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Submitted to <https://cara.fs2c.usda.gov/Public/CommentInput?project=NP-3239>

The Biden Administration has published a request for information (RFI) on the Federal Registry. The RFI asks a series of questions concerning old growth and mature forests and how to define them. The RFI is the first step towards the implementation of Executive Order (EO) 14072 which calls for the identification of old growth and mature forests and a publicly available, completed inventory of same within the year.

I am a retired educator living in Montana. My home sits on the edge of the Bitterroot National Forest (BNF) and I enjoy spending time wandering through it. Our forests are extremely valuable in and of themselves. Even a half hour in the forest, calms me down after a rough day. I hope that EO 14072 will preserve forests so that generations to come can benefit from them.

I thank the Biden Administration for creating EO 14072, mandating deadlines for inventory, and making the inventory accessible to the public. The preservation of forest ecosystems is the planet's best defense against global warming. Trees, plants, and fungi created the air that allowed humans to exist, the same air we breathe today. It is imperative that this order be followed and the work be done correctly by giving the ecosystems that sustain us top priority.

Old growth and mature forests are important for many reasons. They protect our water system, they filter our air, they sequester and store carbon, and they provide habitat for myriad species, many facing extinction. They must be preserved and future old growth forests must be recruited which means mature forests and nearly mature forests must also be protected. Sadly, old growth forests are diminishing mostly due to logging. Large trees are lucrative thanks to generous government subsidies. It makes it hard to resist cutting them down.

If the government truly wishes to preserve these important forests, then they must abandon timber targets and change the way they fund the Forest Service (FS). Funding should be based on forest and species preservation, by improving habitat, improving watersheds, and recovering endangered and sensitive species. This would bring about landscape scale "true" restoration, not "restoration projects" that are created to reach timber mandates. When a moratorium was put on logging in the Tongass (AK), timber mandates were not reduced even with this exclusion of a large percentage of public forests. Timber mandates are political not science based and should be abandoned altogether. If we ever wish to preserve old growth and mature forests as this EO portends, timber targets/mandates must be abolished and the FS must be rewarded for keeping trees in the ground.

Forests are successional systems. Each stage is important to the final result of old growth, certainly to provide for old growth far into the future, all forests should be preserved. Many argue that suppression of fire has degraded the system and thus "management" is necessary. But on the BNF, a recent study found that logging was the major culprit creating high stem densities ("overstocked forests") of small diameter trees associated with higher fire danger (Nacify et al 2010).

Any definition or inventory of old growth must also measure carbon sequestration capability. In the current climate crisis we face, carbon should be considered in all undertakings. The value in old growth and mature forests is also in the carbon sequestration and storage.

I am wary of a universal definition of old growth. Old growth is different in regions, ecosystems, habitat types, and elevations. For example: A tree could grow to 16 diameter at breast height (dbh) in 10 years in Oregon, but it would take almost 80 years in Montana. I am also concerned that the definition will include “planning and adaptive management”. This implies that old growth and mature forests will be logged even though there is little evidence that this “improves” or protects old growth. It most certainly does not protect old growth from ground disturbing machines that essentially erase non-tree, old growth characteristics. Since it takes hundreds of years for old growth to develop, there is no way to tell whether logging old growth improves or destroys it.

Another problem with a definition is how it might be used. Region 1 has used Old-Growth Forest Types of the Northern Region (Green et al, 1992) as minimum screening criteria for determining old growth, but they have used that minimum criteria to “manage” old growth stands by commercially logging them to the minimum 8 large trees per acre. Green et al found that old growth stands in Western Montana (including the BNF) had on average, 17 large trees per acre.

My experience has been with the BNF and their management of old growth. I used to enjoy an area of old growth quite close to my home. I would wander up there and just sit with those big trees. It was humbling. Unfortunately, during a recent “restoration” project (The Westside Project), it was disqualified from old growth status and cut down. A forest biologist identified the area as old growth, but the silviculturist did a “walk-through” and determined that it was not old growth. No reasons were given other than it did not meet the requirements of Green et al 1992. Another forest biologist looked at the area and said that there were stumps (not a criteria in Green et al or the BNF forest plan) so it could not be old growth. After the project, a team of citizens counted rings of the newly logged stumps and found the area did indeed qualify as old growth and should have been preserved. When I go there now, I see dried out, compacted soil, weeds, and deep ruts from the feller buncher machine. It will take more than a lifetime to recover if it ever does.

Old growth definitions should be used as criteria to screen and identify old growth, not to manage them. After a complaint was filed, the Gold Butterfly Project (<https://cara.fs2c.usda.gov/Public/CommentInput?project=NP-3239>) on the BNF was withdrawn until they could change the definition of old growth. The BNF had been using the Green et al for screening, but had started to log it to the minimum criteria which did not comply with the Forest Plan definition. They were in violation of the law until an amendment could be created to redefine old growth in the Forest Plan to the minimum of 8 large trees per acre. The Gold Butterfly project decision has yet to be finalized. Currently the BNF has proposed to amend the Forest Plan programmatically for old growth, but also for Coarse Woody Debris (an important characteristic for old growth), Snag retention (an important

characteristic of old growth), thermal cover (an important characteristic for wildlife habitat), and road density limits (vital for connectivity).

The present BNF Supervisor Anderson, came directly from a problematic situation in Prince of Wales Island, AK where he was the district ranger. An audit (<https://www.kfsk.org/wp-content/uploads/2021/02/Alaska-Region-Timber-Sales-Program-Region-10-2018-FCOB-002.pdf>) found. “The identified issues occurred because the timber sales program was not sufficiently managed, in part, due to the **pressure to meet timber sales goals** (p 13 emphasis added).” On the BNF, Anderson still seems intent to meet timber targets at a break neck pace and will radically amend the Forest Plan to do so. When he arrived on the BNF, Gold Butterfly (55,000 acres) was in process. Then in just a few years, three more large scale projects were introduced Mud Creek (48,000 acres, 17,300 acres of commercial logging), Eastside (471,000 acres with 150,000 acres of potential non-commercial treatment), and the Bitterroot Front (144,000 acres with 55,000 acres of potential commercial logging). 3 of the 4 projects await a final decision. All of these projects will affect old growth and mature forests. Currently the BNF is working to change the Forest Plan through a programmatic amendment to allow for reduced road density standards, thermal cover, snag retention, and coarse woody debris requirements, and to change the old growth definition to minimum screening criteria in Green et al. Should these large projects and the amendment be realized, the BNF will lose a large percentage of old growth and mature forests.

There are also 3 smaller GNA projects in process that were issued under categorical exclusions (CE). During these CE’s the definition of old growth was used to disqualify old growth forests and cut them down. In the Buckhorn project (<https://www.fs.usda.gov/project/?project=56927>), an area was identified as old growth, but the trees were cored and found to be an average of 130 years, 40 years below the Green et al criteria. They disqualified this area on one characteristic (Green recommends not disqualifying old growth on a single characteristic), and cut it down. On the Piquett Creek Project (<https://www.fs.usda.gov/project/?project=56774>) where the Forest Plan definition was used, an area originally identified as old growth was disqualified because it did not have the minimum 15 trees per acre (Forest Plan criteria states “generally” 15 trees per acre and includes other criteria). Again, this old growth stand was cut down. These instances show that a definition of old growth is problematic if it is used to manage old growth rather than identify it. Logging old growth is contrary to EO 14072 and to the recommendation of many old growth scientists (Yanischevsky; 1994; Hessburg et al., 2015; Fielder et al., 2007a,b; Wales et al., 2007; Rapp, 2003).

Much of the old growth forest habitat has been logged and destroyed on public lands. Preserving what is left and recruiting future old growth stands is essential to wildlife. Green et al, though it has limitations, is probably a good start and could be used as a guide to determine old growth forests, but it should not be used to manage these forests. The minimum characteristics identified in Green et al are not standards. The entire document

should be used which includes old trees, large trees, decadence, dead top trees, large snags, large dead and down wood, and canopy structure when determining an old growth stand. It seems agency employees were using just the chart in the document to determine and manage old growth, so much so, Green et al amended the document to include more items on the chart. Northern Region 1 seems to have stopped using habitat types when identifying forest stands which is a component of the Green et al old growth description. If a definition is created it should mandate the use of habitat types including indicator species when identifying stands. Pfister et al created Forest Habitat Types for Montana which should be used. It is a comprehensive study.

The proposed BNF old growth amendment both cite specific and programmatic for old growth reduces the size of stands from 40 to 5 acres (shared on the Bitterroot Front project field trip). According to Pfister 2000, in general, larger stands are more effective as habitat than smaller stands. The Forest Plan mandates 40 acres using the science of patch size and recommendations by studies that show these stands function best as habitat when they are connected to other stands. This can be achieved by corridors of old growth, closed canopy, or mature forests between the stands (Thomas, et al 1990, Bennet 1999). The BNF Forest Plan suggests connecting the old growth stands to riparian areas in order to achieve the 40 acre minimum size. This push for connectivity and large stands for wildlife would be lost with a smaller minimum size stand. Logging old growth which requires temporary or permanent road building fragments would fragment vital connectivity. Fragmentation of existing patches of old growth by roads, timber harvesting or other created openings will decrease effectiveness of the patch as habitat due to the reduction in amount of interior old-growth conditions (Baker and Knight 2000).

It might be possible to partially protect old growth and mature stands with a minimum dbh limit. In our area it would have to be 16 inches, a lifespan of @ 80 years. When asked about maximum size limits for thinning, a BNF silviculturist explained that was not possible because it precluded cutting diseased trees (Bitterroot Front Field Trip). Although the important contributions of fire in western forests is now recognized by agencies, the essential roles of natural diseases and decay generally have not been similarly accepted (Christensen et al. 1996). Diseased trees are part of the decadence described in Green et al and they become future snags, then coarse woody debris, and finally soil. A healthy forest must include disease if “healthy” includes a complete assemblage of ecosystem processes and components (Harvey 1994). A dbh limit alone would not preserve the other components of a healthy forest.

The National Forest Inventory and Analysis must be excluded from the inventory process. FIA is for sampling, and does not yield spatially explicit or accurate information nor does it reveal the location and extent of mature and old-growth forests. The patch sizes are small and would not denote functional, connected old growth. I recently attended a webinar in which Dominick DellaSala spoke of a mapping method that uses LiDAR imagery to measure many characteristics of old growth. It is

state of the art and the scientific studies are currently under scientific review. I would suggest using that technique for inventorying old growth and mature forests. It would measure the structural development of forests from young to old. This method would also reveal amount of carbon sequestered. It is comprehensive and measures much more than FIA and other vegetation modelling.

The fear of fire that is propagated by government agencies and the wood products industry has spurred a renewal of funding and fervor to cut down forests. However, the weight of available science does not support the notion that reducing fuels will prevent fires or protect communities. Bartowitz et al. (2022) found “*that increasing harvest of mature trees to save them from fire increases carbon emissions rather than preventing them.*” Campbell et al, 2011; Harris et al, 2016; Law and Warring, 2015; Law et al, 2017; Reinhardt and Holsinger, 2010; and Stenzel et al, 2019 came to the same conclusion.

It is my recommendation that all forests be preserved regardless of old growth or mature status. We have so little left, we must preserve what we have before it is lost. Saura et al 2014 shows that wildlife will need stepping stones and connected habitat to move through as climate conditions change. Intact forests are not only important for wildlife, they are our best defense in a changing climate (Creutzburg et al 2014, Moomaw 2019). Finally, Law 2018 has shown that emissions from logging are much greater than those of a forest fire. If we are to preserve old growth and mature forests as EO 14072 dictates, timber mandates must end and agencies must be rewarded for preserving forest ecosystems not cutting down trees.

Thank you for considering my comments. Please include them in the official record for this RFI.

Michele Dieterich

References

Baker, W.L., and R.L. Knight. 2000. Roads and forest fragmentation in the southern Rocky Mountains. Pages 92-122 In Knight, R.L., F.W. Smith, S.W. Buskirk, W.H. Romme and W.L. Baker editors. Forest fragmentation in the Southern Rocky Mountains. University Press of Colorado, Boulder.

Bartowitz, K.J., E.S. Walsh, J.E. Stenzel, C.A. Kolden, and T.W. Hudiberg, 2022, Forest Carbon Emission Sources Are Not Equal: Putting Fire, Harvest, and Fossil Fuel Emissions in Context: *Frontiers in Forests and Global Change*, 5:867112, doi: 10.3389/ffgc.2022.867112
<https://www.frontiersin.org/articles/10.3389/ffgc.2022.867112/full>

Bennett, A.F. 1999. Linkages in the landscape: The role of corridors and connectivity in wildlife conservation. IUCN, Gland, Switzerland. 254 pp.

Campbell, J.L., Harmon, M.E., Mitchell, S.R., 2011, Can fuel reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Frontiers in Ecology and Environment*, doi:10.1890/110057.

Fiedler, C.E., P. Friederici, M. Petruncio, C. Denton, and W.D. Hacker. 2007a. Managing for old growth in frequent-fire landscapes. *Ecology and Society* 12(2): 20. URL: <http://www.ecologyandsociety.org/vol12/iss2/art20/>

Fiedler, C.E., P. Friederici, and M. Petruncio. 2007b. Monitoring old growth in frequent-fire landscapes: *Ecology and Society* 12(2): 22. URL: <http://www.ecologyandsociety.org/vol12/iss2/art22/>

Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992. Old-Growth Forest Types of the Northern Region. USDA Forest Service, Northern Region R-1 SES 4/92. 60 p.

Law, B.E., Hudiburg, T.W., Berner, L.T. Kent, J, Buotte, P, Harmon, M. Land use strategies to mitigate climate change in carbon dense temperate forests. March 19, 2018. 115(14) 3663-3668. <https://doi.org/10.1073/pnas.1720064115>

Law, B.E., and Waring, R.H., 2015, Carbon implications of current and future effects of drought, fire, and management on Pacific Northwest forests: *Forest Ecology and Management*, v. 355, p. 4-14.

Law, B.E., Hudibug, T.W., Berner, L.T., Kent, J.J., Buotte, P.C., and Harmon, M.E., 2017, Land use strategies to mitigate climate change in carbon-dense temperate forests: *PNAS*, www.pnas.org/cgi/doi/10.1073/pnas.1720064115

Lessica, P. 1996. Using fire history models to estimate proportions of old growth forest in northwest Montana, USA: *Biological Conservation*, v. 77, n. 1, p. 33-39.

Moomaw William R., Masino Susan A., Faison Edward K. Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good , *Frontiers in Forests and Global Change Vol 2*, 2019 <https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027> DOI=10.3389/ffgc.2019.00027

Naficy, Cameron & Sala, Anna & Keeling, Eric & Graham, Jon & Deluca, Thomas. (2010). Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies. *Ecological applications* : a publication of the Ecological Society of America. 20. 1851-64. 10.2307/25741352.

Pfister, R.D., W.L. Baker, C.E. Fiedler, J.W. Thomas. 2000. Contract review of old-growth management on school trust lands: *Supplemental Biodiversity Guidance* 8/02/00. 30 p.b

Pfister, Robert D.; Kovalchik, Bernard L.; Arno, Stephen F.; Presby, Richard C. 1977. Forest habitat types of Montana. Gen. Tech. Rep. INT-GTR-34. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest & Range Experiment Station. 174 p.

Rapp, V., 2003, New findings about old-growth forests: Pacific Northwest Research Station Science Update, 12 p. <https://www.fs.fed.us/pnw/pubs/science-update-4.pdf>

Saura, S., Bodin, Ö. and Fortin, M.-J. (2014), EDITOR'S CHOICE: Stepping stones are crucial for species' long-distance dispersal and range expansion through habitat networks. *J Appl Ecol*, 51: 171-182. <https://doi.org/10.1111/1365-2664.12179> Stenzel, J.E., et al, 2019, Fixing a snag in carbon emissions estimates from wildfires: *Global Change Biology*, v. 25, 3985-3994, DOI: 10.1111/gcb.14716..

Thomas, J.W., E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon, and J. Verner. 1990. A conservation strategy for the northern spotted owl: A report of the Interagency Scientific Committee to address the conservation of the northern spotted owl. U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Bureau of Land Management, Fish and Wildlife Service, and National Park Service. Portland, Oregon. 523 pp.

Wales, Barbara C., Lowell H. Suring, Miles A. Hemstrom, 2007. Modeling potential outcomes of fire and fuel management scenarios on the structure of forested habitats in northeast Oregon, USA. *Landscape and Urban Planning* 80 (2007) 223-236.

Yanishevsky, Rosalind M., 1987. The Rise of Plans and the Fall of Old Growth - A Comparative Analysis of Old Growth in Region One. Montana Dept. of Fish, Wildlife and Parks Annual Nongame Symposium, Kalispell, MT.