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Soda Mountain Wilderness Council

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October 13, 2020

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Submitted via: Hand delivery to Ochoco National Forest Supervisor's Office, 3160 NE Third Street, Prineville, OR 97754
Submitted via email: SM.FS.ESCREENS21@usda.gov

Regional Forester Casamassa:

The following are the comments of the 25 organizations listed below on the Preliminary Environmental Assessment ("EA") for "Forest Management Direction for Large Diameter Trees in Eastern Oregon."[1] This is a proposed amendment to land management plans for the Deschutes, Fremont-Winema, Malheur, Ochoco, Umatilla, and Wallowa-Whitman National Forests that focuses solely on the 21-inch standard, one component of an integrated management direction that aims to maintain the abundance and distribution of large and old forest structure. If approved the amendment would change management direction on nearly 10 million acres of public lands.

Our organizations have a long history of participating in decisions concerning the management of Forest Service lands. We represent members who have deep relationships with the waters and forests located on Forest Service lands in the Eastern Cascade and Blue Mountains Ecoregions. Our members rely on these lands to provide our local communities and surrounding regions with clean and cold aquatic habitat, carbon storage, flood control, drinking water, and high quality wildlife habitat as well as opportunities for recreation and contemplation. We are deeply concerned that this proposed amendment threatens those values.

After a technical review of the preliminary EA by scientific and legal experts, we have concluded that the EA does not comply with the National Forest Management Act ("NFMA"), the National Environmental Policy Act ("NEPA") or their implementing regulations. This is a significant amendment under both NFMA and NEPA to six National Forests' land management plans. Therefore, analysis in an Environmental Impact Statement ("EIS") and a robust public engagement process, including scoping, is required. Scoping is an integral part of the NEPA process that was inexplicably ignored as the agency developed its action alternatives. The EA does not incorporate the best available science nor does it disclose scientific controversy.

On July 7, 2020, many of our organizations submitted a letter asking for the process to be suspended and that any change to the screens be comprehensive and analyzed through an EIS. We expressed our concerns that the amendment process is being driven by political and economic considerations, rather than by the best available science, and that it is going forward at

[1] We note that the covered area also includes the portion of the Umatilla National Forest in the State of Washington.

a time when public engagement is onerous due to the ongoing COVID-19 pandemic. Those concerns remain. Again, we ask that this planning process be withdrawn immediately. The agency should wait until after economic and health disruptions of the ongoing pandemic have subsided to ensure the public, scientific community, and other stakeholders are better positioned to participate before reinitiating the planning process. If the Eastside Screens are to be replaced, it must happen through a comprehensive ecosystem conservation strategy--as has been promised to stakeholders for almost 30 years. In order for such a strategy to succeed, it must be developed through a robust public engagement process and it must be informed by the best available science. This must include a science advisory panel with independent climate, ecosystem, hydrology, fish, botany and wildlife scientists. Only a comprehensive ecosystem conservation strategy that thoroughly addresses all ecosystem functions will be adequate to amend the Eastside Screens. Anything short of such a strategy will adversely impact ecosystem values, undermine public trust, and fall short of the agency's statutory duties.

It also came to our attention on October 12 that the comment submission portal and the project NEPA website were down for a significant period of time, rendering it difficult or impossible for the public to review the project documents and make timely comments. It is unclear how long these sites have been down. The undersigned reached out to Emily Platt, the project team leader but received no response. In order to comply with its duties under 36 C.F.R. § 219.4, the Forest Service must provide adequate opportunities for public participation in the NEPA process. These technical roadblocks in the final days before the close of the comment period materially prejudice the public's ability to participate and comment on this significant proposal. As such, **we respectfully request that the comment period be extended by 14 days from the time that functionality is restored to the project website and comment portal.**

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GENERAL COMMENTS

With this proposal, the Forest Service seeks to remove current restrictions on large tree logging across nearly 10 million acres and six national forests. This is, at the very least, a significant forest plan amendment under both NFMA and NEPA and must be analyzed in an EIS. The outcomes of this proposal are uncertain and will result in significant impacts to the integrity of the Blue Mountain and Eastern Cascade ecosystems. This is supported by the attached expert reports and letters authored by Dr. Dominick DellaSala, Dr. William Baker, and Dr. Chad Hanson (Exhibits 1 and 2) which are hereby expressly incorporated into these comments and made a part of them.

The amendment is also inconsistent with the 2012 planning rule. It fails to consider a reasonable range of alternatives; to disclose and assess the direct, indirect and cumulative effects of the amendment; and to consider best available science as required under NEPA. These are just some of the many issues we raise below. Because this amendment violates both NFMA and NEPA, we ask the Forest Service to withdraw this EA and keep the 21-Inch standard in place until a comprehensive ecosystem conservation strategy is adopted for these eastside forests.

I. The 21-Inch Standard Must Remain in Place until a Comprehensive Ecosystem Conservation Strategy is Adopted

The Eastside Screens were adopted in the early 1990s in response to concerns about over-logging on Forest Service lands east of the Cascade Mountain Crest in Oregon and Washington. Congress, the Forest Service, and conservation partners recognized unchecked logging across the region had created an ecological crisis. The landscape was fragmented by roads, riparian areas were severely degraded, and so few ancient forests and large trees were left on the landscape that the viability of old-growth dependent species was at risk.

In 1993, Congress convened the Eastside Forests Scientific Society Panel to examine the health of old-growth forests east of the Cascade Crest in Oregon and Washington. In "A Report to the Congress and President of the United States," the Panel concluded that "all remaining LS/OG [late-successional/old-growth] blocks and fragments are ecologically significant." The Panel recommended that the federal government protect old growth stands; cutting no tree over 150 years or with a diameter at breast height ("dbh") of 20 inches or greater with no distinction between live or dead trees; no construction of roads within roadless areas 1000 acres or greater, or within smaller, but biologically significant, roadless areas; no timber harvest in riparian areas; designate Aquatic Diversity Areas and not log, build new roads, or mine within these areas; restriction of timber harvest in areas prone to landslide or erosion; limiting post-fire or "salvage" logging; and developing a comprehensive monitoring program.

In February of 1994, in order to accomplish their long-term planning goals, the Forest Service and the Bureau of Land Management proposed a strategy for the development of coordinated ecosystem management in public lands east of the Cascade Mountains in the States of Oregon and Washington. This coordinated ecosystem planning strategy became known as the Interior Columbia Basin Ecosystem Management Project ("ICBEMP"). *Western Land Exchange Proj. v. Dombeck,* 47 F. Supp.2d 1196, 1198 (D. Or. 1999).

Between 1993 and 1995, the Forest Service developed interim measures to preserve late-successional/old-growth forests pending completion of the Columbia Basin EISs.[2] The first of these measures, was the Revised Interim Standards for Timber Sales on Eastside Forests (Regional Forester Amendment #2), commonly referred to as the Eastside Screens, which consists of a series of procedures for screening proposed timber sales. *Prairie Wood Prods. v. Glickman,* 971 F. Supp. 457, 461 (D. Or. 1997). The Eastside Screens was originally announced in a memorandum issued by the Regional Forester on August 18, 1993. On May 20, 1995 the Forest Service issued a final EA and FONSI.

The Eastside Screens initially contained three screening procedures: riparian, ecosystem, and wildlife. *Id*. While the recommendations of the Eastside Forests Scientific Society Panel helped inform the screens, the Forest Service incorporated just a portion of their recommendations, and actually weakened many provisions, such as: raising the dbh limit to 21 inches or greater, limiting the application to live trees only, and rather than outright protection of old growth stands, they generally allowed for activities to occur within old growth stands provided 'no net loss' of old growth (late old structure) resulted. Outside of late old structure, the Screens directed forests to be managed to maintain or enhance old growth components. Although not as widely protective of old growth stands as the Eastside Scientific Society Panel recommendations, the Screens did incorporate measures that allowed for connectivity between old growth patches and protection of goshawk habitat.

Among other things, the wildlife screen prohibits 1) logging "live trees" 21-inches or greater (dbh), and 2) timber sale harvest activities within LOS stages that are below the historical range of variation or "HRV." The adoption of the Eastside Screens amended all land and resource management plans ("LRMPs" or Forest Plans) for National Forests east of the Cascade Crest.[3]

The Screens were intended to be in place until the completion of the ICBEMP. Although volumes of data had been collected for the ICBEMP, the project was never officially completed and the Screens remain in place today, several years after their anticipated expiration. By the time ICBEMP was disbanded, some forests on the eastside had initiated second generation forest planning. The Forest Service intended to replace the Screens with guidance in these new forest plans. Like the ICBEMP process, that didn't work out as intended. The Blue Mountain Forest Plan Revision final EIS and draft ROD—covering the Wallowa-Whitman, Malheur and Umatilla National Forests—were pulled in 2019 after an almost 20-year planning process. The three other forests in the planning area have not initiated plan revision processes. As a result, the Forest Service has initiated a narrow planning process aimed solely at amending the 21-inch standard for the six national forests on Oregon's eastside. The current amendment process is not the

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[2] 62 Fed.Reg. 2176 (Jan. 15, 1997). The Lower Columbia River Basin EIS would address Oregon and Washington, and the Upper Columbia River Basin would cover Idaho and parts of Montana, Utah, Nevada, and Wyoming. Old-growth forests west of the Cascade crest are managed under the Northwest Forest Plan.

[3] Document Title: Decision Notice for the Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales, USDA Forest Service, Region 6, Colville, Deschutes, Fremont, Malheur, Ochoco, Okanogan, Umatilla, Wallowa-Whitman, and Winema National Forests in Oregon and Washington, May 20, 1994.

holistic approach promised when the screens were put in place. It proposes to amend only one portion of the wildlife screen: the prohibition on logging large trees.

The recommendations made by the Eastside Forests Scientific Society Panel are amazingly prescient and are still valid today—if anything, there is now even more scientific justification for their recommendations made 27 years ago. And the reasons to protect and restore our National Forests are ever more urgent in the face of a changing climate. National Forests are uniquely positioned to help our communities adapt to and mitigate against climate chaos. Any comprehensive ecosystem strategy must recognize the role forests play in carbon sequestration and that forest degradation due to logging practices is one of the largest contributors to atmospheric carbon emissions.

In order to be successful at actually protecting old growth in Oregon's eastside forests, a sound old growth protection proposal should include, at a minimum, the following key factors:

1. Protect all larger trees and older trees, regardless of whether they are dead or alive, with forest plan standards. In many ways, large and older dead trees are more important for old-growth-dependent species than live trees. If we reduce the number of live large and old trees across the landscape, we will not be able to recruit large standing dead structure.

2. All roadless areas over 1000 acres and smaller roadless areas of ecological significance must be protected. These are the areas that have seen the least impact from active management and they represent our last, best remaining intact native forests. Any distinction between "inventoried" and "uninventoried" roadless areas is an artificial distinction that ignores the best available science.

3. Comprehensive aquatic protections. Our riparian areas provide many values including cycling of nutrients, groundwater recharge, and wildlife connectivity corridors. These areas have also been severely degraded. We can no longer afford to impact stream temperatures, sedimentation, and habitat.

4. Stand-level protections. Old growth is not defined solely by old trees – that is just one factor. As much as anything, an old growth stand is important for the quality and health of its soil, in which a veritable universe of organisms thrive. Any logging activity in these stands – even if just the logging of younger trees – will place the integrity of the old growth stands at risk.

5. Recognition that all eastside forests are not "dry" forests. Much of the forests on the eastside are mixed moist conifer forests. These forests have very different disturbance regimes than dry forests and are generally more intact and resilient than dry forest types. Attempts to manage mixed and moist forests the same as dry forests--as proposed by all alternatives in the draft EA--would be disastrous to both the forests themselves and the species that rely on them.

6. Restrict livestock grazing in both upland and riparian areas to restore the natural ecological function, protect and restore water quality and quantity, and provide forage to native wildlife.

7. Fully decommission unnecessary roads for the benefit of native wildlife and water quality and make necessary roads less damaging to wildlife and watersheds.

8. Revise fire management policies to allow beneficial managed fire in the backcountry forest landscape and prescribed fire in frequent fire, dry forest types before (but not during spring greenup and nesting seasons), during, and after the fire season.

9. Focus on creating local jobs through a full spectrum of ecological restoration projects and road habilitation projects rather than subsidizing a failed economic model of commercial forestry.

II. The Forest Plans Amendment does not Comply with the National Forest Management Act, the 2012 Planning Rule as Amended or Forest Service Directives

This is a significant amendment under NFMA that requires an EIS and additional opportunities for public participation. It proposes to manage large trees without using mandatory constraints and thus fails to "insure" protection for wildlife habitat and other ecosystem values. Finally, the failure to identify potential species of conservation concern or determine whether additional species specific plan components are needed; identify and address related plan components; document a comprehensive monitoring strategy; and to include a rational adaptive management approach violates the 2012 planning rule.

A. The Amendment Does not "insure" Protection for Wildlife Habitat and Other Ecosystem Values

NFMA requires the incorporation of "standards and guidelines" into forest plans in order to "insure" that, during management activities, protection is provided for various resources such as wildlife diversity, soils, watershed conditions, and fish habitat. 16 U.S.C. §1604. Standards are mandatory constraints on project activities while guidelines, as historically applied by the Forest Service and interpreted by courts, are discretionary restrictions on project activities. Webster defines "insure" as "to make certain especially by taking necessary measures and precautions." Since guidelines have not been interpreted as mandatory, standards are the only planning component that can adequately insure the protection mandated in NFMA. Other planning components such as desired conditions, goals, objectives and guidelines are important, but they cannot insure such protection because of the discretion they afford in implementation. The 2012 planning rule regulations, as amended, affirm this requirement.

Not only are standards required by NFMA and its implementing regulations, they are good practice as they promote accountability and planning efficiencies. Standards provide certainty about future management action. Without adequate standards, interpretation of the legal requirements and the forest plans' desired conditions, goals, and objectives are left up to the line officers. This lack of certainty places line officers in the position of having to make politically

and legally contentious decisions without an adequate framework. Clear guidance, direction, and requirements will help these public servants meet legal requirements and implement best available science as they manage National Forests and provide the public with assurance that forest management will not cross certain unacceptable thresholds. Minimum requirements and actions are not inconsistent with the discretion afforded in NFMA and the 1982 regulations; they merely place floors and sideboards on that discretion and channel it in the right direction. In addition, standards facilitate planning efficiencies at the project level by eliminating the need for planning teams to negotiate and write project-specific standards for each management action; a time consuming and inefficient use of limited Forest Service resources. *See* Nie et al, 2014.

Standards also lead to efficiencies in the context of the Endangered Species Act ("ESA"). One of the five factors considered by the wildlife regulatory agencies in making listing decisions is "the inadequacy of existing regulatory mechanism[s]." 16 U.S.C. § 1533. Voluntary and unenforceable plan components such as desired conditions, goals, objectives, and guidelines are generally not considered a sufficient regulatory mechanism. Standards have been used to justify not listing a species while lack of standards has led to listing decisions. For example, the U.S. Fish and Wildlife Service did not list the Queen Charlotte goshawk in southeast Alaska due to the standards contained in the Tongass National Forest Plan. Conversely, the 2010 decision to list the greater sage grouse as "warranted but precluded" was influenced by the lack of protection in National Forest plans with sagebrush habitat significant to the species.

The 21-inch standard was intended to maintain the abundance and distribution of large and old forest structure for large tree dependent wildlife species. Any management direction that replaces it must insure large structure will be maintained to the same degree. This cannot be achieved without standards. Standards will also allow for management efficiencies and reduce controversy around timber sales freeing up agency resources to do needed restoration across the planning area.

B. The Forest Plans Amendment Constitutes a Significant Amendment Under NFMA that Requires an EIS and Additional Procedures

Under the NFMA the Forest Service can make non-significant amendments to a forest plan in "any manner whatsoever after final adoption after the public notice." 16 U.S.C. §§ 1604(d), (f)(4). However, any amendment to a forest plan that results in a "significant change" requires compliance with heightened procedural conditions and additional public participation. *Id*.

1. The Amendment is Significant Because it Will Affect Multiple-Use Goods and Services and Will Negatively Affect the Entire Land Planning Area

The Forest Service Manual provides guidance for determining when a change is considered "significant" under NFMA. FSM 1926.52 (2015).[4] The Manual states that an amendment to a forest plan is significant if it would "significantly alter the long-term relationship between levels

[4] It is unclear whether this section of the Manual is still in force, but the Forest Service has not provided any more recent direction on the determination of "changes to the land management plan that are significant." FSM 1926.52 (2015).

of multiple-use goods and services [or]… have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area." FSM 1926.52 (2015). Further, the Responsible Official is required to determine "whether the change is significant or not significant in a decision document." FSM 1926.5. Nowhere in the EA does the Forest Service discuss or analyze whether this amendment is a significant change under NFMA. *See* 16 U.S.C. §§ 1604(d), (f)(4).

This proposed amendment is a significant change under NFMA that requires additional procedures because it will alter the long-term relationship between levels of multiple-use goods and services and will have an important effect throughout the entire land management planning area. *See* FSM 1926.52, 36 C.F.R. § 219.13(b)(3). The proposed amendment will clearly have an important and deleterious effect throughout the entire land management planning area, because it is intended to remove protections found in forest plan standards for trees 21-inch dbh and greater, not only across an entire forest, but across six national forests, at a total of nearly 10 million acres. If the Forest Service does not consider an amendment of this scope to be considered significant, then what is?

In terms of the long-term relationship between levels of multiple-use goods and services the EA largely views the forests simply as a source of revenue rather than a more complex, interconnected ecosystem. Instead of allowing the forest to continue its recovery from past, extensive logging, the Forest Service is focused again on logging large trees. The real value of large trees is not for commercial logging but rather for the wildlife that relies on them. There are many birds that rely on large trees associated with mature forests, old growth forests, mixed-conifer forests, and/or Grand fir or Douglas fir. *See* USGS North American Breeding Bird Survey Results and Analysis 1966-2017, www.mbr-pwrc.usgs.gov/ (last visited Oct. 1, 2020). The EA does not fully contemplate the effects this amendment will have on those species. Appendix D of the EA simply lists the species that may be affected along with little to no analysis. For more on the effects of this amendment on wildlife, see Sections III. C. 2. d. "An EIS is Required Because the Proposed Alternative has Significant Impacts on Carbon Values, Snag Habitat, and Aquatic Habitats and III. G. "The Forest Service Effects Analysis is Flawed and Failed to Disclose and Assess the Direct, Indirect and Cumulative Effects of the Amendment" of these comments below.

The Forest Service Manual provides further guidance regarding how to approach adopting a significant change:

> In developing and obtaining approval of the amendment for significant change to the land management plan, follow the same procedures as are required for developing and approving the land management plan (see secs. 219.10(f) and 219.12 of the planning regulations in effect before November 9, 2000 (36 CFR parts 200 to 299, revised as of July 1, 2000)).

FSM 1926.52. The Manual incorporates 36 C.F.R § 219(f) (2000), which requires that "[b]ased on an analysis of the objectives, guidelines, and other contents of the forest plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan[,]" and 36 C.F.R § 219.12 (2000) which requires that "[t]he environmental impact

statement for each forest plan shall be prepared according to NEPA procedures." Taken together, these regulations clearly require that an EIS be completed for significant amendments to forest plans, because they are to follow the same procedures required for approving new forest plans. Additionally, in *League of Wilderness Defs. v. Connaughton*, the court stated that "any Forest Plan amendment that results in a "significant change" requires the Forest Service to prepare an EIS; non-significant amendments only require the simpler notice and comment process." No. 3:12-CV-02271-HZ, 2014 WL 6977611, at *27 (D. Or. Dec. 9, 2014).

The Ninth Circuit discussed forest plan amendment significance in *Native Ecosystems Council v. Dombeck*, 304 F.3d 866, 898 (9th Cir. 2002). In that case, the Forest Service created a site-specific amendment that they claimed was not significant to the forest plan's road density requirement. *Id*. at 898. The court held that the Forest Service's amendment to the forest plan was not significant because the amendment did "not alter multiple-use goals or objectives for long term land and resource management, nor significantly change the planned outputs for the forest." *Id*. at 900.

Unlike the situation in *Native Ecosystems Council v. Dombeck*, the proposed amendment to the Eastside Screens in six forest-wide management plans *does* alter long-term goals and objectives. The Eastside Screens were implemented to aid the Forest Service in meeting multiple objectives, such as retaining old forest structure, protecting wildlife, and improving fish viability. *See* discussion above in "I. The 21-Inch Standard Must Remain in Place until a Comprehensive Ecosystem Conservation Strategy is Adopted" regarding the history of the Eastside Screens. The proposed amendment, however, favors only one objective: timber production. The amendment here contradicts the long-term goals of the LRMPs' adoption of the Eastside Screens. Both the original 1994 Decision Notice and the current 2020 EA explain that there is a "…need to maintain the abundance and distribution of old forest structure." Draft EA at 8; U.S. Forest Service, Decision Notice for the Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales 2 (May 20, 1994). The EA states that "[o]ld trees play a valuable role in forests by maintaining a legacy of species genetics and providing ecosystem value through long-lived structure and demonstrated resistance to disturbance." Draft EA at 20. This acknowledgement demonstrates the importance of retaining the late and old structure ("LOS") and large trees that still exist because without these structures, the ecological integrity of the entire ecosystem is degraded. The Eastside Screens have been in place for 25 years, but in the life of a tree this is not a substantial amount of time. Trees across the landscape have had only this limited period to grow larger and begin to ameliorate the original deficit by growing into LOS and large trees. Allowing logging of these large trees to occur across six national forests fundamentally contradicts the original Eastside Screens EA's long-term goals and objectives and will have significant, long-term impacts across Eastern Oregon forests. (*See also* Section III. E "The EA does not Consider a Reasonable Range of Alternatives as Required by NEPA").

Additionally, the amendment at issue in *Native Ecosystems Council* involved temporary negative impacts because, after logging, the Forest Service would close the roads at issue. Here, however, the Forest Service is making permanent changes with long-term ramifications. Once logging of trees 21 inches dbh and larger and logging in LOS occurs, those important trees will be gone forever. The permanence of the actions the proposal will authorize makes them much more

significant. This difference, an amendment authorizing the extensive logging of large trees, versus the 1994 Screens amendments, which prevented the logging of large trees, also explains why the 1994 amendments were not a significant change, while this proposed amendment clearly is.

Although NEPA and NFMA use the term "significant" in different contexts, the Forest Service planning rules have stated that if a proposal is significant enough under NEPA to require an EIS, it is also considered a "significant change for the purposes of NFMA." 36 C.F.R. § 219.13(b)(3) (2012). For all the foregoing reasons, as well as the in-depth discussion of NEPA significance elsewhere in these comments, the proposed amendment will significantly affect the environment and thus requires an EIS under NEPA. As a significant action under NEPA, the Forest Service must prepare an EIS and thus the proposed amendment is, in turn, considered a significant change under NFMA.

2. The Amendment Requires Additional Procedures Both Under NFMA and NEPA

When an amendment results in "significant change" under NFMA, additional procedural requirements are triggered. The 2015 Forest Service Manual articulates that for significant changes, the Forest Service shall follow the same procedure as required for the development and approval of a forest plan. FSM 1926.52 (2015). This includes making all decisions consistent with the multiple uses of the Forest Service's renewable resources, in accordance with the Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. §§ 528–531), as well as the concomitant NEPA requirement for an EIS that accompanies the development and approval of forest plans. 16 U.S.C. §§ 1604(e) and (f); 36 C.F.R. § 219.13(b)(3).

In addition to NEPA public participation requirements, NFMA itself requires public involvement in any amendment process. Section 16 U.S.C. § 1604(d) mandates that there be sufficient public participation in the "development, review, and revision" of land management plans including, but not limited to, making the "plans or revisions available to the public at convenient locations in the vicinity of the affected unit for a period at least three months before final adoption" and during that time the official "shall publicize and hold public meetings." 16 U.S.C. § 1604(d). The Forest Service is also required to hold a 90-day comment period for the proposed plan and draft EIS. 36 C.F.R. § 219.13(b)(3) (2017).

As discussed above, the proposed amendment to the Eastside Screens is a significant change under NFMA because it alters the long-term goals and objectives of the impacted forest plans, and will have important and negative impacts across the majority of six national forests. Such a significant change demands an EIS under both NEPA and NFMA to assure that impacts are properly and thoroughly addressed. The Forest Service is in clear violation of NFMA by preparing only a cursory EA for a significant amendment to multiple forest plans, which by law demands an EIS. The Forest Service must restart its NEPA process for this proposed change by initiating a scoping process for an EIS, and complying with all heightened procedural requirements mandated by NFMA.

C. The Amendment is Inconsistent With the 2012 Planning Rule

The Forest Service 2012 planning rule requires maintaining and restoring "ecological integrity" or the composition, structure, function, and connectivity of aquatic and terrestrial ecosystems §219.8. It directs responsible officials to develop plan components to protect these ecosystem components and individual species as needed.

"The 2012 rule does not give a responsible official the discretion to amend a plan in a manner contrary to the 2012 rule by selectively applying or avoiding altogether substantive requirements...that are directly related to the changes being proposed." 81 FR 90726, Dec. 15, 2016. This includes requirements for standards and guidelines that: maintain or restore the ecological conditions necessary to contribute to the recovery of listed species, conserve proposed and candidate species and maintain a viable population of each species of conservation concern[5] ("SCC"), even if SCC have not yet been identified. 36 C.F.R. § 219.9(b)(1).

Further, the 2012 rule identifies monitoring is a key component. Without a well-designed monitoring program, the effectiveness of the plan in meeting its objectives remains unknown. Monitoring to address species conservation under the 2012 planning rule is part of a larger monitoring program, which informs resource management in the plan area and improves the integration and scalability of monitoring information. FSH 1909.12, ch 30, 30.2.

Here the EA failed to analyze if the proposed amendment provides ecological conditions necessary to provide for viable populations of SCC. As discussed below LOS is a key component of the ecological integrity of Oregon's eastside forests and provides essential habitat for many species within the planning area. Further, it lacks a comprehensive monitoring plan as required by the rule.

1. Failure to Identify Potential Species of Conservation Concern or Determine Whether Additional Species Specific Plan Components are Needed

No SCC have been identified for the plan area. All forests within the plan area still have first generation forest plans in place and have not revised them under the 2012 planning rule (as amended). The EA does not discuss SCC, i.e. whether best available science indicates substantial concern for non-listed species capability to persist over the long-term in the plan area.

In fact, the only time SCC is mentioned in the EA or associated draft wildlife specialist report is when the EA acknowledges that the 2012 planning rule requires the responsible office to determine whether the proposed plan amendment provides the ecological conditions necessary to:

> contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each SCC within the

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[5] A species of conservation concern is defined as a species, other than federally recognized threatened, endangered, proposed, or candidate species (TES), that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area. 36 C.F.R. § 219.9(c).

> plan area. If the responsible official determines that the plan components are insufficient to provide such ecological conditions, ***then additional, species specific plan components, including standards or guidelines***, must be included in the plan to provide such ecological conditions in the plan area.

EA at 14 citing 36 C.F.R. § 219.9(b)(1) (emphasis added). The Forest Service cannot shirk this responsibility because SCC have not yet been identified for the plan area. In fact, the 2016 amendment to the 2012 planning rule explicitly states that:

> If [SCC] have not yet been identified for a plan area and scoping or NEPA analysis for a proposed amendment reveals substantial adverse impacts to a specific species, or the proposal would substantially lessen protections for a specific species, the responsible official must determine whether that species is a potential SCC. If so, the responsible official must apply the requirements of the 2012 Planning rule with respect to that species as if it were an SCC.

81 FR 90726, Dec. 15, 2016. The EA fails to comply with this requirement as it contains no analysis as to whether the amendment provides ecological conditions necessary to contribute to the recovery of TES species (including, but not limited to lynx, gray wolf, and bull trout), conserve candidate and proposed species or maintain viable populations of the great grey owl, northern goshawk, white headed woodpecker, fisher, marten and other declining species all are present within the planning area.

Further, in addition to providing general opportunities for public participation in the planning phase, the public participation strategy should identify specific elements for which public participation opportunities are required, including SCC (FSH 1909.12, ch. 20, secs. 21.22 and 23.13c). Here, none of the opportunities for public participation included a discussion of SCC.

2. Failure to Identify and Address Related Plan Components

The EA and accompanying notice in the Federal Register failed to identify the plan components that are directly related to the amendment, as required by 36 C.F.R. § 219.13(b)(5). The EA and federal register notice cite only three plan components that are related: system drivers, wildland fire, and social, cultural and economic conditions. The Forest Service overlooks components including but not limited to the ecological integrity and interdependence of terrestrial and aquatic ecosystems, contributions of the plan area (and particularly the large trees in the plan area) to ecological conditions within the broader landscape influenced by the plan area; conditions in the broader landscape that may influence the sustainability of resources and ecosystems within the plan area; plan components relating to air, soil, water and riparian areas. *See* 36 C.F.R. §§ 219.8 - 219.11. These components should provide the lens through which the Forest Service analyzes the proposed action and they should inform and frame the environmental review and EA itself. By failing to include and recognize the relevance and relatedness of the other components, the Forest Service incorrectly narrowed the frame of its environmental review and NFMA consistency determination.

Further, a change as major and far-reaching as the removal of protections for large trees over 10 million acres is functionally a plan revision, not a plan amendment. Thus it should be subject to the provisions of the 2012 planning rule that govern plan revisions, including but not limited to 36.C.F.R. §§ 219.5 and 219.7. As discussed elsewhere herein, the Eastside Screens were a comprehensive management strategy and plan for a large planning area, of which the 21-inch standard was an integral piece. The removal of the 21-inch standard is a revision to the entire plan requiring additional assessment, analysis and review as required by the 2012 planning rule.

3. Failure to Document a Comprehensive Monitoring Strategy

Under the 2012 planning rule national forest planning is clearly intended to be adaptive. *See* 36 C.F.R. § 219.2(b). Monitoring is a key component of this adaptive management process. Without it, changing conditions would not be identified and the effectiveness of plan components to mitigate impacts from plan implementation could not be assessed.

Specifically, the planning rule states: "[m]onitoring information should enable the responsible official to determine if a change in plan components or other plan content that guide management of resources on the plan area may be needed." 36 C.F.R. § 219.12(a) Under the planning rule, each plan must have a monitoring program that has "plan monitoring questions and associated indicators." 36 C.F.R. § 219.12(a)(2). Indicators are the means of "testing relevant assumptions and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives." *Id*. As part of the indicator(s) for each monitoring question, there must be triggers for what result would identify a need for further evaluation, or in some cases, even an immediate change in management. Without triggers, monitoring might become just a collection of data, with no application toward identifying a possible need to change management. Adaptive management would then be thwarted. To put it simply, a lack of adaptive management monitoring plans means adaptive management is not possible.

Adaptive management is a key component of the proposed action and the adaptive management alternative is exactly as described. It proposed to replace the 21-inch standard with an adaptive management monitoring plan. The plan would be the same under both alternatives and contain a "decision making trigger" where based on monitoring, a diameter limit could be reimposed as a standard. However, only a broad sketch of what this monitoring could entail was disclosed in the EA and what is described is not rational (*see* Section II. C. 4. Below "The Adaptive Management Approach Described in the EA is not Rational"). This is yet another example of how this rushed planning process has impeded public review and participation and violates the 2012 planning rule.

Given the fact that the "adaptive management alternative" proposes no plan components beyond an adaptive management plan, and the proposed action relies heavily on the same adaptive management plan, how they will be monitored is critical to analyzing their impacts. Any flexibility in implementation requires a rigorous strategy to determine if unproven means of accomplishing goals are actually working.

The EA should have included information so the public could assess:

1. What systematic monitoring programs already exist (both internally and externally) and exactly what is being monitored by those programs.
2. What trends have been shown to exist to date, and a clear explanation of what new information is needed.
3. How current monitoring has informed the need for change and monitoring plans for the action alternatives.
4. How the public can obtain the data generated by these efforts.

That information is essential to analyzing the impacts of the proposed alternatives on ecosystem components such as carbon storage, wildlife connectivity, habitat diversity.

The EA should have included a monitoring plan that:

1. Laid out the countable, measurable, repeatable, predictable, and ensurable monitoring questions that will be used to inform the adaptive management process. Including questions that address "[t]he status of focal species to assess the ecological conditions required under § 219.9" and at-risk species.
2. Explained how forest level data will be used across the region
3. Provided enough detailed information to determine whether management direction is being followed, whether desired results are being achieved, and whether underlying assumptions are valid
4. Recognized that natural mortality from insects, disease, and competition is normal and a desired feature of LOS forests and periodic pulses of abundant mortality are also perfectly natural.

Without this information, the public has no way to determine whether plan components will be effective in meeting the planning rule's substantive requirements, including whether they will contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area. 36 C.F.R. § 219.9(b).

Finally, given the importance of monitoring to the land management planning process, it is critically important that all forests in the planning area have money and other resources available for this activity as part of each annual budget, or under a longer-term appropriation. If the necessary funding and resources needed are not available for monitoring, projects that have the potential to impact large or old structures under a framework that relies on adaptive management should not be implemented.

4. The Adaptive Management Approach Described in the EA is not Rational

In order to assess the effectiveness of "old tree conservation" two of the action alternatives include adaptive management. According to the EA, this approach would include both implementation and effectiveness monitoring. Effectiveness monitoring would focus on answering the following questions:

- How does the mortality level of 1) old trees and 2) all trees differ between managed stands and unmanaged stands?

- How does mortality of old trees differ based on species, biophysical setting, and/or management and disturbance history?
- Does the type of management or the combination of management actions prior to disturbance influence mortality of old trees?

This approach also includes a "decision-making trigger" where based on the information obtained from answering the above questions, a diameter limit of 21-30 inches dbh could be reimposed as a standard throughout portions of the planning area.

This adaptive management approach is not rational. Comparing managed and unmanaged stands makes no sense. The question is not whether removal of large trees is more effective at reducing mortality than no management. No management is a straw man. During timber sale planning, the relevant question is what kind of management will be most effective at conserving LOS: retaining large trees (≥21 inches dbh) or removing large trees (21-30 inches dbh)? The adaptive management questions need to focus on that question.

The adaptive management approach described in the EA also contains a nonsensical fall-back position. If monitoring indicates that passive management is better at conserving LOS forests, then the Forest Service says it will still allow removal of shade-tolerant trees 21-30" dbh but with a standard instead of a guideline. This makes no sense. It basically says if monitoring shows that A is better than B, then don't adopt A, adopt a minor tweak to B.

The EA (at 9) says that adaptive management was designed to instill trust. Again, the adaptive management approach fails to ask the right questions, and, if the "effectiveness monitoring" questions shows change is needed, the adaptive management in the proposed action fails to revert to an effective approach to large tree conservation. Such an approach fails to instill trust with stakeholders.

Further, the adaptive management questions fail to assess the impacts on wildlife and fish, threatened and endangered species, candidate species and species of conservation concern.

III. The Forest Service must Comply with the Requirements of NEPA and Prepare a Robust Environmental Analysis

NEPA's purpose is "to foster excellent action," and the "NEPA process is intended to help public officials make decisions that are based on an understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(c). The NEPA process requires that "environmental information is available to public officials and citizens before decisions are made and before actions are taken." *Id*. at § 1500.1(b). Federal agencies must gather and disclose information during the NEPA process, which "must be of high quality." *Id*. "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." *Id*.

The diameter limits in the Eastside Screens are among the most ecologically important and publicly popular aspects of current forest management in eastern Oregon and Washington. As discussed above, clear sideboards are necessary for the Forest Service to effectively and

efficiently meet its statutory obligations. The Screens help prevent conflicts of interest (such as pressure to meet timber targets) from interfering with important ecological goals.

The lack of a scoping process for this plan amendment has seriously hampered this NEPA process. The Forest Service has failed to: articulate a compelling purpose and need to log large trees, develop a rational and effective proposed action, consider reasonable alternatives that would better meet objectives with fewer trade-offs, and to take a hard look at important environmental effects. All of these failures could have been alleviated by providing an opportunity for public scoping. This in turn would have produced a better environmental analysis, and more focused and informed public comments. Unfortunately, it appears that the ambitious scale and timeframe of this project have gotten in the way of the agency meeting these NEPA obligations.

A. The USFS Failed to Scope the Amendment as Required by NEPA, the 2012 Planning Rule and its Own Regulations

Scoping is one of the major phases of the NEPA process, and is one that not only provides an opportunity for public participation, but also helps to determine the range of issues and interests to be addressed in subsequent phases. CEQ's NEPA implementing regulations require that "[t]here shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping." 40 C.F.R. § 1501.7. The Forest Service itself has specifically adopted the requirement that scoping is mandatory for *all* Forest Service proposed actions under NEPA, and is not limited by the type of analysis undertaken (whether it be CE, EA, or EIS).

> Although the Council on Environmental Quality (CEQ) regulations require scoping only for environmental impact statement (EIS) preparation, the Forest Service has broadened the concept to apply to all proposed actions. "Scoping is required for all Forest Service proposed actions, including those that would appear to be categorically excluded from further analysis and documentation in an EA or an EIS (§220.6)."

2012 Forest Service Handbook 1909.15_10 introduction to § 11, quoting 36 C.F.R. § 220.4(e)(1). Here, the Forest Service specifically calls out the need to complete scoping even for actions which would normally require only a CE - a NEPA document with much less rigorous procedural requirements than an EA. Even if the Forest Service had not already required scoping for "all proposed actions," it would naturally follow that if even the most basic NEPA analysis (a CE) requires scoping, then a more rigorous analysis (an EA) would require scoping as well. The 2012 planning rule, as amended, also clearly intends for all plan amendments to be scoped. It reaffirms that every plan be amended "consistent with Forest Service NEPA procedures." 36 §219.13(b)(3). It also requires that the responsible official give notice if a plan amendment is subject to objection during scoping ***and*** in the subsequent EA or EIS. 36 §219.52(a).

Yet, despite the requirement that an agency "shall" conduct scoping as part of the NEPA process and the Forest Service requiring *itself* to complete scoping for *all* proposed actions—including this proposed amendment—in a binding, mandatory regulation, 36 C.F.R. §220.4(e)(1), the Forest Service failed to undertake this critical, and mandatory, phase during its development of the proposed amendment to the Eastside Screens. As the Forest Service itself states: "[t]he

process of scoping is an integral part of environmental analysis." 2012 Forest Service Handbook 1909.15_10 introduction to § 11. The Forest Service Handbook goes on to describe the purposes and impact of the scoping process:

> Scoping includes refining the proposed action, determining the responsible official and lead and cooperating agencies, identifying preliminary issues, and identifying interested and affected persons. Effective scoping depends on all of the above as well as presenting a coherent proposal. The results of scoping are used to clarify public involvement methods, refine issues, select an interdisciplinary team, establish analysis criteria, and explore possible alternatives and their probable environmental effects.

Id.

By bypassing the scoping phase of this project, the Forest Service has denied the public the opportunity to comment and provide input on the above process. Scoping and public scoping comments are intended to help guide the development of the proposed project and analysis, but one cannot guide the creation of something that already exists. Further, public comments on the already-drafted EA cannot with any integrity be alleged to count as "scoping comments" when the scope of the project, methods, analysis, and alternatives have already been determined. By skipping the scoping process and moving directly to publishing the Draft EA for the proposed amendment, the Forest Service has denied the public the ability to add to the dialogue about issues of concern, methodology, and ultimately helping to shape the alternatives considered in the actual NEPA analysis.

Many of the deficiencies raised by this comment could have been avoided by conducting a proper scoping and public comment phase. As just one example, had proper scoping been conducted, the Forest Service would have gotten public input regarding proposed alternatives, and thus may have adopted or modified the range of alternatives analyzed in the Draft EA. As things stand, this coalition does not believe that an adequate range of alternatives was considered in the Draft EA (as discussed below) - a situation that could have been remedied by properly involving the public in the scoping process.

By skipping over a proper scoping period, the Forest Service has violated its own binding regulations and the requirements and underlying purposes of NEPA, depriving its analysis of proper pre-analysis public input. For example, it has analyzed three proposed amendments in the EA, all thus far bereft of meaningful public input; at this point, comments are unlikely to alter the scope dramatically. *Compare Prairie Band Pottawatomie Nation v. Fed. Highway Admin.*, 684 F.3d 1002, 1012 (10th Cir. 2012) (no unreasonable or bad faith selection of alternatives selected after the government "conduct[ed] an 'early and open' scoping process in conformity with NEPA-implementing regulations"). If this type of circumvention were permissible, it would essentially obviate the need for scoping to begin with. The failure by the Forest Service to conduct scoping is plainly both illegal and completely at odds with NEPA's requirement for early and meaningful public engagement.

This is one of the numerous NEPA failures of this amendment process and as such one of the reasons this coalition requests that the Forest Service withdraw its Draft EA and undertake

proper and adequate scoping for this project, in accordance with its own regulations, before it undertakes the drafting of the actual NEPA analysis.

B. Scoping is a Separate Obligation Under NEPA that is not Fulfilled by Analyzing a Proposal in an EA and Providing an Opportunity to Comment on that EA

Comments permit citizens to weigh in on the agency's actual draft environmental analysis. Conversely, scoping is intended to address and inform the scope of the proposed NEPA environmental analysis – which must necessarily precede that analysis. *See* 40 C.F.R. § 1501.7 (defining scoping, which is an "early and open" process used to "determin[e] the scope of issues *to be addressed* and [to] identify [] the significant issues related to a proposed action.") (emphasis added); *see also Lands Council v. Powell*, 395 F.3d 1019, 1025 n.3 (9th Cir. 2005) (observing that " '[s]coping' describes when an agency begins *initial consideration* of a project, and identifies the significant issues related to the contemplated action") (emphasis added); *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1117 (9th Cir. 2002) (identifying limited NEPA scoping requirements, which do, however, include "narrowing the issues[,] . . . providing adequate notice and beginning a meaningful dialogue with members of the public about a proposed action"), *abrogated on other grounds by Wilderness Soc. v. U.S. Forest Serv.*, 630 F.3d 1173 (9th Cir. 2011); *Los Padres ForestWatch v. U.S. Forest Serv.*, 776 F. Supp. 2d 1042, 1050 (N.D. Cal. 2011) (plaintiff likely to prevail on NEPA claim where agency conducted no scoping prior to applying a CE); *see also Sierra Club v. Bosworth*, 510 F.3d 1016, 1027 (9th Cir. 2007) (invalidating a CE where its promulgation should have taken place "*after* scoping" and criticizing "[p]ost-hoc examination of data to support a pre-determined conclusion" as frustrating the fundamental purpose of NEPA, "which is to ensure that federal agencies take a 'hard look' at the environmental consequences of their actions, early enough so that it can serve as an important contribution to the decision making process") (citation omitted) (emphasis in original).

As discussed above, for an EA, proper scoping is required *under the Forest Service's own regulations*. 36 C.F.R. § 220.4(e) ("[s]coping is required for all Forest Service proposed actions"); *see also Alaska Ctr. For Env't v. U.S. Forest Serv.*, 189 F.3d 851, 858 (9th Cir. 1999) (observing that the Forest Service scopes for "all proposed actions"). Additionally, the Forest Service's regulations identify scoping and the NEPA comment period as two different periods. *See* 36 C.F.R. § 218.5(a) (describing them separately in regulating who may file an objection); *see also* 36 C.F.R. § 218.24(b)(4) (referencing comment period for project that is "to be documented" in an EA, underscoring that scoping comments should occur before EA is prepared). The Forest Service appears to be conscious of this, as it routinely scopes for EAs. *See, e.g., ForestKeeper v. Elliott*, 50 F.Supp.3d 1371, 1375-76 (E.D. Cal. 2014); *Sierra Nevada Forest Prot. Campaign v. Weingardt*, 376 F.Supp.2d 984, 987 (E.D. Cal. 2005).

It is almost incomprehensible that the Forest Service would simply ignore a phase of NEPA planning process that is so integral to the development of the project alternatives and which functions as an important milestone in the public involvement process.[6] It was just such a

[6] "Every planning process will involve traditional scoping and public comment; in addition, the responsible official will determine the combination of additional public participation strategies

deficiency that likely halted proposed logging at Walton Lake on the Ochoco National Forest in 2017. In that instance, the Forest Service failed to re-scope the project after initially withdrawing its anemic CE and beginning work on an EA. There, the Forest Service had undertaken scoping and public comments on the CE, but not on the subsequent EA. After reviewing objections to that draft EA regarding the failure to re-scope the project, the Forest Service itself realized its process was inadequate and withdrew the EA, going back to the drawing board and restarting its NEPA process with a fresh scoping process. Failing to scope *at all,* which is the case here, is an even more egregious violation of the NEPA process and should also require that the Forest Service restart the NEPA process with a scoping period.

Although not explicitly stated, the Forest Service perhaps believes that allowing for public comments on the Draft EA satisfies its requirement to scope and receive public scoping comments. For all the reasons discussed above, this is incorrect. Conducting scoping and receiving public scoping comments is a duty separate from its subsequent duty to seek public comment on the Draft EA (which should be developed with those scoping comments in mind). Those distinct obligations cannot be satisfied using one, combined public comment period.

There was absolutely no legitimate reason for the Forest Service to not conduct scoping on this significant amendment to the Eastside Screens, nor does it even attempt to justify its failure to do so. The effect of not scoping was to prevent the public from submitting scoping comments on the purpose and need, the range of alternatives, and the proposed plan amendment being considered in the EA before the Forest Service actually drafted that EA. Avoiding pre-analysis scoping comments, which is what the Forest Service has accomplished, is not a legitimate purpose for failing to scope under NEPA. Seeking comments only after it has published the draft EA does not cure that omission and is completely at odds with the underlying rationale for requiring pre-analysis public scoping.

C. The Amendment is "Significant" Under NEPA and Must be Analyzed in an EIS

NEPA requires federal agencies to prepare, consider, and approve an adequate Environmental Impact Statement (EIS) for "any major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(c); 40 C.F.R. § 1501.4(a)(1). To make a supportable determination of non-significance, NEPA documents must consider the direct, indirect, and cumulative environmental impacts of a proposed action. 40 C.F.R. § 1508.8. The agency must take a "hard look" at the consequences of the proposed action and provide a "convincing statement of reasons to explain why a project's impacts are insignificant." *Envtl. Prot. Info. Ctr. v. United States Forest Serv.*, 451 F.3d 1005, 1009 (9th Cir. 2006) (alteration in original) (quoting *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 730 (9th Cir. 2001)). The information considered must be of high quality. 40 C.F.R. § 1500.1(b). Scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. *Id.*

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that would best engage a diverse set of people and communities in the planning process." 2012 National Forest System Land Management Planning Rule preamble, 77 Fed. Reg. 21195.

In determining whether an action is "significant" under NEPA, agencies must evaluate the project's significance by analyzing the "context" and "intensity" of the action. 40 C.F.R. 1508.27. The context of an action includes "society as whole (human, national), the affected region, the affected interests, and the locality." *Id*. at § 1508.27(a). Both short-term and long-term impacts are important. The regulations also list ten, non-exclusive intensity factors that the agency should consider. Id. at § 1508.27(b). These factors include: the degree to which the effects on the environment are highly controversial, highly uncertain, or involve unique and unknown risks; the degree of impact on threatened and endangered species or its critical habitat; and whether the action is related to other actions with individually insignificant but cumulative significant impacts. *Id*.

1. The Proposal is Significant Because it is Highly Controversial

The Proposal to remove protections for large trees in Eastern Oregon is highly controversial and requires an EIS to disclose and analyze the controversy and consequences of the decision. "A project is 'highly controversial' if there is a 'substantial dispute [about] the size, nature, or effect of the major Federal action rather than the existence of opposition to a use.'" *Native Ecosystems Council v. United States Forest Serv*., 428 F.3d 1233, 1240 (9th Cir. 2005*)* (alteration in original) (quoting *Blue Mts. Biodiversity Project v. Blackwood,* 161 F.3d 1208, 1212 (9th Cir. 1998)). "A substantial dispute exists when evidence . . . casts serious doubt upon the reasonableness of an agency's conclusions." *In Def. of Animals v. United States DOI,* 751 F.3d 1054, 1069 (9th Cir. 2014) (quoting *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 736 (9th Cir. 2001)).

Controversy is abundant regarding this proposal. For one, the Forest Service convened a science webinar as part of the public process for this proposal. The webinar included opposing scientific views on the proposal and the underlying science, including presenters Dr. Dominick DellaSala, Dr. Chad Hanson and Dr. Beverly Law, who presented views on why the Proposal is misguided and will have detrimental effects not considered by the Forest Service. By inviting these alternative scientific viewpoints and presenting them to the public, something rarely, if ever, done as part of a NEPA process, the Forest Service essentially acknowledged the high level of controversy. Ultimately, the Forest Service ignored these panelists' scientific views, failing to even mention them or to cite them in the EA. Following this webinar, a group of 115 scientists and experts, including those that presented on the Forest Service webinar, submitted a letter asking the Forest Service to maintain protections for large trees based on the irreplaceable values they contribute to mitigate the effects of climate change, along with other important values. *See* Exhibit 4.

The attached report of Dr. Dominick DellaSala and Dr. William Baker ("DellaSala/Baker Report") (Exhibit 1), and the letter from Dr. Chad Hanson (Exhibit 2), also establish the high level of controversy. The DellaSala/Baker report explains several issues of controversy inherent in the Proposal:

1. Recent science calls for keeping/protecting large trees, particularly in the context of the global climate crisis
2. Large trees don't inhibit restoration or recovery

3. Large and shade-tolerant trees were not absent from the pre-human disturbance landscape as posited by the EA, nor is the presence of these trees in larger quantities "unnatural"
4. Removal of large trees of any species does not help with forest recovery or wildfire resilience
5. The FVS modeling is incorrect/inconclusive

Dr. Hanson's letter describes omission of scientific information on key issues such as historical forest composition and density, the role of logging in increasing fire severity, and the impacts to wildlife of the loss of large trees.

Other comments from well-known scientists and experts question the EA's analysis and assumptions. For example, Dr. Jerry Franklin, Dr. Norm Johnson and Dr. S. Trent Seager released an open review of the EA for stakeholders to consider when writing comments on the proposed action and alternatives. This review questions and critiques several of the key aspects of the EA's environmental analysis ("Franklin/Johnson/Seager Open Review") (Exhibit 3). Specifically, it questions the outcomes of Forest Service modeling upon which the EA relies, and how, despite the modeling showing a substantial decrease in the number of old trees under the Adaptive Management alternative, the EA can go on to conclude that this alternative has better ecological outcomes. Franklin/Johnson/Seager Open Review at 7. They go on to question whether the science allegedly underlying the EA is being utilized correctly: "this leads us to have concerns in the EA setting precedent of how the ecology and underlying science of eastside dry forests are used in NEPA and forest planning." In other words, these scientists are concerned that their work is being twisted to fit the Forest Service's preferred policy narrative.

Franklin/Johnson/Seager also express concerns about the model's effectiveness at predicting outcomes as it is based on nonbinding guidelines and not standards. *Id*. at 8. They question two other assumptions made by the Forest Service as well: the use of basal area/SDI to measure the density of old trees, and the use of late-open and late-closed habitat types as the only way to categorize whether habitat requirements are being met. *Id*. at 4-5. Thus, multiple scientists from a variety of disciplines have expressed and raised substantial questions and concerns, not to mention different opinions as to the impacts and outcomes of the proposed alternatives. It is thus clear that the Proposal is highly controversial, there is substantial dispute as to its effects and outcomes, and an EIS is required.

2. The Proposal is Significant and Requires an EIS Because there is a High Level of Uncertainty about Outcomes and Impacts

NEPA requires preparation of an EIS where the environmental effects of an action are highly uncertain. "Uncertainty may be resolved by further collection of data or where the collection of such data may prevent speculation on potential . . . effects." *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001) The purpose of an EIS is to obviate the need for speculation by insuring that available data are gathered and analyzed prior to the implementation of the proposed action." *Sierra Club v. United States Forest Serv*., 843 F.2d 1190, 1195 (9th Cir. 1988) (citations omitted). There is substantial uncertainty relating to several issues underlying the Proposal and its impacts.

a) The EA and the General Technical Report (GTR-990) are Replete with Uncertainty and Unsupported Conclusions

The EA fails to acknowledge that the Forest Service is not sure what will happen and whether anything will improve (other than acknowledging the loss of big trees if they remove the 21 inch standards): "[R]eplacing the 21-inch standard with different conservation policies may result in more large trees being cut, better providing for stand and landscape scale resilience to disturbance has the potential to optimize provision of large trees over time." EA at 8. This statement is completely speculative, demonstrating how speculative this entire proposal is. That is unsurprising, given that the alternatives set out in the EA are all reliant on replacing a standard with a guideline, and in some cases, unfunded monitoring and adaptive management. How can the Forest Service know what the impacts of replacing a measurable standard with a discretionary guideline will be, other than that it will result in the loss of large trees? This uncertainty is substantial and warrants an EIS.

In another vein, the EA contains no analysis of the carbon impacts of the proposal. This shortcoming also leaves substantial uncertainty. Similarly, as discussed below, no cumulative impacts analysis was attempted, thus the cumulative impacts of this proposal combined with other actions are unknown and uncertain. Additionally, the monitoring plan is completely insufficient, as discussed above in Section II. C. 3. "The EA Fails to Document a Comprehensive Monitoring Strategy."

b) Expert Reports and Testimony Demonstrate Uncertainty as to the Outcomes of the Proposal and Alternatives

The DellaSala/Baker Report also highlights more specific uncertainties, particularly in the context of the amount and locations of grand fir on the landscape, wildfire issues (including thinning for wildfire mitigation) and other historical landscape data and hypotheses. *See* Exhibit 1.

The Franklin/Johnson/Seager Open Review also demonstrates that there is significant uncertainty because, as their comments discuss, the alternatives include only guidance, and not standards. *See* Franklin/Johnson/Seager Open Review at 8. Thus "the models that the Forest Service relies on do not accurately reflect what could potentially happen in post-management stands and projects." *Id*. Finally, significant uncertainty is also present when the proposal relies on unclear and unfunded monitoring and adaptive management.

c) The Forest Service has Failed to Take a Hard Look at the Direct, Indirect and Cumulative Impacts to Threatened and Endangered Species

Another factor determining whether an action is "significant" for the purposes of requiring an EIS to be prepared is "the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973." 40 C.F.R. 1508.27(b)(9). Here, the Forest Service has failed to take a hard look at the direct, indirect and cumulative impacts to threatened and endangered species to determine whether an EIS is required. Courts have held that "a project need not jeopardize the continued existence of a threatened or endangered species to have a 'significant' effect" for the purposes of NEPA. *Cascadia Wildlands v. U.S. Forest Serv*., 937 F. Supp. 2d 1271, 1282 (D. Or.

2013), appeal dismissed (Feb. 27, 2014); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.,* 373 F. Supp. 2d 1069, 1080 (E.D. Cal. 2004).

In the EA and supporting documents for the Amendment, the Forest Service's analysis of impacts to lynx, gray wolf, Columbia spotted frog and wolverine (a candidate species) are cursory at best, and an analysis of impacts to bull trout and other TES fish species is completely absent. There is no discussion of formal or informal consultation, despite the conclusion in the Specialist Report that the proposal may affect several of the species.

Other problems underlie the analysis of threatened and endangered species. For example, the analysis assumes that PACFISH and INFISH are adequate to protect riparian and wetland species and habitats. Wildlife Specialist Report at 7. This is problematic as the Forests have been repeatedly challenged in court regarding their adherence to the INFISH standards in planning timber sales. See discussion of aquatic impacts and impacts to RHCAs in Sections III. C. 2. d) (3) "Proposal will have Significant Effects on Aquatic Habitat" and III. G. 3. "Failure to Disclose Effects on Aquatic Ecosystems" below. Further, the discussion of impacts to wolf and wolverine is completely focused on prey, precluding any discussion of other impacts, such as habitat loss, or impacts to breeding and denning.

Another issue that is avoided in the analysis is the potential impacts on Northern Spotted Owls ("NSO"). Although the Amendment affects only the areas of the National Forests outside of the Northwest Forest Plan, which is intended to cover the range of the NSO, presumably NSOs do not know where that line is, and can and do cross over onto areas covered by the Eastside Screens and this Amendment. The Forest Service should disclose and consider any information on the existence of NSOs within the project area and, if such information exists, analyze whether impacts to NSO would occur as a result of loss of large trees on which NSOs rely.

d) An EIS is Required Because the Proposed Alternative has Significant Impacts on Carbon Values, Snag Habitat and Aquatic Habitats

The Forest Service failed to consider and disclose the significant impacts associated with carbon values, snag habitat, and aquatic habitats. Instead of ignoring these issues, the agency should use this NEPA process to determine how to meet the current dual challenges of climate change and loss of biological diversity. Large diameter trees are key to any solution.

Large diameter trees are key to the ability of forests to accumulate substantial amounts of carbon needed to mitigate climate change and to maintain ecological integrity in the face of a changing climate. Logging large diameter trees removes natural climate solutions and deprives the ecosystem of much needed large snags and dead wood that provide habitat for a wide array of wildlife species. Large diameter trees are also integral to a variety of crucial aquatic and riparian ecosystem functions and processes. They play central roles in these ecosystems, such as helping to store sediments and nutrients; shape channel morphology and instream habitats and conditions necessary for fish and other aquatic organisms; support groundwater flows, hyporheic flows and groundwater storage. Because the impacts on carbon values and snag and aquatic habitats will be significant, and EIS is required.

(1) Proposal Will Have Significant Effects on Carbon Values

The accumulation of carbon in forest ecosystems is crucial for mitigating ongoing climatic change, with large-diameter trees storing disproportionally massive amounts of carbon in forests worldwide. Globally, forests removed the equivalent of about 30 percent of fossil fuel emissions annually from 2009 to 2018 and while boreal and tropical forests have received a great deal of attention, 44 percent of the carbon removed by forests from 2009 to 2018 is attributed to temperate forests (Friedlingstein et al., 2019[7]). Temperate forests of the U.S. consistently offset about 14 percent of the Nation's CO_2 emissions and are the largest category of land sinks in the country (EPA, 2020[8]). Forest ecosystems in the U.S. have the potential to continue rapid atmospheric CO_2 removal rates in addition to the massive carbon stores they currently hold (Moomaw et al., 2019[9]). Forest carbon accumulation is a central component of a natural climate solutions framework that is receiving substantial attention in the science and policy literature (Griscom et al., 2017;[10] Fargione et al., 2018;[11] Cook-Patton et al., 2020[12]).

Large-diameter trees are key to the ability of forests to accumulate substantial amounts of carbon needed to mitigate climate change (Luyssaert et al., 2008;[13] Lutz et al., 2018;[14] Stephenson et al., 2014[15]). Large-diameter trees comprise about half of the mature forest biomass worldwide and on average, 50 percent of the live tree biomass carbon in all types of forests globally is contained in the largest 1 percent of trees (Lutz et al., 2018). However, the value for the U.S. is lower (~30 percent) in the largest 1 percent of trees due to widespread historical logging of large trees (Lutz

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[8] EPA. (2020). Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018. EPA 430-P-20-001. U.S. Environmental Protection Agency, Washington, D.C., 719 pp.

[9] Moomaw, W. R., Masino, S. A. and Faison, E. K. (2019). Intact forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good. *Front. For. Glob. Change* 2, 1–27. doi: 10.3389/ffgc.2019.00027.

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[15] Stephenson, N. L., Das, A. J., Condit, R., Russo, S. E., Baker, P. J., Beckman, N. J., et al. (2014). Rate of tree carbon accumulation increases continuously with tree size. *Nature* 507: 90–93.

et al., 2018; Pan et al., 2011[16]). The relationship between large-diameter trees and overall biomass suggests that forests cannot accumulate aboveground carbon to their ecological potential without large trees (Lutz et al., 2018). Recognition of the importance of large-diameter trees in the global forest carbon cycle has led to management recommendations to conserve existing large-diameter trees and those that will soon reach large diameters (Lutz et al., 2018; Lindenmayer et al., 2014[17]).

In any forest, the largest trees relative to the rest of the stand contribute disproportionately to ecological function such as increasing drought-tolerance, reducing flooding from intense precipitation events, altering fire behavior, redistributing soil water, and acting as focal centers of mycorrhizal communication and resource sharing networks (Bull et al., 1997;[18] Brooks et al., 2002;[19] Brown et al., 2004;[20] Luyssaert et al., 2008; Beiler et al., 2015;[21] Lindenmayer et al., 2017[22]). In the U.S. Pacific Northwest ("PNW"), carbon dense old growth forests buffer against increasing temperatures by creating microclimates that shelter understory species from rising temperatures (Frey et al., 2016;[23] Davis et al., 2019[24]). Forests with large-diameter trees tend to have high tree species richness, and a high proportion of critical habitat for endangered vertebrate species, indicating a strong potential to support biodiversity into the future and promote ecosystem resilience to climate change (Lindenmayer et al., 2014; Buotte et al., 2020[25]).

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[16] Pan, Y., Birdsey, R. A., Fang, J., Houghton, R., Kauppi, P. E., Kurz, W. A., et al. (2011). A Large and Persistent Carbon Sink in the World's Forests *Science*, 333, 988-993. doi: 10.1126/science.1201609.

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Harvest practices can substantially alter carbon storage and accumulation (Kauppi et al., 2015;[26] Masek et al., 2011;[27] Turner et al., 2011;[28] Krankina et al., 2012;[29] Law et al., 2018[30]). There is a negative relationship between harvest intensity and forest carbon stocks whereby as harvest intensity increases, forest carbon stocks decrease while emissions increase (Hudiburg et al., 2009;[31] Mitchell et al., 2009;[32] Simard et al., 2020[33]). It can take centuries to reaccumulate forest carbon stocks reduced by harvest (Birdsey et al., 2006;[34] McKinley et al., 2011[35]), and climate mitigation targets need to be met in the next few decades.

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[32] Mitchell, S. R., Harmon, M. E., and O'Connell, K. E. B. (2009). Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems. *Ecol. Appl.* 19,643–55. doi: 10.1890/08-0501.1.

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[34] Birdsey, R., Pregitzer, K., and Lucier, A. (2006). Forest carbon management in the United States: 1600-2100. *J. Environ. Qual.* 35: 1461-1469.

[35] McKinley D. C., Ryan, M. G., Birdsey, R. A., Giardina, C. P., Harmon, M. E., Heath, L. S., et al. (2011). A synthesis of current knowledge on forests and carbon storage in the United States. *Ecol. Appl.* 21:1902–24. doi: 10.1890/10-0697.1.

Carbon storage is an important management objective for National Forest Lands in the U.S. (Depro et al. 2008;[36] Dilling et al., 2013;[37] Dugan et al., 2017;[38] Birdsey et al., 2019[39]). Western U.S. forests show considerable potential to accumulate additional carbon over the coming century, especially forests within the PNW that are projected to have relatively low to moderate vulnerability to future drought and fire (Buotte et al., 2020). The proposed amendments to the 21-inch rule include forests that have a preponderance of medium to high carbon accumulation potential and low future climatic vulnerability. This reinforces the importance of protecting large trees in eastside forests to help abate our current trajectory toward massive global change (Fargione et al., 2018; Buotte et al., 2020).

Current research reveals the large carbon stocks associated with large-diameter trees in "eastside forests," and the potential for significant losses in aboveground carbon stocks ("AGC") with large tree logging (Mildrexler et al., 2020[40]). These findings document the important role of large trees in storing carbon in eastside forest ecosystems, and is consistent with previous findings on the disproportionately important role of large trees in the forest carbon cycle (Hudiburg et al., 2009; Stephenson et al., 2014; Lutz et al., 2012;[41] Lutz et al., 2018). The rapid increase in carbon storage with increasing tree diameter emphasizes the importance of preserving mature and old large trees to keep this carbon stored in the forest ecosystem where it remains for centuries (Law et al., 2018; Lutz et al., 2018). Harvest of large-diameter trees, even focused on a specific species (e.g. grand fir) can remove a significant fraction of tree AGC from these ecosystems. While the 21-inch standard was initially conceived to protect remaining late successional and old-growth forest and the native species that depend on these unique ecosystems for survival (Henjum et al.,

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[36] Depro, B. M., Murray, B. C., Alig, R. J. and Shanks, A. (2008). Public land, timber harvests, and climate mitigation: Quantifying carbon sequestration potential on U.S. public timberlands. *For. Ecol. Manage.* 225: 1122-1134.

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[40] Mildrexler, D.J., L.T. Berner, B.E. Law, R.A., Birdsey, and W. R. Birdsey, and W.R., Moomaw. (2020). Large trees dominate carbon storage in forests east of the Cascade Crest in the U.S. Pacific Northwest. *Front. For. Glob. Change. In review.*

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1994[42]), carbon storage associated with the 21-inch rule on the six national forests is a significant co-benefit of this protective measure (Mildrexler et al., 2020).

Logging large trees would lose these carbon stores, and release large amounts of carbon to the atmosphere. The amount of carbon that remains stored in wood products is insufficient to offset the loss of carbon stored in the forest. Life cycle assessment shows that 65 percent of the wood harvested in Oregon over the past 115 years has been emitted to the atmosphere, 16 percent is in landfills and only 18 percent remains in wood products (Hudiburg et al., 2019[43]). Harvesting the large trees will increase, not decrease emissions and end centuries of long-term carbon storage in the forests.

Trees over 30 inches dbh are extremely rare on the landscape and their existence does not require widespread cutting of large trees. In fact, the rarity of trees over 30 inch dbh highlights the relative importance of the sub-30 inch dbh large trees in the study area, and the value in allowing these trees to continue growing and replenish the stock of trees over 30 inches dbh that are rare on the landscape (Mildrexler et al., 2020). This strategy is the most rapid means for accumulating additional quantities of carbon in forests and out of the atmosphere (Moomaw et al., 2019). Ecological restoration that gives protection to large and old trees, reduces surface and ladder fuels, and understory thinning treatments where appropriate with reintroduction of low-intensity fire at intervals (Allen et al., 2002;[44] Brown et al., 2004; Agee and Skinner, 2005;[45] Noss et al., 2006[46]) can achieve the benefits of carbon storage and accumulation in the larger, most fire-resistant trees and reduction of fuel loads and stem density in the smaller diameter trees.

The recent history of high-grade logging targeted large and old trees (Henjum, 1994; Rainville et al., 2008[47]). Historical abundances of large trees were much greater than today (Kauppi et al.,

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[42] Henjum, M. G., Karr, J. R., Bottom, D. L., Perry, D. A., Bednarz, J. C., Wright, S. G., et al. (1994). Interim Protection for Late Successional Forest, Fisheries and Watersheds: National Forests East of the Cascade Crest, Oregon and Washington. Wildlife Society, Bethesda, MD.
[43] Hudiburg, T.W, Law, B. E., Moomaw, W. R., Harmon, M. E., and Stenzel, J. E. (2019). Meeting GHG reduction targets requires accounting for all forest sector emissions. *Environ. Res. Lett.* 14: 095005. doi: 10.1088/1748-9326/ab28bb.
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[46] Noss, R. F., Franklin, J. F., Baker, W. L., Schoennagel, T., and Moyle, P. B. (2006). Managing fire-prone forests in the western United States. *Front. Ecol. Environ*. 4, 481-487. doi: 10.1890/1540-9295(2006)4[481:MFFITW]2.0.CO;2.
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2015; Hagmann et al., 2013;[48] Wales et al., 2007[49]), and thus would have represented a larger fraction of aboveground biomass than currently found on these forests. While large tree composition may have shifted today relative to European settlement times, these large trees nonetheless continue to perform important functional attributes related to water and climate such as carbon storage, hydraulic redistribution, shielding the understory from direct solar radiation, and providing wildlife habitat. These functional attributes of large trees, irrespective of species, characterize ecosystems through thousands to millions of years (Barnosky et al., 2017[50]), and are not quickly replaced.

High carbon conservation-priority forests also support important components of biodiversity and are associated with increased water availability (McKinley et al., 2011; Perry and Jones, 2016;[51] Berner et al., 2017; Law et al., 2018; Buotte et al., 2020). Large-diameter snags account for a relatively high proportion of total snag biomass in temperate forests (Lutz et al., 2012). Large hollow trees, both alive and dead, are the most valuable for denning, shelter, roosting, and hunting by a wide range of animals (Bull et al., 2000;[52] Rose et al., 2001[53]). In the Interior Columbia River Basin, grand fir and western larch form the best hollow trees for wildlife uses (Rose et al., 2001). Downed hollow logs serve as important hiding, denning, and foraging habitat on the forest floor (Bull et al., 1997; Bull et al., 2000). Large decaying wood influences basic ecosystem processes such as soil development and productivity, nutrient immobilization and mineralization, and nitrogen fixation (Harmon et al., 1986[54]).

The importance of forest carbon storage is now greatly amplified by a warming climate that must urgently be addressed with reductions in greenhouse gases and natural climate solutions (IPCC,

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[48] Hagmann, R. K., Franklin, J. F., and Johnson, K. N. (2013). Historical structure and composition of ponderosa pine and mixed-conifer forests in south-central Oregon. *For. Ecol. Manag.* 304, 492-504. doi: 10.1016/j.foreco.2013.04.005

[49] Wales, B. C., Suring, L. H., and M. A. Hemstrom. (2007). Modeling potential outcomes of fire and fuel management scenarios on the structure of forested habitats in northeast Oregon, USA. *Landscape Urban Plan*. 80:223-236. doi: 10.1016/j.landurbplan.2006.10.006.

[50] Barnosky, A. D., Hadly, E. A., Gonzalez, P., Head, J., Polly, P. D., Lawing, A. M., et al. (2017). Merging paleobiology with conservation biology to guide the future of terrestrial ecosystems. *Science* 355, eaah4787. doi: 10.1126/science.aah4787.

[51] Perry, T. D., and Jones, J. A. (2016). Summer streamflow deficits from regenerating Douglas-fir forests in the Pacific Northwest, USA, *Ecohydrology* doi: 10.1002/eco.1790.

[52] Bull, E. L., Akenson, J. J. and Henjum, M. J. (2000). Characteristics of black bear dens in trees and logs in northeastern Oregon. *Northwestern Naturalist* 81:148-153. doi: 10.2307/3536825.

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[54] Harmon, M. E., Franklin, J. F., Swanson, F. J., Sollins, P., Gregory, S. V., Lattin, J. D., et al. (1986). Ecology of coarse woody debris in temperate ecosystems. *Adv. Ecol. Res.* 15:133-302. doi: 10.1016/S0065-2504(03)34002-4.

2018[55]; Ripple et al., 2020[56]). Rather than holding ecosystems to an idealized conception of the past using historical conditions as management targets, a good understanding of the environmental co-benefits associated with large tree protection is needed to inform management strategies that contribute toward solving humanity's most pressing Earth system challenges (Millar et al. 2007[57]; Rockstrom et al., 2009[58]; Barnosky et al., 2017; Ripple et al., 2020).

Replacing large diameter trees in eastside forests with seedlings will create a major carbon loss to the atmosphere during harvest (Harris et al., 2016[59]) and not achieve storage of comparable atmospheric carbon for the indefinite future. Continuing to protect large trees in eastside forests provides the greatest benefit for carbon, habitat, and biodiversity.

While the effects of climate change were touted throughout the EA as a reason to log large trees, the EA failed to analyze the effects of the amendment on carbon values including climate mitigation and adaptation and carbon stocks. As outlined above, the impacts on this proposal on these values is significant and as such should have been analyzed in an EIS. A robust analysis of the impacts of logging large trees on carbon values would have shown that it would likely make the climate issue worse. And in turn that many assumptions made in the EA are invalid.

(2) Proposal Will Have Significant Effects on Snag Habitat

Under all alternatives, the EA proposes a significant amendment to the snag standards considering and disclosing the significant impacts associated with this proposal. Logging large trees will deprive the ecosystem of much needed large snags, and the critically important role played by snags and dead wood recognized in the 1994 Everett Report (p 23):

> [In]… presettlement forest fires ... [t]rees were killed but not removed by fire and a considerable biomass of dead wood was left standing. Before being incorporated into the soil, these dead trees functioned first as dead shade-moderating site conditions for the establishment of new conifer seedlings, shrubs, and herbs; snags- providing food, roosts, and homes for various birds and small mammals; and down logs- again providing food

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[55] IPCC (2018). "Summary for policymakers," in *Global Warming of 1.5oC, An IPCC Special Report*, eds V. Masson Delmotte, P. Zhai, H.-O. P. - Rtner, D. Roberts, J. Skea, P. R. Shukla, et al. (Geneva: World Meteorological Organization), 32.

[56] Ripple, W. J., Wolf, C., Newsome, T. M., Barnard, P., and Moomaw, W. B. (2020). World Scientists' Warning of a Climate Emergency, *BioScience* 70(1), 8–12, doi: org/10.1093/biosci/biz088.

[57] Millar, C. I., Stephenson, N. L., and Stephens, S. L. (2007). Climate change and forests of the future: managing in the face of uncertainty. *Ecol. Appl.* 17(8):2145-2151. doi: 10.1890/06-1715.1.

[58] Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, III, F. S., Lambin, E., et al., (2009). Planetary boundaries: exploring the safe operating space for humanity. *Nature* 461, 472–475.

[59] Harris, N. L., Hagen, S. C., Saatchi, S. S., Pearson, T. R. H., Woodall, C. W., Domke, G. M., et al. (2016). Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. *Carbon Balance Manag.* 11, 24; doi: 10.1186/s13021-016-0066-5.

> and shelter, and substrate for arthropods, plants, soil bacteria and fungi, and moisture retention.
>
> Dead trees and down logs play important roles in ecosystems. An important goal of research will be to determine the amount of dead wood that is needed to conserve biological diversity and long-term productivity. An important goal of ecosystem management will be to match management actions to the disturbance ecologies of ecosystems. … [Y]ield expectations for harvested acres should be scaled to accommodate the dead wood needs of ecosystems.
>
> … Large amounts of standing and down dead wood should be left after harvest.
>
> … Under ecosystem management, planned thinning can leave behind important dead and down wood in all of its needed forms.[60]

Significant progress has been made to improve the identification of the appropriate amount of snags and dead wood that should be maintained over time in eastside forests, but this plan amendment eliminates any clear requirement to meet the quantifiable needs of snag-associated wildlife when designing timber sales. In addition, there is no valid ecological rationale for removing large numbers of shade-tolerant trees 21-30 inches dbh or gutting the snag standard given that large shade-tolerant trees provide disproportionate ecological value in terms of cavity habitat. Ponderosa pine are not as cavity prone.[61]

The proposed plan amendment seeks to shift species composition away from shade-tolerant species like grand fir/white fir and as a result would have significant effects on habitat for species like pileated woodpecker. This point was made in the Franklin/Johnson/Seager Open Review:

> "… the EA addresses habitat under LOS for late-closed and late-open associated wildlife species. This fails to account for conifers species composition, and more importantly, the stand specifics of each conifer species (e.g., dbh, spatial placement) for wildlife habitat requirements. Since different alternatives allow the harvest of different tree species, sizes, and ages, it does not hold that post-treatment stands classified as late-open or late-closed will inherently contain the habitat needed … [L]ate-closed forests without proper conifer species composition providing rapid decay (e.g., grand fir or white fir) will not provide appropriate pileated woodpecker habitat."

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[60] Everett et al 1994. Eastside Forest Ecosystem Health Assessment . Volume I: Executive Summary. General Technical Report PNW-GTR-317.

[61] *https://www.jstor.org/stable/3809474?seq=1."* Foundations of Forest Wildlife Habitat Management Habitat through Disturbance and Silviculture. August 2020. Lecture 1 Questions and Answers: https://nctc.fws.gov/topic/online-training/webinars/forest-ecology-and-management.html *citing* Evelyn L. Bull, Richard S. Holthausen and Mark G. Henjum 1992. Roost Trees Used by Pileated Woodpeckers in Northeastern Oregon. The Journal of Wildlife Management. Vol. 56, No. 4 (Oct., 1992), pp. 786-793. https://www.jstor.org/stable/3809474?seq=1.

For further discussion of the significant impacts of this proposal on snag habitat see Section III. G. 2. "Failure to Disclose Impacts on Snags and Dead Wood."

(3) Proposal Will Have Significant Effects on Aquatic Habitat

Aquatic and riparian ecosystems are especially vulnerable to negative impacts from the loss of large trees (and the loss of recruitment for large tree structure), both from logging within RHCAs and from upslope logging. The EA failed to adequately disclose or analyze the significant effects that increased logging of large trees would have on these ecosystems.

The Inland Native Fish Strategy ("INFISH") and Pacific Anadromous Fish Strategy ("PACFISH") are management directions related to aquatic resources that have been incorporated into all of the land management plans for the 6 national forests in the planning area. PACFISH and INFISH do not limit the size of trees harvested within the areas that they apply to, specifically, Riparian Habitat Conservation Areas or "RHCAs."

The Preliminary EA states that "[s]ince no changes will be made to these aquatic conservation strategies, a No Effect determination applies to all Threatened and Endangered, R6 Sensitive and MIS fish species...in the analysis area." EA at 69. Essentially, the EA claims that because there are not proposed changes to INFISH or PACFISH there will be no effects.

This reasoning is arbitrary and capricious. Under all of the action alternatives, large trees now will be allowed to be cut in RHCAs as long as Resource Management Objectives ("RMOs") logging does not retard attainment of RMOs and that RMOs are met. This is a highly subjective objective. Logging within RHCAs along streams that are not meeting multiple RMOs has become a regular occurrence in some eastside forests. The failure to meet RMOs in streams with commercial logging proposed within their RHCAs is documented in the USFS NEPA analyses for numerous sales. Examples include streams in the Camp Lick, Ragged Ruby, and Big Mosquito sales on the Malheur National Forest, and the Black Mountain and Gap sales on the Ochoco National Forest. Some of these sales include commercial logging within RHCAs along streams that regularly exceeds stream temperature standards for RMOs and state water quality standards.

In areas where there is ample evidence of historic fir dominance, silvicultural prescriptions regarding large trees in mixed-conifer forests within RHCAs and in upslope areas often seek to shift species composition towards early seral species and lessen the amount of mature fir in stands. The proposed action explicitly encourages logging of fir $\geq$21 inches dbh. As a result increased logging of larger fir within RHCAs would be expected under this proposal.

Riparian forests, aquatic habitats, fish, and water quality will be significantly affected by this proposal as a result of increased logging of large trees in the uplands and within RHCAs. The EA has ignored key issues such as decreased recruitment of large woody debris; likely increases in stream temperature and excess fine sediments; alteration of watershed hydrology due to the increased loss of large trees; and other likely negative effects to aquatic systems.

Large trees are integral to a variety of crucial aquatic and riparian ecosystem functions and processes. They play central roles in these ecosystems, such as helping to store sediments and

nutrients; shape channel morphology and instream habitats and conditions necessary for fish and other aquatic organisms; support groundwater flows, hyporheic flows and groundwater storage, and so provide cold water flows into streams; and provide key habitat for numerous species. (Bisson et al., 1987;[62] Frissell et al., 2014;[63] Hicks et al. 1991;[64] Ralph et al.1994;[65] Bilby and Bisson 1998;[66] Spies et al. 2013;[67] Pollock and Beechie 2014[68]). Should this amendment be implemented, the loss of large trees due to logging, and the loss of future recruitment of large trees, would likely have significant effects.

e) The Forest Service Failed to Adequately Disclose Baseline Data as Required by NEPA

The Forest Service fails to provide baseline data. We urged the Forest Service to provide accurate baseline data on species composition, density and trends, as well as wildlife species population data and trends and climate/carbon information and trends within the project area. "To comply with NEPA's 'hard look' mandate, courts have held that agencies are obligated to maintain a current inventory of resources so that an adequate baseline exists to evaluate the environmental impacts of a proposed action. It is against baseline information that environmental impacts are measured and evaluated; therefore, it is critical that the baseline be accurate and complete." *Central Oregon LandWatch v. Connaughton*, 905 F. Supp. 1192, 1197 (Or. 2012).

Where data is insufficient or lacking, under NEPA the Forest Service has a duty to fill in those informational gaps. NEPA regulations provide that once an agency determines that "the means to obtain" a prediction about future impacts "are not known, [the agency] *shall* . . . evaluat[e] . . .

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[62] Bisson, P; Bilby, R.; Bryant, M.; Dolloff, C.; Grette, G.; House, R.; Murphy, M.; Koski, K.; and Sedell, J. 1987. Large woody debris in forested streams in the Pacific Northwest: past, present, and future. Pages 143-190. Streamside management: forestry and fishery interactions. University of Washington.

[63] Frissell, C.; Baker, R.; DellaSala, D.;Hughes, R.; Karr, J.; McCullough, D.; Nawa, R.; Rhodes, J.; Scurlock, M.; and Wissmar, R. 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. Prepared for the Coast Range Association.

[64] Hicks, B., Beschta, R., and Harr, D. (1991). Long-term changes in streamflow following logging in western Oregon and associated fisheries implications. Water Resources Bulletin, (27):2.

[65] Ralph, S.; Poole, G.; Conquest, L.; and Naiman, R. 1994. Stream channel morphology and woody debris in logged and unlogged basins of western Washington. Canadian Journal of Fisheries and Aquatic Sciences 51(1), 37-51.

[66] Bilby, R. and Bisson, P 1998. Function and distribution of large woody debris. Pages 324-326 River ecology and management: Lessons from the Pacific coastal ecoregion.

[67] Spies, T.; Pollock, M.; Reeves, G.; and Beechie, T. 2013. Effects of riparian thinning on wood recruitment: A scientific synthesis. Science Review Team, Northwest Fisheries Science Center.

[68] Pollock, M. and Beechie, T. 2014. Does Riparian Forest Thinning Enhance Forest Biodiversity? The Ecological Importance of Downed Wood. Journal of American Waters Resource Association (JAWRA) 50(3): 543-559. DOI: 10.1111/jawr.12206.

impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(4) (emphasis added).

Examples of missing baseline information include: the baseline information on species that rely on large trees, as described in the GTR-485, including population and habitat trends; baseline impacts of on-going actions on the forests, such as logging (and particularly the outcomes of other site-specific plan amendments on large trees, as discussed in the Case Study Section below), grazing, road-building, recreation and invasive species; and the on-going impacts of climate change.

D. The Purpose and Need for the Amendment is Unreasonable and Does Not Take Into Account Applicable Statutory and Regulatory Requirements

The stated purpose and need for this proposed amendment is inconsistent with the Forest Service's analysis and the stated goal of the amendment. It fails to recognize the Forest Service's statutory duties under NFMA and its implementing regulations.

NEPA's implementing regulations require that the agency state the underlying purpose and need for the proposed action. 40 C.F.R. § 1502.13. An accurate statement of purpose and need is central to crafting an adequate NEPA analysis because it will provide the guideposts for the analysis of the proposed action, alternatives, and effects (40 C.F.R. § 1502.13) and dictates the range of "reasonable" alternatives. *See, e.g.*, *Klamath-Siskiyou Wildlands Center v. Graham*, 899 F. Supp. 2d 948, 958 (E.D. Cal. 2012). Yet the statement of purpose must not be so narrow as to artificially limit the alternatives considered. *See*, *e.g.*, *City of Carmel-by-the Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997). Courts evaluate a Statement of Purpose and Need under a reasonableness standard. *Friends of Southeast's Future v. Morrison,* 153 F.3d 1059, 1066-67 (9th Cir. 1998). One of the ways reasonableness is determined is by looking at whether an agency's underlying substantive duty informs the scope of the agency's NEPA analysis. *See Westlands Water Dist. v. U.S. Dept. of Interior,* 376 F.3d 853, 866 (9th Cir. 2004).

According to the Forest Service, the purpose of the "assessment is to analyze a durable, science-based alternative to the 21-inch standard in the Eastside Screens." EA at 7. Regarding the need for the proposed action the EA goes on to state that "[s]cientific research, ongoing monitoring of restoration treatments and natural disturbances, and practical experience implementing the 21-inch standard demonstrate a need to change policy to better conserve large and old trees and to adapt stands to future climate and disturbance regimes." *Id.*

The EA goes on to state that the goals in the EA are the same as the purpose and need of the original 1994 Eastside Screens:

> "The goal of this proposed amendment is synonymous with the purpose and need for the original screens, which is the '...need to maintain the abundance and distribution of old forest structure.' The original 1994 EA explains, 'The purpose is to preserve those components of the landscape—old forest abundance, wildlife habitat in late and old structural stages, and riparian areas—which new information suggests is vitally important

> to certain species of wildlife and fish and to the overall vegetative structure of the forest.'"[69]

Here the Forest Service has overly narrowly construed the purpose and need to exclude the protection of large trees, and so not only fails to be synonymous with original Screens as claimed, but also fails to protect large trees and old and mature forests. By excluding large trees from the stated need for protection within the purpose and need statement, the agency has improperly skewed the overall goals of the analysis, the alternatives presented, the proposed action, and the assumptions and recommendations of the EA. Alternatives that flow out of the agency's flawed and overly narrowly construed purpose and need are thus, in turn, flawed.

1. **The Purpose and Need is Undermined by the Forest Service's Own Analysis**

This stated purpose and need is undermined by the Forest Service's admission that LOS forest structure would continue to improve under all alternatives, including no action/current management. EA at 36. Protecting and restoring LOS is the primary goal of the Eastside Screens, so this analysis shows there is no compelling purpose and need for this plan amendment. Further, EA Figures 7, 8, and 9 (EA at 30-31) show that restoration efforts over the last 25 years under the no action alternative are effective and LOS forest structure is increasing under the Eastside Screens. The EA (at 32) says "[t]he increased amount of open LOS forest in both the dry and moist forest groups is an indicator that we are moving toward eastside screen goals."

2. **The Purpose and Need is Inconsistent with the Stated Goal of the Proposed Amendment**

The purpose and need is also inconsistent with the stated goal of the amendment to maintain the abundance and distribution of old forest structure. EA at 8. Old forest *structure* includes large trees that are not yet old.

The Forest Service is not in fact focusing on forest structure. The agency is using sleight of hand to shift the focus of the Screens to protect just *old* trees and exclude large trees that are functional surrogates for old trees and an important component of the Screens' conservation strategy. In spite of the Screens' focus on large tree structure, the purpose and need for this plan amendment conspicuously only talks about protecting old trees, not large trees. This is a significant change to the Eastside Screens, which recognized the shortage of old trees will be long lasting, and the authors of the Screens wisely chose to mitigate that shortage by protecting large trees that can serve as functional surrogates for old trees. Table 1 in the 1995 Eastside Screens defined forest structural stages used to determine Late Old Structure (LOS) and historic range of variability (HRV) and it explicitly states that "Structural stage is not necessarily associated with stand age or to seral (species composition) development." If the goal of the Screens remains the same, then both old trees <u>and</u> functional surrogates (regardless of age or species) need to be conserved. Removing large trees is in direct conflict with that goal. Removing large trees does not offer

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[69] USDA Forest Service. 1994. (Eastside screens) Environmental assessment for the continuation of interim management direction establishing riparian, ecosystem and wildlife standards for timber sales (revised June 1995). USDA Forest Service, Pacific Northwest Region, Portland, OR.

"more effective conservation" of the ecological functions provided by old trees. Especially when we account for the increase in large tree mortality caused by logging under the amended screens, the EA (at 36) admits that LOS forest structure would continue to improve under all alternatives, including no action/current management.

The EA (at 16) says it will use species composition and tree age as indicators for analysis. This conflicts with the assertion that this plan amendment retains the original goals of the Eastside Screens and the Eastside Screens explicit statement that structural stages are independent of stand age or species composition.

The EA also admits that removing large trees is not essential to meeting LOS objectives. The agency has authority under existing management direction to focus on small diameter trees in order to meet LOS restoration goals. The EA (at 36) says "…the current trend of increasing LOS forest will continue for all alternatives. … Closed canopies will continue to increase because tree growth and regeneration will outpace thinning effects from both wildfire and management. Future treatments would need to increase the removal of small and mid-sized trees from closed canopy forests in order to change this trajectory." (emphasis added).

The EA (at 20) admits "Large trees can substitute for some of the ecological function in the short-term" but the Proposed Action and the EA analysis does not reflect this very important fact. The Forest Service needs to develop a policy that retains large trees when they can help serve the scarce ecological functions of old trees. The EA needs to disclose the risk that this plan amendment will allow and encourage removal of large trees and their associated ecological functions as functional surrogates of old trees.

The Forest Service is also diverging from the original intent of the screens in the new snag standards. The Forest Service proposes to eliminate the aspirational goal to retain enough snags and green trees to support maximum potential populations of cavity excavator species, which are keystone species. *See* 1995 Eastside Screens, Scenario A, Sub 4 (a). The new replacement standard has no clear goals related to healthy populations of snag-associated wildlife. This directly undermines the stated purpose of these amendments to restore resilience, because snag-associated birds help control insects that harm trees. If the Forest Service fails to retain enough snags and green trees, then insect predator populations will pose an increased threat to the forest.

The EA (at 7) says: "Increases in stand basal area since frequent fire was excluded from eastern Oregon forests are largely attributable to growth and establishment of relatively large, fast growing, shade tolerant species like Grand fir and Douglas-fir …" This is highly misleading. Though Douglas fir and Grand fir can grow large, most of the trees (and most of the basal area) that have established due to fire exclusion are much smaller than 21-inch dbh and can be removed without amending the screens. All things being equal, the basal area of small trees poses a greater competitive threat to old trees than the basal area of large trees, because small trees have a higher proportion of sap wood compared to large trees.

The EA (at 7-8) says "A variety of empirical studies and science syntheses demonstrate that protection of all trees greater than 21 inches prevents restoration of historical conditions and conditions that are likely to maintain old trees into the future …" This fails to reflect the vast science showing that removing small trees is the higher restoration priority. Removal of small trees allows the Forest Service to make substantial progress on its restoration goals. However,

there are significant ecological trade-offs with large tree removal, because it sacrifices other important restoration goals that are generally not sacrificed to the same degree when small trees are removed.

The EA (at 8) says "Although the 21-inch standard protects large trees from logging, it does not protect large trees from mortality from fire, insects, and drought." This fails to recognize that it is ecologically more important to protect large trees from logging than from natural mortality. Logging mortality and natural tree mortality have some things in common and some things that distinguish them. Both logging mortality and natural mortality thin the forest and may make resources available to increase the vigor of remaining trees. However, natural mortality creates highly valuable snag habitat and down wood (and continues to store atmospheric carbon), whereas logging exports these valuable LOS components from the forest. On balance, natural mortality provides a better mix of benefits, especially in light of the fact that stand resilience can be largely accomplished by removing smaller trees. The NEPA analysis needs to reflect the important differences between the effects of logging and natural mortality.

The EA (at 8) goes on to state:

> Given new science and our evolving understanding of landscape ecology, a standard that prohibits logging of all trees larger than or equal to 21 inches diameter at breast height (dbh) is no longer adequate to support landscape restoration and resiliency efforts, nor conserve the remnant old and late seral and/or structural live trees it was meant to protect.

This is highly misleading because: (i) there is no new science saying that species composition and fuel reduction are more important than the stated goal of the Screens - "maintain the abundance and distribution of old forest structure," including large young trees that serve as old tree surrogates; (ii) landscape restoration, resilience and old tree conservation can still be achieved by thinning small trees; and (iii) this sentence effectively rewrites the goals of the Screens to exclude conservation of large trees that serve as old tree surrogates.

3. The EA fails to Articulate any Purpose and Need for Amending the Snag and Green Tree Replacement Standards

The EA (at 4-5) says "The amendment would not change any other plan components […]." This is not true. Snag and green tree retention standards are being amended under all action alternatives to weaken protections and restoration of snags and green tree replacements. The EA failed to identify what is the purpose and need for this separate amendment to the Screens' snag and green tree replacement standards. This raises significant concerns in light of the fact that logging large trees will deprive the ecosystem of much needed large snags, and the critically important role played by snags and dead wood. It's almost as if the Forest Service is amending the snag standard, not to fix the minor flaw in the standard or to better meet snag objectives, but in order to facilitate the pre-ordained decision to remove large trees.

4. The Proposed Action Fails to Meet the Purpose and Need

Neither the large tree amendment or the snag and green tree amendment are rational actions for addressing the stated purpose and need. We are concerned that the Forest Service will

substantially change the proposal between the preliminary and final EA. Doing so would deprive the public of an opportunity to comment on whether the final proposal meets the stated purpose and need. Especially in light of the Forest Service having already prevented the public from participating in the legally required project scoping process, we are concerned that the public will not have a chance to comment on a NEPA document that describes the actual proposal and its effects.

This preliminary EA should be revoked and the Forest Service should start from scratch to develop an EIS that actually analyzes a range of alternative actions that would meet the purpose and need of the original Eastside Screens. Specifically, the proposed action as presented in the EA fails to meet the purpose and need and the original intent of the Screens for at least three reasons:

- The proposed action alternative allows removal of large trees that serve as surrogates for old trees that remain scarce. Large shade-tolerant trees up to 30" dbh can be removed without any ecological justification;
- The proposed action alternative adds dangerous levels of administrative discretion to large tree conservation. Managers are under pressure to get the cut out and will make choices that sacrifice ecological goals in order to meet economic goals; and
- The amended snag and green tree standard is a radical departure from the original intent of the wildlife screens.

The preliminary EA says that tree age would be determined using best available science. This would be tree coring, but tree coring is very resource intensive and could harm the very trees we are trying to save. That is one reason why the authors of the Eastside Screens chose to use diameter as a surrogate for age. Unlike tree age, tree diameter can be quickly and easily determined without harming the tree. Tree diameter is also a good way to ensure that ecologically valuable large trees are retained regardless of age. Further, and as discussed above, large trees serve as functional surrogates for old trees because they provide many of the same ecological functions as old trees, especially when a large deficit of old trees still exists on the landscape.

The proposed action emphasizes retention of old trees and increased removal of large trees less than 150 years old. Table 3 (EA at 34) suggests that more than 2/3 of large trees in the planning area are in stands less than 150 years old. This suggests that this plan amendment is putting a surprisingly large subset of large trees at risk of logging. The EA needs to accurately describe the magnitude of this risk.

Table 3. Large Trees in the Project Area.

Stand Age	Proportion of large trees (>20.9 inches dbh) in the analysis area*	Percent basal area (ft^2/acre) of large trees
<50 years	3%	9%
50-150 years	68%	25%
>150 years	29%	48%

*There are 41.7 million trees larger than 20.9 inches dbh in the project area

E. The EA does not Consider a Reasonable Range of Alternatives as Required by NEPA

NEPA mandates that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.2(e). NEPA also requires the Forest Service to "study, develop, and describe appropriate alternatives" to a proposed project independent of whether the agency is preparing an EA or an EIS. 42 U.S.C. § 4332(2)(E); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988); *see* 40 C.F.R. § 1508.9. "Informed and meaningful consideration of alternatives, including the no action alternative, is thus an integral part of the statutory scheme. Moreover, consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process." *Bob Marshall Alliance*, 852 F.2d at 1228-29. Federal agencies must "[r]igorously explore and objectively evaluate all reasonable alternatives to a proposed project." *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin*, 538 F.3d 1172, 1217 (9th Cir. 2008).

The Ninth Circuit made clear in *Western Watersheds Project v. Abbey*, that "the existence of a viable but unexamined alternative renders an EA inadequate." 719 F.3d 1035, 1050 (9th Cir. 2013). Courts reviewing EAs have consistently found them lacking where there existed feasible mid-range or reduced-impact alternatives failing between the extremes of granting in full or denying in full the proposed action, but the agency opted not to analyze them in detail. *See, e.g., Abbey*, 719 F.3d at 1050 (finding EA arbitrary and capricious where it failed to consider "reduced-grazing" alternatives); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Dep't of Interior*, 655 F. App'x 595, 599 (9th Cir. 2016) (holding that agency's "decision [in EA] not to give full and meaningful consideration to the alternative of a reduction in maximum interim contract water quantities was an abuse of discretion, and the agency did not adequately explain why it eliminated this alternative from detailed study"); *Wild Fish Conservancy v. Nat'l Park Serv.,* 8 F. Sup 3d 1289, 1300 (W.D. Wash. 2014) (finding agency's EA deficient because the "conclusion that there is not a meaningful difference, or viable alternative, between 0% and 90% [of fish survival] [was] suspect"), aff'd, 687 F. App'x 554 (9th Cir. 2017); *Native Fish Soc'y v. Nat'l Marine Fisheries Serv.,* 992 F. Supp. 2d 1095, 1110 (D. Or. 2014) (holding that agency "erred in failing to consider a reasonable range of alternatives" in EA, and finding that "[g]iven the obvious difference between the release of approximately 1,000,000 smolts and zero smolts, it is not clear why it would not be meaningful to analyze a number somewhere in the middle").

The EA considered three action alternatives. The EA analyzed these along with a "no action alternative." The no action alternative would not change management direction and retain the requirement to maintain all live trees ≥ 21-inch dbh outside of LOS stands. The Proposed Action or *Old Tree and Large Tree Guideline with Adaptive Management Alternative* would replace the 21-inch standard with a guideline that suggests land managers retain trees "having visual characteristics that suggest an age ≥ 150 years [and] … grand fir, white fir, or Douglas-fir ≥ 30" dbh or trees of any other species ≥ 21 inch dbh. The *Old Tree Standard Alternative* would eliminate the 21-inch standard and replace it with a standard requiring all trees estimate to be > 150 years) to be retained. The *Adaptive Management Alternative* would eliminate the 21-inch standard. Management activities would not be constrained by a size or age requirement. Both the proposed action and the adaptive management alternative would include an "adaptive management component," What this would look like has not been adequately disclosed in the EA. What has been disclosed is not rational.

Here, the Forest Service failed to consider a reasonable range of alternatives because it failed to consider reasonable action alternatives that would have better met its stated purpose and need and minimized adverse effects of the proposed actions.

1. Reasonable Alternatives not Considered

Because the public was not afforded the opportunity to provide comments during a formal scoping period, Oregon Wild submitted comments on May 15, 2020 during the "pre-engagement" phases of the planning process with the hopes that the agency would consider those comments when developing proposed action and action alternatives. At that time the Forest Service had not disclosed the identified purpose and need, preliminary need to amend the forest plans or any information on why or how it proposed to amend the 21-inch standard.

These pre-engagement comments suggested a variety of needed plan amendments that the Forest Service could have considered. Some of the alternatives suggested in these comments would require a slight adjustment to the purpose and need but we contend such an adjustment is needed in order to comply with NEPA (see section above). In the EA, the Forest Service fails to explain why these alternatives were not considered. Why has the Forest Service neglected to bring its land management plans in line with new information about the need to manage forests for climate mitigation, modify grazing practices, and conserve small roadless areas? Why is the Forest Service proposing a narrow amendment that increases logging of the large and mature trees without considering all the relevant scientific information?

Instead of rejecting alternatives based on conclusory statements and assertions, the Forest Service must fully consider all reasonable alternatives and show their effects so that the public and decision-maker can be better informed of alternatives and their effects.

The Forest Service rejected some alternatives because they would not allow the agency to prevent tree mortality. This is a flawed rationale because, as discussed above, it fails to recognize that natural tree mortality is an ecological necessity for healthy forested ecosystems and much preferable to logging mortality that exports the ecological benefits of large tree mortality from the forest.

Below, we set forth several reasonable NEPA alternatives that would meet the purpose and need and should be considered in the NEPA analysis.

No Action Sub-Alternative, aka "Do The Right Thing" - The Forest Service must consider a sub-alternative of the no action alternative that (i) retains old trees regardless of size, both live and dead, and both inside and outside LOS, (ii) kills some large young shade-tolerant trees that are in direct competition with old trees (i.e., within the dripline of shade-intolerant trees >200 years old), and (iii) prunes lower branches on some shade-tolerant trees to reduce ladder fuels near old trees. These strategies are entirely consistent with the Forest Service's existing authority under the Eastside Screens and better meet the overall restoration goals of the Screens, because it avoids many of the trade-offs of commercial logging and increases recruitment of large snags that are in short supply. Such an alternative also harmonizes competing diverse objectives including carbon adaptation and mitigation, large snag habitat, wildlife cover, large tree conservation, resilience, and so forth.

Best Science Snag and Green Tree Alternative - The Forest Service must consider alternatives to the snag and green tree replacement standard that retain the objective of managing for large healthy populations of snag-associated wildlife (and the resilience benefits that come from that), while aligning the snag and green tree standard with the best available science, (e.g., 80% DecAID tolerance levels) for the wildlife most sensitive to the shortage of snags.

Protect Large Trees Inside LOS Alternative - The Forest Service should consider an alternative that adopts conservative diameter limits for treatments within LOS. As currently written, the Forest Service could remove large trees from LOS as long as they maintain the bare minimum LOS criteria (which remain vaguely defined and elusive). The Forest Service should consider an alternative that meets the intent of the screens by retaining LOS components when conducting treatments within LOS.

Direct Competition Alternative - The Forest Service should consider an alternative that adopts a narrow amendment allowing removal of shade-tolerant trees 21-26" dbh AND <100 years old when in direct competition with old trees (i.e., within the dripline of shade-intolerant trees >200 years old).

Conserve Sensitive Areas Alternative - The Forest Service should consider an alternative that excludes certain sensitive areas and land allocations from this plan amendment, such as RHCAs, wildlife habitat/big game cover areas, scenic/recreation areas, unroaded areas >1,000 acres, MA-15, etc.

Climate Harmony Alternative - The Forest Service must make carbon storage part of the purpose and need for this plan amendment and all vegetation management projects because failing to do so is morally perilous, then the Forest Service should consider an alternative that harmonizes climate change adaptation (small tree density reduction to increase resilience) and climate change mitigation (maintain and increase carbon storage consistent with the productive capacity of the land).

Focus on White fir/Grand fir Alternative - The Forest Service should consider an alternative that retains protection of Douglas fir larger than 21-inch dbh. Douglas fir is not really shade-tolerant,

nor is Douglas fir fire intolerant. It is more reasonable to conserve Douglas fir similar to other shade-intolerant, fire-tolerant species like larch and Ponderosa pine.

Standards, Not Guidelines Alternative - The Forest Service should have considered alternatives that retained diameter limits as standards, instead of guidelines. This alternative would perform very similar to the guidelines, but would better maintain public trust, and avoid conflicts between ecological and economic goals.

Dry Forest Alternative - The Forest Service should have considered an alternative that only amended the 21-inch standard for dry forests types. Dry and moist mixed conifer forests have different fire return intervals and disturbance regimes and thus past management has affected these areas differently. Forest types can be easily delineated using plant associations.

Strengthen Protections for Large Trees Alternative - The Forest Service should have considered an alternative that strengthens the 21-inch standard to a 20" standard, as originally proposed by the 1993 Eastside Forests Scientific Society Panel convened by Congress. This standard would accelerate LOS, provide greater wildlife habitat, store more atmospheric carbon, and better maintain public trust.

Prescribed Fire and Managed Wildfire Alternative - The Forest Service should have considered an alternative that relies on both prescribed fire and managed wildfire to meet the purpose and need stated in the EA.

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

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

2. The Analysis of the No Action Alternative is Flawed

The EA failed to analyze current management as applied or acknowledge that the Forest Service can meet the stated purpose and need under existing management direction. The EA analysis of the no action alternative needs to take a hard look at the agency's ability to meet its objectives by managing trees less than 21-inches dbh and accurately disclose the effects of the no action alternative.

a. The EA Must Analyze Current Management as Applied

The EA says the existing 21-inch standard "has been applied ***as written*** across Forests and through time." (emphasis added). This is misleading. The Forest Service has frequently applied the Eastside Screens to protect large trees both *inside* and *outside* LOS forests, and in landscapes that are both *above* and *below* HRV. The Forest Service must describe and analyze the existing 21-inch standard as applied, instead of as written. The EA (at 27) says the Forest Service assumes that the screens will be applied as written, rather than as applied ("Under all action alternatives, we assume that subpart 1 of Scenario A is not interpreted as having a 21-inch dbh tree harvest prohibition as long as the intent of the ecosystem standard and Scenario A wildlife standard are met including not net loss of LOS from respective biophysical environments"). In other words, allowing removal of large trees when LOS is above HRV. This is not a fair and accurate description of current management. Applying the Screens this way will lead to a significant loss of large tree structure that must be disclosed in the NEPA analysis.

b. The Forest Service Can Meet the Stated Purpose and Need Under Existing Management Direction

The EA analysis of the no action alternative fails to recognize that the Forest Service has authority under the existing land management plans in the planning area to take action and advance the stated purpose and need. Two existing authorities in particular deserve to be highlighted. First, the Forest Service can retain old trees that are smaller than 21-inch dbh. With support from conservationists, the Forest Service uses that authority in some projects.[70] This adjustment will mitigate the loss of old trees under 21-inch dbh that the Forest Service expresses so much concern about. The Forest Service can do this without amending the Screens. Second, the Forest Service can kill and retain large, shade-tolerant trees that are in direct competition with older legacy pine and larch by girdling or blowing the tops off of these trees. This will allow the Forest Service to prolong the life of old legacy trees, retain carbon storage on the landscape, and recruit valuable large snags and down wood, all without amending the Screens.

The effects of the no action alternative need to be reanalyzed in light of the erroneous assumption that many old trees <21-inch dbh would be removed, and many large young shade-tolerant trees would persist under the no action alternative. The EA needs to reanalyze effects on old trees in light of the discretion present within existing authorities.

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[70] An example of such a project is the Glaze Forest Restoration Project on the Sisters District of the Deschutes National Forest. See page 46 of the Glaze EA: "All old growth trees established under the historic fire regime prior to the time of European settlement (i.e., pre-settlement trees) would be retained. This includes small old growth trees regardless of size."

c. The EA Analysis of the No Action Alternative Needs to Take a Hard Look at the Agency's Ability to Meet its Objectives by Managing Trees Less than 21-inch dbh

The EA analysis of the no action alternative also fails to recognize that managing trees <21-inch dbh allows the Forest Service to substantially achieve its management goals with fewer trade-offs while removing large trees adds very little to the accomplishment of goals and comes with significant trade-offs, such as carbon emissions, wildlife impacts, snag habitat loss, loss of public trust, and social conflict.

Best available science finds that the Forest Service management goals can be largely met by managing small trees. For example, Rainville et al (2008)[71] found that there is a vast need for density reduction in eastside forests, but that it is predominantly in forests with small trees.

> [W]e found that on lands where active forestry is allowable, thinning of most densely stocked stands would not be economically viable. … In the 46 percent of the three Blue Mountains national forests that is forested, thinning with timber removal is an unlikely treatment method. This does not mean that other vegetative management options (prescribed fire, wildland fire use, or thinning without commercial timber removal) could not be used to reduce fire hazard, but it is doubtful that these areas would produce much commercial timber. … Commercial thinning would only be possible where the value of the timber harvested exceeds the cost of the harvesting, hauling, road maintenance, and contractual requirements (i.e., a positive net revenue exists). Because most simulated thinnings harvested low volumes of small trees, commercial removal was possible on only 39,900 (± 4,600) acres, or less than 10 percent of the densely stocked acres (table 4-8). … … even when considered under the most favorable of assumptions, most densely stocked stands would not be treatable without significant investments."

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[71] Rainville, Robert; White, Rachel; Barbour, Jamie, tech. eds. 2008. Assessment of timber availability from forest restoration within the Blue Mountains of Oregon. Gen. Tech. Rep. PNW-GTR-752. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 65 p. http://www.fs.fed.us/pnw/pubs/pnw_gtr752.pdf. See also, Schoennagel et al 2017. Adapt to more wildfire in western North American forests as climate changes. PNAS 2017; published ahead of print April 17, 2017. www.pnas.org/cgi/doi/10.1073/pnas.1617464114; https://headwaterseconomics.org/wp-content/uploads/Adapt_To_More_Wildfire.pdf ("Mechanical fuels treatments on US federal lands over the last 15 y (2001–2015) totaled almost 7 million ha (Forests and Rangelands, https://www.forestsandrangelands.gov/), but the annual area burned has continued to set records. Regionally, the area treated has little relationship to trends in the area burned, which is influenced primarily by patterns of drought and warming. Forested areas considerably exceed the area treated, so it is relatively rare that treatments encounter wildfire. … [R]oughly 1% of US Forest Service forest treatments experience wildfire each year, on average. The effectiveness of forest treatments lasts about 10–20 y, suggesting that most treatments have little influence on wildfire. … [T]he prospects for forest fuels treatments to promote adaptive resilience to wildfire at broad scales, by regionally reducing trends in area burned or burn severity, are fairly limited.").

This is supported by the EA. Figures 7, 8, and 9 (at 30-31) show that restoration efforts under the no action alternative are working to meet agency management objectives. The Eastside Screens protections have been effective at increasing LOS forests, and is not impeding agency progress. LOS forests are increasing under the Eastside Screens. The EA (at 33) also admits there are tens of millions of trees just under the 21-inch dbh limit, management of which is not inhibited by the existing screens:

> There are an estimated 41.7 million trees larger than 20.9 inches throughout the eastern Oregon landscape, which is an average of about 6 trees per acre within the analysis area. This population of large trees is comprised mostly of ponderosa pine (48%), grand fir/white fir (23%), and Douglas-fir (15%). ***There are about 43.5 million trees in the next smaller size class (17-20.9") with similar relative proportion of species.***

(emphasis added). This indicates that the agency has plenty of work they can engage in to achieve their management objectives by working within the existing limitations of the Eastside Screens. The analysis of the no action alternative needs to accurately disclose this.

d. The Effects of the no Action Alternative were not Accurately Disclosed

The effects analysis failed to accurately disclose the effects of the no action alternative. The EA (at 16) says "we simulate typical timber harvest in the Forest Vegetation Simulator (FVS)." FVS was not used to "mimic all potential alternative treatments, effects of those treatments, or all disturbances and succession dynamics" rather, it was used to simulate "stand level application of one generalized silviculture prescription … density reduction … We applied a typical prescription designed to increase growing space for trees that remain on site, decrease competition and ecological stress (limited availability of water or light), and favor fire tolerant species." EA at 21. The EA failed to analyze the effects of no action in light of the recognized existing authority to convert large young shade-tolerant trees into ecologically valuable snags.

3. Alternatives Considered but not Analyzed in Detail

The EA improperly rejects an alternative to cut and retain large trees on site. The EA calls it "drop and leave," but it could also be called "large snag creation" as it would address snag habitat deficiencies. The Forest Service rejects this large snag creation alternative because the EA says it is consistent with the no action alternative. The NEPA analysis must be sure to fully and accurately disclose how the problems of tree stress and resilience can be addressed under the no action alternative using existing authority to create large snags. The effects analysis failed to clearly disclose that the proposed action will exacerbate the shortage of large snags, while the no action alternative/large snag creation alternative will mitigate the shortage of large snags.

This large snag creation alternative is superior to the proposed action in several ways. The proposed action removes large trees from the forest, which solves a perceived problem with tree competition and resilience, but creates another problem by exacerbating the shortage of large snags. An alternative that creates large snags actually solves several problems. It reduces tree competition in ecologically appropriate situations, increases resilience, and helps mitigate the shortage of large snags.

Creating snags instead of felling trees would also address the problem of surface fuels because the small fuels would fall slowly to the ground and not build up. Concerns about fuel could also be mitigated by cutting a smaller number of trees over time instead of many trees at one time.

Snag creation would also be ecologically preferable to felling large trees, because snags provide ecological benefits that down wood does not, such as cavity nesting. The preliminary EA says this alternative is available under the no action alternative, so the NEPA analysis should carefully disclose the benefits of this approach when describing the effects of no action.

The non-commercial snag creation alternative has several benefits that need to be reflected in the analysis. It not only retains valuable LOS features in the forest but also helps ensure that valuable LOS features are not sacrificed for the wrong reasons, such as to meet timber targets. The screens have kept large trees separate from economic incentives for a long time. There are significant ecological risks involved if conservation of large trees become entangled with economic motivations.

There is precedent for doing large-scale snag recruitment on federal lands. BLM's 2016 Plan Revision for Western Oregon requires BLM to create 10 snags per acre when logging in Late Successional Reserves.

F. The EA Failed to Meaningfully Consider Cumulative Effects

Pursuant to NEPA, the agency must "provide full and fair discussion of [the] significant environmental impacts" of the proposed action." 50 C.F.R. § 1502.1. In particular, the agency must take a "hard look" at the direct, indirect, and cumulative impacts of a proposed project. Deferring to future analysis after a decision has been made is in noncompliance with NEPA when the lead agency has enough information to engage in reasonable forecasting without speculation. *N. Plains Res. Council, Inc. v. Surface Transp. Bd*, 668 F.3d 1067, 1079 (9th Cir. 2011) "General statements about 'possible effects' and 'some risk' do not constitute 'hard look' absent a justification regarding why more definitive information cannot be provided." *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dept. of the Interior*, 608 F.3d 592, 603 (9th Cir 2010). "It it not appropriate to defer consideration of cumulative impacts to a future date when meaningful consideration can be given now." *Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1075 (9th Cir. 2002).

Cumulative impacts are those that "when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." *Id.*; 40 C.F.R. § 1508.25(a). A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions…[and which] can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7.

An agency properly "considers" cumulative impacts when it provides "some quantified or detailed information," indicating that it has taken a "hard look" at the impacts of its proposed action and future actions. *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998). "General statements about 'possible' effects and 'some risk'" are inadequate. *Id.* at 1380. Put differently, "very broad and general statements devoid of specific,

reasoned conclusions" do not pass muster. *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 811 (9th Cir. 1999).

Here, the Forest Service engages in a wholesale avoidance of cumulative impacts analysis by stating that "effects of past actions are reflected in the existing conditions and are not described or listed in extensive detail because they inherently contributed to the present state of the landscape." EA at 105. This type of sweeping generalization is not permissible under NEPA. The EA then goes on to make more broad statements, with no analysis or detail, as to future foreseeable *categories* of actions, completely failing to address a single specific foreseeable action, despite having access to SOPAs and plans for each of the forests involved in the proposal.

Contrary to the Forest Service's assertions, there is great potential for cumulative impacts resulting from the proposed alternatives when combined with impacts from foreseeable actions. For example, the DellaSala/Baker report describes the need to analyze grazing impacts in conjunction with the proposed action. The carbon impacts of the loss of large trees on the landscape should also be analyzed cumulatively with other sources of emissions, such as logging, road-building and wildfires. The Forest Service should look at the record developed during ICBEMP to help develop a detailed and informative analysis of the cumulative effects of this plan amendment.

G. The Forest Service Effects Analysis is Flawed and Failed to Disclose and Assess the Direct, Indirect and Cumulative Effects of the Amendment.

The Forest Service must take a hard look at the environmental consequences of any proposed action and associated alternatives. NEPA's hard look at environmental consequences must be based on "accurate scientific information" of "high quality." 40 C.F.R. § 1500.1(b). Essentially, NEPA "ensures that the agency, in reaching its decision, will have available and will carefully consider detailed information concerning significant environmental impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 349. Here, the Forest Service failed to take a hard look at direct, indirect and cumulative effects of the amendment on large and old trees, snags and dead wood, aquatic ecosystems, LOS dependent wildlife species, deer and elk, meadows, black bear, carbon values and climate and socioeconomics in violation of NEPA.

1. Failure to Disclose Effects on Large and Old Trees

The plan amendment only applies outside LOS, by definition, where large trees are not common. This raises serious concerns because where large trees are not common is precisely where retaining large trees is most important. The effects analysis needs to fully and accurately disclose the disproportionate adverse ecological effects of removing large trees where they are needed most. The EA makes no compelling showing that achieving a 0.2% improvement in canopy reduction and resilience (EA at 37) is more important than retaining large trees precisely where they are in short supply.

The EA says there is an average of about 6 trees per acre >21 inches dbh within the analysis area. Averaging large trees across such a large area is not very informative. Many acres have no large trees at all and some areas have many large trees. To make the analysis more informative and

more relevant to wildlife viability indicators, the effects analysis must compare alternatives by displaying the distribution of large trees as histograms showing the number of acres having different abundance of large trees/acre under the different alternatives (highlighting the effects of large tree removal on non-LOS forests that are the subject of this amendment). This can presumably be done using the Forest Inventory and Analysis ("FIA") data that the Forest Service is already using for the EA analysis.

The EA (at 39) admits that current management will result in conservation of more large trees in our eastside National Forests, while amending the Screens will result in 3.4 percent fewer large trees. Conservation and restoration of LOS components like large trees is the key objective of the Eastside Screens. The EA analysis shows that amending the screens will conflict with that goal, while retaining the existing diameter limit in the screens will better meet that objective. The purpose and need of this proposed amendment is best met by retaining current management.

Some confusion arises in the effects analysis because the Forest Service is proposing to redefine large trees under some alternatives. The EA does not say what definition of large tree they are using in the effects analysis. Does it include all trees larger than 21 inches dbh, or does it exclude grand fir, white fir, and Douglas fir 21-30 inches dbh? Does it use the same evaluation criteria for all alternatives? The forest ecology literature often uses 20 inches dbh (or 51 cm dbh) to define large trees, not 21 inches dbh. It makes sense to disclose effects using those ecological criteria. When the Forest Service reports 3.4 percent fewer large trees per acre, is that result spread across all acres, or just treated acres? Does the analysis assume treatment of 34,000 acres/year (average acreage treated per year in the planning area), or 110,000 acres/year (projected treated acres under the EA)? The Forest Service should report the absolute number and distribution of large trees spared by the existing Screens and provide a graphic showing the effects on large trees over time.

The EA analysis of the no action alternative fails to recognize that the Forest Service has the authority under the existing screens to protect old trees, regardless of size, and the ability, in ecologically appropriate situation, to create snags from competing trees where necessary. The Forest Service currently uses that authority in some projects. The EA needs to disclose its assumptions, including the erroneous assumption that old trees <21 inches dbh would be removed under the no action alternative.

The EA analysis of effects to old trees needs to be reconsidered in light of the Franklin/Johnson/Seager Open Review suggesting that the Forest Service may be over-estimating tree mortality from crowding in old forests. Stand density indicators used by foresters are designed for use in stands dominated by relatively young trees. Those tools are not appropriate in stands of large and old trees. As explained by Franklin, Seager and Johnson in their review of this EA:

> "In no case should the stand density indices developed for managed stands be used to judge conditions in old tree dominated stands. The stand density indices used in managed stands composed largely of younger trees are not appropriate to judge competitive conditions in stands of old trees, in which the basal areas are largely composed of heartwood rather than sapwood.

> … [T]raditional silvicultural concepts and measures designed for wood production forests – uniformly distributed young trees of particular densities or basal areas – has no place in restoration of the old-tree-dominated dry forests that are optimal for producing the full array of ecosystem benefits …"

The EA analysis fails to clearly distinguish between the competitive stress caused by large and old trees versus small-young trees and fails to distinguish the differential water demands of heartwood versus sapwood. The EA analysis likely overestimated the projected mortality of large trees from competition, overestimated the number of trees that need to be removed to increase the chances of survival of large and old trees, underestimated the ability to meet objectives by focusing on reducing the basal area of small trees, and miscalculated whether large trees need to be removed to substantially reduce competitive stress. The agency's narrow silvicultural lens of viewing trees in a forest as constantly competing fails to acknowledge the complex interconnections among trees themselves, and within these ecosystems. For example, trees will use mycelial networks to share nutrients. Individual trees can also benefit from the microclimates created by adjacent trees, as well as from protection from windthrow.

The 25-year analysis window is too short to reveal the full effects of large tree removal. The EA analysis of effects to old trees also fails to carry the analysis far enough into the future to determine which alternative recruits more old trees from younger cohorts. Maintaining a healthy population of old trees, while simultaneously providing desired abundance of large snags over time, requires retaining large numbers of trees in cohorts less than 150 years old. Many of the trees in this critical at-risk recruitment cohort are large, "young" trees that would likely be removed under the proposed amendment. The analysis needs to clearly show the adverse effects of shrinking the population of trees nearing old age.

2. Failure to Disclose Impacts on Snags and Dead Wood

The EA (at 9) says that concerns about wildlife were addressed by retaining the existing intent of the Wildlife Screens and by adopting new snag standards that are "grounded in science." This is misleading at best. As discussed above, the Forest Service is using sleight of hand to narrow the focus of the Wildlife Screens to *old trees* and exclude functional surrogates for old trees that were clearly part of the original intent of the Screens. The Forest Service is also proposing a radical new snag standard that remains connected to the discredited "potential population" methodology and completely divorces timber planning from any clear goals related to the number of snags (and green trees) needed to maintain healthy populations of snag-associated wildlife over time.

The existing Wildlife Screens (Scenario A, Sub 4 (a)) have a clear aspirational goal to provide enough snags and green trees to support maximum potential populations of cavity excavator species. The authors of the Screens recognized that maintaining healthy populations of woodpeckers was important to forest health and resilience, because cavity excavators create nesting sites for a number of other birds that help suppress populations of forest insects that can be harmful to trees. The new snag standards shift from 100% potential populations to 40-60% potential population objectives in many land allocations. This not only retains the flaw in the Screens, it also adopts (without any justification) a lower target for snag habitat.

The value of snags and dead wood was reiterated by the Eastside Scientific Societies Panel that explained the keystone role of woodpeckers and the critical importance of snags and dead wood to the overall functioning of the forest.

> The predatory impact of woodpeckers on pest insects is only part of the total predatory impact of the entire avian community. Many bird species continually feed on insect populations, and many depend on woodpeckers to construct the cavities they use. Therefore, maintenance of natural densities of woodpeckers may be crucial to the natural ecological response systems to insect irruptions.
>
> A few scattered snags retained by forest management are not sufficient to provide nesting and roosting habitat into the future. Snags and logs in harvested areas and logs in streams remain only a finite time; the next generation of snags and large woody debris—in other words, live old trees—must be protected. Saving the remaining old-growth is thus a critical first step in conserving old-growth-dependent species, but preservation must be supplemented with plans for generating future old growth.
>
> Forest management that preserves selected snags does not adequately meet the foraging needs of LS/OG-associated species. Eliminating foraging habitat by extensive salvaging or selective cutting will have adverse consequences for pileated woodpeckers and other forest species dependent on cavities excavated by woodpeckers. Continual recruitment of standing dead and downed coarse woody material is absolutely necessary to support the diversity of organisms, including fungi and insects, that in turn provide a productive forest system for woodpeckers and other sensitive wildlife species.
> Elimination of deadwood habitat from the forest thus has adverse consequences on bird populations and seriously skews natural predator-prey relationships that may have a major influence on insect populations (Henjum, et al 1994[72]).

More recent science confirms the finding that forest birds exert some control over forest insect populations.

> Our calculations presented ... imply that insectivorous birds exert substantial predation pressure on insects and other arthropods, especially in tropical and temperate/boreal forest ecosystems. This is supported by a large number of experimental studies conducted in a variety of habitats in different parts of the world (see Şekercioğlu 2006a, Mäntylä et al. 2011; Şekercioğlu et al. 2016 for reviews) ... Birds in forests account for 75% of the annual prey consumption of the world's insectivorous birds (≈ 300 million tons year−1; Table 2). Forests cover a large portion of the global terrestrial surface area (41.6 million km2; Saugier et al. 2001), and in these productive and vegetatively complex habitats, birds usually reach higher diversities (Willson 1974) and numbers ha−1 compared to non-

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[72] Henjum, M.G., J.R. Karr, D.L. Bottom, D.A. Perry, J.C. Bednarz, S.G. Wright, S.A. Beckwitt, and E. Beckwitt. 1994. Interim protection for late-successional forests, fisheries, and watersheds: National forests east of the Cascade crest, Oregon and Washington. The Wildlife Society Technical Review 94-2. Bethesda, MD. 245 pp. (aka the report of the Eastside Scientific Societies Panel)

> forested areas (Gaston et al. 2003). ... To fulfill these huge energy requirements, the insectivorous birds capture billions of potentially harmful herbivorous insects and other arthropods. Only few other predator groups, such as spiders and entomophagous insects, can keep up with the insectivorous birds in their capacity to suppress herbivorous insect populations in a variety of biomes (Table 3; DeBach and Rosen 1991; Nyffeler and Birkhofer 2017). Other predator groups like bats, primates, shrews, hedgehogs, frogs, salamanders, and lizards apparently are less effective natural enemies of herbivorous insects (Table 3). Although some of these latter predator groups may exert high predation pressure in a particular biome type … (Nyffeler et al 2018[73]).

The existing snag standard might be technically outdated, but the Forest Service is throwing the baby out with the bath water by eliminating the aspirational goal for maximum populations of cavity excavators and insect predators needed to maintain resilient forests. If the Forest Service was true to its word, it would be retaining the aspirational goals related to snag associated wildlife and meet those goals by adopting new standards that are aligned with the latest science and information, e.g., DecAID. Instead the Forest Service is eliminating the goal and adopting a new standard so vague that anything goes. This directly undermines the stated intent to restore resilience and retain the fundamental goals of the screens.

They are doing so without adequate analysis of the impacts of the new snag standard. The EA lacks any meaningful species-specific analysis of the effects of large tree removal on the many wildlife that use large snags. Many of the affected wildlife are of conservation concern. The EA also fails to provide a meaningful analysis of effects of removing large trees on long-term recruitment of snags and down wood. The Eastside Screens were adopted in part due to concerns about loss of snags that provide a wide variety of important ecosystem services. In particular, large snags serve as habitat for cavity excavators that are keystone species in eastside forests, because they excavate nesting cavities used by a wide variety of other wildlife, some of which prey on insects that can harm trees. Maintaining abundant large snags for cavity excavators is a necessary precondition to a healthy, resilient forest with healthy relationships between predators and prey, and healthy trees. See Everett et al (1994) and Henjum et al (1994) (above). Importantly, shade-tolerant tree species, such as grand fir/white fir are disproportionately valuable for cavity excavators because those tree species tend to more readily form cavities.

The analysis failed to describe existing large snag abundance using the best available science, for example DecAID tolerance levels. EA Figure 19 and Table 15 are not informative about existing snag habitat values to wildlife. Reporting acres with at least one snag larger than 20 inch dbh has almost no biological significance because many snag-associated wildlife require habitat with far more than 1 snag per acre.

One concerning observation that can be drawn from the limited data presented in the EA is that snag habitat is not increasing on the same trend as large trees. The EA says that large trees are increasing but snags show little to no improvement. EA at 74 ("Although a slight increase in large snag abundance was observed for each WHT [wildlife habitat type], the degree of change was not significant over the 1995-2017 time period.") This is of concern because abundant large

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[73] Nyffeler, M., Şekercioğlu, Ç.H. & Whelan, C.J. Insectivorous birds consume an estimated 400–500 million tons of prey annually. Sci Nat (2018) 105: 47.

snags and down wood are defining features of old growth forests that the Screens are designed to conserve and restore. See USDA/USDI. ICBEMP SDEIS. Appendix 17a – Definitions of Old Forest. This highlights the potential value of a no-action sub-alternative that converts some of the large young shade-tolerant trees to snags.

The EA failed to provide an analysis of effects to down wood. EA (at 75) says "because this amendment will not change any of the standards or portions of the standards relative to down wood, an in-depth down wood analysis was not conducted." This is grossly illogical and misleading. Large down wood is a critically important feature of old growth forests. 100 percent of large down wood is recruited from the pool of large live green trees. This proposed plan amendment will modify green tree management to allow removal of large trees, and that will *unavoidably reduce recruitment of large down wood*. Failing to take a hard look at this issue is a serious flaw in the NEPA analysis. NEPA requires federal agencies to rely upon "high quality information," "accurate scientific analysis" 40 C.F.R. § 1500.1(b), and "full and fair discussion of significant environmental impacts," 40 C.F.R. § 1502.1.

The effects analysis comparing the snag habitat effects of the proposed action to no action is highly misleading.

Eastside Screens Amendment EA Analysis of Snags	
No Action Effects on Snags	Proposed Action Effects on Snags
"This alternative also includes management direction for large snags and green tree replacements, but desired snag levels are based on outdated scientific information (e.g., population potential for primary cavity excavators) that limits the contribution to the viability of species associated with snag habitats (Bull and Holthausen 1993) and does not provide specific guidelines on characteristics that optimize snag recruitment through green tree retention." (EA at 81).	"This alternative also includes management direction to retain large (>20 inches dbh) snags and to manage green tree replacements based on recent science (Mellen-McLean et al. 2017), or requires that a snag habitat assessment using best available science be completed to maintain or increase habitat for snag dependent species and provides an important structural component of habitat for LOS associated species." (EA at 83)

Existing management direction requires the Forest Service to "maintain snags and green replacement trees of ≥ 21 inches dbh ... at 100 potential population levels of primary cavity excavators. This should be determined using the best available science on species requirements …" While it is true that the "potential population" methodology referenced in the Screens is outdated, as explained below, the Forest Service has proposed a new standard that references the same flawed methodology, so all alternatives are equally flawed in that regard. The Forest Service can't fault the Screens for using outdated science because all the action alternatives have the same problem. The Forest Service failed to consider any alternatives that adopt new snag and green standards based on current science, and failed to stop referencing the outdated "potential population" methodology.

The EA's other criticisms of the existing Screens are also misplaced. Contrary to the EA, the Screens do address green tree replacement (and do so better than the proposed new standard). Under current management the Screens require the Forest Service to maintain enough green trees

to maintain large, healthy populations of cavity excavators, based on the best available science regarding those species' habitat requirements. As explained in detail below, the new proposed green tree standards are flawed and based on vague terms like "LOS objectives" and "wildlife tree objectives." Science can aid the agency in its pursuit of clear goals, but how does one use the best science to achieve an ambiguous goal? This is not an improvement.

The existing Screens explicitly require use of "best available science" in all projects, the proposed amendment's new standard only requires use of best available science when the Forest Service chooses not to retain all large snags. Current management requires use of science *always*, while the proposed action only requires use of science *sometimes*. That's not an improvement.

The EA describes the amended snag standard as an improvement for snag habitat when it is most certainly a step backward. The EA (at 13, and Appendix B, at 146-149) advances a single proposed amendment to snag standards that is common to all alternatives, and that new standard is terribly ineffective. The proposed amendment would require managers to retain all non-hazardous snags over 20 inches dbh, or prepare a snag analysis. There are several problems with these new standards.

It must be emphasized that retaining all snags >20 inches dbh does little to conserve and restore snag habitat over the long term for several reasons. First, because snags in and near harvest units and along haul routes are always at risk of being cut down as hazard trees, and worker safety trumps ecology. The snag dynamics white paper on the DecAID website indicates that timber harvest typically results in the loss of a majority of the standing snags (62 percent of snags within a variety of timber harvest areas were cut down.)[74]

Second, snags are in a state of progressive decay, and tend to be short-lived, so they fall down and must be replaced by new recruits, which is why "green tree replacement" standards are so critical. Even if all the existing snags in a timber sale are retained, there will not be enough snags in the future unless enough green trees are retained and then allowed to die in the forest. Over the long term, the provision of snag habitat is much more dependent on green tree management, rather than how snags are treated during logging.

The EA effects analysis cites Mellen-McLean (2017) but this publication is not cited in either the snag standard set forth in Appendix B, nor is it found in the "literature cited" section of the EA. Is this meant to be a reference to DecAID? If so, it should be made explicit in the standard (not just in the EA analysis) and it should inform snag and green tree management in all projects, not just when the Forest Service chooses not to retain all large snags. And at its core DecAID is not a standard. DecAID does not advise the agencies to manage for any particular tolerance level. DecAID is just information, like a menu of options from good snag habitat to bad snag habitat. The agency has to decide what tolerance level to manage for, and making that selection is an appropriate function of this plan amendment. Unless the Forest Service identifies appropriate tolerance levels for each land allocation as part of this plan amendment, the reference to DecAID in the EA offers no substantive guidance on the number of snags and green trees that should be retained during project planning. While it is true that the DecAID tolerance levels cannot be directly translated to "potential population" requirements in the Eastside Screens, it should be

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[74]http://web.archive.org/web/20060520051245/http://wwwnotes.fs.fed.us:81/pnw/DecAID/DecAID.nsf/HomePageLinks/863EEA66F39752C088256C02007DF2C0?OpenDocument.

obvious that 100 percent potential population is much more like "high" assurance than moderate or low assurance, so the Forest Service should be striving to meet at least 80 percent DecAID tolerance levels which provide a high level of assurance of meeting the needs of primary cavity excavators consistent with the Eastside Screens requirement to maintain enough snags to support 100 percent potential populations.

The alternative snag analysis requirement described in EA Appendix B (at 147) fails to provide a robust snag standard of any kind. It basically says to maintain all snags >21 inches dbh or "complete a snag analysis using the best available science on snag-dependent species ecological requirements as applied through current snag tools, models, or other documented procedures to maintain or increase habitat for a diverse composition of wildlife species." This is merely a procedural requirement with no real substance to it. It fails to offer any clear guidance on how many snags and green trees should be provided. The new standard does not require use of DecAID or reference any of its "tolerance levels" as a new standard to replace the outdated 100 percent potential population standard. It does not establish snag recruitment goals that would ensure viability of snag associated wildlife. At its core, the new standard simply requires managers to "maintain or increase habitat for a diverse composition of wildlife species." So, it's not even about snag-associated wildlife. The Forest Service could comply with this standard by providing a small amount of snag habitat, and increasing habitat for some entirely different suite of species that depends on open forest, grasslands, wetlands, talus, etc. As a snag standard, this does not pass the laugh test. As the significant weaknesses of this new standard become apparent it will generate significant social conflict and controversy. The deeply flawed snag standard is another indicator of the significance of this proposed plan amendment and the need for an EIS.

The new snag and green tree standard is so poorly crafted that we seriously doubt the final draft will look anything like the draft in the EA, so we are concerned that there will not be a meaningful opportunity to comment on this important aspect of the proposed plan amendment. After scoping this proposal, the Forest Service should prepare another draft NEPA document with a more rational and defensible draft snag standard (and related effects analysis), and provide a meaningful opportunity for public comment on that.

For green tree retention, the proposed amendment would require managers to "Retain and recruit large trees of the appropriate species and spatial arrangements to meet LOS objectives and wildlife tree objectives." This raises numerous significant concerns outlined below.

Referencing "LOS objectives" in the snag standard is vague, self-referential, and tautological, and is indistinguishable from the overall goals of the Screens, adding nothing new to ensure retention of adequate numbers of green trees specifically to meet snag objectives over time. LOS basically just means "large trees are common" but this amendment provides for such trees to be removed. The definition of LOS in Table 1 of the Screens does not explicitly reference snags, nor does it quantify the number of medium and large trees that need to be maintained to ensure adequate snag recruitment over time. That's why the Screens had a separate snag and green tree standard (which this amendment will eliminate). Such a vague green tree standard offers no meaningful guidance to managers about how many medium and large trees to retain or when they might remove too many green trees.

The reference to "wildlife tree objectives" has to be a mistake because the relevant forest plans all have wildlife tree objectives based on the discredited "potential population" methodology.

Instead of shifting from the scientifically discredited "100 percent potential population" standards currently in the Screens to new standards based on best available science (such as DecAID), the Forest Service appears to be reverting to lower and equally unscientific (40-60 percent potential population) standards that are even worse than the existing Screens standard. The EA (at 81) says that the existing Screens' "desired snag levels are based on outdated scientific information (e.g., population potential for primary cavity excavators) that limits the contribution to the viability of species associated with snag habitats (Bull and Holthausen 1993)." This criticism applies equally to the proposed action, because the new standards rely on the exact same flawed methods, and call for retention of even fewer snags and green trees. "Wildlife tree objectives" are not explicitly defined in the EA, but "wildlife tree" is a term of art found in the underlying forest plans. For example, see Deschutes LRMP management areas M3-13, M5-11, M20-13, M27-12 (e.g., "M3-13 Snags, and the live trees needed for future snags, will be maintained for 60 percent of the maximum potential population of primary cavity nesting birds, except where eagle management goals would be jeopardized. This would be accomplished using the Deschutes National Forest Wildlife Tree Implementation Plan. Large-diameter snags are especially desirable as both nesting habitat for cavity-nesting animals and perch trees for eagles."). See also Fremont LRMP (p 103) ("Wildlife trees in Management Areas 2, 3, and 14 will be maintained at levels to provide habitat for at least 100 percent of the potential population of cavity-dependent species. … Management Areas 4, 6, 12, and 13, … will be managed to maintain 60 percent of the potential population of cavity-dependent species where safety concerns permit such management. Management Areas 8, 9, 10, 11, and 16 will provide Wildlife trees at whatever level naturally occurs in those areas"). The 1994 Deschutes Wildlife Tree and Log Implementation Strategy also relies on the discredited potential population method. The Screens may be flawed but at least they establish an ecologically aspirational goal to retain 100% population potential, instead of 40-60% found in many forests' "wildlife tree" objectives. The current science says that these standards are outdated and that snag-associated wildlife need more snags, and more green trees need to be retained to ensure recruitment of those snags over time (Rose et al. 2001[75]).

Retaining large trees is important to ensuring long-term snag recruitment because large snag habitat will be directly and significantly reduced when large green trees are sent to the mill under this plan amendment. The proposed action explicitly defines large trees to exclude shade-tolerant trees 21-30 inches dbh, even though such trees are defined as large in the scientific literature

[75] Rose et al. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) .

concerning forest ecology and trees and snags 21-30 inches dbh do provide significant ecological values. (Rose et al 2001[76], Bate et al 1999[77], Quigley 1997[78])

Retaining large trees is important to ensuring long-term snag recruitment because snags are a critical part of LOS forests. Large snags play a disproportionate role in maintaining ecosystem health and resiliency because they support populations of birds that prey on insects that can harm trees. Snags also support a wide variety of other wildlife, and provide a rich assortment of ecosystem services, including capture, storage, and release of water, nutrients, sediment, and thermal energy (Laudenslayer et al,[79] Lofroth 1998[80], Rose et al 2001, Hagar 2007[81], Marcot 2017, Sandström et al. 2019[82]). Retaining large trees is important to ensuring long-term snag recruitment because there is a severe shortage of large snags on the eastside because of past clearcutting, high grading, salvage logging, thinning, and fire suppression (Quigley et al 1997).[83] Retaining large trees is important to ensuring long-term snag recruitment because … The green tree standard is as important or more important than the snag standard, because all snags are recruited from the green tree population. Restoring populations of large snags requires retention

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[76] *Id* ("Hollow trees larger than 20 inches (51 cm) in diameter at breast height (dbh) are the most valuable for denning, shelter, roosting, and hunting by a wide range of animals").

[77] Bate, Lisa J., Edward O. Garton, and Michael J. Wisdom. 1999. Estimating snag and large tree densities and distributions on a landscape for wildlife management. U. S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-425: 1-76 https://www.fs.fed.us/pnw/pubs/pnw_gtr425.pdf

[78] Quigley 1997. ICBEMP Science Assessment. PNW-GTR-405. https://www.fs.fed.us/pnw/pubs/pnw_gtr405.pdf ("LgT - large trees (> 53.2 cm dbh").

[79] William F. Laudenslayer, Jr., Patrick J. Shea, Bradley E. Valentine, C. Phillip Weatherspoon, and Thomas E. Lisle *Technical Coordinators.* Proceedings of the Symposium on the Ecology and Management of Dead Wood in Western Forests. PSW-GTR-181. http://www.fs.fed.us/psw/publications/documents/gtr-181/

[80] Lofroth, Eric. 1998. The dead wood cycle. In: Conservation biology principles for forested landscapes. Edited by J. Voller and S. Harrison. UBC Press, Vancouver, B.C. pp. 185-214. 243 p. http://www.for.gov.bc.ca/hre/deadwood/DTrol.htm

[81] Hagar, Joan, 2007, Assessment and management of dead-wood habitat: USGS Administrative Report 20071054, pp. 1-32. http://pubs.usgs.gov/of/2007/1054/pdf/ofr20071054.pdf; Bruce G. Marcot 2017. Ecosystem Processes Related to Wood Decay. PNW Research Note 576. https://www.fs.fed.us/pnw/pubs/pnw_rn576.pdf

[82] Jennie Sandström et al. 2019. Impacts of dead wood manipulation on the biodiversity of temperate and boreal forests. A systematic review, Journal of Applied Ecology (2019). DOI: 10.1111/1365-2664.13395. https://besjournals.onlinelibrary.wiley.com/doi/pdf/10.1111/1365-2664.13395.

[83] Quigley, Thomas M.; Arbelbide, Sylvia J., tech. eds. 1997. An assessment of ecosystem components in the interior Columbia basin and portions of the Klamath and Great Basins: volume 1. Gen. Tech. Rep. PNW-GTR-405. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 4 vol. https://www.fs.fed.us/pnw/pubs/pnw_gtr405.pdf ("Disturbances in non-harvested stands favor snag development. In contrast, harvest disturbances resulted in fewer snags, fewer large trees with the potential of being recruited as snags, and likely an increased probability that snags in the surrounding area would be used for firewood.")

of large numbers of large trees that die over time due to natural processes such as competition, insects, fire, wind, or active snag recruitment, etc. Harmon (1999)[84] said:

> **Linking Live and Dead Trees -** Although developing a viable morticulture will require new knowledge, in many cases it will require that we apply what we already know. For example, we already know that live trees eventually form dead trees, but it is amazing that this dynamic is often missing from current forest management thinking. … Forest management in the past century has focused on how to lower mortality rates via thinning, fire protection, etc. Ironically, the next century of forest management may be occupied with how to increase mortality when and where we want it. … [H]ow might this new paradigm of morticulture work? It would probably start by answering the question of which species or processes are to be maintained, restored, or otherwise managed (fig. 5). Then the target levels for these functions should be determined. Before assessing the amount of woody detritus to be maintained or added to meet this functional target, the landscape context for the management action should be assessed. Are there limitations of populations or processes that would limit the desired response? If not, a plan to add wood would be designed to maintain the desired level. But if there are landscape limitations, then these should be addressed before planning at the stand-level proceeds."

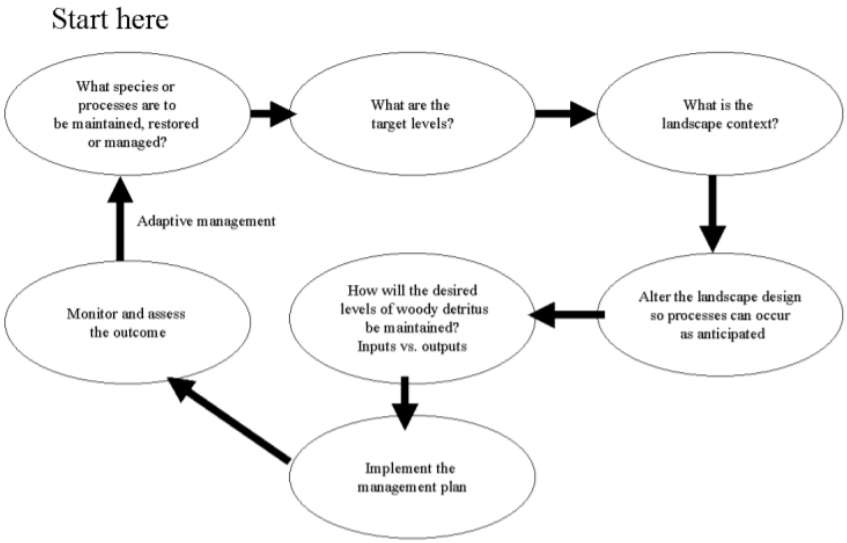

Figure 5—Integrating the elements of a new paradigm for woody detritus management.

Using DecAID or other tools, the Forest Service needs to identify appropriate goals for snags and dead wood habitat based on the needs of wildlife that are most sensitive to the absence of such habitat features. The agency needs to analyze how to achieve those snag goals by retaining an adequate population of green trees and maintaining natural mortality processes that can act on those trees.

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[84] Harmon, Mark 1999. Moving towards a New Paradigm for Woody Detritus Management. *in* Proceedings of the Symposium on the Ecology and Management of Dead Wood in Western Forests. PSW-GTR-181. http://www.fs.fed.us/psw/publications/documents/gtr-181/, https://www.fs.fed.us/psw/publications/documents/gtr-181/071_Harm.pdf.

Retaining large trees is also important to ensuring long-term snag recruitment because:

- Maintaining adequate numbers of large snags over time in a managed stand requires careful management because logging captures and exports mortality and increases tree vigor thus both reducing and delaying snag recruitment.[85]
- Snags are ephemeral. Snags that exist today will be gone in a few years, and every stand needs a population of green trees available, NOT for future logging, NOT to match some abstract notion of "LOS objectives," but exclusively for the purpose of future recruitment of snags throughout the life of the stand. Modelling by Harris (2000)[86] suggests that since snags are ephemeral and need to be continually replaced, 12 or more green trees need to be retained for every snag we want to maintain over the life of the stand.
- Large snags can be substituted for small snags, but small snags cannot be substituted for large snags. This plan amendment allows removal of irreplaceable large trees preventing them from ever becoming large snags.[87]

The EA discloses effects averaged over large areas instead of disclosing effects at the stand level that are more relevant to wildlife. To accurately inform the public and the decision-maker on the real-world effects of large tree removal during timber sales, the NEPA analysis needs to provide an analysis of some example timber sales in typical stands and carefully disclose the adverse effects on snag habitat over time. Commercial logging captures and exports mortality, and significantly reduces the population of green trees available for snag recruitment in the long term. This is true even when logging is limited to small trees, because logging prevents those trees from growing, becoming large, and being recruited as snags. When logging includes removal of trees that are already large, the adverse effects on recruitment of large snags is even more significant, yet not disclosed in the EA.

What would be most informative would be something like the graph below from the Curran Junetta Thin EA[88] (on the Umpqua National Forest, Cottage Grove Ranger District). This particular project is in a moist forest type, but the results displayed are consistent with results in other forest types.

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[85] Thomas, J.W. (ed.) 1979. Ag Handbook 553. https://www.srs.fs.usda.gov/pubs/misc/agh553.pdf. See Heiken, D. Thinking About Dead Wood in Managed Landscapes. 2012. https://www.dropbox.com/s/5gofctjdglx5t3t/dead%20wood%20slides%202012.pdf;

[86] Harris, R.B. 2000. Estimating large snag recruitment needs in regeneration timber harvests. Western Journal of Applied Forestry. 15: 140-146.

[87] Thomas, Jack Ward. 1979. (Editor). Wildlife habitats in managed forests – the Blue Mountains of Oregon and Washington. USDA Forest Service, Agricultural Handbook 553, Washington, D. C. 510pp.

[88] USDA Forest Service. 2007. Curran Junetta Thin EA. Cottage Grove Ranger District, Umpqua National Forest. June 2007.

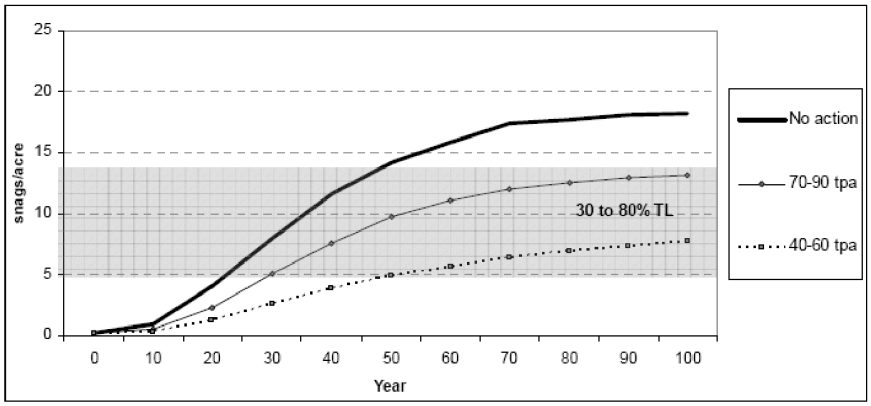

Figure 15. Short and long-term changes to ≥20" dbh snags.

This type of graph is informative because (i) it focuses on large snags that are most valuable for wildlife and most at risk under this amendment, (ii) it shows effects over a sufficiently long time-frame to reveal the effects of losing large numbers of green trees on future snag recruitment, and (iii) it shows effects relative to DecAID 30-80 percent tolerance levels. Examples like this should be included in the NEPA analysis. Such an analysis can be readily done using stand simulation modelling such as Forest Vegetation Simulator ("FVS") which the Forest Service is already using in the NEPA analysis for this project.

From this analysis and comments, it is clear that logging with large tree removal has significant adverse effects on snag recruitment, and those effects are long-lasting, extending more than 80 years after logging. Unfortunately, this effect and its consequences on wildlife relative to DecAID tolerance levels is not disclosed in the NEPA analysis for this plan amendment. This significant long-lasting impact of large tree removal is a strong indicator that this plan amendment will have significant effects and requires preparation of an EIS.

The analysis of the no action and proposed action alternative needs to be redone to reflect these relevant facts regarding the ineffectiveness of the proposed action and the effects of logging on snag habitat.

3. Failure to Disclose Effects on Aquatic Ecosystems

The EA lacks any meaningful analysis of the effects of amending the Screens to allow removal of large trees on riparian and aquatic ecosystems. This deprives the public of the ability to provide informed comments, and deprives the decision-maker of information they need to make informed decisions. As discussed above, the Forest Service suggests that the proposed amendment will have no effect on riparian resources.[89]

Managing RHCAs under the proposed amendment will likely lead to the removal of large trees necessary for meeting riparian management objectives. This raises concerns because the goals of

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[89] "The PACFISH and INFISH objectives, goals, standards and guides would not be changed. … PACFISH and INFISH management direction is similar to the goals of the amendment with regard to allowing vegetation treatments within RHCAs for the purposes of maintaining habitat … [T]reatments cannot retard attainment of riparian management objectives (RMOs)." EA at 69.

PACFISH/INFISH are different from the goals of the Eastside Screens. For instance, PACFISH/INFISH emphasize thermal regulation and recruitment of dead wood both of which arguably require retention of more green trees than the screens. PACFISH/INFISH also have objectives that are more quantified and explicit compared to the LOS goals of the Eastside Screens. The *goals* of PACFISH for riparian vegetation include:

> The goals are to maintain or restore: … riparian vegetation to:
> (a) provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems;
> (b) provide adequate summer and winter thermal regulation within the riparian and aquatic zones; and
> (c) help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed.

The most relevant *riparian management objectives* (RMOs) are:

> **Stream Temperature** – No measurable increase in maximum water temperature.
> Maximum water temperatures below 64F within migration and rearing habitats and below 60F within spawning habitats. [PACFISH]
> Maximum water temperatures below 59F within adult holding habitat and below 48F within spawning and rearing habitats. [INFISH]
> [and]
> **Large Woody Debris** – East of Cascade Crest in Oregon, Washing1on, Idaho.
> >20 pieces per mile; >12 inch diameter; >35 foot length.

The Forest Service track record managing RHCAs for these goals and RMOs is spotty (see above). The Forest Service is under pressure to get the cut out, and often conducts commercial logging in RHCAs using prescriptions similar to uplands, leading to reduced canopy cover (leading to increased stream temperature) and reduced tree populations (leading to reduced recruitment of wood >12" dbh). The Forest Service is prone to assert that "what's good for upland forests is good for riparian forests," failing to recognize the divergent goals in these two areas.

In its very limited analysis of effects to riparian and aquatic ecosystems, the EA makes several unsupported assumptions. Namely that:

- The Forest Service can be trusted to avoid retarding RMOs,
- Logging prescriptions for uplands and RHCAs are distinct,
- Commercial logging in RHCAs is will not retard RMOs, and
- Removing large trees under the amended screens will pose no increased risk that RMOs will be retarded.

These assumptions need to be tested and verified. Potential impacts to riparian and aquatic values deserve in depth analysis.

Further, PACFISH/INFISH recognize the value of instream wood that is 12" dbh or larger. Therefore, any removal of trees larger than 12" dbh within a site-potential tree distance of streams represents a risk that RMOs for large woody debris will be retarded in violation of PACFISH/INFISH. Any removal of canopy trees in the shade zone of streams represents a risk that RMOs for temperature will be retarded in violation of PACFISH/INFISH. The EA failed to disclose these risks. These potential forest plan violations indicate the significance of this decision and the need for an EIS. This also highlights the need to consider alternatives that exclude certain land allocations, such as RHCAs, (and other sensitive areas) from this plan amendment. For all of these reasons, the Forest Service must look at the direct, indirect and cumulative impacts on aquatic ecosystems.

4. Failure to Disclose Effects on LOS Dependent Wildlife Species

The EA analysis of the effects to LOS wildlife is inconsistent and misleading. The EA (at 80) says "viability of species associated with late-open habitats would continue to decline" under current management. The EA (at 82) says the proposed action would "contribute to the viability of species associated with late-open habitats." This analysis fails to describe effects in a way that allows a comparison of alternatives. These two effects descriptions potentially describe the same thing in different ways. Both alternatives could allow management that "contributes to viability" and both could exhibit "declining viability." The EA fails to describe any clear difference between alternatives. The effects analysis should highlight meaningful differences between alternatives, which it fails to do.

The finding of declining viability under the no action alternative is also seemingly contradicted by the information in Table 18 (EA at 81) at which shows open LOS habitat increasing under no action, and the EA (at 36) which says "The extent of late open LOS will continue to increase across the landscape" under the current management alternative. Importantly, the EA (Table 17, EA at 80) says that "trends in the availability of large trees and large snags" are key indicators for LOS associated wildlife habitats and species. Since large trees are the key indicator of wildlife viability and large trees are increasing, it is irrational for the EA to conclude that viability will continue to decline under existing management.

Even focusing on LOS open habitat (rather than viability) proposed action outperforms no action by only <2.8 percent over 25 years in open canopy LOS (EA at 36). This difference is likely inconsequential given all the variables and assumptions. The EA should not suggest that current management is uniquely unable to restore open canopy LOS habitat. This effect is caused by decades of high-grading, clearcutting, overzealous suppression of natural processes, and inadequate funding levels, and has little to do with the Forest Service' ability to remove large trees. The Forest Service has the existing authority to convert closed canopy LOS to open canopy LOS, and does not need to remove large trees to accomplish this goal. There are many acres the Forest Service could treat to advance this goal but chooses not to.[90]

The EA (at 81) also faults the no action alternative for failing to protect old trees that are smaller than 21 inches dbh. This is improper because the Forest Service has the existing authority to protect such trees, without any plan amendment, and in fact the Forest Service actually does

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[90] See Rainville et al (2008), http://www.fs.fed.us/pnw/pubs/pnw_gtr752.pdf.

protect small old trees in many recent projects. The analysis needs to be redone to include protection of small old trees (and conversion of some larger mature shade-tolerant trees to snags) under the no action alternative.

The EA needs to disclose how many of the old trees allegedly saved by the proposed action are large legacy trees that are 'saved' by removing competition from nearby larger mature shade-tolerant trees versus small old trees that are 'saved' by choosing not to cut them.

The effects described in Tables 18 and 19 (and associated narrative text) needs to be rationalized and quantified. The proposed action provides <2.8 percent more open LOS forest habitat over 25 years, but that improvement is only described qualitatively as "low-moderate increase," compared to "low rate of increase" for the no action alternative. The EA should just provide the quantitative data and leave the subjective descriptions out of it. A 2.8 percent difference over 25 years is virtually indistinguishable, and open LOS forest still increases under no action without a lot of the negative trade-offs associated with logging large trees (e.g., carbon emissions, fewer snags, public distrust, social conflict).

Additionally, the EA lacks any meaningful species-specific analysis of the effects of large tree removal on the many wildlife that use large trees. Many of the affected wildlife are of conservation concern. The Eastside Forests Scientific Society Panel's report discussed the key importance of large trees for wildlife species. For example:

> the pileated woodpecker (*Dryocopus pileatus*) relies on large snags for roosting, nesting, and foraging sites. Loss of large trees eliminates habitat for this species. Because the woodpecker builds cavities that are in turn used by many other species, species besides the woodpecker can also disappear from a site when snags are removed.[91]

Henjum et al 1994 also discuss the importance of large trees for species such as bald eagles, Vaux's swifts, and bears.[92] Furthermore, the authors recognized the importance of large Grand fir in providing key wildlife habitat: "Pileated woodpeckers depend on large snags for nesting and roosting" (Bull et al. 1992). Within eastside forests, pileated woodpeckers seem to be closely tied to old grand fir (*Abies grandis*) stands with trees in advanced decay caused by the Indian paint fungus (*Echinodontium tinctorium*) (Bull et al. 1992; Bull and Holthausen 1993), a keystone organism that softens core wood. The woodpeckers in turn provide other keystone services by excavating nesting and shelter cavities in infected core wood, and these are eventually used by many birds and mammals (Thomas et al. 1979a). Clearly, large trees were recognized as important and as needing to be preserved in the literature and analyses that helped to form the Screens.

This was also recognized in the scientific literature that informed the ICBEMP process. Of the volumes of research that came from the ICBEMP, one GTR in particular highlights the importance of large trees ≥21-inches for wildlife: PNW-GTR-485.[93] This research, published in

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[91] Henjum, et al (1994) at 176.
[92] *Id* at 184-188
[93] Wisdom, Michael J.; Holthausen, Richard S.; Wales, Barbara C.; Hargis, Christina D.; Saab, Victoria A.; Lee, Danny C.; Hann, Wendel J.; Rich, Terrell D.; Rowland, Mary M.; Murphy,

2000, "assessed trends in these habitats for 91 species of terrestrial vertebrates on 58 million ha (145 million acres) of public and private lands within the interior Columbia basin."[94] The research was designed around the effects of road networks on species for which there was ongoing concern about population or habitat status, and also found that associated declines in old-forest structural conditions have resulted in widespread decline of many of the 91 species surveyed.[95] The authors of GTR-485 classified these species of concern into families and groups based on similar habitat needs. Three families of species, including a total of 33 species, experienced habitat and population declines and require retention of all large-diameter trees, most often regardless of species or age of tree.

Low-elevation, old-forest species: Species in the low-elevation, old-forest family are white-headed woodpecker, white-breasted nuthatch, pygmy nuthatch, migratory population of Lewis' woodpecker, and western gray squirrel. GTR-485 found that all of these species

> "require large-diameter (>53 cm [21 in]) snags or trees with cavities for nesting, foraging, or both (vol. 3, appendix 1, table 2). The possible exception is the western gray squirrel, which uses cavities of snags and large hollow trees for nesting and resting, but these structures may not be a requirement (Ryan and Carey 1995). The Lewis' woodpecker is associated closely with recent burns and responds favorably to stand-replacing fires (see Tobalske 1997), whereas habitat for other species in family 1 is usually maintained by frequent, low-intensity burns that retain old-forest structure."[96]

As a short-term strategy to address the issue of "basin-wide loss of large-diameter snags (>53 cm [21 in])," it is recommended to retain all remaining of these large trees of many species:

> "(To address issue no. 2) As a short-term strategy retain all large-diameter (>53 cm [21 in] d.b.h.) ponderosa pine, cottonwood, Douglas-fir, and western larch snags within the basin, preferably in clumps, and provide opportunities for snag recruitment throughout the montane and lower montane communities. As a long-term strategy, conduct mid-scale assessment of species snag use and the dynamics of snags in landscapes and adjust the strategy or groups of subbasins."[97]

Broad-elevation, old-forest species: Another family of species that require large trees are the 24 species the authors categorized into the broad-elevation, old-forest family:

> Blue grouse (winter)

Wally J.; Eames, Michelle R. 2000. Source habitats for terrestrial vertebrates of focus in the interior Columbia basin: broadscale trends and management implications. Volume 1—Overview. Gen. Tech. Rep. PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 3 vol. (Quigley, Thomas M., tech. ed.; Interior Columbia Basin Ecosystem Management Project: scientific assessment).

[94] *Id*. at Abstract.

[95] *Id*. at Executive Summary.

[96] *Id*. at 72.

[97] *Id*. at 74-75.

Northern goshawk (summer)
Flammulated owl
American marten
Fisher
Vaux's swift
Williamson's sapsucker
Pileated woodpecker
Hammond's flycatcher
Chestnut-backed chickadee
Brown creeper
Winter wren
Golden-crowned kinglet
Varied thrush
Silver-haired bat
Hoary bat
Boreal owl
Great gray owl
Black-backed woodpecker
Olive-sided flycatcher
Three-toed woodpecker
White-winged crossbill
Woodland caribou
Northern flying squirrel[98]

The authors identify "decline in late-seral forests of subalpine, montane, and lower montane communities and associated attributes such as large trees, large snag, large down logs, lichen, and fungi" as the number one cause of population decline for these 24 species.[99] To address this issue, they recommend retaining all trees larger than 21-inches dbh, and preferably in clumps of large trees:

> "1b.(To address issue no. 1) As a short-term strategy, retain all large-diameter (>53 cm [21 in] d.b.h.) snags and large trees in the subalpine, montane, and lower montane communities, preferably in clumps, and provide opportunities for snag recruitment. As a long-term strategy, conduct mid-scale assessment to determine biophysical snag dynamics at a watershed scale and adjust the strategy by subbasin or groups of subbasins."[100]

Of note is that the authors recommend watershed scale biophysical snag dynamics assessments to replace the short term strategy of retention of all large trees ≥21-inches. In most watersheds in the project area (the six national forests subject to the Eastside Screens in Oregon), those assessments have not happened.

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[98] *Id*. at 36 (Table 6), 75.
[99] *Id*. at 77.
[100] *Id*. at 78.

Forest, Woodland, and Sagebrush species: In this family of species, the authors identify the "pallid bat, long-eared myotis, fringed myotis, and long-legged myotis" as species that "use large-diameter (>53 cm [21in]) trees and snags with exfoliating bark for maternity roosts and day roosts."[101]

To address the issue of loss of potential roost sites for these species, the authors recommend retention and recruitment of large-diameter trees in all cover types and structural stages:

> "Protect all known roost sites (nurseries, day roosts, and hibernacula) and restore useability of historical roosts where feasible. Actively manage for the retention and recruitment of large-diameter (>53 cm [21 in] snags in all forest cover types and structural stages."[102]

All together, the authors identify 33 species belonging to these three families (Low-elevation, old-forest species; Broad-elevation, old-forest species; and Forest, Woodland, and Sagebrush species) for which a primary conservation strategy is retention of all large trees ≥21-inches dbh.

This research is presented in three volumes. The first volume, portions of which are excerpted above, present global findings at the scale of families of species. Volumes two and three go into greater detail on smaller groups of species and individual species.

The scope of ICBEMP, including the research presented in GTR-485, included the entire interior Columbia basin. Not all of the 91 species, or the 33 species for which retention of large trees ≥21-inches is recommended, and their habitats assessed in GTR-485 might exist in the EA project area. The EA however, only identifies the effects of the proposed action on a small handful of species. EA at 78-79. The EA fails to provide baseline information about the effects of the proposed action on many species that the Forest Service, in GTR-485, has previously identified as dependent on retention of large trees ≥21 inches. Because of the likely significant environmental effects of the proposed action on these species, the EA is flawed and an EIS that discloses such direct indirect and cumulative effects is required.

5. Failure to Disclose Effects on Deer and Elk

EA (at 81-82) says the no action alternative "would continue to limit the application of restoration treatments that can be applied to increase the quality and quantity of forage for deer and elk." This is misleading. First, removing large trees under the proposed action results in 0.2 percent less canopy than the no action alternative. (EA at 37). This difference is so small as to be inconsequential.

Second, most trees that are impeding growth of big game forage are much smaller than 21 inches dbh, and the Forest Service has authority and discretion to enhance big game forage by managing small trees, and the Forest Service can even kill mature trees < 21 inches dbh to create snags, using prescribed fire or other methods, providing benefits to both big game and snag associated wildlife. Using existing authority to manage small trees, the Forest Service can make great

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[101] *Id.* at 93.
[102] *Id.* at 96.

progress toward enhancing big game forage. The main impediment to small tree removal is Congressional funding, not the restrictions in the Eastside Screens. The EA (at 26-27) says "harvest levels are more influenced by factors including road systems, logging systems, capacity, budget and individual forest plan direction."

Third, if "problem trees" have grown to be >21-inches dbh, the Forest Service has neglected to identify and address the problem for a very long time (up to 149 years). Maybe leaving a few large trees is not that big of a deal.

Fourth, the Forest Service failed to quantify and disclose the incremental difference between the current Screens and the other alternatives.

6. Failure to Disclose Effects to Meadows

The EA (at 81) faults the existing Screens because the 21-inch diameter limit impedes removal of encroaching conifers from meadows and wetlands. This is highly misleading. First, there is nothing wrong with retaining a few large trees in meadows and wetlands. If encroaching trees have grown to be >21 inches dbh, the Forest Service has neglected to identify and address the problem for a very long time (up to 149 years). Perhaps leaving a few large trees in meadows and wetlands is not that big of a deal. Legacy old growth trees can and do play important roles for biodiversity and habitat in meadows and wetlands. They are, in many areas, reflective of microhabitats, and occurred naturally in scattered isolation or in clumps. They are important natural and historic components of these ecosystems, and recruitment of some smaller trees are needed to maintain old growth trees at these sites into the future.

Second, most of the conifers encroaching on meadows and wetlands are much smaller than 21-inch dbh. The Forest Service has existing authority and discretion to remove those trees, and the Forest Service can even kill large young trees to create snags, using prescribed fire or other methods, providing benefits to both meadows and snag associated wildlife. Using existing authority to manage small trees, the Forest Service can make great progress toward meadow and wetland restoration. The main impediment to small tree removal is Congressional funding, not the restrictions in the Eastside Screens. The EA (at 26-27) says "harvest levels are more influenced by factors including road systems, logging systems, capacity, budget and individual forest plan direction."

Third, the Forest Service failed to quantify and disclose the incremental difference between the current management direction and the other alternatives.

7. Failure to Disclose Effects on Black Bear

Black bears (*ursus americanus*) are known to rely on large, hollow trees for den sites.[103] Specifically, large grand fir make up 80 percent of the hollow trees used by black bears for denning, with western larch and ponderosa pine comprising the additional 20 percent.[104] The EA's proposed amendment would allow for the removal of many of these large grand fir and

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[103] Bull, E. L., Parks, C. G., Torgersen, T. R. (1997). Trees and logs important to wildlife in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-391. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55 p.
[104] *Id*. at 10.

other trees that black bears require for a critical part of their life cycle. Neither the EA nor the wildlife specialist report disclose the effects of the proposed amendment on black bears. These effects of the proposed amendment as compared to current management should be quantified and disclosed.

8. Failure to Disclose Effects on Carbon Values and Climate

The EA (at 9) says the alternatives "address concerns about climate change and wildfire as these alternatives allow for management strategies that increase resilience to future climate …" This is misleading. Addressing climate change properly in dry forests requires harmonizing two objectives: climate change adaptation (e.g., reducing competitive stress via density reduction) and climate change mitigation (avoiding carbon emissions and increasing carbon storage). The Forest Service is only embracing half of the equation, which will facilitate logging, while increasing greenhouse gas ("GHG") emissions and making climate change worse. This is unconscionable. Further, the EA is using dry forest management principles for all forest types, even moist mixed conifer forests which are not at risk of experiencing competitive stress and thus would not benefit from density reduction.

Significant concerns were raised during the virtual workshops held in May 2020 about climate change and the fact that large tree removal will transfer carbon from the forest to the atmosphere and accelerate global climate change. All alternatives fail to address this concern. The EA fails to harmonize climate adaptation and climate mitigation (carbon storage) and fails to address the fact that increased carbon emissions from logging more large trees will exacerbate climate stress and make it harder to maintain resilient stands.

Instead this plan amendment adopts an unsupported approach to climate adaptation. The EA fails to recognize that retaining large trees is a better hedge against climate uncertainty than removing them. The analysis in the draft EA (at 23) assumes that climate change will accelerate the disturbance process, which will likely kill more trees, large and small, and make way for establishment of lots more small trees. Contrary to the logic of the proposed amendment, it makes more sense to retain rather than remove large shade-tolerant trees that did not grow up under intense competition, especially when the future expectation is for lots more small trees and greater challenges growing and retaining large trees of any species. It makes no sense to exacerbate mortality among the large tree cohort that is already depleted, as this plan amendment will do (via logging mortality that exports valuable large trees from the site so they cannot play a role as either large green tree habitat or large snag habitat).

The Forest Service's attempts to justify large tree removal based on climate adaptation and landscape resiliency are highly questionable. First, to the extent that fuel reduction does influence fire, it can be substantially accomplished by focusing management on small trees, and second, wildfires are mostly climate driven, not fuel driven. The EA (at 79-80) says "Climate-driven changes in fire regimes would likely be the dominant driver of changes to forests and LOS habitats in the western United States over the next century." *See also*, Schoennagel et al 2017.[105]

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[105] Adapt to more wildfire in western North American forests as climate changes. PNAS 2017; published ahead of print April 17, 2017. www.pnas.org/cgi/doi/10.1073/pnas.1617464114;

For an in-depth discussion of the failure of the EA to adequately analyze the significant effect on carbon values and climate change see Section III. 2. d. 1. "Proposal will have Significant Effects on Carbon Values."

9. Failure to Disclose Effects on Socioeconomics

The EA analysis of social and economic analysis is incomplete and misleading. The analysis fails to disclose the economic values of non-extractive ecosystem services (water, carbon, biodiversity, recreation, quality of life) vastly exceeds the economic value of extractive commodities (wood products).

The analysis fails to disclose that commodity industries tend to boom and bust and cause social and economic instability and hardship in local communities. The analysis fails to disclose the social and economic effects caused by the fact that increased logging of large trees will increase conflict and controversy. Increased conflict over large tree logging will pose an impediment to collaboration. It will also likely increase the likelihood that timber sales will be objected to and litigated, causing delay and uncertainty for the timber industry.

The analysis fails to take a hard look at carbon emissions from large tree removal and its contribution to the cumulative atmospheric overload of greenhouse gases that is causing climate change, ocean acidification, and the environmental justice/equity/health implications of those effects.

The analysis of "forest products" fails to recognize that wood products are already underpriced and over-supplied due to "externalities." Externalities are costs that are not included in the price of wood, so those costs are shifted from wood product producers and consumers to the general public who suffer the consequences of climate change (and other lost ecosystem services) without compensation from those who profit from logging related externalities. Ecosystem services, such as water, biodiversity, and carbon storage on the other hand are under-supplied because there is not a functioning market for these ecosystem services. The Forest Service failed to recognize that it is in a position to address these market imperfections by focusing on unmet demand for carbon storage and other ecosystem services instead of offering wood products that are already oversupplied.

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https://headwaterseconomics.org/wp-content/uploads/Adapt_To_More_Wildfire.pdf ("… [T]he effectiveness of this [fuel reduction] approach at broad scales is limited. Mechanical fuels treatments on US federal lands over the last 15 y (2001–2015) totaled almost 7 million ha (Forests and Rangelands, https://www.forestsandrangelands.gov/), but the annual area burned has continued to set records. Regionally, the area treated has little relationship to trends in the area burned, which is influenced primarily by patterns of drought and warming. Forested areas considerably exceed the area treated, so it is relatively rare that treatments encounter wildfire. … [R]oughly 1% of US Forest Service forest treatments experience wildfire each year, on average. The effectiveness of forest treatments lasts about 10–20 y, suggesting that most treatments have little influence on wildfire. … [T]he prospects for forest fuels treatments to promote adaptive resilience to wildfire at broad scales, by regionally reducing trends in area burned or burn severity, are fairly limited.").

Finally, the "Effects Details for Forest Products" at EA (at 66-68) is unclear. What spatial scales are being analyzed and reported? What is the "event" being modeled?

H. The EA Failed to Consider the Best Available Science and Give a Hard Look

The Forest Service is required to consider best available scientific information. 36 C.F.R. § 219.3. It must also take a hard look at the environmental consequences of the decision. NEPA's hard look at environmental consequences must be based on "accurate scientific information" of "high quality." 40 C.F.R. § 1500.1(b). Essentially, NEPA "ensures that the agency, in reaching its decision, will have available and will carefully consider detailed information concerning significant environmental impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 349. The Data Quality Act expands on this obligation, requiring that influential scientific information use "best available science and supporting studies conducted in accordance with sound and objective scientific practices." Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub.L. No. 106-554, § 515.

The Forest Service appears to be trying to side-step the incongruity with the original Screens by claiming that 'new science' directs them to log large trees (in direct opposition to the original direction and intent of the Eastside Screens). The EA states that "[g]iven new science and our evolving understanding of landscape ecology, a standard that prohibits logging of all trees larger than or equal to 21 inches diameter at breast height (dbh) is no longer adequate to support landscape restoration and resiliency efforts, nor conserve the remnant old and late seral and/or structural live trees it was meant to protect." As discussed above, the Forest Service's stated purpose and need for the assessment is "to analyze a durable, science-based alternative to the 21-inch standard in the Eastside Screens. Adapting the standard to incorporate science and 25 years of learning would enable managers to more effectively restore forestlands in eastern Oregon."

However, that "25 years of learning" does not reflect the abundance of science and learning regarding the importance of large trees (those ≥21-inches dbh), large snags, and Large Woody Debris or the recruitment of these components, including in riparian and aquatic ecosystems. The EA repeatedly ignores or severely downplays the recent best available science published since the screens were implemented confirming the importance of large trees for wildlife, fish, clean water, watershed hydrology, and carbon sequestration. The analysis ignores or severely downplays the many well-documented negative effects on aquatic and terrestrial ecosystems due to logging (especially logging of large trees) and associated road-related impacts. It also ignores or severely downplays the beneficial ecological effects of mid and high-severity wildfire; the controversy regarding forest density and fire regimes; efficacy of logging to address wildfire concerns or change fire behavior; the importance of intact forests to fight climate change and ameliorate its ecological effects; the importance of connectivity and large blocks of habitat; the ecological difference between dry and moist forest types; Bark beetles and other native insects and diseases; long-term landscape level plans regarding restoring wildfire to the ecosystem (or the lack of those plans); the Van Pelt guidelines and determining the age of Grand fir; and other scientific controversy regarding this proposal.

The direction of this plan amendment process remains baffling given the science forum where most of the scientists affirmed the ecological importance of large trees and were highly skeptical of the need for large tree removal.

I. If the Forest Service Moves Forward with the Proposed Amendment, it Should Continue to Use and Comply with the CEQ regulations in Effect When the EA was Issued

> "The longstanding CEQ regulations issued in 1978 after a collaborative process… underlie a vast body of judicial and administrative decisions over four decades and inform the NEPA procedures adopted by scores of federal agencies to guide their own analyses. They define how every federal agency determines the likely impacts of its actions on the human environment, identifies and considers alternatives to the proposed action, considers cumulative effects of the proposed action together with other reasonably foreseeable effects, takes public and agency comment into account, and identifies mitigation of adverse impacts."
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> -Environmental Law Institute, "Environment 2021: What Comes Next?," July 2020.

As set forth in the letter from five conservation groups dated August 12, 2020, analysis under the 1978 CEQ regulations is required because the 1978 regulations were in effect with the Forest Service commenced the amendment process. *See e.g.* 40 C.F.R. 1506.13 (2020). As such, the Forest Service has already committed to using the 1978 CEQ regulations for the process. The EA was released prior to the effective date of the new CEQ regulations, and was issued pursuant to the original regulations. The public has been reasonably expecting the entire process to continue pursuant to the same set of regulations, and the Forest Service to proceed as such. Additionally, the new NEPA regulations are subject to at least five challenges in Federal court and may be invalidated, leaving the project in a precarious position if adopted pursuant to invalid regulations. Therefore, any NEPA analysis relating to or supporting a proposed amendment of the Eastside Screens must be conducted in a manner consistent and compliant with the 1978 CEQ regulations.

IV. Flaws with Forest Vegetation Simulator (FVS) Used in EA

The EA needs to fully and accurately disclose the strengths and weaknesses of the Forest Vegetation Simulator ("FVS") modeling methods and underlying data used in the EA. The FVS model variant for this region has not been rigorously validated or subjected to sensitivity analysis. In other regions, people have attempted to validate FVS and not been successful. Compared to FVS predictions, real world outcomes were off by $\pm$25 percent or more. This raises serious concerns, especially in light of the fact that the modelling results in the EA show very little differences between alternatives, such as 0.2 percent difference in canopy cover between proposed action and no action alternatives after 25 years, and 1.5 percent difference in species composition between proposed action and no action alternatives after 25 years. *See* Exhibit 1 at 17. In addition, the analysis in the EA attempts to predict mortality of old trees due to competition. While it is relatively easy to model growth of trees, because it is slow and steady, it is notoriously difficult to model tree mortality, which is critical to the effects analysis in this EA.

In addition, we have concerns about the logging prescriptions used in FVS modeling. Stand density indicators used by foresters to design timber sales are intended for tree farming in relatively young, uniform forests. Those tools are not appropriate in stands of large and old trees

that exhibit a naturally "clumpy" and "gappy "distribution of trees. As explained by Franklin, Seager and Johnson in their open letter reviewing this EA:

> In no case should the stand density indices developed for managed stands be used to judge conditions in old tree dominated stands. The stand density indices used in managed stands composed largely of younger trees are not appropriate to judge competitive conditions in stands of old trees, in which the basal areas are largely composed of heartwood rather than sapwood.
>
> … traditional silvicultural concepts and measures designed for wood production forests – uniformly distributed young trees of particular densities or basal areas – has no place in restoration of the old-tree-dominated dry forests that are optimal for producing the full array of ecosystem benefits …

Because the EA analysis fails to distinguish between large and old trees versus small-young trees and fails to distinguish the differential water demands of heartwood versus sapwood. The EA analysis likely:

1. overestimated the projected mortality of large trees from competition,
2. overestimated the number of trees that need to be removed to increase the chances of survival of large and old trees,
3. underestimated the ability to meet objectives by focusing on reducing the basal area of small trees, and
4. miscalculated whether large trees need to be removed to substantially reduce competitive stress.

Logging, particularly excessively aggressive logging such as thinning down to 30% SDI, does not support forests' trajectory towards LOS. Old growth is defined by ICBEMP to include "… Accumulations of large-size dead standing and fallen trees that are high relative to earlier stages. Decadence in the form of broken or deformed tops or bole and root decay."[106] If the goal is to restore LOS, then trees need to compete and interact in order to recruit the abundant snags and dead wood that is an essential component of LOS. This should be readily apparent if the Forest Service had a robust snag and green tree replacement strategy.

We are concerned that the agencies' stocking guides were created and intended to be used as a tool to avoid mortality which is clearly inconsistent with ecosystem management.[107] Healthy forests require dead trees, sometimes in abundance, in order to meet the needs of diverse wildlife

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[106] USDA/USDI. ICBEMP SDEIS. Appendix 17a – Definitions of Old Forest. https://web.archive.org/web/20161221104651/http://www.icbemp.gov/pdfs/sdeis/volume2/appendix17a.pdf.

[107] "To preclude serious tree mortality from mountain pine beetle, western dwarf mistletoe and perhaps western pine beetle, stand densities should be maintained below the upper limit of the management zone" Powell 1999, https://fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev7_016034.pdf

and provide a full suite of ecosystem functions.[108] Stand density index is a tool too often used by foresters who are managing forests under an agricultural model, trying to control and limit mortality, rather than managing on an ecosystem basis to work *with* natural mortality to develop complex, biodiverse forests.

The EA (at 22) says that "Effects were assessed in 2045." It is inappropriate to address effects at a point in time, instead of disclosing and considering effects over time. For instance, logging large trees will cause a significant reduction in large snag habitat between 2020 and 2045, but this adverse effect will not be revealed if the analysis only discloses forest conditions in 2045.

The EA (at 22) says "None of the scenarios simulated understory regeneration." This is a huge problem because it hides the fact that aggressive thinning and removal of large canopy trees will increase light and resources available to stimulate the growth of surface and ladder fuels, especially in more productive sites. The Forest Service can't complain about large shade-tolerant trees being ladder fuels if they don't account for the fact that logging stimulates growth of hazardous ladder fuels. This is a concern in many forest types, but especially where lodgepole are present.

The NEPA analysis needs to disclose effects at relevant scales. Large trees will be removed at the during stand level manipulations (timber sales). This is also a relevant scale at which wildlife make habitat selections. The fact that the EA discloses effects on large trees at the landscape scale is not rational. The Franklin/Johnson/Seager Open Review of the EA says "We have significant concerns that the modeling results (EA 3.1.6) speak to the landscape level when the management action would be occurring at the stand or project level." The NEPA analysis needs to disclose effects on large trees and snag habitat at the stand scape so it can be compared, for instance, to DecAID tolerance levels for wildlife associated with those LOS components.

V. This Decision Should be Made by the Regional Forester

The proposed amendment to the Eastside Screens will impact 6 national forests at a total nearly 10 million acres across Region 6. Such a far-reaching amendment should be guided, and the ultimate decision made, by the Region 6 Forester instead of an individual Forest Supervisor.

As the Forest Service itself describes, Regional Foresters are responsible for "*coordinat[ing] activities between national forests* and grasslands, monitori[ng] activities on those lands to ensure quality operations, provide[ing] guidance for forest plans, allocat[ing] budgets to the forests[,]" and "oversee[ing] Forest Supervisors" within their region.[109] By contrast, Forest

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[108] Rose et al. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf.

[109] https://www.fs.usda.gov/about-agency/organization#:~:text=A%20regional%20forester%20oversees%20forest,allocates%20budgets%20to%20the%20forests (last visited Oct. 4, 2020) (emphasis added)

Supervisors direct the work of districts and coordination within *individual* forests.[110] This structure is set out by planning regulations at 36 CFR § 200.1(c)(2). The Forest Service Manual provides further evidence that Regional Foresters are responsible for actions impacting multiple forest units, stating that "it is the responsibility of the Regional Forester to:

> 1. Coordinate planning efforts among adjoining units and Regions.
>
> 2. Coordinate monitoring among multiple units to address broader geographic scale questions and to maintain a broader-scale monitoring strategy that supports these needs.
>
> ...
>
> 6. Coordinate on broader-scale monitoring strategies with other Regional Foresters, Research Station Directors, and the Northeastern Area State and Private Forestry Director, as appropriate…

FSM 1921.04a (2015).

It is clear that the Regional Forester is ultimately responsible for overseeing management and impacts to forest resources on multi-unit level. Region 6 contains 16 national forests, six of which will be severely impacted by this proposed amendment. While Forest Supervisors may be well-versed in the intricacies of potential impacts to their own forests, this knowledge cannot be presumed to extend to five additional and individually unique national forests. With over one-third of Region 6 forests impacted by this action, the development of and decision to implement such an amendment clearly and appropriately falls under the purview of the Regional Forester's responsibilities, instead of leaving such a monumental decision to the much more narrowly-focused decision-making of an individual Forest Supervisor.

It appears that the Forest Service already anticipates that Glen Casamassa, the current Region 6 Forester, will be involved and overseeing development of certain key stages of this proposed amendment.[111] Despite this, Mr. Casamassa has designated Shane Jeffries, the Ochoco Forest Supervisor, as the signing authority on behalf of all six forests.[112] It makes little sense to put such a decision into the hands of a single Forest Supervisor, when the Regional Forester ostensibly should have the involvement and understanding to make this decision himself. The Regional Forester should not have delegated this authority. Even if it *was* proper to delegate this authority, as the agent of the Regional Forester in this capacity, any decision made by Mr. Jeffries will both legally and factually be treated as the decision of the regional forester, Mr. Casamassa, himself.

The Forest Service has previously recognized the need to have such a broad-reaching amendment be decided by the Regional Forester. In fact, the original decision to continue the

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[110] *Id.*

[111] "Team 21 Project Decision Making Chart," FOIA #2020-FS-R6-04928-F Response 1, Review 3 at 83

[112] "Project Initiation Letter from Glen Casamassa dated April 1, 2020," FOIA #2020-FS-R6-04928-F Response 1, Review 3 at 86.

interim measures of the Eastside Screens[113] and the subsequent revision to the Screens[114] were both decided and signed by the Regional Forester. The Forest Service should continue to recognize the importance of this process and decision, and should continue to require the Regional Forester to be the decision maker for proposed changes to the Eastside Screens.

VI. Case Studies

Ever since the Eastside Screens were adopted the Forest Service has been exempting themselves from this management direction, including the 21-inch standard, through site-specific forest plan amendments. The EA states that since 2003, there have been 21 amendments to forest plans related to the 21-inch standard in the planning area. EA at 5. That does not account for site-specific amendments that were approved prior to 2003. Past FOIA requests by Greater Hells Canyon Council ("GHCC") have shown that starting in 1995, there were at least 16 amendments to the Wildlife Screen including at least 5 amendments to the 21-inch standard on the Wallowa-Whitman National Forest and the Malheur and Umatilla National Forests approved their first site-specific amendments to the 21-inch standard in 1995 and 1996 respectively. Because this information is incomplete, in 2015 GHCC submitted a FOIA request in order to determine the scale of site-specific amendment for all National Forest subject to the 21-inch standard. To date that request has not been fulfilled. It is difficult to know the current condition of LOS across the planning area and to analyze the impacts of large tree logging in the planning area over the past ~35 years without this data. This is, as discussed above, a failure to adequately disclose baseline conditions in the project area, as required by NEPA.

In 2012, GHCC and Blue Mountain Biodiversity Project ("BMBP") filed suit and challenged this practice and the Snow Basin timber sale. That resulted in the decision *League of Wilderness Defenders, et al. v. Connaughton, et al.*, No. 3:12-cv-02271-HZ (D. Or. Dec. 9, 2014). ("*Snow Basin*") In that decision the U.S. District Court found that the Forest Service's decision to approve site-specific amendments to the Eastside Screens as part of the Snow Basin project was a violation of NFMA. Essentially, the court ruled that a site-specific amendment may not be used to address a forest-wide problem.

The Forest Service continues to improperly use site-specific Forest Plan amendments for numerous timber sales across eastern Oregon and Washington. The Malheur National Forest, in particular, has continued to heavily use these site-specific Forest Plan amendments in recent years, despite the 2014 *Snow Basin* ruling.

The proposed amendment focuses on encouraging logging of large fir trees. However, none of the action alternatives offer mandatory protections for large trees of any species. While the

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[113] United States Forest Service, Region 6, *Decision Notice for the Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales* (May 20, 1994)

[114] United States Forest Service, Region 6, *Decision Notice for the Revised Continuation of Interim Management Direction Establishing Riparia, Ecosystem and Wildlife Standards for Timber Sales* (June 5, 1995)

agency is using fir, particularly grand fir, to justify their attempts to remove protections for large trees, it is clear that large trees of all species, including large Ponderosa pines would be put at risk by this proposal. Because the proposed alternatives, especially the Adaptive Management alternative, contain no substantive standards or requirements for implementation, they fall sorely short of being protective of old trees and habitat, and instead open the door to logging projects that actually target large trees. Case studies of projects within the planning area are discussed below to illustrate this and other issues discussed above in our comments.

Snow Basin Vegetation Management Project, Wallowa-Whitman National Forest

This project was approved in 2012 and included a site-specific amendment to the screens to allow logging of trees 21 inches or greater across ~11,000 acres of the ~28,000 acre project area. Specifically, the Record of Decision ("ROD") approved logging of large trees > 21-inch dbh where "there is excessive mistletoe infestation impeding development of healthy conditions in Douglas-fir or where large trees of other species are affecting the health and vigor of aspen stands." In addition, the amendment allowed for the removal of grand firs where they are in direct competition with ponderosa, larch, Douglas fir or quaking aspen, and where they are inhibiting restoration of the species composition characteristic of the site types. Snow Basin ROD at 8; Snow Basin Correction Notice at 1. The Forest Service estimated that this decision would result in the logging of ~40,000 trees over 21 inches dbh. United States Forest Service (2009) EIS for Snow Basin Vegetation Management Project Table 53. The ROD also promised to protect all trees over 150 years old.

In order to determine what trees in the project area were over 150 years old the Forest Service conducted informal field sampling in 2008 of 50 grand fir greater than or equal to 21 inches dbh. The Forest Service data sheet documenting that sampling stated that "trees exceeding 24" dbh were not sampled as they exceeded the capability of our increment borers." This indicates the Forest Service used a 12-inch borer to determine the ages of larger trees and that trees over 24 inches dbh were apparently estimated according to an unspecified method. Of the trees that were not sampled, the Forest Service applied unusually young ages for several of them. For example, two trees with 26-inch dbh are assigned the age of 51 and 66 respectively. A tree with a 33-inch dbh is given the age of 44. It would be exceptional for a tree of this size to be so young in this area, particularly when compared to the age of the trees 21-24 inches dbh that were actually sampled. Field work by GHCC staff in 2013 (using a larger increment borer) found that this sampling method led to ~250 year old grand firs growing in the same cohort as 250 year old Ponderosa pines to be marked for cut, and countless grand firs over 150 years old had has well. Additionally, many trees 21-23 inches dbh were marked for cut that did not fit into any of the approved categories in the ROD. When this was brought to the attention of the Forest Service, they claimed that the trees had been marked when they were < 21 inches dbh but had since grown.

After the *Snow Basin* decision, the project was reconfigured as the Sparta Vegetation Management Project. The purpose of the Sparta project was to "[m]anage forest structure, composition and density towards [HRV] improve sustainability" and [m]maintain and increase landscape resilience to the risk of uncharacteristic disturbance." This included disturbance from

wildfire, insects and disease. The agency concluded that it could achieve this goal without logging trees ≥21 inches and the ROD for Sparta did not include any site specific amendments.

Snow basin illustrates the scope of large trees logging that will likely occur under this amendment; the likelihood that many of those large trees will be old growth (older than 150 years) due to challenges aging grand fir, and that the agency's goals can be met using existing management direction.

The Crow Timber Sale, Malheur National Forest

The Crow "Hazardous Fuels Reduction Project" on the Malheur National Forest is currently in scoping. This project proposes to log large Ponderosa pines (≥ 21 and up to 30 inches dbh.) across ~3,378 acres. Large fir trees (≥ 21 and up to 30 inches dbh) are proposed to be logged across 8,000 acres.

The Forest Service claims that under this proposed action LOS stands will not lose their status. The Malheur definition of LOS requires 10 large trees (>21-inches dbh) per acre. Since the Forest Service plans to leave 10-12 live large trees per acre, that means that just 1-3 large trees dying is enough for each acre to lose its LOS status and any agency obligation to protect LOS.

The Forest Service does not say they will retain trees that have old growth characteristics, even though the 21 inch standard was incorporated into the Eastside Screens because evidence showed (and still does) that most Ponderosa pine ≥ 21-inches dbh are likely to be at least 150 years. The Forest Service has acknowledged that there are many grand fir and Douglas fir that have old growth characteristics and qualify as old growth between 21 to 30 inches dbh. Without specifying that trees with old growth characteristics would be saved from logging, the Crow timber sale will likely log old growth trees as well as large trees.

This illustrates that under the proposed amendment logging of all species of all sizes and ages will be considered.

Middle Fork John Day, Malheur National Forest

The Austin, Big Mosquito, Camp Lick, Magone, and Ragged Ruby sales compose a back-to-back series of timber sales that equal over 49,900 acres of recent, current, and proposed commercial logging within the Middle Fork of the John Day watershed in the Malheur National Forest. All but one of these sales (the Magone sale) include site-specific amendment to allow for the logging of large trees (> 21-inches dbh). All of these sales will be logged within the same general area and in the same approximately 10-year timeframe. The Austin sale is currently in scoping; the Ragged Ruby sale has not yet had a final decision released; and the Camp Lick sale's final decision notice was recently released. NEPA analyses for all of these sales occurred after the 2014 Snow Basin ruling.

In addition, many miles of thinning within RHCAs will occur as a result of these sales. Some thinning, such as in the Camp Lick sale, includes proposed commercial logging within RHCAs. The Big Mosquito includes noncommercial but heavy-handed logging within RHCAs. The

Forest Service broke their written objection resolution agreement with BMBP regarding one of these streams in the Big Mosquito sale (including an agreement that the agency would only fell trees for placement into the creek). The Ragged Ruby sale, which encompasses very moist forests in steep areas with complex groundwater flows and interactions, also has noncommercial thinning.

Despite the potential cumulative impacts to streams from both upslope logging of large trees (> 21-inches dbh) and thinning within RHCAs, the Forest Service has downplayed and neglected to take a hard look at the potential effects of these actions. The Forest Service has failed to adequately consider, for example, the cumulative impacts to species such as ESA-listed Bull trout and Mid-Columbia River steelhead. The Forest Service has even failed to take the simple step of quantitatively summing the combined total amount of stream habitat that would be affected in all of these sales for species such as Bull trout and Mid-Columbia River steelhead.

The cumulative impacts of this ongoing logging of large trees on terrestrial species and aquatic habitats, water quality, imperiled salmon and trout across the landscape are extremely concerning. Should this proposal be implemented, the increased logging of large trees will severely exacerbate these issues across the eastside.

Upper Touchet, Umatilla National Forest

The Forest Service has approved large tree (>21 inches dbh) logging as part of the Upper Touchet timber sale on the Umatilla National Forest. The ~1500 acre project area is surrounded on three sides by Wilderness and Inventoried Roadless Areas, and includes magnificent high elevation moist mixed conifer forest with huge old growth grand firs and old growth Engelmann spruce. Much of this area is rugged and steep, with logging planned on steep slopes above creeks. Many sale units have never been logged or only minimally logged. The area also encompasses a ski recreation area and hiking trails.

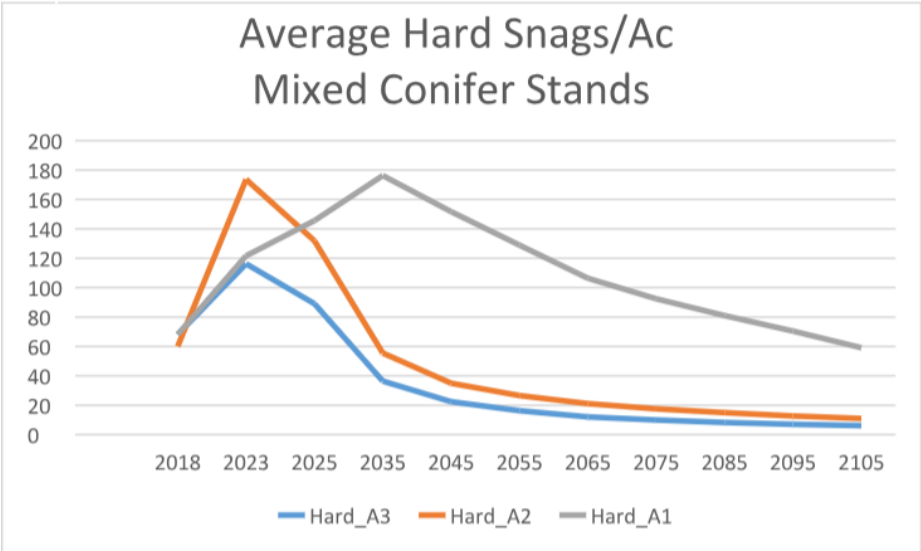
The Upper Touchet timber sale is one example (of many) where the Forest Service is proposing ecologically inappropriate and destructive logging of large trees > 21-inches dbh. Logging large trees in the Upper Touchet project will threaten the ecological integrity of a forest that supports high quality wildlife habitat, imperiled fish, and clean water. The forest in the Upper Touchet project area is a moist, productive forest that historically supported abundant large fir and spruce and will be degraded by the approved logging of large trees.

The Upper Touchet sale did not include a site-specific Forest Plan Amendment to log large trees. The Wildlife Screen allows for logging of large trees in LOS above HRV under "Scenario B." In the moist mixed conifer forests of the Blues, most forests are categorized as above HRV for LOS and other timber sales such as the Tollgate Project have also included logging of > 21-inch trees. Based on the overall large deficit of large and old trees discussed above, allowing widespread logging of large trees of "Scenario B" of the Wildlife Screen goes against the stated goal of the Eastside Screens and this amendment. This illustrates the need for a comprehensive ecosystem protection plan in order to address potential shortcoming in protections for old forests.

East Hills Project, Fremont-Winema National Forest

Below is an excerpt from Oregon Wild's August 6, 2018 objection to the East Hills Project on the Fremont-Winema NF which includes a plan amendment allowing large tree removal across 79,000 acres of logging units. This narrative highlights the need for careful analysis of the long-term loss of snags caused by logging with large tree removal, and shows the strengths and weaknesses of the analysis methods, including FVS modeling sometimes used by the Forest Service.

> Oregon Wild comments on the [East Hills] DEIS provided detailed explanation of how widespread logging will capture mortality and deprive the landscape of needed snags and down wood. The FEIS fails to take a hard look at the adverse effects of logging on dead wood by projecting dead wood recruitment into the future after 10,000+ log trucks worth of trees are removed. There are tools available to quantify these impacts but the FS failed to use those tools and failed to inform the public and the decision-maker about the impacts of logging.
>
> The record includes a draft FVS model runs by Sarah Johnson dated May 4, 2018 "East Hills Snag Summaries." These models runs show that snag habitat will be long-term adversely affected by widespread logging. In the graphs below, "A1" refers to Alternative 1, no action, and "A2" refers to Alternative 2, adopted in the draft ROD. These graphs really highlight the fact that logged and unlogged areas provide different benefits with respect to snag habitat. The FEIS fails to clearly disclose the ecological consequences of treating such a large fraction of the landscape and leaving the project area with such a short supply of snags. Surely, there is a better mix of treated and untreated that will yield a more optimal set of benefits across the landscape.
>
> We are very concerned that these snag projections did not make it into the FEIS. This kind of information is essential to inform the public and the decision-maker about the effects of the proposed action. The FEIS cannot take a hard look at this issue without incorporating this information and making sure the wildlife effects analysis reflects the severe impacts on snags habitat from such widespread logging.
>
> Note: the graphs below from Sarah Johnson's Snag Summaries are missing some key elements required for a hard look. They do not distinguish between large and small snags, and they do not show the effects relative to the 50-80+% DecAID tolerance levels of key snag-associated wildlife. The snag habitat levels shown for Alt 2 in the graphs below are far below optimal levels for species associated with snags and dead wood. The FS claims this is a restoration project, but they are obsessively focused on restoring stand density and species composition, while ignoring other equally important aspects of ecological structure/function/process, that are adversely affected by density reduction, such as snag habitat, dense forest cover, carbon storage, etc. A proper NEPA hard look analysis of this issue will help the Forest Service understand the trade-offs and make adjustments to the final decision to better harmonize competing objectives. The existing NEPA analysis hides important impacts from logging and hides the fact that logging will move stands away from historic reference conditions in direct conflict with the purpose and need for this project.


Average Hard Snags/Ac
Mixed Conifer Stands
200
180
160
140
120
100
80
60
40
20
0
2018
2023
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2105
Hard_A3
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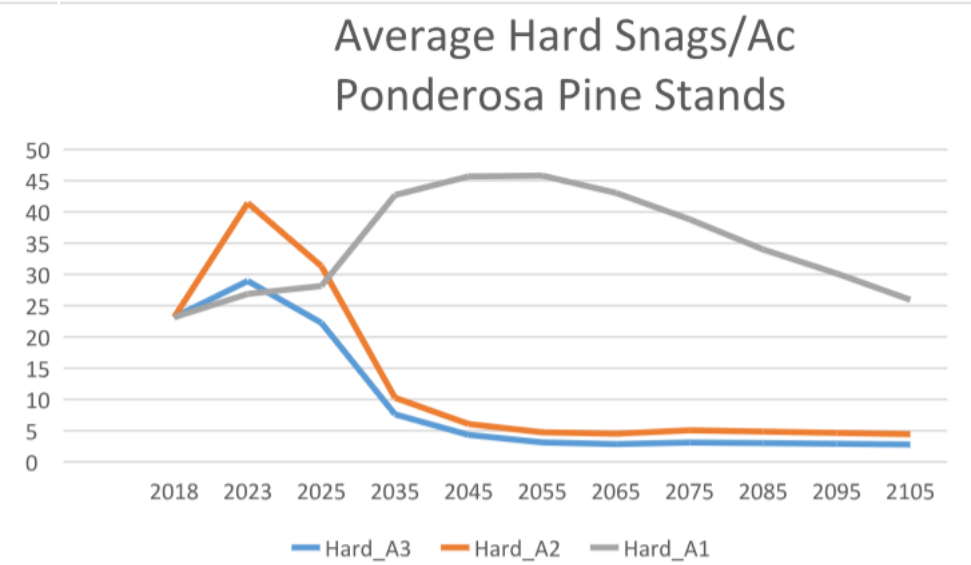
Hard_A1


Average Hard Snags/Ac
Ponderosa Pine Stands
50
45
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2018
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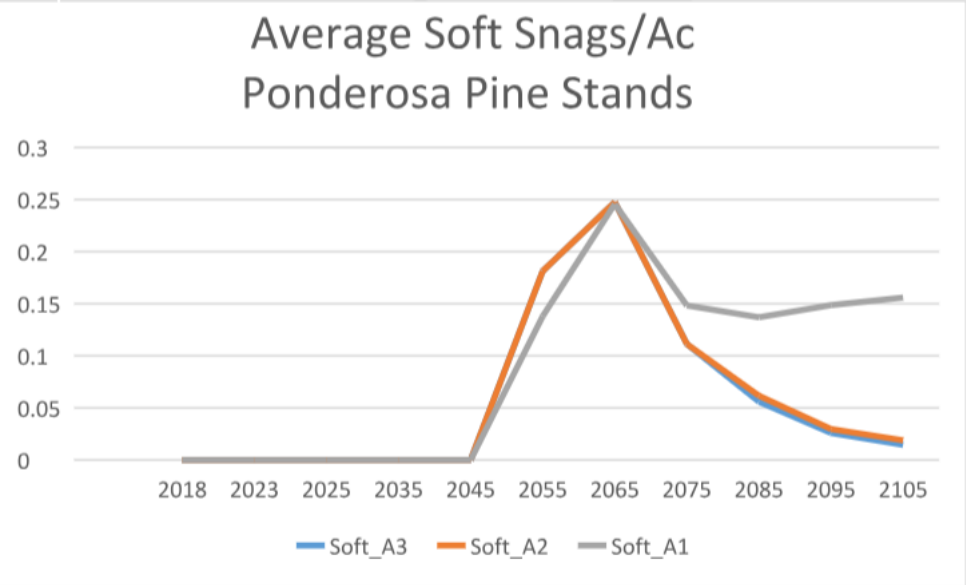

…

The FEIS (p 250) says about Alt 2 "Opening stands with restoration treatments would promote the development of large trees, which would allow for the recruitment of large snags over time. … Over time, restoration treatments would result in an increase in the amount of area with high densities of small and large diameter snags bringing the project area closer to DecAID reference conditions." This is misleading, factually incorrect, and not supported by the evidence. The FEIS fails to clearly disclose that logging will capture mortality across 100k acres and reduced the population of green trees that are available for snag recruitment, and significant reduce snag habitat for a very long time. …

The FEIS says about large tree *retention* under Alt 3: "over the long term continued presence of competing large white fir may slow or prevent large tree development, and thus the potential for future large snag recruitment." This is not supported. Alt 3 will remove large numbers of small trees and, like Alt 2, allow an increase in growth of remaining trees. One big difference is that Alt 3 retains *existing* large trees. Under Alt 2, loss of existing large trees and future snags is far greater than the slight reduction in growth rates of other trees under Alt 3. Sarah Johnson's snag summaries clearly show this, but the analysis in the EIS has not been updated to reflect this more accurate description of the outcome of Alts 2 and 3.

In spite of the high likelihood that logging will make a bad situation worse in terms of snags and dead wood, the wildlife appendix says "Over time, restoration treatments would result in an increase in the amount of area with high densities of small and large diameter snags bringing the project area closer to DecAID reference conditions." There is no quantitative analysis to support this. Every other quantitative analysis that has looked at the effects of thinning has concluded that logging *reduces* future snag recruitment. We believe that a quantitative analysis of the effects of the East Hills Project on snag recruitment would show that this assertion is false. This is a critical issue because it is directly related to the plan amendment related to large trees.