Southeast Alaska
Conservation Council

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Re. Request for information on federal old growth and mature forests (Executive Order 14072) #NP-3239

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Based in Juneau, Alaska (Tlingit/Áak'w Ḵwáan lands), Southeast Alaska Conservation Council (SEACC) is a regional grassroots organization with more than 7,000 supporters. For over 50 years, SEACC has been bringing together diverse Alaskans from our region's communities to protect the natural resources of Southeast Alaska, ensure sound stewardship of the lands of the region, and protect subsistence resources and traditional ways of life side-by-side with commercial fishing, tourism, and recreation.

For the purposes of this comment, SEACC will focus on the forest we have been protecting and studying for more than 50 years — the Tongass National Forest in Southeast Alaska, the nation's largest national forest at just under 17 million acres. It is also a temperate rainforest, one of the last and largest of its kind in the world. The Tongass is unique for many reasons, including the fact that it is relatively intact despite natural and human-caused fragmentation over time, and because of its vast capacity to store carbon, especially in old-growth and mature forest areas. It is estimated that the Tongass alone stores 20% of the carbon on all national forest lands in North America.[1]

What criteria are needed for a universal definition framework that motivates mature and old-growth forest conservation and can be used for planning and adaptive management?

We agree that a fresh definition of old-growth and mature forests is necessary, and vital for the future of our public land management goals, especially regarding conservation. The effort to define these forest types, nationally and within our region, is not new. In 1988, the Chief of the Forest Service established a National Old-Growth Task Group to "provid[e] national consistency to old-growth forest management."[2] The resulting definition for the Forest Service emphasized size and structural attributes, such as snags.[3] Shortly thereafter, the Tongass went through its own reiteration of an old-growth habitat definition. In 1992, a definition for old-growth habitat

[1] DellaSala et al., 2022, p. 13 of 15.
[2] USDA Forest Service, Pacific Northwest Research Station, 2003
[3] USDA Forest Service, Pacific Northwest Research Station, 2003

was updated after decades of industrial logging on the forest. A working group was formed with the stated goal to:

> "Develop ecological old-growth definitions for forest types in the Alaska Region within the framework and direction of the National Old-Growth Action Plan."[4]

Management of the Tongass by the United States Forest Service (USFS) is currently guided by the Tongass Land and Resource Management Plan (TLMP) which was last updated in 2016. The definition of old-growth forest habitat in TLMP[5] references a definition document, produced in 1992, which used timber inventory datasets from the early 1980s in order to inform the definition of old-growth for the Tongass.[6]

Since that time, our collective understanding of ecological values and benefits that old-growth and mature forests provide to the entire planet has changed dramatically. Human values and uses of forests have also changed significantly, even in the past fifty years. In particular, the evidence-based confirmation that climate change is occurring and impacting our land, water, wildlife, and the human environment[7] has directed the course and goals of many scientific analyses of old-growth and mature forests. Specific studies have identified unique threats to the Tongass and the Southeast Alaska region, identifying increasing temperature trends and projections which suggest greater impacts due, in part, to the region's higher latitudes.[8]

We recommend that the criteria for these definitions on the Tongass be derived from peer-reviewed, current science regarding old-growth and mature forests, and their capacity to store carbon. We know that terrestrial ecosystems absorb about 30% of human carbon emissions annually, and forests represent the vast majority of this uptake.[9] In order to leverage use of the best available science, the USDA should ensure that the rapid advances in satellite technology, datasets, and modeling are used by forest managers on the Tongass. These tools should also be transparent and accessible to a wide range of rightsholders and stakeholders.[10]

To inform the definition of mature forests, in particular, we also recommend the use of historically reliable criteria, such as tree age, size, canopy characteristics, understory vegetation, soil type, presence or absence of certain species, decadence, and other factors.

Mature forest is a new category and will require a separate definition framework that can and should borrow concepts from previous and current old-growth science, studies, and definitions. Carbon storage capacity should be a key consideration in helping to inform this definition.

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[4] USDA Forest Service, Region 10, 1992

[5] USDA Forest Service. (2016). TLMP.

[6] *Id.* p. 5.

[7] International Panel on Climate Change, 2019

[8] EcoAdapt, 2014; National Park Service, 2021.

[9] Anderegg et al., 2020, p. 5.

[10] *Id.* pp. 22-23.

We recommend that the definition in TLMP be updated immediately following the conclusion of this process so that Tongass management can be quickly aligned with the management implications stemming from the new definition for old-growth and mature forest.

What are the overarching old-growth and mature forest characteristics that belong in a definition framework?

Old-Growth

In terms of the Tongass, we recommend that all stands that have not been industrially logged be classified as old-growth. Old-growth can be considered a subset of "primary forest," which is forest that has not been altered by industrial activity.[11] Some of these stands may have been selectively logged prior to industrial logging (i.e., hand logging) sixty years ago or more; this type of selective small-scale logging was generally accomplished close to ocean access points and does not constitute the industrial-scale clearcut logging that we have either seen in past years or that we know today on the Tongass.[12] Unlogged stands may contain very large, 1,000-year-old trees, perhaps older,[13] and are now extremely rare.[14] These stands have incalculable ecosystem value, carbon storage capacity, wildlife habitat value, and cultural value to the Indigenous people of the region.

Older definitions describe Tongass old-growth as "undisturbed by man…stands…have a ragged texture because they include trees of various ages, sizes, and conditions, with many dead tops and snags."[15] These stands are referred to in forestry as "uneven-aged." This structure is caused by natural mortality events, usually, wind or disease,[16] causing gaps in the canopy which let in light and make space for understory regeneration, which is composed of ferns, shrubs, forbs, and seedlings of trees that will make up the future stand. Fire is not a natural part of the ecology on the Tongass; wildfires burn on average no more than an acre a year over a typical 10-year span on the forest.[17]

Currently, in the Tongass Land and Resource Management Plan (TLMP), old-growth as defined in the context of timber production is described as follows:

> "For timber inventory purposes, stands of trees 150 years old or older are designated as old growth. More than 85 percent of forest lands meet the criteria for old growth sawtimber (Table 3.13-2)."[18]

[11] Dr. DellaSala, Dominick, pers. comm. [Dr. Dominick DellaSala is the Chief Scientist of Wild Heritage, has authored 200 scientific articles about the Tongass, conservation and forest ecology and has served on the White House task force on science].

[12] Durbin, 1999, p.6.

[13] Audubon Alaska, 2016, p.51

[14] Schoen et al., 2011.

[15] USDA Forest Service, Pacific Northwest Research Station et al., 1974, p. 13.

[16] Audubon Alaska, 2016, p. 51; USDA Forest Service, Pacific Northwest Research Station et al., 1974, p. 35.

[17] Alaska Interagency Coordination Center, n.d. [Fire data for the Tongass National Forest 2004-2021].

[18] USDA Forest Service, Alaska Region. TLMP. (2016). Sec. 3-327.

While age remains an important metric to define old-growth, the primary factor should be whether or not the area has been substantially altered by industrial activity (logging, mining, roadbuilding, and associated deforestation), and the resultant condition of the forest.

Mature Forest

On the Tongass National Forest, stands of trees that were previously industrially logged (clearcut) or had large-scale natural disturbance, such as can occur with mudslides, landslides, or flooding or damming as occurs with increased beaver activity, over a short period of time should be categorized as "mature forest" once they reach certain a certain age range *and* regain the following old-growth forest characteristics:

- Age: beginning at approximately 60 to 80 years, stands can begin to exhibit mature forest characteristics. 80 years is typically the Age of Biological Maturity or Culmination of Mean Annual Increment (CMAI) used by foresters for determining merchantability. It marks the time when the annual growth rate slows down considerably.[19]
- Size: (including height and diameter at breast height) Of note in the temperate rainforest ecosystem and in particular in the Tongass, in some soil types and elevations, relatively small-statured trees may be approaching 100 years old. While the ancient and old trees of other forests may signal their maturity vis a vis their diameter at breast height (dbh) or other metrics, size of individual temperate rainforest trees is not a reliable predictor of age or mature or old growth status. Instead, we recommend using the size metric carefully and in combination with other factors, when appropriate, to define "mature" forest on the Tongass. Indeed, site attributes and quality are more frequently a reliable denominator for 'mature' forest status.
- Canopy characteristics: technology already in use on the Tongass, such as Light Detection and Ranging (LiDAR), along with drones and other technological advances, can aid in the study of canopy characteristics. The canopy of a mature forest, one where recent human disturbance significantly altered the landscape on a large scale, may differ noticeably from old-growth canopy. The Forest Service should use best available science and technology to differentiate canopy types to help inform definitions of "mature" forest vs. old-growth. See Dr. Dominick A. DellaSala's groundbreaking national old-growth and mature forest mapping project (in review).
- Vegetative and understory species diversity: use of past metrics alone will not suffice with regard to assessments of understory species diversity, as those datasets were limited and are aging. In the thirty years since the 1992 old-growth definition, climate change, human influence, and changes in wildlife population, distribution and diversity have undoubtedly changed what a

[19] D.A. DellaSala, pers.comm.; USDA Forest Service, Alaska Region. (2013). *Issue paper: Trajectory to Young Growth on the Tongass National Forest.*

"mature" forest might look like. Those changes should be identified on the Tongass as part of this effort, through a comparative analysis of field data and recent scientific studies.

- Wildlife species diversity: the presence of certain wildlife species may not alone necessarily determine a forest classification, but numerous studies of wildlife on the Tongass strongly suggest that most endemic species on the Tongass thrive in older forests.[20] In second growth, regenerating areas where trees have not yet reached maturity, and in heavily roaded areas, specific wildlife populations tend to be more sparse.[21] True old-growth usually holds an abundance and diversity of species, including endemic species.[22] Mature forest may be somewhere in between, as it sometimes takes time for wildlife to reestablish in formerly disturbed areas, especially where industrial clearcutting is concerned. Peer-reviewed wildlife studies and other best available science should help inform this definition.

Some of the older definitions and historically defined metrics of old-growth on the Tongass can reasonably be used to help create the definition for "mature forest." In 1992, the working group tasked with producing a working definition of old-growth habitat identified ten different types of old-growth forest within the Tongass based on species type and soil type, and used plant association to define the different types on the ground.[23] Some of these metrics still make sense to incorporate into a new definition for mature forest.

A wildlife conservation strategy focused on vulnerable species dependent on older forests was developed during the same timeframe for the Tongass by a committee of biologists from several government agencies. These species included brown bear, marten, and Queen Charlotte goshawk. However, a peer review of this approach concluded that the resultant strategy was inadequate to "ensure viability of all species."[24] In subsequent decades, the list of old-growth-dependent species on the Tongass has grown. The Forest Service should define mature forest so that the definition includes and prioritizes forested areas characterized by the presence and abundance of these and other species, which are indicative of older forests.

New forest inventory data should be available since 1992. The original old-growth definition framework recommended building onto and validating the definition over time through the inventory and field validation process.[25] We anticipate that has been accomplished and should provide powerful tools for creating a new definition for mature forest.

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[20] Audubon Alaska, 2016, pp. 52-56, 144-167.

[21] Brinkman. T.J. (2009). *Resilience of a deer hunting system in Southeast Alaska: Integrating social, ecological, and genetic dimensions*; Audubon Alaska. (2016).

[22] Dawson et al., 2007.

[23] USDA Forest Service, Region 10, 1992.

[24] Powell et al., 1997.

[25] USDA Forest Service, Region 10, 1992, p. 15.

Pursuant to the intent of Executive Order 14072 to help protect these forests due to their role in slowing and mitigating climate change, the carbon storage dynamics of certain stands should be used to define "mature forests," as best available science develops an ever-evolving understanding of how different forests store carbon. What is clear now is that older forests and bigger trees store more carbon than regenerating forests or logged areas and that we must consider the forest as a whole, rather than the carbon sequestration capacity of individual trees, as we seek to develop a defensible 'mature forest' definition given the exigencies of climate change.[26] Additionally, no amount of re-planting (proforestation) can make up for the net carbon storage loss from logging old and mature forests.[27]

How can a definition be durable but also accommodate and reflect changes in climate and forest composition?

There should be enough flexibility in the definitions to allow for changes associated with climate change, human impact (logging, road building, recreational use), and natural disturbance. For example, a current stand of 250-year-old Alaska yellow cedar on the Tongass might not constitute what "old-growth" looked like prior to accelerating climate change, but in forty years, it may have become rare to have intact stands of this age. Due to climate change and the increased prevalence of warmer winters, yellow cedar is declining across the region.[28] The definition of "old-growth" or mature yellow cedar may need to change over time to include younger, smaller trees, because it may be less and less common for Alaska yellow cedar to reach the age and size classes formerly associated with the term "old-growth" or "mature." A definition should allow for that flexibility based on scientific studies, stand inventory data, and best available science, and the process of making these determinations should be iterative, repeated periodically, as informed and required by best available science, over the decades and centuries to come.

A definition should be durable enough that it can withstand manipulation by individual resource managers or teams. A resource manager or group should not be able to reclassify a forested area or a part of an area once it has been classified as old-growth or mature unless public process and an amendment to the Forest Plan (i.e., the baseline definition) occurs.

A definition should also be durable enough that, even if the land changes ownership, the classification remains unchanged.

Management Implications

While the purpose of this comment is to help define what old-growth and mature forests are, the management implications cannot be ignored. During this process, the Forest Service has

[26] DellaSala et al., 2022.

[27] DellaSala et al., 2022; D. Miller, pers. comm. [Dr. Darren A. Miller is a wildlife biologist and Vice President of Forestry Programs at the National Council for Air and Stream Improvement].

[28] USDA Forest Service, Pacific Northwest Research Station, 2010; Tankersley, 2019.

seemingly ignored the threat that logging currently, actively poses for old-growth and mature forests, even as it announced that it would develop this strategy[29] to address President Biden's April 22, 2022, executive order regarding these forests.[30] Neither of President Biden's Executive Orders regarding climate (30x30) or mature and old-growth forests triggers meaningful protection from logging for the Tongass. Much has been made of the threats that fire, insects, and disease pose to these forests by those who live outside and at a great distance from our forest.

However, logging remains the major threat to the Tongass and other federal forests across the country,[31] as frequent challenges to Roadless Rule protections illustrate. The Forest Service should immediately halt any and all proposed logging on lands that have been previously or could in the future be designated as either 'mature' or 'old-growth' in order to allow this rulemaking process to conclude while the trees it exists to identify and protect are still standing in our forests. To fail to do so is to neglect the Forest Service's multiple-use mandates and to forgo the opportunity for essential protections that President Biden's executive order sought to create.

For example, less than ten years ago, the largest clearcut of old-growth timber on the Tongass in decades, the Big Thorne sale, was planned and executed on the Tongass on Prince of Wales Island despite vigorous opposition and litigation.[32] Despite highly publicized and egregious administrative and oversight issues with that sale and with the timber sale program at large,[33] other old-growth sales are still actively taking place on the Tongass, including the leftovers from Big Thorne, like the three Sour, Sweet, and Salty Snakey timber sales, all advertised for bid between 2021 and 2022.[34] Planning has proceeded with still other sales whose fate is uncertain at this time.[35] Not only are these timber sales ecologically destructive, but they cost taxpayers tens of millions of dollars in the form of subsidies that support a timber industry that, at best, represents less than 1% of regional employment by both jobs and earnings.[36]

These old-growth forest timber sales must be permanently and promptly stopped. Across the Tongass, it is estimated that half of the largest tree old-growth stands have been logged.[37] Prince of Wales Island is the most heavily logged landscape on the Tongass.[38] It is estimated

[29] USDA, Office of the Secretary. (2022). Memo 1077-004.

[30] The White House. (2022). E.O. 14072.

[31] Climate-Forests coalition, 2022.

[32] State of Alaska, Department of Law. (2017). *Press Release: Ninth Circuit Upholds Big Thorne Timber Sale*. law.alaska.gov/press/releases/2017/052317-BigThorne.html.

[33] USDA Forest Service, Washington Office, Chief Financial Organization, Financial Compliance and Oversight Branch. (2020).

[34] USDA Forest Service, 2022. fs.usda.gov/managing-land/forest-management/products/timber-sales

[35] USDA Forest Service, Tongass National Forest, Schedule of Proposed Actions. (2022).

[36] Taxpayers for Common Sense, 2019.

[37] Schoen et al. (2011). *High-grading on the Tongass National Forest: Implications of Pending Land Selections of Forest Diversity.*

[38] Durbin, 1999, p.1; Audubon Alaska, 2016, p.52.

that 94% of contiguous old-growth forest on a portion of the island has been logged.[39] With every new old-growth sale that is planned, our ability to mitigate the devastating effects of climate change is reduced. Irreplaceable wildlife habitat is destroyed. Salmon streams and riparian areas are damaged. Had a 'mature' and 'old-growth' forest definition been in use and implemented on the forest prior to the Big Thorne timber sale, this egregious loss of critical old-growth habitat might have been avoided.

In order to fully protect what remains of old-growth forest on the Tongass, the management plan for the forest (Tongass Land and Resource Management Plan, or TLMP) must be promptly updated to include the new definition and to direct and define a new management strategy for these areas. Once defined as old-growth, Tongass stands should be re-designated in the TLMP as non-harvest Land Use Designation (LUD) areas. SEACC advocates for the complete protection of old-growth from further commercial logging on the Tongass. The Tongass Land and Resource Management Plan should be amended as soon as possible to reflect the outcome of the process for which this comment is being submitted, and old-growth stands should be removed entirely from timber LUDs and be protected using Old-Growth Reserve LUD designations or other non-harvest LUD designations.

SEACC has worked for more than fifty years to protect the Tongass National Forest. Science — which has described old-growth and mature forests as special, unique, rare, and valuable — is not new. With this initiative, we hope to see a new management approach emerge, linking both historic and new climate change and forest carbon science, for old-growth and mature forests on the Tongass and across the country.

SEACC is grateful for the opportunity to comment.

Respectfully,

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Executive Director

[39] Audubon Alaska, 2016, p.52.

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