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Comments: The final record of decision should end the cutting of old-growth trees in all national

forests and end the cutting of mature and old growth trees in high carbon

sequestering moist forest types.

Comments on DRAFT EIS: Land Management Plan Direction for Old-Growth Forest Conditions Across the National Forest System (65356)The Forest Service is proposing to amend all land management plans for the 128 planning units of the National Forest System to include consistent direction to conserve and steward existing and recruit future old-growth forest conditions and to monitor their condition, in order to foster the long-term resilience of old-growth forest conditions and their contributions to ecological integrity across the National Forest System.I support the Forest Service's stated intent to prioritize conservation and stewardship of mature and old-growth forests (MOG), as directed by President Biden's EO 14072 "Strengthening the Nations Forests, Communities, and Local Economies" (Whitehouse 2022).Summary: The DEIS lacks reference to and incorporation of knowledge from the current scientific literature to guide the planning process and management actions. The team should redo their Threat Assessment, as it provides a questionable baseline for deciding how to manage mature and old-growth forests. To meet the 30x30 goal, the priorities for protection should be based on forest carbon for climate mitigation, biodiversity, and landscape integrity (Law et al. 2021, 2018; Mildrexler et al. 2023, 2020).I disagree with the selection of the "preferred" Alternative 2. Mature forests are not sufficiently included with old-growth in the Alternatives. Alternative 3 comes closer, but it is essential to modify it in order for it to be acceptable. Alternative 3's goals, objectives and tasks must address the importance of large trees, mature forests and old-growth as Natural Climate Solutions (Law et al. 2023, 2021, 2018). It should include restrictions on harvesting large trees in mature forests that could become old growth, based on their superior resistance to fire in most forest ecosystems (Moris et al. 2022) and their significant contribution to carbon stocks and high rates of carbon accumulation. The revision of Alternative 3 must be reviewed by scientists who are experts in Natural Climate Solutions, biodiversity, and forest ecosystem carbon. Then and only then can the Alternative 3 management plans meet national and international climate and biodiversity goals (IPBES-IPCC 2020, IPCC AR6 WGII, 2022).Detailed Comments:1. Page S-4, para. 4 "The analysis found that mortality from wildfires is currently the leading threat to mature and old-growth forests, followed by insects and disease. The analysis also found that tree cutting is now a relatively minor threat compared to climate amplified disturbances such as wildfire, insects, disease."Comment: This demonstrates the FS is not using best available scientific literature to guide the planning process. The analysis is completely wrong compared with the scientific literature that also used FIA data. Across the W US, aboveground biomass carbon mortality was primarily due to logging (50%), followed by insects (32%), and wildfire (18%) (Berner et al. 2017). Another study indicated that 66% of the aboveground biomass mortality was due to logging (Harris et al. 2016). They found that harvest accounted for 99% of mortality in the southern US, and 44% in the northern US. In terms of emissions, we found that annual logging-related emissions were 5times that of wildfire emissions in Oregon, Washington and California combined (Hudiburg et al. 2019), and that 100 years of wood product usage is reducing the potential annual carbon sink by an average of 21%. Logging is the major impact on mature and old forests. Moreover, increasing demand for wood products (e.g. mass buildings, bioenergy) is expected to accelerate net emissions from logging, wood processing, and operational use (Moomaw & Law 2023, Peng et al. 2023, USDA 2023).2. Page S-6. "The need for change is to: Demonstrate compliance with Executive Order 14072 to institutionalize climate-smart management and conservation strategies that address threats to mature and old-growth forests on Federal lands."3. Page S-7. "What would be the impacts from Standard 3 in the modified proposed action that restricts proactive stewardship in old-growth forests for the purpose of timber production."Comment: It appears that the FS took a large portion

of forests off the table in the Threat Analysis because harvesting remains the priority for the agency. This will not likely meet the 30 x 30 requirements of the EO. The priority should be to identify and protect the forests that are the most ecologically important for conservation and connectivity to reach the EO 30 x 30 goal, and not start with taking a huge amount of forestland off the table before such forests are identified. Forests play an important role in Natural Climate Solutions. For example, studies identified strategic reserves that have priority for protection of their forest carbon, drinking water, biodiversity, and landscape integrity (Law et al. 2023, 2021), and provided an analysis framework that includes spatial analysis of observations.4. Pages S-9, S-10 Alternatives; P. 13-14 2.2.1, 2.2.2 Alternatives considered but eliminated. The Alternatives fail to protect mature forests. Mature forests are a few decades away from acquiring old-growth characteristics and are essential to recovering vastly diminished old-growth ecosystems. The DEIS "Alternatives" would increase degradation of older forests. Compliance with international agreements and EO directives would send a message to the world that the US takes its national and international obligations seriously. This can only happen if large old trees in mixed stands, and mature and old-growth forests are protected from commercial logging and road building.5. Pgs 17-52 Sections 2.3.1, 2.3.2 Alternatives 1, 2 and 4 These are not acceptable Alternatives for many reasons stated above. "Preferred" Alternative 2 prohibits proactive stewardship in old-growth forests for the purpose of timber production, however, it still allows commercial logging under the guise of proactive management to improve resilience and achieve desired conditions at the fastest rate.6. Pg 53, Section 2.3.5. Alternative 3 - More Restrictive Standards for Old-Growth Alternative 3 responds to recommendations to restrict all commercial timber harvest in old-growth forests to provide further protections for old-growth forests. This does not prohibit other vegetation management actions from occurring; however, it is recognized that the removal of commercial timber harvest as a management tool could impact the ability to use other tools. Alternative 3 is more responsive to EO 14072 by including stronger protections against commercial logging. However, it does not address the importance of large trees in mature forests and old-growth as a Natural Climate Solution (Law et al. 2023, 2021, 2018). Modification of Alternative 3 is essential for it to be acceptable. It should include restrictions on harvesting large trees in mature forests that could become old growth, based on their superior resistance to fire (Moris et al. 2022) in most forest ecosystems and their significant contribution to carbon stocks and high rates of carbon accumulation (Law et al. 2021). As the Intergovernmental Panel on Climate Change states, "protecting natural-forest ecosystems is the highest priority for reducing greenhouse-gas emissions" (IPCC AR6, p. 302). The US is a signing member, meaning that it agreed with this statement. References Berner, L.T., B.E. Law, A. Meddens, J. Hicke. 2017. Tree biomass mortality from fires, bark beetles, and timber harvest during a hot, dry decade in the western United States (2003-2012). *Environ. Res. Lett.* 12(6): 065005. <https://doi.org/10.1028/1748-9326/aa6f94> Harris, N.L., S.C. Hagen, S.S. Saatchi, et al. 2016. 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reduce the carbon costs of forest harvest. *Nature* 620, 44 - 45. <https://doi.org/10.1038/d41586-023-02238-9>Peng, L., T.D. Searchinger, J. Zions et al. 2023. The carbon costs of global wood harvests. *Nature* 620, 110-115. <https://doi.org/10.1038/s41586-023-06187-1>Parmesan, C. et al. in *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (eds P[ouml]rtner, H.-O. et al.) Cambridge Univ. Press. <https://www.ipcc.ch/report/ar6/wg2/>USDA Forest Service. 2023. Future of America's forests and rangelands: Forest Service 2020 Resources Planning Act Assessment. Gen. Tech. Rep. WO-102. Washington, DC. 348 p. <https://doi.org/10.2737/WO-GTR-102>.USDA Forest Service. 2024. Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management. Revised. [https://www.fs.usda.gov/sites/default/files/fs\\_media/fs\\_document/Mature-and-Old-Growth-Forests.pdf](https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/Mature-and-Old-Growth-Forests.pdf)White House. 2022. Executive Order 14072 - Strengthening the Nation's Forests, Communities, and Local Economies.ATTACHMENT: inbound3580807780025381718.pdf - - this is the content that is coded in text box, it was only included as an attachmentCoast Range Association PO Box 1001 Corvallis, OR 97339www.coastrange.org Comments to: <https://cara.fs2c.usda.gov/Public/CommentInput?Project=65356>This document contains the Coast Range Association's Comments on the National Old Growth Amendment (NOGA) Draft Environmental Impact Statement (DEIS)On Dec 19, 2023 the US Forest Service proposed a nationwide amendment to all 128 forest plans to conserve old-growth forests and guide stewardship of future old-growth forests. The Draft Environmental Impact Statement (DEIS) for this proposal was released on June 21. The public comment period is until September 20, 2024.DEIS alternatives: ?Alternative 1 is the required "no action" alternative.?Alternative 2 is the agency's preferred alternative and is based on a theory of "proactive stewardship" for old-growth forests. The stewardship concept retains wide discretion to cut and sell old-growth trees.?Alternative 3 restricts commercial logging in old growth forests, but still allows the felling of old-growth trees.?Alternative 4 permits timber production and commercial logging in old growth forests without requiring ecological or restoration purposes.None of the alternatives include language to prohibit all the commercial logging of old growth. We know mature and old growth forest could be effectively managed without selling trees if Congress properly funded management of the nation's national forest system.We need forest management that matches the scale of the climate crisis. Stewardship for mature and old-growth forests on federal lands will make a serious contribution to the reduction of climate warming atmospheric carbon. Climate warming is a crisis and attaining such a goal is best not left to stakeholder processes. Especially stakeholder processes where commercial interests participate.The final record of decision should end the cutting of old-growth trees in all national forests and end the cutting of mature and old growth trees in high carbon sequestering moist forest types.What is missing in the DEIS?Nothing in the DEIS prevents the Forest Service from management activities that take forests out of old growth status, at which point protections offered by the NOGA would no longer apply. Line officers appear to have the discretion to modify NOGA protections in individual forest plans through forest plan amendments or revisions.There are still no standards for protecting mature trees and forests. The adaptive strategy directs National Forest management to address forests for OG recruitment, but it's left to regional and forest level processes for how such implementation is accomplished. Part of the "purpose and need" of this policy is ecological integrity. Without specific mature forest protections, the agency will fail to recover the abundance and distribution of old-growth forests and will undermine ecological integrity objectives.In Region 6 What is Old Growth?The DEIS states "Old-growth forests are dynamic systems distinguished by old trees and related structural attributes. Old-growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics, which may include tree size, accumulations of large dead woody material, number of canopy layers, species composition, and ecosystem function (USDA Forest Service 1989)." And Davis et al states "Parts of the NFS Pacific Northwest Region are managed under the Northwest Forest Plan (NWFP). In these areas, an old growth structure index score (OGSI 200) identified old-growth forest.The NWFP OGSI200 is based on density of large live trees, density of large snags, cover of down dead wood, and a diameter diversity index based on density of trees in different size classes (Davis et al. 2022).We state the above to highlight the apparent fact that the what-and-the-where of old growth forests have not, to our knowledge, been directly determined for each national forest. Therefore, the quality of the post FEIS engagement between the public and management on each national forest is crucial to implementation. To this end, DEIS recommendations for implementation are not

encouraging. Pacific Northwest - Region 6: How Much Old Growth? The DRAFT Ecological Impacts Analysis Report Appendix 2. Table 21-1. "Estimates of old-growth forest in thousands of acres and percent of forested acres. [Table of estimated OG in Region 6 forests] The above table is the Forest Service's estimate of old-growth acreage for Region 6 national forests. The table is from Forest Inventory and Analysis (FIA) data. Since the numbers were statistically derived, Region 6 old growth acreage may range from 6.96 million acres to 5 million acres (95% confidence). With the determination of 1.8 million acres of old growth forest up for grabs, are the tribes, industry groups, conservation groups and the public-at-large expected to determine NOGA-FW-STD-2's requirement for defined old-growth areas? In fact, as we explain in our comments, all mature and old growth is up for grabs through the agency's decision to not front-load a science-based delineation of 'defined old growth areas.' DEIS acknowledges the agency's potential economic bias. We quote from the DEIS "Notwithstanding the fact that timber harvest and production are primary aspects of the agency's mission, there is an interest in the role that economic incentives play in shaping agency decision making, particularly as it relates to achievement of ecological management objectives. However, NOGA-FW-STD-2 clearly stipulates that vegetation management in defined old-growth areas may only be for the purpose of proactive stewardship (emphasis added). This sole purpose of the standard limits the risk of commercial incentives influencing the decision-making process." We applaud the Forest Service for acknowledging that "there is an interest in the role that economic incentives play in shaping agency decision making, particularly as it relates to achievement of ecological management objectives." The sentence should have read 'there is a concern about the role that economic incentives play in shaping agency decision making when non-income producing projects are in play.' Money, income and budgets are central to the Forest Service achieving its mission. Our experience on the coast of Oregon shapes how we see the DEIS. For example, the Siuslaw National Forest has this to say about a huge "restoration" project called the North Fork of the Smith River Project. The Environmental Assessment (EA) discusses two options. One option is Do Nothing. The other option calls for the commercial logging of 4,113 acres of forest along with a great number of 'restoration' and maintenance projects. In abbreviated form, the Siuslaw EA says this about the Do Nothing option: "Actions designed to enhance or restore ecosystem function would [hellip][hellip][hellip] not be implemented. Opportunities to help support local economies would not be realized. The road system would continue to deteriorate [hellip][hellip] No invasive plant treatments would occur [hellip][hellip][hellip]. Culverts would continue to deteriorate [hellip]." In this neoliberal era of hollowed out government and the devolution of responsibility and authority, we have great concern over how the preferred Alternative 2 is constructed, implemented and funded. In the pages that follow, we discuss the confusing, complicated and confounding structure of Alternative 2. We state unequivocally to members of Congress and the agency's leadership, inadequate and/or misdirected Forest Service funding will make Alternative 2 unworkable or a slow rolling train wreck. With misdirected Congressional funding, the theory of proactive stewardship will become nothing more than the practice of delusional stewardship. Where are the "defined old-growth areas?" NOGA-FW-STD-2 clearly stipulates that vegetation management in defined old-growth areas may only be for the purpose of proactive stewardship" (emphasis added)." Note the DEIS places an "emphasis added" on the word "only." We assert that a correct emphasis added be placed on "defined old-growth areas." Is the use of the phrase defined old-growth areas an error in the narrative? Nowhere else in the DEIS does the phrase "defined old-growth areas" appear. Page 50, Guideline 1 (NOGA-FW-GDL-01) states "In areas that have been identified in the Adaptive Strategy for Old-Growth Forest Conservation as compatible with and prioritized for the development of future old-growth forest [hellip].." Is the DEIS calling for the mapped identification of old growth and mature forest? If so, then say it. Page S-5 states "However, the amendment does place an emphasis on identifying and prioritizing areas of mature forest to be managed for future old-growth forest, particularly in the Modified Proposed Action (Alternative 2). Specific direction to identify priority areas for the recruitment of future old-growth forest - including from mature forest - is included in the Modified Proposed Action as part of the Adaptive Strategy for Old-Growth Forest Conservation (Management Approach 1.b) and in a guideline that applies to management of those areas (Guideline 3)." We are confused, Management Approach 1.b (NOGA-FW-MA-01b) does not provide guidance for how mature forest areas are to be identified. Nowhere does the words "map" or "mapped" appear. Nor do we see a set of words that might describe "defined old-growth areas" by way of a Geographic Information System (GIS). Management Approach 1.b, Guidelines 2 and 3 point toward Management Approach 1.a (NOGA-FW-MA-01a) Adaptive Strategy for Old-Growth Forest Conservation for identification guidance and clarification." Points X

and XI state the following: X. Ground-truth the accuracy of applied old-growth forest definitions. XI. Provide geographically relevant information about threats, stressors, and management opportunities relevant to the ecosystem of the plan area to facilitate effective implementation. Section X does not say to accurately identify mature or old growth forest areas. And XI says nothing about where mature or old growth forest exist. A vague reference to "geographically relevant information" is not relevant to our question - where are the old growth and mature forest areas accurately identified? Or perhaps the proper question is how and when will mature and old growth forests be accurately identified? Let us state unequivocally, spatial descriptions from statistical interpretation of a sample is not close to the notion of accurately defined areas. Only when we get to "Management Approach 1.b (NOGA-FW-MA-01b) Identify areas that have the inherent capability to sustain future old-growth forest (i.e. areas of likely climate or fire refugia) over time and prioritize them for proactive stewardship for one or more of the following purposes" does the hint of old growth spatial (i.e. a map or GIS dataset) identification surface. Plan Component Standard 1 states "Old-growth forests will be determined using definitions and associated criteria established in the land management plan" or "Where these definitions and associated criteria are found to be incomplete or are non-existent in the plan, the planning unit's corresponding regional old-growth forest definitions and associated criteria" are to be used." And Standard 1 is clarified with the following "The intent of this standard is to clearly establish the old-growth forest definitions and associated criteria that will be used to determine where old-growth plan components/content proposed as part of this amendment will apply (i.e. where old-growth forests occur)." In the entire DEIS document this is the only instance of the phrase "where old-growth forests occur." Is this the best the Forest Service can do to say we need to know at the forest level where old growth and mature forest is exactly located? Again: Where are the "defined old-growth areas? Proactive stewardship is a set of material, real world actions that change the forest. It does not occur in a definition! It occurs in explicit forest areas through projects. Our concern with the location of old growth and mature forests takes us to our next set of comments. We have concerns over the lack of engagement and transparency by Region 6 regarding forest inventory. We know GIS inventories exist and need to be placed front and center for public availability. And our concern with old growth and mature forest identification only deepens when we read in DEIS Objective 1 (NOGA- FW-OBJ-01) "Within 2 years of the old-growth amendment record of decision, in consultation with Tribes and Alaska Native Corporations and in collaboration with interested States, local governments, industry and non-governmental partners, and public stakeholders, create or adopt an Adaptive Strategy for Old-Growth Forest Conservation based on geographically relevant data and information for the purpose of furthering old-growth forest desired conditions." Are we to believe that an understaffed and underfunded agency will conduct a complicated multiparty process to create an Adaptive Strategy for Old-Growth Forest Conservation? And that the strategy process will be based on geographic data when the DEIS, and documents-referenced-by-incorporation, provide no guidance for creating and sharing forest inventory! Which takes us to Standard 2.a (NOGA-FW-STD-02a) where the above parties process vegetation management under the requirement of proactive stewardship. The DEIS states "for the purposes of this standard, the term "proactive stewardship" refers to vegetation management that promotes the quality, composition, structure, pattern, or ecological processes necessary for old-growth forests to be resilient and adaptable to stressors and likely future environments." The DEIS then says that proactive management's uses are, for example, "prescribed fire, [commercial] timber harvest, and other mechanical/non-mechanical treatments used to achieve specific silviculture or other management objectives (e.g. hazardous fuel reduction, wildlife habitat improvement)." Therefore, against a background of missing forest-level stand data, a complicated multiparty process and likely inadequate funding; the agency and public dive into the theory of proactive management addressing multiple threats and topics. What could go wrong? Using only FIA data and satellite derived mapping is unacceptable. Page 7 of the DEIS states "Section 2(b) of the April 2022 EO directed the Department to inventory mature and old-growth forests on National Forest System lands, which the Forest Service published in April 2024 (Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management). The initial inventory was conducted by applying working definitions of old-growth and mature forest conditions for over 200 regional vegetation types to Forest Inventory and Analysis field plot data. Definitions and inventories have been established for forests exhibiting old-growth conditions, but mature forest conditions had not previously been ecologically defined in a consistent manner at a national scale. This initial inventory resulted in the Forest Service identifying an estimated 24.7 million acres of

old-growth forests and 68.1 million acres of mature forest conditions, representing 17 and 47 percent, respectively, of the 144.3 million acres of forested National Forest System lands."The Forest Inventory and Analysis (FIA) program of the Forest Service is a highly valuable enterprise that provides crucial information about the nation's forests. However, at the scale of, for example, the Siuslaw National Forest's 600,000 forested acres, only 240 FIA plots exist. Satellite derived map data is likewise vague as to where boundaries and transitions occur between forest types. There is no substitute for an accurately delineated and mapped forest inventory and an ongoing program to keep the stand level data accurate and relevant. Particularly as we now go into a post Old Growth FEIS period to determine where mature and "defined" old growth areas exist. Multiple issues such as, for example, forest connectivity, ecological integrity, climate resilience and forest resistance to wildfire all are tied to forest type or condition and long-term appropriate management. In our region, we know the Siuslaw National Forest has a delineated GIS stand layer for the forest. Management claims to us it "can't find" the GIS information to share. Or, requests for the data are deflected through stonewalling. Additionally, Siuslaw staff claim all public information or data released at the forest level must be cleared with Region-6 in Portland. The idea one gets from the Forest Service is that Region 6 national forests do not have readily available stand inventories. Such a notion is very hard to believe. The DEIS states "timber harvest and production are primary aspects of the agency's mission." Past stand level inventories exist from 1980s direction and work accomplished in the 1990s. Nowhere in the DEIS is the acronym GIS mentioned. Once in the DEIS the word 'map' mentioned when, on Page 151, it is stated that "The Forest Service's Climate Risk Viewer Fireshed map" refers to a socioeconomic data layer. The phrase 'mapped data' appears not once in the DEIS. The only relevant mapping exercises related to the DEIS are threat assessment maps displayed in the June 2024 Mature and Old-Growth Forests: Analysis of Threats on Lands Managed by the Forest Service and Bureau of Land Management. The Mature and Old-Growth Forests assessment also discusses Fireshed maps and data. Fireshed maps are apparently broken into project area polygons of around 25,000 acres. The Fireshed maps are derived statistically from FIA data so they are not representations of accurate stand level forest inventory data. Apparently, none of the Inflation Reduction Act's \$50,000,000 for the protection of old-growth forests was used to dust off or improve upon past forest stand inventories created during the 1990s and early 2000s. [Image - Fireshed maps of mature and old-growth forests on Forest Service and BLM lands...] Recommendation: We request that the DEIS be amended to include language directing each national forest to be transparent about forest stand inventories and GIS based data relevant to mature and old growth stands. Forest inventory data must be readily and easily accessible to the public. And the FEIS must direct the Forest Service to not obscure forest-level data in massive cloud-based inventories and confusingly assembled datasets. The Coast Range Association is prepared to work with Region 6 on how to implement the above recommendations. Currently, the Forest Service has a simple to download shapefile describing all Region 6 thinning projects under the Northwest Forest Plan. Why are other known and relevant data sets not available like this? [Image of color overlay on aerial forest image "Light blue area in the image is derived from the above referenced GIS thinning data set. Area pictured is near the inter-section of the FS 58 road and FS 54 road in the Siuslaw National Forest."] The History of National Forest Management & the DEIS's "Proactive Stewardship" Given our belief that agency interests significantly influence agency decisions, we anticipate years of contention between the public and the Forest Service over the concept of "proactive stewardship." We believe the Siuslaw National Forest and other PNW forests are particularly susceptible to inappropriate notions of stewardship for two reasons. For one, PNW forest growth is such that the temptation of timber dollars is always present. Second, regarding the Siuslaw, its marine climate and low elevation set it apart from dry southern forests and interior Region 6 forests (i.e. the Cascades). As such, we fear the agency's dry forest proactive culture may distort appropriate Siuslaw stewardship. The DEIS states "The proposed amendment recognizes the importance of proactive stewardship in order to protect old-growth forests from threats." And "Proactive stewardship - a major objective of the old-growth amendment - aims, in part, to improve the quality of old-growth forests to ensure long-term persistence on the landscape." DEIS at S-3 And finally, "Alternative 2: This alternative prohibits proactive stewardship in old-growth forests for the purpose of timber production (NOGA-FW-STD-03 as described for this alternative). This standard, along with NOGA-FW-STD-02a, ensures that the sole purpose of proactive stewardship will be to promote the composition, structure, pattern, or ecological processes necessary for old-growth forests to be resilient and adaptable to stressors and likely future environments." Given the history of Forest Service management and the observed condition of our

bioregion's national forest, the Siuslaw, the greatest past threat to the forest has been the agency itself. Look at the below stand map of the central portion of the Siuslaw. All the dark blue areas are where the Forest Service, to put it mildly, sold the forest for removal. Add in the damaging legacy of roads and what other conclusion might one arrive at? And, the Siuslaw does not have the issue of fire suppression to add to the agency's past unfortunate history.[Image - color coded map showing forest size and conditions]To repeat, given the agency's past management history, statements that "all management tools" including "commercial timber harvest" will lead to good outcomes must be viewed with great skepticism.

**Climate & Atmospheric Carbon**

The DEIS addresses carbon in several short sections and by reference in other documents. We quote the DEIS "Forest management for carbon optimization can help mitigate increasing atmospheric carbon dioxide concentrations while aligning with forest resilience and adaptability objectives (Ontl et al. 2020 and Kaarakka et al. 2021). Management actions can address vulnerabilities of forest ecosystems to climate change, past actions, chronic stressors, or other disturbances such as insect outbreaks or drought (Goodwin et al. 2020) that put sustained forest productivity at risk of decline, with consequences to carbon stewardship and stability. Many management activities like removing hazardous fuels and reducing live tree density or activities enhancing species, structural, or age-class diversity may have short-term carbon emissions but yield long-term carbon benefits through enhancing forest resiliency and therefore carbon stabilization (Krofcheck et al. 2019, Puhlick et al. 2020; Crockett et al. 2023)."The Forest Service must be very careful about applying broad statements to specific regions and national forests. Here in the Pacific Northwest, all moist forests sequester atmospheric carbon in such volumes as to require special consideration.The DEIS, being national in scope, addresses 200 vegetation types. Nowhere in the DEIS are a special set of carbon sequestering vegetation types identified - namely those vegetation types that are known to be some of the most carbon dense on the planet. The Olympic National Forest and the Siuslaw National Forest have the highest carbon density per acre of all 154 national forests. Their Forest Service 1-2 ranking for carbon-per-acre and low natural fire risk suggests a climate related burden to get things right during implementation. We are not encouraged by the treatment of climate in the DEIS narrative.

**Climate not just an issue - climate is an emergency.**

Narratives that discuss a salad of ecosystem services are inadequate for discussing an emergency. Such is the case with the DEIS and climate crisis. In fact, the word emergency does not appear once in the DEIS. The DEIS does acknowledge that a crisis of climate may exist when it quotes Executive Order 14008, Tackling the Climate Crisis at Home and Abroad (2021).However, the word crisis appears numerous times in the DEIS in regard to the Forest Service's Wildfire Crisis Strategy. We suggest that Forest Service connect the dots and elevate climate to the crisis and emergency that it is.

Page S-4 of the DEIS states that in national forests "[hellip]..tree cutting is now a relatively minor threat compared to climate amplified disturbances such as wildfire, insects, and disease. However, past management practices, including timber harvest and fire suppression, contributed to current vulnerabilities in the distribution, abundance, and resilience of old-growth forest characteristics."We find the agency's acknowledgement of climate amplified disturbances and harm from past agency management refreshing, but the spirit of these statements is not carried through in the DEIS's framing of issues and the mechanics of Alternative 2.

**Recommendation: DEIS analysis and guidance should recognize those national forests that rank in the top tier (top 10%?) globally for potential and current forest carbon sequestration per acre per year. A table of such national forests would be helpful during implementation processes. Please avoid technical narratives about carbon flux or carbon dynamics. Such discussions do not help the public to understand why it is good to conserve and provide for mature and old growth forests - they sequester and store massive quantities of climate warming carbon.**

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