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Comments: USDA & USDI

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Re: Comments on USDA & USDI Definition Framework for Old-growth and Mature Forests on Federally Managed Lands (EO 14072)

August 26, 2022

This letter is my response to the USDA & USDI requests for comments on a definition framework for old-growth and mature forests on federally managed lands. My comments will focus primarily on old growth. I have been involved wildlife science and conservation western forests since the 1970s. I received my Ph.D. in wildlife ecology from the College of Forest Resources at the University of Washington and moved to Juneau to begin Sitka black-tailed deer research on the Tongass National Forest for the Alaska Department of Fish and Game in 1977. During my twelve years in Juneau, I also conducted research on brown bears and mountain goats and their relationships to forest management. Since that time, I have remained involved in conservation and management issues on the Tongass National Forest. For example, I was a co-investigator of the Audubon-TNC conservation Assessment of the Tongass from 2004 through 2007, served on the Tongass Futures Roundtable, was a co-editor of the book North Pacific Temperate Rainforests: ecology and conservation, published by the University of Washington Press (Orians and Schoen 2013), and recently authored Tongass Odyssey: Seeing the Forest Ecosystem through the Politics of Trees - A Biologist's Memoir (Schoen 2020) published by the University of Alaska Press. I have also published over 60 scientific and popular papers and major reports addressing Alaska forest-wildlife issues covering a period of four decades and have served as an affiliate professor of wildlife biology with the University of Alaska system.

Key Recommendations Regarding the Questions Posed in the Federal Register:

1. Criteria needed for a universal definition framework for old-growth mature forests: First, I strongly recommend separating the single category of mature and old-growth forests into two categories. Old growth today is extremely rare (<5% of its original distribution) across the contiguous US. The primary focus for old growth should be conservation of the remaining stands that exist on federal lands. Mature forests are more abundant and these stands offer long-term restoration opportunities for moving representative portions into old-growth conditions. Second, key criteria include age, structure, composition, ecosystem type (e.g., rainforest, boreal forest, hardwood forest, dry fire-prone forest, etc.), geographical distribution, site productivity, percentage of down & dead trees on the forest floor and in streams, distribution of arboreal epiphytes, habitat features for fish and wildlife, and carbon storage and sequestration potential. A good model for describing ecological characteristics of old growth is the general technical report (PNW-118) for old-growth Douglas-fir forests by Franklin et al. 1981.
2. The overarching old-growth forest characteristics for a definition include uneven-age structure including old (centuries-old) trees, mature trees (75-150 yrs depending on ecosystem), seedlings, saplings, and dead snags and down logs; broken, multi-layered canopies; abundant and diverse understories of herbs, shrubs, ferns, moss, fungi, and lichens; stand diversity on a fine-grained scale related to site productivity, soil moisture, and micro-climate; and tree species and understory composition.
3. The old-growth definitions must reflect variability based on disturbance and variation in forest

type/composition, climate, site productivity and geographic region. Not all old growth is the same. For example, in Alaska's Tongass National Forest (the most intact temperate rainforest on Earth), old-growth stand types are highly variable (on an acre scale) based on site productivity, soil drainage and micro-climate. Logging has been highly selective of the large-tree old-growth stands which were always rare. Maintaining a diversity of stand types will require setting conservation priorities on the rare stands that also have high fish and wildlife habitat values. Recognizing this stand variability within old growth will be a critical element in maintaining the natural diversity within the forest.

4. The definition of old growth must be crafted with respect to different forest ecosystems across the nation. There should be no uniform definition of old growth other than in the most general sense.

Scientific consensus that clear-cutting old growth should end on federal lands.

The Earth's old-growth forests are today exceedingly rare and highly fragmented. In the United States, perhaps as little as 5-10% of our original forests still remain and most of that occurs on the Tongass National Forest. The ecological structure and function of old growth requires many centuries to develop. Thus, when clear-cut on short (less than two-three century) harvest schedules, the many ecological, economic, and societal values old-growth forests provide will be permanently lost. Old-growth forests are essentially a non-renewable resource.

The scientific concern for preserving the nation's remaining old-growth forests has grown significantly since the 1980s. Today, the Tongass is the only national forest in the United States that is still clear-cutting old growth on an industrial scale. And the scientific support for ending this unsustainable silvicultural practice has grown dramatically as scientists increasingly learn of old growth's irreplaceable ecological and economic values to society (including ameliorating the impacts of climate change) and recognize that old growth has become an endangered ecosystem. In the last decade, there have been numerous letters to the Department of Agriculture and the President from scientists requesting an end to old growth clear-cutting on national forests in general and specifically requesting a rapid transition out of old growth clearcutting on the Tongass. In 2003, former Forest Service Chiefs Mike Dombeck and Jack Ward Thomas urged that "[hellip]harvest of old growth from the national forests should come to an end[hellip]" (Seattle PI, 8-23-03)

In 2014, 78 scientists, led by former chiefs Thomas and Dombeck, sent a letter to the President of the United States requesting that he "[hellip]direct the Secretary of Agriculture and Chief of the U.S. Forest Service to utilize their authority to craft a National Old Growth Policy that fully protects the remaining old-growth forests on national forests throughout the United States[hellip]" (Letter to President Obama, 6-24-14). In addition, in 2015, seven scientific societies (American Fisheries Society, American Ornithologist's Union, American Society of Mammalogists, Ecological Society of America, Pacific Seabird Group, Society for Conservation Biology, and The Wildlife Society), representing a combined membership of over 30,000 scientists and natural resource professionals, sent a joint letter to the Secretary of Agriculture regarding the clearcutting of old growth on the Tongass. The letter stated in part "The Tongass National Forest has the greatest abundance of old growth remaining in the nation. Managing for its old-growth forests, carbon stores, and fish and wildlife populations, would provide an example to the world of the administration's commitment to climate change remediation as well as assure that the Tongass region will continue to provide robust natural resources for future generations. For these reasons, we request that you (1) provide additional guidance to the Forest Service to end clear-cut logging of old-growth forests during the forest plan amendment process, and (2) ensure that the timber industry's transition to second growth is completed as rapidly as possible, ideally within the next three years." (Letter to Secretary Vilsack, 1-20-15). Clearly, these examples demonstrate strong scientific consensus that the clear-cutting of old-growth forests should come to a rapid end.

High-grading the large-tree old-growth stands on the Tongass National Forest:

For decades, scientists have been urging the Forest Service to end high-grading (i.e., disproportionate harvest of

rare forest types) the most valuable stands of large-tree old growth on the Tongass. In 1985, the Alaska Chapter of The Wildlife Society recommended "The disproportionate harvest of high-volume, old-growth classes should cease." (TWS Position Statement on old-growth forest management in coastal Alaska, 6-85).

The high-grading issue on the Tongass was also recognized as a significant problem by the United States Congress. One of the key measures of the Tongass Timber Reform Act (passed by Congress and signed by the President in 1990) was a requirement that the harvest of timber stands on the Tongass should not exceed the proportion of their occurrence on the forest. This important measure was designed to prohibit high-grading the rare, high-volume old-growth stands. Unfortunately, this provision was specific to the 50-year pulp mill contracts which were terminated during the 1990s.

The significant loss of large-tree old growth (SD67) habitat (i.e., high-volume old growth), especially in certain biogeographic provinces such as northern Prince of Wales, is not compatible with the goal of maintaining habitat diversity well distributed across the Tongass. The 2008 FEIS (3-174) stated: "It can be assumed that the more an alternative changes the natural distribution and composition of old-growth ecosystems, the greater are its effects on biodiversity." Past high-grading of old growth on the Tongass (as well as on adjacent state and private lands) and future management under the Amended Forest Plan will have a significant cumulative impact on biodiversity and the integrity and resilience of the rainforest ecosystem on the Tongass and particularly on Prince of Wales Island where it is likely that more high-grading will occur if the remaining roadless areas are opened to development.

In 2013, TNC ecologist Dave Albert and I published a paper in the journal *Conservation Biology*, "Use of Historical Logging Patterns to Identify Disproportionately Logged Ecosystems within the Temperate Rainforests of Southeastern Alaska" (Albert and Schoen 2013). We evaluated the pre-1954 occurrence of contiguous high-volume forest (large-tree old growth) in southeast Alaska to the forest that remained in 2004. Key excerpts from that paper follow.

The highest volume landscape forests in 1954 were reduced by 66.5% region-wide from 243,373 ha in 1954 to 81,611 ha in 2004. This reduction was accompanied by similar declines in the number of patches, average patch size, and largest patch size. Due to natural fragmentation, high-volume forests contiguous at a landscape scale were always rare. The largest proportion (31%) of contiguous high-volume forest occurred on northern Prince of Wales Island, where such forests have been reduced by 93.8%...

Although it has been indisputably documented that the rare, large-tree old-growth forests on the Tongass have been significantly targeted for logging and scientists have strongly cautioned that this practice will increase conservation risks to wildlife, this management approach has continued. This is a significant conservation concern and a major justification for NOT modifying the 2001 Roadless Rule on the Tongass Forest.

The national importance of the Tongass as a carbon sink and in mitigating climate change:

Climate change is a global threat to life on Earth. The most effective way to reverse climate warming is to reduce CO₂ emissions and increase CO₂ removal by vegetation. Forests which store carbon in wood and soil are particularly effective at removing CO₂ from the atmosphere. It takes hundreds to thousands of years to accumulate carbon in trees and soils to their ecological potential and ecosystems that are more intact and less disturbed generally maintain higher carbon storage. Protection of intact forests is one of the most cost-effective ways to mitigate climate change. The total carbon stock in the forests and soils of the Tongass is about 8% of that of all the forests of the conterminous US and over 40% of carbon on national forest lands. Thus, the Tongass National Forest is one of the most important carbon sinks in the nation and its role in mitigating climate change is far more valuable than subsidizing the harvest of old growth on our nation's largest national forest.

The role of the Tongass in the regional economy of southeast Alaska:

The seafood and tourism industries together represent about 25% of southeast Alaska's labor force while harvest of national forest timber represents less than 1%. Average timber employment on the Tongass Forest was estimated at 137 (TLMP 2016). According to Taxpayers for Common Sense, the timber program on the Tongass lost approximately \$30 million annually between 2002-2014. Conserving the old-growth temperate rainforest is a prudent economic strategy for maintaining the economic diversity and resilience of southeast Alaska that leans heavily on the fishing and tourism industries as major economic drivers. Fishing, tourism, subsistence and cultural use of natural resources, and outdoor recreation all depend on the ecological integrity and productivity of the Tongass rainforest. The recent recommendation by the Department of Agriculture to end commercial harvest of old growth on the Tongass is a significant step toward ecosystem and economic sustainability.

Summary and Conclusions:

Old-growth forests are rare throughout the world and provide highly valuable carbon stores as well as diverse and valuable fish and wildlife habitats critical for maintaining global biodiversity. Alaska's Tongass National Forest is the greatest repository of large-tree, old-growth temperate rainforest remaining on Earth. These old-growth stands of immense value as fish and wildlife habitat are exceedingly rare today because they have been the target of clear-cutting for more than a century. The consensus of scientists, including two former Chiefs of the US Forest Service, is that the nation's remaining old growth should be protected. Aldo Leopold's first principle of conservation was to maintain all the parts of the ecosystem. This principle is violated by continued logging of old growth. Large-tree old-growth communities have always been rare and have always been the target of logging. These remaining old-growth stands will be at high risk under continued logging of old growth. Gifford Pinchot, first Chief of the US Forest Service, stated that the role of the FS was to provide the "[hellip]greatest good for the greatest number for the longest time." The current proposal by the Forest Service to restore the 2001 Roadless Rule protections on the Tongass and end large-scale old-growth timber harvest is a positive move and one that will focus Tongass management on forest restoration, fish and wildlife habitat, watershed conservation, recreation, and climate resilience.

Thank you for the opportunity to comment on this important proposal.

Sincerely,

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