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U.S. Forest Service
Attn: Document Number 2022-15185
1400 Independence Ave., SW
Washington, D.C. 20250

Re: *Request for Information (RFI) on Federal Old-growth and Mature Forests* 87 Fed. Reg. 42493 (July 15, 2022), Document Number 2022-15185

Dear Mr. Barbour:

The 21 undersigned forestry associations appreciate the opportunity to submit the following comments on the *Request for Information (RFI) on Federal Old-growth and Mature Forests*, 87 Fed. Reg. 42493 (July 15, 2022), published by the U.S. Forest Service and the Bureau of Land Management ("the Agencies"). The Agencies issued the RFI in response to Executive Order (EO) 14072, 87 Fed. Reg. 24851 (April 27, 2022). There is a clear nexus between the RFI and EO and the *Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands*, Secretary's Memorandum 1077-004 (June 23, 2022). In addition to the comments below, we fully endorse and adopt comments provided by the National Council for Air and Stream Improvement, Inc. (NCASI) regarding the RFI and do not repeat them here.

The National Alliance of Forest Owners (NAFO) is a national advocacy organization advancing federal policies that ensure private working forests provide clean air, clean water, wildlife habitat, and jobs through sustainable practices and strong markets. NAFO member companies own and manage more than 46 million acres of private working forests. The additional undersigned associations represent tens of millions of additional acres of private working forests across the country. Private working forests are a critical nature-based solution to many of our most pressing environmental challenges.

The U.S. is a global leader in modern forestry, practicing some of the highest standards for sustainable forest management in the world.[1] Private forest owners are at the forefront of sustainable forestry in the U.S., deeply rooted in a culture of long-term stewardship, continuous learning, and American innovation. Today, the U.S. enjoys some of the most abundant forest resources in the world,[2] mainly as a result of private forestry's commitment to sustainability and widespread implementation of modern sustainable forest management practices.

Sustainable forest management prioritizes forest health and resilience, and it requires careful planning decades into the future to balance what society uses today with what future generations will need. At its core, sustainable forest management creates synergy between sustainability, productivity, and long-term stewardship.

[1] Cf. Southern Group of State Foresters (SGSF), "SGSF Forest Certification Programs: Status and Recommendations in the South. 2021 Report Update," 2021.
[2] U.S. Forest Service (USFS), 2020 Resources Planning Act Assessment, https://www.fs.usda.gov/research/inventory/rpaa/2020, accessed August 18, 2022.

As stewards of the land, private forest owners recognize the environmental, spiritual, cultural, and recreational value of old-growth and mature forest types and benefits of their continued ecological integrity. **However, old-growth and mature forests on federal land are distinct from forests grown and managed for harvest on private land. Approaches on federal land should not set the predicate for or be applied to approaches on privately owned working forests**.

Comments

A healthy, diverse, and abundant forest ecosystem is immensely beneficial to the climate. At the same time, climate change and other threats like pests, diseases, invasive species, drought, and disturbances present a growing risk to forests of all types. Any definitions of old-growth and mature trees should be limited to a framework that is sufficiently broad to capture the entire U.S. and can be applied locally through the established forest planning process. Definitions should not rely on tree age and should instead support a diverse mosaic of the forests needed for effective climate mitigation. Definitions must distinguish between old-growth and mature forests on National Forest System land and forests managed for wood and fiber production on private land. The definition should explicitly be limited to federal land and clearly state that it is not intended or appropriate for use on private forestlands.

NAFO and its forestry partners are committed to engaging productively with the Agencies on strategic approaches to enable forests to reach maturity and to enable old-growth forests to remain intact on federal lands. We recognize the ecological, spiritual, cultural, and recreational value of these forest types and the necessity of their ecological integrity. Based on our review of the RFI, we would like to offer the following comments:

1. **The Agencies should develop a framework definition establishing criteria for use in localized forest planning processes. The framework for old-growth and mature forests should be grounded in science and should account for the vast differences in forests across the U.S. It should exclude arbitrary, unscientific criteria like age and size class or location that focus on individual trees rather than the whole forest. The Agencies should not attempt to develop a one-size-fits-all definition for the entire United States.[3]**

A single scientifically defensible definition for old-growth and mature forests across the entire U.S. is not achievable, and there is no generally accepted scientific definition of these concepts.[4] Identifying a framework to guide local determinations is the correct approach. It will be an incredibly complex task and one that should be undertaken with great care to minimize the risk of unintended consequences.

This is not the first time the government has attempted to define old-growth. The RFI quotes a 1989 memorandum issued by the Chief of the Forest Service.[5] However, historically, the Forest

[3] Cf. Acker, S.A.; Sabin, T.E.; Ganio, L.M.; McKee, W.A.; "Development of old-growth structure and timber volume growth trends in maturing Douglas-fir stands," *Forest Ecology and Management* 104, 1998, 265–280. p. 266.
[4] Wirth, Christian; Meissier, Christian; Bergeron, Yves; Frank, Dorothea; Fankhänel, Anja. "Old Growth Forests: A Pragmatic View." C. Wirth et al., eds, *Ecological Studies* 207 (11), DOI: 10.1007/978-3-540-92706-8_2, # Springer-Verlag, Berlin Heidelberg, 2009.
[5] Despite the RFI referencing the 1989 definition, it is difficult to find on the USFS website or, indeed, anywhere. The definition appears to be listed here: Tyrell, Lucy, "Old-Growth Forests on National Park Service Lands: NPS Views and Information," Great Lakes CPSU Report 91-1, Great Lakes Cooperative Park Studies Unit, University of Wisconsin-Madison, 1991. http://npshistory.com/publications/vegetation/gl-cpsu-91-1.pdf, Accessed August 19, 2022.

Service has typically relied on site-specific definitions through the forest planning process. For example, the 2012 Planning rule adopted during the Obama Administration sought to address old-growth issues through the locally developed Forest Plan because "these issues are best identified and determined at the forest or grassland level, reflecting ecosystems and plant and animal communities on the unit."[6] On a practical level, each National Forest has a Forest Plan that must "provide for key characteristics associated with terrestrial and aquatic ecosystem types" including "old-growth."[7] A single definition would be a significant departure from well-established norms at the Forest Service.

The EO recognizes that there are "regional and ecological variations"[8] that complicate a definition. The RFI goes further, noting there are "variations in ecological definitions of old [growth] forests in response to the diversity of forest types across the nation" and "today, most scientists agree that old-growth forests differ widely in character with age, geographic location, climate, site productivity, and characteristic disturbance regime."[9] This is the correct way to consider these concepts.

Other organizations, including the Society of American Foresters,[10] the Forest Stewardship Council,[11] and the Sustainable Forestry Initiative,[12] have also attempted to define old-growth. Recognizing the complexities laid out by the RFI in the paragraph above, they appropriately kept their definitions high-level and framework based. We recommend the Agencies adopt this approach, despite the challenging nature of the task.

"Mature forests" are a much less recognized category for forests and any attempt to develop a definition requires even more care. An attempt was made by Oliver and Larson (1996) to define "mature" as the stage between closed canopy and gap initiation (old-growth) conditions.[13] The mature stage was argued to be the stage of re-initiation of regeneration. However, this model only seems to apply to stands regenerated following stand-replacing events, such as wildfire or insect outbreaks. Oliver and Larson's model is not widely used, and other research and publications defining "mature" are lacking.

Even those who seek a simple, universal definition find they need to modify it. For instance, some advocates propose a uniform age threshold (e.g., 80 years) for old-growth across the whole U.S. to promote development of older trees. Yet, when one such advocate conducted an exercise to map old-growth and mature forests across the U.S., he did not apply a universal definition like the one he is proposing the federal government adopt. Instead, he compared forest stands within each region to determine which stands in the region were relatively older than other stands. In other words, he could not use his own recommendation because regional variations make it impossible to apply a single age threshold across the U.S.[14]

Given there is no consensus on a scientific basis for defining old-growth and mature forests, the Agencies should develop a framework for developing localized definitions

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[6] National Forest System Land Management Planning, 77 Fed. Reg. at 21162 (April 9, 2012) (Amending 36 CFR § 219), p.21218.
[7] Ibid, 21213.
[8] EO, Sec. 2(b) a.
[9] RFI, 87 Fed. Reg. at 42493.
[10] Society of American Foresters, *The Dictionary of Forestry*, Society of American Foresters: Bethesda, MD, 2018.
[11] Forest Stewardship Council. "FSC-US Forest Management Standard. v1.1," 2018, https://fsc.org/en/document-centre/documents/resource/242, accessed August 18, 2022. p. 90.
[12] Sustainable Forestry Initiative, "SFI Definitions: Section 14," 2022 Standards and Rules, https://forests.org/wp-content/uploads/2022_SFI_StandardsandRules_Definitions.pdf, accessed August 19, 2022, p. 8.
[13] Oliver, C. D., & Larson, B. C; Forest Stand Dynamics (updated edition), New York: John Wiley, 1996.
[14] DellaSala, Dominick. "Coast to Coast Mature/Old Growth Assessment for the USA." July 28, 2022. https://youtu.be/KamQ6NY7HK0 Accessed August 18, 2022.

through the established forest planning process. The Agencies should further explain that such definitions will inform policy. Most importantly, the Agencies should incorporate sufficient flexibilities to ensure the framework can be modified based on the best available science and/or on-the-ground expertise.

We recommend a framework definition that considers successional and structural criteria as described in Wirth et al. 2009. As the authors describe, **this definition should include:**

- **Existence of large, old, late-successional tree species with ages close to their life expectancy**
- **Uneven-aged**
- **Presence of canopy gaps**
- **Large snags and logs in varying stages of decay**[15]

We also note that even a definition this broad may not apply across the entire United States, so an index of reference criteria, referred to by some as "old-growthiness" may help determine old-growth along a spectrum.[16]

"Mature forests" can be a highly variable category for forests and this definition requires even more care. As stated previously, Oliver and Larson attempted to define mature forests, as the stage between closed canopy and gap initiation (old-growth) conditions,[17] but their approach is novel, not widely recognized, and very limited in its application. **The framework definition of mature forests should focus on unique forest conditions. It should not include all forests with closed canopy stands.**

2. **The Agencies should focus on old-growth and mature stand characteristics in crafting their definitional frameworks, not individual trees.**

Given the direction from the EO to define old-growth and mature forests, it is important to focus on forest and stand dynamics rather than characteristics of individual trees. Many recommended definitions focus on tree age and size.[18] We urge the Agencies to instead focus on a forest stand reflective of the mosaic of trees and vegetation at various seral stages and disturbance patterns.

The Secretary's Memorandum does not point to individual trees, but rather forest area estimates:

> USDA Forest Inventory and Analysis (FIA) data indicates that there are 134 million acres of total forest area on land managed by the agency within the contiguous U.S., of which 56 million acres are older than 100 years and approximately 11 million acres are estimated to be 200 years or older.[19]

The definitional framework for old-growth and mature forests should follow this approach of looking at forest stands. **For this reason, it would be inappropriate to define old-growth or**

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[15] Wirth et al.: 190-201.
[16] Spies, Thomas A. and Franklin, Jerry F. "Old Growth and Forest Dynamics in the Douglas-Fir Region of Western Oregon and Washington. National Areas Journal, 8 (3), 1988, 190-201.
[17] Oliver et al.
[18] See for instance: "Open Letter to President Biden and Members of Congress from Scientists: It is essential to Remove Climate-Harming Logging and Fossil Fuel Provisions from Reconciliation and Infrastructure Bills," November 4, 2021. https://johnmuirproject.org/wp-content/uploads/2021/11/ScientistLetterOpposingLoggingProvisionsInBBB_BIF4Nov21.pdf,Accessed August 15, 2022.
[19] Secretary's Memorandum, 1077-004, Sec. 1g.

mature based on individual tree size or age. Instead, the definitional framework should identify characteristics of forest stands as a whole.

A follow-on implication is that the location of old-growth and mature stands may not be static in location but will evolve over time – especially in the face of a changing climate and disturbances. Any inventory of old-growth and mature stands on national lands should be understood as a snapshot in time, and the Agencies should explicitly recognize that landscapes are constantly evolving.

3. **The definitional framework must be created with explicit policy goals in mind, such as the EO's direction to "retain and enhance carbon storage."[20]**

The EO sets out several specific policy purposes for its exercise to define old-growth and mature forests, though the RFI does not make note of these policy goals. Yet any definition should acknowledge that it is being made with policy goals in mind; as noted in Comment 1, creating a definition of old-growth and mature forests has no scientific basis and is typically only conducted for policy purposes.

One policy purpose for this definitional framework should be carbon stewardship: The EO calls for retaining and enhancing carbon storage in forests on federal land, including old-growth and mature forests. The Secretary's Memorandum also highlights the opportunity and the risk presented by forests for carbon sequestration and storage:

> America's forests—from mature and old-growth stands to working forests—already capture more than 10 percent of our nation's carbon emissions each year, and they have the potential to do more. Yet forest mortality from climate change-induced drought, pests and wildfire is a major driver of carbon emissions from some U.S. forests and could result in additional forests becoming carbon sources rather than carbon sinks.[21]

Some activists overstate the climate contributions of old-growth and mature forests relative to other forest types in an effort to prevent active management. In fact, one study claimed boreal and old-growth forests stored twice the entire global land sink reported by the United Nations Intergovernmental Panel on Climate Change (IPCC), a seeming impossibility.[22] But recent research described below suggests the key studies highlighting the climate sink of old-growth forests are incorrect.

Instead, a well-balanced landscape of different forest types and categories is best for achieving the maximum carbon benefit from forests of all kinds. Trees that grow rapidly – typically younger, less mature trees – will sequester more carbon annually; larger trees sequester less carbon each year.[23] Furthermore, mature trees will eventually reach the end-of-life stage and die, decay, and emit carbon, while younger trees continue to grow and sequester carbon as they reach maturity. For this reason, a mosaic of diverse forest stands can optimize sequestration *and* storage over time. A focus on climate benefits also underscores the importance of focusing on old-growth and mature forest stands (rather than individual trees). **If the federal policy objective is to optimize forest carbon sequestration and storage**

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[20] EO, 87 F.R. at 24852.
[21] Secretary's Memorandum, 1077-004, Sec. 1c.
[22] Gundersen, Per; Thybring, Emil E.; Nord-Larsen, Thomas; Vesterdal, Lars; Nadelhoffer, Knute J.; and Johannsen, Vivian K; "Old-growth forest carbon sinks overestimated," *Nature* 591, March 25, 2021, https://doi.org/10.1038/s41586-021-03266-z, p. E21.
[23] NCASI, "Forest Carbon from Young vs. Old Forests," January 2021, https://www.ncasi.org/wp-content/uploads/2021/01/NCASI22_Forest_Carbon_YoungVsOld_print.pdf, Accessed August 15, 2022.

potential, a mosaic of dynamic forest stands of various age and size classes across the landscape should be the intended future condition.

Private working forests provide an example of how a mosaic of age and size classes across a landscape optimizes climate mitigation benefits. The IPCC recognizes that working forests play a key role in global efforts to reduce and mitigate carbon emissions. Climate mitigation from our nation's working forests includes two important elements: forest carbon sequestration and storage, and the carbon benefits from long-lived wood products. Together, sustainably managed working forests and the forest products they produce are already one of our nation's greatest assets for achieving our climate goals: U.S. forests *and* forest products offset 15% of U.S. industrial carbon emissions every year.[24]

More than one-third of the U.S. is covered by forests, and 47% of U.S. forests are privately owned working forests – forests owned by families, businesses, and investors.[25] These forests are sustainably managed to supply a steady, renewable supply of domestically-grown wood for lumber, energy, paper, and packaging, providing more than 5,000 items that consumers use every day. They support 2.5 million well-paying American jobs, mainly in rural communities.[26]

Approximately 90% of the timber harvest for domestic wood and fiber used to make forest products in the U.S. comes from private working forests. At the same time, these forests account for 80% of net forest carbon sequestration, removing more carbon from the atmosphere than is emitted by all passenger vehicles in the U.S. each year.[27] Private working forests in the U.S. also store nearly half of the carbon stored in all U.S. forests combined. **These numbers show that *managed* forests are the workhorses producing climate benefits.[28]**

These carbon benefits extend to the built environment through long-lived solid wood products. Because wood is 50% stored carbon by weight, long-lived wood products also store vast amounts of carbon. Each year, U.S. wood products add nearly 100 million metric tons of CO_2e to the nearly 9.8 billion tons of CO_2e stored in the wood products carbon storage pools – or nearly three times the carbon stored in all national parks combined. Advanced engineered wood products, like mass timber, present an enormous opportunity to lower the embodied carbon footprint in the built environment, as demonstrated by whole building lifecycle analyses (LCA). Innovative emerging forest products, including bio-based materials, biofuels, and other products that displace petroleum- or fossil-based alternatives, also have significant potential to further extend the carbon benefits of managed forests.

Information about the climate effects of forests and forest products, and source references for the above statistics, can be found at ForestCarbonDataViz.org, a visualization of government data created by NAFO.

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[24] Janowiak, M.; Connelly, W.J.; Dante-Wood, K.; Domke, G.; M.; Giardina, C.; Kayler, Z.; Marcinkowski, K.; Ontl, T.; Rodriguez-Franco, C.; Swanston, C.; Woodall, C.W.; Buford, M. "Considering Forest and Grassland Carbon in Land Management," Gen. Tech. Rep. WO-95, Washington, D.C.: USFS, 2017, p.68.

[25] Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A., coords.; "Forest Resources of the United States, 2017: a technical document supporting the Forest Service 2020 RPA Assessment." Gen. Tech. Rep. WO-97. Washington, DC: USFS, 2019, https://doi.org/10.2737/WO-GTR-97, p. 233.

[26] Forest2Market, "The Economic Impact of Privately-Owned Forests in the 32 Major Forested States," https://nafoalliance.org/wp-content/uploads/2018/11/Forest2Market_Economic_Impact_of_PrivatelyOwned_Forests_April2019.pdf#page=9, 2019.

[27] Oswalt et al, p. 223.

[28] NCASI, "Explanation of forest carbon data used for NAFO Environmental Benefits Report" https://nafoalliance.org/wp-content/uploads/2022/07/NCASI-2022-C-Data-Memo-to-NAFO-with-Tables.pdf, June 1, 2022, accessed August 18, 2022.

As the EO notes, declining forest health is a "pressing threat" on federal lands: "catastrophic wildfires driven by decades of fire exclusion and climate change."[29] The EO also notes future threats could decrease carbon sequestration and storage by increasing forest mortality: "The primary threats to forests, including mature and old-growth forests, include climate impacts, catastrophic wildfires, insect infestation, and disease."[30] The Secretary's Memorandum responds to the EO by highlighting carbon stewardship as a goal for National Forest System lands:

> Carbon Stewardship. Develop recommendations to leverage partnerships and private-sector capital in science and policy-based carbon optimization projects on National Forest System lands, including analysis of potential carbon benefits derived from National Forest System lands, utilizing a carbon accounting certification process that builds on existing work throughout the Administration, is consistent with international standards, and is informed by sound science.[31]

The EO and the Agencies have appropriately identified carbon stewardship as an important goal. However, carbon stewardship should not be conflated with the prioritization of old-growth and mature forests. Old-growth and mature forests have many valuable characteristics but are not, alone, a silver bullet for climate change. For carbon stewardship to be successful, carbon storage *and* carbon sequestration must both be prioritized, which means the climate-smart approach requires a diversity of seral stages encompassing a variety of forest age and size classes across the landscape on federal land.

4. **The Agencies should recognize that management is critical to the ecological integrity and resilience of forested landscapes. In particular, sustainable forest management should part of a suite of tools to address the primary threats to old-growth and mature forests, defined by the EO as "climate impacts, catastrophic wildfires, insect infestation, and disease.[32] Extra care should be taken where old-growth and mature forests abut private lands, especially when it comes to wildfire.**

Among the policy goals of the EO are direction to promote old-growth and mature forests' continued health and resilience' and "to mitigate the risk of wildfires."[33] The Secretary's Memorandum highlights the many values of old-growth and mature forests:

> Carbon sequestration, water, biodiversity, critical habitat, and unique ecological features such as old-growth. In particular, many old-growth and mature forests have a combination of higher carbon density and biodiversity that contributes to both carbon storage and climate resilience.[34]

Yet the Secretary's Memorandum also points to challenges to old-growth and mature forests that threaten these values: "Many are also at increasing risk of mortality through acute and chronic disturbances such as drought, wildfires, type conversion, and insect outbreaks."[35] As old-growth and mature forests face increasing mortality risk, they may become less resilient.

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[29] EO, 87 F.R. at 24852.
[30] EO, 87 F.R. at 24851.
[31] Secretary's Memorandum, 1077-004, Sec. 2b1.
[32] EO, 87 F.R. at 24851.
[33] EO, 87 F.R. at 24852.
[34] Secretary's Memorandum, 1077-004, Sec. 1f.
[35] Secretary's Memorandum, 1077-004, Sec. 1f.

Addressing resilience will therefore be an important component of any strategy to protect old-growth and mature trees.

On U.S. federal lands experiencing the outcomes of over 100 years of fire suppression, active management is necessary to foster resilience.[36] The National Association of State Foresters (NASF) highlights "lack of management" as a main factor in creating age imbalances, leading to "a lack of early successional habitat for species" and "the risk of wholesale alterations in forest ecosystems," especially if "trees in large swaths of forest reach the end of their natural lifespans (and begin dying) all at the same time."[37]

As a result, any definition and any ensuing policies coming from the Agencies and White House to address old-growth and mature forests should incorporate forest management where appropriate, and certainly not exclude it as a possibility. This commitment in the EO should be adhered to:

> My Administration will *manage* forests on Federal lands, which include many mature and old-growth forests, to promote their continued health and resilience; retain and enhance carbon storage; conserve biodiversity; mitigate the risk of wildfires; enhance climate resilience; enable subsistence and cultural uses; provide outdoor recreational opportunities; and promote sustainable local economic development (emphasis added).[38]

As the EO lays out, management can yield various positive outcomes for forests. As the climate changes, adaptation of conservation approaches will be necessary and will increasingly require active management.[39] In addition to "conservation, protection and restoration measures" for natural forests, the IPCC lists adaptation options for managed forests, "including sustainable forest management, diversifying and adjusting tree species compositions to build resilience, and managing increased risks from pests and diseases and wildfires."[40]

USDA provides insight into how to operationalize this type of forest management specific to old-growth and mature trees. According to the Secretary's Memorandum:

> The appropriate science-based practices that will sustain resilient forests and stabilize forest carbon are place specific. Preferential management techniques might include mechanical thinning; proactive fire use including prescribed fire and cultural burning; management approaches that consider composition, competition and structure in forest stands; promoting the growth of tree seedlings; adopting and continuing soil-friendly practices; or utilizing climate-forward reforestation techniques with the right trees in the right places and at appropriate scales.[41]

The need for management should consider the primary threats to old-growth and mature forests, which the EO correctly identifies as "climate impacts, catastrophic wildfires, insect infestation, and disease."[42] A common misconception perpetuated by some activists is that

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[36] See cf. McShea, William J.; Healy, William M.; Devers, Patrick; Fearer, Todd; Koch, Frank; Stauffer, Dean; Waldon, Jeff. "Forestry Matters: Decline of Oaks Will Impact Wildlife in Hardwood Forests." *The Journal of Wildlife Management*, 71 (5), 1717-1728, 2007.
[37] NASF. "Recommendations to Improve the Health and Sustainability of Federal Forest Resources," https://www.stateforesters.org/wp-content/uploads/2021/09/2021-01-Policy-Statement-on-Federal-Lands.pdf, September 8, 2021; accessed August 17, 2022.
[38] EO, 87 F.R. at 24851.
[39] IPCC, 2022: p.21.
[40] IPCC, 2022: p.21.
[41] Secretary's Memorandum, 1077-004, Sec. 1g-h.
[42] EO, 87 F.R. at 24851.

harvests are the biggest threat to old-growth and mature trees; in the U.S., this is simply not the case. In fact, most mill infrastructure in the United States is designed to take a range of average-sized logs; they could not process unusually large logs even if they wanted to. The Washington Post recently published a story about saving California's sequoias that included a comprehensive set of scientific rebuttals of one such activist's work.[43] Harvests occur on less than 2% of the forest land base each year, most of which is from private working forests – forests intentionally grown and managed for production, and replanted following harvest. In the U.S., the biggest threat to all forests is conversion to another land use.[44]

Old-growth and mature forests which have recently experienced or are at threat of significant disturbance must continue to be managed. USDA's recently announced emergency action to protect sequoias illustrates this need.[45] The giant monarch sequoias are undoubtedly old-growth; while age should not be used as a marker for old-growth forests, giant monarch sequoias are among the oldest living things on earth.[46] Thirty-two of the 37 sequoia groves have burned or partially burned since 2015, including many giant monarchs.[47] To address the challenge, the Forest Service will take emergency action on 13,337 acres across 12 groves to "remove surface and ladder fuels that present the greatest wildfire risk and include hand cutting of small trees, mechanical removal of trees, application of borate on green stumps, pulling duff away from the base of large giant sequoias and prescribed burning."[48]

Management is especially important where wildfire is a threat. As the EO states, the Agencies:

> Shall continue to jointly pursue wildfire mitigation strategies, which are already driving important actions to confront a pressing threat to mature and old-growth forests on Federal lands: catastrophic wildfires driven by decades of fire exclusion and climate change.[49]

Private forestlands threatened by conditions on federal lands must be protected from wildfire and other disturbances. In addition to threatening forests on federal land, wildfires and other disturbances on federal land also pose a significant threat to adjacent private forestland. The fires are getting worse due to climate change, and they also destroy healthy forests and emit greenhouse gases in a climate-worsening feedback loop.[50] Any old-growth and

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[43] See for instance: "In environmental circles, [Chad] Hanson is a controversial figure. Other scientists have challenged his methodology and accused him, in their own studies, of misusing data on issues such as how wildfires affect spotted owls and the effectiveness of forest thinning. One of those rebuttals described the work of Hanson and others as having "garnered substantial attention and fostered confusion about the best available science." Partlow, Joshua. "California's Giant Sequoias Are Burning Up. Will Logging Save Them?" *Washington Post*, 16 Aug. 2022, www.washingtonpost.com/climate-environment/2022/08/16/giant-sequoias-fire-mariposa-grove/, accessed August 22, 2022.

[44] See https://nafoalliance.org/issues/strong-markets/.

[45] The National Alliance of Forest Owners is a supporter of the bipartisan Save our Sequoias Act: https://republicans-naturalresources.house.gov/newsroom/documentsingle.aspx?DocumentID=411238

[46] National Park Service. "Age of the Giant Sequoias." https://www.nps.gov/parkhistory/online_books/cook/sec6.htm#:~:text=Since%20actual%20ring%20counts%20on,exceed%203%2C500%20years%20in%20age. Accessed August 15, 2022.

[47] USDA. "Forest Service Taking Emergency Action to Protect Giant Sequoias." July 22, 2022. https://www.usda.gov/media/press-releases/2022/07/22/forest-service-taking-emergency-action-protect-giant-sequoias#:~:text=With%20the%20emergency%20action%2C%20giant,through%20the%20end%20of%202024. Accessed August 15, 2022.

[48] Ibid.

[49] EO, 87 F.R. 24852.

[50] See for instance Halofsky, J.E., Peterson, D.L. & Harvey, B.J. "Changing wildfire, changing forests: the effects of climate change on fire regimes and vegetation in the Pacific Northwest, USA." *Fire Ecology* 16, 4, 2020. https://doi.org/10.1186/s42408-019-0062-8 and Williams, A. P., Abatzoglou, J. T., Gershunov, A., Guzman-Morales,

mature forest strategy should enhance the work already being done to address fire, including the 10-year plan and the billions in funding and wildfire commission included in the bipartisan infrastructure law.

Any approach to address wildfire threats to old-growth and mature forests should take special care to remove threats on federal lands that border private forestland, to protect the important climate and economic benefits private forestlands provide, as described previously in these comments. In particular, the Agencies must 1) Fully suppress and put fires out during fire season; 2) Use all available public and private resources to put fires out; and 3) Partner with private forest owners to protect both public and private land.

5. **Any old-growth definition should explicitly state it only applies to federal lands and that such a definition is not intended or appropriate for privately owned forests.**

The EO lays out a focus on old-growth and mature forests "on federal lands," and welcomes coordination on conservation measures with "any landowners who *volunteer* to participate" (emphasis added).[51] The RFI underscores this focus on federal lands:

> Analysis of the threats to mature and old-growth forests on federal lands, including from wildfires and climate change; and development of policies to institutionalize climate-smart management and conservation strategies that address threats to mature and old-growth forests on Federal land.[52]

This is necessary but insufficient clarification. **The definition should explicitly state it only applies to federal land, and also that it does not apply to private land.** As we explain in comments 1 and 3 above, definitions of old-growth and mature forests are typically made for policy purposes, and the quote above ("development of policies") reiterates that point. The Agencies' definition will also be developed for a specific set of circumstances: federal land use planning. The Secretary's Memorandum notes, "The majority of these forests are in congressionally or administratively designated areas designed to protect and preserve their natural values."[53] **Since the definition is intended for federal policy and federal land use planning, the agencies should be clear that the definition is not designed or intended for use outside of these purposes, including application on private working forests actively managed for timber and fiber production, whether planted or naturally regenerated.**

This clarification that the definition is for federal lands will prevent activist stakeholders from seeking to leverage federal definitions of old-growth and mature forests to restrict harvests on private lands. Activists are actively calling for this to happen: one explicitly cited this RFI process as a way for his supporters to limit harvests in a recent webinar.[54] If applied to private lands, this could severely restrict supply for renewable forest products at a time when countries are trying to shift away from higher carbon building materials, packaging, and other products.[55]

J., Bishop, D. A., Balch, J. K., & Lettenmaier, D. P. (2019). "Observed impacts of anthropogenic climate change on wildfire in California." Earth's Future, 7, 892–910. https://doi.org/10.1029/2019EF001210.

[51] EO, 87 F.R. 24851.

[52] RFI, 87 F.R. 42493.

[53] Secretary's Memorandum, 1077-004, Sec. 1g.

[54] DellaSala.

[55] For instance, Seattle 350 recommends, "On private lands, DNR [Washington State Department of Natural Resources] should double the harvest rotation to minimum 70 years." DellaSalla mapped old growth across the U.S. and his results indicate 36 percent of all forests in the U.S. are mature; and just 35 percent of the mature forests are

6. **The EO explicitly calls for the old-growth and mature forest exercise to "promote sustainable local economic development."[56] Any decisions or actions resulting from the RFI could have impacts extending beyond the scope of federal jurisdiction. The Agencies and the White House should take great care to avoid unintended consequences, including the following:**

Loss of Domestic Production (Leakage): If we make management and harvest more constrained in the U.S., we will import more from elsewhere. The U.S. typically sources almost 80% of its wood domestically. Approximately 10% of that amount is harvested from federal and state lands, and 90% from private lands. If federal harvests were to be restricted further, imports of wood would need to increase some to meet that demand. If harvests on private lands were also restricted, imports would need to increase even more. The U.S. has some of the best regulated and most sustainable forestry in the world,[57] so the risk is high that imports would be less sustainable or even from countries at high risk of deforestation.

Loss of Employment: The forestry and forest products sector supports 2.5 million well-paying American jobs, mainly in rural communities**.** Any mischaracterization of a federal definition could lead to harvest restrictions in the U.S. and put these good jobs at risk.

Perverse incentive – "cobra effect": In creating rules to protect old-growth and mature forests, there is the chance that the problem could be made worse. In particular, there is the risk of the "cobra effect," creation of an incentive that has the opposite of the intended effect.[58] One example of this can be found in Seattle350's policy, "On DNR lands, there should be no logging of trees of 80+ years. Also double the harvest rotation to minimum 70 years."[59] This is in addition to their proposed extended rotations on private lands in Washington. The intent of these policies is to protect old-growth forests by limiting harvests and extending rotations. This may not be the ultimate policy the federal government develops, but it is an argument frequently made in an effort to protect old-growth and mature trees. In practice, the likely outcome of an age-specific definition is that forest managers will conduct harvests before the trees reach the threshold age. It is worth considering how any federal policy could have this type of unintended consequence, whether directly or indirectly.

The agencies should take care to ensure that their definition does not create unintended consequences, such as the examples given here.

Conclusion

Private forest owners recognize the inherent symbolic, spiritual, cultural, and recreational value inherent in old growth forests. They also recognize that climate change and other threats like pests and diseases and invasive species present a growing risk to forests, and that any federal policy should address those threats, as well. Any definitions of old-growth and mature trees should be limited to a framework that is sufficiently broad to capture the entire U.S. and can be applied locally through the established forest planning process. Definitions should not rely on

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on federal lands. But he recommends 50% be preserved – meaning some on non-federal land.
Seattle 350, "Forestry FAQ," https://350seattle.org/forestry-faq/. Accessed August 14, 2022. Note: Washington State DNR issues harvest permits, including on all private forest lands.

[56] 87 F.R. at 24852.

[57] Cf. USFS 2020 Resources Planning Act Assessment, https://www.fs.usda.gov/research/inventory/rpaa/2020 Accessed August 18, 2022, and SGSF.

[58] Siebert, Horst (2001). *Der Kobra-Effekt. Wie man Irrwege der Wirtschaftspolitik vermeidet* (in German). Munich: Deutsche Verlags-Anstalt.

[59] Seattle 350.

tree age and should instead support a diverse mosaic of the forests needed for effective climate mitigation. Definitions must distinguish between old-growth and mature forests on National Forest System land and forests managed for wood and fiber production on private land. The definition should explicitly be limited to federal land and clearly state that it is not intended or appropriate for use on private forestlands.

NAFO and its forestry partners are committed to engaging productively with the Agencies on strategic approaches to optimize the environmental, social, and economic benefits of our nation's forests. NAFO appreciates the opportunity to comment on the RFI. Please contact Anne Clawson at AClawson@nafoalliance.org with any follow up questions.

Respectfully,

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Submitted on behalf of:

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Association of Consulting Foresters
California Forestry Association
Forest Landowners Association
Forestry Association of South Carolina
Maine Forest Products Council
Massachusetts Forest Alliance
Mississippi Forestry Association
National Woodland Owners Association
New Hampshire Timberland Owners Association
North Carolina Forestry Association
Ohio Forestry Association
Pennsylvania Forest Products Association
Southeastern Lumber Manufacturers Association
Tennessee Forestry Association
Virginia Forestry Association
Washington Forest Protection Association
West Virginia Forestry Association
Wildlife Mississippi