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September 19, 2024

Dear Forest Service:

The following are the comments of the undersigned on the old growth plan amendment, as described in the draft environmental impact statement (DEIS) and other documents available on the project web page. We incorporate by reference our previous comments: on the Request for Information (comments dated August 22, 2022), on the Advanced Notice of Proposed Rulemaking (ANPR) dated June 28, 2023; and on the notice for the proposed amendment dated February 1, 2024.

All of the undersigned have long been involved with efforts to secure protection for the nation's older forests, especially on national forest lands.

I. INTRODUCTION

It is universally agreed that older forests are valuable ecologically, culturally, and for fighting climate change. With the President's Executive Order 14072 of April, 2022, the Forest Service was given a golden opportunity to institute long overdue, real protection for our older forests on national forest lands. Unfortunately, the proposed action would mostly waste this opportunity for a scheme that seems to emphasize logging and other treatments, rather than emphasizing protection and retention of these forests and allowing cutting of older forests in only a very narrow set of circumstances. The proposed action would not protect old growth and doesn't require sufficient attention to mature forests, i. e., future old growth.

Below, we describe how the proposal is seriously off-track in term of mature and old growth forest protection, and how to correct this.

II. DIRECTION IN THE AMENDMENT FOR IDENTIFYING EXISTING AND POSSIBLE FUTURE OLD GROWTH MUST BE STRONGER

As we discussed in our NOI comments, forest stands will best achieve old growth status and retain it if they are left alone; i. e., no manipulative management is done. See Faison et al, 2023.

The amendment must provide stronger direction for identifying and protecting existing and future old growth. Under the proposed amendment, management of old growth would occur via implementation of the "Adaptive Strategy for Old Growth Forest Conservation". However, development of the strategy is not required, as it is only a management approach (MA). See MA 1.a, DEIS at 21. MAs are not required plan content under the Planning Rule. 36 CFR 219.7(e)(1), (f)(2). Language under "Intent" for MA 1.a states:

Management approaches and strategies are optional plan content to include in a land management plan (LMP); however, once included they are not optional to follow.

DEIS at 21.

Note, however, that in determining the consistency of proposed projects with their respective plans, management approaches are not considered. See 36 CFR 219.15(d).

In other words, units could evade the intent of the amendment and any required protection of old growth by merely choosing not to develop an Adaptive Strategy.

The following provision of MA-1.a is especially important and cannot be a mere MA:

v. Identify and prioritize areas for the recruitment, retention and promotion of old-growth forests, based on: ecological integrity, inherent capability, threats, stressors, and opportunities relevant to the plan area in order to

provide for the long-term resilience of old-growth forests conditions within the plan area.

DEIS at 21. Without this, there is essentially no direction for protection of existing and potential old growth. This must be a standard.

Similarly, units could decline to pursue the following MA, designed to ensure retention of mature forests that can become future old growth, MA-1b states:

Identify areas that have the inherent capability to sustain future old-growth forest (i.e. areas of likely climate or fire refugia) over time and prioritize them for proactive stewardship for one or more of the following purposes[hellip]

Id. at 23. This must also be a standard.

The proposed amendment does not have sufficient provisions for protecting future old growth, i. e., recruiting stands for future old growth.

III. THE ROLE OF FIRE

See section III of our comments on the ANPR for additional discussion of this issue.

Fire can help maintain old growth in areas that historically had frequent fire, such as in some lower elevation areas of the west. See section IV of our February 1, 2024 comments. Fire is part of the life cycle of almost every forest type in at least the western U. S.

A. OLD GROWTH FORESTS SHOULD NOT NECESSARILY BE MANIPULATED IN ANTICIPATION OF POSSIBLE FIRE, EVEN IN AREAS WITH FREQUENT FIRE

The Forest Service considers fire to be the biggest threat to older forests FS-BLM, 2024 at 1. Yes, old growth can

be changed or eliminated (at least temporarily) by fire. But fire is part of the life cycle of almost all forests, including old growth forests, even if it is very infrequent. It is likely that many existing old growth forests have burned in the past. After fire, they are renewed, and may become old growth again a century or more into the future. Existing and developing old growth forests should not be treated just because they could be adversely affected by fire.

In areas with frequent fire, some stands have become denser than they were historically due to human suppression of fires. Treatment, particularly if it includes fire, can help restore these forests and promote old growth, but not all such forests need or could benefit from treatment, as is discussed below.

A sizable majority of old growth on national forest lands is in areas with infrequent fire. See DEIS at 62. Thus for most old growth forests on national forest land, treatment is likely neither needed nor appropriate because fire was never frequent in their respective eco-types, and ecological processes are continuing as they have historically in these forests.

Even ecological types thought to have been shaped exclusively by frequent, low-intensity fire may have actually had mixed severity fires, including some stand-replacement fires. With regard to the Front Range (of Colorado) ponderosa pine, long thought to be unnaturally dense across its landscape because of decades of fire suppression, Kaufmann et al, 2007, stated:

Lower overstory and understory productivity, and often a lack of continuous fine fuels to carry surface fires across large areas, historically resulted in less frequent fires than typically found in ponderosa pine forests elsewhere[hellip]. Fuels accumulated during periods of 3-7 or more decades between fires, largely in the form of fuel ladders caused by gradual growth of smaller trees, shrubs, and combustible fuels beneath taller trees. Thus, periodic fires often killed patches of overstory trees (including old ones), thinned the overstory in other areas, burned as surface fires, or missed some areas altogether-classic features of a patchy, mixed-severity fire regime. It is likely that some stand-replacing fire occurred even in very sparsely forested patches dominated by shrub communities. [hellip]

Old ponderosa pine trees were very common across historical landscapes in the Colorado Front Range, and a surprising number of old trees still exist after more than a century of human activities. In the unlogged ponderosa pine landscape at Cheesman Lake on the South Platte River (recently burned over and effectively destroyed during the Hayman Fire [of 2002]), trees more than 200 years of age (many more than 400) were found in considerably more than half of the patches[hellip]

(Citations omitted, emphasis added.)

Another study of the Colorado Front Range (Sherriff and Veblen, 2006) concluded as follows:

These findings for the *P. ponderosa* zone above ca. 2200 m [7200 feet] (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. At relatively mesic sites (e.g. higher elevation, north-facing), the historic fire regime consisted of a variable-severity regime, but forest structure was shaped primarily by severe fires rather than by surface fires.

The variable fire regime in forests in the Front Range of Colorado area dominated by ponderosa pine created patches with different structures, some of which were likely old growth at times. Conditions like those described above likely appear in other forests of the west.

Manipulating these forests, at least on a large scale, e. g., by uniformly thinning from below, would create an unnatural structure, and if maintained, prevent old growth character from developing.

Even areas with dense stands in the ponderosa pine type of the Colorado Front Range need to be examined before it is assumed that they became dense only because of human fire suppression. Some areas of ponderosa dominated forests were logged, often taking the largest trees, as they made the most house logs, railroad ties, and other products manufactured during the settlement era . Thus the absence of large, older (pre-settlement) trees in some of these stands today may be a result of this high-grade logging. Also, previous manipulation, if it coincided with a good pine seed year and adequate winter and early growing season precipitation, may have led to dense regeneration, the genesis of the dense mature stands we see in some lower elevation areas today.

Also, livestock grazing, where it occurred, acted as a human fire suppressant. Cows and sheep ate grasses, shrubs, and forbs that would have otherwise propagated low-intensity fires. The absence or paucity of ground vegetation made it easier for pines to establish, allowing denser stands to form. See Belsky and Blumenthal, 1997.

The bottom line is that dense stands in areas thought to have had frequent fire may have been caused by human manipulation other than solely suppressing fires. Data must be gathered locally to determine whether areas of dense forest historically were more open before any manipulation of existing or developing old growth is approved. If forests were historically different, the analysis must show that any proposed treatment would be beneficial and would aid in retention or recruitment of old growth.

B. THE INFLUENCE OF "CULTURAL" BURNING IS GREATLY OVERSTATED

Suppression and the absence of frequent cultural burning and other Indigenous stewardship practices have led to dense forests of today that are vulnerable to drought, forest insects and diseases, and wildfires[hellip]

DEIS at 72; citations omitted. The concept that "cultural" burning, i. e., intentional burning by indigenous peoples, was widely prevalent prior to European settlement, and thereby had a large influence on the structure and composition of historical forests, is strongly refuted by Barrett et al, 2005. For the northeastern United States, see also Russell, 1983.

Burning by indigenous people in the pre-European settlement era did occur but appeared to have been "highly localized and unpredictable", and "was probably rare to absent in wet or cold forest types, where climate seems to be the limiting factor for fire regimes[hellip]". Barrett et al at 32; citations omitted. In other words, burning by indigenous peoples did not shape the broad landscape forest structure or composition to more than a very minor degree in most areas. Clearly, the lack of indigenous burning over the last century or so has NOT led to widespread, overly stocked forests. The Threats Analysis (FS-BLM, 2024) admits that the frequency and extent of cultural burning is debated. Id. at 27.

Note that the majority of national forest old growth is in areas with infrequent fire, as discussed above.

C. PROTECTION OF RESIDENCES IS BEST ACHIEVED BY TREATMENT ON AND ADJACENT TO THE BUILDINGS.

As Cohen, 1999 and 2008, demonstrated, treatment is only needed in the "home ignition zone", about 30 meters surrounding each building, to protect the respective homes. Fire will not directly ignite even pure wood structures from a distance greater than this. Removal of fuels on and around buildings will make it hard for them to burn, even in the hottest wildfires. Thus homes can be protected without cutting much mature and old growth forest, where homes adjoin national forest land with such stands.

See additional discussion in section III of our comments on the ANPR.

IV. LOGGING REMAINS A MAJOR THREAT TO OLDER FORESTS

Logging is said to not be a major threat to old growth. DEIS at 68, FS-BLM, 2024, at 37 et seq. However, nationally, approximately 25 percent of old growth is in the wildland-urban interface. DEIS at 81, 99; USDA Forest Service, 2024b at 91. In three Forest Service regions, it is over 40 percent. Id at 81. Given the high level of concern over fire susceptibility because of recent fires, there will be considerable pressure to log in and near the WUI to reduce fuels, especially in areas near infrastructure.

This will likely affect old growth forests. The DEIS admits that

There may be instances where fuels reduction efforts in the WUI do not necessarily align with maintaining ecological integrity.

Id. at 81 (citation omitted); USDA Forest Service, 2024b at 91.

Modifying fire behavior will remain a priority in the Wildland-Urban Interface (WUI), which is typically, but not always, compatible with stewardship of old-growth ecosystems.

DEIS at 99.

FS-BLM, 2024 cites statistics "suggesting significant growth in housing near mature and old growth forests" between 1990 and 2020. Id. at 62. This will increase the pressure to treat forests in and near the WUI, some of which will be mature and old growth.

It is also clear that the agency is attempting to increase timber output generally. See FY 2022 Timber Program Performance. That document notes that the Pacific Northwest, Eastern, and Southern regions are the "geographic regions most likely to contribute to increased output".

Some of this increased timber output is likely to come from old growth stands, or mature stands that could become old growth if they are left alone.

The consumer demand, aided by Forest Service grants, for a relatively new timber product, cross-laminated timber (CLT), which can be used to construct buildings, is increasing. See: <https://www.fs.usda.gov/about-agency/features/forest-products-support-healthy-forests>. This web page notes that "Forest Service Wood

Innovations grants created strong momentum for mass timber construction." The desire for trees to make CLT will, among other factors, continue to put pressure on the Forest Service to increase timber sales.

We note that the agency will continue to have access to large amounts of appropriated money for vegetation management, courtesy of recent laws passed by Congress and signed by the President. For example, the Inflation Reduction Act (IRA) appropriated \$1.8 billion for fuels reduction in the WUI and \$200 million for vegetation management projects done under the Healthy Forests Restoration Act. IRA at section 23001 (a)(1) and (2). Section 40804 (a) of the Infrastructure Act appropriated \$2.13 billion for a variety of national forest projects through 2026.

As the Threats Report states, some of the money from the infrastructure law will be used to treat landscapes identified for the Wildfire Crisis Strategy. Some of these landscapes to be treated contain mature and old growth forests, as is discussed below.

In response to wildfires, the agency developed a Wildfire Crisis Strategy. See USDA Forest Service, 2022a, 2022b. Initially, the agency prioritized ten landscapes for implementation of the strategy (USDA Forest Service, 2022d), then added 11 more in 2023. These landscapes cover about 13 million acres, on which \$131 million from the Infrastructure Act will be applied. FS-BLM, 2024 at 59. As it turns out, some of these landscapes have old growth:

Estimates show that 16 percent of all estimated mature forest and 13 percent of all estimated old-growth forests on lands managed by the Forest Service are found within Wildfire Crisis Strategy Landscapes[hellip]

Ibid.

It is safe to say that logging on national forest lands will increase in the next decade at least, and some mature and old growth forests will be affected.

To make any timber sales and vegetation management projects more attractive to industry, the agency will be tempted to include large trees, as more wood product(s) can be made from such trees versus smaller trees. The biggest concentrations of larger trees will be in mature and old growth forests, as older trees are usually larger than younger ones, all other factors being equal.

Has the Forest Service forgotten its relatively recent history - the demand for timber from national forests lands and the agency's willingness, if not eagerness, to fulfill it, led to an ecological crisis in the form of near-extinction

of at least two species (northern spotted owl and marbled murrelet) in the Pacific Northwest in the late 1980s?

The only thing that could prevent increased logging of old growth forests on national forest lands in this pro-treatment environment would be a strong rule protecting these forests. However, as is discussed throughout these comments, the proposed old growth amendment would allow, if not encourage, logging of old growth and mature forests; it does not provide confidence that they will be protected. At the same time, the agency is attempting to increase output of timber. Therefore, it is quite likely that more than a minor area of old growth forests would be cut to satisfy these perceived needs.

The bottom line: logging remains a major threat to mature and old growth forests.

V. THE PROPOSED AMENDMENT IS SLANTED HEAVILY TOWARD MANIPULATION OF OLD GROWTH

Reading the proposed amendment and associated text (like the DEIS and Threats Report), one gets the strong impression that the Forest Service believes that old growth and mature forests, far more often than not, will need to be manipulated by humans. This is the exact opposite of a framework that would best retain old growth. The assumption should be that old growth does not need to be treated, with exceptions for public safety, removing roads and exotic species, and some situations in frequent fire forests. See our February 1, 2024 comments at 6-7 and further discussion below. See also Faison et al, 2023, who found that forests which are not actively managed develop the most complexity, biological diversity and carbon storage. (See section VII below for more on the latter.)

We appreciate standard 3, which would prohibit the use of proactive stewardship (i. e., vegetation management; see more below) in old growth for the purpose of timber production. DEIS at 32. However, as is discussed below, units would be allowed, if not strongly encouraged, to conduct vegetation management in old growth forests. And notably, none of the alternatives would change suitability of lands for timber production. DEIS at 15. Thus areas of old growth or developing old growth currently suitable for timber in forest plans would remain suitable. Even if they were not cut to produce commercial timber, they would still be used to calculate the long-term sustained yield, the projected timber sale quantity, and the projected wood sale quantity for each respective unit. (See FSH 1909.12 at 64.23.) These calculations should not include areas with old growth or developing old growth forests because these areas must not be considered for commercial wood production per standard 3.

Under the proposed amendment, management approach 1.a encourages units to develop an "Adaptive Strategy for Old Growth Forest Conservation", under which units should:

v. Identify and prioritize areas for the recruitment, retention and promotion of old-growth forests,[hellip]

Similarly, MA 1.b encourages focus on future old-growth forests in the Adaptive Strategy:

Identify areas that have the inherent capability to sustain future old-growth forest (i.e. areas of likely climate or fire refugia) over time and prioritize them for proactive stewardship for one of more of the following purposes[hellip]

i. To provide for long-term resilience;

ii. To reduce fire hazard, spread or severity, or the spread of potential insect or disease outbreaks; [hellip]

DEIS at 21, 23.

The DEIS Glossary provides the following definition of proactive stewardship:

Proactive stewardship: Refers to vegetation management that promotes the quality, composition, structure, pattern, or ecological processes necessary for old-growth forests to be resilient and adaptable to stressors and likely future environments[hellip]

DEIS at G-2; emphasis added.

In standard 2.a:

For the purposes of this standard, the term "vegetation management" includes - but is not limited to - prescribed fire, timber harvest, and other mechanical/non-mechanical treatments used to achieve specific silviculture or other management objectives (e.g. hazardous fuel reduction, wildlife habitat improvement).

DEIS at 29.

Thus the proposed action directs units to develop strategies that will manipulate old growth vegetation.

However, leaving older forest ecosystems alone will in most cases be the best, if not the only, way to ensure retention of existing old growth and development of mature forest into old growth. See Faison et al, 2023. Forest stands take time, in some cases centuries, to fully develop old growth characteristics. Trees need time to grow to the large sizes found in such ecosystems. Trees die, providing snags, which are critically important for numerous avian and some mammalian species. New trees regenerate and grow in the openings that result from large tree mortality, forming the all-aged structure common in old growth stands. Soil needs time to develop its productivity from years of slow decay of down dead trees and other plant material. Human manipulation delays or thwarts old growth development.

There are a few circumstances where some treatment of old growth forests may be appropriate. See our 2023 comments at p. 7 for a discussion. One of those circumstances is old growth in areas with frequent fire that have a different structure and/or composition due to human fire suppression. That is discussed in section III A of these comments above.

The DEIS touts the benefits of treating forests to retain old growth characteristics to help them develop:

Silvicultural approaches can aid in restoring old-growth attributes by mimicking natural forest dynamics and promoting structural complexity and biodiversity[hellip]

Id. at 74; citations omitted. However, one essential fact is that treatment usually results in the removal of biomass from the system, where it would normally be retained and contribute to various ecological functions. Thus any kind of treatment that results in wood (including down dead material) being removed from the ecosystem rather than recycled within it does not mimic natural processes, except in some historically frequent-fire areas that have grown dense because of fire suppression.

The Threats Report cites a specific forest type where potential future old growth could supposedly benefit from treatment:

limited tree cutting in mature forest may stimulate areas of spruce/fir forest to develop more complexity and more characteristic species composition and therefore old-growth characteristics more rapidly.

FS-BLM, 2024 at 44.

However, Englemann spruce-subalpine fir forests, in Colorado at least, are naturally quite complex, often having two, three, or more age classes. Due to long fire-free periods (because these upper elevation areas burn very infrequently) and natural forces such as windthrow, localized insect and disease attacks, and deaths from old age, these forests develop gaps in the canopy and thus structural complexity. See Alexander, 1987 at 6-7. Treatment should never be needed in spruce-fir forests to help develop old growth characteristics.

Note that the Threats Report states that current conditions of old growth forests in areas with infrequent fire do not need to be changed:

In forests where fire was historically less frequent, the [current conditions] likely represent the forest conditions appropriate for the environment and disturbance regime.

FS-BLM, 2024 at 63. This report also states that:

Tree cutting (harvest, thinning, or otherwise), is rarely recognized as a restoration prescription to reduce vulnerability for infrequent-disturbance old-growth forest ecosystems.

Id. at 45.

Most older forests are naturally more resistant to fire, at least stand-replacing fire. They have high canopy closure, which shades the forest, keeps it cooler, and retains more moisture than younger or more open forests. Down dead logs, after they begin to decompose, also retain moisture and resist ignition. Large trees are much more difficult to ignite than smaller ones, as it takes more sustained, higher heat to do so.

One of the purposes of sustaining future old growth, "i.e. areas of likely climate or fire refugia", through proactive stewardship is:

To promote climate adapted species assemblages in areas where changing climatic conditions are likely to alter current conditions and change species assemblages over time.

MA 1.b (viii), DEIS at 23.

Climate refugia will indeed be needed as the Earth's climate continues warm. Some wildlife species will seek cooler, more moist environments. Given its attributes as described above, what better place, aside from more northerly latitude or higher elevation, exists to provide refugia than old growth forests? This is yet another reason to retain these ecosystems, i. e., not manipulate them to where they begin to lose their value as climate refugia.

To significantly reduce the fire susceptibility of any stand, as is contemplated by MA 1.b, considerable manipulation would need to occur. That is, removing just a few trees or a little ground fuel would not reduce the ignition likelihood by more than a very minor amount because the fuel load would still be high. Reducing the fire susceptibility would thus require major manipulation, likely including all of the following: removal of a sizable percentage of trees to achieve adequate spacing between trees so as to reduce the susceptibility of the area to crown fire; significant reduction of the canopy cover provided by tree crowns (an effect of the above); cutting of most small trees to reduce ladder fuels; removal or other treatment of down dead wood; removal of standing dead trees (snags); and the use of heavy equipment to perform the work. In a dense stand, treatment would likely cause more than 25 percent tree mortality, the threshold for disturbance. See FS-BLM, 2024, at 10.

Effective fuel reduction could lead to a change in classification of what was an old growth stand to one that was not.

tree cutting [based on land management plans] seldom results in transformation of old-growth forest to an earlier developmental stage-but sometimes it does change the status of mature forests.

FS-BLM at 37.

However, many of the national forest units do not have standards for old growth in their management plans, including almost all of Region 3 and most of Region 2. DEIS Appendix C, Table 4 at C-5 et seq. In any case, the pressure to treat forests to reduce fuels in some areas would often require radical reduction of biomass (via the methods described above), leading to a classification change for old growth and mature forests, or at a minimum a significant degradation of old growth quality and function.

Such classification changes would be a threat to the ecological structure of any mature/old growth stands in general. See FS-BLM, 2024, at 9.

One of the activities specifically allowed under proactive stewardship is:

reduction of hazardous fuels to reduce the risk of loss of old-growth forests to uncharacteristic wildfire, and to facilitate the return of appropriate fire disturbance regimes and conditions; [hellip]

Standard 2.a, DEIS at 29. To reduce the risk of uncharacteristic wildfire, a stand would have to be manipulated to the point where it was no longer old growth, as is further discussed above and below.

Manipulation of old growth stands as allowed under the proposed action would surely result in degradation, or even elimination, of old growth characteristics. At a minimum, any kind of treatment in old growth ecosystems could, and likely would, have the following impacts (not listed by rank in intensity or priority, nor is this necessarily a complete list):

--construction and reconstruction of roads and the use of other paths like skid trails for log removal. Roads fragment ecosystems by degrading the habitat effectiveness of numerous wildlife species and causing soil erosion (see FS-BLM, 2024 at 4);

--removal of snags, which are critically important for numerous avian species and some mammals (like marten (*Martes Americana*));

--in Regions 1-4, removal or destruction, intentionally or not, of young conifers that provide the dense horizontal cover needed by snowshoe hare (*Lepus Americanus*), the favorite prey of the threatened lynx (*Lynx Canadensis*);

--removal or burning of down dead wood, the presence of which has many benefits, including small mammal habitat, formation of new soil over time, and help in adding nitrogen to the soil (see Franklin et al, 1981 at 43, fn 18);

--compaction of soils from the use of heavy equipment, with a possible long-term loss of soil productivity. See, e. g., Bowd et al, 2019; and Rhodes, 2007 (at 16);

--elimination or reduction of hiding and thermal cover for big game species such as deer and elk;

--reduction or elimination of habitat for species needing well-forested, closed canopy habitat, such as spotted owls (*Strix*, various subspecies), northern goshawk (*Accipiter gentilis*), and boreal owl (*Aegolius funereus*);

--introduction and/or spread of non-native plant species, i. e., weeds; and

--reduction of the carbon absorbing and storage capability of the residual forest versus the uncut one.

None of these impacts are consistent with maintaining or attaining old growth characteristics. Indeed, treatment would not have to retain old growth under any alternative, even more restrictive alternative 3:

There is no requirement that [current old growth forests] continue to meet the definition of old-growth when managed for the purpose of proactive stewardship[hellip]

DEIS at 16.

Older forests with dead and/or dying trees are often salvage logged. However,

Salvage logging is inappropriate since it removes at least two of the major structural components—dead and down—that are key elements of the system. In all likelihood, some of the more decadent, live trees would also be removed. Salvage logging is also inappropriate because of the damage inevitably done to root systems and trunks of the residual stand which results in accelerated mortality of trees and overall deterioration of the stand. [hellip]

To summarize, if the objective is perpetuation of an old-growth forest ecosystem, a minimum amount of disturbance should be allowed. Snags and logs perform important functions and are essential structures.

Franklin et al, 1981 at 41, 42; emphasis added.

Other purposes for treatment of old growth forests include:

v. To recruit and promote the development of future old-growth forests where current conditions in mature forest are likely to achieve the old-growth forest definitions and associated criteria in the shortest timeframe possible;[hellip]

MA 1.b, DEIS at 23. We agree with the emphasis here - to focus on development of future old growth stands. However, this needs to be a standard. But if the area is already likely to achieve old growth status (based on the definition for the forest type), then why would there be a need to do any "proactive stewardship" or at least any actions that manipulated the vegetation?

Under objective 2, units are directed to initiate at least three proactive stewardship projects/activities" identified in the unit's Adaptive Strategy within two years. DEIS at 27. Objective 3 directs units to initiate at least one co-stewardship project from the Adaptive Strategy with Native American tribes within two years. Thus the proposed action directs units to initiate projects that will manipulate old growth vegetation, whether that old growth needs manipulation or not.

Further evidence of pro-treatment bias in old growth within the proposed action:

In many situations, intentionally accepting alternative climate-driven outcomes without implementing proactive stewardship may slow the development of old-growth forests or result in a reduction of old trees and old-growth forests[hellip]

DEIS at 102; citations omitted. In other words, lack of treatment is believed to thwart old growth development. That is highly unlikely for most old growth stands, as the opposite is much more likely to be true - manipulation will delay, degrade, or thwart altogether the development of old growth character.

Even commercial harvest could occur under the proposed action. The DEIS states that alternative 3's prohibition on commercial harvest

would have the effect of limiting proactive stewardship activities and other vegetation management in cases where adherence to NOGA-FW-STD-2a would otherwise yield commercially viable material as a byproduct of proactive stewardship. [hellip]

Overall, for Alternative 3, from an ecological perspective, the anticipated negative effects of reducing the rate of proactive stewardship by limiting vegetation management tools - and thereby accepting avoidable loss of old-growth - likely outweighs any potential benefits of ensuring that commercial timber harvest does not negatively influence old-growth management decisions.

Id. at 107; see also USDA Forest Service, 2024b at 101. Even if treatment in old growth is supposed to be for purposes of promoting or retaining old growth, treatment could yield commercially valuable products. This would encourage units to sell timber in old growth areas to meet timber targets. The more trees that are cut commercially, the less the cut stand is likely to maintain its old growth character, as commercial sales generally offer the largest trees, the ones most in need of retention for old growth protection. Notably, "there will be no change in forest Allowable Sale Quantity (ASQ), Projected Timber Sale Quantity (PTSQ) or land suitability". DEIS at 121.

If there is still any doubt about the proposed amendment's intention to allow and encourage treatment of forests and production of salable products, the following passages lay it to rest:

The ability of proactive stewardship to positively affect old-growth is partially dependent upon the ability to sell forest products to manufacturing companies and to use harvesting processes (including the residual slash disposal activities) to positively affect the forest vegetation and reduce hazardous fuels. If the forest products industry declines in areas surrounding NFS units to the degree that it is difficult to sell forest products, or if "stumpage prices" decrease substantially, it would affect how many acres could be treated. While some treatments could be accomplished by using prescribed burning only, it is generally very risky in the wildland-urban interface and expensive, leading to fewer acres treated.

DEIS at 125.

Agency funds will go further under Alternatives 2 and 4 and treat additional acres of old-growth with the sales of commercial products covering a portion of restoration costs or "goods for services" unlike Alternative 3 where appropriated funds will be needed to treat acres.

Id. at 127.

[hellip]managing the mature and old-growth forest threats identified in this analysis will be challenged by existing mill infrastructure and timber processors. [hellip]

[hellip]lack of mills presents barriers for conducting management activities aimed at reducing risk from fire, insects, and diseases in an economically viable way.

FS-BLM, 2024 at 60.

The proposed amendment thus envisions treatment of mature and old growth forests across the landscape via proactive stewardship projects which by definition include vegetation management. Indeed, cutting in mature and old growth forests is predicted to increase over the next 50 years. Id. at A.69.

Note that under current agency direction for managing old growth forests, units may need to modify or eliminate existing protections for older and larger trees:

Where forest plans mandate diameter cap cutting or an age limit to retain large diameter or old trees, forest plan amendments may be required to apply silvicultural practices essential to achieving or maintaining desired conditions or improving ecological integrity, or both.

USDA Forest Service, 2024a, at 10. Though it is not clear if this direction would be retained, it would be consistent with the proposed amendment.

Implementation of such projects will adversely affect old growth values:

[hellip]proactive stewardship is likely to be at odds with values that prioritize the naturalness or wildness of old-growth forests as unmanaged, self-determined landscapes.

DEIS at 116.

The intent of the proposed amendment is thus clear: treat existing and future old growth forest areas to save them from threats, even though they may not need treatment, and any treatment could degrade or even eliminate old growth characteristics.

VI. THE PROPOSED EXCEPTIONS IN THE DRAFT AMENDMENT WOULD ALLOW TOO MUCH TREATMENT OF OLD GROWTH

As we detail above, the proposed amendment already appears way too eager to allow and encourage treatment in mature and old growth forests, to the ecological detriment of these areas. But the proposed exceptions would make the prospects for damage even worse.

Standard 2.b would allow treatment of OG for purposes other than proactive stewardship of OG if the proposed activity is incidental to the proposed activity not otherwise prohibited by the respective forest plan, and

the area - as defined at an ecologically appropriate scale - continues to meet the definition and associated criteria for old-growth forest after the incidental tree cutting or removal.

DEIS at 30. As the DEIS explains, activities for purposes other than proactive stewardship can be done

so long as said incidental tree cutting or removal of trees in old-growth forests does not diminish the ability for said forest to continue to meet the definition and criteria of old-growth, on an ecologically appropriate scale.

DEIS at 104; USDA Forest Service, 2024b at 97-98.

Under this broad exception, projects and activities could be approved in old growth that would considerably degrade the quality of the old growth ecosystem, even if the treated areas still technically met the respective old growth definitions. Indeed, examples cited in the DEIS include development of recreational opportunities and ski runs. Id. at 103-104. It is very difficult to imagine an old growth ecosystem maintaining its integrity and function if it has ski runs. Even if it somehow retained the requisite structure, the high level of human use, possibly including some use in the snow-free seasons, would render wildlife habitat ineffective and disrupt ecological processes. In any case, allowing such projects in areas with old growth forests would greatly diminish the quality and functioning of those areas as old growth ecosystems.

The DEIS observes that implementation of these projects may destroy old growth:

It should be acknowledged that some of these infrastructure or multiple use activities may be large enough that they impact whether an area meets the definition and associated criteria of old-growth at the ecologically appropriate scale.

Id. at 104; USDA Forest Service, 2024b at 98. This is a warning sign that the proposed amendment is not strong enough to truly protect old growth ecosystems on national forest land.

Under proposed standard 2.c, activities can be exempted from standards 2.a and 2.b:

vi. in cases where it is determined - based on best available science, which includes Indigenous Knowledge - that the direction in this standard is not relevant or beneficial to a particular species or forest ecosystem type.

DEIS at 31.

Lodgepole pine forests may be specifically excepted under this standard. DEIS at 105. However, the Threats Report admits that lodgepole pine "can achieve [mature-old growth] conditions over time in the absence of insects and fire". FS-BLM, 2024 at A.110. See also Mehl, 1992, at 111.

As a scientific consensus report noted, these forests are not the same:

Not all lodgepole pine forests are the same.

Some forests are composed of nearly pure lodgepole pine established following large fires decades or centuries ago. Others are mixtures of lodgepole pine with subalpine species such as Engelmann spruce, subalpine fir, and aspen at higher elevations, or with mixed conifer species such as ponderosa pine, Douglas-fir, and aspen at lower elevations. Each type of forest has unique features of ecology and fire behavior.

Kaufmann et al, 2008, at 4.

Some pure lodgepole pine stands may not develop old growth characteristics, particularly large diameter trees. However, lodgepole can grow to sizable diameters on productive sites. And as Kaufmann et al, 2008 noted:

If not renewed by fire every few centuries, pure lodgepole pine stands often but not always experience ingrowth by other tree species, especially those tolerant of moderate shade.

Id. at 6. This may lead to development of old growth characteristics, such as variation in tree diameter, more than one age class, down dead logs in various stages of decay, and standing dead trees (snags). Lodgepole grows in subalpine forests at higher elevations, mixed with Engelmann spruce and subalpine fir (id. at 7), where this ingrowth often occurs. As it does, the lodgepole pine overstory begins to die, and structure found in old growth forests begins to develop. Lodgepole also occurs in mixed conifer forests at lower elevations. Ibid. These forests can also develop old-growth-like structure.

The Draft Ecological Impacts Report of the amendment states:

Because lodgepole pine often germinates prolifically following wildfire, stands tend to be of uniform age and can achieve MOG conditions over time in the absence of insects and fire.

USDA Forest Service, 2024b, at 51.

The DEIS states that "excluding lodgepole forests from NOGA-FW-STD-2a may detract from ecological integrity." Even though some lodgepole pine forests will likely not develop old growth character, the entire vegetation type must not be excluded from standards 2.a and 2.b or their successors.

The proposed action would allow exemption from standards 2.a and 2.b if:

In cases where this standard would preclude achievement of wildfire risk management objectives within municipal watersheds or the wildland-urban interface (WUI) as defined in Section 101 of the Healthy Forest Restoration Act of 2003.

Standard 2.c (i), DEIS at 31. I. e., such areas could be treated in ways that did not promote proactive stewardship of old growth forest ecosystems.

It is estimated that 6.2 million acres of old growth, about 25 percent of the total nationwide, is in the wildland-urban interface (WUI). DEIS at 104, 99. But the definition of WUI is expansive. The DEIS' Glossary does not have a definition for WUI. The definition most often used is from the Healthy Forest Restoration Act (HFRA). It includes any area within a community wildfire protection plan, and:

(B) in the case of any area for which a community wildfire protection plan is not in effect-

(i) an area extending 1/2-mile from the boundary of an at-risk community;

(ii) an area within 1 1/2 miles of the boundary of

an at-risk community, including any land that-

(I) has a sustained steep slope that creates

the potential for wildfire behavior endangering the

at-risk community;

(II) has a geographic feature that aids in creating

an effective fire break, such as a road or

ridge top; or

(III) is in condition class 3, as documented

by the Secretary in the project-specific environmental analysis

16 U.S.C. 6511 (16).

Modifying fire behavior in the WUI will remain a priority. DEIS at 109. This means significant treatment in these areas to reduce fuels and the concomitant fire risk. Considerable land containing existing and future old growth forests would be adversely affected.

VII. CARBON MANAGEMENT

One of the important functions of older forests is removal of carbon from the atmosphere, long-term storage of that carbon, and production of oxygen. Larger trees store "disproportionally massive amounts of carbon", much more so than smaller ones. See Mildrexler, et al, 2020.

It takes at least 200 years for an old growth stand that is cut to be able to remove as much carbon as it did prior to treatment. Harmon et al 1990.

The DEIS misstates the carbon emissions from unmanaged forests:

Moving carbon stored in forests to forest products storage may result in lower net greenhouse gas (GHG) emissions relative to unmanaged forests, if carbon stored in harvested wood products (HWP), substitution effects, and forest regrowth are considered[hellip]

DEIS at 75; citations omitted.

This is quite unlikely. See, e. g., Campbell et al, 2011. Much of the wood is trimmed off and discarded during wood product manufacturing process(es); this material subsequently decomposes and returns carbon to the atmosphere. Wood products, e. g., furniture, wear out and wind up in landfills and must then be replaced by new products. This progression is supported by science; e. g., an early study by Harmon et al, 1996, estimated that of all the carbon harvested in Washington and Oregon between 1900 and 1992, only 23 percent remained in storage. In other words, the remainder has been released into the atmosphere, increasing the carbon concentration therein.

A study by the Forest Service in Alaska (USDA Forest Service, 2020) found that a thinned stand stored less carbon than an uncut stand 100 years after thinning.

It is clear that logging and wood product manufacturing decrease carbon storage. Maintaining our older forests will help in the battle against climate change by maximizing carbon storage. In fact, this is an essential part of any strategy to stem or reverse climate change.

VIII. PLAN MONITORING.

Old growth conditions should indeed be monitored as part of each units required biennial monitoring (36 CFR 219.12(a), (d)) or a broader scale monitoring effort (219.12(b)) to observe how old growth ecosystems change over time. Thus it is good to have proposed Plan Monitoring 1 as part of the amendment. (DEIS at 35.)

However, the wording here needs to be clearer. The component, Plan Monitoring 1, states:

Within two years, include the areas identified and prioritized for the retention and promotion of old-growth forests in the Adaptive Strategy for Old-Growth Forest Conservation in the biennial monitoring report or the broader scale monitoring strategy to be updated as conditions change.

DEIS at 35.

It isn't clear what is to be updated, the Strategy or the monitoring report. The "intent" for this component states:

The intent of including plan monitoring in the amendment is to focus monitoring on the areas identified in the Adaptive Strategy to understand how conditions change.

This requirement is also intended to ensure that there is a clear and transparent way to track where the plan components in this amendment would apply, recognizing that the system is dynamic and conditions will change over time.

Id. at 35.

DEIS at 102 states that Mon 01 is

designed to track the areas identified and prioritized for the retention and promotion of old-growth forests[hellip] and provide regular updates on measurable changes in unit-level old-growth forest, actions taken pursuant to this amendment, and potential unintended consequences...

The intent appears clearly to monitor old growth conditions and related activities. The wording of the component itself should be adjusted to make clear that old growth conditions will be monitored.

IX. ALLOW UNITS TO DESIGNATE SPECIAL AREAS FOR OLD GROWTH CONSERVATION

The DEIS dismisses an alternative that would establish areas for old growth management because "old-growth forests are dynamic systems and the intent is not to manage all of these areas in the same manner." DEIS at 13-14. However, it may be appropriate on parts of some units to have designated areas for old growth protection. Units can, during land management planning, identify the highest quality old growth stands and/or others that may need special attention, and ensure their protection by designating one or more special areas. Units should at least be encouraged to do this, where appropriate.

X. ALASKA EXCEPTION DELETED

We are pleased to see that the provision which would have exempted the entire Tongass National Forest in Alaska from any plan components addressing old growth has been deleted. See DEIS at 33. There was never any reason for this provision; indeed, the Tongass is already transitioning away from selling old growth timber:

[hellip]Alternatives 2 and 3 would effectively halt larger commercial old growth timber sales on the Tongass NF, leaving commercial harvesting to occur within young or secondary growth areas. The 2016 Tongass Forest Plan, as amended, and the 2021 Southeast Alaska Sustainability Strategy (SASS) already envision reduced commercial timber harvesting of old growth.

DEIS at 106.

We encourage implementation of strong old growth protection for the Tongass, as for everywhere else. It is especially important for the Tongass because it has large areas of intact forest, much of which is likely old growth. For ecological and carbon storage functions, it is best to keep it that way.

XI. MISCELLANEOUS

It is not clear what the plan components on DEIS pp. 38-52 apply to. They seem to be substantially the same (except for different numbering) as the components described on pp. 20-37.

CONCLUSION

As we noted at the outset, the Forest Service has a golden opportunity to provide some real protection for existing and future old growth ecosystems, which are of inestimably high value for biological diversity and carbon storage. The proposed amendment largely fails to do this.

The agency needs to greatly strengthen the proposed amendment with the following:

--the requirement to identify existing and future old growth stands must be a standard.

--the amendment must emphasize that existing and developing old growth stands should not be manipulated unless there is a strong reason to do so. The NEPA documents for any projects manipulating these forests must clearly state the justifications for, and the potential effects of, implementing the projects.

--fuel reduction in old growth must only be allowed in areas with historically frequent fire where analysis of the best available science gathered in the areas proposed for treatment shows that conditions deviate significantly from historical conditions and proposed treatment will (a) help restore natural conditions, and b) minimize harm to old growth by retaining old growth characteristics to the maximum degree practicable.

--not allowing treatment in existing and future old growth in areas with historically infrequent fire except: a) to protect public safety, such as removing hazard trees in areas of high public use; b) removing non-native plants, animals, or fish; and c) closing and obliterating roads.

--all old growth and most developing old growth stands must be unsuitable for timber production. Units must be required to amend their respective management plans accordingly.

--delete all objectives mandating that a certain number of vegetation manipulation projects be done on each unit every year. Treatment of old growth, if any, should be on a case-by-case basis and only after a demonstration of need and a positive result for old growth.

--require all treated areas to still meet old growth definitions for the respective ecological types.

Sincerely,

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