Data Submitted (UTC 11): 1/31/2024 5:00:00 AM
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Organization: Applegate Siskiyou Alliance and Klamath Forest Alliance
Title:
Comments: See attached comments. Thank you,

Luke Ruediger

January 31, 2024

RE: Public comments on Management Plan Direc6on for Old-Growth Forest Condi6ons Across the Na6onal Forest System (Federal Register/Vol. 88, No.243)

Our organiza3ons and the communi3es we represent in southwestern Oregon and northwestern California have long been at the frontlines in the struggle to protect old-growth forests on federal lands. Although our organiza3ons strongly support the protec3on of old-growth habitats on federal lands and look forward to a day when this issue no longer polarizes Na3onal Forest management issues, we are concerned by the approach being take in this proposed No3ce of Intent to Prepare an EIS surrounding the management of "old-growth forest condi3ons across the na3onal forest system." We do not believe that this proposal is a solu3on that ends mature and old-growth forest logging on federal lands, nor does it end the polariza3on that surrounds old forest logging on Na3onal Forest lands. In fact, much of the proposal appears targeted towards maintaining the status quo by allowing old-growth logging on federal lands, not restric3ng it.

Our disappointment stems in part from the lost opportunity in not making a stronger, more durable federal rulemaking to protect mature and old-growth forest on federal lands. The dragging of feet, and the insistence in making this a less durable and binding direc3on implemented through forest plans is unfortunate, and demonstrates a lack of leadership from

federal o?cials when it is needed most. Although the proposal claims to be responsive to President Biden's Execu3ve Order #14072, we do not believe it su?ciently achieves the orders goals. Addi3onally, we believe this project should also consider and respond to Execu3ve Order #14008 embracing the 30X30 Ini3a3ve. Implemen3ng these two Execu3ve Orders together would be extremely complementary and should have been addressed with a strong federal rulemaking, not in the upcoming Forest Plans.

Under the current approach, Forest Plans Amendments would be made during all upcoming planning processes and would be targeted at crea3ng a consistent policy in the Forest Planning process for all 128 Na3onal Forests. This policy could have and should have been a strong federal rule. Yet, short of that, and under the current framework of u3lizing Forest Plans, a much stronger conserva3on focus is necessary, with far less loopholes or excep3ons allowed to facilitate old forest logging.

We are also extremely concerned that the current threats analysis failed to iden3fy the single largest factor fully within the control of the US Forest Service and Department of Agriculture; old forest logging. This failure to adequately consider, or in fact, hardly even men3on the biggest single avoidable and controllable threat to mature and old-growth forests, demonstrates bias, a refusal to iden3fy meaningful shi^s in policy or implementa3on that are within the agency's control, and a commitment to the status quo regardless of its impact or consistency with Execu3ve Order #14072. It also demonstrates an inability to credibly analyze the e?ec3veness (or lack thereof) of Forest Service 3mber management prac3ces and their appropriateness from a restora3on or biological standpoint. Rather than analyze this obvious



and important issue, the agency is ignoring their own contribu3on to old forest loss, carbon emissions, and impacts to biodiversity.

Currently, the agency is completely ignoring the role it has played and con3nues to play in mature and old forest loss on federal lands. This approach not only fails to capture many important scien3?c, social, and biological values in its analysis. It also fails to address the elephant in the room, which is the impact of the Forest Service 3mber program on mature and old-growth forest habitats, as well as their contribu3on to climate change.

Ironically, the agency has published a No3ce of Intent to create an EIS to analyze the issues surrounding old-growth forests, yet proposes to implement this proposal through Forest Plans, and is refusing to even consider its own contribu3on, or the threat posed by its own management. Despite clear evidence that the Forest Service's current management ac3vi3es are responsible for repeated mature and old forest damage or loss, the agency has iden3?ed only exterior threats to old-growth habitat and will not be considering meaningful changes to its own management ac3vi3es. This is yet another major lost opportunity and fails to support appropriate climate solu3ons.

Current research demonstrates that logging remains the largest source of tree mortality, par3cularly in the Paci?c Northwest including Oregon and Washington where commercial 3mber harvest accounts for 80% of all tree mortality in these two states and 67% of the tree mortality in the en3re West, including 11 Western states. (Berner. 2017).

Yet, unlike wild?res, wind events, and other natural disturbance related mortality e?ects, federal lands logging, road construc3on and other anthropogenic impacts to old-growth forests are fully discre3onary, can be eliminated, and can be controlled through e?ec3ve policy and regula3on. Unlike any other form of old-growth forest damage or loss, those associated with

Forest Service logging could be immediately and fully mi3gated, at the stroke of a pen. No other decision that the agency can make would as swi^ly, as assuredly, and as successfully mi3gate old-growth forest loss. No other decision could as e?ec3vely keep carbon stored in forests and in forest soils, and no other decision could as e?ec3vely demonstrate trust, accountability, and an honest commitment to the protec3on, maintenance and recruitment of old-growth forest than codifying that commitment with meaningful prohibi3ons or limita3ons on your own management ac3vi3es. To do otherwise, demonstrates bias, a lack of accountability, and an inability to meaningful analyze this EIS with any level of con?dence or scien3?c rigor.

Addi3onally, we have signi?cant concerns that the Forest Service is failing to protect mature forests for carbon storage, for habitat, for connec3vity, and for the recruitment of old-growth forest habitats and given both the historic and ongoing loss of mature and old-growth forest associated with commercial logging on both federal and private lands, as well as the con3nuing de?cit of mature and old-growth forest, the recruitment of old-growth through a?oresta3on and habitat protec3on should be a priority. Recrui3ng old-growth forest can only be done by allowing mature forest to naturally develop old-growth characteris3cs through the development of decadence features, habitat complexity and in many systems canopy layering.

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We believe "reaffirming, at a national scale, the commitment to maintaining and developing old-growth forests conditions across the National Forest System" as proposed in the federal registry notice, means actually protecting these habitats with consistent direction across all Forest Service lands. Currently, the proposed action fails to address the vital, controllable, and substantial threat of federal lands logging, and this failure makes the current proposal ineffective and disingenuous from a regulatory standpoint. The Forest Service must place permanent, enforceable, limits on its own logging activities and must ensure that these measures are sufficient to protect, preserve, recruit, and restore old-growth forest ecosystems

for future generations and for the multitude of ecosystem services they provide. If the agency actually supports a "national intent to maintain and improve amounts and distributions of old-growth forest conditions with national forest ecosystems and watersheds so that old-growth forests are resilient and adaptable to stressors and likely future environments," then the agency must self-impose meaningful restrictions on its ability to log, thin, or liquidate old-growth trees and forest habitats on federal lands.

Please consider our specific comments, concerns and insights during the planning process for this overarching management direction. Having spent decades on the frontlines and having monitored hundreds of Forest Service timber sales and logging projects throughout the Klamath-Siskiyou Mountains, we can confirm that commercial logging remains a significant threat to mature and old-growth forests on federal lands. To effectively protect these habitats, Forest Plans must protect mature and old-growth habitats and de-incentivize the logging of these forests to meet unsustainable National Forest timber quotas.

This planning process must create lasting, durable, enforceable, and meaningful protections for these important, iconic, irreplaceable, carbon rich, mature and old growth forests across Forest Service lands and ecosystems, and to date it does not appear to include the robust protections necessary to achieve these goals.

1) The Forest Service should demonstrate leadership in meeting multilateral climate and forest management commitments by enacting strong, long-standing protections for mature and old-growth forests on federal lands.

All too o^en US government o?cials ask developing countries to protect their primary, mature and old-growth forests for climate mi3ga3on, yet refuse to do so themselves. We seem to think protec3ng forests is for Brazil in the Amazon, or in the Congo Basin, while we steadily go about cuing our forests down. This is occurring on both private and public lands in the United States

and is not only hypocri3cal, but demonstrates poor leadership, and is also a form of climate colonialism.

Un3l the Forest Service and other federal forest managers contribute fully to mul3lateral commitments pertaining to the restora3on and protec3on of ecological integrity, we are playing an unjust, hypocri3cal, unhelpful and colonial role in the debate surrounding forest management and climate mi3ga3on. Instead of making demands of other countries while refusing to implement these same protec3ons on our forest lands, the Forest Service and the

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Biden Administra3on can now choose to be responsible global partners in the ?ght against climate change by protec3ng mature and old-growth forests on federal lands.

"A large-scale e?ort to protect MOG naDonwide, including all primary and old-growth forests within the highest end of the mature forest spectrum, would help the United States meet a range of mulDlateral commitments related to protecDng and restoring ecosystem integrity. Ecosystem integrity has long been a bedrock principle in the United NaDons, recognized in both the Rio DeclaraDon and Agenda 21, and were agreed to in 1992 at the United NaDons Conference on Environment and Development (UNCED) (the 'Earth Summit'). The UNFCCC's Paris Agreement (UNFCCC 1/CP.21), agreed in 2015, carried forward the concept of ecosystem integrity in its preamble, and more recently the Intergovernmental Panel on Climate Change's 6th Assessment Report made numerous references to the fundamental importance of primary forests, ecological restoraDon and ecosystem integrity (Intergovernmental Panel on Climate Change [IPCC], 2022). Similarly, the ConvenDon on Biological Diversity also recognizes the importance of primary forests and ecosystem integrity via decisions 14/5 and 14/30 agreed in

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2018 at its 14 Conference of the ParDes. The United NaDons Strategic Plan for Forests 2030

(ECOSOC ResoluDon 2017/4), which builds on the 2007 UN Forest Instrument (A/RES/62/98 and A/RES/70/199), emphasizes ending deforestaDon and prevenDng forest degradaDon as key globally prioriDes. The United NaDons global decade on restoraDon was launched in 2021, following on the 2011 Bonn Challenge, with a target of 350 million ha of restoraDon, including a pledge of 15 million ha from the United States. The UN Sustainable Development Goals also has a goal of halDng and reversing land degradaDon (United NaDons, 2022). Finally, 95 naDons, including the United States, recently agreed to support the 30 [times] 30 iniDaDve as part of their COP15 ConvenDon on Biological Diversity obligaDons in June 2022. Mature and old-growth forest inventories (White House, 2022) provide a foundaDon for introducing much needed policies that are based on the upper bound full protecDon for MOG, which would allow the United States to ful?ll its internaDonal obligaDons as a leader in the global e?ort to end forest degradaDon and deforestaDon." (DellaSala et al. 2022)

Primary, mature and old-growth forests are widely recognized as natural climate solutions (DellaSala et al., 2020; Law et al., 2021) and increasingly policy makers are seeing the benefit of forest protection as a climate mitigation strategy. Article 5.1 of the Paris Climate Agreement calls on governments to protect and enhance "carbon sinks and reservoirs," while Article 21 of the UNFCCC COP26 Glasgow Climate Pact emphasizes "the importance of protecting, conserving and restoring nature and ecosystems, including forests[hellip] to achieve the long-term global goal of the Convention by acting as sinks and reservoirs of greenhouse gases and protecting biodiversity[hellip]" (UNFCCC, 2021). Furthermore, the United States was one of 140 nations at COP26 that pledged to end forest degradation and deforestation by 2030.

Additionally, the Summary for Policy Makers (SPM.D.4) in the Intergovernmental Panel on Climate Change [IPCC] (2022) report mentions safeguarding biodiversity and ecosystem integrity as fundamental to climate resilient developments. Attention to mature and old-growth forests can inform implementation of these policy commitments and the maintenance of these

forests through robust protections can ensure their success.

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President Biden ran as a climate president, we hope his administra3on can maintain their climate credibility by making responsible, common-sense decisions that protect, restore and maintain natural carbon sinks and natural climate solu3ons. The Forest Service can demonstrate President Bidens "all government" approach to the climate crisis by protec3ng the last mature and old-growth forests and trees on federal land. Execu3ve Orders 14008 and 14072 already iden3fy the conserva3on of mature and old-growth forests as o?cial administra3on policy and spa3ally explicit maps have been produced to inform this planning process. We recommend that the Forest Service implement measures that codi?es and requires these forests protec3on on all Forest Service lands.

2) The failure of our country to protect mature and old-growth forests is an equity and environmental justice issue.

Forest protec3on as a climate mi3ga3on strategy is important in the United States, just as it is in the Amazon and in the Congo River Basin. Expec3ng the developing countries of the world to forgo economic ac3vity to reduce climate e?ects while failing to address our own issues surrounding deforesta3on, logging related carbon emissions, and biodiversity loss is arrogant, hypocri3cal, and demonstrates a bias against under-served communi3es, people of color, less developed countries, and less privileged popula3ons. It is also more of the same, where colonial, ?rst world countries created a problem that we now expect the developing world to mi3gate.

Refusing to address problems we demand others solve with forest protec3on is a form of diploma3c colonialism that the Forest Service should be ashamed to par3cipate in. Rather than

perpetuate this injus3ce and imbalance, the Forest Service should priori3ze the protec3on of mature, old-growth and primary forests on federal lands as a na3onal climate strategy, as our contribu3on to addressing this por3on of the global climate and biodiversity crisis, and as an example of responsible, forward-thinking management that sustains a livable planet for future genera3ons.

The protec3on of mature and old-growth forests is popular with the people of this country and is widely acknowledged as one of our most important natural climate solu3ons available to us, while these same forests provide bene?ts and ecosystem services to communi3es across the country. Yet, while the importance of forests as carbon sinks, wildlife habitat, and biodiversity reserves is well documented, the federal land management agencies are ac3vely heading in the opposi3on direc3on, by promo3ng incr easingly more intensive, widespread and damaging logging prac3ces on federal lands.

Robust, durable, and comprehensive regula3ons protec3ng mature and old-growth forests are a responsible, apainable and e?ec3ve solu3on with signi?cant public bene?ts. Addi3onally, if implemented across the board on all Forest Service lands, issues of environmental equity would not in?uence or a?ect implementa3on. All communi3es living in proximity to public forest lands would bene?t, no maper their economic, ethnic, racial, or religious demographic. Finally, it would demonstrate that federal land managers at the Forest Service and government o?cials in



the Biden Administra3on are taking the climate crisis seriously and intend to address the issue in an equitable and comprehensive manner.

We implore our land managers to address the issues at hand, serve the people of this country

and do what is best for the land. Climate and forest scien3sts are recommending bold ac3on now, on behalf of our climate, unfortunately federal land managers are proposing an increase in federal land logging that will reduce forest health and resilience, increase ?re risks, degrade intact habitats, damage wildlife habitats, generate signi?cant carbon emissions and drama3cally reduce the capacity of public forest lands to mi3gate the worse e?ects of climate change.

Please use this process to enact meaningful protec3ons for all mature and old-growth forests and protect them from commercial logging on Forest Service lands. These forests could be designated as Na3onal Carbon Reserves where old forest habitat and trees would be protected from commercial logging opera3ons and u3lized as carbon reservoirs with a myriad of other public and biological bene?ts. We also recommend increased protec3ons for Inventoried Roadless Area by recommending them to congress for Wilderness Designa3on, designa3ng new or addi3onal Botanical Areas, Research Natural Areas and Special Interest Areas. We must do our part, set a good example, walk our talk, and end mature and old forest logging on Forest Service lands.

3) The agency must elevate conservation within the Forest Service's multiple use mandate. All management activities should be consistent with conservation goals especially given the existential threat posed by the current biodiversity and climate crisis.

To balance the historic impacts of industrialized forest management, we must priori3ze conserva3on on public lands. Climate and biodiversity scien3st across the planet recommend bold, transforma3onal ac3on to address the unfolding crisis, and the Forest Service should respond with increased urgency and commitment, not increased 3mber produc3on.

The conserva3on of natural resources, rela3vely intact ecosystems, carbon sinks, watersheds, wildlife and biodiversity should be the driving force behind public land management, with science guiding our ac3ons, and an acknowledgement that conserva3on measures such as habitat protec3on, mature and old-growth forest protec3ons and nature-based climate solu3ons can be best achieved on public lands.

Although we support and appreciate the general emphasis on old-growth forest resilience, we do not believe the current proposal adequately addresses the history of habitat degrada3on on these lands or the current needs surrounding biodiversity loss and climate change. We have a limited window to meaningfully address these crises and more aggressive conserva3on-based solu3ons are needed, not more logging.

Addi3onally, the vast majority of private land holdings cannot be depended on for cri3cal conserva3on measures due to laws, regula3ons, and ?nancial incen3ves that encourage



resource extrac3on on private lands. Thus, on public lands, conserva3on should be emphasized as a priority in all Forest Plans to help compensate for the con3nuing losses on these adjacent private lands. It is the most important role that public lands and only public lands can play. Addi3onally, conserva3on e?orts on private lands or public land acquisi3on campaigns are needed to more adequately protect habitat connec3vity and to connect protected federal lands for conserva3on purposes, climate mi3ga3on, and the protec3on of biodiversity. To do otherwise, shows a lack of commitment to our planet, to climate protec3on, to the issue of biodiversity loss, and to our commitments with global partners. Private land acquisi3on and the consolida3on of public lands for connec3vity should be incorporated into all Forest Plans with provisions that encourage public lands consolida3on and the acquisi3on of key parcels for

connec3vity, biodiversity, recrea3on, carbon storage and wildlife.

All upcoming Forest Plans must be directed to elevate conserva3on in their mul3ple use mandate and require all management ac3vi3es to priori3ze conserva3on and climate goals in planning, approval and implementa3on processes. To comply with EO 14072 and EO 14008, this should include protec3ons for all mature and old growth forests and include a requirement for all Forest Plans to approve at least 30% of their land in strict conserva3on alloca3ons including Designated Backcountry Areas, Botanical Areas, Special Interest Areas, Connec3vity Corridors, Na3onal Carbon Reserves and LSR forests.

4) Use FLPMA authority to define additional "multiple uses," including, but not limited to; archeological, ecological, botanical, carbon storage and sequestration, biodiversity, wildlife, fisheries, backcountry, scenic values and others.

The Forest Service must use its FLPMA authority to de?ne the addi3onal "mul3ple uses" iden3?ed for management on agency lands and incorporate these conserva3on based mul3ple uses in the upcoming Forest Plans. This must include a wide range of non-industrial and conserva3on-based uses including, but not limited to; archeological, ecological, botanical, carbon storage and sequestra3on, biodiversity, wildlife, ?sheries, quiet, darkness, backcountry, scenic areas, and others. These mul3ple use objec3ves must be clearly de?ned if they are to be priori3zed and achieved. They must also be stated clearly as goals and de?ned under the mul3ple use mandate if conserva3on is to be put given equal foo3ng with other mul3ple use objec3ves in upcoming Forest Plans.

The protec3on of these resources is consistent with both this administra3ons climate and biodiversity goals and objec3ves, while having undeniably bene?cial e?ects on local

watersheds, ?sheries, water quality, recrea3on and human communi3es. Addi3 onally, more than anything else these are the values important to the public who owns and enjoys these lands. An extremely wide spectrum of Na3onal Forest visitors and ci3zens would bene?t from the protec3on of these uses as part of the agency's mul3ple use mandate. In fact, hikers, backpackers, hunters, ?sherfolk, ra^ers, kayakers, botanists, bird watchers, recrea3onal drivers, day use visitors, dispersed camping enthusiasts, those par3cipa3ng in nature study, ecological educa3on groups, and virtually anyone using public lands for recrea3on, educa3on, and



personal enjoyment would bene?t from these uses being equally considered when compared to other industrial uses.

This is especially true given the historic bias of the agency towards extrac3ve and industrial uses that has dedicated vast por3ons of our public lands to these uses at the expense of virtually all others. To balance this historic injus3ce to the planet and to all nearby communi3es, conserva3on should be elevated in the mul3ple use mandate and numerous measures promo3ng conserva3on and sustainability must be built into the framework for management on Forest Service lands. These uses must be considered valid "mul3ple uses" that require a land base, standards and guidelines for protec3on and regula3ons to ensure compliance. They must also require compliance with these standards and guidelines in upcoming Forest Plans.

5) The agency must clearly identify multiple use objectives with quantifiable and enforceable standards for non-commodity values.

The agency should iden3fy quan3?able, enforceable standards for mul3ple use objec3ves similar to the "sustained yield" for 3mber produc3on. Currently, no equivalent standards exist

for non-commodity values and therefore they are not objec3vely monitored for compliance. This is important because management ac3vi3es are focused on mee3ng these concrete, quan3?able management objec3ves. Sta? 3me, agency emphasis and local land management direc3on is heavily focused on mee3ng quan3?able stan dards to demonstrate the e?cacy of management ac3ons.

For example, most 3mber producing Na3onal Forest use the vast majority of their resources and sta? 3me mee3ng the arbitrary and unnecessary, but quan3?able Annual Sale Quan3ty (ASQ). They do so by concentra3ng sta? 3me on approving mostly vegeta3on management projects and auc3oning of commercial 3mber sales. Many other goals or management objec3ves speci?cally iden3?ed in Land & Resource Management Plans are either not realized, not fully realized or simply never implemented.

We believe that if conserva3on and the protec3on of old-growth forests and their resilience is to be place on equal foo3ng with other mul3ple use objec3ves they must also have clear, quan3?able standards and monitoring targets that can be used to measure the e?ec3veness of management ac3vi3es and ensure compliance.

We support the development of clear, concise, replicatable, quan3?able and enforceable standards to monitor the e?ec3veness of conserva3on ac3vi3es. This could include standards surrounding biological diversity, connec3vity, late successional forest habitat, carbon storage, and climate refugia. Metrics could include acres preserved in strict conserva3on based land use alloca3ons (Wilderness, Wild & Scenic River, Na3onal Monuments, Na3onal Parks, Research Natural Areas, Botanical Areas, Inventoried Roadless Areas, designated Backcountry Areas, etc), metrics around carbon storage, connec3vity corridors maintained, climate refugia maintained, noxious weeds removed, road decommissioned or recontoured, acres burned with prescribed

or managed wild?re in a characteris3c mosaic, ?re/climate refugia maintained, stream miles restored with large wood, etc.

Upcoming Forest Plans must meaningfully address a new conserva3on focus in mul3ple use management. Conserva3on goals should be met ?rst, with other goals or economic outputs being secondary, or being achieved through habitat protec3on.

6) Consistency with EO 14008 and 14072 requires the conservation of mature and old-growth forests and/or intact habitats through policy direction and habitat protection.

The goals and objec3ves of EO 14008 and 14072 promote a climate, forest and public land policy focused on u3lizing natural climate solu3ons, preserving natural habitats, protec3ng important carbon sinks, and restoring habitat that has been heavily degraded by past and current management prac3ces. We wholeheartedly support these goals, but believe more concrete, durable protec3ons for mature and old-growth forests and/or intact habitats must be enacted through this EIS process. As demonstrated later in this comment (Appendix A & B) mature and old-growth forests on federal lands are not adequately protected and are regularly targeted for large tree logging, heavy canopy reduc3on, and habitat degrada3on. Addi3onally, protec3ng these forests is one of the most e?ec3ve climate mi3ga3on strategies available, with signi?cant societal and conserva3on bene?ts (DellaSala et al., 2022., Birdsey et al., 2023., Law et al., 2018).

Policy direc3on protec3ng mature and old-growth forests and trees must come from the highest levels of the Department of Agriculture, Forest Service and the Biden Administra3on; strong

enforcement mechanisms, and annual monitoring protocol must also be required as part of the Na3onal Old-Growth Amendment requiring accountability and repor3ng at a Ranger District and Na3onal Forest level. At a minimum, these protec3ons must include regionally adjusted standards for the reten3on of large, old trees and mature or old-growth stands.

These standards and guidelines must protect all mature and old-growth forests and trees remaining on federal lands including Forest Service lands and be built into all Forest Plans. This objec3ve can be achieved by following the approach iden3?ed in recent research using regionally adjusted stand age and diameter thresholds. This approach would protect between 36% and 68% of total carbon in all trees in a representa3ve selec3on of 11 Na3onal Forests. Carbon accumula3on of live above-ground biomass from mature stands and large trees was also 12%-60% of the total accumula3on in all trees. (Birdsey et al., 2023). At the tree level, the largest trees in old-growth forests may represent just 1% of all stems yet store at least 40% of the above-ground carbon (Stephenson et al. 2014., Lutz et al., 2018., Mildrexler et al., 2020). Likewise, recent research found that the carbon stocks for large trees in mature stands accounted for between 41% and 84% of total carbon storage, while total carbon accumula3on from large trees in mature stands accounted for between 53% and 71% (Birdsey et al., 2023). Addi3onal research on Na3onal Forest lands in dry forests of eastern Oregon demonstrated that large trees over 21" diameter made up only 3% of the trees in the forest, but stored 42% of the above ground carbon (Mildrexler et al., 2020). These studies demonstrate the importance of



large trees and mature forests in both storing and accumula3ng carbon, and mi3ga3ng climate change.

At the stand level, old-growth forests store 35% to 70% more carbon, including in soils, when compared to logged stands (Keith et al., 2009; Mackey et al., 2014; Mayer et al. 2020). Old-

growth forest stands may also act as a natural bu?er against extreme climate condi3ons (De Frenne et al., 2013; DellaSala et al., 2015; Frey et al., 2016; Beps et al., 2017, Xu et al., 2022). At the watershed level, old-growth forests maintain hydrological cycles (Perry and Jones., 2016; Crampe et al., 2021), while in the Paci?c Northwest, old-growth forests may func3on as ?re refugia in large wild?re complexes (Lesmeister et al., 2019).

Addi3onally recent research demonstrates that 3mber harvest is by far the largest contributor to tree mortality in the West, with 3mber harvest in Oregon and Washington contribu3ng. (Berner.2017) Other papers have shown that cumula3ve mortality following 3mber harvest and wild?re, is higher in thinned stand than in stands subject to only wild?re (Hanson 2022, Baker. 2022 etc).

Maintaining ecological integrity and managing federal lands consistent with EO 14008 and 14072 requires the agency to protect all exis3ng mature and old-growth forests and trees, while restoring planta3ons stands and young forests heavily altered by previous logging ac3vi3es. We recommend allowing mature stands to develop through natural process into old-growth forests, maintaining exis3ng old-growth forests by commiing to not logging them, and managing young stands to more quickly develop mature and late successional characteris3cs.

7) Sideboards are needed to protect mature and old growth forests and trees and carbon storage in "restoration" areas.

Informa3on provided in this comment demonstrates that mature and old forest logging on federal lands remains a signi?cant impact to our na3on's forests and climate resilience. These forests are dispropor3onately important in both storing and accumula3ng carbon and mi3ga3ng

the impact of climate change. Yet, nearly every federal land vegeta3on management project or 3mber sale our organiza3ons have tracked in the last 20-30 years have included a signi?cant mature and old-growth forest component, and these ac3vi3es are both degrading and diminishing mature and old-growth forest habitat on federal lands. These projects are also o^en implemented or proposed under the guise of fuel reduc3on, forest restora3on or ?re resiliency, yet o^en have the opposite e?ects.

The current status quo includes the rou3ne targe3ng of rela3vely intact old forests and large, old trees for logging in almost every federal 3mber sale. Yet, the current climate and biodiversity crisis necessitates a new, more responsible approach that protects and preserves carbon storage and climate refugia on federal forest lands. This approach is outlined in Birdsey 2023 using a regionally adjusted stand age and diameter threshold. These metrics for reten3on are easily iden3?ed, tracked and monitored on the ground, allowing for realis3c and e?ec3ve implementa3on in a wide variety of forest types (Birdsey. 2023).



We believe, based on years of experience monitoring federal land 3mber sales and reviewing the best available science, that the best way to protect stored carbon, maintain climate refugia, support resilience and preserve large, old trees is to designated age and diameter limits for commercial logging on all federal lands, and to protect Na3onal Carbon Reserves where logging will not take place. Only this approach of protec3on, coupled with strong sideboards for all vegeta3on management projects will preserve and restore carbon rich forest habitats on federal lands. Although the agency goes out of its way in environmental analysis documents leading to this No3ce of Intent to avoid using the term logging, it is board footage requirements under the Annual Sale Quan3ty (ASQ) that are driving forest management prac3ces on Forest Service lands. This near singular focus on 3mber produc3on is a signi?cant contribu3ng factor to our

overall carbon emissions, biodiversity loss, and habitat degrada3on.

All forest management projects on Forest Service lands with a commercial logging component including those called restora3on, fuel reduc3on or forest resiliency projects must include robust, science-based sideboards protec3ng mature and old-growth forests and trees with a regionally adjusted stand age and diameter threshold. This should be codi?ed in every Forest Plan maintaining strong diameter (21" in dry forests) and age limits (80 year stand age) on tree removal. In other loca3ons, commercial logging should be prohibited by protec3ng Na3onal Carbon Reserves in upcoming Forest Plans.

8) Carbon emissions and habitat destruction associated with commercial logging are far more significant than those from natural disturbance processes, including wildfire, insects and wind combined.

Mature and old-growth forests and the large trees within these forest habitats play an outsized role in both storing and accumula3ng atmospheric carbon (DellaSala., 2022, Stephenson et al., 2014, Mildrexler et al., 2020). Protec3ng mature and old-growth forests and trees can help to mi3gate old forest loss and can facilitate the matura3on of mid-size trees and mid-successional forest into large diameter classes and more mature successional stages which are important from a climate, habitat and watershed perspec3ve (Moomaw et al., 2019). At the same 3me logging these stands can create a signi?cant and long las3ng "carbon debt" that takes decades or centuries to restore or "repay" (Moomaw et al. 2019; Law et al., 2022).

Research demonstrates that na3onal and regional es3mates of emissions associated with commercial logging are 5-10% greater than emissions from natural disturbance processes,

including wild?re, insects, and wind combined (Harris et al., 2016., Law et al., 2018). In fact, research in Oregon demonstrates that the logging and forest products industry is the single largest source of emissions in the state, cons3tu3ng an incredible 39% of the states total emissions (Law et al. 2018). Protec3ng mature and old growth forests is extremely important because even when threatened by natural disturbances associated with climate change there is substan3al evidence that old-growth forests can con3nue to maintain or increase carbon stocks if adequately protected (Stephenson et al., 2014, Law et al., 2018., Lesmeister et al., 2021). This is par3ally because signi?cant carbon remains in standing snags even a^er high severity



wild?res and other natural disturbance events. In most cases carbon is simply transferred from live vegeta3on to dead standing material where it can be stored for long periods of 3me (Stenzel et al., 2019., DellaSala. 2020.). It is also because mature and old forests are the most resilient habitats on the landscape with signi?cant natural ?re resistance.

9) Increase the use of conservation-based land use allocations to achieve climate and biodiversity goal, as well as 30X30 goals on public lands.

Scien3st across the planet are recommending bold ac3on to face the ecological threats of our 3me. To be successful, this ac3on must include increased habitat protec3ons through the use of conserva3on-based land use alloca3ons including increased protec3ons for expanded Inventoried Roadless Areas including recommending them to congress for Wilderness Designa3on, the designa3ng of new or addi3onal Botanical Areas, Research Natural Areas, Special Interest Areas, Backcountry Areas, Connec3vity Corridors and Na3onal Carbon Reserves intended to store carbon in natural ecosystems and mi3gate climate change. A signi?cant increase in all these land use alloca3ons is required to address the climate and biodiversity crisis and is consistent with President Biden's recent Execu3ve Orders 14008 and 14072. These

designa3ons can also be used to protect mature and old-growth forests under the Na3onal Old-Growth Amendment. Upcoming Forest Plans should require an increase in exis3ng conserva3on-based land use alloca3ons and the designa3on of new alloca3ons such as Na3onal Carbon Reserves and Connec3vity Corridors on Forest Service lands. Protec3ng mature, old-growth, and primary forests, as well as new Wilderness Areas, Botanical Areas, Research Natural Areas should be a top priority that is required in all upcoming Forest Plans.

10) National Carbon Reserves should be designated and protected in all mature and old-growth forests.

All mature and old-growth forests iden3?ed in the recent federal inventory should be protected as Na3onal Carbon Reserves. These areas should be protected from the impact of federal land logging ac3vi3es and managed to maximize carbon storage by encouraging more mature, late successional and old-growth forest habitats or characteris3cs. Logging including the types of commercial thinning o^en implemented on Forest Service land, releases far more carbon than natural disturbance processes such as drought, bark beetle mortality or wild?re e?ects (cite) and logging also produces far more cumula3ve mortality in the 11 Western states (Berner.2017).

President Bidens recent Execu3ve Order on forests directs the agency to protect mature and old-growth forests habitats and maximize carbon storage in natural forest environments as a climate solu3on. Implemen3ng this policy direc3on requires protec3ng mature an d old-growth forests from commercial logging in Na3onal Carbon Reserves.

By protec3ng both mature and old-growth forests, currently mature forests will be allowed to grow into complex late successional or old-growth habitats, allowing for the recruitment of addi3onal old-growth forests over3me (Moomaw. 2019). It has also been proven that mature,

late successional and old-growth forests are far more resilient to wild?re and climate e?ects



than managed forest allowing them to be more persistent despite climate impacts (Bradley. 2016., Lesmeister. 2019., Zald. 2018).

Addi3onally, research has shown that far more acreage and northern spoped owl habitat is degraded under the current ac3ve management strategy than is a?ected by wild?re e?ects (Odion.2014). Researchers have shown that over a 20 year period in 11 western states only 2-4.2% of fuel treatments were likely to encounter a moderate to high severity ?re (Rhodes & Baker. 2008). Other researchers have also shown that less than 1% of fuel treatments coincide with wild?re each year and only 10-20% will encounter wild?re while s3ll e?ec3ve due to regrowth and the establishment of woody vegeta3on (Schoenaggel. 2017 & Barnep. 2016). Finally, research in the southern Cascade Mountains and in other regions has shown that commercial thinning creates higher levels of tree mortality within treated units than wild?re alone. (Hanson. 2022., Baker. 2022)

Designa3ng Na3onal Carbon Reserves would far more e?ec3vely mi3gate climate change and store carbon than ac3vely managing these lands for 3mber produc3on or "restora3on" forestry. It would also have addi3onal bene?ts to watersheds, water quality, habitat values, biodiversity, habitat connec3vity and the maintenance of climate refugia. This may be the single most important contribu3on the Forest Service could make towards mi3ga3ng climate change and serving the public interest. We strongly encourage you to protect and designate all mature and old-growth forests as Na3onal Carbon Reserves in the upcoming Forest Plans and exclude these habitats from commercial 3mber produc3on. E?orts should be made to protect forests over 80 years of age in Na3onal Carbon Reserves and trees over 21" in dry forest ecosystems.

11) Research Natural Area (RNA) designations should be increased on Forest Service lands

Research Natural Areas should be used to protect intact habitats throughout the Forest Service landbase and u3lized to protect intact na3ve environments as an environmental baseline from which climate change and its impact on na3ve ecosystems can be researched. RNAs should also be su?ciently large to allow for natural processes and a wide diversity of habitats. Research Natural Areas should be designated in high quality representa3ons of common na3ve ecosystems and in unique or rare plant communi3es or wildlife habitats with rare or threatened species or in unroaded areas between 1,500 and 5,000 acres in size.

New Research Natural Areas could be designated as addi3ons to exis3ng RNA's, as stand alone RNA's or overlapping other designa3ons such as Connec3vity Corridors, Na3onal Carbon Reserves, Botanical Areas and other Special Interest Areas. Maintaining exis3ng RNAs and designa3ng a signi?cant expansion to the RNA network should be a priority that is required in all upcoming Forest Plans.

12) Botanical Area (BA) designations should be increased on Forest Service lands

In previous Land and Resource Management Planning processes Forest Service Botanical Areas have been designated to protect high value plant communi3es, unique habitats, rare plant



species, and unusual plant associa3ons. Exis3ng Botanical Areas protect important areas but are o^en not adequately managed for the protec3on botanical resources or were designated in small areas that could bene?t from signi?cant expansion. Given the drama3c declines in biodiversity associated with climate change, industrial impacts, noxious weed spread,

inappropriate motorized recrea3on and public land grazing, these lands are under threat despite previous Botanical Area designa3ons.

Exis3ng Botanical Areas and future addi3ons to the Botanical Area network need addi3onal protec3ons for botanical resources and intact environments. In many cases, like on the Rogue River-Siskiyou Na3onal Forest and Klamath Na3onal Forest Botanical Area Management Plans were never established as proposed in the original Forest Plan and designa3on process. Currently, stronger protec3ons and establishment of the mandated Botanical Area Management Plans de?ning how these botanical resources will be preserved and protected are necessary on most Na3onal Forests.

In addi3on, funding is needed to provide the botanical research, protec3on and enforcement measures necessary to adequately protect botanical areas for inappropriate impacts or to beper understand these diverse, unique and rare plant communi3es. Funding could be included for caple exclosures, allotment closures, o?-road vehicle closures, and stronger regula3ons to eliminate impacts associated with federal lands logging, road construc3on and ?re suppression impacts. We believe addi3onal emphasis, protec3on and enforcement is needed to achieve the stated objec3ves of exis3ng Botanical Areas.

We also support the protec3on of addi3onal Botanical Areas across Na3onal Forest lands to help mi3gate the biodiversity crisis and more comprehensively protect intact, rare, uncommon, or unique plant communi3es. The designa3on of new Botanical Areas could start with a public nomina3on process during Forest Plan comment periods. It could also start by designa3ng all previous candidate Botanical Areas for designa3on and elimina3ng any non-compa3ble uses. Maintaining exis3ng Botanical Areas, expanding them, strengthening them and designa3ng new Botanical Areas should be a priority in all upcoming Forest Plans.

Finally, we also believe that the agency should create new Standards and Guidelines in many designated Botanical Areas to more appropriately manage for botanical values, biodiversity and climate change. These Standards and Guidelines must include clear prohibi3ons on motorized use o? exis3ng roads, protec3ons from federal land livestock grazing, strategies to address poten3al noxious or non-na3ve weed spread and strict prohibi3ons on logging and road construc3on. Metrics must be created and met to protect Botanical Areas from a variety of localized impacts.

13) Special Interest Area designations should be increased on Forest Service lands including the designation and protection of high value Connectivity Corridors & Climate Refugia

14

The increased designa3on of Special Interest Areas in need of special management should be encouraged. Special Interest Areas can be focused on botanical values, like Botanical Areas, geologic values in Geologic Areas and recrea3onal values in other recrea3on based Special Interest Areas. These designa3ons address speci?c needs on the landscape and could be u3lized to increase designa3ons focused on biodiversity and climate resilience. In par3cular new Special Interest Areas could emphasize the protec3on of climate refugia and connec3vity including designated Connec3vity Corridors and Climate Refugia. These corridors and discrete refugia areas should include intact habitats and important habitat linkages providing for the migra3on and dispersal needs of plant and wildlife species apemp3ng to ?nd habitat under a changing climate. As habitats throughout the country shi^ and change with our climate, connec3vity between habitats will become increasingly important and should, along with forest protec3on

and Na3onal Carbon Reserves, be a more prominent por3on of our na3onal climate strategy.

Species seeking appropriate habitat condi3ons may need to shi^ their ranges to address the new reali3es including dispersing West and closer to the coast, by moving further north to avoid increasingly extreme clima3c events, by moving to higher eleva3ons, and by searching out the climate refugia s3ll remaining on the landscape.

We whole-heartedly support the designa3on of a large Connec3vity Corridors and propose the Siskiyou Crest (on the Rogue River-Siskiyou and Klamath Na3onal Forest), as a premier Connec3vity Corridor designa3on in the Paci?c Northwest and Northern California. The area connects the Cascade Mountain to the Coast Range and is the only east-west tending transverse range in the Paci?c Northwest region. It also includes high quality connec3vity habitat linking high eleva3on subalpine habitats to low eleva3on valley and foothill communi3es, allowing for dispersal across the landscape and throughout a wide variety of ecosystems. The protec3on of the Siskiyou Crest is a key climate solu3on with landscape scale implica3ons. It has also been iden3?ed as maintaining regionally signi?cant climate refugia habitat (Olson???). For these reasons, the region in its en3rety (at least on all federal lands) should be designated as one of the premier Connec3vity Corridors and Climate Refugia Areas on the West Coast. The Siskiyou Crest and other connec3vity pathways and regional climate refugia should be iden3?ed and priori3zed for protec3on across Forest Service lands in the upcoming Forest Plan.

Connec3vity Corridors should be used to connect mountain ranges, intact habitats, wilderness areas, and other conserva3on areas in the Forest Planning process. They should also be su?ciently sized to accommodate natural disturbance processes and to connect broad ecosystems throughout the country. They should be u3lized to exclude these areas from habitat stressors which compound climate impacts including commercial logging, road construc3on, o?-

road vehicle use, public land grazing, and other anthropogenic impacts. They should also be designed to facilitate species dispersal and migra3on for both plant and animal species by suppor3ng intact wildlife habitats, plant communi3es, and unroaded areas.

Climate Refugia could be found within designated Connec3vity Corridors or designated as a stand alone habitat. Climate refugia could include, but is not limited to high eleva3on areas, springs, wetlands, fens, and sphagnum bog habitats, cool moist forest associa3ons, canyon



bopoms, north facing slopes and more speci?c habitats such as disjunct plant popula3ons currently found as range extensions for species more common in another, o^en cooler or more mesic region. These loca3ons have proven in some cases, over millennia to support condi3ons that are resilient to climate change. They are also repositories of biodiversity and refugia for species adapted to these more mesic, moist, or snowy condi3ons. Climate Refugia should be designated, along with larger Connec3vity Corridors in all upcoming Forest Plans.

14) Recommend all Inventoried Roadless Areas for Wilderness designation

The maintenance and protec3on of biodiversity, carbon stocks, habitat connec3vity and intact natural habitats could be drama3cally increased through the permanent and adequate protec3on of all Inventoried Roadless Areas (IRAs) on Na3onal Forest lands. U3lizing this EIS process and the upcoming Forest Plans, the agency should recommend Wilderness designa3on for these areas and encourage Congress to approve new Wilderness Areas and expansions to exis3ng Wilderness designa3ons. Puing conserva3on on equal foo3ng with other mul3ple use objec3ves means designa3ng more lands as Wilderness and by extending the most stringent habitat protec3ons to the most intact lands remaining on public lands.

Although these formal recommenda3ons do not actually protect these lands as wilderness, the exis3ng IRA protec3ons and o?cial Forest Service recommenda3ons for Wilderness designa3on would priori3ze the protec3on of these lands to meet the 30X30 targets embraced in Execu3ve Order 14008. If the agency is serious about eleva3ng conserva3on to meet climate, connec3vity and biodiversity objec3ves, addi3onal Wilderness is absolutely necessary.

It is also currently the best assurance and most e?ec3ve land use alloca3on at excluding logging, mining, development, new road construc3on, damaging economic ac3vi3es, and other habitat stressors that compound the already signi?cant impacts of climate change. Wilderness is the best designa3on for protec3ng intact, undisturbed wildlife habitats and intact plant communi3es, the best designa3on for maintaining habitat connec3vity and the best for facilita3ng species migra3on and dispersal in a changing climate.

Unmanaged lands with intact biological legacies have proven to be e?ec3ve at bu?ering habitats from the worst e?ects of climate change (Lesmeister. 2019), while they have also been shown to support more natural ?re regimes (Johnston. 2021), lower burn severity (Bradley etal. 2016), and signi?cant ?re refugia (Lesmeister. 2019).

All Inventoried Roadless Areas should be reviewed for poten3al expansion and recommended for Wilderness designa3on. These recommenda3ons could be formalized administra3vely by expanding, iden3fying and recommending Inventoried Roadless Areas for Wilderness designa3on in upcoming Forest Plans. They could also be formalized by providing stronger protec3ons and Backcountry Area designa3ons for all Inventoried Roadless Areas and expanded Inventoried Roadless Areas on Forest Service lands.

15) Backcountry Areas should be designated and protected on National Forest lands.

16

All areas maintaining wilderness characteris3cs on Na3onal Forest lands should be inventoried and protected in the upcoming Forest Plans. This should include all Inventoried Roadless Areas, unroaded areas adjacent to Inventoried Roadless Areas and stand alone unroaded areas that otherwise meet designa3on criteria. Areas both over 5,000 acres and smaller areas with dis3nct opportuni3es for solitude, intact habitats, and wilderness characteris3cs should also be consider for designa3on.

These Backcountry designa3ons enacted through Forest Plans should also include recommenda3ons to congress for permanent Wilderness designa3on. Explicit language in these Forest Plans should be used to administra3vely protect these lands un3l Congress can act. They should also include language iden3fying these areas as poten3al Wilderness recommended to congress for Wilderness designa3on.

By designa3ng these areas in a comprehensive Backcountry Non-Motorized Area network the agency would be commiing to these areas protec3on with guidelines similar to the current Roadless Rule. Within each area wildland quali3es, biodiversity, and habitat connec3vity could be maintained and enhanced through rewilding e?orts that include the designa3on of signi?cant new Backcountry Non-Motorized Areas in upcoming Forest Plans.

These designa3ons would protect the area's wildland quali3es, biodiversity and connec3vity habitat, and would set an example from which congress could act. They would also support EO 14008 and the 30X30 Ini3a3ve embraced by the Biden Administra3on. Addi3onally, these protec3ons would support the goals of Execu3ve Order 14072 and the Na3onal Old -Growth

Amendment by protec3ng the most intact, unaltered forest habitat remaining on public lands.

Yet, currently the Inventoried Roadless Area network has failed to adequately iden3fy, designate or acknowledge the actual unroaded acres on the Na3onal Forest landscape. Many of the original RARE inventories excluded important roadless areas, or por3ons of otherwise inventoried wildland habitats. In other loca3ons, roadless or wilderness-like habitats have developed since the RARE process and a combina3on of road blow outs, rewilding, neglect, and/or road decommissioning has or could expand most Inventoried Roadless Area. These processes could also merge or develop areas that did not maintain these characteris3cs when the RARE process took place. At any rate, current roadless area inventories underes3mate that actual extent of roadless Na3onal Forest lands in need of protec3on.

Areas should be screened using established criteria including naturally appearing, untrammeled landscapes, opportuni3es for solitude, and the presence of habitats in?uence largely by natural process. Likewise, addi3onal areas not originally iden3?ed should now be considered for Backcountry designa3on and for recommenda3on as Wilderness. This would include, but not be limited to smaller areas that could be merged through road decommissioning or deconstruc3on to create larger wildlands that meet roadless area criteria, all unroaded or intact areas adjacent to currently Inventoried Roadless Areas, and all unroaded or intact areas over 5,000 acres.

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Demand for Wilderness is currently extremely high, with many wilderness areas currently subject to permit systems. Due to overuse and the extreme popularity of wilderness recrea3on in these beau3ful regions, use has now been limited to protect the areas environment and the sense of space and solitude Wilderness protects. Expanding our wilderness system and increasing designa3on Backcountry designa3ons in upcoming Forest Plans will mi3gate these

impacts, spread recrea3onal use across the landscape and bene?t wildlife, biodiversity, and wildland values in some of the last undeveloped and non-industrialized landscapes on federal land.

All unroaded areas down to 5,000 acres should be designated as Backcountry Non-motorized Areas on federal lands. These protec3ons would include signi?cant unlogged, mature and old-growth forest and would contribute in a signi?cant way to the Na3onal Old-Growth Forest Amendment. Although the Forest Service cannot designate Wilderness Areas, they can recommend them to congress for Wilderness designa3on, and they can be designated in the upcoming Forest Plans as Designated Backcountry Areas.

16) Annual Sale Quantity (ASQ) Reductions are needed to support conservation goals and to acknowledge importance of managing specifically for conservation and climate as multiple use and sustained yield objectives.

According to the Advanced Notice of Proposed Rulemaking, "The Forest Service is analyzing threats to mature and old-growth forests to support policy development to reduce those threats and foster climate resilience. Today's challenge for the Forest Service is how to maintain and grow older forest conditions while improving and expanding their distribution and protecting them from the increasing threats posed by climate change and other stressors."

One of the most important stressors and the largest single contributor to the loss of our mature and old-growth forests nation-wide is commercial logging. Since 1950 far more mature and old-growth forest has been lost to timber harvest than any other disturbance process, and the east coast was logged off long before 1950. Yet, the agency has refused to provide meaningful analysis or acknowledgement of this historic and ongoing impact. In fact, while the agency claims timber harvest is not a significant issue, it remains the main driver of tree mortality in

the 11 western states (Berner.2017).

On private land mature and old-growth forest is extremely rare, while on public lands commercial logging has historically liquidated vast tracts of mature and old-growth forest including many of our most productive and resilient forest habitats. Early on in the history of federal timber management, the agency logged off the most productive forests the highest probability of resilience and persistence. We are now left with the scraps due to the massive unsustainable liquidation of old growth forest on federal and private timber lands throughout the West and across the country.

Unfortunately, logging continues to be a significant threat to the National Forests and the mature/old-growth forests of our country. Simply put, the Forest Service is working through the



scraps and logging off the last mature and old-growth forests under a false flag of "forest health." Yet, this threat can be addressed head on by changing our management practices and eliminating or dramatically reducing the concept of an Annual Sale Quantity (ASQ) and "matrix" lands whose biological values are sacrificed for commodity production. Currently, the quantifiable ASQ is the driving force behind Forest Service management with timber sales and commercial "vegetation management projects" taking the vast majority of staff time on "timber" forests like those in the Pacific Northwest, Northern California and beyond.

Current board footage targets are arbitrarily defined by Forest Service management plans developed under previous multiple use objectives that did not elevated conservation to equal status and therefore cannot meet the conservation, climate or biodiversity goals of this administration or the goals of this planning process to restore and maintain resilient old-growth forests. Additionally, acres must be taken out of the "matrix" landbase for the designation of additional conservation areas including National Carbon Reserves. These reductions in matrix lands must be compensated for by reducing or eliminating the ASQ. This reduction in harvest levels will translate directly to additional stored carbon, climate mitigation, and increased levels

of climate refugia, while allowing the both the agency and the Biden Administration to meet its conservation and climate goals under Executive Orders 14008 and 14072.

Additionally, if mature and old-growth forest were adequately protected, as we recommend, the Annual Sale Quantity would also have to be adjusted downward to allow for the protection of mature and old-growth trees and forests within a land use allocation open to timber harvest. The Forest Service must adjust the Annual Sale Quantity downwardly to address the new policy directions of the agency. It must also consider eliminating the Annual Sale Quantity and managing specifically for biological, scenic, and other values. This would not necessarily eliminate commercial logging or timber sales on federal lands, but it would allow the agency to put conservation on equal footing, by allowing timber harvest when necessary or scientifically prudent, rather than requiring an unsustainable level of timber harvest on federal lands. Doing so would also officially elevate and adequately consider the economic value of intact lands from a recreation, quality of life, and amenities perspective.

At the same time, in many locations throughout the West from New Mexico and Colorado to Montana and from eastern Washington, eastern Oregon, southwestern Oregon to California climate induced stress has decreased growth rates and increased background levels of tree mortality when compared to previous years or decades (and when compared to modeling outputs). This can include fire induced mortality, episodic bark beetle outbreaks, or even non-native pathogens. As this level of background mortality increases due to climate change, the calculations and analysis leading to previously identified harvest levels are rendered inaccurate and unsustainable.

This issue should be addressed by acknowledging that we are living in a changing climate, and these changes are influencing plant and forest communities. To require harvest levels based on previous plant and forest communities, climates, growth rates, and background mortality levels is arbitrary, capricious, unsustainable and inconsistent with the most recent and best available

science. Eliminating the ASQ would provide the most responsible and adaptive approach to management, while the environment is actively changing in fundamental ways, our management, regulations and conservation networks must respond with robust, visionary approaches to address these unprecedented events.

The Biden Administrations commitments to the 30X30 concept and our national climate obligations must include increased, durable habitat protections on federal lands, including the protection of intact habitats, including mature and old-growth forests. Undeniably, it is industrialization and resource extraction that has been responsible for the vast majority of the current climate and biodiversity crisis we face, protecting lands from industrial impacts and resource extraction must be an increasing part of the solution.

We recommend that the agency eliminate both the Matrix land use allocation and the Annual Sale Quantity to adequately focus on resilience, conservation, and outdoor recreation. This would allow for timber sales and timber production when consistent with management needs, but would not require arbitrary levels of timber production or encourage commercial logging on federal lands for purely economic purposes. It would also elevate other economic activities such as recreation which provides far more to the economy than timber harvest and manufacturing.

Recreation can be sustainable managed while protecting habitats and improving the quality of life for citizens of this country, it is a far better choice for communities adjacent to National Forest lands than timber production and resource extraction, but has not historically been adequately or objectively analyzed in NEPA analysis. Typical agency analysis considers only the economic "benefits" of timber production without either adequately considering the impacts or this activity or adequately considering alternative economic drivers that would not create the same level of impact. The agency must compare these economic drivers to timber production, by comparing both the economic outputs and ecosystems services provided by various

economic approaches to federal lands. Protecting habitats including mature and old-growth forests have positive social, biological and economic benefits that are not being adequately considered in Forest Service planning processes. We ask that you conduct a conservation and recreation alternative in the upcoming EIS, that replaces the current timber emphasis on federal lands.

The protection and maintenance of biological values, new Botanical Areas, Special Interest Areas, Backcountry designations, Connectivity Corridors and National Carbon Reserves should be identified and protected to ensure compliance with President Biden's Executive Order #14072 and the National Old-Growth Amendment and to protect the old forest values identified in the scoping notice for this project. Along with these increased protections the agency must either reduce or eliminate the ASQ, allowing future land managers to base management decisions on the needs of the land, rather than its capacity to produce timber for the industry.

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Although, logging has been dramatically reduced since the massive unsustainable logging frenzy that took place between 1950 and 1980, harvest levels remain far too high given the unfolding climate crisis and the role mature and old-growth forests play in mitigating its worst effects. Based on the timber previously extracted, the timber continuing to be extracted and the mortality associated with climate enhanced natural disturbance processes, the timber to sustain the agency's so-called "sustained yield" logging simply does not exist. The ASQ must be eliminated or drastically reduce to address the existing environmental condition we see today and the future conditions we see under various climate/carbon emission scenarios.

17) Implement a review of existing federal land logging projects for consistency with EO 14072, EO 14008 and the National Old-Growth Amendment.

Although we are pleased by recent management direc3on provided to Regional Foresters by the Deputy Chief of the Forest Service Christopher French which requires a review of all 3mber and vegeta3on management projects e?ec3ng old-growth forest habitats. Yet, we are concerned that the extensive and easily manipulated excep3ons iden3?ed in the NOI and the subsequent review will con3nue to allow old forests to be logged.

As part of the Na3onal Old-Growth Amendment the Forest Service must implement a review of exis3ng federal land logging projects for consistency with Execu3ve Orders 14008, 14072 and the proposal to elevate conserva3on to "equal foo3ng" with other mul3ple use objec3ves. Many of the currently approved, but not implemented, currently proposed, or currently planned 3mber sales or "vegeta3on management projects" on local Na3onal Forests and Ranger Districts are inconsistent with the goals and objec3ves iden3?ed in this process. Many also fail to conserve intact lands or carbon rich mature and old-growth forests as directed in Execu3ve Orders 14008 and 14072.

Examples of inconsistent federal land 3mber sales including those on Forest Service lands are iden3?ed in two recent reports published by the Climate Forest Alliance, while addi3onal historic and contemporary examples are provided in Appendix A. All 3mber sales iden3?ed in these reports should be reviewed and withdrawn to protect, conserve and maintain intact landscapes, habitat connec3vity, carbon rich forests, climate refugia, and biodiversity values on federal lands. Yet, we also believe that all federal land logging projects either approved, but not implemented, proposed, or planned should be reviewed for consistency with the rulemaking and the Execu3ve Orders that led to it (EO 14008 and 14072) and many should be altered or canceled to ensure compliance.

The two reports below, should be included in this comment by reference and all 3mber sales

listed in these reports should be altered or canceled to ensure compliance with the intent of the Na3onal Old-Growth Amendment.

Worth More Standing: 10 Climate Saving Forests Threatened by Federal Logging



America's Vanishing Climate Forests: How the U.S. is Risking Global Climate Credibility on Forest Conserva3on

According to the Advanced No3ce of Proposed Rulemaking, "The Forest Service is analyzing threats to mature and old-growth forests to support policy development to reduce those threats and foster climate resilience. Today's challenge for the Forest Service is how to maintain and grow older forest condiDons while improving and expanding their distribuDon and protecDng them from the increasing threats posed by climate change and other stressors." We contend that one of the main threats to these habitats includes Forest Service logging and inappropriate vegeta3on management projects.

The Advanced No3ce of Proposed Rulemaking also iden3?es, "concerns about the durability, distribuDon, and redundancy of these systems, given changing climate, as well as past and current management prac.ces, including ecologically inappropriate vegeta.on management and ?re suppression prac.ces." Unfortunately, current management prac3ces rou3nely include inappropriate vegeta3on management and ?re suppression ac3ons. The heavy dose of greenwash applied to these treatments by the agency does not negate the actual nega3ve impacts, many of which are inherent to the process.

For example, despite calling commercial logging "restora3on" or "vegeta3on management," the agency cannot deny that yarding opera3ons damage forest soils, genera3ng surface erosion, sedimenta3on, soil compac3on and noxious weed spread. Logging large trees and reducing canopy cover, like so many 3mber sales do, also impacts habitat for late successional species like the Northern spoped owl, California spoped owl, Mexican spoped owl, Paci?c ?shers, goshawks, Humboldt martens, and innumerable other wildlife species. Logging these large trees and damaging forest soils also nega3vely impacts carbon storage, carbon sequestra3on and climate, while increasing ?re risks and reducing ?re resilience.

Yet, in previous Forest Plans and/or project level analysis, the agency fails to acknowledge the impacts or existence of inappropriate vegeta3on management projects, or that current management prac3ces are a concern for the "durability, distribuDon, and redundancy of these systems." Despite a consistent increase in the scope, scale and intensity of logging and vegeta3on management projects on Forest Service lands the agency has not yet come to terms with the o^en ine?ec3ve and damaging project level ac3vi3es they approve. This must be fully disclosed, analyzed, and incorporated into project alterna3ves.

Locally, in the Klamath-Siskiyou Mountains, the Bear Country Timber Sale located in the Salmon River watershed on the Klamath Na3onal Forest provides a clear example of a damaging 3mber sale project with signi?cant old forest logging components. Located in a Wild and Scenic River corridor, and an important connec3vity corridor between large protected areas (Trinity Alps Wilderness and Marble Mountains Wilderness). This project was highlighted in the Worth More Standing Report and addi3onal informa3on can be found in Appendix A of this comment. Currently, the Bear Country Timber Sale has been approved and is being opposed by local conserva3on interests.

Another 3mber sale directly upstream from the Bear Country Timber Sale on the Wild and Scenic South Fork Salmon River, is called the South Fork Project. This project was highlighted in the Vanishing Forests Report and addi3onal informa3on is included in Appendix A of this comment.

Increasingly, Na3onal Forest projects are using heavy industrial logging systems for stand management including "group selec3on" logging and other forms of heavy canopy removal. In many forest types including those in southern Oregon and northern California, this type of heavy canopy removal tends to regenerate dense and highly ?ammable understory fuel loading with explosive even-aged fuel con?gura3on. Group selec3on logging includes removing whole groves of mature and old-growth trees in staggered clearcuts. The carbon rich trees in closed canopy stands targeted for group selec3on and drama3c canopy reduc3on are important for climate refugia, carbon storage and climate mi3ga3on. Yet, these large trees are rou3nely removed by the thousands in Na3onal Forest 3mber sales.

According to the Medford District BLM, who manages dry mixed conifer forests very similar and in many cases, iden3cal to plant communi3es on Na3onal Forest lands, group selec3on logging and speci?cally the canopy removal it facilitates will increase ?re risks in treated stand for at least 20 years. This is due to canopy loss, the removal of large ?re-resistant trees, microclimate altera3ons, the regenera3on of dense, even aged, highly ?ammable trees and shrubs, and the deposi3on of logging slash. According to analysis for the Clean Slate Timber Sale on the Grants Pass Resource Area and the Gri?n Halfmoon Timber Sale on the Ashland Resource Area group selec3on logging and heavy canopy reduc3on leads to increased ?re risks, poten3ally faster moving ?res, burning with more intensity and with more pronounced resistance to control (DOI.

2018a & DOI. 2018b). Yet despite these unsepling and inappropriate impacts both group selec3on logging and heavy canopy reduc3on is increasingly implemented on forested federal lands including Na3onal Forests.

For more informa3on read this report on the impact of group selec3on logging and heavy canopy thinning on local ?re risks, please incorporate the following document into our comments by reference.

Medford District BLM Fire/Fuel Analysis for Timber Sales Authorized Under the 2016 Resource Management Plan for Southwestern Oregon.

Removing large trees or whole groves of large trees in group selec3on logging units and/or heavily reducing canopy cover, is not climate smart forestry and instead will reduce forest resilience to ?re, drought, insects and other climate-related e?ects, while also downgrading or removing Northern spoped owl habitat and degrading mature or old growth forest habitats. Such prac3ces clearly represent "unnecessary and undue degrada3on" which has been de?ned as "harm to land resources or values that is not needed to accomplish a use's goals or is excessive or dispropor3onate." FLMPA creates an a?rma3ve obliga3on to take ac3on to



prevent unnecessary and undue harm and this obliga3on should be codi?ed with durable, las3ng mature and old-growth forest protec3ons on all federal lands.

We request speci?cally that an alterna3ve be analyzed for compliance and e?cacy in the upcoming EIS that eliminates and/or dras3cally reduces the ASQ.

18) Regulations to reduce "unnecessary and undue degradation" are needed on Forest

Service lands and must be effectively applied to all management activities. This must include an evaluation of carbon storage, carbon emissions, habitat disruption, soil disturbance, noxious weed spread, and other impacts associated with commercial logging projects.

"Unnecessary or undue degrada3on" is de?ned in the context of FLPMA as "harm to land resources or values that is not needed to accomplish a use's goals or is excessive or dispropor3onate." FLPMA also creates and a?rma3ve obliga3on to take ac3on to prevent unnecessary or undue degrada3on, yet current land management prac3ces on Forest Service lands are not consistent with these obliga3ons.

Regula3ons, policies, and federal ac3ons are needed to reduce the level of unnecessary and undue degrada3on occurring on Forest Service lands by increasing protec3ons for mature and old-growth forests, intact habitats, roadless areas, and connec3vity corridors. Proposed land management projects must also be analyzed to evaluate their impacts to carbon storage, carbon emissions, noxious weed spread, habitat connec3vity, wildlife habitat, watershed values, climate refugia and other measures of "land health."

Addi3onally, currently proposed projects should be reviewed and withdrawn if they fail to meet the conserva3on goals outline in the Na3onal Old-Growth Amendment and Execu3ve Orders 14008 and 14072. Preven3ng unnecessary or undue degrada3on o^en means iden3fying speci?c, enforceable metrics, regula3ons, or habitat protec3ons that minimize or preclude anthropogenic impacts associated with industrial logging, mining, grazing and other extrac3ve industries opera3ng on federal lands. It also means looking back at currently approved projects with an eye towards compliance with the goals, objec3ves, policies and direc3ves of the Biden

Administra3on surrounding climate. It means reviewing exis3ng project authoriza3ons to iden3fy those projects represen3ng the "current management prac3ces" and "inappropriate vegeta3on management projects" that are inconsistent with the goals of this policy direc3on.

More speci?cally, we believe the following 3mber sales proposed, approved, and not yet implemented are not compliant with the Na3onal Old-Growth Amendment and President Biden's recent Execu3ve Orders (14008 & 14072). These projects must be reviewed and canceled. They include The Bear Country Timber Sale & South Fork Timber Sales on the Klamath Na3onal Forest, as well as Slater Fire Re-entry Project, and the mature and old forest units in the Upper Briggs Timber Sale and the Shasta Agness Timber Sale on the Rogue River-Siskiyou Na3onal Forest. We also believe the Region 5 Hazard Tree Project must be drama3cally scaled



back to maintain biological values, maximize natural carbon storage and encourage a vibrant, natural regenera3on of na3ve post-?re habitats in the areas a?ected.

Numerous recent Execu3ve Orders have been signed to encourage habitat protec3on and more responsible land management prac3ces on Forest Service lands, but they have not yet led to policy direc3on that prevents unnecessary or undue degrada3on. Current land management projects being approved and implemented throughout Na3onal Forest lands do not meet these standards and will not in the future without a robust, easily enforceable policies that require local land managers to reduce or eliminate the ASQ, increase habitat protec3ons, protect mature and old-growth forests, and designated a large, well connected network of conserva3on based land use alloca3ons speci?cally to address climate and biodiversity needs, while improving, enhancing or maintaining habitat connec3vity.

Regula3ons must be developed in the upcoming EIS to mi3gate the "unnecessary and undue

degrada3on" of forest habitats currently associated with the Forest Service's 3mber program, the arbitrary ASQ, and many so-called "restora3on" or "fuel reduc3on" logging projects.

19) The threat of mature and old-growth logging to the health and resilience of Forest Service lands in southwestern Oregon

We believe the agency must iden3fy meaningful protec3ons for mature and old-growth forests and trees and ensure that policy direc3on is su?ciently robust to ensure these protec3ons are codi?ed in Forest Plans. The agency must also acknowledge the unsustainable and environmentally damaging nature of their current 3mber program and the regularity under which mature and old-growth forest is currently logged. Currently, this process has failed to address these scien3?c and environmental reali3es and is instead ignoring the contribu3on of Forest Service 3mber sales have to old-growth forest loss, climate/carbon cycles, biodiversity loss, and other impacts.

For decades our organiza3ons have monitored federal land 3mber sales in southwestern Oregon and northwestern California and essen3ally every commercial logging project on either BLM or Forest Service lands has included a mature and/or old-growth logging component. These logging units have a profoundly nega3ve e?ect on the health and resilience of Forest Service lands and surrounding areas, they release signi?cant and dispropor3onal levels of carbon into the atmosphere, degrade wildlife habitat, damage na3ve plant communi3es, o^en increase ?re risks, and have been shown to reduce a stands resilience to climate change, wild?re, beetle outbreaks and noxious weed spread by altering microclimate condi3ons, encouraging young, dense, even aged growth, by disturbing soils, spreading noxious weeds, and degrading watershed values.

Please see Appendix A at the end of this comment for a list of 3mber sales either proposed, approved or implemented on Rogue River-Siskiyou and Klamath Na3onal Forest lands since 2010. Every one of these 3mber sales contained or contains a signi?cant mature and old-growth forest logging component, all would or did drama3cally reduce canopy cover,



signi?cantly increase logging related carbon emissions, damage wildlife habitat, and increase ?re risks.

We provide this informa3on to demonstrate that the threat of mature and old forest logging on Forest Service lands is a real, prominent, and avoidable threat. Mature and old forest logging is s3ll the rule on Forest Service lands, not the excep3on. Where mature and old forests s3ll exist, they are being logged or proposed for logging. The targe3ng of mature and old growth trees and stands must be addressed with a rulemaking that prohibits these ac3vi3es and protects our last carbon rich, climate forests.

Addi3onally in the Applegate River watershed there is a strong correla3on between commercial logging on BLM lands (including so-called "restora3on" or "forest health" 3mber sales) and elevated bark beetle mortality during conducive, episodic weather events. This same correla3on is now appearing on Forest Service thinning and "restora3on" projects including the ?agship "restora3on" logging project, the Ashland Forest Resiliency Project (AFR) on the Siskiyou Mountains Ranger District, Rogue River Siskiyou Na3onal Forest. Please read the following reports for more informa3on and incorporate these reports into this comment by reference:

Bark Beetles, Timber and the BLM in the Applegate Valley: An Overview of Bark Beetle Science and Land Management on the Medford District BLM

Medford District BLM Fire/Fuel Analysis for Timber Sales Authorized Under the 2016 Resource Management Plan for Southwestern Oregon.

20) The proposed loopholes for old-growth logging are far too broad and vague to provide meaningful protections.

The exceptions and loopholes identified in the NOI to allow old-growth logging are far too broad and vague to provide meaningful protections. To start, the "Standards for Management Actions Within Old-Growth Forest Conditions" identified in the NOI are so vague that they are non-enforceable. All exceptions allowing management (e.g. logging) in old-growth habitats are subjective and easily manipulated with agency greenwash (which has become quite routine).

The first exception allows vegetation management activities if they would not "degrade or impair the composition, structure, or ecological processes in a manner that prevents the long-term persistence of old-growth forest conditions within the plan area." Yet, this exception does not define "degrade" or "impair" and does not establish natural reference conditions for these systems, meaning the composition, structure and ecological processes can be defined subjectively to promote Forest Service logging under the currently arbitrary, capricious and unsustainable ASQ for each Forest.

The standards for management actions continue by allowing old forest logging treatments if the agency claims they are implemented "for the purpose of proactive stewardship, to promote the composition, structure, pattern or ecological processes." The standard continues to identify a



need for proactive stewardship to "promote one or more of the following" 11 exceptions.

These exceptions are so broad, so vague, so ill-defined and so unenforceable that they again signal to land managers that they must simply find one of these exceptions and use it to justify the status quo and the continued logging of old-growth forests. Further exceptions "may be

allowed if the responsible official determines the actions are necessary to" meet five additional and extremely subjective determinations including logging "to reduce fuel hazards on National Forest System land within the Wildland Urban Interface to protect a community or infrastructure from wildfire." Additional exceptions include logging to protect public health and safety, to comply with other statues or regulations, for culturally significant uses, and where direction in this amendment is not relevant or beneficial. Each of these exceptions are purely subjective, leading to decisions that damage, degrade or eliminate old-growth forest conditions and support no agency accountability.

The NOI identifies exception #3 which states that

"Vegetation Management within old-growth forest conditions may not be for the primary purpose of growing, tending, harvesting, or regeneration of trees for economic reasons. Ecological appropriate harvest permitted in accordance with standards 1 and 2."

Clearly, the provision maintains the status quo and allows widespread, routine exceptions from the protective provisions of this proposal. Forest Service managers regularly design timber sales to meet ASQ targets and get out their "allowable" cut. They are also required, once they identify commercial harvest as part of a project to design an economically viable timber sale, which encourages harvest in older forests, the logging of larger trees, and a more significant canopy reduction, all of which damage or degrade old-growth conditions.

Based on issues surrounding public opinion and to avoid litigation, the agency has not openly approved a timber sale in the Klamath-Siskiyou Mountains of NW California and SW Oregon with a "primary" purpose of growing, tending, harvesting, or regenerating trees of economic reasons since the late 1980s or early 1990s. Different language is used today to justify agency logging and this this provision provides absolutely no additional protection or deterrent to old-growth logging. In fact, it is a signal to local land managers that ample, very subjective and easily manipulated exceptions have been provided to maintain the status quo and ensure this policy provides absolutely no hinderance to current timber harvesting practices, which

routinely log old-growth forests and damage their resilience.

The desire to alter composition, structure, and ecological processes, or "reduce fuel loading is exactly what is driving the increase in timber production, the increasingly intensive logging treatments identified as "restoration" or "fuel reduction", and the logging of mature and old-growth forests. What the agency is asking here, is for local land managers to use manipulative language to maintain the status quo by exempting commercial logging projects from old-growth forest protections if they use the correct justification, write a manipulative NEPA analysis, and use the right words. Under this proposal, nothing changes in the Forest Service timber program,



nothing changes in this programs impact, and little, if any additional old-growth forest is protected.

Rather than focusing on creating numerous, massive loopholes to ensure old-growth forest can be logged (as the agency is doing), the agency should be focusing on ensuring that the protections they propose are effective, meaningful, durable, and robust enough to achieve their goals. This should include prohibitions on commercial logging in stand over 80 years of age in both mature and old-growth age classes and structural conditions. This prohibition should apply to all stands over 80 years of age and all National Forest lands.

These prohibitions are necessary because policy direction and regulations must be sufficiently strong to ensure that even local Forest Leadership who may be hostile to the protection of mature and old-growth forest habitats are required to protect these habitats in their upcoming Forest Plans. For over 100 years Forest Leadership at the local, regional, and national level have been intimately tied to the timber industry and are evaluated based on local timber production levels. The current proposal identified in the Notice of Intent provides very vague, subjective and non-enforceable exemptions and Standard for Management Actions Within Old-Growth Forest Conditions. This proposal is unacceptable and does not have the teeth necessary to

require compliance. In fact, it was structured specifically to ensure it will have no effect on the agency's unsustainable mature and old-growth logging practices.

The lack of enforceability inherent to this proposal will lead to the same excessive and damaging logging proposals we see today on National Forest lands (See Appendix A) and fails entirely to address the existing problem of mature and old-growth forest logging on federal lands. At the same time, the current emphasis on landscape scale logging activities under the guise of "restoration" would lead to significant impacts to old-growth forests and old-growth forest recruitment through habitat simplification, large tree removal, canopy reduction, group selection logging, and other commercial logging activities that are detrimental to both old-growth forest values and long-term carbon storage.

In the current political climate, it would be foolish not to more explicitly protect old-growth forest habitats and focus restoration efforts on more heavily altered landscapes, like the millions of acres of plantation forest developed by the Forest Service between 1950 and the 1990s. It would also be foolish to ignore the impacts of the current or contemporary (post-1990s) National Forest Timber Program and the individual impacts of National Forest timber sales.

Based on our monitoring of National Forest logging activities in SW Oregon and NW California, we have seen a significant increase in mature and old-growth logging proposals in the past 10-15 years. This is largely due to local Forest Service managers that have been steadily increasing timber production from National Forest lands. Done almost exclusively under the guise of "forest health" or "fuel reduction" these activities have become increasingly more intense in their implementation with larger trees being removed, less canopy being retained, more openings being logged, more soil damage occurring, more native plant communities impacted,



more permanent and "temporary" roads being built, and far more old-growth stands targeted with industrial logging. The current proposal will do absolutely nothing to address this growing

problem and will in fact, codify this destructive approach.

Currently, the proposed loopholes for "restoration, fuel reduction and forest health" are the very reasons currently cited for logging old-growth forests, removing large old trees, damaging habitat complexity, dramatically reducing old forest canopies, removing, dowdgrading or degrading Northern spotted owl habitats, and otherwise degrading old growth forests and forest necessary for old-growth recruitment. Additionally, commercial logging is not the only way to maintain and encourage landscape scale resilience and it is certainly the least effective, with the most collateral impacts.

In most locations, the loopholes proposed by local line officers and agency officials are not based on actual needs, but instead represents the culture of the agency, its refusal to meaningfully protect old-growth forests or trees, it's constant desire to maximize agency "flexibility," and it's tendency to approve regulations or policies that have no teeth. In most situations, the agency is more focused on creating loopholes to avoid regulation, support business as usual, and protect the timber industry's access to mature and old-growth forests on federal lands than on creating policies that will protect these forests from the discretion of hostile Forest Supervisors and District Rangers.

The proposed EIS must include an alternative with meaningful and enforceable standards that protects old-growth forests, rather than standards that encourage old forest logging and provide massive loopholes big enough to drive thousands of log truck through. This alternative must include stronger conservation measures, stronger habitat measures, far less exemptions, and far less subjective exceptions to the rule. The current proposal is largely meaningless, does not alter the status quo and will not curtail old-growth logging on federal lands. Provisions must protect all mature and old-growth stands over 80 years of age from commercial logging and must dramatically increase land use allocations where logging is either excluded or significantly reduced. Blanket exceptions based on subjective decisions by local land managers and

extremely flexible, non-enforceable exceptions must be stripped from this proposal and Standards for Management created that will provide benefits to old-growth forest not incentives to log them.

21) Both mature and old-growth forests must be protected to ensure the resilience of old-growth forest habitats.

Currently, the Forest Service is proposing to emphasize the maintenance and preservation of only old-growth forest habitats, while excluding mature forests from these protections. Although the agency claims to be interested in the long-term resilience and persistence of old-growth forests and the recruitment of old-growth forests, these goals will not be met under the current proposal. This is largely because the next generation of old-growth forest (mature forests) would not be protected and in fact, would be targeted for logging that removes important habitat elements and characteristics of old-growth forest habitat.

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It is our position that the measures proposed in this Scoping Notice are not enough, and the insufficiencies in this plan will lead to poor outcomes, continued habitat loss, localized species loss/extinction, significant climate/carbon impacts and dramatic impacts to the rate of old forest recruitment that occurs on the landscape. Throughout the country, old-growth forests have been predominantly converted to younger age classes through commercial logging that encourages young forests and/or plantation stands. This makes mature and old-growth forests and habitats increasingly rare and unique, while young, even-aged, plantation-like stands are have become quite common. On Forest Service lands, most of these plantations were logged between 1950 and 1990, making them roughly 30-80 years old. This means protecting forests over 80 years of age will capture primary forests of both mature and old-growth age classes. The agency identified millions of acres of mature forest, that if allowed to mature and develop late successional characteristics through natural process, natural selection and the natural development of stand decedance will recruit millions of additional acres of old-growth forest.

Unfortunately, without protections and if not included in the National Old-Growth Amendment, these mature forests will largely not become old-growth forests due to Forest Service logging practices that reduce habitat complexity, remove snag recruitment, reduce large trees per acre, damage canopy structure, reduce canopy layering, and generally degrade late successional and old-growth stand conditions.

The failure to protect these mature forests and the failure to adequately and realistically protect old-growth forests under this proposal is dooming it to failure and dooming future generations to continued polarization and controversy surrounding the removal and degradation of old-growth and mature forests that the public so desperately wants to protect.

We believe an alternative that protects all mature and old-growth forests over 80 years of age from commercial logging will best protect and preserve the persistence and long-term resilience of old-growth forests on federal lands. We also promote a prohibition on the removal or logging of trees over 21" diameter in dry mixed conifer forests throughout eastern Oregon and Washington, in southwestern Oregon and throughout California.

It is important to note that these prohibitions on commercial logging do not negate all management within these stands. In fact, they could still be open to non-commercial fuel reduction treatments if ecologically appropriate standards are identified. They could also be treated with prescribed fire, cultural fire, and/or managed wildfire to achieve fire and fuel loading goals. These treatment measures would adequately address stand resilience, the restoration of fire as a process, and the reduction of fuel loading.

Stands over 80 years of age could be thinned non-commercially or burned to address fuel concerns and to encourage fire adaptation. Additionally, larger, more fire resilient trees would be retained under our proposal. This would allow natural processes, natural disturbance agents, and natural mortality to create the structural and compositional elements of late successional or old-growth forest habitats.

22) Federal timber management activities in mature and old-growth forest habitats routinely implement prescriptions that increase fuel loading and reduce stand resilience.

Forests throughout the Na3onal Forest system were heavily logged between 1950 and the late 1990s damaging, degrading or elimina3ng mature and old-growth forest habitats na3on-wide. Yet, in most loca3ons, especially in dry forest associa3ons natural stands, not subjected to previous industrial logging are rou3nely priori3zed for logging "treatments." This is largely because liple commercial value remains in previously logged planta3on stands and very few could be commercially logged with economic viability. Thus, land managers are increasingly turning to unlogged mature and old-growth stands for 3mber produc3on and to meet their ASQ.

In these areas, where less intensive commercial logging has occurred fuel loading and ?re hazards are signi?cantly less problema3c than in the adjacent clearcuts and shelterwood units. Yet, these planta3on are rou3nely ignored to focus on 3mber produc3on from intact habitats and unlogged stands. The logging treatments generally proposed o^en reduce large trees and old forest canopy that is important in maintaining ?re and climate resilience. In fact, the level of dense, young, even-aged, woody vegeta3on is o^en directly related to the level of overstory canopy retained in logging treatments. Overstory canopy suppresses understory growth and the heavy ?re hazards found in many adjacent over logged stands. When the overstory is removed or signi?cantly reduced (as is proposed in all Forest Service 3mber sales) ?re hazards and woody regenera3on proliferates.

The clearcuts and shelterwood units on Na3onal Forest lands demonstrate the most altered forest condi3ons on the landscape, with the least ?re resistance or resilience. These condi3ons

are outside the range of variability, while other more natural stands may be somewhat impacted by climate e?ects or ?re suppression impacts, they are o^en within the range of variability. O^en natural stands are lacking in large old trees, old snags and large downed wood, all of which are beper served with passive restora3on or purely non -commercial fuel or prescribed ?re treatments.

Yet, it is in these natural stands, with commercially valuable 3mber that agency o^en focuses its "treatments," not in the more altered and more ?ammable planta3on stands. Despite their highly ?ammable condi3ons, the clearcuts and shelterwood units in the planning area are for the most part not being "treated," while mature and old-growth stands are targeted for commercial thinning that produces substan3al 3mber volume. This demonstrates that these projects are not really about ?re hazard reduc3on, but instead about 3mber produc3on.

It is also important to note that the Forest Service has tens thousands and thousands of acres of non-commercial fuel reduc3on and prescribed ?re units authorized, but not implemented. The backlog means that many so-called Vegeta3on Management Projects end up implemen3ng the 3mber sale por3on of the project with nega3ve implica3ons for fuel and ?re management, as well as northern spoped owl habitats and forest resilience, but never fully implement the non-



commercial fuel component or prescribed ?re component. This is common on Forest Service land across the country.

We demand that Forest Service disclose the number of acres of non-commercial fuel reduc3on and prescribed ?re approved in the past 15 years, but not fully implemented, na3on-wide. A number in acres must be provided as part of a valid NEPA analysis and the agency must disclose

and consider the previous lack of follow through surrounding non-commercial implementa3on. Without this analysis and this public disclosure all Forest Service decisions considering the full implementa3on of non-commercial treatments are faulty, unsupported by recent evidence and invalid.

In reality, many projects are being designed and planned as a commercial 3mber sales that will increase ?re hazards. They are designed simply to meet arbitrary and biologically unjus3?ed ASQ targets and have virtually no other purpose. Although o^en iden3?ed in the Purpose and Need as a secondary priority, it appears loopholes for this sort of logging are being promoted in the NOI, as long as logging for economic purposes is not the "primary purpose." Our Na3onal Forests have a staggering backload of approved, but not implemented fuel reduc3on and prescribed ?re treatments, demonstra3ng that many approved fuel treatments will likely never occur, but commercial treatments are almost always fully implemented.

Star3ng in the 1990s and in response to the northern spoped owl injunc3on and ESA lis3ng , the agency began aggressively thinning conifer forests throughout the West, supposedly to increase forest health and decrease fuel and ?re risks. In the past 25 years, commercial thinning has occurred throughout the West and the associated canopy loss has triggered an aggressive understory response, drama3cally increasing fuel loads and woody regenera3on. Increased solar radia3on and exposure to drying winds has also raised ambient air temperatures, reduced rela3ve humidity and reduced fuel moisture content in many previously treated stands during the summer months. This makes these stands more ?ammable and more likely to sustain high levels of ?re induced mortality during wild?re events. In fact, research conducted during the Biscuit Fire demonstrates that commercially thinned stands were almost twice as likely to experience high severity ?re e?ects, then adjacent untreated areas (Raymond. 2005).

Each ?re season these stands are drier, hoper, more exposed and sustain higher fuel loading due to historic commercial thinning opera3ons. According to Raymond 2005, this increase in fuel loading can o^en be apributed to an increase in ?ne woody material created during commercial thinning opera3ons (Raymond. 2005). Addi3onally, recent research in northern California shows that thinning opera3ons followed by a large wild?re created more canopy loss and more cumula3ve mortality than in stands that experience ?re alone (Hanson. 2022. & Baker. 2022). The agency fails to consider this cumula3ve mortality and the rela3ve importance of that mortality when the impact of logging is combined with the e?ects of regional wild?res or climate change.

Canopy condi3ons must recover in treated stands before fuel loading and structural condi3ons will again be within the range of variability. This will take 3me to recover, and either passive



restora3on, non-commercial thinning, or prescribed, cultural or managed ?re treatments designed speci?cally to recover historic large tree components and suppress understory growth would be most appropriate. These objec3ves would be met to a high degree if commercial logging was prohibited in stands over 80 years of age and large tree removal was curtailed with a 21" diameter limit in the arid West and in dry forest associa3ons.

Although the agency o^en claims "bene?ts" from commercial logging to forest fuels, ?re resilience, and ?re risks, these claims are based on faulty analysis, overly op3mis3c assump3ons, and misapplied ?re regimes. There is also a lack of monitoring data iden3fying the long-term results from commercial thinning opera3ons on Forest Service lands, thus these claims cannot be veri?ed. Lacking long-term monitoring data and refusing to see the clearly nega3ve consequences of previous commercial thinning opera3ons, the agency plows ahead, impac3ng forest health and drama3cally reducing ?re resilience with each addi3onal 3mber

sale. Yet, as more land within the landscape is commercially "treated" the problem con3nues to grow.

Researchers have ques3oned the e?cacy of commercial thinning and manual thinning treatments in reducing ?re severity (Faison. 2023, Della Sala. 2022). While recent scien3?c analysis has shown that "most inference about interven3on op3ons has been drawn from theory rather than empiricism." (Prober. 2019). In fact, this massive literature review of 473 studies found that the vast majority relied on ecological reasoning, untested theory, and modeling, while only 16% relied on empirical data. (Prober. 2019). The most recent ICCP report also shows that there is almost no evalua3on of the success of ac3ve management adapta3on approaches in the scien3?c literature (Parmesan. 2022). This demonstrates that the myth of thinning has taken on a religious fervor focused more on faith than empirical evidence. Faith does not sa3sfy NEPA requirements, does not cons3tute a valid scien3?c approach, and does not negate the reali3es on the ground or the lack of e?ec3veness for ac3ve management strategies. The agency cannot con3nue relying on dogma, anecdotal evidence, and wishful thinking to promote their mature and old-growth logging agenda, especially when these ac3vi3es are having the opposite of the intended results.

Shrub response:

The dras3c canopy reduc3ons proposed in most Forest Service 3mber sales (to 40% canopy cover or lower) will increase understory and ladder fuel loading by regenera3ng dense shrubby understory vegeta3on and young conifers in the years following "treatment." The phenomenon is known as "shrub response" or "understory response" and is associated with canopy thinning, especially in mixed conifer systems with signi?cant shrub and hardwood associates, like those speci?cally found in southwestern Oregon (Franklin/Johnson. 2009).

Interior forests in West support dry mixed conifer ecosystems with a high poten3al for shrub response. In both arid and rela3vely mesic forest condi3ons, canopy reduc3on will inevitably induce a signi?cant shrub response. In fact, in their paper 3tled "Restora3on of Federal Forests

in the Paci?c Northwest: Strategies and Management Implica3ons" Jerry Franklin and Norm



Johnson state that "potenDal shrub responses to reducDon in stand density must be considered. Some dry mixed-conifer plant associaDons have the potenDal to develop dense shrubby understories when light and moisture are made available by tree thinning; this is parDcularly the case in dry forests that exhibit more even-aged and dense structures."

Many forests targeted for "treatment" by the agency support more even-aged, dense structure and dry condi3ons in mature and old-growth stands. The arid site condi3ons and abundant chaparral and hardwood communi3es will also contribute to shrub response, which is vigorous a^er commercial logging opera3ons. The authors con3nue " the potenDal for developing undesirable levels of understory fuels need to be assessed on a stand-by-stand basis and prescripDons adjusted so as to reduce the risk of undesirable understory responses. Indeed, in some cases it may be desirable to maintain essenDally full overstory cover, treaDng only ladder fuels, and leaving all dominant and co-dominant canopy trees in place rather than risk enhancing ground fuels." These recommenda3ons apply to forests across the West, yet were not been adequately addressed. Ac3on alterna3ves re?ec3ng these recommenda3ons from Johnson/Franklin 2009 to retain canopy and all dominant and co-dominant trees should be incorporated into the proposed ac3on.

There is a direct rela3onship between canopy reduc3on and understory shrub response, for example in the Bear Grub EA 2023, published by the Medford District BLM, the agency admits that "AlternaDve 2 would create the most open condiDons and may result in more rapid regeneraDon of surface fuels, which may necessitate earlier and more frequent maintenance treatments." (DOI. 2020. P. 59).

Understory response is evident and common throughout the West, but maintenance of those fuels is infrequent and inadequate. In fact, nearly every treatment area iden3?ed in recent

NEPA analysis would create a compromised canopy (previously logged to below 50% canopy cover) and nearly all implemented units are currently undergoing a signi?cant understory response. Dense, young, woody vegeta3on has developed in every canopy gap, while stands with higher levels of canopy cover and more large trees per acre tend to moderate understory shrub response and maintain lower surface fuel loading, which o^en contributes to signi?cant ?re severity. (Raymond. 2005).

The process is rather simple, increased sunlight and growing space triggers understory shrub and conifer regenera3on. Likewise, soil disturbance associated with yarding ac3vity o^en pierces through the soil surface triggering germina3on of woody species that in turn, create dense ladder and understory fuel as they mature.

This phenomenon has been noted by numerous recent studies examining fire effects and vegetation patterns in the Siskiyou Mountains. Two recent research articles studying in the 2013 Big Windy Fire and 2013 Douglas Fire in the Siskiyou Mountains, found that more open conditions and more intensive forest management led to accelerated levels of fire severity (Lesmeister. 2019, Zald. 2018). Lesmeister 2019 also cited other region research supporting these important findings, "On the 2002 Biscuit Fire that burned near our study area, Thompson



and Spies (2009) concluded that weather and pre-fire vegetation conditions were the primary determinants of crown damage. They found that forests with small- stature vegetation and areas of open tree canopies and dense shrubs experienced the highest levels of tree crown damage, while older, closed-canopy forests with high levels of large conifer cover were associated with the lowest levels of tree crown damage. The moisture content of air and soil in a forest affects the amount of fuel moisture, and thus the probability of ignition and burning temperature (Heyerdahl et al. 2001)." (Lesmeister. 2019).

Shrub response tends to signi?cantly increase fuels in the understory beginning roughly 5-10 years a^er commercial entry. The development of dense understory fuel con3nues un3l canopy

condi3ons have recovered and can again suppress understory growth. The result is a signi?cant increase in fuels and ?re risk following logging treatments. According to BLM ?re/fuel analysis in both the Gri?n Halfmoon and Clean Slate Timber Sale heavy canopy reduc3on can drama3cally increase ?re risks for 20 years or more. Yet, we ?nd this predic3on to be very conserva3ve. Because ?re resistance in conifer stands throughout the planning area will take between 80 and 120 years to re-establish at current levels once logging occurs. This is because canopy cover recovers slowly, especially when considering the e?ects of climate change, it is also because the large, old trees between 80 and 150 years old, take that long or longer to regenerate and start contribu3ng to late successional characteris3cs, overstory canopy, and the modera3on of understory fuel loading.

The Bear Grub EA 2023, also documents that surface fuel loading has a direct and significant relationship with fire severity and intensity. By removing overstory canopy and increasing surface fuel loading through logging treatments, the BLM is encouraging higher rates of spread, bigger flame lengths, hotter fires, and more fire induced mortality when wildfires do burn. According to the EA, "Surface fire behavior has a direct effect on fire severity, mortality, suppression tactics, and the initiation of crown fire. Rates of spread and flame lengths are key components affecting fire size and resistance to control. Surface fire behavior has a direct effect on fire severity, mortality, suppression tactics, and the initiation of crown fire, lower surface fuel loading produces lower flame lengths" (DOI. 2020. P. A-94). Thus, the commercial thinning has the potential to produce more significant fire events near residential communities and the treatments proposed as exceptions in the NOI will do the same.

The rela3vely arid climate throughout much of the West means that stands last thinned over 20 years ago s3ll have not recovered closed canopy condi3ons and many stands are further deteriora3ng from accelerated levels of overstory mortality. Stand shock, desicca3on, bark beetle infesta3ons and windthrow can all further reduce the overstory canopy in the years

following "treatment." The lack of canopy, also generates an understory response with extreme levels of fuel loading and fuel laddering. Fuel loading will increase un3l canopy condi3ons ?ll in and reduce the growth of understory vegeta3on and in the interior West it may take many decades to regrow large trees that suppress understory growth.

Ci3zen monitoring has documented an aggressive understory response over a broad geographic area and in nearly every 3mber sale in the Applegate Valley over the last 25 years. Yet, the



agency has essen3ally refused to adequately analyze "understory response", its in?uence on understory fuel loading and therefore ?re severity in NEPA analysis throughout the valley. The Nedsbar EA claims on page 3- 35 that the live fuel moisture content of understory vegeta3on o?sets the impact of increased density and abundance of understory fuel. They cite an ar3cle wripen by James Agee (1996) that comments on live fuel moisture as a very important poten3al in?uence on future ?re severity. Yet, the same ar3cle also states "The e?ect of herb and shrub fuels on ?reline intensity is not simply predicted. First of all, more herb and shrub fuels usually imply more open condiDons which are associated with lower relaDve humidity and higher wind speeds. Dead fuels may be drier and the rate of spread may be higher because of the altered microclimate from more closed canopy forest with less understory. Secondly shrub fuels vary (Ceanothus

signi?cantly in heat content. Waxy or oily shrubs like snowbrush veluDnus) or

(ChamoehoDa

bearclover foliolosa) burn quite hot; others have lower heat contents."

In the arid West, less canopy general means dryer microclimates, increased exposure to winds and increased shrubby understory fuels. Many of the shrubby species that regenerate a^er heavy canopy reduc3on (below 50%) are extremely ?ammable and laden with waxes and vola3le oils. These species are o^en highly ?ammable and would include young incense cedar, doug ?r, live oak, manzanita and buckbrush to name a few. This means that if typical species

regenerate in the understory following commercial treatments, the impact of live fuel moisture will be overwhelmed by the ?ammability of the conifer saplings, shrub communi3es and ac3vity slash.

The following scien3?c studies have shown a correla3on between thinning and understory shrub development:

Wilson et al. 2007, "Density Management and biodiversity in young Douglas-?r forests" Challenges of managing across scales."

Summary: This study found an increase in shrub density at 16 and 30 years following treatment.

Campbell 2008, "Carbon Dynamics of a ponderosa pine planta3on following thinning treatment in the northern Sierra Nevada."

Summary: This study found an increase in shrub cover following thinning treatments. Shrub cover increased from 9% to 32% 3 years a^er treatment and maintained 22% shrub cover, 16 years a^er treatment.

Agee 1996, The in?uence of Forest Structure on Fire Behavior

Summary: Altered microclimates and increased growing space can encourage the development of ?ammable understory fuel loads, increase wind speeds, dry soils and fuels, while increasing temperatures, all of which can increase ?re severity and ?re behavior during wild?re events.



Weatherspoon and Skinner 1995, An Assessment of factors associated with damage to tree crowns from the 1987 wild?res in Northern California

Summary: This study found higher levels of ?re severity on open sites when compared to closed, canopy forest.

Odion et al. 2004, Paperns of Fire Severity and Forest Condi3ons in the Western Klamath Mountains

Summary: This paper established a connec3on between 3me since ?re and ?re intensity. The

paper found that high levels of canopy cover can suppress understory fuel loading and reduce ?re severity.

The agency has failed to adequately analyze the issue of "understory response" and its associa3on with canopy reduc3on to 50% or lower. On-the-ground monitoring demonstrates that understory response can drama3cally a?ect fuel dynamics. The agency is refusing to thoroughly analyze the impact of canopy reduc3on and large tree removal on ?re severity and fuel loading and by doing so it push false narra3ves, false solu3ons, and ine?ec3ve management ac3vi3es. The EIS must consider the in?uence of understory response in Forest Service logging units and maintain both large trees and canopy cover through regula3ons that e?ec3vely avoid these impacts and promote highly resilient old forest habitats. The current approach is doing the opposite.

Stand drying:

The BLM admits on page 3-35 of the Nedsbar Forest Management Project EA that "A drier microclimate generally contributes to more severe ?re behavior." At the same 3me, the extent of overstory canopy cover is directly propor3onal to the level and seasonality of stand drying. More open sites are exposed to drying winds, high levels of solar radia3on, and high ambient air temperatures, the combined a?ect is to dry forest stands, reducing fuel moisture, increasing the rate of spread during wild?re events, the poten3al for spoing, resistance to control and ?reline intensity.

Ci3zen monitoring e?orts have documented the increased ?re risks associated with overstory canopy reduc3ons, throughout the Applegate Valley. We have document this impact in nearly every watershed and 3mber sale treated by BLM and Forest Service in the last 25 plus years. Again, the Nedsbar Forest Management Project EA admits on page 3-35 "Management of forest stands can result in altered micro climates (Agee 1996). Increasing spacing between the canopies of trees can contribute to increased wind speeds, increased temperatures, drying of topsoil and vegetaDon, and increased shrub and forb growth (Agee 1996). A more open stand

allows more wind and solar radiaDon resulDng in a drier microclimate compared to a closed stand. A drier microclimate generally contributes to more severe ?re behavior." The BLM and Forest Service o^en claims project design features will mi3gate this concern, but project design



will not reduce stand drying if canopies are reduced to 50% canopy cover or below, as so many commercial thinning projects do.

The Bear Grub EA agrees stating, "Thinning and group selection openings may indirectly increase surface wind gusts. Bigelow and North (2012) found evidence of this, observing moderate increases in average wind gusts in thinned stands (up to 1.5mph) and greater increases in openings (up to 5.6 mph in openings of 2 acres). Openings greater than 2 acres could increase wind speeds to a greater extent, which could result in problematic surface fire behavior." (DOI. 2020. P. 57).

Regional research conducted in SW Oregon confirms that stand drying and significate microclimate alteration can increase fire hazards in various ways. Researchers found that "Thinned forests have more open conditions, which are associated with higher temperatures, lower relative humidity, higher wind speeds, and increasing fire intensity. Furthermore, live and dead fuels in young forest or thinned stands with dense saplings or shrub understory will be drier, making ignition and high heat more likely, and the rate of spread higher because of the relative lack of wind breaks provided by closed canopies with large trees." (Lesmeister. 2019).

The issue of stand drying and increased wind speeds combine to make ?re weather more vola3le and to increase ?re behavior. These e?ects are related directly to canopy cover reduc3ons, which are proposed to include reduc3ons well below 50%. Any stand thinned to below 50% canopy cover will be subjected to a signi?cant increase in fuel loading and ?re hazard and these impacts are not being adequately considered in analysis.

Extended Fire Seasons:

Many commercial logging opera3ons and commercial thinning opera3ons have not only increased fuel loading and ?re risks, but they are also contribu3ng to an extension of ?re seasons dura3on each year by increasing solar exposure and drying out forest fuels.

Ac3ve ?re season has been extended through a combina3on of climate change, logging treatments and canopy reduc3on. The physical altera3on of forest canopies and forest structure has extended ?re season by drying of forest stands and forest fuels. The increased exposure associated with more open forest serves to dry stands and fuels earlier in the season, making them ?ammable weeks before they would be otherwise. The increased exposure also serves to increase evapora3on, limi3ng the posi3ve e?ects of rain or overnight RH recovery during the summer ?re season. The e?ect is directly propor3onal to the level of canopy reduc3on, with lower levels of canopy crea3ng the most dras3c e?ect.

Early in the ?re season, non-forest plant communi3es and forest with minimal canopy have dried out su?ciently to carry ?re, yet closed conifer stands can act as ?re breaks due to higher fuel moisture contents. The reason is largely due to shading from forest canopy and the microclimate condi3ons that canopy cover creates. It can also have to do with the spread of noxious or non-na3ve species, especially exo3c annual grasses like medusahead and cheatgrass



which o^en spread in fuel reduc3on and commercial logging units. These grasses cure out and become ?ammable long before na3ve vegeta3on and closed stands with canopy shade and less ?ashy ?ne fuels.

When canopy cover is reduced to below 50%, the poten3al for igni3on and spread is higher much earlier in the ?re season. Fire behavior will also be increased, with the rate of spread and the poten3al for spoing being more pronounced in areas with low er canopy cover reten3on levels and drier fuels. The result of commercial thinning and heavy canopy reduc3on has already a?ected ?re resilience on the landscape scale, making ?res harder to contain and more likely to burn with intensity. This cumula3ve impact is compounded on the landscape scale as

the agency works its way across that landscape logging and increasing fuel hazards. As the percentage of the landscape treated with the current commercial prescrip3ons increases, ?re resilience on the landscape scale will be nega3vely impacted. Likewise, as previously treated stands are re-entered canopy condi3ons will be reduced further, compounding already signi?cant impacts to the seasonality and intensity of wild?re a?ects in our region. Addi3onally, group selec3on logging, creates staggered openings that BLM analysis demonstrates will increase ?re risks, ?re intensity, rate of spread and resistance to control (Ruediger. 2020).

The issue of extending ?re seasons, drying forest stands, understory shrub response, increased fuel loading and microclimate altera3ons that favor uncharacteris3c wild?re e?ects and their clear associa3on with canopy reduc3on have not been adequately considered or analyzed in NEPA analysis and must be considered when analyzing the Na3onal Old-Growth Amendment. Currently treatments assumed to reduce fuel loading and ?re risks are having the opposite e?ect.

Increased ?ne fuel loading:

Commercial logging can increase ?ne fuel loading in three major ways, 1) by deposi3ng logging slash and; 2) by regenera3ng dense, young, highly ?ammable vegeta3on (see shrub response above) and 3) by spreading weeds such as cheatgrass which signi?cantly increase ?re occurrence and ?re spread.

Even a^er logging slash removal and/or pile burning, commercial logging can drama3cally increase the ?ne fuel loading in a?ected stands by deposi3ng limbs, tops, and logging slash. Disposing of this logging slash is never fully achieved and an inevitable increases in ?ne, woody material follows all commercial thinning opera3ons. According to Raymond 2005, this logging slash led to a near doubling of high severity ?re when compared to untreated stands (Raymond. 2005). Weatherspoon and Skinner 1995, also found a correla3on between ?ne woody material deposited during logging opera3ons and burn severity (Weatherspoon & Skinner. 1995).

As discussed earlier in this comment, the opening of canopies, the disturbance of soils, and the regenera3on of non-na3ve annual grasslands such as cheat grass or medusahead grass in logged areas can also increase ?re spread and intensity by genera3ng more ?ashy, highly ?ammable fuel in the understory. The dry ?ashy fuels represented by these non-na3ve annual



grasses can burn quickly, spread rapidly to adjacent habitats, generate signi?cant spoing, produce substan3al ?ame lengths, and increase tree mortality.

There is no ques3on that large accumula3ons or pulses of ?ne fuel associated with commercial logging, post-?re logging, and canopy removal can increase ?re risks. There is also no ques3on that both the deposi3on of logging slash and the vegeta3ve dynamics following logging opera3ons can a?ect ?re severity and increase the complexity of ?re suppression e?orts.

23) Prohibition on commercial logging or the logging of large/old trees do not negate appropriate forms of stand maintenance or management including non-commercial treatments, prescribed fire, cultural fire and/or managed wildfire.

All too often the agency acts as though any limitation placed on their commercial timber sale program or their ability to log large old trees will impact their ability to manage for "forest health" and "resilience." We obviously disagree and see prohibitions on commercial logging as complimentary to fire/fuel management and the maintenance of long-term resilience. Large, old trees are the most fire-resistant portions of the landscape and create microclimate conditions that support that resilience into the future. Mature and old-growth forests often grow complex canopy structures that reduce understory shrub response, maintain cooler, more moist stand conditions, and limit within stand windspeeds during fire events. Numerous papers published using empirical data from actual southwestern Oregon wildfire events have shown that unmanaged, mature and old-growth forests burn at lower fire severity than surrounding managed stands (Zald.2018) and these same forests can create effective fire refugia (Lesmeister. 2021, Lesmeister.2019.).

At the same time, small diameter fuels are the most fire available fuel on the landscape, cure out the fastest, contribute to extreme fire spread, support a high level of spotting, and more often than not, younger stands contain less variability, more even-aged, low statured fuels and far less resilient stand conditions. We believe it is important to note that commercial timber harvest is not necessary to address wildfire and fuel loading concerns and in many cases, makes these issues worse following so-called "restoration" logging treatments. If commercial logging is prohibited in stands over 80 years of age, these stands would still be available for non-commercial thinning, prescribed fire, cultural fire and managed wildfire, all of which more directly affect the fuels that actively contribute to fire severity and spread.

Thank you for the opportunity to comment,

Luke Ruediger, Executive Director

Luke Ruediger, Conserva3on Director

Applegate Siskiyou Alliance

Klamath Forest Alliance



Appendix A: A list of recent Forest Service Timber Sales on the Rogue River-Siskiyou and Klamath National Forests with mature or old-growth logging components.

Below are examples of US Forest Service timber sales either proposed or implemented in the last

20 years that proposed a mature or old forest logging component

Shasta Agness Timber Sale

The Shasta Agness Timber Sale was approved by the Rogue River Siskiyou National Forest in LSR forest near Agness, Oregon at the confluence of the Wild and Scenic Rogue and Illinois River's. Its approval required permission from the Regional Office to exceed both age class limitations placed on federal land logging in the Northwest Forest Plan and limitations on large tree removal in LSR forest. The project authorizes the removal of larger, more mature trees up to 28" in diameter and 140 years of age in LSR forest. It also authorizes 3,770 acres of commercial logging, 5 miles of new road construction, and 4.3 miles of new motorized trails.

The area contains unique biodiversity, relatively intact old forest habitats and moist, productive growing conditions that allow these coastally influenced forests to efficiently store large volumes of atmospheric carbon.

The Shasta Agness Timber Sale proposes to convert mature and old forest habitats into oak woodland habitats in locations where few, if any oak trees are currently found. The resulting canopy loss, the loss of carbon storage and the release of carbon currently stored in living trees will be significant, as well as the loss of important old forest habitat and climate refugia. Species such as the threatened Northern spotted owl and Humboldt marten would be impacted. In fact, conservation interests located one Northern spotted owl nesting site within proposed commercial logging units. No survey's took place to confirm or disprove occupancy by these species and significant damage to their habitat will occur, when the project is fully implemented suitable habitats will be either downgraded or removed from the Northern spotted owl habitat baseline.

Unit 51 of the Shasta Agness Timber Sale has been identified as an" oak woodland restoration"n treatment, but almost no oak trees are found in the unit and instead fir trees. This unit is proposed for "oak woodland

Unit 53 of the Shasta Agness Timber Sale contains closed forests with a canopy of large, dominant Douglas fir trees. This unit is proposed for "oak woodland restoration," logging all conifers to 28" diameter and removing all conifers up to 28" diameter and replanting reducing canopy cover to below 30%. This will requiring the stand with oak saplings. removing more than half the stand, which will then be replanted with oak saplings.



Upper Briggs Restoration Project

The Upper Briggs Project has been approved by the Rogue River-Siskiyou National Forest, but not fully implemented. The timber sale proposes over 4,000 acres of commercial logging in Briggs Creek, an important tributary of the Wild and Scenic Illinois River and key watershed under the NW Forest Plan.

The project was reportedly proposed to increase fire resilience due to an assumed risk associated with potentially catastrophic fuel loading and fire risks. Yet, ironically before the project was approved, the area burned at roughly 80% low severity during the 2018 Klondike Fire, underburning most of the stands proposed for commercial logging and fuel reduction. The agency responded by claiming that the low severity fire did not kill enough trees or create the

structural conditions they have arbitrarily defined as "healthy" and "fire resilient." The agency then approved the project despite the beneficial fire effects and currently resilient stand conditions.

The project includes industrial logging prescriptions in currently intact, fire adapted, old forest habitats in the Briggs Creek watershed. Large tree removal and extensive canopy removal will impact forest values, increase fire risks, and impact natural fire regeneration following the beneficial Klondike/Taylor Fire. It will also damage scenic values in the Briggs Creek watershed, along popular hiking trails and adjacent to well used campgrounds.

The project also includes so-called "meadow restoration" which would be implemented with meadow side clearcuts at the margin of numerous meadows including the Horse Meadows Wildlife Area where timber harvest is prohibited in the Siskiyou National Forest Land & Resource Management Plan.

Carbon storage will be diminished and significant carbon will be released through large tree logging and canopy reduction. Additionally, cool, moist climate refugia and closed forest stands would be damaged through logging activities. The currently unimplemented portions of the Upper Briggs Restoration Project should be canceled to comply with President Biden's Earth Day Executive Order on the protection of forests.

Unit 23 of the Upper Briggs Restoration Project is located along the

Unit 63 of the Upper Briggs Restoration Project contains

popular Onion Way Trail and burned at low severity in the 2018

mature and old-growth forest that underburned at low

Klondike/Taylor Fire, but is none-the-less proposed for heavy

severity in the Klondike/Taylor Fire of 2018.

industrial logging.



Slater Fire Re-entry Project

The Slater Fire Re-Entry Project was inappropriately proposed through the use of a road maintenance Categorical Exclusion. The project proposed 4,106 acres of commercial roadside logging, including the removal of trees within 300' of Forest Service roads, along 146 miles of Forest Service road. This included proposed logging treatments in LSR forest, Riparian Reserves, Special Wildlife Sites, and designated Back Country Areas. It also included provisions to remove both fire killed snags and living "green" trees that survived the fire.

In many cases, old-growth forest was logged and was even posted like a trophy on the Rogue River Siskiyou National Forest facebook page. Portions of the project were implemented under an emergency declaration for the Slater Fire with no public input or oversight. The agency logged the area under an emergency declaration long after the fire was contained. The entire Takilma-Happy Camp Road extending over the Siskiyou Crest has been clearcut to 300' on either side of the road. Many living trees that survived the fire and fire killed snags were removed.

Ultimately, the project was largely withdrawn due to an out of court settlement that resolved

potential litigation and roughly 80% of the project was withdrawn. Currently the project is being repackaged as the Slater Fire Re-open Project and an Environmental Assessment is being developed to analysis potential project impacts. This project now proposes 9,650 acres of post fire logging within 200' of over 200 miles of road.

During the initial implementation stage hundreds of acres were clearcut, massive amounts of carbon stored in standing snags and surviving "green" trees was released, soils and vegetative recovery was impacted, and massive, old growth logs were hauled to the mill. The Slater Fire Reopen Project should be canceled to comply with President Bidens Earth Day Executive Order.

Massive old growth trees posted like a trophy on the A post fire clearcut at the Page Mountain Sno-Park

Rogue River Siskiyou National Forest facebook page. These showing the logging of large old trees and snags along

old growth trees are among hundreds of old growth trees with significant soil damage.

logged during the so-called "emergency" logging

operation.

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Seiad Horse Project

This post fire logging project implemented in the Johnny O'Neil Late Successional Reserve (LSR) logged approximately 1,200 acres of fire affected forest habitat, and was approved in the aftermath of the 2017 Abney Fire. Although much of the area, burned at high severity, living trees and green islands within the fire perimeter were also removed in the logging operations. The project removed large diameter trees and snags along the Pacific Crest Trail, near the Condrey Mountain Inventoried Roadless Area, and in the Kangaroo Inventoried Roadless Area.

These post-fire logging units in the Seiad Horse Project release carbon stored in standing snags, damaged forest regeneration, created extensive soil damage, surface erosion and sedimentation in important coho salmon streams

in the Klamath River watershed. These units are also located at the edge of the Condrey Mountain Inventoried Roadless Area and designated Back Country Area, as well as the Cook and Green Pass Botanical Area, known as the most diverse location in the state of California.

The project area is located in an important connectivity corridor between the Red Buttes W ilderness Area and surrounding Inventoried Roadless Area. The project also impacted connectivity for the Pacific fisher, LSR habitat, and Riparian Reserves within the planning area. The removal of large diameter trees and fire killed snags released significant carbon emissions during logging operations, dramatically reduced the carbon naturally stored on site, and damaged the natural regeneration of vegetation following the 2017 Abney Fire.

Westside Project

At the time it was proposed and approved, the Westside Project was one of the largest timber sales in Forest Service history. The project was largely implemented in LSR forest and in important salmon and steelhead streams in the Klamath River watershed. The effects on wildlife were immense including impacts to 70 Northern spotted owl activity centers, 19 Siskiyou Salamander sites, and damage to Pacific fisher habitats. The Klamath National Forest also refused to survey for numerous sensitive plant and animal species within the planning area, creating undetermined and unmonitored impacts.

The agency approved 11,700 acres of clearcut logging in fire affected forests and 20,500 acres of roadside "hazard" tree logging, including 7,560 acres of LSR logging. It also included 22 miles



new temporary roads with 14 stream crossings and 152 new log landings. The project had significant impacts to water quality, triggered large landslides, and created legacy sediment sites with lasting implications for the threatened Klamath River fisheries. The project's Water Quality Permit was predicated on the treatment or mitigation of existing legacy sediment sites, but most of these mitigations have not been implemented.

Most of the timber sales associated with the Westside Project were sold and implemented across thousands of acres in the Mid-Klamath River watershed. The clearcutting of fire affected forest led to habitat simplification, a loss of stored carbon, the sedimentation of important fish bearing streams and the disruption of natural regeneration processes on the landscape scale.

The Westside Project converted complex early successional The Westside Project was implemented as clearcut snag forest and converted it to highly simplified slopes logging on very steep, unstable slopes like this one

lacking large snags, downed wood and habitat complexity, above Walker Creek, a tributary of the Klamath River. creating deficits for hundreds of years and damaging

forest regeneration.

Chetco Bar Fire Recovery Project

The Chetco Bar Fire Recovery Project was a massive post fire logging proposal that included both unit logging and roadside logging components. The project was approved by the Rogue River Siskiyou National Forest following the 2017 Chetco Bar Fire.

The project included 13,626 acres of logging, including over 9,000 acres in previously unlogged stands and hundreds of miles of roadside logging. The project included the removal of both live and dead trees in fire affected areas.

The planning area is located adjacent to the Kalmiopsis Wilderness and the surrounding Inventoried Roadless Areas. The Chetco River is also an important fishery and the river contains exceptional water quality. The extensive logging implemented on federal lands, combined with private industrial post-fire logging has badly damaged the lower Chetco River watershed.

Although much of the forest burned at high severity during a large east wind event, the coastally influenced forests supported massive, old trees. In the post-fire environment, both living "green

trees" and standing snags store vast quantities of carbon and sustain the biological legacies

important for the natural regeneration of the forests in the lower Chetco River watershed.

Ultimately, large portions of the Chetco Bar Fire Recovery Project were implemented including

many, many miles of roadside logging throughout the lower Chetco River watershed. The project

created extreme impacts to the Chetco River watershed, to natural forest regeneration and to the

climate by logging large old trees and snags in the aftermath of the 2017 Chetco Bar Fire.

Massive old fire killed trees proposed for post-fire logging in This over 5' diameter snag was logged along near Quail

the Chetco Bar Fire Recovery Project. This unit was logged in Prairie Creek in the roadside logging projects following the

roadside logging projects near Quail Prairie Lookout. Note 2017 Chetco Bar Fire. Snags like this store huge volumes of

the size of the individual in the photo compared to these carbon on the landscape and provide important biological

massive carbon-rich snags. values.

Crawford Timber Sale

The Crawford Timber Sale was proposed on the Klamath River between Happy Camp and Orleans, California in some of the last occupied northern spotted owl habitat in the western Klamath National Forest. The timber sale proposed commercial logging on 1,650 acres, the removal of 139 acres of foraging habitat for the Northern spotted owl in forests identified as Critical Habitat. The project would have degraded 4 northern spotted owl home ranges and included the "incidental take" of two of the areas last reproducing pairs of northern spotted owls. The project was litigated by conservation interests and subsequently withdrawn by the Klamath National Forest.



Old forest proposed for logging in the Crawford

A view across the Crawford Timber Sale and the

Timber Sale.

connectivity corridor between the Siskiyou Wilderness

Area and Marble Mountains Wilderness in the distance.

Bear Country Timber Sale

The Bear Country Timber Sale is located on the Wild and Scenic North and South Fork Salmon River watersheds, in some of the most remote, diverse, and mountainous country on the West Coast. The timber sale proposes 4,195 acres of commercial logging, 3,704 acres of which is proposed in natural, unlogged stands and 2,330 acres of LSR logging. This logging would remove 235 acres of nesting, roosting and foraging habitat for the northern spotted owl and an additional 701 acres of foraging habitat. This would include logging related impacts to 8 northern spotted owl home ranges and to one of the only nesting habitats documented to reproducing on the Scott/Salmon Ranger District.

The project also proposes 5.2 miles of commercial roadside "hazard" tree logging 300' from existing roads and 2,271 acres of mastication on 24.4 miles of remote ridgeline at the heart of the Salmon River watershed. This project proposes heavy industrial logging, large tree removal, canopy reduction, and damage to mature, late successional and old-growth forest habitats. If approved and implemented this project would release abundant carbon stored in large, living trees and degrade important intact forests habitats and climate refugia.

The Bear Country Timber Sale should be canceled to comply with President Biden's Earth Day Executive Order on the protection of forests.

Unit 126 on Butcher Gulch contains spectacular old-

Unit 80 of the Bear Country Timber Sale is located in

growth forest above the Wild and Scenic South Fork

old-growth LSR forest and proposes heavy commercial

Salmon River.

logging in high quality Northern spotted owl habitat.

South Fork Timber Sale

The South Fork Timber Sale has been proposed by the Klamath National Forest just upstream from the Bear Country Timber Sale on the South Fork Salmon River. Located in an important connectivity corridor between the Trinity Alps and Russian Wilderness Areas and a large LSR forest, the project proposes significant old forest logging in previously unlogged forest habitats.

It also surrounds numerous popular trailheads, campgrounds and recreation areas around Carter Meadows at the headwaters of the Wild and Scenic South Fork Salmon River.

The South Fork Timber Sale has undergone public scoping and it is current planning status is officially "on hold" due to undisclosed reasons. The South Fork Project should be canceled to comply with President Biden's Earth Day Executive Order on the protection of forests for climate resilience.

Unit 71 of the proposed South Fork Timber Sale includes

Unit 65 of the South Fork Timber Sale includes mature

high elevation true fir forests near the headwaters of

and old-growth forest. Logging prescriptions call for

the Salmon River and adjacent to the Russian

significant canopy reduction and large tree removal.

Wilderness Area.

Appendix B: Additional Information on the impact of commercial thinning on fire and climate resilience

Incorporate the following information and links by reference into this comment: The information and links provided below demonstrate how widespread and systemic mature and old forest logging is on federal lands. The level of mature and old forest logging currently being implemented and proposed creates concerns regarding the sustainability of such logging activities, the impact this logging has on fire risks, wildlife habitat, watersheds, and carbon storage, as well as the effect it will have on the scenic and recreational value of our public lands. These links demonstrate that mature and old forest logging is a significant threat to federal forests and climate resilience.

Worth More Standing Report: https://www.climate-forests.org/worth-more-standing

Pilot Projects: https://siskiyoucrest.com/2013/03/05/middle-applegate-pilot-projects/

https://www.dropbox.com/s/a7n3ezf5dcru15e/Pilot Thompson Community Monitoring Report.pdf

http://www.dropbox.com/s/j1tizckl4vbgvi0/Pilot Joe The Myth and The Reality.pdf

Nedsbar Timber Sale: https://siskiyoucrest.com/2015/02/01/a-hike-through-nedsbar-timber-sale-and/

https://siskiyoucrest.com/2015/01/25/nesdbar-timber-sale-bald-mountain-units/

https://siskiyoucrest.com/2015/01/21/nedsbar-public-hike-unit-28-22a-28-22b/

https://siskiyoucrest.com/2015/01/07/nedsbar-community-monitoring-program/

https://siskiyoucrest.com/2014/12/23/update-nedsbar-timber-sale-community/

https://siskiyoucrest.com/2014/12/13/nedsbar-timber-sale-regeneration-unit/

Crawford Timber Sale: https://siskiyoucrest.com/2020/08/12/keeping-klamath-wild-crawford-timber/

Pickett West Timber Sale: https://siskiyoucrest.com/2017/06/03/pickett-west-timber-sale-

industrial-old/

https://siskiyoucrest.com/2017/06/15/zig-zag-creek-hellgate-canyon-and/

https://siskiyoucrest.com/2017/06/26/pickett-west-timber-sale-panther-gulch/

https://siskiyoucrest.com/2017/07/14/pickett-west-timber-sale-logging-off/

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https://siskiyoucrest.com/2017/07/17/pickett-west-timber-sale-logging-last/

https://siskiyoucrest.com/2017/07/29/the-pickett-west-timber-sale-old-growth/

Clean Slate Timber Sale: https://siskiyoucrest.com/2018/07/02/clean-slate-timber-sale-old-growth/

Seiad Horse Project: https://siskiyoucrest.com/2017/12/17/klamath-national-forest-proposes/

https://siskiyoucrest.com/2018/04/13/klamath-national-forest-proposes-post/

https://siskiyoucrest.com/2018/05/11/porposed-logging-along-pct-at-cook-and/

Chetco Bar Fire Recovery Project: https://siskiyoucrest.com/2018/03/23/chetco-bar-fire-salvage-project-quail/

Briggs Project: https://siskiyoucrest.com/2018/05/30/the-upper-briggs-restoration-project-2/

https://siskiyoucrest.com/2019/06/18/the-upper-briggs-restoration-project/

Bear Grub Timber Sale: https://siskiyoucrest.com/2020/03/09/bear-grub-timber-sale-threat-to-forests/

https://siskiyoucrest.com/2020/05/19/wellington-wildlands-threatened-with/

https://siskiyoucrest.com/2020/06/01/bald-mountain-biodiversity-and-bear/

https://applegatesiskiyoualliance.org/the-bear-grub-timber-sale-and-the-wellington-wildlands/

https://applegatesiskiyoualliance.org/bear-grub-timber-sale-deming-ridge-units/

https://applegatesiskiyoualliance.org/bear-grub-timber-sale-save-the-east-applegate-ridge-trail-from-logging/

https://applegatesiskiyoualliance.org/bear-grub-timber-sale-bald-mountain-units/

Shasta Agness Timber Sale: https://siskiyoucrest.com/2020/08/26/shasta-agness-timber-sale-

industrial-logging-dressed-up-in-restoration-language/

Bear Country Timber Sale: https://siskiyoucrest.com/2021/06/23/the-bear-country-timber-sale-old-forest-logging-on-the-wild-and-scenic-salmon-river/

Rogue Gold Timber Sale: https://siskiyoucrest.com/2021/10/18/the-rogue-gold-timber-sale-logging-the-last-old-forest-above-the-rogue-river-valley/

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Late Mungers Timber Sale: https://applegatesiskiyoualliance.org/late-mungers-timber-sale-old-forest-logging-on-murphy-creek-deer-creek-and-tributaries-of-the-applegate-river/

Penn Butte Timber Sale:https://applegatesiskiyoualliance.org/the-ivm-and-late-mungers-project-intentionally-very-misleading/

https://applegatesiskiyoualliance.org/blm-targets-mungers-powell-creek-the-rain-forests-of-the-applegate-with-logging-in-the-penn-butte-timber-sale/

https://applegatesiskiyoualliance.org/penn-butte-timber-sale-old-forest-logging-in-the-williams-creek-watershed/

The impact of so-called "forest health" or "fuel reduction" logging and commercial thinning projects on federal lands.

The logging projects listed above and discussed in the incorporated links demonstrate the continuing impact of mature and old forest logging on federal lands in a small portion of the Klamath-Siskiyou Mountains. Although we can demonstrate the problem in our region, colleagues across the West report similar problems with the federal timber sale program in the Sierra-Nevada Mountains, in the Rocky Mountains, the southwest and any forested region in the federal land system. Old forest logging is not the exception, but instead it is the current policy of federal land managers to log mature and old forest habitats in an effort to meet arbitrary and unsustainable timber quotas. It is also the policy of the agencies to use so-called "fuel reduction" or "restoration" timber sales as a guise for reaching annual timber quotas. Unfortunately, these

timber sales are effective at producing timber, but counterproductive to fuel reduction and forest restoration objectives.

Historically, logging has been responsible for the majority of loss in mature and old-growth forest cover on both the continental, national, regional and global scale, and its impact cannot be ignored. Mature and old-growth forests have been almost entirely lost on private ownerships and are now found primarily on federal lands, making their protection disproportionally important for climate, for biodiversity, for watersheds, for wildlife and for the scenic and recreational values the public enjoys on federal lands. The current policies and practices of federal land managers are contributing to the loss and decline of mature and old-growth forest habitats, and should be immediately discontinued.

Every timber sale proposed or implemented on federal lands in our region has a mature and old forest logging component with impacts and effects that are contrary to President Biden's 30X30 Initiative and Earth Day Executive Order on the protection of forests for climate resilience. This is not only because these projects are logging intact environments and releasing naturally stored carbon by logging large carbon dense trees and forests, it is also because of the impact this logging has on habitat values, and watershed values, while increasing, not decreasing fire risks and forest health concerns.

For additional information on the real-world impacts or effects of commercial thinning on public lands, please review and incorporate these links by reference into this public comment.

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The O'lickety Timber Sale: Illegal BLM Logging and the Continuing Loss of Northern Spotted Owl Habitat in the Applegate Valley

https://www.dropbox.com/home?select=BLM+Fire%3AFuel+Analysis+for+recent+sales.pdf&preview=BLM+ESA+Monitoring+Report.pdf

BLM ESA Monitoring Report

https://www.dropbox.com/s/rui3gqhx3zcznyo/FINAL_2015 Medford BLM Post Harvest

Monitoring Report.3.4.16.pdf?dl=0

Bark Beetles, Timber & The BLM in the Applegate Valley: An over of bark beetle science and land management on the Medford District BLM

https://www.dropbox.com/s/h188fxpbm2xxow3/Beetles, Timber %26 the BLM %282017%29.pdf?dl=0

The Squishy Bug Timber Sale: "Salvage" Logging, Bark Beetles and Invalid Assumptions for NEPA Analysis

https://www.dropbox.com/home?select=BLM+Fire%3AFuel+Analysis+for+recent+sales.pdf&preview=Squishy+Bug+Timber+Sale+Report.pdf

Medford District BLM Fire/Fuel Analysis for Timber Sales Authorized under the 2016 Resource Management Plan for Southwestern Oregon

https://www.dropbox.com/s/50u8m52bk41ih3p/BLM Fire%3AFuel Analysis for recent sales.pdf?dl=0

New Research on Forest, Fires and Northern Spotted Owl Management in Southwestern Oregon

https://www.dropbox.com/home?select=BLM+Fire%3AFuel+Analysis+for+recent+sales.pdf&preview=NSO+%26+Fire+Resilience+Letter.pdf

Information and Policy Recommendations Pertaining to Forests, Fire and Smoke Management in Southwestern Oregon

https://www.dropbox.com/home?select=BLM+Fire%3AFuel+Analysis+for+recent+sales.pdf&preview=NSO+%26+Fire+Resilience+Letter.pdf

DellaSala, D.A., Baker, B.C., Hanson, C.T., Ruediger, L., and Baker. W. 2022. Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus? Biological Conservation

https://doi.org/10.1016/j.biocon.2022.109499

Commercial logging & thinning on federal lands impacts climate resilience

Mature and old-growth forests are both regularly threatened by federal land timber sales and important as carbon reserves where live trees, standing snags, downed trees and forest soils have stored immense amounts of carbon for hundreds, if not thousands of years (Law. 2022). Carbon storage accelerates dramatically with age (Stephenson et al. 2014, Mildrexler et al. 2021, Law et al. 2022), demonstrating the positive effects of protecting mature and old forests on federal lands from a carbon sequestration and storage standpoint.

Yet, mature and old forests should be protected for not only the carbon they store, but also for their important watershed values and connectivity values. As climate refugia and as habitat for species requiring overstory canopy, cool, moist habitat conditions, thermal regulation, late successional forest habitats for nesting, roosting, denning and foraging, and habitat for threatened, rare, or endangered species. The effects of mature and old forest protection have innumerable positive outcomes and few drawbacks.

According to regional research, the wood products industry is the largest single source of greenhouse gas emissions in the state of Oregon, accounting for 39% of the states total emission load (Law. 2018). Additional studies have shown that protected mature and old forest habitats are far more efficient and effective at storing carbon than actively managed forests or commercial logging supposedly implemented to reduce fire risks (Law 2022.).

In the largest study of actual wildfire effects ever conducted in the US, protected landscape were shown to burn at lower levels of fire severity than heavily managed and less protected areas (Bradley. 2016). Additionally, logging or "thinning" to reduce wildfire intensity produces far more emissions over a comparable area when compared to wildfire. In fact, emissions from logging were five times those from disturbances from wildfire, wind and insects combined. (Harris et al. 2016, Law etal. 2018).

The amount of carbon removed by thinning is much larger than the amount that might be saved from being burned in a fire, and far more area is harvested than would actually burn (Mitchell et al. 2009, Rhodes et al. 2009, Law & Harmon 2011, Campbell et al. 2011, Hudiburg et al. 2011, Hudiburg et al. 2013). Most analyses of mid- to long-term thinning impacts on forest structure and carbon storage show there is a multi-decadal biomass carbon deficit following moderate to heavy thinning (Zhou et al. 2013). Even thinning in young forests can have significant carbon impacts. For example, a study in a young ponderosa pine plantation vulnerable to drought in Idaho found that removal of 40% of the live biomass from the forest would subsequently release about 60% of that carbon over the next 30 years (Stenzel et al. 2021).

Although thinning is commonly used to reduce fire severity and associated tree mortality, a comparison of thinned with adjacent unthinned stands in the burn area of a large California wildfire showed that thinning resulted in more tree mortality than unthinned stands, showing that the fire killed more trees than thinning prevented from being killed (Hanson 2022). Additionally, the likelihood of a fire intersecting these treatments is also less than 1% and potential treatment effectiveness often lasts less than 10-20 years (Scheennagel. 2017, Campbell et al. 2011). It has



also been shown that these thinning operations create far more impacts to northern spotted owl habitat (a surrogate for mature and old forest) than wildfire alone (Odion.2014)

There are high forest carbon losses associate with thinning, and only minor differences in the combustive losses associated with high severity fire and the low-severity fire that fuel treatment is meant to encourage. (Campbell et al. 2011).

Additional habitat protections for mature and old-growth forests under both President Bidens

30X30 Initiative and his Earth Day Executive Order on the protection of forests must be immediately enacted to protect, preserve, restore and maintain adequate carbon storage in the natural environment. Fire/fuel reduction efforts should shift from focusing on logging miles from communities, in backcountry environments and in mature and old forest habitats to reducing fuels manually and with prescribed fire near homes and communities. ((Moritz et al. 2014, Schoennagel et al. 2017, Law et al. 2022). This would have extremely positive impacts on community fire safety, while protecting habitat values, reducing logging related impacts to ecosystems and carbon storage, reducing structure, home and infrastructure losses during wildfire events, work towards mitigating the home ignition problem and support management that is consistent with President Biden's applicable Executive Orders.

This shift to home and community fire protection would be win-win for society, while the reducing direct taxpayer costs to citizens and reducing impacts to ecosystems services that support our economies, communities and quality of life.

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ATTACHMENT: National Old-Growth Amendment Comment.pdf is letter content