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 **Comments on the Tongass Land Management Plan Amendment and Draft EIS**

February 20, 2016

Dear Supervisor Stewart:

This letter represents my personal comments on the Tongass Plan (TLMP) Amendment and Draft Environmental Impact Statement (DEIS). I appreciate the opportunity to comment on this important land management plan for our nation’s largest national forest. I also commend the Forest Service for recognizing the need to rapidly transition timber harvest on the Tongass from old growth to young growth. Further, I appreciate the Forest Service’s effort to avoid timber harvest in conservation priority watersheds identified by Audubon Alaska, The Nature Conservancy, and Trout Unlimited.

 I have been involved in Tongass wildlife science and conservation since 1977 when I first moved to Juneau to begin Sitka black-tailed deer research on the Tongass Forest for the Alaska Department of Fish and Game. During my twelve plus 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. 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, and was a co-editor of the recent book *North Pacific Temperate Rainforests: ecology and conservation*, published by the University of Washington Press in 2013. I have published 50 scientific and popular papers and major reports addressing forest-wildlife issues covering a period of nearly four decades. I have also reviewed every TLMP since 1979. In my work, I have traveled extensively throughout the Tongass from Ketchikan to Yakutat on foot and by small boat and plane and have an intimate familiarity with this rainforest ecosystem. In addition to my professional experience on the Tongass, my family and I have recreated extensively throughout the Forest and intend to continue using the forest in the future.

**Synopsis of Key Concerns with the TLMP Amendment and DEIS**

1. Alternatives considered and purpose of amendment
2. Continued old growth clearcutting on the Tongass
3. Highgrading the large-tree old-growth stands
4. Weakening the Tongass Conservation Strategy
5. Failure to sustain the forest diversity and ecological integrity of the Tongass National Forest

**Summary of Concerns with the TLMP Amendment and DEIS**

## **Overview**

The Tongass National Forest—at 16.8 million acres—is the largest national forest in the United States. The Tongass lies in the northern portion of the Pacific Coast Temperate Rainforest—the largest temperate rainforest on Earth—which extends from northern California, through coastal British Columbia and southeast Alaska, to Alaska’s Kenai Peninsula. Compared to tropical rainforests, coastal temperate rainforests are relatively rare (< 2% of forest land globally) and have been substantially altered by logging and development. The northern portion of coastal British Columbia and southeast Alaska include the largest tracts of undeveloped old-growth temperate rainforest on Earth and the Tongass alone represents about one third of the global extent of this rare coastal forest.

 The Tongass encompasses over 5,000 islands and approximately 18,000 miles of marine shorelines. This natural fragmentation plus deep glacial fjords and active glaciation pose significant implications and risks to the long-term conservation of the region’s plants and animals, including many endemic populations. The Tongass encompasses over 5,500 streams, rivers and lakes with over 17,000 miles of spawning and rearing habitat for salmon and trout. Southeast Alaska is one of the most important salmon producers in the Pacific Rim and about 80% of the commercial salmon harvest comes from the Tongass. The Tongass also supports abundant populations of many wildlife species that have declined or become rare or threatened throughout their ranges to the south (e.g., bears, wolves, murrelets, eagles, etc.).

 Industrial-scale timber harvest began in the mid-1950s on the Tongass with clearcutting as the primary harvest technique. That harvest has concentrated over the last six decades in the most easily accessible and economically valuable stands of old growth. Because only about half of the Tongass is forested and only 30% of the Tongass encompasses productive old-growth forest (of economic value), it is important to carefully account for what kinds of acres are harvested not just the amount of total acres. In the last 60 years, the industry has targeted— or highgraded—the rarest and most ecologically valuable large-tree old-growth stands that represent less than 3% of the Tongass land base.

 In 1949, Aldo Leopold—considered the founder of the science of wildlife ecology—wrote that first principal of conservation was to preserve all the parts of the land base. I believe this issue “preserving all the parts” is of fundamental importance for sustainable management of the Tongass National Forest.

## **Detailed Concerns**

## **Alternatives considered and purpose of the amendment:**

I do not believe that the purpose or alternatives considered in this amendment reasonably address the fundamental ecological reasons for transitioning timber management on the Tongass away from old-growth clearcutting to young-growth harvest. The alternatives considered focus primarily on the economics of maintaining a timber industry on the Tongass and fail to adequately assess the ecological impacts of continued clearcutting of old growth or the impacts to forest diversity and the natural range of abundance of forest and habitat types from continued highgrading (disproportionate harvest) of the rare and ecologically valuable large-tree old-growth stands.

**I recommend that the Plan alternatives should be broadened and that the final plan should assess the impacts of continued highgrading relative to maintaining the abundance and diversity of habitat types important to many fish and wildlife populations depend on those rare forest communities. The Amendment should also address the cumulative risks to fish and wildlife populations associated with further reduction and fragmentation of the remaining old-growth stands and the road network that is required to harvest those forests.**

1. **Continued old growth clearcutting on the Tongass:**

The Earth’s old-growth forests are today exceedingly rare. 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 clearcut on short (less than two-three century) harvest schedules, the many ecological, economic, and societal values old-growth forests support will be permanently lost. Essentially, old growth is a non-renewable resource. In fact, the Society of American Foresters stated “With present knowledge, it is not possible to create old-growth stands or markedly hasten the process by which nature creates them…the best way to manage for old growth is to conserve an adequate supply of present stands and leave them alone.” (SAF (1984) Policy Statement on scheduling the harvest of old growth).

In 1987, The Wildlife Society requested that a committee of scientists be convened to prepare a white paper on the management and conservation of old-growth forests in the United States (Thomas et al. 1988. Wildl. Soc. Bull. 16:252-262). I served on that committee which was chaired by Jack Ward Thomas, who would later become Chief of the Forest Service. In that paper we concluded “The state of scientific knowledge in forest and wildlife ecology cautions against additional haphazard reduction in the quantity, quality, and distribution of old growth-forests…Management plans for providing old growth must be based on existing stands because replacement stands cannot be produced by silvicultural practices…”

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 clearcutting old growth. 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 clearcutting 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 Jack Ward Thomas and Mike Dombeck urged that “…harvest of old growth from the national forests should come to an end…” (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 “…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…” (Letter to President Obama, 6-24-14).

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 Secretary Vilsack 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 clearcut logging of old-growth forests during the forest plan amendment process, and (2) ensure that the timber industries’ 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 clearcutting of old-growth forests should come to a rapid end. To continue clearcutting Tongass old growth for the next 15 years (as specified in the Plan’s preferred alternative) is simply not reasonable nor scientifically supportable.

**I strongly recommend that you modify the preferred TLMP alternative and complete the transition out of old growth on the Tongass within the next three years as recommended by the joint scientific societies’ letter quoted above.**

1. **Highgrading the large-tree old-growth stands:**

For decades, scientists have been urging the Forest Service to end highgrading (i.e., disproportionate harvest of rare forest communities) the most valuable stands of large-tree old growth on the Tongass. As far back as 1979 for example, the Alaska Chapter of The Wildlife Society (TWS) recommended that “Cutting of high-volume timber sites, which have historically been harvested in greater proportion than their occurrence within the Forest, should not exceed the proportion of their occurrence in order to provide a balance and diversity of habitat.” (TWS Position Statement on Forest Practices in Alaska, 5-79)

 In 1985, the Alaska Chapter of TWS again 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 highgrading 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 highgrading 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.

During the development of the 1997 TLMP Amendment the Forest Service engaged an interagency committee of scientists to craft a Tongass Conservation Strategy. The Viable Population Committee (VPOP) released its draft strategy in ~1993. In the spring of 1994, the VPOP strategy was reviewed by an independent committee of 21 scientists (with appropriate expertise from across North America). The review was coordinated by Ross Kiester and Carol Eckarhardt of the Forest Service’s Pacific Northwest Research Station. Although the peer reviewers gave the strategy high marks, they suggested that none of the planning alternative was adequate to ensure viability of all species. One of the key recommendations the peer reviewers made to the Forest Service planning process included: “Keep landscape options open: do not further fragment existing large blocks of high-volume old growth and do not differentially cut low altitude, high-volume old growth.” This important recommendation to minimize highgrading of the high-volume (or large-tree) old growth has been a repeated refrain from wildlife scientists throughout the 1980s and 90s and continues even today.

The interagency VPOP Team responded to the peer reviewers agreeing with many of their recommendations and revised and submitted their final plan to the Forest Service in 1994. Among their conclusions in the final report, the VPOP Team stated: “Although a relatively small percentage of the overall landscape may be affected by timber harvest, historically a much greater proportion of the high-value forest habitat has been harvested. The resulting effects of that harvesting are disproportionately concentrated in certain ecological provinces.”

In the fall of 1996, 12 members of the Peer Review Committee, that had conducted an independent scientific peer review of the Tongass wildlife habitat conservation strategy, sent a joint statement of concern to the Tongass National Forest regarding the TLMP draft environmental impact statement. Key excerpts from that statement follow.

*…One of the most important conclusions of the 1994 peer review was that, to preserve options to secure viable wildlife populations, the Forest Service must take immediate measures to protect throughout the Forest both large blocks of old growth forest and high volume stands.*

*…Expanded reserves must protect the remaining large blocks of high volume old growth on the forest.*

In September of 1997, 11 members of the Peer Review Committee of scientists issued a joint statement concerning the new Forest Plan. The scientists’ concerns included the following statements:

*In general, the more desirable timber classes correspond to habitat of high value to wildlife. The high “volume classes”…have been, almost exclusively, the target of past logging in Southeast Alaska…*

*The final Land Management Plan for the Tongass National forest does not incorporate the recommendations of the Peer Review or other scientific input in fundamental ways. Consequently, we do not believe that this Plan will protect viable, well distributed populations of vertebrate species on the Tongass National Forest.*

Although the 2008 TLMP Amendment explicitly identified the large-tree old growth component of the forest (for the first time) and acknowledged past highgrading of these rare stands, the new plan failed to end this damaging management practice. 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 Plan will have a significant cumulative impact on biodiversity and the integrity and resilience of the rainforest ecosystem on the Tongass.

In 2013, TBNC 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*. 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 is destined to continue under the new plan amendment.

**I strongly recommend revising the Plan amendment to immediately terminate the highgrading of large-tree old growth on the Tongass. Highgrading rare forest communities is incompatible with the goal of maintaining the natural range of forest diversity across the Tongass and ensuring adequate habitat for those plants and animals that depend on those communities.**

1. **Weakening the Tongass Conservation Strategy**

The 1997 and 2008 TLMP Amendments incorporated the VPOP Committee’s Tongass Conservation Strategy. This strategy—established to maintain viable and well distributed populations of wildlife across the Tongass—incorporated a series of habitat reserves and buffers. The old-growth strategy has two basic components. The forest-wide reserve network of Old Growth Reserves (OGR) included a system of large, medium, and small Habitat Conservation Areas (HCAs) allocated to the Old-growth Habitat LUD. The reserves were to be connected by corridors that included beach and estuary fringe, and riparian management areas.

Appendix D of the 2008 TLMP states:

 *Beach and estuary fringe, and riparian habitats, have special importance as components of old-growth forests, serving as wildlife travel corridors, providing unique wildlife habitats, and providing a forest interface with marine or riverine influences that may distinguish them as separate ecosystems within the larger old-growth forest ecosystem…In conjunction with riparian areas, which provide connectivity within watersheds, the beach fringe is thought to be a component of the major travel corridor system used by many resident wildlife species… the Forest Plan establishes a Beach and Estuary Fringe Forest-wide Standard and Guideline that prevents timber harvest within 1,000 feet inland from mean high tide…Together, the beach and riparian habitat management features and the mapping of small reserves represented a substantial response to the landscape linkage element of conservation planning and significantly contributed to management of the overall matrix among habitat reserves.*

The new Plan Amendment modifies the conservation strategy in that it allows the harvest of mature young-growth stands that occur within some OGRs, beach fringe and riparian management areas. This modification will significantly reduce the effectiveness of the TLMP Conservation Strategy. The young-growth stands that will be harvested represent many of the best young growth on the Tongass. These were established because of the important habitat values of beach-estuary fringe and riparian areas, and to eventually provide old-growth conditions in the next several centuries as forest succession advanced to old growth. Harvesting these stands now will result in highgrading the most productive young growth within critical conservation reserves and postpone their natural succession back into old growth. These decisions were apparently made by the Tongass Advisory Committee without the benefit of independent scientific review. In fact, ten independent scientists (including six retired FS scientists), with extensive Tongass experience, sent a letter to Mr. Jason Anderson, Deputy Forest Supervisor, on May 12, 2015, expressing concerns over the TAC recommendations. Selected excerpts from that letter follow:

*To access more volume, and improve timber sale economics, the advisory committee would have the Forest Service authorize clearcutting in < 10 acre units in ecologically sensitive areas that are currently off limits to logging. These include Old Growth Reserves, Beach Fringe Buffers, and Riparian Management Areas. These are some of the most productive lands on the Tongass NF, and include reserves that were part of the wildlife conservation strategy in the 1997 Land and Resource Management Plan (carried forward in the 2008 TLMP amendment). Allowing commercial logging in these sensitive areas risks the integrity of that strategy… we find no empirical data to support the contention that one can log 60-80 year old young growth in ways that are economically viable and achieve desired wildlife benefits.*

**As one of the signatories to the above letter, I strongly recommend that the Forest Service not modify the 1997-2008 TLMP Conservation strategy. To modify that strategy is scientifically indefensible.**

1. **Failure to sustain the forest diversity and ecological integrity of the Tongass National Forest**

I have had the opportunity to participate in the scientific, management, and policy arenas on the Tongass National Forest as both a state agency and conservation NGO scientist for nearly four decades. In that time, I have seen increased conservation measures applied to the Tongass. However, as a result of the continued clearcutting of old-growth forests and the disproportionate harvest—highgrading—of the rare and most valuable old-growth stands, I believe that the current Plan Amendment will result in unsustainable forest management of the Tongass. Thus management of our nation’s largest national forest—which represents the nation’s greatest repository of rare old growth—will likely be out of compliance with federal laws and regulations.

Under the Multiple Use-Sustained Yield Act of 1960, national forest lands are to be managed in trust for the American public for “outdoor recreation, range, timber, watershed, and wildlife and fish purposes.” The historical record of the Tongass clearly documents, that compared to other resources, timber production has dominated management directions and budgets. And that remains the case today.

The National Forest Management Act of 1976 (and its planning regulations of 2012) requires that forest plans must provide for “ecological sustainability” and “ecosystem integrity…” 36 C.F.R. 219.8(a). In addition forest plans “must provide for the diversity of plant and animal communities.” 16 U.S.C. 1604(g)(3)(B). As I have described previously, the natural diversity of forest communities on the Tongass is significantly at risk based on the historical pattern of timber harvest which targeted the rare large-tree old-growth stands. Because these stands provide important habitat benefits to many plant and animals species, the natural abundance of those species may also be at risk.

 “The plan must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity….”  36 CFR 219.8(a); see also 219.9(a). This new Plan Amendment actually rolls back key standards and guidelines established to maintain viable and well distributed populations of wildlife species across the Tongass (e.g., allowing timber harvest in old growth reserves, beach and estuary fringe, and riparian management areas). There is no clear evidence in the Plan Amendment or in the DEIS of any significant effort to “…maintain or restore structure, function, composition, and connectivity…” of old growth or large-tree old growth on the Tongass. Perhaps the most egregious case in point is on northern Prince of Wales Island where contiguous high-volume old-growth forest has been reduced by 94%. And this was the most productive forest region of the entire Tongass. Further, this is the region that will receive the greatest amount of old-growth clearcutting under the proposed plan.

*The plan must include plan components, including standards or guidelines, to maintain or restore the diversity of ecosystems and habitat types throughout the plan area. In doing so, the plan must include plan components to maintain or restore:*

*(i) Key characteristics associated with terrestrial and aquatic ecosystem types;*

*(ii) Rare aquatic and terrestrial plant and animal communities; and*

*(iii) The diversity of native tree species similar to that existing in the plan area.”*

*36 CFR 219.9(a)(2).*

I see no explicit plan components in this amendment that focus on restoring or maintaining the diversity of ecosystems and habitat types within the plan area. I believe that the large-tree old growth (SD67) timber type described by Forest Service employees Caouette and DeGayner (2005. Predictive mapping for tree size and densities in southeast Alaska. Landscape and Urban Planning. 72:49-63) can be considered a distinct habitat type under the planning regulations. These forest communities are very rare and have been a primary target of past timber harvest as I have documented previously. These forest communities (habitat types) are at significant risk of being largely eliminated on the Tongass, particularly in the primary timber regions like northern Prince of Wales Island where they have been reduced by 94% and significantly fragmented (see Albert and Schoen 2013). This pattern of forest management significantly increases the risks of reducing Sitka black-tail deer populations below traditional harvest levels (see Schoen and Kirchhoff 1990. Seasonal habitat use by Sitka black-tailed deer on Admiralty Island, Alaska. J Wildl. Manag. 54:371-378) as well as posing potential risks of local extirpation to the Alexander Archipelago wolf population in the Prince of Wales complex (see Person and Brinkman 2013. In *North Pacific Temperate Rainforests: Ecology and Conservation*. University of Washington Press). In addition, the recent targeted timber harvest on western redcedar and Alaska-cedar on the southern Tongass increases risks of maintaining diversity, or at least the natural abundance, of these tree species.

**Definitions** (all of these are in 36 CFR 219.19):

*Sustainability.  The capability to meet the needs of the present generation without compromising the ability of future generations to meet their needs. For purposes of this part, ‘ecological sustainability’ refers to the capability of ecosystems to maintain ecological integrity….*

*Ecological integrity. The quality or condition of an ecosystem when its dominant ecological characteristics (for example, composition, structure, function, connectivity, and species composition and diversity) occur within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influence.*

Based on the above definitions, I do not believe that the Tongass National Forest was managed sustainably over the last six decades. And the current Plan Amendment will not correct the historic loss of the old-growth ecosystem or the large-tree old-growth habitat type. If “ecological sustainability” means maintaining “ecological integrity” which is defined as its “…dominant ecological characteristics (for example, composition, structure, function, connectivity, and species composition and diversity) occur within the natural range of variation…” This problem occurs at two levels. The first level is the productive old-growth ecosystem level. For example, old growth in heavily harvested areas like North Prince of Wales, East Chichagof, Mitkof, Revilla, or Long islands has been reduced and fragmented decreasing patch size and distance between patches. This has diminished the abundance, size, diversity, and connectivity of these old-growth patches. And clearly, it can be argued that these non-renewable ecosystems no longer exist within their “natural range of variation” across the Tongass or within specific biogeographic provinces like norther Prince of Wales.

At the second level, the habitat type *large-tree old growth (SD67)* was always rare on the Tongass. There is no question that this habitat type has been significantly reduced forest wide and on northern Prince of Wales the contiguous stands of this rare habitat have been reduced by 94% (Albert and Schoen 2013). The “composition, structure, function, and connectivity” of this important habitat is significantly beyond the “range of natural variation” on Prince of Wales, the largest island in the Tongass. Not only is this a loss of a distinct ecological component of the Tongass National Forest, this loss will impact all of the plant and animal species that use this important habitat type. Potential species that will likely be affected include Sitka black-tailed deer, Alexander Archipelago wolf, marten, Prince of Wales flying squirrel, Queen Charlotte goshawk, marbled murrelet, and a variety of cavity nesting birds.

*Ecosystem. A spatially explicit, relatively homogeneous unit of the Earth that includes all interacting organisms and elements of the abiotic environment within its boundaries. An ecosystem is commonly described in terms of its:*

*(1) Composition. The biological elements within the different levels of biological organization, from genes and species to communities and ecosystems.*

*(2) Structure. The organization and physical arrangement of biological elements such as, snags and down woody debris, vertical and horizontal distribution of vegetation, stream habitat complexity, landscape pattern, and connectivity.*

*(3) Function. Ecological processes that sustain composition and structure, such as energy flow, nutrient cycling and retention, soil development and retention, predation and herbivory, and natural disturbances such as wind, fire, and floods.*

*(4) Connectivity. (see below).”*

*“Connectivity. Ecological conditions that exist at several spatial and temporal scales that provide landscape linkages that permit the exchange of flow, sediments, and nutrients; the daily and seasonal movements of animals within home ranges; the dispersal and genetic interchange between populations; and the long-distance range shifts of species, such as in response to climate change.*

If we consider that productive old growth on the Tongass is a non-renewable ecosystem, it is clear that the historical pattern of logging throughout southeast Alaska and the Tongass National Forest has had a major impact on the “composition, structure, function, and connectivity” of this ecosystem. Arguably, the integrity of this ecosystem is at risk particularly in heavily harvested regions of the Tongass like northern Prince of Wales. The resilience of this ecosystem will also be stressed by climate change. This will be further exacerbated by the significant reduction and fragmentation of specific habitat types like large-tree old growth. The added impact of the road infrastructure on Prince of Wales Island will also affect species like the wolf and is likely that there will be future challenges in maintaining the natural predator-prey dynamics within this system (see Person and Brinkman 2013).

**In order to manage the Tongass National Forest sustainably, I recommend that the Plan Amendment be revised to speed the transition out of old-growth clearcutting (within the next three years). Furthermore, I strongly recommend that all remaining stands of rare large-tree old growth across the Tongass be immediately protected from further clearcutting.**

Thank you for the opportunity to review this important Plan Amendment for the Tongass National Forest and convey my comments and recommendations to the planning team and Tongass leadership. Because this forest contains the nation’s last major expanse of old growth and still supports all its post Pleistocene flora and fauna, decisions made in this Plan Amendment will be far-reaching and irreversible, and will affect the opportunities for Alaskans and all Americans to use and enjoy the Tongass for generations to come.

Sincerely,

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