

USDA Forest Service
Director, Policy Office
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Via Federal rulemaking portal: www.regulations.gov

June 28, 2023

Dear Forest Service,

The following are the comments of the undersigned on the Advanced Notice of Proposed Rulemaking (“ANPR”), 88 Fed Reg 24997 et seq., published April 21, 2023. We incorporate our previous comments of August 12, 2022 on the Request for Information published in the July 15, 2022 Federal Register (87 Fed Reg 42493 et seq.).

All of the undersigned use national forest lands regularly, for activities like recreation, nature study, immersion in nature, etc. The organizations represented, as well as some of the individuals, are actively involved in reviewing plans, projects, activities, proposed for national forests and grasslands, and also policies and rules that govern the management thereof.

I. INTRODUCTION. The ANPR asks for comments on how the agency can adapt its policies to manage the national forest system in the face of climate change. The short answer, on which more detail is provided below, is that the agency must change its policies and culture to emphasize protection of critical resources found on national forests and grasslands. First and foremost is conserving old forests; it is the main emphasis in the President’s Executive Order 14072, which is the reason the agency is undertaking this rulemaking. Managing to retain and enhance old forests also promotes other critical values of our national forest system: conserving native biodiversity, or the web of life, and protecting watersheds, which supply much of the nation with drinking water.

It is important to recognize that these critical values, especially old forest retention and conservation of biological diversity, must be provided on federal public lands, especially on national forests. Only the national forest system, and to a lesser extent, BLM lands, have the large blocks of forested habitat that, if managed appropriately, can meet the needs of a wide variety of wildlife, plant, and fish species, and provide major carbon storage that is critical in the effort to limit the damage from climate change.

Since the end of World War II at least, the Forest Service has been mainly concerned with providing commodity outputs, especially raw material for wood products and forage for domestic livestock. The high timber output is reflected in ANPR Figure 1, which shows that between about 1945 and 1993, large volumes of timber were cut from national forest lands. The drop after that was caused not as much by any change within the agency, but rather because of court actions to protect species such as the northern spotted owl that are dependent on old forests in the Pacific Northwest.

While timber outputs have stayed low compared to the 1945-1993 period, there is still a tendency to emphasize outputs over protection. The Forest Service will have a great deal of money from the Infrastructure and Inflation Reduction Acts to implement projects in the near future. Under the agency's Wildfire Crisis Implementation Plan (USDA Forest Service, 2022), up to 20 million acres of national forest land in the west "over and above current treatment levels" would be treated over the next 10 years. *Id.* at 3. This Plan further states:

The wood products industry has been and will remain an important partner for helping achieve restoration outcomes and reduce wildfire risk. New and innovative uses of wood, such as cross-laminated timber, can not only support restoration and risk reduction outcomes but also sequester large quantities of carbon.¹

Id. at 5.

In short, the Forest Service will try to accomplish fuel reduction via commercial logging contracts. Such contracts will be much more attractive to industry if they include larger trees, even if the focus is to remove the smaller ones. Thus there will be a tendency to allow cutting of the very trees that should be retained.

With our forests getting stressed by a warming climate, it is more important than ever to manage our national forest system to retain the values that make it special. The forthcoming rule must ensure that critical and unique resources are emphasized and maintained.

II. CONSERVING OLD FORESTS. There is absolutely no question about the high value of older forests, which the ANPR recognizes:

Older forests often exhibit structures and functions that contribute ecosystem resilience to climate change. Along with unique ecological values, these older forests reflect diverse Tribal, spiritual, cultural, and social values, many of which also translate into local economic benefits. Along with unique ecological values, these older forests reflect diverse Tribal, spiritual, cultural, and social values, many of which also translate into local economic benefits.

88 Fed Reg 24503.

There is also no question that in spite of its high timber outputs of the past 75 years, which degraded or destroyed many acres of older forest ecosystems, much acreage of older forest remains on national forest lands:

The inventory required by E.O. 14072 demonstrated that the Forest Service manages an extensive, ecologically diverse mature and old-growth forest estate.

Ibid.

¹ The last statement here is misleading, as uncut forests store much more carbon than if the trees are made into wood products. See further discussion in section III below.

We must also recognize that humans cannot create these older forest ecosystems. Rather, nature must be given the time and space to do so. Therefore, the forthcoming rule must emphasize protection of these mature and old-growth forests.

III. THE THREAT OF FIRE DOES NOT OBVIATE THE NEED TO PROTECT OLDER FORESTS. There is, understandably, much concern about wildfire in the western U. S., as numerous large fires have burned in recent years, with loss of many structures and some human lives. This has led to calls for greatly increasing fuel reduction activity on national forests across the western U. S.

However, this should not be used as an excuse to treat older forests that are not immediately adjacent to homes or other infrastructure. Older forests often have standing dead trees and down dead logs, i. e., a moderate amount of fuel, but this a natural part of older forests. The dead standing trees and down wood provide important ecosystem components.

Some of these forests will burn over time, just as almost all forests in at least the western United States do at some point. But older forests provide shade and often have lush ground vegetation, which makes them less likely to burn with any given ignition source, natural or human. The larger trees take more heat to ignite compared to smaller trees. And when the older forests do burn, they will likely burn at lower intensity. They will usually also begin to regenerate naturally to a forested condition not long after fire.

The caption below ANPR Figure 2, which shows disturbance acreage on national forest, states that the recent increase in disturbance is “driven primarily by overstocked forests that are susceptible to insect, disease, and wildfire”. This is inaccurate. The increase in disturbance is caused by a warming climate and the increased presence of humans. The warmer climate, with a longer and more intense fire season, leads to more fires, especially with more humans visiting the forests each year. More people means more fire starts², and more structure loss.³ A warmer climate also makes trees more susceptible to insects and disease, as the warmer and more prolonged heat, which is often accompanied by long dry periods, stresses trees.⁴

² In its analysis for the Roadless Area Conservation Rule (RACR), the Forest Service noted the following:

In the West, 80% of human-caused fires start in essentially roaded areas. In the East, the figure is nearly 97%. Nationally (in all Forest Service regions), it is four times more likely that a human-caused wildland fire will occur in an area that is essentially roaded rather than an inventoried roadless area.

RACR FEIS, 2000, at 3-106. In other words, where there is motor vehicle access, fire starts are much more likely.

³ Higuera et al, 2023, concluded:

Structure loss was driven primarily by wildfires from unplanned human-related ignitions (e.g. backyard burning, power lines, etc.), which accounted for 76% of all structure loss and resulted in 10 times more structures destroyed per unit area burned compared with lightning-ignited fires.

⁴ It is well established that very cold winter temperatures can stop outbreaks of mountain pine beetle (*Dendroctonus ponderosae*) and spruce bark beetle (*Dendroctonus rufipennis*), two insects that are likely responsible for most of the insect-related tree deaths in the Forest Service’s Rocky Mountain Region. The lack of such cold snaps in a warming climate allows outbreaks to continue unimpeded for longer periods.

Many forests are naturally dense. Lodgepole pine (*Pinus contorta*), for example is a very prolific seed-producing species that will colonize a site where a stand of lodgepole pine burned or was cut to produce a dense new stand. Englemann spruce-subalpine fir (*Picea englemanii-Abies lasiocarpa*) stands often grow moderately dense over time as the long fire return intervals in these upper elevation areas allow the growth of understory trees.

Some stands, mainly at lower elevations that historically had more frequent, low intensity fire may have become dense due in part to fire suppression⁵, such as stands dominated by ponderosa pine (*Pinus ponderosa*) in Colorado. But this concept has been misapplied to the entire ponderosa pine zone. In a study of ponderosa pine stands in the northern Front Range of Colorado, Sherriff and Veblen, 2006, concluded:

[Our] findings for the *P. ponderosa* zone above ca. 2200 m (i.e. most of the zone) contradict the widespread perception that fire exclusion, at least at the stand scale of tens to hundreds of hectares, has resulted in unnaturally high stand densities or in an atypical abundance of shade-tolerant species.

The bottom line is that many densely forested areas on national forest lands are not overstocked; rather they are dense from natural processes. The increased disturbance observed in such areas in recent years is spawned by the warming climate and presence of humans leading to increased disturbances from fire, and also from insects and disease.

In its zeal to reduce fuels in the face of public pressure, it would remain too easy for the agency to treat older forests, in the absence of direction limiting it. Thinning may seem like a benign treatment for older forests, but usually it is not. Removing younger, smaller trees prevents them from ever becoming older, larger trees. Multi-aged and -sized trees are an important structural component of mature and old growth forests, as is down dead wood, another component that is often targeted for disposal in fuel reduction projects. The trees cut will no longer remove carbon from the air; in fact, they will increase atmospheric carbon when they are burned or made into wood products. (See more below in section IV.)

Small trees provide perches for owls to seek prey. In habitat for the threatened (under the Endangered Species Act) lynx (*Lynx canadensis*), small trees help form the dense horizontal cover needed by this species' favorite prey, snowshoe hare (*Lepus americanus*). As a panel of scientists assembled to develop the "best available scientific information on lynx"⁶ put it

By removing or reducing the understory and ladder fuels to meet [fuel reduction] objectives, dense horizontal cover important to snowshoe hares is reduced and habitat value is diminished for hares and lynx.

⁵ High grade logging and livestock grazing may have also played a role in increasing the density of stands dominated by ponderosa pine over the last 100 years or so. Grazing removed fine fuel that would have otherwise supported low-intensity fire, which would have in turn maintained more open ponderosa pine stands. See Belsky and Blumenthal, 1997, who believe that grazing may have been a significant factor in shaping the density of modern ponderosa pine stands.

⁶ ILBT, 2013, at 1.

ILBT, 2013, at 74.

Some old growth forest areas will burn in the upcoming years, but it is hard to see how thinning or other treatment would make them more resilient without diminishing or even eliminating some of the values these ecosystems now provide. To significantly reduce the fire threat to older forests, if that could even be done, much vegetation would have to be removed, e. g., the spacing between tree crowns would probably have to be 30 feet or more. These wide-open areas would have to be maintained, i. e., treated regularly, to retain reduced fuel levels. They would no longer be an old growth forests.

Also, any kind of logging could make fire more likely, as removal of trees exposes more ground to sun, meaning the cut area will dry out faster and become more easily ignitable. Logging also increases fine fuel loading on the ground, which ignites more readily than trees. More open stands also allow more wind to come through, which would allow fires to spread more rapidly.

Reviewing fires in western pine and mixed conifer stands, Bradley et al, 2016, found that “forests with higher levels of protection had lower severity values even though they are generally identified as having the highest overall levels of biomass and fuel loading”. Research on the O & C lands in Oregon determined that fires burned more intensely in managed forests versus older, unmanaged ones. Zald and Dunn, 2018. Meigs et al, 2016, found that insect attacks do not generally increase the severity of subsequent fires.

The best protection for homes is indicated by research conducted by the Forest Service. Cohen, 1999 and 2008, found that structures survived fire if an area of about 30 meters surrounding them, known as the home ignition zone, was largely cleared of flammable material. Fires, no matter how hot, did not ignite even buildings with a pure wood exterior from a greater distance. See also Syphard et al, 2014.

In short, there is no need to thin or otherwise treat older forests to reduce fuels. Such thinning may be counterproductive to efforts to reduce the threat of wildfire and would definitely diminish ecological values. Yet logging remains a threat to older forests because of the perception that treating them would reduce the risk of fire. Indeed, Forest Service Chief Randy Moore said the following in a recent interview:

If we are to move aggressively towards removing some of the overstocked vegetation we will have to help introduce additions to the wood industry infrastructure.⁷

This indicates that the agency will try to help wood products industry expand, i. e., to open new facilities. To open and stay open, those facilities will need to be supplied with wood from the national forests. Older forests usually have larger trees, and this potential raw material would be attractive to industry, more so than the smaller trees that might be thinned in some areas.

⁷ See: <https://www.evergreenmagazine.com/conversation-with-randy-moore/> Accessed June 6, 2023

Also, an Associated Press (AP) wire story, published in the Flathead (MT) Beacon on June 27, 2023 and the Denver Post on June 28, 2023, stated the following:

The [Forest Service's mature and old growth forest] inventory will be used to craft new rules to better protect those woodlands from fires, insects and other side effects of climate change. But there's overlap between older forests and many areas slated for thinning. That includes more than half of the treatment area at North Yuba, according to an AP analysis of mature forest data compiled by the conservation group Wild Heritage.⁸

Recent science indicates that natural forests are best for a variety of functions:

Natural forests (i.e., those protected and largely free from human management) tend to develop greater complexity, carbon storage, and tree diversity over time than forests that are actively managed; and natural forests often become less susceptible to future insect attacks and fire following these disturbances. Natural forest stewardship is therefore a critical and cost-effective strategy in forest climate adaptation.

Faison et al, 2023.

Older forest ecosystems are especially better off with little or no human manipulation, as they develop the greatest complexity, provide the most biodiversity, and store the most carbon. Almost any kind of manipulation, on the other hand, tends to simplify the ecosystems, to the detriment of their functioning.

Other than where older forests with high fuel levels are immediately adjacent to communities, they should generally be left alone, except to protect public safety or to reduce unnatural fuel accumulation in forests shown through on-site data and best available science to be outside the natural range of variability regarding tree density and fuel loading. Other acceptable management could include removal of non-native species, such as weeds; closing and obliteration of unneeded roads and trails; and ecological restoration actions. Another action that might reduce the risk to older forests would be to limit human use when conditions make fire most likely, such as extended hot, dry periods during the snow-free months.

IV. CARBON STORAGE. The importance of trees, especially larger ones, for storing carbon, cannot be overstated. Indeed, it would be impossible to imagine a credible strategy to mitigate climate change that did not include protecting forests. Nothing stores carbon as efficiently as trees do, since they are able to do so via a natural process that occurs continuously. It is highly unlikely that humans will develop a technology to remove carbon from the atmosphere and store it as well as trees do.

⁸ See: <https://flatheadbeacon.com/2023/06/27/u-s-push-to-lower-wildfire-risk-across-the-west-stumbles-in-places/>, accessed June 27, 2023. As the article explains, North Yuba is a project approved on the Tahoe National Forest.

Larger trees are especially important for carbon storage, as noted by Mildrexler et al, 2022:

Large-diameter trees store disproportionately massive amounts of carbon and are a major driver of carbon cycle dynamics in forests worldwide. ...

Given the urgency of keeping additional carbon out of the atmosphere and continuing carbon accumulation from the atmosphere to protect the climate system, it would be prudent to continue protecting ecosystems with large trees for their carbon stores, and also for their co-benefits of habitat for biodiversity, resilience to drought and fire, and microclimate buffering under future climate extremes.

Even when forests with larger trees burn, the loss of carbon is not high, as Harmon et al, 2022 found in a study of high severity fires:

combustion rates are very low overall at the stand (0.1%–3.2%) and landscape level (0.6%–1.8%), because large trees with low combustion rates comprise the majority of biomass.

This retention of carbon can be seen as one views a forested area that just had a high-intensity fire. Ground vegetation has burned, as have tree foliage and small branches, but the rest of each large tree, while it may be scarred, it is otherwise intact, i. e., it did not burn up and remains standing. Considerable forest carbon is retained even after a fire.

Logging leads to an increase of carbon in the atmosphere because not all of the wood cut from national forests (or anywhere else) goes into the final wood product. As Law, 2021, stated:

More carbon is stored longer in forests than in wood products because about half of the harvested carbon is emitted soon after logging Of the accumulated carbon harvested from west coast U.S. forests since 1900, 65% has returned to the atmosphere while only 19% is in long-lived wood products, and the remaining 16% is in landfills. That is, 81% of the wood removed from west coast forests since 1900 has been emitted to the atmosphere as carbon dioxide or is in landfills Increased harvesting adds additional carbon dioxide to the atmosphere, accelerating climate change. (citations omitted)

The science is clear: retaining trees, especially large ones, stores carbon and keeps it out of the atmosphere, while logging leads to an increase in atmospheric carbon.

V. WRITING A RULE TO PROTECT OLDER FORESTS

We look forward to the Forest Service's proposed rule. We ask that it address the following issues:

A. Provide strong protection for old growth ecosystems. For the reasons discussed in this letter, we believe strongly that forests with ecosystems featuring older, larger trees must be conserved.

At a minimum, the highest quality old growth stands must be unsuitable for timber production. They must also be closed to mineral leasing, per 36 CFR 228.102(c)(1)(iii). Units with old growth should be directed to amend their respective management plans to implement the above. Failing to designate these stands unsuitable for timber production and closed to mineral leasing would leave them unprotected from future activity that would damage or destroy their ecological and climate resilience values.

Note that Secretary Vilsack's Memorandum 1077-044 of June 23, 2022, Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands (Memo), already directs national forest units to consider timber suitability as part of climate resilience:

Develop recommendations for methods to incorporate new analyses and data and the use of new and innovative tools and technology to ensure climate resilience, and carbon stewardship considerations are integrated into forest and relevant project planning. For land management planning, this should include recommendations for how to support the explicit consideration of carbon stewardship optimization and climate adaptation in defining desired conditions, and how to evaluate whether certain National Forest System lands are appropriate for designation as "not suitable for timber production" pursuant to 16 United States Code (U.S.C.) 1604(k), *Development of land management plans*, based on those considerations.

Memo at 2 b(4).

B. Consider the use of management areas to protect older forests. Landscapes containing old growth forests can be managed and protected in forest plans by using management areas (MAs), per the Planning Rule at 36 CFR 219.7(d). Having old growth ecosystems in management areas would help insure they receive the special attention they deserve. Standards and guidelines can be written for MAs protecting old growth to ensure that ecosystem character is retained. Units should be advised to consider using MAs in their respective plans to manage old growth ecosystems, but also to use forest-wide plan components as necessary to ensure proper protection of these ecosystems. Use of MAs might also help ensure that old growth ecosystems are widely distributed across units that have such forests.

The above is not to say no trees in old growth stands on national forest land could ever be treated. See subsection D below.

C. Ensure future old growth. Current old growth ecosystems will not exist forever. Fire, insects, diseases, other disturbances, and old age may change these areas. To help ensure that old growth ecosystems remain on the landscape, the forthcoming rule should direct units to manage some mature forest ecosystems for future old growth. Areas with the mature forests most likely to develop into old growth within the next 50 years or so need to be protected, similar to existing old growth ecosystems. This can be accomplished by encouraging units to designate MAs and/or have strong forest-wide components that protect these areas, just as for existing old growth, as discussed in subsection B above.

D. Allow management in limited circumstances. Any management of older forests would be subject to valid existing rights. The rule should also allow management of older forests that would help conserve them, including treatment of hazard trees affecting public safety; removal of non-native plants, animals, and fish; and obliteration of unneeded roads and trails. Management could be appropriate where it can be clearly shown, through data gathered on site and through use of the best available science, that an area is detrimentally outside the range of natural variability, and that treatment would help return it to a density, composition, and/or structure that is within the natural range.⁹

In a very few situations, treatment may be appropriate to promote the conservation of species whose continued existence on the respective national forest unit is of concern. These species would include threatened, endangered, candidate, and species proposed for listing under the Endangered Species Act, plus species of conservation concern (per the Planning Rule at 36 CFR 219.9) or sensitive species.¹⁰

In the rare circumstances where manipulation of older forests is deemed appropriate for any purpose, it should be accomplished with fire if possible, as that is the natural process primarily responsible for the configuration of our forests. Reduction of fuels by various methods can be allowed within the home ignition zone and in areas immediately adjacent. See section III above.

But the overall assumption must be that mature and old growth forest ecosystems are more beneficial if they are retained in their natural state unless clearly demonstrated otherwise.

Recreation use should be allowed in mature and old growth forest ecosystems only if it does not diminish the important ecological values therein. High levels of recreation use can diminish habitat effectiveness for various wildlife species. Camping in sensitive areas can compact soils and diminish water quality. Units should be encouraged to limit recreation as needed to conserve the integrity of older forest ecosystems.

E. Ensure full analysis of any proposals to manipulate mature and old growth ecosystems. For project proposals that contemplate manipulation of older forests for any purpose, the justification for, and possible effects of, treatment must be clearly presented, and the public must have an opportunity to comment through the normal NEPA process. Categorical exclusions must not be used for such projects. Agency NEPA regulations at 36 CFR 220.6(b) should be amended to state that the presence of mature/older forests is an extraordinary circumstance.

CONCLUSION

⁹ For example, this could be appropriate in ecosystems that historically had frequent fire, such as ponderosa pine-dominated forests in Colorado below about 7200 feet elevation.

¹⁰ Units that have not recently amended or revised their land management plans may still have sensitive species, per FSM 2670. Others will use species of conservation concern developed for each region.

The Forest Service has a golden opportunity to protect the inestimably valuable asset of older forest ecosystems and help ensure earth has a fighting chance to protect native biodiversity and reduce the impact of climate change. It must write a strong rule that prohibits commercial exploitation of these forests and protects them to the maximum degree possible, consistent with valid existing rights, safety, and common sense.

Sincerely,

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