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Comments: I submitted this earlier today but made a few revisions so I'd prefer this one be the official copy.

Thanks.

Thank you for this opportunity to comment on one of the most monumental decisions of my lifetime. I appreciate President Biden's executive order to protect old-growth forests, a natural extension of his critical 30 x 30 vision to conserve nature. I'm thrilled to see that now we have a chance to put this on the ground across all national forests and affecting every plan managing them.

How the Forest Service interprets this mandate to protect old growth is critical for true protection not only of our existing old-growth (ancient) forests and big trees, but for the mature forests that will become old-growth.

I am a science and nature writer, journalist, and award-winning book author. I write this letter to you after an overnight trip to one of my favorite places—the Metolius River lined with centuries-old and often fire-scarred ponderosas, incense cedars, Douglas-firs, western larch, and grand fir.

I'm also fresh from witnessing firsthand what is so overlooked in the field of forestry—the power of self-willed trees to grow straight or crooked, in trios or couplets, with mistletoe and beetle holes, and in ways of relationship that wildlife—especially birds—can show us if we are attentive. I come from an ecological perspective. I spend a lot of time outside observing as well as reading science papers and interviewing ecologists.

I must be blunt. The amendment is weak. The Forest Service can and must do better. I'm alarmed in the huge loopholes allowing the logging of old-growth trees and forest as "mitigation" for wildfire risk and other subject-to-interpretation reasons. Leaving out mature forests—our future old-growth—is a travesty and disservice to our future. But this can be changed by doing the obvious—close the loopholes and include mature forests.

I'd also like to see the definition of "old growth" and large trees be improved and practical for managers to know and follow on the ground. The looser the definition, the more ways there are to go around protection. We need measurable definitions. If that means clearly stating no logging of trees larger than 20 inches DBH and of trees older than 80 years, that's at least clear.

We've seen a diameter rule to work in eastside forests in Oregon and Washington that retained most of the last remaining (only 3 percent) old-growth trees, because of a rule clearly identifying trees 21" DBH and

greater as off limits to logging. Why do we have so few left? Massive logging. Not wildfire. I personally know from working for the Forest Service on the Malheur National Forest in the early 1980s conducting stand exams for timber sales called [ldquo]complete overstory removal,[rdquo] which led to logging enormous ponderosas and systematically destroyed something else[mdash]beauty and the wisdom of elder forests. Despite how few big trees still stand, the large and old trees store far more carbon than the rest of the trees.

See this study: [ldquo]Large Trees Dominate Carbon Storage in Forests East of the Cascade Crest in the United States Pacific Northwest[rdquo] <https://www.frontiersin.org/articles/10.3389/ffgc.2020.594274/full>.

From the abstract: [ldquo]Large trees accounted for 2.0 to 3.7% of all stems (DBH [ge] 1[rdquo] or 2.54 cm) among five tree species; but held 33 to 46% of the total AGC (Above Ground Carbon) stored by each species. Pooled across the five dominant species, large trees accounted for 3% of the 636,520 trees occurring on the inventory plots but stored 42% of the total AGC.

Despite loopholes, the 21-inch rule of 1994 was effective and if anything needs strengthening not discarding as happened at the end of the Trump administration. (Note, a coalition of environmental groups litigated and won, although the future is still uncertain). When rules become guidelines, it[rsquo]s a disservice to the hard-working folks of the Forest Service at the district level who often live in rural communities where the politics are already difficult. Rules are essential. Guidelines can be bent to the will of the timber interests.

In addition to strict enforceable standards for the Old Growth Amendment, I would offer this definition of old growth with caution as a way to conceive the ecological significance of these highly biodiverse forests[mdash]one that honors plentiful dead trees standing for example. This definition is from a 2020 British Columbia Provincial government task force: [ldquo]Old forests meld light and dark; their structural complexity can include large old living trees, large standing dead snags, long downed logs, a multi-layered canopy, hori[shy]zontal patchiness with canopy gaps that allow understory growth, and hummocky micro-topography.[rdquo]

However, do not use a definition like this to go into an old-growth forest with reasoning like [ndash] [ldquo]oh, let[rsquo]s cut down trees and make more canopy gaps.[rdquo] Let the forests do that on their own through windfall, fire, and the natural death of a tree that opens up glades. We have a long track record of messing up forests. It[rsquo]s time to leave our hubris and arrogance behind.

Using any strict definition of qualities of old growth as an excuse to log or disqualify a forest is a problem. For instance, from my time with researchers at the H.J. Andrews Experimental Forest, I came to understand that there can be old-growth forests with only a few big old trees standing at this current time. What makes a forest [ldquo]old growth[rdquo] lies in ecological processes over long periods of time that are ongoing without us logging and building roads.

The lessons of the northern spotted owl now threatened by barred owls finding their way into Northwest old-growth forests should serve as a warning everywhere. While the protections for the endangered owl under the Northwest Forest Plan (now being amended, too) were overall a tremendous success story for keeping these highly biodiverse and carbon-storing forests standing, here's one key takeaway. The solution cannot be about short-term and short-sighted solutions of killing barred owls. We need more not less habitat—more forests that can become old-growth and connected wildlife corridors between them. We need to comprehend far more life-history studies of all the interconnected wildlife, including the importance of nearby forests after wildfire that are intact and not "salvage" logged. (See "Disentangling Post-Fire Logging and High-Severity Fire Effects for Spotted Owls" <https://www.mdpi.com/2673-6004/2/2/11>).

In the broadest sense when it comes to the old growth amendment for Forest Service plans, it's time for conservation to be interpreted correctly as being conservative by doing no harm. Stop the meddling. Stop churning up forests that have never been logged or logged lightly with big machines and chainsaws and calling this restoration. Stop cherry-picking the science that supports logging as solution and ignoring the science that calls for what we must be doing instead—being bold and taking actions that match the immensity of the climate crisis.

For example, the Forest Service should create a system of strategic carbon reserves. We know how and where to do it—see this research and map for the western US: Law, B.E., Berner, L.T., Buotte, P.C. et al. Strategic Forest Reserves can protect biodiversity in the western United States and mitigate climate change. *Commun Earth Environ* 2, 254 (2021). <https://doi.org/10.1038/s43247-021-00326-0>

<https://www.nature.com/articles/s43247-021-00326-0> .

We cannot let politics and timber industry interests dictate the future of our far too few last remaining big trees and forests. It's far past time for the Forest Service to draw from what makes this agency the best it can be.

Listen to the ecologists. Honor the values of our far too few designated Wilderness, Wild & Scenic Rivers, and Research Natural Areas. Honor roadless areas and wildlife connectivity. Be proud of our naturally carbon-capturing and storing big and old trees. Be a leader in the climate crisis by protecting not logging them.

Take a good long honest look at this agency's past and vow to do better. Sometimes it's important to state the obvious—that logging is the number one threat to our big trees and ancient forests and mature forests.

As former Siuslaw National Forest Supervisor Jim Furnish wrote in an opinion piece following the release of the inventory of old-growth forests (reprinted in my local newspaper, the Bend Bulletin on 5/25.2023):

The agencies focused almost exclusively on forest fire as the only threat facing older forests on public lands today. This is odd because older forests survive fire better than younger ones. And the Forest Service moves ahead with commercial timber sales that keep cutting them down, though they recently canceled the controversial Flat Country sale. No matter how they spin it, chainsaws are the biggest threat. Logging must be addressed head-on.

I conclude by returning to my statement at the beginning. This decision is [dquo]monumental.[rdquo]

We are living in an era like no other—a climate and biodiversity crisis of our own making. While corporations are favoring pursuing expensive and often impractical and suspect climate capture technology, the U.S. Forest Service holds nature's very best natural carbon capture and storage solutions. They're not in the sapling or young trees, they are in the very largest of trees. The longer they grow, the more carbon they hold. Big standing dead trees hold carbon and so do the downed trees. We have little time to lose when it comes to cutting our fossil fuel emissions drastically and protecting the big trees so they can keep capturing carbon for us naturally.

So please, do not tell all the people—more than a half million—who wrote in on the inventory asking to protect big and old trees that you have listened when this amendment clearly shows the Forest Service has watered down, weakened, and found ways to turn something monumentally good into yet another ineffective policy paying lip service to the public will.

Do not tell people that the way to protect old growth is to cut old growth. Do not talk about historic conditions of a hundred years ago before fire suppression when we will never return to those conditions in this era of an overheated planet. Was there fire suppression over the past century? Yes. Did the Forest Service ignore the importance of fires and Traditional Ecological Knowledge of indigenous peoples who often lit wildfires (but carefully, not during bird nesting season, and without logging). Yes.

The solution? Let mature forests grow and protect old growth. Involve indigenous peoples' wisdom and knowledge of reciprocity-giving far more back than we take. Consult ecologists, mycologists, bryologists, ornithologists, and all who know the intricate relationships that we can so easily harm with simplistic forestry prescriptions.

Know that old-growth and big trees have the best chance of resisting and surviving wildfire, but we need far more mature forests to become old growth. Focus on wildfire risk by helping communities be fire safe (See the film, "Elemental: Reimagine Wildfire- [https://www.elementalfilm.com/.](https://www.elementalfilm.com/))

Finally, for all the staff who are reading these comments—go outside. Find a big tree even in a city. Stay awhile. Notice the intricacies of spiders weaving webs in crevices, lichens fixing nitrogen, warblers seeking insects on the underside of leaves, woodpeckers seeking beetles, and ask. Do we understand all these relationships? Have we consulted nature? Have we thanked a tree for standing decades or even centuries exhaling oxygen for us to breathe, shading us, and sequestering and storing more and more carbon with time?

Protecting old-growth, big trees, and mature forests means exactly that—protect them by protecting them. Put away the chainsaw. Take off the forestry blinders. Open your eyes to wonder

ATTACHMENT: CommentForest Service Old Growth Forest Protections.docx is letter content.