and efficiency of operations in an environmentally responsible manner and to achieve road related ecosystem restoration within the limits of current and likely funding levels.
> …
> **7703 - POLICY.** Determine and provide for the minimum forest transportation system that best serves current and anticipated management objectives and public uses of National Forest System (NFS) lands, as identified in the appropriate land and resource management plans (FSM 1920). In managing the forest transportation system for access, Responsible Officials must coordinate with other public and private transportation system agencies to integrate transportation information and to balance transportation facility investments and maintenance costs against the need to maintain land health and water quality.
> …
> **7703.1 - Road Management**. In accordance with 36 CFR § 212.5(b)(1), when managing NFS roads, responsible officials are to:
> 1. Address both the access benefits and ecological costs of road-associated effects.
> 2. Give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads, or, where appropriate, converting them to less costly and more environmentally beneficial other uses.
> 3. Use a roads analysis process (FSM 7712.1) to ensure that road management decisions are based on identification and consideration of social and ecological effects. See FSM 7712.13 for guidance on the scope and scale of roads analysis required.
> …
> Give priority to upgrading the most heavily used roads to provide safe and efficient travel and to reduce adverse environmental impacts. If necessary for environmental protection and due to lack of funding, travel on classified roads may need to be restricted or closed.
> …
> Use an open and public roads analysis process (FSM 7712.1) to help identify roads that should be decommissioned, to identify restoration needs, and to establish decommissioning priorities. It may be necessary to regulate use on some unneeded roads until decommissioning or other approved uses, such as conversion to trails, can be achieved.

[4] USFS Road Management Policy, https://www.fs.usda.gov/nfs/11558/www/nepa/115185_FSPLT3_5597368.pdf.

These policies highlight several important points:

- The need to manage the roads system in an environmentally sensitive way that recognizes the important long-term biophysical value of snags and abundant dead wood;
- The need to identify and manage toward the minimum road system;
- The need for the FS to use an open, public roads analysis process to balance competing interests; and
- The need to focus maintenance treatments on highest use roads and to emphasize decommissioning of roads that are not used very often or have significant environmental trade-offs.

We urge the FS to consider alternatives that let some roads close naturally where and when possible. The FS has discretion (and a duty) to balance interests. This project should not be designed or described as a one-dimensional safety project. It involves a complex process of balancing interests that are sometimes aligned and sometimes in conflict. In analyzing environmental impacts, the FS should carefully weigh trade-offs and harmonize goals of the proposal, such as fire hazard (caused by tree removal and replanting dense uniform stands), habitat fragmentation caused by long linear plantations (and more roads than necessary) threaded through the forest, bringing road density within optimal levels for fish/hydrology/climate change, cumulative effects, cumulative snag loss related to road density, fire ignition risk related to keeping unnecessary roads open, carbon emissions related to salvage logging and plantation fire hazard, soil impacts related to heavy equipment and biomass removal, weeds related to soil disturbance and retarded recovery of native vegetation, loss complex early seral related to removal of legacy structures and replanting that displaces diverse early seral non-conifer vegetation, habitat diversity related to adding more acres of plantations to a landscape that already has too many. In addition, as fire management policy should be shifting away from suppression, the FS should take into consideration that many roads will not be needed for fire access.

As recognized in the Roads Policy, the agency should consider alternative means of managing hazards from falling trees, such as

> (1) minimizing human activities near hazard trees (closing roads)—this may not work where a hazard tree is adjacent to a high traffic road, but some little used roads can be closed;
> (2) topping trees so they are too short to reach the road when they fall; and
> (3) placing signs to warn people of the hazards so that people can evaluate the risks for themselves.

Often the hazard is not from the tree falling directly on people, but from cars colliding with trees that have previously fallen. This hazard can be mitigated with signage and speed limits, while allowing valuable wildlife trees to persist.

The USFS Roads Policy is an official recognition that the FS lacks funding to maintain its entire road system. The FS should be looking for opportunities to let roads close naturally where and when possible, especially those that are remote and infrequently used.

III. Environmental Effects and Tradeoffs May Be Significant

This project requires careful weighing of competing values. The Cedar Creek and Gales fires changed conditions, which may have altered some ecologically valuable habitats, but the fires also created the possibility of new habitats. Logging and replanting after fires is neither needed nor beneficial. The significant adverse effects of post-fire logging must be clearly described in the assessment and then minimized and mitigated as much as possible in order to meet forest plan objectives.

A. Purpose and Need Should Address the Unmet Need for Carbon Storage

The analysis should carefully consider climate change mitigation and adaptation in the context of the proposal, which are completely lacking in the scoping notice. Climate mitigation can be achieved by avoiding carbon emissions, which is achieved by retaining all green trees, avoid fragmenting large wood (maintain the surface to volume ratio of large wood). Climate adaption can be achieved by maintaining vegetation diversity post-fire, by not replanting conifers so as to avoid creating high hazard fuel conditions, by not opening roads (to minimize ignition risk), by letting roads close naturally to improve watershed function, etc.

WNF must take the hard look at climate impacts that NEPA requires. The Forest Service must recognize the cumulative nature of the greenhouse (GHG) emissions and climate impacts. It does not matter that this project is small in the global scheme because all emissions matter when the causation is global and cumulative. It is thus inappropriate to jump to the conclusion that the project's contributions to global GHG are negligible because of the project scale and the difficulty in determining direct and indirect effects of the project on global climate.
Climate change acts as a primary driver of the increasing wildfires that threaten our communities and our forests, as well as adding significant uncertainty to our ability to conserve and restore our last remaining old growth forests.

On April 22, 2022, President Biden issued an executive order (EO) declaring a policy to conserve mature and old growth forests on federal land and to manage forests to retain and enhance carbon storage. The EO states:

> Sec. 1. Policy.
> Strengthening America's forests, which are home to cherished expanses of mature and old-growth forests on Federal lands, is critical to the health, prosperity, and resilience of our communities …. Forests provide clean air and water, sustain the plant and animal life fundamental to combating the global climate and biodiversity crises, and hold special importance to Tribal Nations. … Conserving old-growth and mature forests on Federal lands … is critical to protecting these and other ecosystem services provided by those forests. … We can and must take action to conserve, restore, reforest, and manage our magnificent forests … <u>It is</u>

> the policy of my Administration, … to … conserve America's mature and old-growth forests on Federal lands …
> …
> Sec. 2. Restoring and Conserving the Nation's Forests, Including Mature and Old-Growth Forests.
> My Administration will manage forests on Federal lands, which include many mature and old-growth forests, to promote their continued health and resilience; retain and enhance carbon storage; conserve biodiversity …[5]

The EO also called for an inventory of mature and old growth on federally managed public land, an analysis of threats to mature and old growth forests, and development of policies to address those threats. The FS does not need to wait for these steps to take action to protect valuable forest habitat and should incorporate this guiding policy into its analysis.

WNF should incorporate climate change mitigation and adaptation into alternatives prepared in the EA or EIS, including through avoiding carbon emissions and maintenance of vegetation diversity post-fire. The agency should minimize selling timber, and thus removing valuable wood and carbon from the forest, from this project in light of the fact that the public *needs* carbon storage to reduce global climate change much more than they *need* wood products or road access to every remote corner of the forest. The EA must also account for community stability provided by forest management that adequately accounts for water quality, water quantity, quality of life, and carbon storage for a stable climate.[6]

B. Potential Significant and Cumulative Effects

We appreciate WNF's preparation of an EA for this project to weigh the tradeoffs between environmental consequences and public safety impacts. Environmental impacts will likely be significant, and WNF may need to prepare an Environmental Impact Statement (EIS) for the project.

- This FS must consider the project's effects on soil, water, wildlife, carbon, and fire hazards. The project may pose economic conflicts of interest between conservation and

[5] Executive Order on Strengthening the Nation's Forests, Communities, and Local Economies, April 22, 2022, Presidential Actions, https://www.whitehouse.gov/briefing-room/presidential-actions/2022/04/22/executive-order-on-strengthening-the-nations-forests-communities-and-local-economies/.

[6] "Land protection, both public and private, provides substantial ecological benefits by avoiding conversion of natural systems to intensive, developed uses. These benefits include carbon sequestration, watershed functioning, soil conservation, and the preservation of diverse habitat types (e.g., Daily 1997, Brauman et al. 2007, Kumar 2012, Watson et al. 2014). Land protection also solves a key market failure: private markets tend to underprovide socially beneficial land uses such as natural forests, agricultural lands, or managed timberlands. The reason for this failure is that many of the benefits of these lands go to the public in general, not individual landowners. When private values and market transactions determine land uses, less land will be devoted to socially beneficial uses than if citizens could collectively determine use on the basis of social values (e.g., Angelsen 2010, Tietenberg and Lewis 2016)." Katharine R.E. Sims, Jonathan R. Thompson, Spencer R. Meyer, Christoph Nolte, Joshua S. Plisinski. 2019. Assessing the local economic impacts of land protection. Conservation Biology. 26 March 2019 https://doi.org/10.1111/cobi.13318, https://harvardforest.fas.harvard.edu/sites/default/files/Sims_et_al-2019-Conservation_Biology.pdf.

commercial tree removal or lead to potential noncompliance with FS policies and forest plan requirements.

- The FS must carefully consider the environmental tradeoffs associated with hazardous fuels treatments, which could sacrifice ecological benefits from retaining fallen trees and other woody debris on the landscape. The NEPA analysis should not assume a 100% chance of future wildfire or overestimate ecological benefits of fuel treatments.[7]
- The FS must consider the ways in which the project would harm threatened spotted owls by increasing forest fragmentation (including in reserves and critical habitat), increasing the extent of habitat inhospitable to spotted owls, converting complex forests into simplified forests, increasing fire hazard by increasing dense plantation fuel structure, reducing spotted owl roosting and foraging opportunities, reducing spotted owl prey populations, increasing spotted owl disturbance by logging activity, increasing adverse competitive interactions with barred owls, making it harder for spotted owls to persist and move safely across the landscape. The FS must carefully weigh and balance the need for safety and spotted owl conservation.
- The FS must consider impacts to threatened salmon ESUs, which could be significantly harmed by removing snags that help shade streams, increasing sediment production from heavy use of unpaved roads and off-road soil disturbance by heavy equipment (including steep slopes), increasing activity within riparian reserves and at road/stream crossings, by converting complex forests into simplified forests, by reducing the availability of dead wood to streams and riparian reserves, by depleting summer stream flow by increasing the extent of dense conifer plantations. The FS must carefully weigh and balance the need for safety and salmonid conservation.
- The FS must take a hard look at adverse impacts to the outstandingly remarkable values associated with existing and proposed Wild and Scenic River corridors.
- The FS must take a hard look at adverse impacts to designated wilderness, including Waldo Lake Wilderness.

The new paradigm for post-fire management is well articulated in this excerpt from respected scientists in one of the world's leading science journals:

> … [N]atural disturbances are key ecosystem processes rather than ecological disasters that require human repair. Recent ecological paradigms emphasize the dynamic, nonequilibrial nature of ecological systems in which disturbance is a normal feature and how natural disturbance regimes and the maintenance of biodiversity and productivity are interrelated … Salvage harvesting activities undermine many of the ecosystem benefits of major disturbances. … [R]emoval of large quantities of biological legacies can have negative impacts on many taxa. For example, salvage harvesting removes critical habitat for species, such as cavity-nesting mammals, [and] woodpeckers, … Large-scale salvage harvesting is often begun soon after a wildfire, when resource managers make decisions rapidly, with long lasting ecological consequences….

[7] 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.

Lindenmayer, Franklin et al (2004). Federal forest managers should follow the best available science and avoid reliance on outdated provisions of existing resource management plans.

On November 9, 2020, in the wake of the 2020 wildfires, a large group of conservation groups sent a letter to the Willamette NF (and other forests) highlighting the value of natural recovery processes after wildfires, the potential for significant environmental effects from post-fire management, and the need for careful management of fire-affected forests. This project should be carefully designed in light of these considerations:

> Owners of private lands currently have no incentive to manage for the values associated with ecologically complex forests, young or old. This leaves federal lands with the vital role of restoring mature & old-growth forest ecosystems as envisioned by the Northwest Forest Plan, the Spotted Owl Recovery Plan, and even BLM's Revised RMPs. Science tells us that the best path to restoring complex *old* forest is by conserving complex *young* forest, not through salvage and replanting. Importantly, the role of complex post-disturbance forest types is not well recognized in current management plans. It is crucial that your agencies act accordingly to close the gap between outdated management practices and current science.
>
> Advancing the goal of conserving ecologically complex forest requires a cautious approach to post-fire management. In recent decades, voluminous and compelling science has emerged showing that natural forest recovery after fire is more likely to maintain and develop long-lasting complex forest attributes, while salvage logging and traditional replanting schemes are certain to simplify forests and retard or prevent development of desired complex forests. See key science resources listed below, especially Swanson et al (2010), and Donato et al (2012).
>
> After a fire, the powerful dynamics of PNW forest ecosystems rapidly emerge. This ecosystem is dominated by large wood legacies carried over from the previous stand, plus a profusion of diverse plants that produce nuts, berries, nectar, pollen, and palatable foliage. These rich plant communities provide food and habitat for a diversity of foraging wildlife, and those wildlife support diverse predators - helping to support a robust forest food chain. The importance of the complex early seral stage has been vastly under-appreciated until recently, and your respective agencies' approaches to post-fire management need to reflect the best (and most recent) available science.
>
> As your agencies know well, fire as a disturbance provides the ideal conditions for this complex early seral ecosystem to emerge and flourish at least until conifer regeneration develops and dominates the site. In a forest experiencing natural recovery, the heterogeneous early seral ecosystem stage can persist for decades. However, this biodiverse condition can be brought to a screeching halt with salvage logging and conifer replanting that removes complex legacy structures, damages regenerating vegetation diversity, and accelerates conifer dominance. In fact, forests with structurally complex beginnings due to fire can develop desired old growth forest characteristics twice as fast as forests simplified by salvage logging and replanting.

The new science regarding post-fire forest management is fairly well represented in the 2011 Revised Recovery Plan for the Northern Spotted Owl which recognizes the natural role of fire in developing and maintaining complex habitat supporting spotted owls and diverse prey species. Relevant parts of the recovery plan state:

- "There is evidence of spotted owls occupying territories that have been burned by fires of all severities. The limited data on spotted owl use of burned areas seems to indicate that different fire severities may provide for different functions." (p III-31).
- "… [S]upport is lacking for the contention that reduction of fuels from post-fire harvest reduces the intensity of subsequent fires (McIver and Starr 2000), and planting of trees after post-fire harvest can have the opposite effect." (p III-47).
- "Detrimental ecological effects of post-fire timber harvest include: increased erosion and sedimentation, especially due to construction of new roads; damage to soils and nutrient-cycling processes due to compaction and displacement of soils; reduction in soil-nutrient levels; removal of snags and, in many cases, live trees (both of which are habitat for spotted owls and their prey); decreased regeneration of trees; shortening in duration of early-successional ecosystems; increased spread of weeds from vehicles; damage to recolonizing vegetation; reduction in hiding cover and downed woody material used by spotted owl prey; altered composition of plant species; increased short-term fire risk when harvest generated slash is not treated and medium-term fire risk due to creation of conifer plantations; reduction in shading; increase in soil and stream temperatures; and alterations of patterns of landscape heterogeneity …" (p III-48).
- "Consistent with restoration goals, post-fire management … should promote the development of habitat elements that support spotted owls and their prey, especially those which require the most time to develop or recover (e.g., large trees, snags, downed wood). Such management should include retention of large trees and defective trees, rehabilitation of roads and firelines, and planting of native species (Beschta et al. 2004, Hutto 2006, Peterson et al. 2009). We anticipate many cases where the best approach to retain these features involves few or no management activities. Forests affected by medium- and low-severity fires are still often used by spotted owls and should be managed accordingly. Many researchers supported the need to maintain habitat for spotted owl prey. For example, Lemkuhl et al. (2006) confirmed the importance of maintaining snags, downed wood, canopy cover, and mistletoe to support populations of spotted owl prey species. Gomez et al. (2005) noted the importance of fungal sporocarps which were positively associated with large, downed wood retained on site post-harvest. Carey et al. (1991) and Carey (1995) noted the importance of at least 10 to 15 percent cover of downed wood to benefit prey." (p III-49).

We would like to highlight the recovery plan's recommendation to conserve large trees and snags because they are "habitat elements that support spotted owls and their prey, especially those which require the most time to develop or recover..." Given the dire condition of spotted owl populations and the fact that spotted owl habitat is limiting, these post-fire recommendations should be followed on all federal lands. At a minimum they must be followed in all areas with a conservation emphasis, e.g., LSRs, critical habitat, riparian reserves, Administratively Withdrawn Areas, roadless areas, ACECs, etc.

A high percentage of the wildfires in Oregon this year were in drinking water source areas exhibiting steep mountainous terrain with significant potential for erosion. Watersheds affected by wildfire are already at increased risk of erosion and water quality degradation. Salvage logging (and associated road building) will reduce the sediment holding and soil building services of dead wood and makes a bad situation worse with regard to water quality, including drinking water, and other watershed values. See key science resources listed below, especially Emelko et al (2011).

Climate change is not only a primary driver of the increasing wildfires that threaten our communities and our forests, but climate change also adds significant uncertainty to our ability to conserve and restore old growth forests. After fire, agencies should manage to retain as much old forest structure and function as possible, this includes all large trees and snags. Converting burned forests to plantations lacking significant dead wood structure promotes a homogenous forest type that is already vastly over-represented in western Oregon, and one that poses a significant fire hazard for communities and remaining mature & old-growth forests. Complex early seral forests are also a hedge against climate uncertainty. Species diverse forests are expected to be better able to tolerate and adapt to climate extremes and disturbance, and better able to store carbon more securely. See key science resources listed below, especially IPCC AR5 2014, and Osuri et al (2020).

Given this science and evidence, our post-fire recommendations for public lands include:

- Focus on stabilizing watersheds, by mitigating damage caused by fire suppression, limiting erosion using native fibers and native plants, treating weeds, disconnecting roads from streams, and closing and storing unneeded roads.
- Focus danger tree felling on imminent hazards located within 150 feet of high use areas, such as developed sites, parking lots, and paved roads. Do not remove felled danger trees from reserves, including the full extent of riparian reserves. If danger trees are removed, use them for restoration of streams and old clearcuts that lack large wood.
- Avoid salvage logging. Salvage logging has potentially significant impacts on water quality, fish & wildlife habitat, and forest successional trajectories and salvage should not be approved using Categorical Exclusions from the National Environmental Policy Act. If salvage logging is deemed necessary, focus on partial removal of small trees from plantation stands less than 80 years old.

- Retain all large wood to mitigate the shortage of snag habitat and for long-term ecological benefits and carbon storage. Fires create an apparent abundance of snags, but that is misleading because snags are ephemeral; the abundance of snags is short-lived and hides the fact that after those snags fall down, there will be a long-term shortage of snags that lasts until large trees regrow. Salvage logging will exacerbate the expected shortage of snags.
- Avoid road construction, including temporary roads, as they have long-term impacts on watersheds, soil, and vegetation, can introduce invasive weeds, and fragment habitat. Watersheds are already damaged by hundreds of miles of hastily constructed firelines. New roads will make a bad situation worse.
- Don't cut any live, green trees, because all surviving trees are helping to rebuild the below-ground ecosystem and serve a valuable role as legacy structure and a recruitment pool for future large trees and snags. All trees presumed to be dying should be treated as live until they are dead, because we do not want to lose the ecological benefits of those trees that may unexpectedly survive.
- Avoid replanting because it will create hazardous fuel conditions and truncate development of a desired complex early seral forest. If replanting is deemed necessary, replant diverse species in patches, at low density, far from existing seed sources.
- Encourage fire-affected local communities to rebuild in a responsible way that is more resilient to wildfire, which is an unavoidable part of our climate future.

Clearing large areas along an extensive road system can have significant negative cumulative impacts such as: soil degradation from heavy equipment operating off roads and biomass removal, water quality degradation from heavy equipment affecting ditches that convey water to streams; cumulative loss of habitat features that are already rare such as snags, down wood, and diverse early seral vegetation; accelerated carbon emissions; increased fire hazard associated with logging slash and plantation fuel structure, increase fire ignition risks associated with roads; habitat fragmentation and loss of habitat connectivity caused by increasing the width of non-habitat associated with roads; etc. Each of these potentially significant effects deserve careful consideration in the EA or in an EIS.

The cumulative impacts of hazard tree removal must be carefully considered. There is a dense road network across the federal/non-federal landscape and if all the hazard trees are removed a certain distance from all those roads, then the area of the forest that can support large snags will be greatly diminished. The cumulative impacts analysis must also account for the lost potential for high quality large snag habitat caused by past regeneration harvest and salvage logging. The NEPA analysis should disclose how the forest can meet DecAID 50-80% tolerance objectives given the cumulative loss of large snag habitat.

The project does not propose to remove trees for timber production alone. Commercial sale of hazard trees should be limited, as there are economic conflicts of interest that could lead to ecologically important large trees being removed for the wrong reasons. The total value of large

trees for ecosystem services such as carbon storage and habitat vastly exceed the value of wood products.[8]

C. Consider Alternatives to Mitigate Effects and Resolve Trade-offs

The FS should develop and fully analyze multiple alternatives to consider different ways to resolve trade-offs and mitigate adverse effects of this project. In developing alternatives, the FS should consider the following:

- Strategically closing roads either temporarily or permanently to allow snag habitat (and other ecosystem services provided by dead wood) to persist. Strategic road closures should focus on areas within reserves and adjacent to large unroaded habitat blocks and should be informed by the minimum road system identified in roads analysis, the road density goals in the LRMP.
- Where roads and culverts have become inaccessible, the FS should consider using explosives to daylight culverts and let snags persist and allow roads to close naturally.
- Limiting danger tree removal to within 100 feet of roads.
- Limiting treatments to high use roads, such as paved roads and 2-digit roads, and roads that lead to key recreation sites. The agency should focus on roads that are heavily used by the public and workers. There is a trade-off between safety and habitat, and the agency should conserve defective trees and snag habitat in areas that receive little public use.
- High cutting snags to reduce the hazard and retain some (short) snag habitat. LSR standards & guidelines for road maintenance require the following: "Leaving material on site should be considered if available coarse woody debris is inadequate. Topping trees should be considered as an alternative to felling."
- Retaining danger trees as down wood where possible. The agency should fell trees where absolutely necessary, but wherever possible leave the trees on-site to provide down wood habitat. When tree removal is necessary, use the wood to restore stream habitat or to add down wood to previously clearcut plantations where down wood habitat is severely lacking.
- Retaining all danger trees as down wood in all reserves, roadless areas, and land allocations devoted to wildlife.
- Explicitly increasing risk-tolerance in order to mitigate the adverse effects of danger tree removal and to retain more trees in sensitive areas, such as unroaded areas, riparian areas, and mature & old-growth stands and conservation areas.
- Limiting removal to imminent danger of falling in order to retain snag habitat longer.
- Retaining all green trees so they can help kick-start the recovery of the below-ground ecosystem.
- Prohibiting use of heavy equipment off-road to protect soil and water quality and vegetation diversity.
- Retaining dead wood to help support populations of spotted owl prey.

[8] Bradbury, R.B., Butchart, S.H.M., Fisher, B. et al. The economic consequences of conserving or restoring sites for nature. Nat Sustain (2021). https://doi.org/10.1038/s41893-021-00692-9. https://rdcu.be/cgpdK

- Developing alternatives to meet all ACS objectives and watershed analysis recommendations, and LSR assessment recommendations, and roads analysis recommendations.

There are multiple options for managing safety: (a) manage the physical feature presenting the hazard, or (b) manage public use so that the public is less likely to be subject to the physical hazard. We strongly support retention of large snags while educating the public and managing public use to keep the public out of harm's way as much as possible. Truly hazardous trees (i.e., imminent risk of falling in very high use areas) may need to be felled (often leaving a high stump for wildlife), but the boles of such trees should generally be left to provide for wildlife and soil needs.

IV. Impacts to Imperiled Species and Habitat

The scoping proposal fails to address potential impacts to imperiled species in the project area. The FS must take a hard look at impacts to fish, wildlife, and habitat that will stem from hazard tree removal in the EA or in an EIS.

A. Consultation with FWS and NMFS Required

This project is likely to adversely affect threatened spotted owls and ESA-listed salmonids and may adversely modify critical habitat. The Forest Service must therefore initiate Endangered Species Act consultation with U.S. Fish and Wildlife Service and National Marine Fisheries Service.

B. Retain Wood to Support Spotted Owl Prey

The project area covers large swaths of spotted owl habitat. According to the Forest Service's Burned Area Report, 61 owl territories and thousands of acres of designated Critical Habitat were affected by the Cedar Creek Fire.[9]

We encourage the FS to consider alternatives that retain all green trees (to help feed the below ground ecosystem) and retain dead wood rather than removing it. This approach is especially appropriate in all reserves and other land allocations devoted to wildlife, as well as in critical habitat for the spotted owl. Science shows a strong association between abundant dead wood and spotted owl prey.

- "Small logs provide escape cover or shelter for small species. … Tallmon and Mills (1994) have shown that red-backed voles, a primary prey species for the spotted owl, are highly associated with large down material in more advanced decay stages. Truffles, a

[9] USDA Forest Service, Burned Area Emergency Response Report, October 17, 2022, https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1074776.pdf, at 17.

dietary staple of the northern flying squirrel, have also been loosely associated with down material."[10]

- "Several small mammals, such as the northern flying squirrel form the prey base for the Endangered Species Act (ESA) listed spotted owl and are among the species associated with abundant large dead standing and down wood. This presumably, is why spotted owls prefer to forage in stands with abundant standing and fallen dead wood (Table 2, North et al. 1999). The fruiting bodies of hypogeous fungi are a food source of northern flying squirrels and are also associated with down logs, suggesting that there are complex, indirect paths through which dead wood supports spotted owls (Amaranthus et al. 1994, Carey 2000)."[11]
- North et al. (1999) noted in a study of foraging habitat selection by northern spotted owls, "In our study area, stands with high use by owls typically included many 'legacies' (large trees and snags) that survived a fire or windstorm that destroyed much of the previous stand. They found that "stands with 142 m^3/ha of intact snags and a high diversity of tree heights had medium or high foraging use by spotted owls. In these old-growth stands, biological legacies (e.g., large trees and snags) produced by past disturbance provide important forest structures associated with spotted owl foraging."[12]

The FS must consider all of the ways in which this particular project could harm threatened spotted owls by increasing forest fragmentation (including in reserves and critical habitat), increasing the extent of habitat inhospitable to spotted owls, converting complex forests into simplified forests, increasing fire hazard by increasing dense plantation fuel structure, reducing spotted owl roosting and foraging opportunities, reducing spotted owl prey populations, increasing spotted owl disturbance by logging activity, increasing adverse competitive interactions with barred owls, making it harder for spotted owls to persist and move safely across the landscape.

The proposed action document does not address the need to maintain snag habitat. Removing large numbers of danger trees along a dense road network will make a bad situation worse for snag habitat, and the FS should minimize tree removal to mitigate this effect. It may seem counter-intuitive, but one of the most significant and lasting effects of stand replacing disturbance such as fire, wind, or regeneration logging is to bring the process of snag recruitment to a virtual standstill for many decades. Even if snags are not removed by the disturbance, snags created by the disturbance will fall down over time and few if any snags are created. After those snags fall down, the snag population remains low because the pool of green trees available for snag recruitment is greatly reduced. This results in a "snag gap" that has serious adverse

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[10] Gregg, M. 2013. Wildlife Report for Management Indicator Species, Species of Concern from the Northwest Forest Plan, and Landbirds - Pole Creek Fire Timber Salvage. http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/94141_FSPLT3_1451590.pdf

[11] Thomas Spies, Michael Pollock, Gordon Reeves, and Tim Beechie 2013. Effects of Riparian Thinning on Wood Recruitment: A Scientific Synthesis - Science Review Team Wood Recruitment Subgroup. Jan 28, 2013, p 36. http://www.mediate.com/DSConsulting/docs/FINAL%20wood%20recruitment%20document.pdf

[12] North, Franklin, Carey, Forsman, Hamer. 1999. Forest Stand Structure of the Northern Spotted Owl's Foraging Habitat. For. Sci. 45(4):520-527.

consequences for habitat and many other ecological processes. The apparent abundance of large snags after a stand replacing disturbance masks a severe shortage of large snags down the road.

C. Minimize Effects on Riparian Reserves and Aquatic Resources

The proposed action document indicates that logging will occur riparian reserves, which means that the FS must carefully weigh and balance competing goals such as safety and aquatic/riparian conservation. The EA/EIS should specify which roads/what amount of acreage in riparian reserves would be impacted.

Riparian reserves were established to protect and restore water quality, aquatic organisms, and riparian areas. Aquatic Conservation Strategy (ACS) standards and guidelines RF-3 requires the Forest Service to:

> "Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by: … closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs."

This requires a careful analysis of each road segment, evaluating whether it conflicts with ACS objectives, and determining if it would be appropriate to close such roads (if necessary, by letting the danger trees remain and eventually fall on the road). If culverts pose an unacceptable risk, they can be opened with explosives. It is objectively unnecessary to fell danger trees just to allow access by heavy equipment.

Several ACS objectives require special attention:

- "Maintain and restore spatial and temporal connectivity within and between watersheds." Roads in riparian reserves are an impediment to connectivity within watersheds. Roads in riparian reserves are prime candidates for closure to meet ACS objectives.
- "Maintain and restore the sediment regime under which aquatic ecosystems evolved." This project will definitely increase sediment production above natural levels.
- "Maintain and restore water quality…" Increases sediment delivery and increased water temperatures to streams will violate this objective.
- "Maintain and restore in-stream flows…" Removing danger trees and establishing thirsty young plantations will deplete summer streamflow in violation of this ACS objective.
- "Maintain and restore the species composition and structural diversity of plant communities… supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability." Salvage logging and replanting in riparian reserves will violate this objective.
- "Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species." Harm to spotted owls and listed fish violate this objective.

Logging (including salvage logging) is generally not allowed in riparian reserves. TM-1 says, "Salvage trees only when watershed analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected." Due to the fact that stand replacing fire brings recruitment of large wood to a virtual standstill until the stands regrow large trees, it is impossible to make a finding that future large wood supplies are met. Salvaging large danger trees will exacerbate the expected future shortage of large wood. In Congressional testimony in July 2004, Jerry Franklin said:

> "It is sometimes argued that following a stand-replacement fire in an old-growth forest that snags and logs are present in 'excess' of the needs of the site, in terms of ecosystem recovery. In fact, the large pulse of dead wood created by the disturbance is the only significant input of woody debris that the site is going to get for the next 50 to 150 years—the ecosystem has to 'live' off of this woody debris until the forest matures to the point where it has again produced the large trees that can become the source for new snags and logs (Maser et al. 1988)."[13]

Road/stream crossings are an area if particular concern. This is where a lot of sediment tends to be delivered to streams. All road/stream crossings are also riparian reserves, so they need to be managed primarily to meet riparian objectives.

Roads that run parallel to streams within the riparian reserves are another major concern because such roads tend to intercept the flow of water, spawning substrate, and wood that should be delivered to streams. The ACS has detailed standards for existing roads in riparian reserves:

> RF-2. For each existing or planned road, meet Aquatic Conservation Strategy objectives by:
> a. minimizing road and landing locations in Riparian Reserves.
> b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
> c. preparing road design criteria, elements, and standards that govern construction and reconstruction.
> d. preparing operation and maintenance criteria that govern road operation, maintenance, and management.
> e. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
> f. restricting sidecasting as necessary to prevent the introduction of sediment to streams.
> g. avoiding wetlands entirely when constructing new roads.

The FS should not use riparian reserves for log landings, should prepare operation and maintenance criteria for each road, should avoid disruption of hydrologic and material flow paths, and should follow the appropriate recommendations in the applicable watershed analyses.

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[13] Dr. Jerry F. Franklin, Professor of Ecosystem Studies, College of Forest Resources, University of Washington. July 15, 2004. TESTIMONY FOR THE RECORD ON OVERSIGHT HEARING ON "RESTORING FORESTS AFTER CATASTROPHIC EVENTS" BY HOUSE COMMITTEE ON RESOURCES, SUBCOMMITTEE ON FOREST AND FOREST HEALTH. https://www.govinfo.gov/content/pkg/CHRG-108hhrg94996/html/CHRG-108hhrg94996.htm.

The project has the potential to significantly harm aquatic and riparian values by removing snags that help shade streams, increasing sediment production from heavy use of unpaved roads and off-road soil disturbance by heavy equipment (including steep slopes), increasing activity within riparian reserves and at road/stream crossings, by converting complex forests into simplified forests, by reducing the availability of dead wood to streams and riparian reserves, and by depleting summer stream flow by increasing the extent of dense conifer plantations. The FS analysis must carefully weigh and balance the need for safety and aquatic/riparian conservation.

The fire-impacted areas covered by this proposal contain complex areas of creeks, streams, and rivers with numerous roads weaving throughout. The FS must fully consider and mitigate the project impacts on the impacted watershed and applicable water quality protection standards as well as which ESA-listed fish or other aquatic species will be affected by the project in its site-specific analysis. The FS must carefully evaluate the effects and weigh the costs of roadside logging in relation to drinking water quality, quantity, and treatment.

D. Survey and Manage Species

The FS should conduct surveys for survey and manage species (including red tree voles, fungi, mollusk, lichen, bryophytes, etc.) that may be located within the activity areas and may be adversely affected by all the activities contemplated by this project. The fires did not render the habitat for these species unsuitable. They all evolved in an ecosystem where fire was a formative influence.

V. Conclusion

Each substantive issue discussed in these comments should be (i) incorporated into the purpose and need for the project, (ii) used to develop NEPA alternatives that balance tradeoffs in different ways, (iii) carefully analyzed and documented as part of the EA or an EIS, and (iv) considered for mitigation. Thank you for taking our input into consideration. Please feel free to reach out with any questions or to request copies of referenced documents.[14]

Sincerely,

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[14] Note: If any of these web links in this document are dead, they may be resurrected using the Wayback Machine at Archive.org: http://wayback.archive.org/web/. Referenced documents can be found at the following Dropbox link: https://www.dropbox.com/sh/ctippifimdczyk6/AACp2fJYnsIjRuyFh96ocie3a?dl=0.