

Center for Biological Diversity • Earthjustice • Environment America • Environmental Law & Policy Center • Friends of Douglas-Fir National Monument • Larch Company • League of Conservation Voters • Natural Resources Defense Council • Oregon Wild • Sierra Club • Southern Environmental Law Center • Standing Trees • Wild Heritage

November 19, 2021

Council on Environmental Quality
Office of Budget and Management

Re: Docket CEQ—2021—0003—0001

Dear CEQ and OMB officials,

The undersigned organizations representing millions of members and supporters submit these timely comments on the Federal Agency Climate Adaptation and Resilience Plans for the U.S. Department of Agriculture’s Forest Service and the Department of Interior’s Bureau of Land Management.

Among the most significant and far-reaching steps the USDA and DOI can take to enhance climate adaptation and resilience on public lands is to protect older (mature and old-growth) forests and trees across all federal forestlands because of their outsized contributions to storing and sequestering carbon—and for the other ecological co-benefits they provide. The absence of even a mention of older forests and trees in the USDA and DOI action plans is a glaring omission that ignores sound science and the scientific consensus that natural solutions to increase nature-based storage by drawing down accumulated atmospheric CO₂ is necessary now even if aggressive greenhouse emissions reduction targets are achieved by the 2030 and 2050 critical timelines.¹

This summer, after decades of controversy over the liquidation of older forests, the Biden Administration smartly announced that it would halt large-scale old-growth logging in the Tongass National Forest. The rationale underpinning that decision holds true for all federal forests across this country and we urge the Biden Administration to include protecting mature and old growth forests and trees across all federal lands in their climate adaptation and resiliency action plans.

Older Forests and Trees Provide Disproportionate Climate Benefits and Critical Ecological Services

¹ Bronson W. Griscom, et. al, Proceedings of the National Academy of Sciences Oct 2017, 114 (44) 11645-11650; DOI:10.1073/pnas.1710465114. Lutz, J.A., T.J. Furniss, D.J. Johnson, S.J. Davies et. al. 2018. Global Importance of Large-Diameter Trees. Global Ecol Biogeorg. 2018;1-16.

Protecting existing carbon stocks concentrated in mature and old-growth forests and trees is a highly and immediately effective, low- or zero-cost approach to removing carbon dioxide from the atmosphere, which would help the Biden Administration meet its climate and biodiversity protection goals set forth in Executive Order 14008. Indeed, the Biden Administration has already directed federal agencies to increase forest protection over the coming decade in its “Nationally Determined Contribution” submitted to the United Nations Framework Convention on Climate Change.² And earlier this month at COP26 in Glasgow, President Biden stated “Conserving our forests... is an indispensable piece of keeping our climate goals within reach.”

Older forests and trees are carbon and biodiversity powerhouses, contrary to the unsupported assertion in the recently released *Long-Term Strategy of the United States*.³ They store massive amounts of carbon while living. Importantly, the rate of carbon accumulation will continue to increase as a tree gets older and larger⁴ and remains robust for extended periods of time at the stand level, even as individual trees begin to die.⁵

And, once individual trees die due to old age or a disturbance event, they continue to hold onto (store) their accumulated carbon for long periods of time.⁶ Therefore, some of the most significant and durable gains in carbon storage and sequestration over the next few decades can thus come from protecting federal mature and old-growth forests and trees and allowing forests to grow older.⁷

The benefits of protecting older forests do not stop with climate change mitigation—they are also an important adaptation tool. Such forests are essential biodiversity reservoirs—the profound complexity of older forests sets the stage for the abundance of life found in these areas. And with a rapidly changing climate producing more droughts and greater storm events, older forests are

² The United States of America Nationally Determined Contribution Reducing Greenhouse Gases in the United States: A 2030 Emissions Target (Apr. 2021), available at <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf> (last viewed Apr. 27, 2021).

³ United States Department of State & United States Executive Office of the President, *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* at 46 (2021) (“Substantial forested lands, including large portions of our Western public lands, now have older forests which sequester less CO₂ and are more vulnerable to natural disturbances.”)

⁴ Stephenson, N. Das, A., Condit, R. et al. Rate of tree carbon accumulation increases continuously with tree size, *Nature* 507, 90-93, January 15, 2014, Luyssaert, S., et al. 2008. Old-growth forests as global carbon sinks. *Nature* 455:213-215.

doi.org/10.1038/nature07276. Sillett, Stephen C., Robert van Pelt, George W. Koch, Anthony R. Ambrose, Allyson L. Carroll, Marie E. Antoine and Brett M. Mifsud. “Increasing wood production through old age in tall trees.” *Forest Ecology and Management* 259 (2010): 976-994. <https://doi.org/10.1016/j.foreco.2009.12.003>.

⁵ He, et al., Relationships between Net Primary Productivity and Forest Stand Age in U.S. Forests 26 *Global Biogeochemical Cycles* 3009 (2012); Law, Beverly E., Osbert Jianxin Sun, John L. Campbell, Steve Van Tuyl and Peter E. Thornton. “Changes in carbon storage and fluxes in a chronosequence of ponderosa pine.” *Global Change Biology* 9 (2003): 510-524.

<https://doi.org/10.1046/j.1365-2486.2003.00624.x>; Keeton, William S., Andrew A. Whitman, Gregory C. McGee and Christine L. Goodale. “Late-Successional Biomass Development in Northern Hardwood-Conifer Forests of the Northeastern United States.” *Forest Science* 57 (2011): 489-505. <https://doi.org/10.1093/forestscience/57.6.489>.

⁶ Stenzel, Jeffrey E., Kristina J. Bartowitz, Melannie D. Hartman, James A. Lutz, Crystal A. Kolden, Alistair M. S. Smith, Beverly E. Law, et al. “Fixing a snag in carbon emissions estimates from wildfires.” *Global change biology* (2019): n. pag. <https://doi.org/10.1111/gcb.14716>; Campbell, John L., Joseph B. Fontaine and Daniel C. Donato. “Carbon emissions from decomposition of fire-killed trees following a large wildfire in Oregon, United States.” *Journal of Geophysical Research* 121 (2016): 718-730. <https://doi.org/10.1002/2015JG003165>.

⁷ Moomaw WR, Masino SA and Faison EK (2019) Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good. *Front. For. Glob. Change* 2:27. doi: 10.3389/ffgc.2019.00027

associated with clean water production and flood amelioration.⁸ Further, as trees age and grow wider and taller, their bark thickens, conferring natural resistance to wildfires.⁹ Meanwhile, smaller trees re-growing after logging have less resilience to and increase the risk of wildfire. Mature and old growth forests also harbor cultural resources. Protecting them from logging would help address environmental justice.

Old growth delivers carbon and biodiversity benefits in concentrated form. These storehouses have historically been squandered on private and public lands alike and today there simply isn't enough old growth left across all regions of the country to respond to the Administration's climate or biodiversity commitments at the necessary scale. For this reason, restoring the extent of old growth is a tremendous opportunity for the U.S. to respond to the Administration's climate commitments at the necessary scale. While old growth forests must be protected to prevent their loss of carbon stored, mature forests and trees—those poised to continue to store more carbon as they become old growth—must also be protected.

The Forest Service and Bureau of Land Management Must Revise Their Approach to Carbon Management

The Forest Service now recognizes that timber harvest emits carbon. However, their current approach to carbon accounting is that carbon stored in wood products, burning wood for electricity, and re-growing younger forests over long time horizons, offsets emissions lost to logging. This accounting approach allows the Forest Service to log mature and old growth trees as part of restoration, resilience and hazardous fuel reduction projects. Yet, comprehensive carbon accounting and numerous recent scientific publications do not support this narrative.¹⁰ Nationally, carbon losses from timber harvests are five times higher than those from all other disturbances *combined*, including wildfire, and ten times higher than emissions lost to fire and insects alone.¹¹

That's because logging immediately releases decades of accumulated carbon back into the atmosphere with only a fraction of live-tree carbon stored in wood products long-term.¹² The released carbon is irrecoverable on any time scale relevant to avoiding the worst impacts of climate change.¹³ Even following a high intensity wildfire, the vast majority of the carbon is left on site.¹⁴

⁸ Frissell, Christopher A. "Ecological Principles." In *Watershed Restoration: Principles and Practices*, edited by Jack E. Williams, Christopher A. Wood, Michael P. Dombeck, 96-115. Bethesda, MD: American Fisheries Society, 1997.

⁹ Agee, James. 1993. *Fire Ecology of Pacific Northwest Forests*. Washington, D.C.: Island Press. 121-24.

¹⁰ Leturq et al, "GHG displacement factors of harvested wood products - the myth of substitution", Scientific Reports (2020), Howard et al. Wood product carbon substitution benefits: a critical view of assumptions. Carbon Balance Management. (2021) 16:9 <https://doi.org/10.1186/s13021-021-00171-w>. John D Sterman et al, Does replacing coal with wood lower CO₂ emissions? Dynamic lifecycle analysis of wood bioenergy 2018 Environ. Res. Lett. 13 015007

¹¹ N.L. Harris et al., *Attribution of net carbon change by disturbance type across forest lands of the conterminous United States*, 11 Carbon Balance Mgmt. 24 (2016), <https://cbmjournals.biomedcentral.com/articles/10.1186/s13021-016-0066-5>.

¹² James E. Smith et al., *Methods for Calculating Forest Ecosystem and Harvested Carbon with Standard Estimates for Forest Types of the United States*, Gen. Tech. Rep. NE-343, Northern Research Station: U.S. Department of Agriculture, Forest Service, https://www.nrs.fs.fed.us/pubs/gtr/ne_gtr343.pdf. Hudiburg, T.W., et al. 2019. Meeting GHG reduction targets requires accounting for all forest sector emissions. Environ. Res. Letters <https://doi.org/10.1088/1748-9326/ab28bb>

¹³ Allie Goldstein et al., *Protecting irrecoverable carbon in Earth's Ecosystems*, 10 Nature Climate Change (2020), <https://forestcarboncoalition.org/wp-content/uploads/2020/04/goldsteinetal2020wSI.pdf>.

¹⁴ Stephen Mitchell, Chapter 10 - Carbon Dynamics of Mixed- and High-Severity Wildfires: Pyrogenic CO₂ Emissions, Postfire Carbon Balance, and Succession, Editor(s): Dominick A. DellaSala, Chad T. Hanson, The Ecological Importance of Mixed-Severity Fires, Elsevier, 2015, Pages 290-309, ISBN 9780128027493, <https://doi.org/10.1016/B978-0-12-802749-3.00010-4>., Beverly E. Law, Tara W. Hudiburg, Logan T. Berner, Jeffrey J. Kent,

Lastly, tree planting following logging, a major plank in the USDA and DOI's climate adaptation and resilience action plans, is not an adequate measure, as it takes about a century to make up the carbon lost in logging old trees.¹⁵ And that is time we no longer have.

Furthermore, land management agencies have little control over how timber is processed into wood products or the carbon storage associated with the making of those products. The science overwhelmingly supports storing and sequestering carbon in older forests and trees as a far more effective strategy than logging and manufacturing of associated wood products.¹⁶

The Current Land Management Regimes Leave Vast Swaths of Older Trees and Forests on Federal Forestlands Unprotected

Congress is poised to approve an unprecedented and massive increase in funds that will be deployed to conduct restoration, primarily through thinning and other forms of logging across ~30 million acres of federal forests throughout the next decade. We are pleased that there is additional funding included for an inventory of older forests and agency action to implement long term protections for older forests. Acting promptly on this is especially important because there are inadequate safeguards in the legislative language for durable protections of older forests and trees from logging and road building. As currently drafted, both bills allow commercial logging that often targets the larger and older trees.

Agency land management plans and practices do not otherwise fill in the gap. For example, restoration or hazardous fuel reduction projects often consist of clearcuts and near-clearcuts involving the felling and removal of older forests and trees. Similarly, "thinning" has no consistent definition and often involves felling and removal of older forests and trees. Protections occasionally afforded in agency land management plans are neither uniform nor enduring. The Pacific Northwest Forest Plan and its system of reserves is the rare exception, and even that plan leaves open to logging over 1 million acres of mature and old growth forests. Further, forest plans developed under the 2012 planning rule have declined to commit to not log existing mature and old growth forests and trees. And areas eligible to be inventoried for inclusion in the National Wilderness Preservation System also have no protections.¹⁷

Unfortunately, outside of congressionally protected areas such as wilderness and regulatory protections for Forest Service roadless areas inventoried prior to 2001, there are few protections for older forests on federal lands.

It's well past time to fill this glaring protective gap. USDA and DOI should place a moratorium on logging older forests and trees, and initiate a federal rulemaking to protect these forests and trees from logging and removal.

Polly C. Buotte, Mark E. Harmon, [Land use strategies to mitigate climate change in carbon dense temperate forests](#). Proceedings of the National Academy of Sciences Apr 2018, 115 (14) 3663-3668; DOI:10.1073/pnas.1720064115,

¹⁵ Staver, Carla A., 2020. [Written Testimony before U.S. House of Representatives Committee on Natural Resources, Hearing on H.R. 5435 \(American Public Lands and Waters Climate Solution Act\) and H.R. 5859 \(Trillion Trees Act\)](#)

¹⁶ Hudiburg, T.W. et al 2019. Meeting GHG reduction targets requires accounting for all forest sector emissions. Environmental Research Letters. <https://iopscience.iop.org/article/10.1088/1748-9326/ab28bb/pdf> and Harmon, M.E. 2019. Have product substitution carbon benefits been overestimated? A sensitivity analysis of key assumptions. Environmental. Research. Letters. <https://doi.org/10.1088/1748-9326/ab1e95>

¹⁷ Chapter 70 areas, Forest Service Handbook 1909.12

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