Tongass National Forest
Proposed Land and Resource Management Plan

Final Environmental Impact Statement

Plan Amendment

Volume II – Appendices

2016

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APPENDIX A
SCOPING AND COMMENT SUMMARY REPORT

Tongass Forest Plan Amendment Scoping and Comment Summary Report

Tongass National Forest

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August 17, 2015

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
ANILCA	Alaska National Interest Lands Conservation Act
ASQ	allowable sale quantity
CMAI	Culmination of Mean Annual Increment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
Forest Plan	Land and Resource Management Plan
Forest Service	U.S. Department of Agriculture, Forest Service
FWS	Fish and Wildlife Service
IRA	inventoried roadless area
LUD	Land Use Designation
MIS	Management Indicator Species
NEPA	National Environmental Policy Act
NFS	National Forest System
NOI	Notice of Intent
OGR	old-growth reserve
SOA	State of Alaska
TUS	Transportation and Utility System
YAC	Youth Advisory Council
YG	young growth

1.0 PROJECT SUMMARY

The U.S. Department of Agriculture, Forest Service (Forest Service) is preparing an Environmental Impact Statement (EIS) that evaluates an amendment to the 2008 Tongass National Forest Land and Resource Management Plan (Forest Plan). The Record of Decision will consider and identify changes, if any, to the current 2008 Forest Plan.

2.0 BACKGROUND

On July 2, 2013, Secretary of Agriculture, Thomas Vilsack, issued Memorandum 1044-009, *Addressing Sustainable Forestry in Southeast Alaska*, which expressed the Secretary's intent to transition the Tongass National Forest (the Tongass or Forest) to a young growth–based timber program in 10 to 15 years, more rapidly than considered in the 2008 Forest Plan. He asked that the Forest Service "strongly consider whether to pursue an amendment to the Tongass Forest Plan. Such an amendment would evaluate which lands will be available for timber harvest, especially young growth timber stands, which lands should be excluded, and additional opportunities to promote and speed transition to young growth management."

In order to achieve the young-growth (YG) transition goal of 10 to 15 years, the initial phase of the National Environmental Policy Act (NEPA) documentation has been initiated. Notice of Intent (NOI) to prepare an Environmental Impact Statement was originally published in the Federal Register on May 27, 2014. On June 23, 2016, a corrected Notice of Intent was published modifying the expected timeline, providing details on the objection process under 36 CFR 219 subpart B, and identifying M. Earl Stewart as the Forest Supervisor.

In addition, the Forest Service completed a 5-year review of the Forest Plan in September 2013. There were a total of 257 unique comment submissions and over 152,000 form letters received during the comment period for the 5-year review. Many of the comments on the 5-year review also requested a transition to young-growth timber harvesting. All of these comments were taken into consideration in identifying the scope of this Forest Plan amendment.

In January and February 2015, open houses were held in Juneau, Sitka, and Ketchikan to share information with the public about the progress being made on the Proposed Forest Plan Amendment and Draft Environmental Impact Statement, and to provide opportunity for the public to comment on the Draft Plan Monitoring Program. An informational newsletter was also published in conjunction with the open houses, providing project information and detailing how the public can participate.

3.0 PURPOSE AND NEED FOR PROJECT

The Purpose and Need for Action, as defined in the Notice of Intent (NOI), is:

> "The Forest Service is preparing an Environmental Impact Statement (EIS) to describe the effects of making proposed changes to the Tongass Forest Plan to accomplish the transition to young growth management as provided in the Secretary's Memorandum. The Forest Service will evaluate which lands should be available for timber harvest, especially young-growth timber stands, and any proposed changes to standards and guidelines and other management direction to promote and speed the transition to young-growth

management while maintaining a viable timber industry in Southeast Alaska. It will also evaluate other changes suggested in the 5-year review."

4.0 PROPOSED ACTION

The Proposed Action, as defined in the Notice of Intent (NOI), is:

> "The Forest Service proposes to amend the Tongass Forest Plan, using the 2012 Planning Rule, as needed to accomplish the transition to young growth management over the next 10 to 15 years while retaining the expertise and infrastructure of a viable timber industry in Southeast Alaska, as outlined by the Secretary in Memorandum 1044-009. The amendment process will address: Identifying areas suitable and not suitable for timber harvest to achieve the transition to young growth management; whether the Tongass needs to be able to harvest young growth forest stands before they reach their maximum rate of growth; what changes in management direction should be made to promote young growth management; whether the inventory of roadless areas should be updated, which may require additional rulemaking; whether changes are needed to provide for development of hydropower; updating the upper limit on the quantity of timber that may be sold from the Tongass to reflect other changes made; and how to modify the monitoring provisions of the Plan as required by the 2012 Planning Rule, including identifying focal species to monitor instead of management indicator species as required by the former planning regulations. The amendment process may address other topics relevant to promoting and speeding the transition to young growth management. It is not expected that changes made to the Tongass Forest Plan will affect the overall integrity of the Plan's conservation strategy."

5.0 OPPORTUNITIES FOR COMMENT AND PARTICIPATION

5.1 FIVE-YEAR REVIEW

The Forest currently operates under the Tongass National Forest Land and Resource Management Forest Plan, as amended in 2008. In 2013, the Forest Service completed a 5-year review to determine whether any actions are needed to clarify or adjust the plan. The Tongass solicited comments through public and stakeholders meetings, government-to-government consultation with Southeast Alaska tribes, and written comments. Press releases, radio announcements, project brochures, postcards, letters posters and email notices were used to notify the public. Additionally, letters of invitation to participate were sent to 32 tribes in 16 communities.

Public comments were accepted between January and June 30, 2013. Public meetings were hosted in February and March 2013 in the communities of Wrangell, Petersburg, Sitka, Craig, Ketchikan, Juneau and Haines. Additionally, Conservation Strategy Summits were hosted in June 2013 in the communities of Ketchikan and Juneau. Then Forest Supervisor Cole received input on a range of topics, including young-growth management, the Roadless Rule, watershed restoration, mining, renewable energy, and local economies. All of the comments received were taken into consideration in identifying the scope of this Forest Plan amendment. A detailed summary of the Five-Year Review process and comment summary is available online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5443864.pdf (USDA Forest Service 2013)

In October 2013, the Forest Service announced its intent to modify the Forest Plan based on the conditions of the land and the demands of the public. Identification of the timber base suitable to support a transition to young-growth management in a way that supports the continued viability of the forest industry in Southeast Alaska was noted as a focus area.

5.2 SCOPING PROCESS

The NOI initiated the scoping process, which helped guide the development of the EIS. The NOI to prepare an environmental impact statement was published in the Federal Register on May 27, 2014 (79 FR 30074) initiating a 30-day public scoping period. The NOI asked for public comment on the proposal until June 26, 2014. The Forest Service received over 116,000 letters and of these, about 250 letters were unique.

5.3 PUBLIC MEETINGS

In January and February 2015, open houses were held in Juneau, Sitka, and Ketchikan to share information with the public about the progress being made on the Proposed Forest Plan Amendment and Draft Environmental Impact Statement, and to provide opportunity for the public to comment on the Draft Plan Monitoring Program. While comments were not solicited on the Forest Plan Amendment during these meetings, Forest Service staff were on hand and materials were made available to the public to inform them on the amendment process and how and when to provide input. Approximately 15-20 people attended each meeting.

5.4 CONSULTATION WITH FEDERALLY RECOGNIZED TRIBAL GOVERNMENTS AND TRIBAL CORPORATIONS

The Forest Service invited the following tribal governments and corporations to participate as cooperating agencies:

- Angoon Community Association
- Central Council Tlingit & Haida Indian Tribes of Alaska
- Chilkat Indian Village
- Chilkoot Indian Association
- Craig Tribal Association
- Douglas Indian Association
- Hoonah Indian Association
- Hydaburg Cooperative Association
- Organized Village of Kake
- Organized Village of Kasaan
- Ketchikan Indian Community
- Klawock Cooperative Association
- Metlakatla Indian Community
- Petersburg Indian Association
- Organized Village of Saxman
- Sitka Tribe of Alaska
- Skagway Traditional Council
- Wrangell Cooperative Association
- Yakutat Tlingit Tribe

While none of the invited tribal governments or corporations are participating as cooperating agencies, all will be engaged with through consultation.

5.5 CONSULTATION WITH OTHER AGENCIES

The Forest Service invited the Environmental Protection Agency (EPA), Fish and Wildlife Service (FWS), and the State of Alaska (SOA) to participate as cooperating agencies in the development of the EIS. . The FWS accepted this invitation and is participating as a cooperating

agency. The EPA formally declined the invitation. The EPA, FWS, and SOA submitted comments during the scoping comment period.

5.6 TONGASS ADVISORY COMMITTEE

As a result of both the 5-Year Review and the July memorandum from the Secretary of Agriculture, Memorandum 1044-009, a Federal Advisory Committee was established to provide advice on identifying ways to support the transition and provide for a viable forest industry in Southeast Alaska. The Tongass Advisory Committee (TAC) was federally chartered in 2014 to advise the Secretary of Agriculture on developing an ecologically, socially, and economically sustainable forest management strategy for the Tongass National Forest. The TAC was tasked with developing recommendations about how to transition within 10 to 15 years from old-growth to predominantly young-growth timber management in a way that is economically viable for the existing industry, while recognizing and balancing the other unique and equally important resource values of the Tongass. The TAC was comprised of fifteen members from the timber industry, conservation community, Native interests, State and local government, and other interests. The TAC provided recommendations to the Secretary of Agriculture in May 2015 and the Forest Service developed an alternative based on these recommendations to be included in the EIS.

5.7 YOUTH ADVISORY COMITTEE

The 2012 Planning Rule requires the responsible official to provide meaningful opportunities for public participation throughout the planning process. It gives direction for providing such opportunities, including for outreach. In 2014, Tongass National Forest officials reached out to a Ketchikan High School guidance counselor who assembled 8 students to form the Ketchikan High School Youth Advisory Council (YAC). Three YAC meetings were held at Ketchikan High School from fall 2014 through spring 2015. The objective was to involve the YAC members in the public participation process for the proposed Forest Plan Amendment, including having them actively participate in a Forest Service public open house meeting in Ketchikan. This meeting allowed YAC members to better understand the scope of the Forest Plan Amendment and the issues that were raised during the scoping process. They gathered information at each station, examined maps, and talked with Forest Service subject matter experts. In May 2015, several members of the YAC had the opportunity to meet with Forest Service staff and the Tongass Advisory Committee, a Federal Advisory Committee during a social event at Ward Lake Recreation Area where they discussed the importance of collaboration and civic involvement.

For the school year 2015-2016, the YAC is comprised of 11 students, both Juniors and Seniors, who have demonstrated leadership tendencies, have a high grade point average, and are interested in understanding the scope of Forest Planning and how they can participate in the effort. A meeting was held on October 21, 2015 to welcome new YAC members. The goal of the YAC is to formulate consolidated comments on the proposed Forest Plan and associated DEIS during the 90-day comment period.

6.0 ISSUE DEVELOPMENT

The Interdisciplinary Team identified the significant issues described in the following section. These issues consider internal scoping and comments received from federal agencies, the SOA, individuals, special interest groups, non-governmental organizations, businesses, and a

native corporation. Each comment was reviewed and considered in defining the significant issues, other environmental and social considerations, and other considerations for plan alternatives. These will guide the analysis throughout the NEPA process. Each comment was assigned to one or two themes (e.g., young-growth transition, or climate change) so they could be easily evaluation. Additionally, each comment was given one or more of the following 12 categories relative to how the comment would be addressed (if it needed to be addressed). Comments received during the 5-year review were also considered:

- Addressed by Forest Plan and Forest Plan Land Use Designations (LUD).
- Addressed through implementation of Forest Plan standards and guidelines and Best Management Practices.
- Addressed through implementation of project-specific planning, implementation, and mitigation measures.
- Addressed during processes or impact analyses routinely conducted by the Interdisciplinary Team.
- Addressed through spatial location of alternatives.
- Used to drive or partially drive an alternative.
- Beyond the scope of the project.
- Support amendment project.
- Oppose amendment project.
- Other request or comment
- Addressed by law, regulation, or departmental direction
- Consider recommendation for analysis

6.1 SIGNIFICANT ISSUES

The following are significant issues developed during the scoping process described above, and developed in consideration of the purpose and need of this EIS. These issues are used to drive or partially drive alternatives or will be analyzed in the greatest detail in the EIS. Section 5.2 identifies other environmental considerations, which are not considered significant issues for this EIS but will also be addressed. Finally, Section 5.3 provides a summary of all comments received during scoping.

Issue 1 – Young-Growth Transition

Issue Statement: The Secretary of Agriculture requested the Forest Service to transition to a YG–based timber program on the Tongass in 10 to 15 years, more rapidly than considered in the 2008 Forest Plan. This transition is intended to move the Tongass National Forest to a more ecologically, socially, and economically sustainable forest management program and reduce old-growth harvest while providing economic timber to support the local forest products industry.

The issue concerns financial efficiency, salability, and volume of future timber sales. It also relates to the potential local employment and revenues generated for communities in the local area. YG timber growth rates, sustainable harvest rates, the amount of old-growth harvest needed during transition to sustain the timber industry, and the locations where young-growth harvest would take place are some of the factors to be considered.

<u>Units of Measure</u>

- Timber volume of young growth vs. old growth

- Acres of harvest of young growth vs. old growth by harvest and logging system by location
- Financial efficiency of young-growth vs. old-growth harvest
- Number of annualized direct jobs supported
- Timber demand vs. amount of harvest made available to meet demand

Issue 2 – Renewable Energy

Issue Statement: The Forest Plan should promote the development of renewable energy projects to help Southeast Alaska communities reduce fossil energy dependence, where it is compatible with National Forest purposes and to ensure that the planning, construction, and operation of projects protect and effectively use National Forest System lands and resources. Management of National Forest System (NFS) lands should support the intent of the State of Alaska legislature to receive 50 percent of its electrical generation from renewable energy sources by 2025 (House Bill 306 [2010]).

Units of Measure

- Proportion of known potential renewable energy projects potentially allowed under the Forest Plan

Issue 3 – Protection of Roadless Areas

Issue Statement: The protection of roadless areas (particularly high-value roadless areas) from development and timber harvest on the Tongass is of local and national importance, particularly relative to wildlife and biodiversity, recreation, and tourism. Whether or not the Tongass will be exempt from the 2001 Roadless Rule is not clear.

Many people believe roadless areas should be allowed to evolve naturally through their own dynamic processes and should be afforded protection that ensures this will occur. The Tongass includes very large undeveloped land areas with several portions of the Forest consisting of contiguous roadless areas that exceed 1 million acres and represent large, unfragmented blocks of wildlife habitat. This large scale of roadless lands does not exist on any other National Forest, except the Chugach National Forest in Southcentral Alaska.

Roadless areas are considered important because of their wildlife habitat and recreation values and their importance for tourism. They are also important because of the passive-use and ecosystem services values they provide.

Units of Measure

- Acres of inventoried roadless areas protected under each alternative
- Values of lands protected under each alternative

Issue 4 – Protection of Wildlife Habitat and the Old-growth Conservation Strategy

Issue Statement: The Tongass National Forest supports a unique and important assemblage of wildlife including the largest population of brown bears and breeding bald eagles in the world, the Alexander Archipelago Wolf, species of high importance for subsistence (e.g., Sitka black-tailed deer), an extensive array of endemic mammals, and a large number of species that are at least partially dependent on old-growth habitats (e.g., marten and goshawk). The Tongass Old-growth Conservation Strategy is considered important for the continued health of the unique wildlife and plant populations in Southeast Alaska.

Timber harvest and road development can have important effects on populations of many of these species and the biodiversity of Southeast Alaska. Although less than 10 percent of the productive old-growth habitat on the Tongass has been converted to young growth, the

percentage is much higher for certain types of old growth, such as lowland and large-tree old growth. In addition, a high percentage of non-NFS lands have been harvested at a much higher rate. Therefore, the cumulative effects of harvest and road building on wildlife in Southeast Alaska are greater than the effects for the Tongass by itself.

Units of Measure

- Acres of productive old growth protected under each alternative
- Percentage of biogeographic provinces protected in reserves
- Changes in road densities
- Indicators of habitat capability using habitat models
- Cumulative harvest and road development on all Southeast Alaska lands

6.2 OTHER ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The following list of other environmental and social considerations will be analyzed in the EIS, in addition to the significant issues identified in the previous section.

- Air Quality
- Climate Change
- Geology, Karst, and Caves
- Soils
- Water
- Wetlands
- Fish
- Plants (including sensitive plants and invasive species)
- Forest Health
- Lands
- Transportation and Utilities
- Minerals
- Recreation and Tourism
- Scenery
- Subsistence
- Heritage Resources and Sacred Sites
- Wilderness, Wild and Scenic Rivers, and other special LUDs
- Economics and Social Environment
- Environmental Justice

6.3 FIVE-YEAR REVIEW COMMENT SUMMARY

During the comment period for the Five-Year review, 252 unique submissions were received, along with 152,182 form letters (some of which contained unique content). The range of topics, including young-growth management, the Roadless Rule, watershed restoration, mining, renewable energy, and local economies.

The Forest Service developed 515 Statements of Concern (grouped into 24 topics) based on the comments. Among the comments received, some issues were raised more frequently than others. The five SOC Topics with the most comments received were Tongass National Forest management issues, timber, Land Use Designations, socioeconomics, and energy. A detailed summary of the Five-Year Review process and comment summary is available online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5443864.pdf (USDA Forest Service 2013)

6.4 SCOPING COMMENT SUMMARY

The following sections provide a summary of the scoping comments received, sorted by issue category. Some comments were identified as part of one or more issue categories and may be duplicated. This summary covers comments related to the significant issues as well as the other environmental and social considerations. Some comments below have been taken directly from

comments received while many have been summarized or paraphrased to represent several similar comments. All comments were considered individually. This list is not inclusive; a complete record of comments is available in the planning record.

6.4.1 Climate Change

Climate change was a common theme among many comments. Some commenters requested that climate change be identified as a significant issue. Others requested that the effects of the alternatives on the climate be considered, as well as the effect of climate change on every resource. Examples of climate change comments include the following:

- EPA recommends that the Forest Plan EIS discuss the anticipated impacts associated with past, present, and future changes in climate throughout the forest and provides suggested references.
- Please treat climate change as a significant issue in the purpose and need for this proposed amendment. All federal agencies must manage for climate preparedness and resilience (Executive Order 13653) and Secretary Vilsack has recognized the Tongass' global significance as a carbon-rich reserve.
- The DEIS needs to consider the critical temporal relationship between present carbon emissions and the future effects of climate change. The immediate release of carbon from logging will have significant impacts compared to the much longer-term release of biomass from the death and decomposition of live trees in decades or centuries.
- In addition with the carbon dioxide problem, cutting down forests only accelerates the climate problems. Don't make a short-term decision with long-term negative consequences. We have too few forests as it is.
- If we want to control global warming, we need to preserve all out healthy trees
- Analyze the effects of alternatives on carbon sequestration and long-term storage potential.
- The current Conservation Strategy fails to recognize the role of climate change in the maintenance of biodiversity. The effects of climate change must be considered if the Conservation Strategy is re-evaluated.
- The alternative that best optimizes carbon and other values on the Tongass is one that rapidly transitions out of industrial old-growth logging.

6.4.2 Economics

Many comments addressed issues or concerns related to economics. Comments concerned the economics associated with transition to YG management, the economics of the current timber program, and the economics associated with non-timber resources. Examples of economic comments are provided in the following subsections.

6.4.2.1 Transition Economics

- The analysis should evaluate the economic viability of YG management only, rather than a mix of YG and old-growth logging.
- If existing mills close, it will not be possible to maintain the economies of scale to support timber operations on the forest or to bring new operators into the region. Forest Service needs to invest in transition.
- Transition should create local jobs and require local, value-added manufacturing.
- The outcome of any "transition" alternative should reward local, value added manufacturing and end existing export and transshipment policies on the Tongass. The

successful Tongass micro-sale program that currently exists on Prince of Wales Island encourages local processing and the manufacture of high value-added wood products.
- Evaluate the economic outlook for YG forest products and analyze the need to export YG materials to build a YG program.
- Emphasize value-added forest product uses.
- The current appraisal system favors large operators and does not fully capture the value that YG timber offers the region. The system needs to be revised to encourage business investment and development, job growth, and value-added manufacturing in Alaska.
- All alternatives should focus on creating local timber jobs.
- Consider alternatives favoring management for deer and wildlife habitat, healthy salmon streams, and a local wood economy for Southeast Alaska.

6.4.2.2 Economics of Current Timber Program

- Criticism of the Tongass timber program as a market failure in which taxpayers and other forest users pay for below-cost timber program.
- Recent YG harvests have not been economical.
- The Forest Service is not meeting its annual timber targets and the lack of timber supply is responsible for decline of timber manufacturing.
- The Forest Service should update and revise its forecasts for market demand of Tongass timber. The economic analysis used by the Forest Service in its timber sale planning is inaccurate and outdated, and greatly overestimates market demand for Tongass timber.
- The Forest Service must also revise its forecasts of market demand for timber, which have consistently proved to be much higher than actual market results.
- As part of the Amendment process, the Tongass National Forest needs to revisit its methodology for estimating market demand and its series of market demand scenarios, because they overestimate actual demand.
- For YG, the Forest Service needs to move away from using export based criteria. In this land management plan, the Forest Service needs to analyze what markets for Tongass timber they are “seeking to meet.”
- Stop systematically overestimating timber demand.
- Stewardship contracts to not recoup actual cumulative effects and opportunities lost.

6.4.2.3 Non-timber Economics and Competition with Timber Program

- The DEIS should evaluate how Forest Plan Amendment implementation will impose real costs, monetary and otherwise, on non-timber forest values and give these values equal consideration.
- The DEIS needs to consider all non-timber-related economics and number of jobs supported by forested habitat including: recreation, tourism, hunting, fishing and subsistence.
- Stop giving timber a preference over other Tongass multiple uses by systematically overestimating market demand.
- Support tourism and fishing in place of logging old growth.
- The Forest Service should support local communities by seeking ways to improve protections for important fish and wildlife habitat and enhance visitor services. At the same time, the Forest Service should end its large-scale old-growth timber sale program.

- As part of the plan amendment, enact sensible budgets for recreation, heritage, and wilderness programs in the Tongass that can support diverse and sustainable economic opportunities for southeast Alaskans. We urge you to shift resources to support our growing tourism and recreation economy.
- Recreation is now bringing in more money than logging, shift the funds to it. Preserve the forests so that this remains viable.
- The DEIS should include a detailed public investment analysis that discloses the full cost of administering the TLMP timber sale program accompanied by a more thorough analysis of benefits provided by intact old growth forests to recreation, fisheries and subsistence.

6.4.3 Fish

A number of commenters addressed concerns associated with fish and fish habitat protection. Examples of comments related to fish include:

- Refocus resources and management toward projects that protect and restore vital watersheds and important fish and wildlife habitat, while promoting a diverse and sustainable economy in Southeast Alaska based on fishing, tourism, and recreation.
- Consider alternatives favoring management for deer and wildlife habitat, healthy salmon streams, and a local wood economy for Southeast Alaska.
- The EIS should describe the current quality and potential capacity of habitat, its use by fish and wildlife throughout the forest, and identify known fish and wildlife corridors, migration routes, and areas of seasonal fish and wildlife congregation.
- The EIS should evaluate effects on fish and wildlife from various management strategies as well as any proposed habitat alteration, aquatic and terrestrial habitat fragmentation caused by roads, land use, and management activities, and human activity.
- The Forest Plan currently fails in the area of demonstrating and focusing management of Tongass lands as working lands for the production of salmon. An amendment should include sufficient study to show what lands on the Tongass are producing fish, the baseline production a) currently, b) prior to industrial logging (1954), c) prior to fish traps and canneries, and d) projections into the future under various management regimes and climate change impacts. Part of the assessment should include calculations of the value of contributions to the economy from Tongass National Forest lands and management activities. An assessment should be made as to areas that need to be designated as salmon producing watersheds and well defined goals should be set for an acceleration of restoration activities to bring all salmon systems that have legacy impacts from historic industrial logging to be restored to full production capacity.
- Consider alternatives favoring management for deer and wildlife habitat, healthy salmon streams, and a local wood economy for Southeast Alaska.

6.4.4 Karst

Several comments were received stressing protection of karst landscapes. Comments relating to karst landscapes include:

- Karst protection in south Southeast Alaska should be kept in place or strengthened due to past and future corporate big tree logging, from both Native and private corporations. Karst is important for maintaining clean water and a healthy Tongass eco-system.
- Preserve all karst areas.
- The richness of our forests, with karst and muskegs and unique soil microbiology and salmon streams, is irreplaceable after logging of the old growth.

6.4.5 Lands

A number of commenters identified general concerns related to lands, as well as specific concerns related to proposed land exchanges and specific land areas. Comments relating to lands include:

- Support for efforts of the Alaska Mental Health Trust Authority and the Forest Service that resulted in the proposed land exchange document dated September 4, 2012. The proposed land swap will provide much needed timber harvest activity for the southern southeast region economy.
- Include the Trust Land Exchange as an action common to all alternatives of the Forest Plan Amendment. The Trust Land Office manages lands for the Alaska Mental Health Trust and has begun the planning process to implement the objectives outlined by Secretary Vilsack (Memo 1044-009, July 2, 2013.). It appears that the Trust Land exchange creates a positive working solution to support the Secretary's transition plan. Identifying the proposed exchange as an alternative in the forest plan amendment would promote that potential outcome.
- Recommendation to include land patterns and shared boundaries that would exist upon passage of the Sealaska legislation in the amended Tongass Plan.
- A request for analysis and consideration of other unfulfilled Native land entitlements.
- Requests specific to Traitors Cove, Southern Kruzof Island, and Connell Lake.
- A request for the federal government to turn all federal lands (within the Borough) over to the Ketchikan Gateway Borough.

6.4.6 Land Use Designations

6.4.6.1 Transportation and Utility LUD

Several comments requested modification to or clarification of Transportation and Utility System (TUS) LUD Standards and Guidelines to remove permitting and development barriers. Specifically, it was requested that the current TUS LUD should be amended to change the criteria to allow the TUS LUD to apply to hydropower projects and other renewable energy projects within TUS Avoidance Areas and to allow for public and private hydropower development in all LUDs.

6.4.6.2 Renewable Energy LUD

Several commenters requested or supported the development of a Renewable Energy Resource Plan and/or Renewable Energy LUD to facilitate the development of these projects. Representative comments include:

- A Renewable Energy Resource Plan, including a Renewable Energy Resource Development LUD, should be added to the Forest Plan to promote and support all forms of renewable energy development (including geothermal) and related transmission lines within the Tongass National Forest
- A Renewable Energy LUD that promotes the development of hydroelectric projects with a minimum of regulatory impediment and cost will be the key to a successful transition from fossil based fuels in the Tongass to clean renewable energy for all of Southeast Alaska.
- The renewable energy LUD should allow development of all clean energy technology (wind, biomass, geothermal, tidal) and associated transmission and access roads.

- Plans for and interest in hydropower development, mining, transmission, geothermal, and transportation projects exist and should be considered and evaluated in this amendment. Necessary changes to Land Use Designations and other use decisions present a management challenge that would be appropriate to consider in the LRMP revision process. We encourage the Forest Service to consider the potential for project right-of-way and siting needs, as land use determinations are established or revised. Based on this analysis, it may also be appropriate to expand upon the standards and guidelines related to land ownership to include additional standards and guidelines related to these types of activities. We recommend that the Forest Service work closely with the FWS and the Alaska Department of Fish and Game, as well as other potentially affected stakeholders, on these changes."
- Changes to further hydropower development are outside the essential core purpose of the amendment and should not be part of the amendment.

6.4.6.3 Tongass Community Economic Development Zone LUD

Some commenters requested a new Tongass Community Economic Development Zone LUD to promote and support economic development and activities for communities with lower per capita incomes or high energy prices or unemployment.

6.4.6.4 Minerals and Strategic Minerals LUD

Some commenters requested a new Mineral and Strategic Mineral LUD to promote and support mineral and strategic mineral development and related access roads consistent with national security and national strategic mineral policies.

6.4.7 Minerals

In addition to the Mineral and Strategic Mineral LUD recommended by some commenters (see Section 5.2.6.4, above), some commenters requested that the term “reasonable access” be defined for purposes of the Forest Plan to provide timely (30-day turnaround) issuance of Forest Service Special Use Permits for those who hold a mining claim or Federal Energy Regulatory Commission (FERC) preliminary permit to authorize these operations to investigate and develop lawfully permitted federal resources.

6.4.8 Old-Growth Reserves

Several comments were received specific to old-growth reserves (OGR). These comments addressed OGR design criteria, protection of OGRs, and additional evaluation of the efficacy of existing OGRs. Example comments include:

- The FWS recommends specific changes to OGR design criteria to ensure comparable conservation value within Value Comparison Units when OGRs are proposed to be relocated.
- Treatments in OGRs, beach fringe, estuary, riparian, and other buffers, or other areas important for conservation should be to improve habitat value.
- Harvests in OGRs should be designed specifically to accelerate succession to old-growth conditions and maintain non-timber resources.
- Current OGRs should be reviewed by an interdisciplinary state and federal teams to understand how they are working, consider issues associated with altering their locations and sizes, how removal of second growth stands from OGRs would affect

them, and assess how possible modifications would be expected to affect fish, wildlife, and their uses.

- OGRs appear to be located to exclude old-growth habitat (to allow for high-grade logging) avoid the most important deer winter habitat to make these areas and trees available for logging.
- The scope of the Tongass Forest Plan Amendment needs to be expanded to evaluate the entire system of old-growth reserves in order to demonstrate their efficacy. Wildlife outputs must be analyzed in the context of projected demand rather than just what is needed to meet minimum viable populations.

6.4.9 Planning/Alaska National Interest Lands Conservation Act (ANILCA)

Many comments addressed general planning issues, including the 2012 Planning Rule, the 5-year review, plan revision, ANILCA, multiple-use planning and other issues. Examples of these comments include:

- The NOI is disappointingly too broad in scope and lacks appropriate direction for the Forest Service to respond urgently to the need to phase out industrial-scale old growth logging immediately.
- We are still concerned about the 2012 Planning Rule and its impact on the ability of the Forest Service to provide a cost-effective, workable framework for national forest planning that is consistent with the National Forest Management Act and other statutory direction. The 1982 Rule was used for the 2008 plan and should be used for any amendment as well.
- Do not "test drive" the 2012 planning rule on the Tongass until other “early adopters” have had a chance to report back
- The Forest Service has yet to outline how the analysis from the five-year TLMP review makes the case for amending the forest plan to accomplish a transition to young-growth timber harvesting within the next 10 to 15 years.
- Any section of the Forest Plan amended during this planning process must also ensure that ANILCA continues to be properly recognized. To help ensure there is no confusion during implementation, we request the Forest Plan specifically acknowledge that the Forest Service intends for all Forest Plan provisions, including administrative designations and prescriptions to be consistent with ANILCA. However, in the event of a conflict, ANILCA prevails.
- Consider a process or plan to coordinate its resource harvest and other management activities with adjacent landowners
- What is needed instead of an amendment to the Forest Plan is a complete revision of the 1997 Forest Plan and 2008 Amendment. A full revision of the Forest Plan is long overdue.
- Suggest the Forest Service use an analysis approach called OPTIONS that identifies eight factors that must be addressed in order to effectively define and implement a sustainable, defensible and auditable forest management strategy.
- The scope of the amendment should be narrowed to ensure the Plan is amended during the current presidential administration.
- The YG transition should be directed to the Federal Advisory Committee Act committee and a future planning process, rather than addressed in the current plan amendment.

- It is vital that the Forest Service pare the plan amendment process down to its bare essentials. Numerous issues that could be dealt with, but can await some future process, need to be identified as non-core and deferred.
- We believe that the focus on maintaining the existing timber industry fails to provide for multiple uses. The scope of the proposed Amendment does not reflect the broad need for changes, does not reflect a realistic assessment of changed conditions, and consequently will fail to appropriately guide the achievement of ecological, social and economic sustainability in the planning area. [36 Code of Federal Regulations (CFR) 219.8]

6.4.10 Purpose and Need

A range of comments addressed the purpose and need. Examples of these comments include:

- We request that you develop a revised purpose and need for the amendment that does not prioritize timber development "over the competing environmental and recreational goals without justification sufficient to support the agency's balancing of these goals."
- The Forest Service is encouraged to consider expanding scope of analysis.
- Only limited attention should be paid to the suitability or availability of land for logging
- The amendment should focus on the goal to preserve the exceptional natural values on the Tongass, rather than the goal of ensuring that communities are economically viable.
- Apply 2012 Planning Rule. TLMP amendment should not thwart the spirit and intent of NFMA and further delay a long overdue economic analysis of all the Tongass resources.
- The Forest Service needs a new paradigm where timber is relegated to its economic value relative to other forest resources- since other forest uses are productive and above cost.
- The Amendment's limited purpose aimed at timber industry objectives falls short of the NEPA obligation to "rigorously explore and objectively evaluate all reasonable alternatives." [40 CFR. § 1502.14(a)]. You could fix this problem by either focusing narrowly on alternatives that immediately end old-growth logging, or by broadening the scope of the Amendment by developing alternatives that enhance recreation opportunities in the Tongass National Forest and alternatives that focus on mitigating damage to salmon habitat through an emphasis on completing deferred road maintenance.

6.4.11 Plants

Some comments were received stressing that the EIS evaluate impacts on plant species, their habitats, and invasive species.

6.4.12 Recreation and Tourism

Several comments were received stressing the importance of other industries, including recreation and tourism, to the economic opportunities of communities. Some suggested the Forest Service should reallocate its priorities and resources to support these industries and stop giving timber a preference over them.

6.4.13 Renewable Energy

Many comments addressed renewable energy. Some of these comments were general in nature, and many dealt with hydropower or biomass. Examples include:

- The EIS should consider alternative investments in efficiency programs, wind turbines, tidal energy, and solar and thermal energy.
- The Forest Service should solicit information from the renewable energy industry with regard to potential renewable energy sites and utilize that information in the identification of specific areas within the Renewable Energy Resource LUD within the Forest Plan.
- Roadless area restrictions negatively impact access to and development of renewable energy, in conflict with state and national goals for clean energy
- Ensure that Renewable Energy Resource Policies are promptly included in the Forest Plan without the needed for a Plan amendment process.
- The Draft EIS should assess the social and economic impacts of renewable energy development
- The amendment should address the needs relating to developing renewable energy resource on the Tongass National Forest to the maximum extent possible.
- Recommends that the Plan amendment process be utilized to level the playing field for consideration of renewable energy with other important resource values within the TNF.
- The renewable energy component of the plan should encompass both ongoing maintenance requirements and the evaluation and development of new renewable energy resources.
- The Forest Plan EIS should consider expansion of existing and development of future renewable energy facilities and transmission lines.
- Lands permanently cleared for a Renewable Energy project should be considered unsuitable for timber production.
- A Renewable Energy Resource Plan, including a Renewable Energy Resource Development LUD, should be added to the Forest Plan to promote and support all forms of renewable energy development (including geothermal) and related transmission lines within the Tongass National Forest

6.4.13.1 Hydropower

- The Forest Service should modify the Tongass Forest Plan in a manner which allows for hydropower development within the Tongass National Forest, and provides for equal treatment of hydropower development proposals regardless of market location or funding source.
- The Forest Plan should consider all known potential hydroelectric energy sources located in the Tongass National Forest and provide for their future development.
- Incorporate Lake Grace Hydropower into the Forest Plan.
- Changes to further hydropower development are outside the essential core purpose of the amendment and should not be part of the amendment.
- We support development of fish-friendly hydropower to meet local power needs in southeast Alaska, and the Tongass Plan already makes ample provision for it.

6.4.13.2 Biomass

- Conversion to biomass for heat and/or potential energy generation is fatally flawed. The Draft EIS should disclose impacts to human health and carbon sequestration, as well as the cost to taxpayers

- To consider alternatives that redirect the public investment in alternative energies to cleaner and real renewable energy sources, not biomass. Federal investment in biomass facilities is a lost opportunity cost that will divert funds from energy alternatives that can better meet the region's needs
- The EIS needs to evaluate the life-cycle greenhouse gas emissions associated with biomass industry development
- The Forest Plan should consider biomass heating and energy systems and the potential to manufacture biomass-based fuels.
- The EIS should evaluate health risks associated with increased utilization of biomass for energy and heat.
- Recommends the inclusion of biomass as a forest resource.

6.4.14 Restoration

A number of comments concerned forest restoration, watershed restoration, and restoration projects in general. Examples of the comments include:

- A Plan "standard" that discloses the costs of restoration projects in all timber sale planning documents must be adopted in the Amendment.
- We request that the EIS consider reasonable alternative funding mechanisms for habitat amelioration projects rather than an exclusive focus on so-called "stewardship" contracting. [40 CFR. § 1502.14(a); Sierra Forest Legacy, 577 F.3d at 1025 – 1027]. The Tongass National Forest has never provided a NEPA analysis that evaluates the feasibility of stewardship contracting or alternative ways to fund projects for habitat mitigation and other remedial forest management needs. Programmatic analysis may show that it would be more cost-effective to emphasize service contracts for road storage and decommissioning and red pipe remediation, rather than to liquidate old-growth forests in order to fund perceived needs for remedial work.
- Refocus resources and management toward projects that protect and restore vital watersheds and important fish and wildlife habitat, while promoting a diverse and sustainable economy in Southeast Alaska based on fishing, tourism, and recreation.
- The need to work on forest restoration, which duplicates the natural condition rather than uniformed canopied, second growth tree farms.

6.4.15 Roadless Areas

Many comments addressed roadless areas. Some comments were of a general nature, many supported preserving roadless areas, and many supported exempting activities from the roadless rule. Examples include:

- Analysis should consider how the forest should be managed with Roadless Rule not enforced and also if it remains in force.
- LUDs that allow logging in inventoried roadless areas (IRA) should be revised.
- Roadless area restrictions negatively impact access to and development of renewable energy, in conflict with state and national goals for clean energy
- Updating the roadless area inventory is fine for the amendment exercise, although it may or may not be pertinent.
- The Forest Service should not consider IRAs as a determining factor for amending LUDs or defining the suitable and available land base. Update the inventoried roadless area maps to omit roaded portions (i.e., "roaded roadless" areas) due to their substantially altered condition.

- Possible rulemaking related to roadless areas should not be allowed to complicate the transition amendment.
- The amendment should not include an update to the inventory of roadless areas.
- Decisions regarding IRAs should be addressed in a separate process.

6.4.15.1 Preserve Roadless Areas

- Opposes roads in roadless areas.
- Conservation of inventoried roadless areas should be a significant feature of all transition alternatives.
- The plan amendment is not a prudent vehicle for decisions about Tongass roadless areas.
- The Forest Service was encouraged to update its LUDs to remove inventoried roadless areas from the suitable timber base.
- Conservation of inventoried roadless areas should be a significant feature of all transition alternatives.
- If rulemaking is needed it should address only the simple issue of supplying a missing end-date for the self-described “temporary” exemption of the Tongass from the Roadless Area Conservation Rule. The effects analysis in the EIS for the transition amendment should assume that roadless areas will not in any likely scenario be logged.
- Conservation of inventoried roadless areas should be a significant feature of all transition alternatives.

6.4.15.2 Favors Exemption to the Roadless Rule

- Consider amending the Roadless Rule as applied to the Tongass to permit the development of geothermal power, transmission lines, and access to them.
- The Forest Service should engage in rulemaking to once again exempt the Tongass National Forest from the 2001 Roadless Rule.
- The Forest Supervisor and District Rangers should have the authority to permit development in IRAs.
- Suggests modification of Roadless Rule to open up viable timber.
- Modification to Roadless Rule needed to allow hydropower.
- Modification to Roadless Rule needed to provide reasonable access to mines.
- Recognize the negative impacts incurred by the restrictive access in roadless areas to critical resources within the Ketchikan Borough.
- The EIS should consider appropriate road access in IRAs for timber harvest and other management activities, mineral development, and renewable and alternative energy
- Implementation of the Roadless Rule in Alaska violates ANILCA.
- The Roadless Area Conservation Rule should not inhibit hydropower development in the Tongass.
- The Roadless Area Conservation Rule, as an administrative regulation, does not affect hydropower applicants’ ability to seek roads pursuant to the Federal Power Act.
- Resolve ambiguities in the preamble to the 2001 Roadless Rule, as applied to the Tongass, regarding the Forest Service's authority to permit new hydropower facilities, transmission lines and access to them for which application is made after January 12, 2001.
- Supports Tongass exemption from 2001 Roadless Rule.

- Limits on access to the Tongass, due to continued application of the 2001 Roadless Rule, impede SEAPA's ability to access its facilities to provide core maintenance and also hinders the key work necessary to plan and develop future energy resources.

6.4.16 Special Uses

Several commenters requested methods to streamline special use permitting for those that hold a mining claim or FERC preliminary permit to authorize these operations to investigate and develop lawfully permitted federal resources. These methods included providing a 30-day review and issuance of Special Use Permits for exploratory and study activities.

6.4.17 Subsistence

Several commenters stressed the protection of continued subsistence uses on the Forest. Examples include:

- The Tongass Plan EIS should evaluate the best methods and processes for monitoring, researching, and sustaining fish and wildlife resources in the Forest.
- The Forest Plan must provide for continued subsistence and sustainable harvest of national forest resources
- Subsistence uses need to be factored into Tongass Forest Plan land use planning from the very beginning of the process.
- The EIS should consider road access to resources for subsistence, recreational, cultural, and social activities important to the southeast communities.

6.4.18 Timber

Many comments were assigned to the timber theme. Some supported an immediate or rapid end to old-growth logging, or opposed clearcuts or logging on the Tongass in general. On the other end of the spectrum, some supported more timber harvests. Example comments include:

- The Forest Service should quantitatively consider how timber harvest can be accomplished while supporting sustainable populations of fish and wildlife that are managed for a variety of uses.
- Harvest of old-growth wood in selective harvest regimes and/or wildlife thinning needs to be monitored for windthrow and for long-term effects and benefits.
- The Amendment process must revisit, in particular, plan components that allow clearcutting and plan components that allow for clearcuts larger than 100 acres. Tongass Forest Plan standards and guidelines for clearcutting need to reflect and appropriately balance impacts to other resources.
- Request for substantial reduction in lands currently deemed suitable for timber production and that the Forest Service develop alternatives that provide primarily for non-timber uses.

6.4.18.1 Reduce Old-growth Harvest and Clearcutting

- Preserve old growth; protect all remaining old-growth forests.
- Leave all remaining old growth in the Tongass for the next generations.
- Use selective logging practices - not clear cuts.
- Clearcuts contribute to erosion, flooding, establishment of nonnative and particularly invasive and noxious vegetation.
- Stop logging the beautiful rainforest of Alaska, the Tongass National Forest.
- We should be phasing out old growth logging altogether.

- Stop old growth logging. These forests act as a carbon sink and natural water purification system.
- Old growth forests cannot be replaced simply by planting more trees after logging.

6.4.18.2 Increase Harvest Levels

- The Forest Service should make available at least 350 million board feet (MMBF) of timber annually.
- Any further removal of Tongass lands from the approved timber base violates ANILCA.
- Need to provide the lumber needed to build houses.
- Please increase old-growth logging immediately. Please support a dual transition in which a firm Allowable Sale Quantity is split between old-and second-growth components. Old-growth allowable sale quantity (ASQ) should be increased drastically and immediately.
- Proposes timber preference over other forest uses.

6.4.19 Transportation

Transportation-related comments include those that encouraged keeping roads open to access YG or other resources, addressed water quality or maintenance concerns, or requested specific actions, like recognizing proposed roads. Example comments include:

- Stop removing existing road systems that will be needed to harvest YG in the future.
- Recommendation that the road and trail system evaluated through the Forest Plan reflect realistic, long-term funding expectations. The NEPA analysis for this planning process should discuss resources available to build and maintain the road and trail system. Please indicate the likelihood for adequate maintenance funding for each of the action alternatives.
- Plan should recognize a land access route to Blank Inlet, providing economic and recreational opportunities important to the Ketchikan Borough.
- Encourages the Forest Service to amend the Forest Plan to recognize the proposed Vallenar Bay Road and include it on the LUD map.
- Plan amendment should take into better account updates to the State of Alaska's Southeast Transportation Plan and the Alaska Energy Authority's 2011 Southeast Regional Integrated Power Plan.
- Action alternatives should not propose changes to the Forest Plan that may affect existing roads or other transportation facilities.
- The EIS should consider road access to resources for subsistence, recreational, cultural, and social activities important to our southeast communities.
- The current Tongass Forest Plan fails to provide standards to adequately assess and make known the impacts of existing roads and proposed project road activities on watersheds, riparian areas, streams, and fish habitats.
- The Forest Plan should be updated to include a non-negotiable standard of every Tongass timber project planning process, for assessments of road-stream connectivity and consequent impacts on peak flows and sediment delivery from roads.

6.4.20 Tribal Consultation

One comment noted that the Plan should provide a framework for Alaska Native Corporation and Tribal participation in implementing access, subsistence, and other important provisions of ANILCA. Additionally, EPA provided direction for conducting intergovernmental issues with federally-recognized tribes.

6.4.21 Water

Some comments stressed the protection of watersheds and streams and requested the strengthening of Forest Plan requirements to emphasize protection. Example comments include:

- The forest must also place more emphasis on project level impairment to watersheds.
- Recommendation that Forest Plan revisions address a framework for project level watershed and water quality analysis. The EIS should summarize existing baseline watershed and water quality conditions.
- Concern over effects of management actions on drinking water sources and lists requests for the EIS to identify.
- Concern over effects of management actions on surface water quality.
- Requests revisions to standards and guidelines for stream protection and watershed health associated with road-stream connectivity.
- Various watersheds have been identified as especially important for fish and wildlife, and should be identified as unsuitable for timber harvest.
- Protect drainages that are crucial for healthy habitat.

6.4.22 Wildlife

Several comments provided wildlife concerns or management recommendations. A common theme was the protection of Alexander Archipelago wolf. Example comments include:

- Recommendation for use of an advisory committee of expert biologists for development standards and guidelines to maintain wildlife populations.
- Recommendation that standards designed to conserve wolves (and deer habitat) should be strengthened to reduce vulnerability of wolves.
- Current Forest Service old-growth logging practices harm habitat and threaten wolf populations.
- Recommendation to use the best available information, including work of the Interagency Wolf Task Force.
- FWS requests clarification of when permits are needed for eagle nest disturbance, requests to participate in focal species discussion with Forest Service staff, and provides specific measures for the protection of goshawks.
- Concern for other species, including pollinators (e.g., bees, bats, and butterflies), marbled murrelets, Queen Charlotte goshawks, marten, bears, flying squirrel and their habitat.
- Impacts to subsistence.
- Requests that any changes to Management Indicator Species (MIS) be made in a separate amendment process directed specifically at wildlife conservation and peer-reviewed by an independent scientific panel, or part of a full Forest Plan revision.
- Recommendation that the Conservation Strategy not be weakened in any way that could reduce species viability or increase risk to vulnerable species. Any modifications should be peer reviewed.
- Consider alternatives favoring management for deer and wildlife habitat, healthy salmon streams, and a local wood economy for Southeast Alaska.
- The Forest Service should meet future demands for fish and wildlife-beyond providing for minimal viable populations.
- Forest Service should review the existing Forest Plan conservation strategy using an interdisciplinary approach.

- The EIS should describe the current habitat capacity and identify known wildlife corridors, migration routes, and congregation areas and evaluate the effects of the alternatives upon these.
- The EIS needs to evaluate timberland suitability determinations in terms of the cumulative loss of habitat that has occurred due to high-grading the better quality old growth forests that provide optimum fish habitat and winter carrying capacity for deer. We request that your analysis:
    - disclose the cumulative effect of continued high-grading across the southern Tongass and discuss ending the practice;
    - assess potential impacts of any reasonably foreseeable future high-grading on all land ownerships;
    - consider high-grading at multiple scales and by different land ownerships in light of remaining large-tree productive old growth at the stand level relative to past selections of large tree and high value species and future harvests of these species, at the landscape scale and at the biogeographic landscape scale.
- Potential changes to the conservation strategy should be outside the scope of the plan amendment.
- Replacing MIS with focal species should be outside the scope of the plan amendment
- Requests to develop alternatives that maintain well-distributed populations of focal species across the Tongass, including those in prior forest plans as MIS.
- Consider alternatives favoring management for deer and wildlife habitat, healthy salmon streams, and a local wood economy for Southeast Alaska.

6.4.23 Young-Growth Transition

Numerous comments addressed the transition to young growth. Varying suggestions for old- and young-growth harvest levels over time, methods to open up YG, and suggestions for where timber should come from were received. Example comments are provided in the following subsections.

6.4.23.1 Need More Rapid Transition to Young Growth

Many comments were received that supported a transition away from old-growth harvests but at a rate faster than 10 to 15 years. Some supported an immediate stop to old-growth harvest while others recommended the transition be completed as soon as possible, in 2 years, or no more than 5 years or faster than 10 years. Example comments include:

- Support a dual transition in which a firm ASQ is split between old- and second-growth components. Old-growth ASQ should be reduced drastically and immediately. The young-growth component should support ecological, economic, and community health linking restoration and stewardship with local wood product manufacturing.
- Delaying the transition for another 10-20 years or more will result in unacceptable risks.

6.4.23.2 Culmination of Mean Annual Increment (CMAI)

Some comments suggested relaxation of the CMAI standard, or a limited relaxation if necessary to facilitate the young growth transition. Others commented that the transition should be delayed until more young growth has reached CMAI and allow old growth to be harvested in IRAs in the interim or that CMAI relaxation is not needed to secure the desired reduction in old-growth logging.

6.4.23.3 Effects on Local Industry and Communities

Concerns were raised about the effects of a premature transition to young growth on local mills that would require retooling. Others expressed support for small, value-added mills in communities.

- Support small value-added mills in our communities. Do not support export-oriented, industrial-scale, old-growth clearcuts.
- A premature transition to YG will force mill closures because inadequate supplies are available and the transition would require total retooling of existing sawmills.
- The current timber industry can be maintained through the transition through implementation of the Tongass Integrated Plan (February 2013).
- Request for alternatives favoring jobs, sustained yield forestry, and a viable wood products industry based on 10-year contracts.

6.4.23.4 Location of Young Growth Harvests

- The Forest Service should consider restricting logging, from the time of the Record of Decision on, to a subset of the current roaded, suitable, and available timber base to reduce potential impacts to other resources.
- Long-term availability of YG should be addressed later. In the meantime, YG harvest should be limited to non-controversial LUDs and YG should be separately stated (and capped) from old growth.
- YG logging should avoid prime wildlife habitat.
- Post-transition YG logging should be restricted to a subset of the current suitable and available land base that the agency identifies as least likely to entail significant environmental risks. Obvious exclusions, which could be implemented either through standards and guidelines or changes to the designated timber base, include roadless areas, karst lands, and high value deer winter habitat.

6.4.23.5 Harvest Volume

- Forest Service will have to offer substantially more than its recent average of timber and will have to build up a stockpile of sales so that commercial financing for a timber industry can be attained.
- Reassure the existing timber industry that the Forest Service is committed to providing sufficient old-growth timber for a long enough period to permit private commercial-bank financing to pay for new mill equipment and to fund the expense of pioneering new markets for young-growth timber- all steps vital to support an Alaska timber industry.
- A transition plan for YG that does not provide sufficient timber would violate the requirement of the Tongass Timber Reform Act to seek to meet the demand for timber.
- It is unrealistic to expect a widespread YG transition to begin within the next 20 to 30 years, without continued old-growth sales to make such a transition economic.
- The ASQ should be revised to reflect the sustainable young growth timber base and small old growth sale program.

6.4.23.6 Other Young Growth Transition Comments

- Industrial-scale old-growth logging projects are in complete contradiction to the original transition plan.
- All transition alternatives should focus on creating Alaskan jobs using Alaskan wood for available markets.

- The current planning process should consider timber growth rates, the landscape logging can occur on, the consequences of logging on ecosystem function, and the overall goals of Tongass management activities and how they balance with the strategic goals of overall Forest Service land management
- The Forest Service should give consideration to conservation strategies for young growth resources and how these stands can be managed to provide for adequate, economically viable timber harvests while conserving and facilitating fish, wildlife, and their uses.
- Transition alternatives should focus on the least vulnerable types of forest – red alder, conifer second growth, and cedar dieback.
- Lands that would be opened up for YG have better use if left to evolve into old-growth habitat.
- Both young- and old-growth timber programs are poor vehicles to stabilize communities. The Tongass Forest Plan amendment must evaluate all other alternatives to diversify and strengthen local economies
- Postpone transition decision until results of YG inventory are available.
- USFWS recommends establishing limits on the volume of old growth that may be cut in any year, with declining volumes allowed in subsequent years.

7.0 REFERENCES

USDA Forest Service. 2013. Five-Year Review of the 2008 Land and Resource Management Plan: Public Outreach and Comment Analysis Report. November 2013. Available online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5443864.pdf

APPENDIX B
MODELING AND ANALYSIS

Appendix B

Modeling and Analysis

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Appendix B
Modeling and Analysis

Planning Situation

The National Forest Management Act of 1976 (NFMA) directs each National Forest to prepare a comprehensive land and resource management plan. The Tongass National Forest produced its first comprehensive Plan in April 1979. The NFMA also directs that these management plans be revised at least every 15 years. The Tongass began the Revision process in 1987, published a Draft Environmental Impact Statement (DEIS) in June 1990, and prepared the Supplement to the DEIS (SDEIS) as a result of the November 1990 Tongass Timber Reform Act (TTRA). The SDEIS was published in August 1991 and the Revised SDEIS (RSDEIS) was published in April 1996. The Final EIS (FEIS) for the Forest Plan Revision was published in 1997 along with a comprehensive Appendix B that detailed the analytical process followed. In 2002 a Draft Supplemental EIS (SEIS) was published and in 2003 a Final SEIS was developed; an Appendix B for modeling and analysis also accompanied the Final SEIS. In 2008, the Forest Plan was amended and another Appendix B was developed for the FEIS (2008) to describe the major analytical processes and models used in the 2008 Forest Plan Amendment EIS. This Appendix B is also designed to include descriptions, which document the analytical processes and models used for the 2016 Forest Plan FEIS.

Due to the magnitude (17 million acres) and complexity (e.g., 19 land use designations) of the planning process, a number of analytical methods are used. This discussion includes basic assumptions, modeling components and inputs, rules, methods, and constraints. The information supplements the broader, less technical descriptions included in the body of Chapters 2 and 3 and Appendix C of the EIS. Additional information and documents used in the analysis process are contained in the planning record. The planning record in its entirety is incorporated here by reference.

Forest Management Modeling

Analysis-related Changes between the 2008 and 2016 EISs

As the assessment, development, and analysis of geographic information is a continuous process, aspects and attributes of existing databases are continually changing. These improvements and additions to the databases often have direct results on models, model results, and the assumptions used within the models themselves. A wide range of changes and updates were incorporated during the years between the 1997 FEIS and the 2008 FEIS. These covered changes to resource inventories, coefficient development, and assumptions, all of which played a role in the recalculation of alternative outputs. Appendix B to the 2008 FEIS includes a description of these changes. This section describes the changes that occurred since the 2008 FEIS. They include:

Recalculation of the Suitable Land Base for each Alternative—More accurate information about the landscape has been captured in the Forest's GIS resource layers (e.g., streams, slopes, karst). This information was used to update the suitable land bases. In addition, the model used in the identification of suitable forest lands was refined. See Appendix A of the Forest Plan and Chapter 3 of this FEIS for more detailed information on how more current information was included in the suitability analysis.

Changes to Scenery Management System— Scenic Integrity Objectives were mapped for each alternative, based on Seen Areas, Distance Zones, and Land Use Designations (LUDs). Seen Areas and Distance Zones are based on modeling of these using Visual Priority Routes and Use Areas (see Appendix F in the Forest Plan). The Visual Absorption Capability was remodeled and mapped and based

on updated GIS layers. Regulation Class layers (see below) were developed for use in Woodstock modeling.

Land Adjustments—Since 2008, a number of land adjustments have occurred; foremost among these are the land adjustments resulting from Public Law 113-291 in 2014. These adjustments have been incorporated into the current analysis as they have affected the total National Forest System (NFS) land base as well as the suitable forest land bases.

Inventory and Data—The inventory step of the planning process consists of the collection, development, and documentation of data to address the public issues, management concerns and resource opportunities, and planning criteria. Two basic types of information are needed to facilitate the analysis and development of alternatives. The first consists of information related to the classification of land into categories with unique properties. This classification can be based on any attribute significant to planning issues. This type of information is tied directly to the map base. In the case of the Tongass National Forest, this map base is its GIS database. The second type of information is not directly tied to a map base, but has more to do with the estimation of how land will respond to certain management activities. This type of information comes from many sources: Regional procedural handbooks, research studies, available literature, etc. The most up-to-date and verifiable information available was used for the EIS. Several Forest-wide inventory data sources have been updated and improved for the 2016 FEIS. The primary changes and updates to the inventory, data, and modeling include:

- The timber harvest map was updated to reflect timber harvested through 2015.
- The inventory of young-growth forest stands was updated.
- Forest Planning and Projection System (FPS) model runs were conducted to estimate young-growth yields, including commercial thins. These runs were based off of a combination of FIA and stand-level data collected on young-growth stands.
- New site index information was developed for all stands, young growth and old growth.
- New roads were added to the roads data base.
- Changes in land ownership due to conveyances to the state and Native corporations and other adjustments were addressed in the data base (noted above).
- Improvements and updates were made to most other resource databases, including suitable lands for timber production, streams, slopes, karst, and other data.

The major modeling changes were:

- The forest management model was built using Woodstock, replacing the Spectrum model used in the previous plan (2008).
- The forest management model was run for 20 five-year periods.
- Analysis areas were defined using attributes not used previously (e.g., beach buffers, karst, etc.)
- The updated Tongass young-growth timber inventory was used to model the young-growth land base. The Woodstock model maintained stand-level detail for the young-growth acres. Old-growth acres were modeled as strata per the 2008 planning analysis.
- All timber values were recalculated to reflect current information.
- Watershed constraints were recalculated based on the suitable acres in each alternative.
- Logging costs for young growth were calculated based on stand characteristics, using the equations from the Region 10 appraisal spreadsheets.
- New treatment options including group selection/patch cuts and variable retention harvest were developed in some alternatives

- Minimum rotation ages were established based on log-product objectives, in some alternatives.
- Harvest levels were established at a pre-determined target during the period of transition from old-growth to young-growth harvest.
- A broader array and definition of land allocation constraints were developed.
- Tongass National Forest acres transferred under Public Law 113-291 were removed from the model and do not contribute to the outputs, benefits and costs discussed in the EIS.
- Haul costs were modified to include the costs of constructing and maintaining log transfer facilities; camp and commute costs were also added to remote VCUs.

The Forest Planning Model Woodstock

Woodstock is a commercially available forest management modeling system developed and sold by RemSoft (www.remsoft.com). It is widely used by private, state, and federal land managers to develop and evaluate long-term timber harvest schedules designed to meet management objectives given constraints or limitations on management activities. Woodstock allows planners to create a detailed forest management model with the available data. In this planning effort, Woodstock was used to ensure that land allocations and output schedules for alternatives are realistic and meet standards and guidelines in a cost-efficient manner.

Woodstock is similar to Spectrum, the modeling system used in the 2008 Forest Plan. Both are linear programming models that assume that relationships between outputs and the land base are linear (e.g. harvesting twice the number of similar acres yields twice the timber volume). A management objective is specified (e.g., maximize present net value of revenues from harvest) as well as any constraints that may affect that objective (e.g., land allocations, limits on harvest flow over time, limits on silvicultural choices, etc.). An in-depth technical discussion of linear programming and its use in forest management applications can be found in Davis et al. (2001).

Woodstock was used instead of Spectrum for several reasons:

1. Woodstock has a greater capacity than Spectrum. This allowed the use of stand-specific yields for the approximately 8,400 young-growth stands. Greater capacity also provided for a single model for suitable Tongass National Forest lands, as opposed to the three Spectrum models to cover the same land base.
2. Woodstock provides more capacity and flexibility in specifying yields. For the young-growth yield tables, for example, volumes were split into five species groups and four size classes. The yield tables also contained logging costs specific to stand conditions.
3. Woodstock provides more control for modeling. For example, minimum rotation ages could be established such that each stand reached 95 percent of CMAI.
4. Woodstock provided the solution in both a tabular and a spatial format that was used to drive other models.
5. A previous Woodstock model offered a good starting point. Before beginning work for the Tongass National Forest, the modeling subcontractor had already built a Tongass Woodstock model under contract to The Nature Conservancy. Most of that model had been constructed in coordination with Tongass National Forest staff. It was easier to convert that model to use for the Tongass than to start over with a new program.

The Woodstock solution process involves three steps: 1) create a linear programming (LP) model, 2) find the optimal solution to the LP model, and 3) prepare reports of the model solution. Woodstock's matrix generator portion translates the management objective, constraints and assumptions about the land base into a matrix of coefficients that can be solved with Mosek – a commercial LP solver software package. The solver software identifies a set of management prescriptions that results in the highest possible

objective function value (e.g., Net Present Value) within the constraint parameters (meeting desired conditions and appropriate standards, guidelines, and land allocations). Woodstock's report writer portion then translates the LP output into reports, such as costs, revenues, landscape condition, and long-term sustained yield capacity. For some alternatives, Woodstock's spatial solution generator was used to map the solution for use in other analytical tools.

Results from the modeling process are only approximations of what to expect when any given alternative is implemented. The main purpose of modeling is to aid planners in estimating likely future consequences of management decisions. An informed choice between alternatives can be made even though the model may lack precision in describing specific attributes of a given alternative.

The Tongass Woodstock Models

Large LP models can be difficult or impossible to solve. While the Woodstock model offers more capacity than the Spectrum model, some of the limitations of the previous Spectrum models were imposed on the Woodstock model. Specifically, the Woodstock models for the Tongass only analyze land classified as suitable for timber production. Those lands considered "not suitable" for timber production were omitted from the models since there were no opportunities to schedule management activities. The process for determining suitability can be found in Appendix A, " Identification of Lands as Not Suitable and Suitable for Timber Production," of the Forest Plan.

Woodstock Model Components

A Woodstock model has five main components: 1) the objective function, 2) land base development types, 3) management prescriptions, 4) activities and outputs, and 5) constraints. The objective function provides the model with a way to evaluate management options. Examples of typical objective functions are "maximize net present value," "maximize timber volume," and "minimize cost." Only one objective function can be used for each model run; however, forests typically find it beneficial to use the results of one objective function run to learn about the specific nature of their management problem or to formulate desired conditions used with another objective function. Detailed information on objective functions used by the Tongass is found in the solution process section of this appendix.

The management prescriptions and constraints influence how the land base will be defined. The Tongass models are designed to analyze the activities and outputs associated with timber harvest scheduling; therefore, the land base is defined by those characteristics significant to the timber resource. Other resources are dealt with through the LUD allocation process and model constraints. The management prescriptions applied to the Forest differ by types of regimes, rotation age and dispersion amount (portion of the trees removed from the stand). The costs associated with timber harvesting are documented below as are the volumes and value of the wood fiber. The constraints differ by alternative but often refer to a particular timber classification, specific geographic area, activity or output volumes allowed, and management allocation. Constraints are used to ensure desired condition achievement, compliance with appropriate standards and guidelines, and that the resultant management strategy is feasible.

Vegetation Inventory

The Tongass Geographic Information System (GIS) library was used as the source of all spatial information used in the forest management model. The timber inventory came from two sources:

Old-Growth Inventory – The Woodstock model used the same old-growth inventory data that was used for the 2008 Forest Plan, with the updates described above. Specifically, 15 strata are used to define timber volumes and yields. They span 3 stocking levels and 5 geographic ranges.

Young-Growth Inventory – Inventory projections for the young-growth acres were based on the young-growth stand-based inventory, and the recently completed site index layer. There are about 8,100 young-growth stands in the Tongass inventory. About 40,000 cruise plots were established in a subset of the young-growth stands, distributed across the forest. Plot data was compiled and average stand conditions expanded to establish inventory on the un-cruised stands

using strata based on District, size class and density class. Each stand was grown forward with the FPS growth model, using the site index specific for that stand. At each five-year period, the stand table was merchandized into six species groups and four size classes.

Land Base Analysis Areas

Analysis Areas represent unique combinations of the different Identifiers used to stratify the mapped suitable land base. The mapped suitable land base is different for each alternative and is displayed in the EIS. The total land base analyzed amounts to almost one million acres. It is important to note that they include the unmapped unsuitable lands accommodated for by the Model Implementation Reduction Factor (MIRF – see below for detailed discussion). If information was perfect, and all unsuitable lands could be mapped, the actual suitable would be somewhat less than the land base represented by the analysis areas.

An analysis area is an operational aggregation of land resource polygons that have the same characteristics, are expected to have similar responses management prescriptions, and have similar costs and benefits associated with management prescriptions. By an extension of this logic, analysis areas differ from each other in management prescription response and the costs and benefits associated with those prescriptions. Analysis Areas are unique combinations of the Analysis Area Identifiers described below.

Analysis Area Identifiers. Fourteen attributes were used to classify the land base for the Woodstock models. An analysis area is a unique combination across all attributes. The attributes describe characteristics that: (a) affect timber growth and yield; (b) describe the existing timber stand; (c) affect timber management costs and/or revenues; (d) affect land allocation and/or management restrictions in some or all alternatives. The attributes are described below.

Stand ID: Existing inventories were used to produce current and future yield values for all current young growth stands. These yields were stand based and referenced by Woodstock using the Stand ID.

Old Growth Strata: There are 15 strata assigned to the old growth stands. They span 3 stocking levels and 5 geographic ranges. In lieu of yield produced at the individual stand level, yields for old growth stands are assigned to each of these 15 strata.

Regulation Class: Regulation class is determined by the combination of Scenic Integrity Objective, LUD designation, Distance Zone and Visual Absorption Capacity. Regulation class affects the intensity of potential harvesting activities and is used to assign management regimes.

Site Class: There are nine site index classes utilized in this model. The primary use of site index is by the growth model when generating future yields. The site index was also used to establish minimum rotation ages. All site indices are base age 50, and correspond to the site productivity values in FPS.

Timber Phase: Old growth strata and young-growth stands can be categorized in one of 3 land phases, based on the Tongass Timber Sale Adaptive Management Strategy. All alternatives can access timber in Phase I and some alternatives can access timber in Phases II and III as well.

District: There are 10 districts in this model. District is used for both reporting and for assigning regeneration yields. Northern districts did not include cedar as a part of the regeneration species mix, while those in the southern districts did.

Steep Slopes: Slopes over 72- percent are considered oversteepened. In some alternatives, management is restricted on oversteepened slopes.

Land Use Designation (LUD): There are five LUD classifications in this model. The LUD is a factor in identifying appropriate management regimes.

Road Classification: Road classification specifies whether an area is presently roaded or unroaded. The roaded/unroaded condition of an area influences the cost of harvesting the timber and is used to determine appropriate management. Unroaded areas require more costly road construction; roaded areas require less costly road maintenance and repair when harvesting activities are conducted.

Riparian Management Area: Riparian management area (RMA) is used to assign management regimes in some alternatives.

Beach Buffer: Stands that border saltwater are designated as within the beach and estuary fringe (also referred to as beach buffers). Beach buffers are used to assign management regimes. In Alternative 5, a 200-ft fringe right along the water is never planned for treatment. These stands received a 21-percent reduction in acres to account for a fringe area right along the water that will never be assigned management in any alternative addressed by this model.

Karst: Karst landscapes have been categorized as low, moderate, and high vulnerability. Karst is used to assign management regimes.

Value Comparison Unit (VCU): VCUs, which generally represent large watersheds, are used to assign hauling costs. VCUs are also used to disperse harvest across the landscape

Logging System: Logging systems consist of the three basic categories of ground, cable, and helicopter. Cable and helicopter have additional levels depending on yarding distance. Logging systems are used to assign logging costs.

Table B-1
Woodstock Themes

Theme	Attributes
Old Growth Strata	North Island Low Volume North Island Medium Volume North Island High Volume North Mainland Low Volume North Mainland Medium Volume North Mainland High Volume South Island Low Volume South Island Medium Volume South Island High Volume South Mainland Low Volume South Mainland Medium Volume South Mainland High Volume Yakutat Island Low Volume Yakutat Island Medium Volume Yakutat Island High Volume
Regulation Class	Ineligible for management Reg Class 1 Reg Class 2 Reg Class 3
Site Class	SI 1 to 35 SI 36 to 45 SI 46 to 55 SI 56 to 65 SI 66 to 75 SI 76 to 85 SI 86 to 95 SI 96 to 105 SI > 105

Table B-1 (continued)
Woodstock Themes

Theme	Attributes
District	Admiralty Craig Hoonah Juneau Ketchikan Petersburg Sitka Thorne Bay Wrangell Yakutat
LUD	Modified Landscape Old Growth Reserves Scenic Viewshed Timber Management All Others
Roadless	Roadless between 1000 and 5000 acres Roadless less than 1000 acres Inventoried Roadless Area – non-roaded Inventoried Roadless Area – roaded Roaded
Karst	None Low Vulnerability Medium Vulnerability High Vulnerability Unknown
Logging System	Ground Cable Short span Cable Long span Helicopter Distance <0.75 Mile Helicopter Distance 0.75-2 Miles Helicopter Distance >2 Miles

Modeled Analysis Areas. Using the 14 attributes, there were about 120,000 unique combinations of acres. Many of these analysis areas were small and we eliminated small polygons in order to make the model run more efficiently. Young growth analysis areas that were less than 0.5 acre and old-growth analysis areas less than 1.0 acre were eliminated. This eliminated about 36,000 potential analysis areas and about 6,300 acres from the model.

Management Prescriptions

A prescription is a management practice or group of management practices applied to a specific land area. The planning process involves assignment of the land base to the available prescriptions. This is facilitated by the Woodstock model and is based on forest constraints specific to each forest plan alternative and the objective function.

Prescriptions were developed by the interdisciplinary team to represent the full range of possible management activities and outputs. Since the Tongass models are concerned primarily with timber harvest scheduling, only prescriptions related to timber harvest were modeled. The interdisciplinary team quantified the outputs, costs, and revenues that would occur when these timber prescriptions were applied to a given analysis area. This quantification process produced the output, cost, and revenue coefficients that are used in Woodstock yield and economic tables. The interdisciplinary team, during its development of standards and guidelines for all prescriptions, ensured that the specific management requirements set forth in 36 CFR 219.27 would be met in accomplishing the goals and objectives for the Tongass.

Woodstock prescriptions were developed to allow consideration of a full range of management activities in the analysis areas. A grow only or no-harvest prescription was created for each analysis area as well as several different harvest options. The only criterion used to eliminate timber options from the models was technical feasibility. For example, ground-based/shovel logging was not considered on slopes greater than 35 percent. Consideration of timber prescriptions for any given Analysis Area was not directly limited by economic efficiency, in order to allow them to be chosen in efficient fulfillment of a forest-wide desired condition (CFR 219.14(f)(8)). Available timber options were not eliminated from consideration because they produced a negative PNV or even a lesser PNV than some other timber option. A full range of timber options with varying levels of economic efficiency was available to the model, and the Woodstock model was able to consider the economic efficiency of each prescription during the solution process.

The prescriptions analyzed are briefly described below. Note that all regimes assume natural regen, and that all existing young-growth stands 20 years or less, and all regeneration stands are assumed to have a precommercial thinning to bring the stands to desirable stocking levels.

Grow only or Minimum Level/Maintenance. Applies minimum custodial direction for the timber resource. There is no commercial timber harvest and no production of outputs related to timber harvest. This is the prescription assigned to lands not scheduled for timber harvest

Clearcut. Removal of all merchantable commercial trees within a stand in one operation. This prescription is only available for old-growth stand and existing young-growth stands past the age of precommercial thinning.

Precommercial thinning and clearcut. All young-growth stands 20 years old and younger received a precommercial thinning. Final harvest removes all merchantable commercial trees within a stand in one operation. This prescription is available for young-growth stands 20 years and less, and regenerated stands.

Commercial thinning and clearcut. One commercial thin at age 60, 65, 70, 75, 80 70, 75, or 80. Clearcut at choice of rotation ages.

Precommercial thinning, commercial thinning and clearcut. Young-growth stands 20 years old and less receive a precommercial thinning. One commercial thin at age 60, 65, 70, 75, 80 70, 75, or 80. Clearcut at choice of rotation ages. This prescription is available for young-growth stands 20 years or less and regenerated stands.

Commercial thinning, no subsequent harvest. One commercial thin at age 60 or older; no further entries are allowed. This prescription is available for young-growth stands in certain land allocations, defined for each alternative.

Young Growth Patch Cuts. This regime creates an uneven-age class distribution across space by creating smaller even-aged openings. Up to 35 percent of the stand is harvested in small openings, no larger than 10 acres in size. Openings will naturally regenerate, and precommercial thinning may be scheduled to coincide with a subsequent harvest entry. This prescription is available for young-growth stands in certain land allocations, defined for each alternative.

Old Growth Partial Cut. On first entry into old-growth stands, 75 percent of the standing volume is harvested. The remaining 25 percent of the stand is harvested every 50 years. This prescription is available for old-growth stands in Regulation Class 3.

Minimum Rotation Age

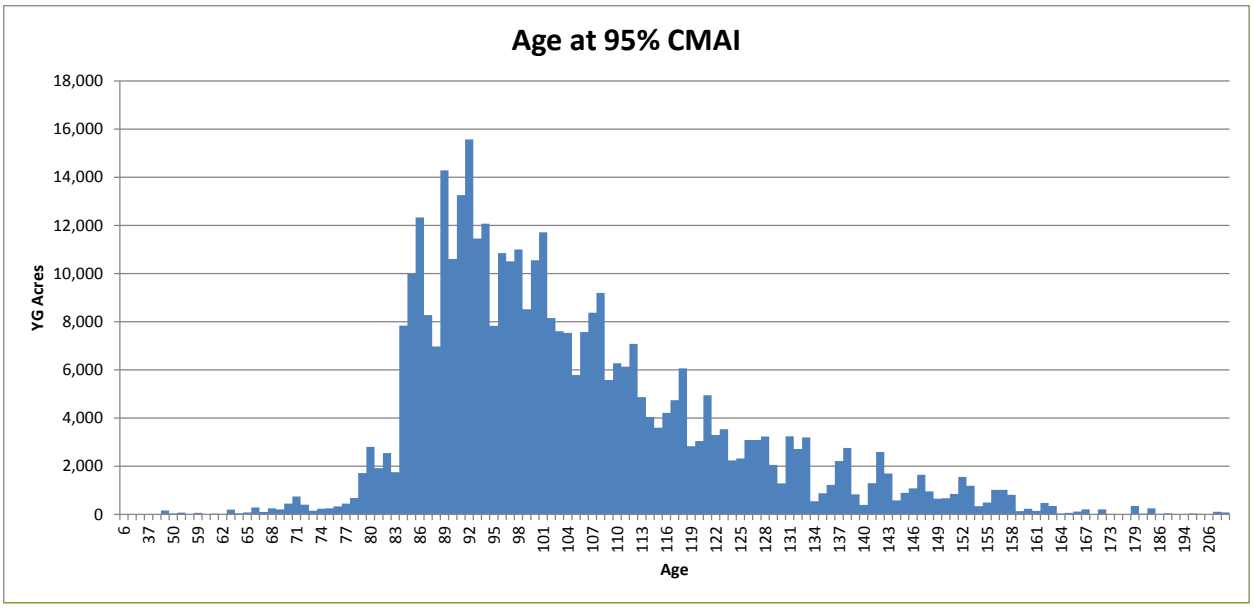
The National Forest Management Act establishes the minimum rotation age for even-aged harvest as the age at which stands have “generally reached culmination of mean annual increment (CMAI)”. The planning regulations define this more specifically as the time that stands reach 95 percent of mean annual increment.

To define this for modeling, young-growth stands were grown forward to project the age at which each stand would reach CMAI. The results indicated that most stands would not reach 95 percent CMAI prior to age 90, and many stands would take considerably longer than that, as shown in Figure B-1 below.

Public Law 113-291 of 2014 made provision for shorter rotations on a limited basis – up to 1,500 acres per year in the first 10-year period, and no more than 50,000 acres in the first 20 years, could be harvested at ages less than 95 percent CMAI. This standard was used as the basis for Alternative 1. However, after 20 years, minimum harvest age was defined by 95 percent CMAI.

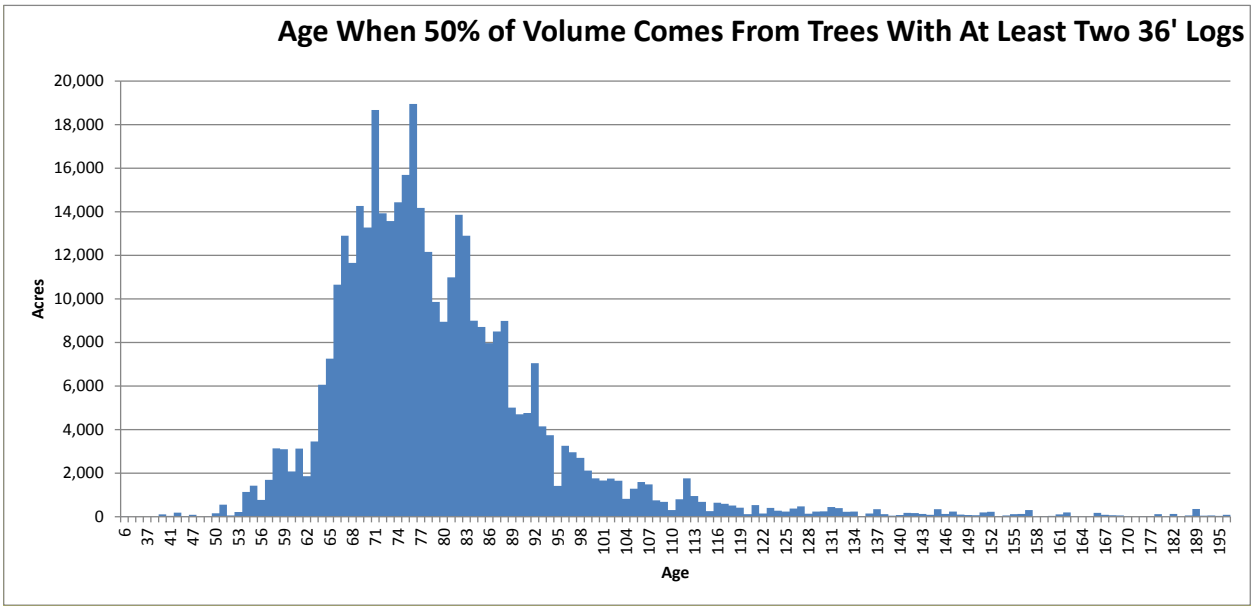
To increase the transition speed to a young-growth harvest program, rotations shorter than 95 percent CMAI were used in Alternatives 2, 3, 4, 5, and 7 (Alternative 7 is the very short-rotation alternative, which was evaluated but not analyzed in detail), and in calculation of the Sustained Yield Limit. Alternative 6 (the State-recommended alternative, which was evaluated but not analyzed in detail) used 95 percent CMAI exclusively.

Figure B-1 Frequency Distribution for Age at 95 Percent CMAI for Young-growth Stands



Minimum rotations less than 95 percent CMAI were based on an analysis of the log products that could be made from young-growth stands. A number of different standards were evaluated. Ultimately, minimum rotation ages for young-growth stands were set at the age at which at least 50 percent of the total volume comes from trees with at least two full 36-ft. logs. Comparing Figure B-2 with Figure B-1 shows that this standard reduces the minimum rotation age for most stands.

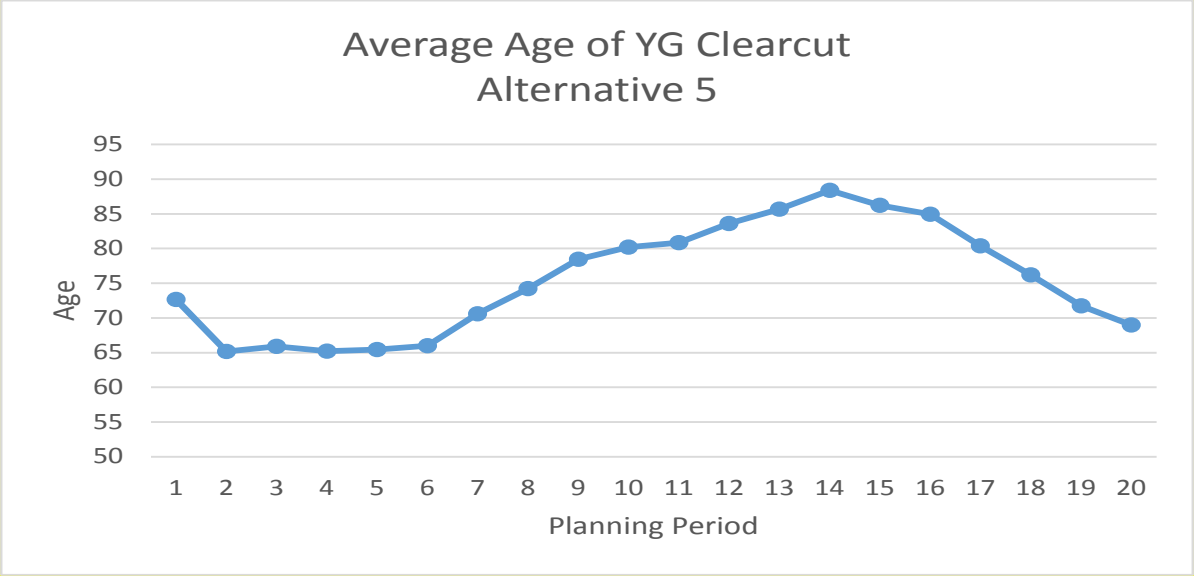
Figure B-2 Frequency Distribution for Age when 50% of Volume Comes from Trees with at least Two 36-ft. Logs



Further analysis indicated that most young-growth stands with a site index of 90 or greater would reach this standard at age 65, and that most stands with site index less than 90 would reach this standard by age 75.

Minimum rotations in the harvest scheduling model were set at 65 for higher site stands (site index 90+) and at 75 for lower site stands (site index less than 90). These minimum rotation ages establish the first time that a young-growth stand could be considered for harvest. Due to the current young-growth age-class distribution, much of the harvest in the early planning periods would come from stands harvested at these minimum rotation ages, as shown in Figure B-3.

Figure B-3 Average Age of Young-growth Clearcuts in the Preferred Alternative 5 by 5-year Planning Period



Activities and Outputs

Management activities create costs and produce outputs, both of which are reflected in the Woodstock model. Each Activity and Output used in the model is described below.

Activity Costs. All costs and values used in the Woodstock are based on the current USFS Region 10 appraisal system. Costs in the model include costs incurred by the timber sale purchaser – logging, haul and presale costs. The Forest Service costs for timber sale preparation and harvest administration are also included in the model, but do not contribute to the Present Net Value objective function. The actual cost figures used in the analyses are available in the planning records.

Coefficient Development and Estimation of Effects. The GIS enables identification and stratification of land into logical groupings. The response of these groups to management activities was determined from a wide variety of existing data. All coefficients and assumptions made in the modeling process have been developed from the following information sources.

Yarding/Logging Costs
Information Source: Calculated using equations from USFS Region 10 timbers sale appraisal spreadsheets.

Occurs With or Varies By: For old growth, varies by volume class, logging operability, geographic zone, productivity group, stand age, and prescription. This cost is incurred according to net sawlogs removed per acre. For young growth, varies by volume per acre, logging operability and harvest method.

Assumptions: These costs include road maintenance relative to logging, profit and risk relative to yarding, landing construction, and yarding. Logging costs increase as operability becomes more difficult. The logging operability classification of the area heavily influences the logging costs due primarily to the different harvest systems required. The size of the logs influences logging costs. Typically, larger logs result in less logging cost per 1,000 board feet. For old growth, volume class and productivity group are used to estimate the average log size and volume per acre for each unit. For young growth, pieces per thousand are used in the young growth logging cost equations to estimate logging costs specific to each stand at each time period.

Logging systems include ground-based/shovel, short-span cable and long-span cable. Helicopter costs will also be determined by three categories of distance (0.5 mile, 1.25 mile, and 2+ mile). Helicopter costs are constant costs independent of volume strata and geographic zone, so they can be applied wherever helicopter logging must be used. Young-growth harvest costs were determined initially from FVS outputs at age 80. They were then adjusted for geographic zone, age, and prescription (i.e., clearcut or thin) using South Islands (POW, where the data was collected) as a reference point. Cost curves from 1996 were used as the basis of this adjustment.

Felling and bucking coefficients
Information Source: Based on most recent USFS Region 10 appraisal spreadsheets.

Occurs With or Varies By: Tracked on a per volume basis (MBF). For old growth, varies by volume class. For young growth, coefficients are based on projected yields for each stand.

Assumptions: Felling and bucking costs were split out separately from logging costs. Old-growth costs varied by Geographic Zone and volume strata.

Outputs (Benefits). The economic benefits associated with timber harvest are based on appraised value. Value is based on tree size, species composition, amount of defect, and assumptions about domestic manufacture and export. Timber benefits are measured as pond log value. Pond log values used in the Woodstock model are the estimates of price a timber buyer would pay for a log at the mill site, less the markup charged by the logger (profit and risk). To get the stumpage value of this log, all

estimated costs that are incurred to get the log to the mill must be subtracted from the pond log value. The resulting stumpage price is assumed to be the price the timber buyer pays for the log (bid price). Bid price represents money to the U.S. Treasury.

Sawtimber (board feet and cubic feet)
Information Source: Timber values were determined using timber appraisal methodologies for Southeast Alaska (FSH 2409.22) as reflected in the most recent USFS Region 10 appraisal spreadsheets.

Merchantable volume of existing old growth timber stands was based on FIA plot analysis by volume strata within each identified Geographic Zone and are the same volumes used in the 2008 Plan.

Yields for existing young-growth timber stands were derived from a recent young growth inventory and a recently updated site index map. In the Woodstock model, each of the approximately 8,100 young-growth stands were grown forward and those unique yield projections were each used in the model. Stands 20 years old and younger were assumed to have a precommercial thin to achieve desirable stocking levels.

Yields for future regenerated stands were based on a subset of the young growth yields. All future stands are assumed to have desirable stocking due to precommercial thinning.

Occurs With or Varies By: At harvest, the old-growth volume of merchantable timber produced generates a revenue per mbf that varies by Geographic Zone and volume class. Geographic zone affects this revenue due to differences in species composition and wood quality. Young growth harvest revenue is based on the species and size class of the harvested logs.

Assumptions: For existing old-growth stands, piece size and species composition is determined from a tree-by-tree analysis of the FIA plot summary data. For young growth and regenerated stands, piece size and species composition is based on a tree-by-tree analysis of the FPS model outputs. It is assumed that existing old-growth volumes are constant (i.e., through time, growth equals mortality). Young- growth (regenerated) stands grow at a rate determined by the FPS model. Pond values are based on the assumption that for species that are exported, half of the volume will be exported, and half will be processed by domestic manufacturers.

Woodstock Constraints

Constraints in a linear programming model are the rules that must be followed when determining an optimal problem solution. Without constraints, the solution of a Woodstock model may represent a management strategy that is impractical, inconsistent with the forest plan, or in conflict with Forest Service policy. Thus, constraints are included in Woodstock models to ensure that their results are useful and meaningful.

There are two categories of constraints within a Woodstock linear programming matrix: implicit and explicit. Implicit constraints are common to all Woodstock models. For example, all acres in the model must be allocated to some prescription (even if it is the “no management” prescription), or the number of acres assigned to each prescription must not be negative. These types of constraints are exercises in logic and need not be discussed further.

Explicit constraints are those constraints added to Woodstock models by planners. These constraints come in many forms and are applied to mimic regulations and laws such as NFMA, standards and guidelines set forth in the forest plan, and on-the-ground operating conditions. An example is the non-declining yield constraint. Proven ability to maintain a constant flow (non-declining yield) of harvested timber volume in perpetuity is Forest Service policy. A constraint is added to the Woodstock data set that forces all timber harvest volumes to be at least as great as the previous decade's harvest volume (see below for further discussion). Another example may be a constraint that forces a certain area to be

managed specifically for wildlife habitat. There are many explicit constraints in the Tongass models. They vary by land attributes, geographic area, and by management alternative. The explicit constraints used in the Woodstock models fall into two categories: timber policy constraints and operational constraints. A detailed discussion of the intent of these constraints follows. They are summarized in Table B-2 for comparison of their application across the alternatives.

Timber policy constraints. These constraints are included in the Woodstock models to represent legal or policy requirements of national forest timber management. The primary requirements regarding timber management incorporated into Tongass Woodstock models are:

Non-declining Yield. The Tongass models have a constraint that ensures harvest volume (in board feet) will not decline in any period over the 100-year planning horizon per national policy. Harvest volumes may increase, but all subsequent harvests must be at least as much as the previous decade's harvest.

Sustained Yield. The harvest in any decade of the planning horizon must not exceed the Long-Term Sustained Yield that can be maintained on the forest. Long-term sustained yield is measured in cubic feet. It is calculated as the average yearly volume yielded from a chosen management action, summed across all management actions for all stands chosen by the model. For instance, if a management action yields 50 cubic feet every 100 years, the Long-Term Sustained Yield for that management action is 0.5 cubic feet per year.

Minimum harvest age. The age at which a managed stand is harvested is called the rotation age. Agency policy has been that rotation age can be no earlier than the age at which 95% of culmination of mean annual increment (CMAI) occurs. As discussed above, because of this transition to young-growth management, most alternatives in this plan amendment allow harvest at ages younger than 95% CMAI (based on legislative and NFMA exceptions).

Constraints Common Across All Alternatives. There are four constraints common to all seven alternatives. They are: (1) Non-declining yield, (2) Harvest during the first three periods – can only come from Craig, Thorne Bay, Ketchikan, Petersburg, and Wrangell Districts; after that, all nine timber districts are available become available, (3) Normal operability constraints, and (4) Old growth high volume strata constraints.

Compatibility Matrices Specific to Each Alternative. The Tables below show which management regimes are compatible with each land use allocation, under each alternative. These "compatibility matrices" were used to build the land allocation constraints into the Woodstock models.

Table B-2.0
Key for Codes Found in Tables B-2.1-7

Code	Description
NH	No Harvest
CC	Clearcut
GS	Group Selection and Patch Cut
VR	Variable Retention
CT	Commercial Thin
Par	Partial Harvest
YG	Young Growth
OG	Old Growth
x1	x1 = Phase 1 only
x2	Remove 33% of volume
x3	Only CC harvest in Period 1-3, then CT but no CC
x4	Patch cutting in Moderate, clearcut in Low
x5	Minimum age 60/70
x6	Where also OG and RMA, minimum age 65/75

Table B-2.1
Compatibility Matrix Alternative 1

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	-	-	-	x	-	-
Phase I, II and III	x	x	-		x	x	x
Roaded Roadless	x	-	-	-	x	-	-
Beach Buffer	x	-	-	-	x	-	-
Karst - High	x	-	-	-	x	-	-
Karst - Moderate & Low	x	x	-		x	x	x
LUD - Non Development	x	-	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	-	x	-	-
Steep Slope, MMI 4	x	x	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x	x	x
LUD - Timber Production	x	x	-	-	x	x	X

*Relax CMAI on 50,000 acres in first 20 yrs (1st decade 15,000 ac, no more than 1500 ac per year)
*FP Scenery Standards apply (Reg class constraints by VCU)
*YG use 2 log trigger
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.2
Compatibility Matrix Alternative 2

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	-	-	-	x	-	-
Phase I, II and III	x	x	-		x	x	x
Roaded Roadless	x	x	-	-	x	x	x
Beach Buffer	x	x3	-	x	x	-	-
Karst - High	x	-	-	x	x	-	-
Karst - Moderate & Low	x	x	-		x	x	x
LUD - Non Development	x	x	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	x2	x	-	-
Steep Slope, MMI 4	x	x	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x	x	x
LUD - Timber Production	x	x	-	-	x	x	X

*Relax CMAI on 50,000 acres in first 20 yrs (1st decade 15,000 ac, no more than 1500 ac per year)
*FP Scenery Standards apply (Reg class constraints by VCU)
*YG use 2 log trigger
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.3
Compatibility Matrix Alternative 3

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	x	-	-	x	x	x
Phase I, II and III	x	x	-		x	x1	x1
Roaded Roadless	x	x	-	-	x	x	x
Beach Buffer	x	-	-	x	x	-	-
Karst - High	x	-	-	x	x	-	-
Karst - Moderate & Low	x	x	-		x	x	x
LUD - Non Development	x	x	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	-	x	-	-
Steep Slope, MMI 4	x	x	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x	x	x
LUD - Timber Production	x	x	-	-	x	x	X

*Relax CMAI on 50,000 acres in first 20 yrs (1st decade 15,000 ac, no more than 1500 ac per year)
*FP Scenery Standards apply (Reg class constraints by VCU)
*YG use 2 log trigger
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.4
Compatibility Matrix Alternative 4

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	-	-	-	x	-	-
Phase I, II and III	x	x1	-	-	x	x1	x1
Roaded Roadless	x	-	-	-	x	-	-
Beach Buffer	x	-	-	x	x	-	-
Karst - High	x	-	-	x	x	-	-
Karst - Moderate & Low	x	x	-		x	x	x
LUD - Non Development	x	-	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	-	x	-	-
Steep Slope, MMI 4	x	x	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x	x	x
LUD - Timber Production	x	x	-	-	x	x	X

*Relax CMAI on all acres and time periods
*FP Scenery Standards apply (Reg class constraints by VCU)
*YG use 2 log trigger
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.5
Compatibility Matrix Alternative 5

	YG						OG		
	NH	CC	CT CC	GS	VR	CT	NH	CC	Par
Roadless	x	-	-	-	-	-	x	-	-
Phase I, II and III	x	x	-	-	-	-	x	x	x
Roaded Roadless	x	-	-	-	-	-	x	-	-
Beach Buffer	x	-	-	-	x6	x	x	-	-
Karst - High	x	-	-	-	-	-	x	-	
Karst - Moderate & Low	x	x4	-			-	x	x	x
LUD - Non Development	x	-	-	x5	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	x5	-	x	x	-	-
Steep Slope, MMI 4	x	-	-	-	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x6	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x6	-	x	x	x
LUD - Timber Production	x	x	-	-	-	-	x	x	X

*Relax CMAI on all acres and time periods
*FP Scenery Standards apply (Reg class constraints by VCU)
*YG use 2 log trigger
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.6
Compatibility Matrix Alternative 6
(State of Alaska alternative – modeled, but not analyzed in detail)

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	x	-	-	-	x	x
Phase I, II and III	x	x	-	-	-	x	x
Roaded Roadless	x	x	-	-	-	x	x
Beach Buffer	x	-	-	-	-	-	-
Karst - High	x	-	-	x	x	-	-
Karst - Moderate & Low	x	x	-		x	x	x
LUD - Non Development	x	-	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	-	x	-	-
Steep Slope, MMI 4	x	-	-	-	x	-	-
LUD - Modified Landscape	x	x	-	-	x	x	x
LUD - Scenic Viewshed	x	x	-	-	x	x	x
LUD - Timber Production	x	x	-	-	x	x	X

*95% CMAI on all acres and time periods
*No FP Scenery Standards in this alternative
*Total acreage in even-aged stands less than 150 years would be limited to 33% of the forested acres within a VCU.
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition <= 46

Table B-2.7
Compatibility Matrix Alternative 7
(Conservation group alternative – two options modeled, but not analyzed in detail)

	YG				OG		
	NH	CC	CT CC	CT	NH	CC	Par
Roadless	x	-	-	-	x	-	-
Phase I, II and III	x	x	x		x	x	x
Roaded Roadless	x	-	-	-	x	-	-
Beach Buffer	x	-	-	-	x	-	-
Karst - High	x	-	-	-	x	-	-
Karst - Moderate & Low	x	-	-		x	x	x
LUD - Non Development	x	-	-	-	x	-	-
RMA outside TTRA Buffer	x	-	-	-	x	-	-
Steep Slope, MMI 4	x	-	-	-	x	-	-
LUD - Modified Landscape	x	x	x	-	x	x	x
LUD - Scenic Viewshed	x	x	x	-	x	x	x
LUD - Timber Production	x	x	x	-	x	x	X

*Relax CMAI on all acres and time periods
*FP Scenery Standards apply (Reg class constraints by VCU)
*Short log min CC age = 55
*Long log min CC age = 65/75
*Transition ends @ 5 years-OG harvest levels out at 3.5 MMbf/year
*If YG+OG > 46, then OG volume = 5, else OG+YG = 46
*Total harvest during transition = 35

Model Implementation Reduction Factor Constraints (MIRF). These constraints are designed to accommodate for unmapped unsuitable lands that were missed during the suitability determination. It is assumed that when harvest activities occur, a certain percentage of the assumed suitable land will be off-limits for management due to several economic or ecological considerations. These constraints are applied to each old-growth volume strata of each of the six operability harvest systems as well as to young-growth stands. The constraint is implemented by forcing the model to never harvest a certain percentage of the acres in the model. The effect is to control the maximum amount of acres from the suitable land base that are actually harvested. See below for a discussion of how MIRF factors were determined.

Dispersion and Adjacency Constraints. To meet visual quality and Regulation Class objectives, dispersion and adjacency constraints were incorporated into the models. “Dispersion” refers to spreading harvests across the landscape rather than focusing all activities in a concentrated area. The dispersion limits are taken from proxies developed by Tongass landscape architects for each LUD. These visual guidelines estimate how much of a viewshed can be "disturbed" at any one time and still meet the adopted scenic integrity objectives of the area. They also specify length of time before harvest of adjacent units is permissible and the maximum size of these harvest units. Table B-7 (below) shows the constraints that were used for each Regulation Class. The “Visual Disturbance” factors were used in the constraints section of the model and the “Adjacency” definitions were defined in the outputs section of the model. Together, these two definitions (as well as treatment options available to each regulation class) distinguish the regulation classes in the model. Detailed information about these constraints is found in the “Regulation Class” section of this appendix (below).

Woodstock Solution Process

The following sections describe some of the steps involved in solving the Woodstock models. Following that is a brief discussion of how the Tongass evaluated economic efficiency of the alternatives.

Objective Functions

The objective function of a linear programming model allows the model to determine the "best" set of management actions that meet the constraints. It is generally expressed as a "minimize" or "maximize" function. The LP solution software finds the largest (or smallest) value possible of the objective function within the boundaries of the model constraints. Linear programming principles guarantee that the solution is optimal; that is, the best answer possible. Different objective functions were used to explore the Tongass management problem. While the "maximize present net value" objective function was used for the final results, the others were used at intermediate steps in the analysis process. Some of the objective functions used in the modeling process include:

Maximize Net Present Value. Present Net Value (PNV) is defined as the benefits less the costs of a management prescription, discounted at 4 percent annually to the present day, summed over all management prescriptions of all Analysis Areas. Because the model is formulated in 5-year time periods, discounting is done from the middle of each period. This is the objective function that was used for all final model runs presented in this FEIS. This ensures that the final harvest schedule is the most economically efficient approach to meeting the constraints with the available stands.

Maximize Discounted Timber Volume. Timber volume is tracked for each management action of each Analysis Area in each period. Each volume is discounted to the present and the total amount is maximized. The Woodstock model was used to determine how quickly the Tongass could transition to a sustainable timber sale program comprised primarily of young-growth harvest, and how high the young-growth harvest could be, given the land allocation and other management constraints. Maximizing discounted volume ensured that the model had the incentive to get as much young-growth volume as possible, early in the harvest schedule. The non-declining yield constraint ensure that the young-growth harvest was sustainable, and allowed the harvest to increase over time as the young-growth age class distribution was regulated. The discount rate used for this calculation was 16 percent. This objective function was used only in the initial run.

The solution process for each alternative consisted of making a set of Woodstock model runs designed to find the most cost efficient way to transition to a young-growth harvest program as rapidly as possible. The general procedure was as follows:

> Initial Run - Determine the highest level of sustainable young-growth harvest, given the land allocation constraints. This model includes only the young-growth acres. Management regimes are limited to those compatible with the land allocation. Harvest is limited to non-declining flow – harvest may increase from one period to the next, but may not decrease. The objective function maximizes discounted harvest volume. This run produces the highest level harvest in the early periods that is sustainable through time.
>
> First Old-growth Run – the old-growth acres are added to the model. Young-growth harvest is constrained to meet the level established in the initial run through the transition period. Old-growth harvest is constrained such that total harvest meets the target volume during the transition period (46 MMbf per year, in most alternatives). After the transition period, old-growth harvest is established at 5 MMbf per year. The maximize PNV objective function was used on this an all subsequent runs.
>
> Intermediate Old-growth Runs – Constraints affecting the selection old-growth harvest are added sequentially to ensure that the model results are in the expected range. These constraints include the old-growth operability constraints, the constraints limiting the harvest of RegClass 3 old-growth acres, and constraints limiting the harvest of high volume old-growth stands.
>
> Final Run – All constraints are included and the model is run to maximize PNV. This ensures that the objectives and constraints are met in a cost efficient manner.

At each step, the Woodstock model results are evaluated to ensure that the solutions are consistent with the design of each Alternative.

Iterative Process

The Woodstock model was used to test the assumptions and problem formulation strategies used in this analysis. The final solution for each alternative is often the result of several runs that were used to test to test the solution space given the land allocation constraints, and to observe the impact that the implementation constraints had on the solution. Early on, model runs were made to validate the model and compare it to previous models. A number of runs were made to test the solution space, especially around the question of potential young-growth harvest levels under different potential harvest policies.

Present Net Value

Economic benefits from the Woodstock model were calculated as Present Net Value, or PNV, of the scheduled timber management activities. This calculation was done by the Woodstock model using pond log values and costs to the logger. The formula used to calculate the PNV of each potential management prescription is:

$$PNV = [PLV - LC]/(1 + d)^t$$

where:

PLV = pond log value (adjusted to exclude logger profit and risk)
LC = Logging costs (operability, haul, LTF, camp/commute, felling and bucking, road building)
t = time (year) of harvest into the future
d = discount rate (4% annually)

The dollar values of outputs used to calculate PNV in the Woodstock model are pond log values measured at mill sites less the profit and risk to the seller. The costs weighed against these values included all of the expenses incurred from removing the timber from the site to the mill (including logging costs, haul costs, LTF costs, road building costs, as described above in the *Activities and Output* subsection). This is done to account for the variability in stumpage values that occur over such a large land area that is the Tongass National Forest. Stumpage value is the value of the timber at the site and is considered receipts to the federal government for a timber sale. In other words, it is what a purchaser will pay for the timber after considering all of the expenses (LC in the equation above) that are incurred in removing it to the mill. Stumpage, while not explicitly calculated before it is entered into the Woodstock model, it is an inherent part of the above equation [PLV – LC] that is calculated by Woodstock for all potential management prescriptions.

See the above section on Activities and Outputs for more detailed information on each of the costs and timber values used in the Woodstock model.

Supplemental Information on Other Model Assumptions

Stage II Suitability Analysis

Each acre classified as suitable for timber harvest was analyzed to determine the costs and benefits for a range or management intensities (36 CFR 219.14(b)). For the purpose of this analysis, the planning area was stratified into categories of land with similar costs and returns according to the Analysis Area Identifiers described above. The stratification also took into account those factors that influence costs and returns such as physical and biological conditions of the site (affecting logging system) and transportation requirements (by VCU).

Stage II analysis is used to identify management intensities of timber production for each category of land that results in the largest amount of discounted net revenues. Stage II analysis provides insight into the overall economic condition of the suitable land base and what types of land are most cost efficient for management. The costs and benefits used for this analysis are described above and include pond log

value, the cost of logging, removing, and transporting the timber to the mill. This analysis does not account for the utility volume costs or revenues, as the current market conditions do not favor its removal.

Stage II analysis was conducted for all applicable management intensities: Intensive even-aged management with thinning regimes to very small clearcuts and group selection/patch cut prescriptions (regulation class 3 areas).

The Regulation Class Process

To recognize the varying intensities of timber harvests that may occur on the landscape, the regulation class concept was developed. Regulation Class is a methodology developed to distill the unique combinations of Land Use Designation (LUD), Distance Zone (DZ), Scenic Integrity Objective (SIO), and Visual Absorption Capacity (VAC) into four management categories, or Regulation Classes. These classes group lands that allow similar allowable harvest unit size, visual disturbance, and re-entry times (adjacency). Regulation Classes are numbered 0 to 3, with 0 being ineligible for management. Most of the following discussion is focused on Regulation Classes 1-3.

Land Use Designation (LUD). For each alternative, a unique assignment and map of Land Use Designations was developed. Every Land Use Designation, or LUD, delineates a unique set of standards and guidelines that apply to that area. For each alternative, up to 19 LUDs were recognized, but only a subset of these were allowed to produce commercial timber that contributed to the PTSQ. Scenic Viewshed, Modified Landscape, and Timber Production LUDs were available in all alternatives and represent the primary LUDs for timber management. These three LUDs were evaluated in the Regulation Class process. In addition, several alternatives allow young-growth harvest in specific natural setting LUDs, such as Old-Growth Habitat and Semi-Remote Recreation. See the supplemental alternative LUD maps, the alternative descriptions in Chapter 2 of the FEIS, and Chapter 3 of the Forest Plan for more specific information on LUDs.

Distance Zone (DZ). The amount of allowable timber harvesting also is affected by distance zone (DZ). Distance zone is the proximity of an area to a view-point. Distance zone varies from Foreground (within a 0.25 mile), Middle Ground, Background, to Seldom Seen, which is completely out-of-view from selected viewing points. Again, available treatment intensity is usually greater on lands with more hidden Distance Zones.

Scenic Integrity Objectives (SIO). Scenic Integrity Objectives are a function of LUD and Distance Zone and describe the desired quality of the scenery to be maintained in each classification. The categories include “High,” “Moderate,” “Low,” and “Very Low” objectives. Further description of SIOs is found in the “Scenery” section of Chapter 4 in the Forest Plan. SIOs for each of the LUD/Distance Zone combinations in the development LUDs are shown in Table B-3.

Visual Absorption Capability (VAC). The VAC is a measure of an area's ability to "absorb" (make visually less noticeable) ground disturbing activities (i.e., timber harvesting). VAC is simplified to three categories: Low, Interim, and High. VAC is used to define the intensity of management treatments that can be used to maintain each SIO. Generally, areas with greater VAC can sustain a more intensive treatment while still maintaining the desired SIO. Table B-4 shows the management unit size allowed for each SIO/VAC combination.

Tongass landscape architects developed some general timber harvesting guidelines, or proxies, for various VACs, SIOs, and LUDs. Although the exact harvest intensity an area receives is determined during the timber sale layout stages, estimates of allowable disturbance were needed in order to facilitate modeling. Each LUD has a series of adopted SIO and VAC objectives. Associated with these objectives are the estimated allowable disturbance factors. The proxies for each LUD and SIO/VAC setting were grouped by similar harvest method and unit size, cumulative visual disturbance, and height to adjacent stand criteria. Grouping the proxies of similar standards resulted in the creation of four distinct categories. These groups became the four regulation classes used in Woodstock modeling. These groups range from no harvest allowed to large clearcutting with minimal visual concerns. The GIS is then used to provide Woodstock with the regulation class allocations by alternative for each Analysis Area. Table B-5 summarizes the approximate disturbance factors by LUD, Distance Zone, SIO, and VAC.

Table B-3
SIO for Distance Zone/LUD from Scenery Standards and Guidelines for Development LUDs

LUD	Foreground	Middle Ground	Background	Not Seen
Scenic Viewshed	Retention	Partial Retention	Partial Retention	Max Modification
Modified Landscape	Partial Retention	Modification	Modification	Max Modification
Timber Production	Modification	Max Modification	Max Modification	Max Modification

Table B-4
Maximum Unit Size based on Visual Absorption Capability

SIO	Low VAC	Interm. VAC	High VAC
High	< 2	5-15	15-30
Moderate	5-10	15-40	40-60
Low	15-40	40-60	80-100
Very Low	50-75	80-100	80-100

The percentages in Table B-5 are rough estimates intended to depict the possible level of disturbance one may encounter when viewing these areas. For modeling purposes, these visual disturbance zones were aggregated into groups with similar standards and economic response (e.g., logging costs). Because the percent of visual disturbance includes all visible terrain, tests had to be conducted to "recalculate" disturbance thresholds since only suitable lands are being modeled. These tests involved a series of iterative mapping exercises where varying levels disturbance factors were applied to the separate groups. The feasibility of the harvest level was then compared to the standards and guidelines and reviewed by Tongass National Forest landscape architects. This work was conducted under the following assumptions:

1. The items in the database (e.g., distance zone, visual absorption capability) were correct,
2. The standards and guidelines are modeled to their limits, and
3. The "viewshed" was a large area (e.g., as viewed from a boat).

This work indicated a need to further review the scenery components of the database but in general the process worked well in terms of modeling the intent of the standards and guidelines. This work resulted in three distinct regulation classes that permit timber harvest activities. The final allocation of regulation classes to the various disturbance zones is shown in Table B-6.

Table B-5
Percent Allowable Visual Disturbance

Land Use Designation	Distance Zone	SIO	Low VAC	Interm. VAC	High VAC
Scenic Viewshed	Foreground	H	8	10	10
	Mid. Ground	M	8	15	20
	Background	M	20	20	20
	Not Seen	VL	20	20	20
Modified Landscape	Foreground	M	8	15	20
	Mid. Ground	L	15	20	25
	Background	L	25	25	25
	Not Seen	VL	25	25	25
Timber Production	Foreground	L	15	20	25
	Mid. Ground	VL	50	50	50
	Background	VL	50	50	50
	Not Seen	VL	50	50	50

[1]H = High, M = Moderate, L = Low, VL = Very Low

Table B-6
Regulation Class Allocation

Land Use Designation	Distance Zone	SIO[1]	Low VAC	Intermediate VAC	High VAC
Scenic Viewshed	Foreground	H	3	3	2
	Mid. Ground	M	3	3	2
	Background	M	3	2	1
	Not Seen	VL	1	1	1
Modified Landscape	Foreground	M	3	3	1
	Mid. Ground	L	2	2	1
	Background	L	2	1	1
	Not Seen	VL	1	1	1
Timber Production	Foreground	L	2	2	1
	Mid. Ground	VL	2	1	1
	Background	VL	1	1	1
	Not Seen	VL	1	1	1

[1]H = High, M = Moderate, L = Low, VL = Very Low

There are two main components of scenery constraints applied to the Regulation Classes in each VCU: the total visual disturbance and adjacency considerations. Total visual disturbance is the percent of land within a viewshed (VCU) that is classified as disturbed (Table B-7). Adjacency refers to the amount of time required before a harvest unit can be placed immediately next to an existing harvest unit (often referred to as the “green-up” period). These constraints are shown in Table B-7.

There are several important things to remember regarding the above table:

1. Disturbance percent is applied to suitable lands only, not the entire viewshed.
2. These values are entered into the models as constraints for each VCU.
3. The disturbance and adjacency factors for Regulation Class 3 are based on the use of small patch cutting (less than 2 acres). Optimally, disturbance and adjacency would not be an issue with carefully planned uneven-aged management (i.e., partial stand removal).

Variation by Alternative. Because LUD is one factor in determining Regulation Class, the breakdown of each of the seven alternatives into regulation class was recalculated for each alternative. A GIS map of Regulation Class was developed and used to intersect with the other layers used in Analysis Area development. Regulation Class was then used as an attribute to help define Analysis Areas.

Table B-7
Generalized Visual Constraints
Regulation Class Visual Disturbance Adjacency

Regulation Class	Visual Disturbance	Adjacency
1	40%	20 Years
2	30%	35 Years
3	20%	50 Years

Model Implementation Reduction Factors (MIRF)

To reiterate what was stated in the "Constraints" section (above), the use of MIRF is designed to accommodate for unmapped unsuitable lands that cannot be directly eliminated from the suitable land base but should be. It is known that when harvest activities occur, a certain percentage of the assumed suitable land will be ineligible for management (unsuitable) due to a number of physical, biological, or economic considerations. However, reasonable assumptions can be made to estimate the average amounts of these elements on the ground. Their effect on actual suitable land can be incorporated into the Woodstock model as constraints. Constraints are applied to each old-growth volume strata of each of the six operability harvest systems as well as to young-growth stands. The constraints are implemented by forcing the model to never harvest a certain percentage of the acres in the model. The effect is to control the maximum amount of acres from the "pre-MIRF" suitable land base that are actually harvested. A discussion of these elements and their estimated amounts follows.

MIRF Elements. Each of the nine MIRF subfactors used in the 1997 FEIS (Riparian Habitat was previously divided into two subfactors so there were 10 identified in 1997) was re-evaluated for the 2008 FEIS. This review was conducted again for the current Forest Plan Amendment EIS and it was decided to leave the subfactors alone, as defined for the 2008 FEIS. A detailed description of the derivation of MIRF is presented in Appendix B of USDA Forest Service (2008). Each of the subfactors and their values are described in the following paragraphs.

Land Selections – This subfactor is the reduction in suitable lands due to the conveyance of selected lands to the State of Alaska and Native interests. In 2008 the value of this subfactor was calculated as 1% for old growth and young growth. Public Law 113-291 significantly affects the number of acres to be conveyed in the future; however, because the factor is already small and because it is believed that the percentage of suitable in remaining acres of potential conveyance lands could be larger than previously assumed, it was left alone.

TTRA Stream Buffers – This subfactor estimates the reduction in the suitable land base due to unmapped Class I and II stream buffers. It is assumed that the percentage reduction due to this subfactor is 2% for old growth and 1% for young growth.

Non-Commercial Forest – This subfactor estimates the reduction in the suitable land base due to volume class mapping errors. It is associated with the low-volume stratum and is defined as the net percent change in suitable acres due to low-volume productive old growth (POG) being mapped as non-commercial (unsuitable) and non-commercial forest being mapped as low-volume POG. It is estimated as a 10% reduction in suitable for old growth and no reduction for young growth.

Slope/Soil Hazard – This subfactor estimates the reduction in the suitable land base due to unmapped steep slopes. It represents the additional acreage of steep slopes identified during project implementation that is not already mapped, divided by the mapped suitable acres. This subfactor varies according to administrative area: the Chatham MIRF for this subfactor is estimated at 26% for old growth

and 10% for young growth and the Ketchikan and Stikine MIRFs are estimated at 1% for both old growth and young growth.

- Cost Efficiency – This subfactor excludes the stands with the lowest economic potential from the suitable land base. It varies with operability class and volume stratum and the reduction is estimated at 25% for Difficult/Low Volume and Isolated/Medium Volume and 50% for Isolated/Low Volume. For young growth, no reduction is assumed.

Riparian Habitat (Class III streams) – This subfactor estimates the reduction in the suitable land base due to unmapped Class III stream buffers. It is estimated at 8% for old growth and 4% for young growth.

Karst/Caves – This subfactor estimates the reduction in the suitable land base due to a change in karst classification from low – moderate to high vulnerability. This subfactor varies according to administrative area: the Ketchikan, Stikine, and Chatham reductions are estimated at 6%, 0%, and 1% for old growth and 3%, 0%, and 1% for young growth, respectively.

- Remaining Standards and Guidelines – This subfactor estimates the reduction in the suitable land base due to unmapped eagle/osprey nests, goshawk nests, murrelet nests, wolf dens, goat habitat, and other factors. It is estimated at a 1% reduction for both old growth and young growth.

Overall Results. The sum of these subfactors produces the overall MIRF for each category (Administrative Area, volume strata, operability class). MIRFs were applied identically for all alternatives. Specific calculated MIRF values are in the planning record. The range of MIRFs (varying with operability class) for the different volume strata and Administrative Areas are as follows:

	Low Volume	Medium Volume	High Volume
Chatham	49% – 99%	39% – 64%	39%
Stikine	23% – 73%	13% – 38%	13%
Ketchikan	29% – 79%	19% – 44%	19%

Estimation of Past and Future Harvest and Road Construction for Effects Analysis

The quantification of the direct, indirect, and cumulative effects of the alternatives on fish, wildlife, plants, and other resources was based heavily on the estimation of past and future harvest of old growth and young growth and the amount of road construction. These tasks were conducted for both National Forest System (NFS) and non-NFS lands. This section describes the process followed and the major assumptions.

Estimation of Past and Future Harvest

The estimation of the direct, indirect, and cumulative effects of the alternatives on POG habitats and the fish, wildlife, and plants that use these habitats required three major steps. First, it was necessary to assemble the inventory of existing vegetation on both NFS and non-NFS lands. The second step was the estimation of the original POG (existing in 1954, prior to large-scale commercial timber harvest) on NFS and non-NFS lands and the classification of this original POG into POG types for the purpose of evaluating the level of disproportionate past harvest. The third step was the estimation of future harvest and the amount of POG in various POG categories that would be remaining after future harvest on NFS lands under each alternative, and for all lands combined, including factors for future harvest on non-NFS lands.

Vegetation Inventory

For NFS lands, the existing vegetation information from the Tongass Geographic Information System (GIS) library was used. Specifically, the Size Density Model (SDM) (see Affected Environment in the *Biodiversity* section) was used for the classification of existing vegetation on the Tongass. Using this

model, POG is defined by seven old-growth types: SD67, SD5N, SD5S, SD5H, SD4N, SD4S, and SD4H. Young growth is defined by six types, depending on the approximate age and origin of the stand; natural young growth (e.g., young growth originating from blowdown) is divided into three types (S1, S2, and S3) and young growth that originated from timber harvest is classified into three types (HS1, HS2, and HS3). It is noted that the stands covered by these young-growth categories are not all even-age stands. Young-growth under even-aged management was identified separately using harvest activity information.

For non-NFS lands, a number of sources of information were used to produce the most updated and accurate mapping available for non-NFS lands in Southeast Alaska. These sources included:

- Sealaska Regional Corporation provided updated GIS layers for vegetation and harvest on their lands throughout Southeast Alaska; these layers were used for mapping all Sealaska lands.
- The State of Alaska provided GIS layers for harvesting on state lands in Southeast Alaska. These layers were used for most state lands.
- Audubon Alaska and The Nature Conservancy completed a conservation assessment for Southeast Alaska (Albert and Schoen 2007) that included the development of a reasonably accurate vegetation map of the entire region based on Tongass GIS vegetation data (SDM mapping), augmented with timber inventory data from Haines State Forest and with classified Landsat Multi-spectral Scanner (MSS) imagery from the Interim Landcover Mapping Program of the U.S. Geological Survey, and 1997 aerial photography. This mapping was used for most of the remainder of Southeast Alaska.
- Forest Service orthophotography and aerial photography was interpreted in some areas to fill in gaps in the above layers.
- The Working Forest Group provided more recent southeast Alaska harvest mapping.

Based on the above information, a Catalogue of Past Harvest for all of Southeast Alaska was developed that itemizes the acres harvested for each land ownership category, landowner, and biogeographic province, and breaks this harvest down by approximate decade, where the decade of harvest is known or can be reasonably estimated. In addition to the spatial information described above, statistics on the implementation of the Alaska Forest Resources and Practices Act and information on State timber sales in Southeast Alaska were collected from the Alaska Department of Natural Resources, Division of Forestry. This information is presented in Appendix C.

Original POG by Category

Next, the original POG was estimated on NFS and non-NFS lands in each biogeographic province and ecological subsection by category. This was done for the purpose of evaluating the level of disproportionate past harvest.

Original POG is defined in this EIS as the POG that existed, outside of the developed areas associated with towns, prior to all mapped timber harvest. Therefore, all young growth originating from timber harvest (mapped as HS1, HS2, and HS3 on NFS lands) was assumed to be original POG. Natural young growth (mapped as S1, S2, and S3 on NFS lands) was assumed to be in a steady state of succession and replacement; therefore, it was not assumed to be original POG. On the Tongass, about 570 acres of young growth were mapped as having been harvested between 1750 and 1900 and a total of about 10,800 acres were mapped as having been harvested after 1900 but prior to 1954, which is generally accepted as the approximate year that large-scale logging began. The vast majority (about 410,200 acres on the Tongass) of the harvest occurred from 1954 through the present. In addition, about 39,000 additional acres are mapped as young growth, but do not have a year of origin. These stands are primarily partial cut stands and are considered in the identification of original POG.

In addition to total POG (represented by the seven SDM types), two other categories of POG were used to represent the larger tree types: high-volume POG, which includes the three types with the largest trees (SD5S, SD5N, SD67), and large-tree POG, which is defined as SD67 by itself. To estimate original high volume- and large-tree POG, an estimate was first made of the percentage of past harvest in these

categories using the SizeDensity1954 layer, which was based on timber type mapping from the mid-1980s and other GIS layers. The following compositions of harvest were conservatively determined for NFS and non-NFS lands:

- For NFS lands, prior harvest was estimated to have been 30 percent large-tree POG and 75 percent high-volume POG.
- For non-NFS lands, prior harvest was estimated to have been 37 percent large-tree POG and 65 percent high-volume POG.

Future Harvest

The estimation of future harvest on non-NFS lands was made by examining the amount of POG remaining on these lands and making reasonable assumptions regarding the percentage of that POG that would be harvested in the future. It was conservatively estimated that 60 percent of all existing POG on state, private, other federal, and other non-NFS lands would be harvested within 100 years. All existing young growth and future harvest are expected to be harvested in the future and remain as young-growth.

Estimation of Past and Future Road Construction

The estimation of the direct, indirect, and cumulative effects of the alternatives associated with road construction required two major steps. First, it was necessary to assemble the inventory of existing roads on both NFS and non-NFS lands. The second step was the estimation of future road development for NFS lands under each alternative, and for all lands combined, including factors for future road development on non-NFS lands.

Road Inventory

For NFS lands, the existing road information from the Tongass GIS library was used. The “roads with core attributes RSW” layer was used for the inventory of system roads and the definition of maintenance levels to determine whether they were open or closed. The “non-routed other roads” layer was used to estimate additional unauthorized roads. For non-NFS lands, existing roads were inventoried using the following sources:

- Tongass GIS non-routed other roads layer, which contains most roads on non-NFS lands.
- Mapping of roads on Sealaska lands provided by Sealaska Regional Native Corporation.
- GIS layers for roads on many non-NFS lands in Southeast Alaska provided by State of Alaska.
- Other available GIS layers (e.g., ESRI’s StreetMap) were used for urban and rural areas around towns and settlements.
- Orthophoto and aerial photograph interpretation were used to “fill in holes” in other sources.

Based on input from the State of Alaska, it was assumed that half of the non-NFS road miles would remain open and half would

Future Road Construction and Reconstruction

Future road construction/reconstruction assumptions were different for old-growth versus young-growth harvest. The ratios derived are based on a review of Big Thorne and other recent timber sale projects.

For young growth, it was first assumed that 100% of all Maintenance Level 1 (ML 1) roads (closed roads) would be reconstructed if all young growth on the Forest were to be harvested. Then the miles of reconstruction for each alternative was extrapolated from this by using the proportion of young-growth to be harvested in that alternative. In addition, it was assumed that in some young-growth stands, construction of new roads would have less impact than reconstruction of old roads; thus an additional one mile of new road per 400 acres of young-growth harvest and one mile of new road over previously decommissioned road per 600 acres of harvest was assumed. It was also assumed that 10% of new

roads and new roads over decommissioned road grades would remain open, while the remaining 90% would be closed.

For old-growth harvest, future road construction was estimated based on the ratio of one mile of new road construction per 150 acres of harvest plus one mile of new road construction over previously decommissioned road grade per 800 acres of harvest. In addition, one mile of road reconstruction per 300 acres of harvest was assumed. Further, it was assumed that 10% of new roads and new roads over decommissioned road grades would remain open, while the remaining 90% would be closed.

On non-NFS lands, future increases in road density were projected after examining existing road densities and making reasonable assumptions regarding the additional road density that would be developed in the future. Estimates were conservatively high. Existing road density on non-NFS lands is 2.29 miles per square mile and the assumption was made road densities would increase by 1.3 miles per square mile within 100 years. All future non-NFS roads were assumed to remain open.

Deer Model Assumptions and Application

Interagency Deer Model

Forest Plan standards and guidelines require the use of the most recent version of the interagency deer winter habitat capability model to assess impacts to deer habitat (WILD4.XIV.A.2; USDA Forest Service 2008a). The interagency deer model was used in the EIS to (1) evaluate changes in deer winter habitat capability under each alternative, and 2) estimate the number of WAAs across the Tongass that meet the 18 deer per square mile index under the wolf standards and guidelines under each alternative.

The deer model was run for historic (1954) and current conditions, and to assess effects in 25 years (when harvested stands would reach the stem exclusion stage) and in 100 years (to encompass long-term effects over the planning horzon). Changes in winter habitat capability under the alternatives were based on comparisons to existing conditions for the analysis of direct effects (NFS lands only). For the analysis of cumulative effects changes in deer habitat capability were compared to historic (1954) conditions, the point at which large-scale timber harvest began (NFS and non-NFS lands). Analyses were run at the WAA scale, as this is the land division used by the ADF&G for deer inventories and planning, and the biogeographic province scale.

For the 2008 Forest Plan EIS a cross-walk was developed to reclassify the SDM model into the deer model vegetation categories (high-, medium-, low-volume old-growth). High-volume stands included SDM vegetation categories SD5N, SD5S, and SD67; medium volume stands include SD4N, SD4S, and SD5H; and low volume stands include SD4H. HSI scores from this model range from 0 to 1.3 but were standardized to range from 0 to 1.0 by dividing all values by 1.3, because outputs from such models represent a range from 0 to 100 percent habitat suitability, with higher values indicating higher habitat capability. Greater details are documented in the project planning record.

To estimate 1954 winter habitat capability, it was necessary to “grow back” the vegetation in previously harvested units. For this purpose, the recently developed volstrata1954 layer was used, which covered NFS and non-NFS lands. For all existing and future estimates on non-NFS lands deer habitat capability was set at zero, in order to be conservative and given that good quality and updated vegetation data in the correct format does not exist for non-NFS lands.

Future winter habitat capability was based on maximum timber harvest after full implementation of the Forest Plan under each alternative. For POG, it was assumed that the harvested acreage would be in the stand initiation (I) stage of stand development for 25 years and then remain in the stem exclusion stage (E) of stand development until it was harvested again. Intermediate stand treatments such as pre-commercial and commercial thinning are not reflected in the interagency deer model results because the model only assigns one value to harvested stands. That is, the model does not account for the conversion of stands currently in the stem exclusion stage back into the stand initiation stage, or account for the potentially beneficial effect of thinning treatments on deer winter habitat capability.

To describe existing conditions, an estimate of the percentage of 1954 habitat capability currently remaining was calculated by dividing the current HSI score for each WAA and biogeographic province by the 1954 HSI score. Likewise, to evaluate the effects of the alternatives, the future HSI score was divided by the current HSI score (direct and indirect effects) or by the 1954 HSI score (cumulative effects) for that WAA or biogeographic province, respectively. This was done at the 25- and 100-year time steps.

Modeled deer densities, in terms of deer per square mile, were calculated to evaluate the ability of the alternatives to comply with the wolf standard and guideline of maintaining habitat sufficient to support 18 deer per square mile. For this analysis, habitat capability in terms of modeled deer density was calculated by assuming a density of 100 deer per square mile for an HSI of 1.0. Only WAAs where wolves potentially occur (GMUs 1, 2, 3, and 5) were included and WAAs with naturally very low deer densities (WAAs 4302-4607) were excluded from the analysis.

FRESH Deer Model

The Forage Resources Evaluation System for Habitat (FRESH) model developed by the USDA Forest Service Pacific Northwest Research Station (Hanley et al. 2012) was also used to quantify the value of available deer habitat in the planning area (http://cervid.uaa.alaska.edu/deer/Home.aspx). The FRESH model is a food-based model that takes into account the quantity (biomass) and quality (digestible energy and digestible protein, two of the most common nutritional limiting factors for deer) of the available food resources in relation to user-specified metabolic requirements of deer (which depend on age, sex, season, and reproductive status). The model uses a linear algorithm to determine the suitable forage that can sustain deer at this metabolic requirement, and produces the number of deer days per unit area that the available food resources (within the habitat patch or landscape) are capable of supporting. One deer day represents the food required to support one animal for one day at the specified level of nutritional requirements. The output of the model is a “snapshot” of habitat conditions at one point in time which can be used to make a relative comparison of conditions within a habitat patch or landscape under different conditions (i.e., before and after implementation of a management activity).

Values for the available forage biomass and its nutritional quality (digestible energy and digestible protein concentrations) on the Tongass were based on a variety of sources including the Tongass Wide Young-Growth Study (2007, 2008, 2010, 2011, 2012, 2013), Prince of Wales Commercial Thin Study (Forest Sciences Lab Juneau 2014, unpublished), 2011 Tongass Young-growth Inventory (2011), Second Growth Management Project, Size-Density Accuracy Assessment and other unpublished studies from southeast Alaska (see the Project Record for more information). It is assumed that all available vegetation is potential food, and there is no accounting for long-term herbivore-plant dynamics (i.e., the effects of overbrowsing; Hanley et al. 2012). Thinning and logging slash have the potential to inhibit deer access; however, the current body of literature does not provide sufficient information for making adjustments to FRESH model output to reflect these limitations.

For this analysis, forage resources were analyzed with the GIS-based model application for the winter season. Spatial results from the Woodstock model were used directly in the GIS-based model. Deer metabolic requirements for winter were the following: dry matter digestibility directly 48 percent, digestible protein 1.8 percent and dry matter intake 525 g/day (see Hanley et al. 2012 for rationale and sources).

The FRESH model requires an estimate of snow depth on February 1 at sea level in a level open area. To reflect the geographic variation in snow depth in Southeast Alaska, the planning area was divided into six snow zones with average snow depth estimated for each under current climate conditions. Climate data from 1981-2010 were used to model PRISM-based “precipitation as snow” which was then converted to snow depth using the relationship of snow depth and elevation in the FRESH model snow sub-model (see metadata in the project record for additional information). The FRESH model then reduces the biomass of each forage in proportion to its height profile that is “buried” in snow (see Hanley et al. 2012 for details).

APPENDIX C
CUMULATIVE EFFECTS

Appendix C
Cumulative Effects

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ATTACHMENT

Attachment 1 Catalog of Past Harvest

Appendix C
Cumulative Effects

Introduction

Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Cumulative actions are defined as "actions, which when viewed with other proposed actions, have cumulatively significant impacts and should therefore be discussed in the same impact statement" (40 CFR 1508.25). Cumulative effects are discussed in detail for each resource in the Environmental Impact Statement (EIS). This document discusses the projects considered and records which projects were considered for each resource.

Assumptions

Projects and actions included int the cumulative effects analysis were identified by reviewing past records, reviewing scoping comments, interviewing knowledgeable individuals, analyzing the existing condition of the project area using the Tongass and other geographic information system (GIS) layers, reviewing current plans, and, where necessary, making reasonable assumptions. These assumptions sometimes permit quantitative assessments.

Major assumptions used in this analysis are documented in Appendix B of the EIS, which also documents assumptions used for analyzing direct and indirect effects. Many of these assumptions are related to past and reasonably foreseeable timber harvest and road construction and reconstruction.

Timeframe for Analysis

The timeframe for this cumulative effects analysis encompasses past and future activities. Past activities include timber harvest and other activities that date back over 70 years, while future activities consider timber harvest at 25 years into the future, as well as at 100 years in the future. Most other future activities can only be considered as reasonably foreseeable about 25 years into the future because of uncertainties beyond that point.

Analysis Area

The area considered for cumulative effects analyses varies according to the resource being assessed. For most aquatic or watershed-related resources, the area within the proclaimed Forest boundary (approximately 17.9 million acres, including 1.2 million acres of non-National Forest System [NFS] lands) is used. For aquatic and watershed-related resources, this area is subdivided by 6th-field watersheds. For wildlife and other terrestrial resources, all of Southeast Alaska from Yakutat Bay southeast to the southeastern end of Alaska (approximately 21.6 million acres, including 4.8 million acres of non-NFS lands) is used as the study area for some analyses, although some analyses are based on the area within the Forest boundary, depending on the availability and quality of information. The Southeast Alaska area includes all of Glacier Bay National Park and the State, Bureau of Land Management, and other lands in the vicinity of Haines and Skagway. Often Wildlife Analysis Areas (WAAs) are used to summarize information within these study areas. In addition, biogeographic provinces are used to summarize cumulative effects information for biodiversity and some wildlife resources. For social and economic, recreation, and related human uses, all of Southeast Alaska and beyond, is given consideration for cumulative effects, especially regarding economic, market, and other factors.

Appendix C

Relevant Past, Present, and Reasonably Foreseeable Actions

Based on a review of published material and available information about the Tongass National Forest and adjoining lands on various agency websites and the scoping process, an initial list of existing, proposed, and reasonably foreseeable actions was compiled to be assessed for inclusion in this cumulative effects evaluation. Resources drawn from include the Forest Service Schedule of Proposed Actions (SOPA) report, April 2015 through March 2015 (Forest Service 2015); Tongass Integrated Plan (TIP) 2015-2019; the Alaska Department of Transportation and Public Facilities Project Statewide Transportation Improvement Program and Southeast Alaska Transportation Plan (ADOT&PF 2004, 2014); the Energy Resource Report for the Tongass National Forest (Tetra Tech 2015) the results of the scoping process, and other sources. In the case of timber harvest, this cumulative effects analysis attempts to quantify the effects of past human actions by adding up all prior actions on an annual or decadal basis (see Attachment 1). It also examines other past projects, but most importantly, by looking hard at current conditions, residual effects of past human actions and natural events are captured, regardless of which particular action or event contributed those effects. The Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” For these reasons, the primary method of analyzing past actions is based on the cumulative change in environmental conditions to the present, as described in the affected environment sections of the EIS. To keep the cumulative effects analysis useful, manageable, and concentrated on the effects that are meaningful, greater effort is given to future activities that are more certain and geographically close to the project with a focus on issues of greatest concern.

Table C-1 lists and describes the past projects and actions that are considered for analysis of cumulative effects. An updated catalog of past timber harvest is also provided in Attachment 1. Table C-2 lists the present and reasonably foreseeable projects and actions that are considered for cumulative analysis. Some projects or actions could be listed as past and present, as well as reasonably foreseeable (e.g., a currently operating mine that was built 20 years ago and is expected to continue operating into the reasonably foreseeable future). These projects are listed in Table C-2 and only completed projects or actions are listed in Table C-1. Table C-3 identifies the primary areas with potential interactions among the identified projects and actions and the primary resource areas.

Table C-1
Past Actions and Projects Considered in Cumulative Effects Analyses

Past Actions	Location	Year(s)	Description
Climate Change and Natural Processes			
Climate Change - General	Throughout Southeast Alaska	Past 25 years	Some climate models for Southeast Alaska have predicted rising temperatures, a 10 percent decrease in summer precipitation in portions of the region, and decreased soil moisture due to increased evaporation during warmer, dryer summer weather. These climate change-related processes may have already been initiated.
Yellow Cedar Decline	Primarily in a wide band from western Chichagof and Baranof Islands to the Ketchikan area	Past 50 years	Yellow-cedar decline and mortality, has dramatically changed many of the forests of Southeast Alaska and this decline is believed to have been climate related. Aerial surveys have mapped approximately 585,000 acres of decline in a wide band from western Chichagof and Baranof Islands to the Ketchikan area (USDA Forest Service and ADNR 2015). In 2014, approximately 20,000 acres of dying (i.e., active decline) yellow-cedar trees were mapped (USDA Forest Service and ADNR 2015).
Fire	Throughout Southeast Alaska	Historical	Because of high precipitation levels, fire has not been a major factor in shaping the forests of Southeast Alaska. However, approximately 400 to 500 acres have burned annually on the Tongass.
Insects and Disease	Throughout Southeast Alaska	Historical	A range of insects and diseases have taken their toll in Southeast Alaska forests; however, their severity has varied substantially over the years. Surveys have documented that individual insect pest species typically affect a few thousand acres to hundreds of thousands of acres each year. In addition to insects, stem decays cause substantial loss in all tree species in unmanaged stands. Tree death and stem breakage resulting from decay contribute to the structural diversity in stands and may be a major factor in small-scale disturbance in Southeast Alaska (Hennon and McClellan 2003). Dwarf mistletoe has also had high infestation levels in many hemlock stands below 500 ft in elevation (Shaw and Hennon 1991, Shaw et al. 2008).
Windthrow Events	Throughout Southeast Alaska	Historical	Small-scale windthrow events are very common throughout Southeast Alaska forests. These small events involve individual trees or small groups of trees. The open gaps in the canopy that result, allow young trees to colonize and fill the openings. Therefore, over time, complex, mixed-aged stands are produced. Insect and disease infestations are major contributing factors. These small-scale openings cover about 6 to 13 percent of Southeast Alaska forest canopies (Nowacki and Kramer 1998). Areas not protected by topographic barriers from the severe effects of infrequent, major storms are subject to large-scale windthrow events that cause catastrophic damage. Entire stands have blown down in the past, resulting in the regeneration of more even-aged stands with more uniform canopies (Nowacki and Kramer 1998). Both forms of windthrow are a part of the natural forest generation, growth, and development. Juday et al. (1998) concluded that there was a high risk of increased large-scale blowdown across Southeast Alaska as well as increased windthrow around harvest units as a result of climate change.
Watershed Effects	Throughout Southeast Alaska	Past 25 years	Climate change effects on water quality, water quantity, and fish to date are not clear, if they have occurred at all.

Table C-1 (continued)
Past Actions and Projects Considered in Cumulative Effects Analyses

Past Actions	Location	Year(s)	Description
Timber Harvest Activities			
Past Harvest – Tongass National Forest	Throughout Southeast Alaska, but concentrated on Prince of Wales and adjacent islands with large portions on Wrangell, Mitkof, Kupreanof, Kuiu, Revillagiggedo, and Baranof Islands.	Mostly 1954 to present	Approximately 462,000 acres of forest land have been harvested on the Tongass National Forest. Of these, about 422,000 acres were clearcut and are in even-aged management. Close to 70 percent of this harvest took place in the 1960s, 1970s, and 1980s; therefore the majority of young growth originating from harvest is 25 to 55 years of age. Less than 10 percent is greater than 55 and less than 4 percent is greater than 65 years of age. Attachment 1 to this appendix is a Catalog of Past Harvest for Southeast Alaska and is broken down by ownership and year/decade.
Past Harvest – State and Private Lands (non-NFS)	Throughout Southeast Alaska, wherever private or state lands are present; mostly on Prince of Wales and adjacent islands, Kupreanof, and Baranof Islands.	Mostly 1975 to present	Approximately 453,000 acres of forest land have been harvested on non-NFS lands within the Tongass National Forest boundary. The vast majority of this harvest took place in the 1980s and 1990s, so it is mostly younger than the young growth on NFS lands. Attachment 1 to this appendix is a Catalog of Past Harvest for all of Southeast Alaska and is broken down by ownership and year/decade.
Past Road Construction for Timber Harvest	Throughout Southeast Alaska, but concentrated on Prince of Wales and adjacent islands along Wrangell, Mitkof, Kupreanof, Kuiu, Revillagiggedo, Baranof, and other islands.	Mostly 1950s to present	To date, approximately 9,351 miles of road have been constructed on the Tongass National Forest and adjacent non-NFS lands within the Tongass boundary; 5,093 miles are on NFS land and 4,258 miles are on non-NFS land. The vast majority of these roads were developed for timber harvest purposes although these miles include state highways and local roads, in and around communities. Of the 9,351 miles, about 6,101 miles are open roads (2,321 miles on NFS land and 3,780 miles on non-NFS land). The remaining 3,249 miles are either closed roads or decommissioned roads.
Past Log Transfer Facility (LTF) Construction	Throughout Southeast Alaska, but concentrated on Prince of Wales and adjacent islands along Wrangell, Mitkof, Kupreanof, Kuiu, Revillagiggedo, Baranof, and other islands.	Mostly 1950s to present	LTFs are used to transfer logs to barges or rafts for towing. About 116 LTFs currently exist on the Tongass and there are 55 marine access points suitable for transferring logs to barges that have current permits on NFS lands. Another 10 marine access points no longer have permits. In addition, there are about 126 LTFs on State land and another group of LTFs exist on private lands.
Land Adjustments			
Misty Fjords National Monument Wilderness Inholdings	Ketchikan Misty Fjords Ranger District (KMRD)	2012	The 68-acre inholding located on the Eulachon River was acquired in 2012.

Table C-1 (continued)
Past Actions and Projects Considered in Cumulative Effects Analyses

Past Actions	Location	Year(s)	Description
Public Law 113-291	Many parts of the Tongass, but especially Prince of Wales and adjacent islands	2015	Public Law 113-291 amended ANCSA and provided Sealaska Regional Corporation final Section 14(h)(8) ANCSA entitlement. On March 9, 2015, Sealaska Corporation received its final ANSCA entitlement and conveyance of 70,075 acres. This conveyance affected multiple areas, LUDs and ranger districts on the Tongass. Public Law 113-291 also amended Section 508 of ANILCA by adding 8 new LUD II areas, containing 152,000 acres. The new LUD II designations changed the previous LUD designations for these lands (both development and non-development LUDs) to LUD II.
Other land adjustments	Tongass-wide	Prior to 2015	National Forest System Lands have been conveyed to Non-Federal parties under the Native Allotment Act, Alaska Native Claims Settlement Act (ANCSA), Alaska National Interest Lands Conservation Act (ANILCA) and other authorities.
Mining			
Various Mines	Tongass-wide	From 1867 to present	Mining history in Southeast Alaska dates back to the first mineral location in 1867, prior to the existence of the Tongass. During the late 1800s, gold was discovered in Southeast Alaska and mining ventures began to pop up. Historic mines include the Treadwell Mine and the Alaska Juneau Mine in Juneau; the Kensington and Jualin mines north of Juneau (recently reopened); the Ross-Adams uranium mine on Prince of Wales Island; the undeveloped Quartz Hill molybdenum deposit in the non-Wilderness Misty-Fjord National Monument; copper mines in the Ketchikan area; and many other deposits that were explored or developed throughout the Tongass. Mineral exploration and extraction has continued, at some level, since the first discoveries.
Energy			
Swan Lake Hydroelectric Project expansion	KMRD	2016-2017	In August 2015, the Federal Energy Regulatory Commission issued an order amending SEAPAs license for the project. SEAPA will expand the reservoir raising the spill elevation 15 feet and add 25% additional storage for winter hydropower generation, displacing up to 12,000 MWhrs of diesel generation (800,000 gallons) annually. The project will inundate about 93 acres of additional land of which about 26 acres is federal lands within the Tongass National Forest.
Recreation and Tourism			
Cruise Ships	Tongass-wide, especially the major ports	Late 1880s to present	The Southeast Alaska cruise ship industry has developed and grown to substantial levels. The first cruise ships sailed in the late 1880s and the number of passengers now numbers about one million per year. Modern cruise ships began sailing to Alaska in the 1970s and the number of passengers reached about 500,000 in 1995 and the number of passengers doubled in the next 20 years. These ships use the major ports of Southeast Alaska.
Outfitter Guides	Tongass-wide	Mostly 1920s to present	Outfitters and guides have provided services throughout Southeast Alaska for many years, beginning as hunting and fishing guides in the early years, they have expanded the services they provide. The Forest Service issues special use permits to manage the number and distribution of outfitters and guides.

Table C-1 (continued)
Past Actions and Projects Considered in Cumulative Effects Analyses

Past Actions	Location	Year(s)	Description
Helicopter Landings and Tours	Mostly the Juneau Ranger District		With the advent of the cruise ship industry, helicopter tours and landings developed into a secondary industry. The majority of these occur in the Juneau Icefield. Helicopter landing tours also occur in a number of locations elsewhere on the Forest, including the Skagway Icefield and Baird Patterson Glaciers. These tours involve high volumes of people concentrated at specific locations for short periods of time, typically two to four hours.
Dispersed Recreation and Subsistence Gathering	Tongass-wide	Mostly 1920s to present	Dispersed recreation has steadily increased in Southeast Alaska along with the growth of the tourism industry, the growth of communities, and the development of roads. Gathering of subsistence resources has also increased, although more slowly, with the growth of subsistence communities.
Fishing and Recreation Lodges	Tongass-wide	Mostly 1940s to present	Numerous lodges have been developed on private lands adjacent to the Tongass National Forest. Some of these have gone out of business but most continue to operate.
Recreation site development and closure	Tongass-wide	Mostly 1960s to present	A wide range of recreation facilities have been developed on the Tongass. They include 25 campgrounds and camping areas, 10 day-use areas, 35 picnic sites, 155 cabins/lookouts, 44 shelters, 68 trailheads and 885 miles of trail, and many other facilities.
Community Development			
Community Development	Tongass-wide	Mostly 1890s to present	Settlement and community development in Southeast Alaska occurred primarily from the late 1800s to the present. Mining, fishing, and fish canneries were the primary early factors encouraging settlement, later followed by logging. Today there are 32 communities in Southeast Alaska. Eleven of these communities have less than 100 people ranging up to Juneau with over 33,000. The footprint of these communities ranges in size from a few acres to several thousand acres. Road development is associated with community development and is covered above under timber harvest activities.
Wildlife Habitat Enhancement and Regulatory Actions			
Habitat Enhancement	Tongass-wide	Mostly 1960s to present	A range of wildlife habitat enhancement projects has occurred throughout Southeast Alaska. These projects were designed to improve forest and riparian habitats for wildlife. They include extensive pre-commercial thinning, some with wide-spacing, riparian thinning and snag creation.
State Hunting and Trapping and Federal Subsistence Regulations	Tongass-wide	Mostly 1959 to present	State regulations have been in place since shortly after Statehood (1959) to control hunting and trapping activities. These regulations set bag limits and seasons and limit the hunting and trapping methods that can be used in pursuit of game animals, game birds, and furbearers. Prior to Statehood, federal regulations governed hunting and trapping. In addition, a Federal Subsistence Board establishes subsistence regulations for many areas of the State.

Table C-1 (continued)
Past Actions and Projects Considered in Cumulative Effects Analyses

Past Actions	Location	Year(s)	Description
Watershed and Aquatic Habitat Improvement and Aquatic Regulatory Actions			
Restoration Projects	Tongass-wide	Mostly 1960s to present	The Forest Service has conducted numerous watershed improvement projects including: watershed monitoring and assessments; instream and riparian rehabilitation; placement of large woody debris in streams; conducting landslide assessments; improving fish passage in streams (creating jump pools, barrier modifications, culvert replacements); stream and lake stocking, and lake fertilization; decommissioning roads; and maintaining fish passage structures. The number and locations of projects have varied year to year based on funding and need.
State Fishing and Federal Subsistence Regulations	Tongass-wide	Mostly 1959 to present	State regulations have been in place since shortly after Statehood (1959) to control fishing and shellfish collecting. These regulations set bag limits and seasons and limit the methods that can be used to pursue resources. Prior to Statehood, federal regulations governed fishing. In addition, a Federal Subsistence Board establishes subsistence regulations for many areas of the State.

Table C-2
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Climate Change and Related Natural Perturbations			
General – Climate Change	Throughout Southeast Alaska	2016 and beyond	Some climate models for Southeast Alaska predict rising temperatures, a 10 percent decrease in summer precipitation in portions of the region, and decreased soil moisture due to increased evaporation during warmer, dryer summer weather. These factors may lead to an increase in fire frequency and severity, further yellow-cedar decline, higher rates of insect and disease infestations, more severe windthrow events, and effects on stream flows, water temperature, and fisheries.
Yellow Cedar Decline	Primarily in a wide band from western Chichagof and Baranof Islands to the Ketchikan area	2016 and beyond	As the climate continues to warm, cedar decline is likely to continue to spread, especially in the south and east. Conversely, yellow-cedar appears to be spreading northward as climate warms, into areas that retain snow longer into the spring.
Fire	Throughout Southeast Alaska	2016 and beyond	Approximately 400 to 500 acres burn annually on the Tongass National Forest. Due to climate change, there may be an increased risk of forest fires but the effects are likely to be minor at the forest level.
Insects and Disease	Throughout Southeast Alaska	2016 and beyond	If the warming trend continues, damage to trees from insects and rot are likely to increase, both from species currently present in Southeast Alaska and from new species invading the area from other parts of North America or elsewhere. Consider stem and root decay, hemlock dwarf-mistletoe; heart rot; spruce beetle; spruce aphids; and species not yet present.
Windthrow Events	Throughout Southeast Alaska	2016 and beyond	Both small-scale and large-scale forms of windthrow are a part of the natural forest generation, growth, and development. Juday et al. (1998) concluded that there was a high risk of increased large-scale blowdown across Southeast Alaska as well as increased windthrow around harvest units as a result of climate change.
Watershed Effects	Throughout Southeast Alaska	2016 and beyond	Climate change will likely produce increases in air temperature in the winter months with increases in precipitation expected in the fall and winter, with much of the precipitation occurring as rain instead of snow (EcoAdapt 2014). The warmer air temperatures would contribute to the melting of glaciers, higher peak flows in the fall and winter in most streams other than glacier-fed streams, and lower summer flows primarily in snow-melt and rain dominated watersheds (Shanley and Albert 2014, Shanley et al. 2015). In addition, the warmer air temperatures may result in increased stream temperatures, but the degree this would occur depend greatly on local factors and any potential increase may be lessened by the potential increases in rainfall occurring in the summer and fall (EcoAdapt 2014). Climate change could also result in sea-level rise, which could inundate estuarine rearing areas for fish. Other effects on fish are likely to be both positive and negative and have a high degree of uncertainty.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Timber Harvest Activities including roads and other actions on NFS lands (thinning and commercial thinning not differentiated)			
Forecasted acres to be harvested and roads to be constructed during the next 25 years and during the next 100 years for each alternative.			
Projected Future Harvest and Road Construction and Reconstruction over 25 years for Each Alternative	Lands suitable for timber productions on the Tongass under each alternative (see suitable land maps)	2016 - 2040	Alternative 1: YG Harvest = 9,669 acres, OG Harvest = 38,527 acres, Road Construction = 345 miles, Road Reconstruction = 160 miles Alternative 2: YG Harvest = 63,787 acres, OG Harvest = 15,027 acres, Road Construction = 385 miles, Road Reconstruction = 256 miles Alternative 3: YG Harvest = 53,734 acres, OG Harvest = 16,599 acres, Road Construction = 355 miles, Road Reconstruction = 229 miles Alternative 4: YG Harvest = 40,760 acres, OG Harvest = 23,255 acres, Road Construction = 354 miles, Road Reconstruction = 209 miles Alternative 5: YG Harvest = 43,316 acres, OG Harvest = 23,813 acres, Road Construction = 369 miles, Road Reconstruction = 219 miles (Young growth = YG; Old growth = OG)
Projected Future Harvest and Road Construction and Reconstruction over 100 years for Each Alternative	Suitable forest lands on Tongass under each alternative (see suitable land maps)	2016 - 2115	Alternative 1: YG Harvest = 209,882 acres, OG Harvest = 62,851 acres, Road Construction = 1,372 miles, Road Reconstruction = 887 miles Alternative 2: YG Harvest = 335,344 acres, OG Harvest = 32,609 acres, Road Construction = 1,656 miles, Road Reconstruction = 1,191 miles Alternative 3: YG Harvest = 313,216 acres, OG Harvest = 35,568 acres, Road Construction = 1,586 miles, Road Reconstruction = 1,129 miles Alternative 4: YG Harvest = 234,885 acres, OG Harvest = 42,597 acres, Road Construction = 1,316 miles, Road Reconstruction = 900 miles Alternative 5: YG Harvest = 284,144 acres, OG Harvest = 42,479 acres, Road Construction = 1,520 miles, Road Reconstruction = 1,058 miles (Young growth = YG; Old growth = OG)
Timber harvest projects that are being implemented or are in planning stages for the next five years. These are included within the 25-year and 100-year estimates above.			
Big Thorne	Thorne Bay Ranger District (TBRD)	2015-2019+	100-150 MMBF offered for sale. 70 miles of roads maintained and 64 miles of roads restored. Restore and enhance 4.6 miles of stream; thin 10 riparian acres and 1,000 upland acres. Remove 8 fish barrier culverts. (Approximately 98 MMBF has already been sold as of November 2015)
Greater Staney Area	TBRD	2016-2019+	47 MMBF offered for sale. Restore and enhance 2 miles of stream; thin 54 riparian acres and 1,500 upland acres. Remove or replace 28 fish barrier culverts.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Wrangell Island	Wrangell Ranger District (WRD)	2016-2019+	70 MMBF offered for sale and 1,300 acres for precommercial thinning. 52 miles of roads maintained; 9.5 miles of roads reconstructed; 12 miles of roads stored; and 2.5 miles of road decommissioned. Remove or replace 9 fish barrier culverts.
Zarembo	WRD	2016-2019+	60 MMBF offered for sale and 2,000 acres for precommercial thin. 80 miles of road maintained; 18 miles of road stored. Restore and enhance 7.6 miles of stream; thin 162 riparian acres and 1,460 upland acres. Replace 48 fish barrier culverts.
TwelveMile	CRD	2017-2019+	13 miles of roads maintained. Restore and enhance 2.5 miles of stream; thin 40 riparian acres and 65 upland acres. Remove or replace 10 fish barrier culverts.
Neck Lake/Alder Creek	TBRD	2016-2019+	40 MMBF offered for sale. 18 miles of roads maintained and 29 miles or roads stored. Restore and enhance 1.5 miles of stream; thin 50 riparian acres and 300 upland acres. Replace 4 fish barrier culverts.
Kuiu Roaded	Petersburg Ranger District (PRD)	2016-2019+	25 MMBF offered for sale. 5 miles of roads maintained; 18 miles of roads reconstructed; 9 miles of roads stored; and 7 bridges replaced. Restore and enhance 3 miles of stream. Remove or replace 10 barrier culverts.
Thomas Bay	PRD	2017-2019+	15 MMBF offered for sale (5 MMBF young growth). 4 miles of roads maintained and 4 miles or roads stored. Replace 2 bridges. Restore and enhance 1 mile of stream; thin 1,000 riparian acres and 312 upland acres. Replace 2 fish barrier culverts.
Traitors Cove	KMRD	2017-2019+	10 MMBF offered for sale. 4 miles of roads maintained and 4 miles of roads stored. Restore and enhance 3 miles of stream; thin 100 riparian acres. Remove or replace 8 barrier culverts.
Kosciusko Vegetation Management & Watershed Improvement Project	TBRD	2016-2019+	Manage roughly 1,500 acres of young-growth for multiple resource objectives and harvest an estimated 75 acres of old-growth, to meet Forest Plan objectives and assist in the transition to a young-growth industry.
Iris and Shelikof	Sitka Ranger District (SRD)	2015-2019	Restoration and Enhancement thinning. 20 miles of roads stored. Restore and enhance 4 miles of stream; thin 500 riparian acres and 3,500 upland acres. Remove one fish barrier culvert.
Saddle Lakes	KMRD	2016-2019	47 MMBF offered for sale. 17 miles of new NFS road, 10 miles of temporary road and reconditioning 10.5 miles of existing NFS roads.. Restore and enhance 3 miles of stream. Remove or replace 28 barrier culverts.
Shrimp Bay	KMRD	2015-2018	10 MMBF offered for sale and 1,000 acres precommercial thin. 3 miles of roads maintained. Remove or replace 5 barrier culverts.
Kennel Creek	Hoonah Ranger District (HRD)	2015-2018	Restoration and Enhancement thinning. 4 miles of road maintained. Restore and enhance 0.5 miles of stream; thin 350 upland acres. Remove 4 barrier culverts.
Sitka Ranger District	SRD	2017-2019	Precommercial thin 400 acres. Watershed restoration including riparian thinning, instream work, and pond and road work.
Mitkof	PRD	2015	10 MMBF offered for sale.
Control Lake-Angel Wings	TBRD	2015	0.5 MMBF offered for sale.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Control Lake – Rush Firewood	TBRD	2015	0.2 MMBF offered for sale.
Navy	WRD	2015	10 MMBF offered for sale.
Elf Point	KMRD	2017	10 MMBF offered for sale.
Heceta	TBRD	2018	5 MMBF offered for sale.
Vallenar	KMRD	2019	20 MMBF offered for sale.
No Name Bay	PRD	2020+	70 MMBF offered for sale.
Frosty Bay	WRD	2020+	10 MMBF offered for sale.
Timber Harvest Activities – State and Private Lands			
Forecasted acres to be harvested and roads to be constructed during the next 25 years and during the next 100 years for each alternative. These sales will be governed by the Alaska Forest Resources and Practices Act which is designed to protect fish habitat, water quality and promote reforestation.			
Projected Future Harvest and Road Construction and Reconstruction over 25 years for Each Alternative	Almost all State and Private Lands within the proclaimed Tongass Boundary	2016 - 2040	The majority of State and Private harvest will be old growth Alternative 1: Harvest = 56,234 acres Road Construction = 584 miles Road Reconstruction = 61 miles Alternative 2: Harvest = 56,234 acres Road Construction = 584 miles Road Reconstruction = 61 miles Alternative 3: Harvest = 56,234 acres Road Construction = 584 miles Road Reconstruction = 61 miles Alternative 4: Harvest = 56,234 acres Road Construction = 584 miles Road Reconstruction = 61 miles Alternative 5: Harvest = 56,234 acres Road Construction = 584 miles Road Reconstruction = 61 miles

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Projected Future Harvest and Road Construction and Reconstruction over 100 years for Each Alternative	Almost all State and Private Lands within the Tongass Boundary	2016 - 2115	The majority of State and Private harvest will be old growth Alternative 1: Harvest = 224,937 acres Road Construction = 2,335 miles Road Reconstruction = 245 miles Alternative 2: Harvest = 224,937 acres Road Construction = 2,335 miles Road Reconstruction = 245 miles Alternative 3: Harvest = 224,937 acres Road Construction = 2,335 miles Road Reconstruction = 245 miles Alternative 4: Harvest = 224,937 acres Road Construction = 2,335 miles Road Reconstruction = 245 miles Alternative 5: Harvest = 224,937 acres Road Construction = 2,335 miles Road Reconstruction = 245 miles
Specific State of Alaska timber sales that are being implemented or are in planning stages for the next five years. These are included within the 25-year and 100-year estimates above.			
Coffman Cove	Prince of Wales Island	2015+	1,628 acre sale. 13.1MMBF. 5.8 mile of road. Approximately 412 acres of old growth timber with an estimated volume of 7,177 MBF will be sold in 2015.
South Thorne Bay Area	Prince of Wales Island (Kasaan Peninsula)	2015+	153 acre sale. 3.0MMBF(Active)
North Thorne Bay	Prince of Wales Island (Thorne Bay)	2015+	300-acre sale. 5.8MMBF
North Hollis	Prince of Wales Island (Hollis)	2015+	263 acres of old growth; 108 acres of young growth. 5.3 MMBF old growth; 2.2 MMBF young growth.
Kosciusko Island	Kosciusko Island (Prince of Wales)	2015, 2016	1,383 acres; 28 MMBF. New log transfer facility and sort yard.
Heceta	Heceta Island (Prince of Wales)	2015, 2016	2,600 acres. 30 MMBF. (10 MMBF old growth, 20 MMBF young growth)
El Capitan	Prince of Wales Island	2016	1,700 acres; 5 miles of new road. 17 MMBF.
Whale Pass	Prince of Wales Island	2016	441 acres; 2 miles new road; 6.6 MMBF.
Exchange Cove	Prince of Wales Island	2016	116 acres.1.2 MMBF.
Bostwick Bay	Gravena Island (Ketchikan)	2017	583 acres. 5 miles new road. Road to cross Bostwick Creek. 8.9MMBF.
Vallenar	Gravena Island (Ketchikan)	2017	300 acres old growth. 300 acres young growth. 12 MMBF. 8 miles new road; 1.5 mile reconstructed road.
Little Coal Bay	Prince of Wales (Kasaan Bay)	2017	1,000 acres. 5.2 MMBF

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Kitkun Bay	Prince of Wales (Cholmondeley Sound)	2017	1,051 acres. Volume not reported.
Port Dolores	Prince of Wales (Sumez Island)	2018	1,109 acres 12.2 MMBF Old Growth; 3.8 MMBF young growth.. 4.7 miles of new road on state land. 1,500 feet of new road on NFS land.
Hook Arm	Dall Island	2018	960 acres. 11.5MMBF. 4.4 miles new road.
Naukati	Prince of Wales (Naukati)	2018	162 acres. 3.7MMBF. Short spur roads.
Control Lake	Prince of Wales (Control Lake)	2018	170 acres 3.4MMBF. 1.4 miles new road.
Mitkof Island	Mitkof Island (Petersburg)	2019	210 acres; 4.0 MMBF
Thomas Bay	Thomas Bay (Petersburg)	2019	816 acres; 20.2 MMBF (4.9 MMBF old growth; 15.3 MMBF young growth). 3.7 miles new road; 1.7 Miles road reconstructed.
Earl West Cove	Wrangell Island	2019	700 acres; 12.5 MMBF; 5.0 miles new road
Leask Cove	Revillagigedo Island (George Inlet)	2019	316 acres; 6.3 MMBF; 1.8 mile spur road
Small Sales and Other Sales	Variable	2016 and beyond	Right-of-way sales; blowdown sales; sales less than 10 acres. Five to 10 small sales totaling approximately 2.0 MMBF will be offered for Calendar Year 2018.
Alaska Mental Health Trust Commercial Forestlands	Variable	2015 and beyond	The Alaska Mental Health Trust Land Office is comparable to a private forestland manager. Approximately 265 million board feet of the Trust's commercial forestland lies in southeast Alaska. A large portion of this forestland is community and environmentally sensitive. The Trust will be looking at these sensitivities in more detail in the future. The Trust Land Office is currently overseeing a timber sale contract near Icy Cape (18,000 acres). To better understand the forestland assets owned by the Trust, forest resource inventory work is currently underway in the vicinity of Wrangell and Thorne Bay.
Sealaska and other Alaska Native Corporations	Native Corporation Lands	2015 and beyond	Projected harvest of 6.2 MMBF in 2016 increasing annually to 7.2 MMBF by 2030.
Land Adjustments			
Alaska Mental Health Trust land exchange	Ketchikan, Petersburg, Wrangell, Sitka, Juneau, Myers Chuck, Naukati, and Hollis, Alaska	2015-2020 or later	The Alaska Mental Health Trust is working with the Tongass National Forest on a land exchange proposal involving 18,000 acres of Non-Federal lands in scenic viewsheds and approximately 20,000 acres of NFS land across eight communities in Southeast Alaska. In order to better align land ownership patterns with the inherent missions of both the Forest Service and the Alaska Mental health Trust Authority. An equal value land exchange has been proposed. In 2015, A Feasibility Analysis was completed, and both parties signed an Agreement to Initiate.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Remaining land conveyances due to the Alaska Statehood Act	Tongass-wide	2015-2025 or later	The State of Alaska was granted and entitled to select up to 400,000 of National Forest Lands in Alaska for the purpose of furthering the development of and expansion of communities under the Alaska Statehood Act (43 CFR 2627.1(a)) On the Tongass National Forest, the State of Alaska has approximately 12,145 acres remaining of land entitlement under the Act. The adjudication process and conveyances are initiated by the Bureau of Land Management, Alaska State Office.
Cube Cove land acquisition	Admiralty Island	2016 or later	The 22,890 acres of surface estate within the Admiralty Island National Monument and Kootznoowoo Wilderness would be purchased from Shee Atiká, Inc. The purpose of this acquisition is to conserve and enhance significant scenic, recreation, cultural and wildlife/plant resources within National Monument/Wilderness and to protect wilderness values from development. In addition to the surface land purchase between the Forest Service and Shee Atika, the subsurface estate owner, Sealaska Regional Corporation, has expressed interest to potentially exchange the subsurface estate at Cube Cove for other Surface Estate on the Tongass National Forest.
Sealaska Land Entitlement Finalization Act	Tongass-wide	2015-2017	Within two years of enactment of the "Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015", Sealaska may submit applications for the conveyance under section 14(h)(1)(A) of the Alaska Native Claims Settlement Act (43 U.S.C. 1613(h)(1)(A)) of not more than 76 cemetery sites and historical places, amounting to approximately 500 acres.
Boomer land donation	Sitka Ranger District, Chichagof Island	2016+	In 2012, the Federal Energy Regulatory Commission (FERC) issued an order amending the license for the Blue Lake Hydroelectric Project. FERC's environmental assessment for the project identified 362 acres of National Forest System lands inundated by the raising of water levels in the reservoir as an unavoidable impact that would require mitigation. The mitigation was needed to offset the permanent loss of the timber, recreation, subsistence, wildlife habitat, and botanical resources around the Blue Lake Creek valley and other areas of the lakeshore. The City of Sitka proposed to donate 48 acres of land on Chichagof Island as mitigation for the inundated area. The lands proposed for donation are three parcels known as "Basoiniuer No. 1, Basoiniuer No. 2, and Golden West" on City planning documents. These three parcels are municipal-owned lands within the West Chichagof-Yakobi Wilderness. These lands are referred to as the Boomer lands.
Alaska Veteran Native Allotment Land Equity Act	Tongass-wide	Not scheduled	The proposed legislation is specific to National Forest Lands in Alaska, but includes a clause regarding approval of formerly rejected Native Allotment Cases under the "Shields v. USA" case. The Shields case closed 200 Native allotment cases under the 1906 Native Allotment Act which were applied for under ancestral uses v. individual use and occupancy. Most Shield's cases were previously identified on the Tongass. Native Allotment applications are 160 acres each and thus approximately up to 32,000 acres of the Tongass that could become private lands in the future. This legislation was introduced in May 2015 and has not become law.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Unrecognized Southeast Alaska Native Communities Recognition and Compensation Act	Native Villages of Haines, Ketchikan, Petersburg, Tenakee, and Wrangell	Not scheduled	The proposed legislation would amend the Alaska Native Claims Settlement Act to permit the Native residents of each of the Native Villages of Haines, Ketchikan, Petersburg, Tenakee, and Wrangell, Alaska, to organize as Urban Corporations and to receive certain settlement land pursuant to this Act. The entitlement would consist of one township of land or 23,040 acres (total approximate acres are 184,320) and require the conveyance of all roads, trails, log transfer sites, leases, and appurtenances on or related to the land conveyed to the new urban corporations. This legislation was introduced in May 2015 and has not become law.
Alaska State Forest Proposal	Prince of Wales Island	Not scheduled	State officials or interests have at times advocated the establishment of an additional Alaska State Forest to be managed to provide income for state government programs. One concept for such a management unit was for a 2-million-acre area on or near Prince of Wales Island, which would require transfer of extensive areas of current Tongass National Forest System lands to the State. To date, no federal legislation to implement such a proposal has been introduced in Congress and this action is not considered reasonably foreseeable.
Alaska Native Allotment Act conveyances	Tongass-wide	Unknown	The Alaska Native Allotment Act provided for Native individuals who had occupied lands prior to their designation as national forest to apply for conveyance of up to 160 acres, under conditions prescribed by the Act and federal regulations. As of August 2015, about 45 Native allotment cases remain on the Tongass National Forest and are pending adjudication by the Bureau of Land Management. This number may increase due to unknown circumstances by either quite title action, re-instatement applications, or new legislative proposals.
Mining (Tongass)			
Greens Creek Mine (Active)	Admiralty Island	Present – 2025 or beyond	Underground polymetalic mine. Ore is processed on site and exported by sea. Waste water, waste rock and tailings are managed onsite. Power is supplied by hydroelectric infrastructure and diesel generators. The Greens Creek Land Exchange Act of 1995 allows mining to continue through 2095. Annually, the mine continues exploration in and around the mine.
Kensington Mine (Active)	Juneau	Present-2025 or beyond	Underground gold mine. Waste water, waste rock and tailings are managed onsite. Power is provided diesel generators. Annually, the mine continues exploration in and around the mine.
Bokan Mountain	Prince of Wales (Kendrick Bay)	Unknown	Bokan Mountain is a potential rare earth mine. Developers estimate 190 employees. It would be powered by liquid natural gas (LNG) generators.
Niblack	Prince of Wales (Moira Sound)	Unknown	Niblack Project is a potential polymetalic mine. Developers estimate 200 employees.
Other Locatable Minerals	Tongass-wide	Continual	Mining exploration is expected to continue in many areas of the Forest. Existing projects submit annual operating plans that describe exploration activities.
Mineral Materials	Various	Continual	New and existing mineral materials sources will be developed. Stone, crushed rock, gravel and other saleable materials will be used for road building and maintenance and

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
			other purposes. Materials may be used in-service (by the Forest Service) or sold to private parties.
Mining (Canada)			
Kerr-Sulphurets-Mitchell	Unuk River watershed	Present-2068 or beyond	Seabridge Gold proposes to reopen this polymetallic mine in northwest British Columbia about 18 miles east of the Alaska/B.C. border. These deposits would be mined as open pits until later in the project when the Mitchell deposit would continue as an underground mine.
Red Chris	Stikine River Watershed	2015-2045	Imperial Metals recently opened the Red Chris copper/gold mine in northwest British Columbia.
Tulsequah Chief	Taku River Watershed	Unknown	Chieftan Metals Inc. seeks to open this underground polymetallic mine in northwest British Columbia about 40 miles northeast of Juneau.
Energy			
Angoon Hydroelectric Project	Admiralty Island, Thayer Creek, (Angoon	Unknown	The Alaska National Interest Lands Conservation Act (ANILCA), Section 506(a)3(B) granted Kootznoowoo Inc. the right to develop hydroelectric resources on Admiralty Island at Thayer Creek. The Forest Service completed a final environmental impact statement (FEIS) to disclose the effects of the proposed project. A record of decision (ROD) was released in May 2009. The ROD authorizes the construction of a 1 megawatt run of river hydroelectric facility on Thayer Creek, approximately six miles north of Angoon that includes a diversion dam, penstock, powerhouse, underground transmission lines and access roads.
Bell Island Geothermal	KMRD	Unknown	No specific projects are proposed at this time, although SEAPA is conducting preliminary investigations for geothermal power generation.
Crooked Creek/Jim's Lake Hydroelectric Project	Elfin Cove	2017	In February 2015, the community of Elfin Cove proposed to develop a project that consists of two hydroelectric systems in series with a total capacity of about 140 kilowatts (kW). Common to both systems is about 12,000 feet of power line. The upper system is a run-of-river hydroelectric project that would include the following major components: 1) A natural water feature diversion on Crooked Creek that is about 20 feet long by 4 feet tall by 4 feet wide diversion. 2) About 1,250 foot long 12-inch diameter penstock 3) about 14-foot by 14-foot powerhouse 4) A tailrace measuring about 3 feet deep by 8 feet wide by 50 feet long. 5) Access trails, temporary construction roads, and other appurtenant features necessary to provide a complete and functional system. The lower system is a storage hydroelectric project that would include the following major components: 1) a siphon intake 2) about 2,050 foot long 14-inch diameter penstock 3) an approximately 24-foot by 24-foot powerhouse. 4) a tailrace measuring 3 feet deep by 8 feet wide by 150 feet long. 5) Access trails, temporary construction roads, and other appurtenant features necessary to provide a complete and functional system. The project would occupy about 60 acres of federal lands.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Indian River hydroelectric	Tenakee Springs	2017-2018	The community of Tenakee Springs has been developing a 180 kilowatt run-of-river hydroelectric project on Indian River. The Project will supply approximately 90% of the city's electricity, reducing diesel use by about 31,400 gallons annually. The project does not occupy federal lands,
Kake-Petersburg Transmission Line Intertie	Mitkof and Kupreanof Islands, Petersburg and Wrangell Ranger Districts	2016 and beyond	The Southeast Alaska Power Agency (SEAPA) proposed to build a new electric transmission line that would connect the isolated electric system presently serving the city of Kake with SEAPA's interconnected electric network, in or near Petersburg. The November 2014 Draft EIS analyzed three action alternatives that range from 52 miles to 60 miles in total length, with 82 to 88 percent of their total length located on NFS lands. The proposed transmission line would be built to transmit power at either 69 - or 138–kilovolts. All three action alternatives follow existing NFS system roads to the extent possible, with the length along existing roads ranging from 58 percent to 72 percent of the total. The action alternatives all cross Inventoried Roadless Areas. No new roads would be built under any of the alternatives. Construction access in unroaded areas would be via temporary shovel trails and matting panels, with helicopter support, as needed. The action alternatives would all involve marine crossings.
Soulé River Hydroelectric Project	KMRD	Unknown	In February 2011, Soule Hydro, LLC filed an application for an original license with the Federal Energy Regulatory Commission for its proposed 77MW hydropower project on the Soule River, about nine miles southwest of Hyder, Alaska (FERC Project No. 13528). Major project features include: (1) a main dam 265-feet-tall by 903-feet-long; (2) a saddle dam about 2,024 feet long; (3) an intake structure; (4) a reservoir with a surface area of about 1,072 acres (5) an 16-foot-diameter by 11,400-foot-long water conduit tunnel; (6) a 3.1-mile-long access road; (7) a 80-foot-wide by 160-foot-long powerhouse; a tailrace that will discharge into the river mouth; (8) three 138 kilovolt substation next to the powerhouse; (9) marine access facilities that include a staging area, boat ramp, barge basin for offloading barges, and float for small watercraft; (10) temporary log transfer facility; (11) a 10-mile-long, 138 kilo-volt submarine cable to Stewart, B.C. (about two miles will be in Canadian waters) to connect with a BC Hydro substation. The project would occupy 1,257 acres of federal lands within the Tongass National Forest.
Sweetheart Lake Hydroelectric Project	Juneau Ranger District	Unknown	In October 2015 the Federal Energy Regulatory Commission released the draft EIS for the proposed project located on Lower Sweetheart Lake and Sweetheart Creek, (FERC Project No. 13563). Major project features include: (1) A 280-foot-wide, 111-foot-high dam; (2) a 525-foot-long, 10-foot-high, 10-foot-wide arched reservoir outlet tunnel; (3) a 45-foot-long, 25-foot-wide, 16-foot-high intake structure; (4) a 9,612-foot-long, 15-foot-wide, 15-foot-high underground power tunnel; (5) an 896-foot-long, 9-foot-diameter penstock; (6) three 160-foot-long, 7- to 9-foot-diameter buried penstocks (7) a 160-foot-

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
			long, 60-foot-wide, 30-foot-high powerhouse; (8) three 7.1-MW Francis turbines with 6.6-MW generators with a total installed capacity of 19.8 MW; (9) a 541-foot-long, 30- to 90-foot-wide rock tailrace; (10) a 4,400-foot-long coastal road from the powerhouse to a dock/landing site, located on the east shore of Gilbert Bay; (11) an 8.69-mile-long, 138-kilovolt (kV) transmission line traversing Gilbert Bay, the Snettisham Peninsula, and Port Snettisham, consisting of: (a) two buried segments, totaling 4,800 feet in length; (b) two submarine segments; and (c) one 15,400-foot-long overhead segment; (12) a 22,000-square-foot fenced switchyard adjacent to the powerhouse; (13) a 4,225-square-foot caretaker's facility near the dock; (14) a 4,800-foot-long, 12.47-kV service transmission line extending from the powerhouse to the dock and caretaker's facility; (15) a 10,000-foot-long, 12.47-kV service transmission line; and (16) a 400-square-foot shelter at the dam site. The project would occupy 2,058.24 acres of federal lands within the Tongass National Forest and 131.18 acres of tideland and submerged lands of the state of Alaska.
Communication Sites			
Existing and Future Communications Sites	Tongass-wide	Present and continuing	Sites approved for telecommunication facilities are characterized by antennas, electronic transmitters, equipment shelters, and a variety of electronic communication support equipment. Proposals for new communications uses on the Tongass National Forest will be encouraged to co-locate on an approved communications site, unless the proponent demonstrates that communication sites approved in the Forest Plan are not technically feasible due to geographic location, or are incompatible with the requested use. Currently, there are 75approved communication sites on the Tongass.
Transportation			
Regional Transportation Systems	Tongass-wide	2015 and continuing	The State of Alaska will continue to maintain and improve its regional transportation system including road and marine systems.
Angoon Airport	Angoon	2016	The Alaska Department of Transportation and Public Facilities proposed a land-based airport for Angoon. In January 2015 the Federal Aviation Administration released a Draft Environmental Impact Statement (EIS) for public comment. The preferred alternative identified in the DEIS is on private lands. . Two alternative airport locations being considered are within the Admiralty Island National Monument and Kootznoowoo Wilderness. ADOT&PF submitted an ANILCA Title XI application for the alternative in Wilderness.
Clark Bay Ferry Terminal Parking Expansion	Hollis (Prince of Wales)	Est. 2016	The Alaska Department of Transportation and Public Facilities intends to expand the existing parking area at the Clark Bay (Hollis) ferry terminal by about 50 parking spaces.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Juneau Access Improvement Project (ADOT&PF Federal Highway Administration)	Juneau/Haines	2016 or later	Extend Glacier Highway/State Route 7 northward from its current terminus to the north side of the Katzehin River delta, in a series of stages, under the preferred alternative in the Final Environmental Impact Statement (EIS) and construct terminal near Katzehin River.
Gravina Access	Gravina and Revillagigedo Islands	2016 or later	Design and construct improved access to Gravina Island
Ketchikan to Shelter Cove Road (Cleveland Peninsula Shelter Cove D1 easement)	KMRD, Cleveland Peninsula	2015??	Construct between 9 and 10 miles of new, single lane, unpaved roadway and bridges and upgrade between 10 and 19 miles of existing logging roads to connect Revilla Road near Ketchikan to the Forest Service Road system at Shelter Cove on Carroll Inlet.. Approximately 1.61 miles of road would be routed through wetlands or other jurisdictional waters of the United States, while the other 5.68 miles would be routed through uplands. The project is an identified road segment supporting implementation of the 2004 Southeast Alaska Transportation Plan
Naukati Bay Road	Naukati (Prince of Wales)	2015?	Upgrade and pave Naukati West Access Road to a two lane road between the North POW Road and the Naukati Seaplane Float.
Sitka-Katlian Bay Road	Sitka	2016 or later	In 2010 the State of Alaska Department of Transportation and Public Facilities (DOT&PF) was granted a D-1 easement for highway and utility planning purposes (Sitka – Rodman Bay). This road corridor was identified as a Proposed State Road Corridor in the 2008 Forest Plan Land Use Designations map and given a Transportation and Utility System LUD. DOT&PF is preparing a "…State Projects Environmental Checklist to address impacts and issues associated with…" building about nine miles of unpaved single-lane road from the end of the existing Sitka road system at Halibut Point Road, extending east along the south shoreline of Katlian Bay, crossing the Katlian River, and ending four miles east of the Katlian Bay. Two and one-half miles of this proposed road crosses National Forest System lands. Some of the road is in the Sitka Urban Inventoried Roadless Area (331).
Kake Access Project	Kake (Kupreanof Island)	unknown	In January 2013 the Western Federal Lands Highway Division of the Federal Highway Administration (FHWA) issued a notice to advise the public that FHWA would prepare an Environmental Impact Statement (EIS) for a proposed transportation project to improve access to and from the community of Kake in Southeast Alaska Construct approximately 27 miles of new single lane, unpaved roadway and bridges and improve approximately 26 miles of existing logging roads on the north end of Kupreanof Island to provide Kake road access to Petersburg via a short shuttle ferry link. The very low volume road is intended to improve Kake's surface transportation access to Petersburg, the regional transportation system.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
Sandy Beach Road	Thorne Bay (Prince of Wales Island)	2015?	Reconstruct and realign FSR30 from the intersection of Freeman Drive MP 0.0 in Thorne Bay to MP 0.5 at the City of Thorne Bay's Bypass Loop Road and city limits. This is the first phase of the fully designed 6.58 miles of trails and roadwork to the Sandy Beach.
Alaska Marine Highway and Interisland ferry	Southeast Alaska (non-NFS)	2016 and beyond	Construction of new passenger terminal buildings and other improvements in Angoon and Kake; various marine terminal improvements in Ketchikan, Skagway, Gustavus, Sitka, Juneau, Tenakee Springs, and Haines; maintenance and refurbishment of vessels.
Other Transportation Projects	Southeast Alaska (NFS and non-NFS)	2016 and beyond	The Forest Service will conduct transportation projects which will vary year to year based on funding and need. These include maintaining or improving existing roads and bridges, placing roads in storage, paving existing dirt roads, and improving fish passage at culverts. The State and local communities will also implement various transportation projects such as paving or resurfacing roads, road realignments, safety improvements, vessel and marine terminal improvements, etc.
Recreation and Tourism			
Cruise Ships	Tongass-wide	2015 and beyond	Expected growth in recreation and tourism businesses based on continued growth in the cruise ship industry
Outfitter Guides	Tongass-wide	2015 and beyond	Outfitter guide services may include guided hunts or trapping, camping, fishing, cross country skiing, hiking or other commercial recreational activities. Outfitter and guide services are generally provided within ½-mile inland of the shoreline but extend further for some activities (e.g. goat hunting, canoeing, freshwater fishing).
Helicopter Landings and Tours	Mostly the Juneau Ranger District	2015 and beyond	About 17,000 landings occur on the Juneau Icefield for tours and activities annually (based on 2004-2007 data), which accounts for about 75% of the helicopter tours/landings in Southeast Alaska. Helicopter landing tours also occur in a number of locations elsewhere on the Forest, including the Skagway Icefield and Baird Patterson Glaciers.
Dispersed Recreation and Subsistence Gathering	Tongass-wide	2015 and beyond	There may be increasing recreational demand as the tourism industry continues to grow and increasing recreation around communities with population growth. Gathering of subsistence resources is also expected to increase, although more slowly than recreation, with the growth of subsistence communities.
Fishing and Recreation Lodges	Tongass-wide	2015 and beyond	Numerous lodges occur on private lands adjacent to the Tongass. It is expected that most of these lodges will continue to operate, and new lodges will be opened, providing additional recreational opportunities.
Recreation site development and closure	Tongass-wide	2015 and beyond	Continued use, maintenance and improvement of existing developed recreation sites (e.g., cabins, campgrounds, visitor centers, trails, and viewing areas, and other facilities), closures of such sites, or creation of new may occur. Similarly, the State or communities may develop, improve, or modify recreation sites.
Communities			
Population changes	Tongass-wide	Ongoing	Human settlement expansion is expected to occur around the region's larger cities, such as Juneau and Sitka, with residential expansion also expected as a result of state land auctions.

Table C-2 (continued)
Present and Reasonably Foreseeable Actions and Projects Considered in Cumulative Effects Analyses

Present/Reasonably Foreseeable Actions	Location	Year(s)	Description
State land Offerings	Tongass-wide	Ongoing	The State periodically offers land for settlement and development. Often, these lands are adjacent to NFS lands. No NFS lands are included in these State land offerings.
POW Borough	Prince of Wales Island	unknown	The Prince of Wales Community Advisory Council is investigating the formation of a Prince of Wales Borough. (speculative)
Wildlife			
Pre-commercial thinning		2016 and beyond	The Tongass Integrated Plan provides details on planned precommercial thinning projects that would benefit wildlife. A summary of acres by Ranger district is below. HRD: About 2,270 acres; JRD: About 640 acres (Couverden); KMRD: About 2,780 acres; PRD: About 3,890 acres; TBRD: About 6,000 acres (Big Thorne Stewardship); WRD: About 1,460 acres.
Mitkof Island Deer Habitat Enhancement	Petersburg Ranger District	2016	Treat up to 1,114 acres of young-growth stands to benefit deer.
Sport and Subsistence Harvest	Tongass-wide	2016 and beyond	Sport and subsistence harvests will continue throughout the forest. Prediction of the future extent and intensity of such activities has a high degree of uncertainty associated with it on a Forest-wide basis over a broad time scale.
Watershed Restoration			
Restoration Projects	Tongass-wide	2016 and beyond	Annually, the Forest Service will conduct watershed improvement projects including: watershed monitoring and assessments; instream and riparian rehabilitation; placement of large woody debris in streams; conducting landslide assessments; improving fish passage in streams (creating jump pools, barrier modifications, culvert replacements); decommissioning roads; and maintain fish passage structures. The number of locations and number of projects will vary year to year based on funding and need.

Table C-3
Interactions Between Resources and Actions or Projects

Actions or Projects	Climate and Air	Geology/Karst	Soils	Water	Wetlands	Fish	Plants	Forest Health	Biodiversity	Wildlife	Lands	Timber	Transportation	Energy/Utility Lines	Minerals	Recreation/ Tourism	Scenery	Subsistence	Heritage	Roadless	Wilderness	Socioeconomic	Communities
PAST ACTIONS																							
Climate Change and Natural Processes																							
Climate Change - General	x								x	x													
Yellow Cedar Decline								x	x			x											
Fire	x							x	x			x											
Insects and Disease								x	x			x											
Windthrow								x	x			x											
Watershed Effects				x		x			x	x													
Timber Harvest Activities																							
Past Harvest - NFS		x		x	x	x	x		x	x		x				x	x	x	x	x		x	x
Past Harvest – non-NFS		x		x	x	x	x		x	x		x				x	x	x	x	x		x	x
Past Road Construction/Use		x		x	x	x	x		x	x		x	x			x	x	x	x	x		x	x
Past LTF Construction/Use				x	x	x	x		x	x						x	x	x	x	x		x	x
Land Adjustments																							
Misty Fjords National Monument Wilderness Inholdings (2012)											x										x		
Public Law 113-291		x		x		x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x
Boomer Land Donation									x	x	x												
Other land adjustments				x		x			x	x	x	x					x			x		x	x
Mining																							
Various Mines		x	x	x	x	x	x		x	x		x			x	x	x						
Recreation and Tourism																							
Cruise Ships	x									x						x					x	x	x
Outfitter Guides										x						x					x	x	
Helicopter Landings and Tours										x						x					x	x	x
Dispersed Recreation and Subsistence Gathering						x	x		x	x						x		x					
Fishing and Recreation Lodges						x	x		x	x		x				x	x		x			x	
Recreation site development and closure						x	x		x	x		x				x	x		x			x	

Table C-3 (continued)
Interactions Between Resources and Actions or Projects

Actions or Projects	Climate and Air	Geology/Karst	Soils	Water	Wetlands	Fish	Plants	Forest Health	Biodiversity	Wildlife	Lands	Timber	Transportation	Energy/Utility Lines	Minerals	Recreation/ Tourism	Scenery	Subsistence	Heritage	Roadless	Wilderness	Socioeconomic	Communities
Community Development																							
Community Development									x	x	x		x	x		x	x	x	x			x	x
Wildlife Habitat Enhancement and Regulatory Actions																							
Habitat Enhancement					x	x	x		x	x								x					
State Hunting/Trapping and Federal Subsistence Regulations										x								x					
Watershed and Aquatic Habitat Improvement and Aquatic Regulatory Actions																							
Restoration Projects				x	x	x												x					
State Fishing and Federal Subsistence Regulations					x	x												x					
PRESENT AND REASONABLY FORESEEABLE ACTIONS																							
Climate Change and Natural Processes																							
General – Climate Change	x			x		x		x	x	x		x		x		x						x	x
Yellow Cedar Decline								x	x			x											
Fire	x							x	x			x											
Insects and Disease								x	x			x											
Windthrow Events								x	x			x											
Watershed Effects				x		x			x	x													
Timber Harvest Activities																							
Future Harvest - NFS		x		x	x	x	x		x	x		x				x	x	x	x	x		x	x
Future Harvest – non-NFS		x		x	x	x	x		x	x		x				x	x	x	x	x		x	x
Future Road Construction/Use		x		x	x	x	x		x	x		x	x			x	x	x	x	x		x	x
Future LTF Construction/Use				x	x	x	x		x	x						x	x	x	x	x		x	x
Land Adjustments																							
Land Adjustments		x		x		x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x
Mining																							
Various Mines		x	x	x	x	x	x		x	x		x			x	x	x						
Energy																							
Hydroelectric Projects	x		x	x	x	x	x		x	x		x	x	x		x	x		x	x		x	x
Other Renewable Energy Projects	x		x	x	x	x	x		x	x		x	x	x		x	x		x	x		x	x

Table C-3 (continued)
Interactions Between Resources and Actions or Projects

Actions or Projects	Climate and Air	Geology/Karst	Soils	Water	Wetlands	Fish	Plants	Forest Health	Biodiversity	Wildlife	Lands	Timber	Transportation	Energy/Utility Lines	Minerals	Recreation/ Tourism	Scenery	Subsistence	Heritage	Roadless	Wilderness	Socioeconomic	Communities
Transmission Lines			x	x	x	x	x		x	x		x	x	x		x	x		x	x		x	x
Communication Sites																							
Existing and Future Communications Sites							x		x	x				x			x		x				
Transportation																							
Regional Transportation Systems	x	x	x	x	x	x	x		x	x			x	x		x	x	x	x			x	x
Local Transportation Systems	x	x	x	x	x	x	x		x	x			x	x		x	x	x	x			x	x
Alaska Marine Highway & Interisland Ferry	x					x				x			x			x						x	x
Recreation and Tourism																							
Recreation Developments/Actions	x					x	x		x	x		x				x	x	x	x		x	x	x
Communities																							
Community Expansion/Development	x		x	x	x	x	x		x	x	x		x	x		x	x	x	x			x	x
Wildlife																							
Pre-commercial thinning & habitat enhancement							x		x	x		x						x					
Sport and Subsistence Harvests										x								x					
Watershed Restoration																							
Restoration Projects			x	x	x	x	x		x	x													

Attachment 1

Catalog of Past Harvest

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Attachment 1
Catalog of Past Harvest

Introduction

This appendix presents a catalog of past harvest for Southeast Alaska. It is based on updated and extensive mapping of past harvest based on the Tongass GIS library, GIS data layers provided by Sealaska Regional Native Corporation, the State of Alaska, and Audubon Alaska/The Nature Conservancy, as well as supplemental interpretation of orthophotography and other aerial photography. It is also based on tabular information collected from the State of Alaska, Department of Natural Resources regarding state harvests and harvests under the Alaska Forest Resources and Practices Act. Appendix B provides more detailed information on the inventory methodology.

Part II presents a tabular summary of information provided by the State of Alaska Department of Natural Resources, Division of Forestry.

Part I – Acreage of Past Harvest by Ownership Category, by Landowner, by Biogeographic Province, by Approximate Decade

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
Yakutat Forelands Biogeographic Province			
Tongass National Forest	Tongass National Forest	1950s	28
	Tongass National Forest	1970s	553
	Tongass National Forest	1980s	1,812
	Tongass National Forest	1990s	229
	Tongass National Forest	2000s	987
	Tongass National Forest	--	18
	Total NFS Lands		**3,627**
State of Alaska	State of Alaska	1970s–1990s	1,315
	Total State Lands		**1,315**
	Yak-tat Kwaan Village Corporation	1980s	12,541
	Other	--	134
Private & Other Lands	**Total Private/Other Lands**		**12,675**
	TOTAL PROVINCE HARVEST		**17,618**
Yakutat Uplands Biogeographic Province			
Tongass National Forest	Tongass National Forest	1980s	665
	Tongass National Forest	1990s	173
	Tongass National Forest	2000s	552
	Tongass National Forest	--	21
	Total NFS Lands		**1,411**
State of Alaska	**Total State Lands**		0
Private & Other Lands	**Total Private/Other Lands**		0
	TOTAL PROVINCE HARVEST		**1,411**
East Chichagof Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	1,016
	Tongass National Forest	1950s	1,527
	Tongass National Forest	1960s	6,053

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
	Tongass National Forest	1970s	13,232
	Tongass National Forest	1980s	10,501
	Tongass National Forest	1990s	11,713
	Tongass National Forest	2000s	60
	Tongass National Forest	--	105
	Total NFS Lands		**44,207**
State of Alaska	State of Alaska	1980s	200
	State of Alaska	1990s	227
	State of Alaska	2000s	70
	Total State Lands		**497**
Private & Other Lands	Hoonah	--	252
	Huna Totem Village Corporation	--	11,449
	Sealaska Regional Corporation	1970s	1,352
	Sealaska Regional Corporation	1980s	7,670
	Sealaska Regional Corporation	1990s	6,400
	Sealaska Regional Corporation	2000s	6,825
	Other Private Owners	--	81
	Total Private/Other Lands		**37,007**
	TOTAL PROVINCE HARVEST		**81,711**
West Chichagof Island Biogeographic Province			
Tongass National Forest	**Total NFS Lands**		**0**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	**Total Private/Other Lands**		**0**
	TOTAL PROVINCE HARVEST		**0**
East Baranof Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	197
	Tongass National Forest	1950s	223
	Tongass National Forest	1960s	8,158
	Tongass National Forest	1970s	2,725
	Tongass National Forest	1990s	2,227
	Total NFS Lands		**13,530**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	Other Private Land Owners	--	2
	Total Private/Other Lands		**2**
	TOTAL PROVINCE HARVEST		**13,532**
West Baranof Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	1950s	1,085
	Tongass National Forest	1960s	9,812
	Tongass National Forest	1970s	5,556
	Tongass National Forest	1980s	10
	Total NFS Lands		**16,978**
State of Alaska	State of Alaska	1980s	696
	State of Alaska	1990s	204
	Total State Lands		**900**
Private & Other Lands	Shee Atika Village Corporation	1980s	1,184
	Other Private Owners	--	271
	Total Private/Other Lands		**1,455**
	TOTAL PROVINCE HARVEST		**19,332**

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
Admiralty Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	Prior to 1950	3,202
	Tongass National Forest	1950s	771
	Tongass National Forest	1960s	3,305
	Tongass National Forest	1970s	1,108
	Tongass National Forest	1990s	17
	Tongass National Forest	2000s	105
	Tongass National Forest	--	88
	Total NFS Lands		**8,595**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	Shee Atika Village Corporation	1980s–1990s	20,080
	Other Private Owners	--	110
	Total Private/Other Lands		**20,190**
	TOTAL PROVINCE HARVEST		**28,785**
Lynn Canal Biogeographic Province			
Tongass National Forest	Tongass National Forest	1960s	2,129
	Tongass National Forest	1970s	1,177
	Tongass National Forest	1980s	545
	Tongass National Forest	1990s	1,527
	Total NFS Lands		**5,377**
State of Alaska	State of Alaska	1980s	214
	Total State Lands		**214**
Private & Other Lands	Other Private Owners	1990s	335
	Total Private/Other Lands		**335**
	TOTAL PROVINCE HARVEST		**5,926**
North Coast Range Biogeographic Province			
Tongass National Forest	Tongass National Forest	1950s	221
	Total NFS Lands		**221**
State of Alaska	State of Alaska	--	24
	Total State Lands		**24**
Private & Other Lands	Goldbelt Village Corporation	1980s	20,389
	City and Borough of Juneau	--	1
	Other Land Owners	--	147
	Total Private/Other Lands		**20,537**
	TOTAL PROVINCE HARVEST		**20,782**
Kupreanof/Mitkof Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	1,573
	Tongass National Forest	1950s	1,096
	Tongass National Forest	1960s	6,781
	Tongass National Forest	1970s	10,183
	Tongass National Forest	1980s	8,335
	Tongass National Forest	1990s	5,539
	Tongass National Forest	2000s	2,234
	Total NFS Lands		**35,742**
State of Alaska	State of Alaska	1980s	3,648
	State of Alaska	1990s	884
	State of Alaska	2000s	54
	Total State Lands		**4,587**
Private & Other Lands	Kake	--	126

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
	Petersburg	--	484
	Kake Village Corporation	1970s–1990s	17,471
	Sealaska Regional Corporation	<1980	3,755
	Sealaska Regional Corporation	1980s	1,831
	Sealaska Regional Corporation	1990s	551
	Sealaska Regional Corporation	2000s	6,009
	Other Private Owners	--	823
	Total Private/Other Lands		**31,050**
	TOTAL PROVINCE HARVEST		**71,379**
Kuiu Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	2,570
	Tongass National Forest	1950s	344
	Tongass National Forest	1960s	3,428
	Tongass National Forest	1970s	8,989
	Tongass National Forest	1980s	7,852
	Tongass National Forest	1990s	4,644
	Tongass National Forest	2000s	667
	Total NFS Lands		**28,494**
State of Alaska	State of Alaska	--	9
	Total State Lands		**9**
Private & Other Lands	Sealaska Regional Corporation	<1980	22
	Other Private Owners	--	113
	Total Private/Other Lands		**135**
	TOTAL PROVINCE HARVEST		**28,638**
Central Coast Range Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	159
	Tongass National Forest	1950s	910
	Tongass National Forest	1960s	3,574
	Tongass National Forest	1970s	1,087
	Tongass National Forest	1980s	164
	Tongass National Forest	1990s	586
	Total NFS Lands		**6,479**
State of Alaska	State of Alaska	1970s–1980s	1,421
	Total State Lands		**1,421**
Private & Other Lands	Other Land Owners	--	13
	Total Private/Other Lands		**13**
	TOTAL PROVINCE HARVEST		**7,913**
Etolin Island and Vicinity Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	2,565
	Tongass National Forest	1950s	1,728
	Tongass National Forest	1960s	2,593
	Tongass National Forest	1970s	12,666
	Tongass National Forest	1980s	8,964
	Tongass National Forest	1990s	6,532
	Tongass National Forest	2000s	1,016
	Tongass National Forest	--	4
	Total NFS Lands		**36,066**
State of Alaska	State of Alaska		3,764
	Total State Lands		**3,764**

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
Private & Other Lands	Wrangell		643
	Other Land Owners		68
	Total Private/Other Lands		**712**
	TOTAL PROVINCE HARVEST		**40,542**
North Central Prince of Wales Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	1,772
	Tongass National Forest	1950s	11,460
	Tongass National Forest	1960s	50,216
	Tongass National Forest	1970s	47,190
	Tongass National Forest	1980s	35,623
	Tongass National Forest	1990s	33,507
	Tongass National Forest	2000s	4,343
	Tongass National Forest	--	15
	Total NFS Lands		**184,125**
State of Alaska	State of Alaska	--	15,384
	Total State Lands		**15,384**
Private & Other Lands	Hydaburg	--	48
	Kasaan	--	16
	Thorne Bay	--	180
	Haida Village Corporation	1980s–1990s	2,465
	Kavilco Village Corporation	1990s	11,811
	Klawock-Heenya Village Corporation	1980s–1990s	12,073
	Sealaska Regional Corporation	<1980	3,240
	Sealaska Regional Corporation	1980s	32,741
	Sealaska Regional Corporation	1990s	24,452
	Sealaska Regional Corporation	2000s	22,835
	Shaan Seet Village Corporation	1980s–1990s	6,858
	Other Private Land Owners	--	3,304
	Total Private/Other Lands		**120,022**
	TOTAL PROVINCE HARVEST		**319,531**
Revilla Island/Cleveland Peninsula Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	2,181
	Tongass National Forest	1950s	6,812
	Tongass National Forest	1960s	6,389
	Tongass National Forest	1970s	8,443
	Tongass National Forest	1980s	5,827
	Tongass National Forest	1990s	11,477
	Tongass National Forest	2000s	4,470
	Tongass National Forest	--	60
	Total NFS Lands		**45,658**
State of Alaska	State of Alaska		4,043
	Total State Lands		**4,043**
Private & Other Lands	Ketchikan	--	39
	Sealaska Regional Corporation	<1980	151
	Cape Fox Village Corporation	1980s–1990s	13,266
	Other Land Owners	1980s–1990s	7,406
	Total Private/Other Lands		**20,862**
	TOTAL PROVINCE HARVEST		**70,563**

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
Southern Outer Islands Biogeographic Province			
Tongass National Forest	Tongass National Forest	1950s	569
	Tongass National Forest	1960s	3,737
	Tongass National Forest	1970s	3,058
	Tongass National Forest	1980s	5,737
	Tongass National Forest	1990s	1,683
	Tongass National Forest	2000s	354
	Total NFS Lands		**15,138**
State of Alaska	State of Alaska	1990s	2,102
	Total State Lands		**2,102**
Private & Other Lands	Haida Village Corporation	--	4
	Klawock-Heenga Village Corporation	--	366
	Sealaska Regional Corporation	2000s	31
	Shaan Seat Village Corporation	1980s–1990s	3,324
	Total Private/Other Lands		**3,725**
	TOTAL PROVINCE HARVEST		**20,965**
Dall Island and Vicinity Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	77
	Tongass National Forest	1950s	79
	Tongass National Forest	1960s	213
	Total NFS Lands		**369**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	Haida Village Corporation	1980s–1990s	365
	Klukwan Villa Village Corporation	1980s–1990s	17,265
	Sealaska Regional Corporation	<1980	630
	Sealaska Regional Corporation	1980s	4,549
	Sealaska Regional Corporation	1990s	1,831
	Sealaska Regional Corporation	2000s	8,011
	Other Land Owners	--	265
	Total Private/Other Lands		**32,916**
	TOTAL PROVINCE HARVEST		**33,285**
South Prince of Wales Island Biogeographic Province			
Tongass National Forest	Tongass National Forest	<1950	410
	Tongass National Forest	1950s	60
	Tongass National Forest	1960s	467
	Tongass National Forest	1970s	368
	Tongass National Forest	1980s	276
	Tongass National Forest	1990s	994
	Tongass National Forest	2000s	716
	Tongass National Forest	--	1
	Total NFS Lands		**3,292**
State of Alaska	State of Alaska	--	351
	Total State Lands		**351**
Private & Other Lands	Sealaska Regional Corporation	<1980	79
	Sealaska Regional Corporation	2000s	79
	Haida Village Corporation	1980s–1990s	589
	Kootznoowoo Village Corporation	1980s–1990s	13,491
	Other Land Owners	--	25
	Total Private/Other Lands		**14,184**

Table I-1
Acreage of Past Harvest by Landowner

Ownership Category	Landowner	Est. Approx. Harvest Decade	Acres Harvested
	TOTAL PROVINCE HARVEST		**17,827**
North Misty Fiords Biogeographic Province			
Tongass National Forest	Tongass National Forest	1950s	81
	Tongass National Forest	1960s	960
	Tongass National Forest	1980s	68
	Tongass National Forest	--	260
	Total NFS Lands		**1,370**
State of Alaska	State of Alaska	--	818
	Total State Lands		**818**
Private & Other Lands	Sealaska Regional Corporation	1980s	16
	Sealaska Regional Corporation	2000s	8
	Total Private/Other Lands		**23**
	TOTAL PROVINCE HARVEST		**2,211**
South Misty Fiords Biogeographic Province			
Tongass National Forest	**Total NFS Lands**		**0**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	**Total Private/Other Lands**		**0**
	TOTAL PROVINCE HARVEST		**0**
Ice Fields Biogeographic Province			
Tongass National Forest	Tongass National Forest	1960s	1,732
	Tongass National Forest	1970s	1,311
	Tongass National Forest	1980s	996
	Tongass National Forest	2000s	5
	Total NFS Lands		**4,044**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	**Total Private/Other Lands**		**0**
	TOTAL PROVINCE HARVEST		**4,044**
Glacier Bay/Fairweather Range Biogeographic Province			
Tongass National Forest	**Total NFS Lands**		**0**
State of Alaska	**Total State Lands**		**0**
Private & Other Lands	Glacier Bay N.P.	--	200
	Total Private/Other Lands		**200**
	TOTAL PROVINCE HARVEST		**200**
Chilkat River Complex Biogeographic Province			
Tongass National Forest	**Total NFS Lands**		**0**
State of Alaska	State of Alaska	1980s–2000s	17,069
	Total State Lands		**17,069**
Private & Other Lands	BLM	--	136
	Glacier Bay N.P.	--	568
	Private/Other	--	2,864
	Total Private/Other Lands		**3,568**
	TOTAL PROVINCE HARVEST		**20,637**

Part II – Statistics on the Alaska Forest Resources and Practices Act Implementation and State Timber Sales in Southeast Alaska

Part II presents a tabular summary of information provided by the State of Alaska Department of Natural Resources, Division of Forestry. Statistical information is not available for harvests prior to the Alaska Forest Resources and Practices Act (AFRPA), nor for some years since the Act. Tables II-1 through II-5 provide statistics regarding the AFRPA, as it has been applied to private and other lands in Southeast Alaska. Tables II-6 through II-18 provide information on State timber sales in Southeast Alaska.

Table II-1
Forest Practices Act – Summary Statistics for Southeast Alaska, 1991–1998

	1991	1992	1993	1994	1995	1996	1997	1998
New Notifications								
SSE	103	117	145	124	131	146	123	87
NSE	2	0	8	0	3	1	0	0
TOTAL	**105**	**117**	**153**	**124**	**134**	**147**	**123**	**87**
Harvest Acreage in New Notifications Received								
SSE	21,016	37,971	28,769	33,038	22,745	30,509	26,034	16,291
NSE	110	0	824	100	227	80	0	0
TOTAL	**21,126**	**37,971**	**29,593**	**33,138**	**22,972**	**30,589**	**26,034**	**16,291**
# Inspections								
SSE	146	134	98	119	93	90	42	56
NSE	2	0	8	1	5	0	0	0
TOTAL	**148**	**134**	**106**	**120**	**98**	**90**	**42**	**56**
# Variation Trees Reviewed (=approved, denied, and other (e.g., withdrawn)								
SSE	350	1,344	3,581	1,660	1,054	1,116	2,571	4,113
NSE	83	0	0	0	0	0	0	0
TOTAL	**433**	**1,344**	**3,581**	**1,660**	**1,054**	**1,116**	**2,571**	**4,113**

Table II-2
Forest Practices Act – Summary Statistics for Southeast Alaska, 1999–2006

	1999	2000	2001	2002	2003	2004	2005	2006
New Notifications								
SSE	79	104	36	43	51	47	43	51
NSE	0	0	19	10	6	6	5	3
TOTAL	**79**	**104**	**55**	**53**	**57**	**53**	**48**	**54**
Harvest Acreage in New Notifications Received								
SSE	11,705	20,542	5,599	7,667	12,197	30,488	27,733	37,313
NSE	0	3,779	9,619	5,839	1,780	1,969	344	413
TOTAL	**11,705**	**24,321**	**15,218**	**13,506**	**13,977**	**32,457**	**28,077**	**37,726**
# Inspections								
SSE	32	89	44	43	58	35	59	20
NSE	0	0	25	24	11	9	13	9
TOTAL	**32**	**89**	**69**	**67**	**69**	**44**	**72**	**29**
# Variation Trees Reviewed (=approved, denied, and other (e.g., withdrawn)								
SSE	1,522	330	103	58	336	948	411	0
NSE	0	0	144	20	199	17	0	0
TOTAL	**1,522**	**330**	**247**	**78**	**535**	**965**	**411**	**0**

Table II-3
Forest Practices Act – Summary Statistics for Southeast Alaska, 2007–2014

	2007	2008	2009	2010	2011	2012	2013	2014
New Notifications								
SSE	34	27	32	61	54	32	14	14
NSE	7	2	8	8	6	3	5	0
TOTAL	41	29	40	69	60	33	19	14
Harvest Acreage in New Notifications Received								
SSE	10,263	18,988	7,752	17,532	5,577	8,373	4,717	1,724
NSE	1,039	211	1,858	1,740	2,241	6,379	40	0
TOTAL	11,302	19,199	9,610	19,272	7,818	14,752	4,757	1,724
# Inspections (Department of Forestry)								
SSE	39	42	29	37	18	6	20	31
NSE	8	5	3	1	2	1	3	3
TOTAL	47	47	32	38	18	7	23	34
# Variation Trees Reviewed (=approved, denied, and other (e.g., withdrawn)								
SSE	0	538	222	14	6	46	312	202
NSE	0	0	0	0	0	0	243	0
TOTAL	0	538	222	14	6	46	555	202

NR=Not reported in ADOF Annual Report

Table II-4
Forest Practices Act – Road Miles Summary for State of Alaska, 1997–2006

Road Miles Notified	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
SSE	156	104	101	130	39	58	71	69	34	25
NSE	0	0	0	0	104	20	10	3	4	3
Mat-Su/SW	13	3	28	0	0	3	5	13	12	46
Kenai-Kodiak	195	50	146	44	65	146	96	57	25	11
COASTAL	364	157	275	174	208	227	182	142	75	85
Fairbanks	1	0	0	3	0	1	7	3	0	0
Delta	0	0	0	0	0	0	0	0	4	0
Tok	3	0	0	0	0	0	0	60	58	0
Copper R.	7	5	0	0	0	0	0	46	0	0
NORTHERN	11	5	0	3	0	1	7	109	62	0
TOTAL	**375**	**162**	**275**	**177**	**208**	**228**	**189**	**251**	**136**	**85**

Table II-5
Forest Practices Act – Road Miles Summary for State of Alaska, 2007-2014

Road Miles Notified	2007	2008	2009	2010	2011	2012	2013	2014
SSE	23	23	30	55	28	15	15	16
NSE	1	0	0	0	10	16	0.3	0
Mat-Su/SW	2	1	0	0	61	64	0	0
Kenai-Kodiak	24	16	3	66	0	0	6	44
COASTAL	50	40	33	122	99	95	21	60
Fairbanks	0	0	0	3	0	6	4	2
Delta	0	1	0	0	0	0	0	0
Tok	0	0	0	0	27	31	0	1
Copper R.	0	0	0	0	1	0	0	0
NORTHERN	0	1	0	3	28	37	4	3
TOTAL	**50**	**41**	**33**	**124**	**127**	**132**	**26**	**63**

Table II-6
State Timber Sales Sold

	Volume sold (MBF[1])		
Year	**North-Central**	**South-Central**	**Southeast**
1983	5,964	51,985	54
1984	14,735	4,445	1,907
1985	12,182	4,698	3,298
1986	4,450	2,587	424
1987	9,352	3,081	7,174
1988	16,510	4,513	6,452
1989	13,872.5	1,990	5,738
1990	14,317.9	3,398.8	18,064.5
1991	9,519	565	72.2
1992	20,613	3,306	186
1993	17,208	1,020	9,065
1994	1,569	5,564	8,903
1995	107,521	28,332	4,455
1996	182,131	9,368	1,109
FY97	15,528	129	5,942
FY98	13,211	17,754	14,623
FY99	6,836	2,803	4,797
FY00	6,637	5,774	8,365
FY01	6,064	1,857	954
FY02	4,207	1,333	11,340
FY03	4,813	3,779	4,094
FY04	2,708	957	8,064
FY05	5,594	4,934	16,003
FY06	12,478	6,638	10,777
FY07	6,420	30,110	24,437
FY08	7,163	4,316	4,059
FY09	11,036	1,451	5,597
FY10	5,445	2,460	4,626
FY11	7,281	3,913	12,865
FY12	8,815	11,067	1,346
FY13[2]	2,662	1,918	4,976
FY14	19,621	379	8,512

[1] Converted from Mcf.
[2] FY13 values are timber volume offered.
Note: data collection changed from calendar year (CY) to fiscal year (FY) with some overlap between 1996 and FY97.

Table II-7
FY 97 State Timber Sales Sold – Southeast

Area	Sale Name	Acres	Sale Date	Use	Vol MBF
Ketchikan	Ronald Brown	6	7/22/1996	local	37
Ketchikan	Pat Richter	4	8/21/1996	local	43
Ketchikan	Ernie Eads	9	8/22/1996	local	34
Ketchikan	Last Chance Enterprises	5	1/13/1997	local	55
Ketchikan	Ernie Eads	1	2/3/1997	local	8
Ketchikan	Pat Richter	1	3/3/1997	local	4
Ketchikan	Warren Jones	2	3/7/1997	local	46
Ketchikan	Norman Canaday	5	3/18/1997	local	14
Ketchikan	Ralph Porter	1	5/26/1997	local	34
Ketchikan	Daryl Tinkness	1	6/16/1997	local	19
Ketchikan	Ernie Eads	9	6/9/1997	local	228
Ketchikan	Pete Smit	8	5/30/1997	local	54
SUBTOTAL	**12**	**52**			**576**
Haines	Pond View	22	10/14/1996	local	249
SUBTOTAL	**1**	**22**			**249**
Juneau	Shadow	45	7/26/1996	Export	1,455
Juneau	Corner	12	9/30/1996	local	141
Juneau	Blackheart	14	11/7/1996	local	425
Juneau	Nufie	79	2/11/1997	local	1,700
Juneau	Thumb Nail	45	2/11/1997	local	802
Juneau	Pt. Frederick #6	9	3/7/1997	Export	446
Juneau	Silas Triangle	6	6/30/1997	mixed	106
Juneau	Magazine Road	3	6/30/1997	Export	42
SUBTOTAL	**8**	**213**			**5,117**

Table II-8
State Timber Sales Sold – FY 98 – Southeast

Area	Sale Name	Acres	Sale date	Use	Vol MBF
Ketchikan	Fleenor	5	7/25/1997	local	178
Ketchikan	Sneather	0	10/21/1997	local	7
Ketchikan	Whale pass assoc. I	0	11/3/1997	local	55
Ketchikan	Whale pass assoc. Ii	0	2/26/1998	local	67
Ketchikan	Tinkess	1	11/14/1997	local	5
Ketchikan	Trumble	1	11/24/1997	local	1
Ketchikan	Fleenor #2	8	3/6/1998	local	147
Ketchikan	Gray	1	12/8/1997	local	2
Ketchikan	Smith	3	PENDING	local	16
Ketchikan	Eads	2	5/12/1998	local	44
Ketchikan	Hammar	3	5/12/1998	local	21
Ketchikan	Hollis Comm. Council	0	5/12/1998	local	74
Ketchikan	Kitkun	160	6/29/1998	local	4,300
Subtotal	**13**	**184**			**4,917**
NSE	Thunder Creek	565	7/15/1997	export	4,331
NSE	Buster Benson	7	8/18/1997	local	80
NSE	Highline	8	9/2/1997	local	244
NSE	Alaska Power & Tele.	0	9/18/1997	local	6
NSE	Fred Strong	4	10/9/1997	local	32
NSE	Scott Rossman	5	5/8/1998	local	23
NSE	Scott Rossman #2	2	5/28/1998	local	12
NSE	Scott Rossman #3	2	6/15/1998	local	58
NSE	Banana Pt. Salvage	2	7/9/1997	local	40
NSE	Roy's Breakdown	41	7/23/1997	local	1,339
NSE	Silas	14	7/23/1997	local	466
NSE	Roy Sokol Salvage	1	7/29/1997	local	9
NSE	Thumbnail Unit 3	2	9/12/1997	local	229
NSE	Thumbnail ii	29	9/15/1997	local	607
NSE	Mitkof Hwy Row	1	11/21/1997	local	16
NSE	Hemlock Salvage	0	11/21/1997	local	9
NSE	Shadow Salvage	0	11/24/1997	export	120
NSE	Hermit Creek	4	12/22/1997	local	102
NSE	Pt. Frederick #6	0	6/5/1998	local	58
NSE	Eastern Passage I	83	2/23/1998	local	1,681
NSE	Nufie II	19	6/9/1998	local	244
Subtotal	**21**	**788**			**9,706**

Table II-9
State Timber Sales Sold – FY 99 Coastal Region

Area	Sale Name	Acres	Sale Date	MBF	Use
Ketchikan	Fleenor No. 3	6	07/27/98	125	Local
Ketchikan	Small #2	4	08/17/98	123	Local
Ketchikan	Small #3	3	09/28/98	68	Local
Ketchikan	Small #4	6	11/30/98	382	Local
Ketchikan	Small #5	4	11/30/98	308	Local
Ketchikan	Small #6	1	11/24/98	18	Local
Ketchikan	Small #7	3	12/11/98	80	Local
Ketchikan	Small #8	3	12/24/98	67.7	Local
Ketchikan	Small #9	0.1	03/26/99	10	Local
Ketchikan	Small #10	9.9	05/19/99	357	Local
Ketchikan	Small #11	4.7	06/01/99	150	Local
Subtotal	**11**	**44.7**		**1,688.7**	
NSE	Thumbnail III	74	09/21/98	1,613	Local
NSE	Eastern Passage I	52	06/01/99	1,429	Local
NSE	McCormack Creek Rd. Project ROW	0	08/03/98	37.25	Local
NSE	Del Mikkelsen	5	12/03/98	29	Local
Subtotal	**5**	**131**		**3,108**	

Table II-10
State Timber Sales Sold – FY 00 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Mcf	Use
Ketchikan	SE-959K	1	07/13/99	3		Local
Ketchikan	Coffman Cove	214	07/27/99	5,515		Local
Ketchikan	SE-960K	1	09/21/99	14		Local
Ketchikan	SE-962K	5	09/21/99	117		Local
Ketchikan	SE-1019K	1	03/13/00	12		Local
Ketchikan	SE-1021K	5	04/07/00	491		Local
Ketchikan	SE-970K	2	05/22/00	27		Local
Ketchikan	SE-971K	1	06/08/00	8		Local
Ketchikan	SE-1020K	1		34		Local
Ketchikan	SE-972K	5		468		Local
Ketchikan	SE-973K	8		257		Local
Subtotal	**11**	**244**		**6,945.9**		
NSE	Small #1, SE-474J	3	07/19/99	139		Local
NSE	Eastern Passage I, Unit 4	24	12/30/99	656		Local
NSE	Devils Elbow	2	07/19/99	24		Local
NSE	Porcupine Snow		12/22/99	41		Local
NSE	High Extension	8	02/01/00	49		Local
NSE	Porcupine Wings	24	03/28/00	419		Any
NSE	Porcupine Heights	5	04/05/00	38		Local
NSE	Roy's Favorite	3	06/02/00	53		Local
Subtotal	**8**	**69**		**1,419**		

Table II-11
State Timber Sales Sold – FY 01 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Purchaser	Use
SSE	SE-979-K	1	01/12/01	20	Jack Dupertuis	local
SSE	SE-983-K	2	03/14/01	28	Sealaska	export
SSE	SE-1020-K	2	10/16/00	34	Naukati Adventures	local
SSE	SE-976-K	7	10/03/00	391	Pat Richter	local
SSE	SE-980-K	0	12/08/00	10	Evergreen Timber	export
SSE	SE-981-K	2	12/08/00	30	Hummer Enterprises	local
SSE	SE-982-K	4	05/16/01	80	B&W Lumber	local
SSE	SE-984-K	0	05/17/01	10	Hummer Enterprises	local
Subtotal	**8**	**17**		**603**		
NSE	Ski Hill	5	07/29/00	34	The Stump Co.	local
NSE	37Mile	6	04/10/01	104	The Stump Co.	local
NSE	Chilkat Lake	2	04/10/01	19	Bob Jensen	local
NSE	Knob 4	2	04/10/01	28	Tophat Logging	local
NSE	Birch Hill	1	04/30/01	9	Eager Beaver	local
NSE	Knob Extension	1	06/18/01	1	Sage Thomas	local
NSE	Knobs Backside	5	06/25/01	24	Carl Smith	local
NSE	Half Load	1	01/18/01	11	Hidden Valley	local
NSE	Knob 3 Extension	2	02/05/01	16	Green Diamond	local
NSE	Daisy	3	02/23/01	65	Hidden Valley	local
NSE	SE-741	1	02/26/01	11	Don Peterson	local
NSE	Three Peaks	2	03/12/01	20	Green Diamond	local
NSE	Knob ABC	2	03/21/01	9	Green Diamond	local
Subtotal	**13**	**33**		**351**		

Table II-12
State Timber Sales – FY 02 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	Naukati West	70	04/29/02	2,685	V-A
SSE	East Pass #5	50	04/01/02	1,110	V-A
SSE	Tuxecan	134	04/15/02	4,018	V-A
SSE	Richter #2	4	07/09/01	187	V-A
SSE	Richter #3	3	02/08/02	90	V-A
SSE	Jones 1	0	09/18/01	13	V-A
SSE	Sunde 1	0	05/30/02	7	V-A
SSE	Clark Bay Group	3	11/02/01	26	V-A
SSE	Gildersleeve1	1	09/17/01	24	V-A
SSE	Thorne Bay #1	80	09/14/01	2,539	V-A
Subtotal	**10**	**345**		**10,699**	
NSE	37.5 Mile Fall	4	10/25/01	51	V-A
NSE	37-Mile Addition	4	07/24/01	28	V-A
NSE	Daisy Salvage	1	10/16/01	31	V-A
NSE	Birch Road A	2	07/13/01	17	V-A
NSE	Birch Pole	1	01/08/02	3	V-A
NSE	Backside 2	3	07/10/01	19	V-A
NSE	Daisy 2	7	05/24/02	117	V-A
NSE	Birch road	2	07/06/01	10	V-A
NSE	Daisy Dead	2	06/06/02	9	V-A
NSE	LS Mountain	10	07/09/01	357	V-A
Subtotal	**10**	**36**		**641**	

Table II-13
State Timber Sales Sold – FY 03 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	Yatuk Creek #1	4	10/15/02	179	VA
SSE	Yatuk Creek #2	5	10/15/02	228	VA
SSE	Yatuk Creek #3	2	10/15/02	80	VA
SSE	Yatuk Creek #4	4	10/15/02	41	VA
SSE	Yatuk Creek #5	6	10/15/02	205	VA
SSE	Yatuk Creek #6	4	10/15/02	112	VA
SSE	Yatuk Creek #7	4	10/15/02	308	VA
SSE	Yatuk Creek #8	3	10/15/02	151	VA
SSE	Yatuk Creek #9	64	01/06/03	2,064	VA
SSE	Frederick Rd. #1	4	10/14/02	125	VA
SSE	Thorne Bay Burn #4	2	11/01/02	53	VA
SSE	Thorne Bay Burn #5	2	11/01/02	40	VA
SSE	Sandy Road #1	6	11/01/02	87	VA
SSE	Sunde #2	<1	05/06/03	10	VA
Subtotal	**14**	**110**		**3,683**	
NSE	Starigavin ROW NSE-1026	1	09/27/02	6	VA
NSE	Tidy Stump SE-759	1	08/23/02	25	VA
NSE	Farm Wood	3	01/17/03	50	VA
NSE	Jensen Skid Road	3	02/18/03	19	VA
NSE	Hemlock Switch	5	02/10/03	67	VA
NSE	Spruce Addition	1	02/04/03	10	VA
NSE	20 Mile Xing	2	02/26/03	13	VA
NSE	Half Dozen	1	02/28/03	4	VA
NSE	Wolf Pack	1	03/10/03	13	VA
NSE	Chilkat Lake Road	2	03/27/03	5	VA
NSE	Spruce Log	2	01/03/03	10	VA
NSE	Hemlock Home	1	01/13/00	13	VA
NSE	Porcupine Clean	1	11/04/02	11	VA
NSE	Farm Birch	2	12/17/02	6	VA
NSE	Wolf Skid	2	04/04/03	4	VA
NSE	Spruce Tap	2	05/05/03	7	VA
NSE	Hemlock Corner	2	05/05/03	41	VA
NSE	37 Mile Patch	1	05/19/03	10	VA
NSE	38 Mile Draw	9	05/21/03	84	VA
NSE	Daisy Cleanup	3	06/13/03	64	VA
Subtotal	**20**	**45**		**462**	

Table II-14
State Timber Sales Sold – FY 04 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	Boy Scout	19	08/21/03	990.18	local
SSE	Intertie ROW	n/a	07/21/03	172.00	local
SSE	Coffman Cove R	1	08/18/03	40.40	local
SSE	Kasaan 1	149	10/21/03	3,238.00	local
SSE	East Naukati	135	05/06/04	3,164.00	local
SSE	Thorne Bay ROW	1	12/12/03	42.43	export
Subtotal	**6**	**305**		**7,647.01**	
NSE	Deats 1-N. Douglas	1	03/14/04	1.00	local
NSE	Little Salmon Mt.	8	10/03/03	357.00	local
NSE	38-mile Draw 5	1	10/02/03	10.00	local
NSE	Spruce Rose	1	07/08/04	11.00	local
NSE	Big Hemlock	2	07/23/03	34.00	local
NSE	Boulder Spruce	3	08/10/03	52.00	local
NSE	Boulder Spruce 2	10	10/30/03	24.00	local
NSE	38 Mile Pocket	1	11/25/03	33.00	local
NSE	Stretch Time	2	12/10/03	29.00	local
NSE	Ice Road	2	02/06/04	28.00	local
NSE	Boulder 6 x 6	1	05/03/04	21.00	local
NSE	Stretch Melt	2	06/10/04	31.00	local
NSE	Nataga Skid	3	06/10/04	5.24	local
NSE	Stretch	6	11/28/03	53.00	local
NSE	38 Mile Extension	1	12/09/03	22.00	local
Subtotal	**15**	**44**		**711.24**	

Table II-15
State Timber Sales Sold – FY 05 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	2058 Road 1/Jones #2	3	07/09/04	36	local
SSE	2058 Road 2/Jones #3	2	07/09/04	28	local
SSE	2058 Road 4/Jones #1	2	07/09/04	19	local
SSE	2058 Road 5/Thorne Bay WP	6	07/27/04	107	local
SSE	2058 Road 6/Thorne Bay WP	3	07/21/04	65	local
SSE	Sandy Road 2	20	08/20/04	419	local
SSE	Coffman Cove ROW #2	1	08/23/04	8	local
SSE	Thorne Bay 2	130	10/30/04	4130	local
SSE	Control Lake 1-mid	112	11/15/04	3627	local
SSE	Shady Tie-in	40	11/29/2004	987	local
SSE	Kasaan 6	6	11/17/04	179	local
SSE	Control Lake 2	5	12/03/04	121	local
SSE	Control L. 3	8	12/03/04	189	local
SSE	Control L. 4	17	12/09/04	491	local
SSE	Kasaan 2	108	12/17/04	4028	local
SSE	Mt. Point #1	3	05/12/05	149	export
SSE	Choker Setter Cir.	1	06/28/05	23	local
Subtotal	**17**	**466**		**14,606**	
NSE	Boulder Load	1	7/6/2004	8	local
NSE	Boulder Six X Six 2	1	7/12/2004	8	local
NSE	Alder Rerun	2	7/23/2004	27	local
NSE	Alder Rerun 2	2	9/1/2004	41	local
NSE	Nataga Skid 2	1	8/12/2004	17	local
NSE	Alder III	2	9/17/2004	59	local
NSE	Porcupine Mining	1	9/10/2004	20	local
NSE	Porcupine Mining II	1	9/10/2004	23	local
NSE	Klehini U14 Corner	2	12/11/2004	32	local
NSE	Porcupine Mining III	1	10/15/2004	13	local
NSE	Takshanuk Trail	3	11/7/2004	14	local
NSE	37 Mile Ridge	2	11/11/2004	15	local
NSE	Porcupine Low Road	1	11/12/2004	10	local
NSE	Battleship Island	1	12/12/04	2	local
NSE	West Herman 2	9	1/3/2005	185	local
NSE	37 Mile Bowl	2	1/4/2005	27	local
NSE	37 Mile Bowl 2	1	1/24/2005	38	local
NSE	Purlin	1	02/16/05	1	local
NSE	Pondside	2	02/28/05	31	local
NSE	West Draw	2	03/14/05	21	local
NSE	West Herman 1	23	03/01/05	594	local
NSE	West Draw #2	1	04/01/05	21	local
NSE	Knobs Rerun	2	05/21/05	49	local
NSE	Fabrizio Mining	6	05/27/05	82	local
NSE	Birch Reload	1	05/18/05	6	local
NSE	Nataga Sky	1	06/10/05	22	local
NSE	Dunit Bench	2	06/20/05	31	local
Subtotal	**27**	**74**		**1,397**	

Table II-16
State Timber Sales Sold – FY 06 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	2058 Rd 8 small/Gutchi Creek #2	5	08/02/05	108	local
SSE	SSE 1230/2058 Rd 8 mid	18	10/01/05	588	local
SSE	Eastern Passage units 6-12	395	11/01/05	9110	local
SSE	Steep Drive	1	10/19/05	20	local
SSE	South Thorne Arm #1	0	10/01/05	2	local
SSE	Leask Lake Sort Yard	5	09/22/05	60	export
SSE	Kasaan 6	6	3/28/2006	179	local
Subtotal	**7**	**430**		**10,067**	
NSE	Tatshunak Trail	1	8/2/2005	5	local
NSE	Knobs B-C Timber	1	7/25/2005	16	local
NSE	Nataga Stretch	18	7/25/2005	173	local
NSE	Glacier Salvage	10	10/1/2005	100	local
NSE	Spruce Corner	1	10/3/2005	27	local
NSE	KB West Spur 1	10	10/10/2005	144	local
NSE	1424 Hemlock Ridge	1	12/29/2005	46	local
NSE	1425 Porcupine Salvage	3	1/6/2006	25	local
NSE	1426 Billy Goat	3	1/6/2006	24	local
NSE	1427 Farm Special	5	2/1/2006	38	local
NSE	1428 Farm Spur 2	3	03/15/06	37	local
NSE	1429 Billy Goat 2	3	04/11/06	55	local
NSE	Boulder Firewood	1	04/11/06	10	local
NSE	Porcupine Firewood	2	06/26/06	10	local
Subtotal	**14**	**62**		**710**	

Table II-17
State Timber Sales Sold – FY 07 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Use
SSE	Bostwick #1	362	11/29/06	12,687	local
SSE	2058 Road Small	6	07/10/06	182	local
SSE	2058 Road Small	4	07/10/06	98	local
SSE	Control Lake Fir	1	08/25/06	0	local
SSE	Leask Lake Aide	1	08/25/06	19	research
SSE	South Thorne Bay	128	07/02/06	3,330	local
SSE	D-1 #1	1	04/02/07	7	export
SSE	20 Road	26	05/29/07	5,145	local
SSE	Whipple Creek	26	04/02/07	2,334	export
SSE	Bostwick Trail Lo	0	6/20/2007	13	local
Subtotal	**10**	**555**		**23,815**	
NSE	KB2	1	7/28/2006	17	local
NSE	Cabin Log	4	8/10/2006	41	local
NSE	Spur Road	1	8/10/2006	12	local
NSE	West Herman 3	4	8/25/2006	105	local
NSE	Porcupine Spruce	3	9/12/2006	132	local
NSE	Hemlock Spruce	3	9/12/2006	55	local
NSE	KB3	6	10/26/2006	42	local
NSE	Winds	2	11/2/2006	119	local
NSE	Porucpine Road	1	11/7/2006	5	local
NSE	Warm Springs	5	10/01/06	1	local
NSE	Hidden	2	01/03/07	16	local
NSE	35 Mile Snow Co	10	04/09/07	9	local
NSE	Sunlight Salvage	2	05/11/07	45	local
NSE	Ski Hill	3	06/05/07	23	local
Subtotal	**14**	**47**		**622**	

Table II-18
State Timber Sales Sold – FY 08 through 14 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Product
	Fiscal Year 2008				
SSE	Java	44	12/14/2007	1,325	Sawlog
SSE	Gutchi Creek	24	12/14/2007	34	Sawlog
SSE	Squirrel	72	04/07/2008	-	Sawlog
SSE	Kasaan Small Sale #2	5	04/16/2008	26	Sawlog
SSE	Kasaan Small Sale #3	6	04/16/2008	8	Utility
SSE	Indian Creek	72	07/14/2008	111	Sawlog
SSE	Limestone Place	1	07/14/2008	0.4	Sawlog
SSE	Mountain Pt. #2	2	08/13/2008	14	Sawlog
SSE	Jinhi Bay	10	08/13/2008	54	Utility
SSE	Kasaan Small Sale	5	09/17/2008	4	Utility
Subtotal	**10**	**241**		**1,576**	
NSE	Old Highway 3	4	10/24/2007	21	Sawlog
NSE	Revetment	3	01/18/2008	10	Sawlog
NSE	Old Highway #4	2	04/16/2008	1	Utility
NSE	Old Highway #5	2	05/09/2008	16	Sawlog
NSE	Sunshine LSM Salvage	2	07/15/2008	100	Utility
NSE	KB 6	14	07/21/2008	12	House Log
NSE	Billy Goat Cleanup	2	08/06/2008	29	Sawlog
NSE	Roads End	5	08/14/2008	95	Utility
NSE	West Herman 4	5	09/04/2008	50	Sawlog
NSE	Glacier Side Salvage	9	09/15/2008	100	Sawlog
NSE	KB Firewood	8	09/25/2008	2	Utility
Subtotal	**11**	**52**		**436**	
	Fiscal Year 2009				
SSE	Squirrel Export	15	01/06/2009	137	Sawlog
SSE	Kasaan #2 Export	10	02/17/2009	105	Sawlog
SSE	Jinhi Bay Export	-	02/17/2009	93	Sawlog
SSE	Java Export	-	02/18/2009	0.2	Sawlog
SSE	20 Road Export	-	02/18/2009	47	Sawlog
SSE	S.Thorne Bay #1 Export	-	03/04/2009	4	Sawlog
SSE	Heceta #2	1	04/02/2009	1	Sawlog
SSE	S. Thorne Bay #2	107	06/10/2009	2,149	Sawlog
SSE	Indian Creek - Export	-	07/02/2009	185	Sawlog
Subtotal	**9**	**133**		**2,720**	
NSE	Gustavus Gravel FC	1	10/20/2008	8	Sawlog
NSE	Big Spruce	1	03/03/2009	3	Sawlog
NSE	KB-7	10	07/02/2009	25	Sawlog
NSE	Jim Nail Mining Claim	2	08/15/2009	5	House Log
NSE	Porcupine Bear II	-	09/02/2009	13	Sawlog
Subtotal	**5**	**14**		**54**	

Table II-18
State Timber Sales Sold – FY 08 through 14 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Product
	Fiscal Year 2010				
SSE	Kasaan #7 Export	1	11/07/2009	18	Sawlog
SSE	Zarembo	175	12/17/2009	1,803	Sawlog
SSE	Kasaan Closout	21	04/26/2010	22	Utility
SSE	S. Thorne Bay #2 Export	-	04/26/2010	242	Sawlog
SSE	Bradford Yellow Cedar	-	08/05/2010	3	Sawlog
SSE	Acorn	5	09/22/2010	73	Sawlog
Subtotal	**6**	**202**		**2,161**	
NSE	Glacier Creek Rd Salvage	5	10/02/2009	100	Utility
NSE	Elbow	5	10/20/2009	100	Utility
NSE	Porcupine Bear III	2	10/25/2009	2	Sawlog
NSE	Flower	5	10/25/2009	100	Utility
NSE	State 38	3	12/09/2009	12	Sawlog
NSE	38 Mile South	3	04/28/2010	2	House Log
NSE	35 Times	2	07/15/2010	10	Utility
NSE	West Herman Cleanup	1	07/15/2010	5	Utility
Subtotal	**8**	**26**		**331**	
	Fiscal Year 2011				
SSE	D1 #2	7	02/01/2011	9	Utility
SSE	D1 Heli-Dup1	8	02/17/2011	353	Sawlog
SSE	D1 Heli-Dupe2	8	02/18/2011	360	Sawlog
SSE	R/W Spruce Log	-	03/18/2011	4	Sawlog
SSE	North Thorne Bay #3	122	04/22/2011	3,063	Sawlog
SSE	Indian Creek #2	230	06/21/2011	11	Sawlog
SSE	East Pass Units 9-12	194	08/28/2011	250	Sawlog
Subtotal	**7**	**569**		**4,050**	
NSE	39 Mile ROW	2	11/17/2010	9	House Log
NSE	37.5 Salvage	5	12/17/2010	50	Utility
NSE	North 38	1	03/25/2011	3	House Log
NSE	Bear Creek	2	05/13/2011	10	House Log
NSE	Billy Goat Clean Up #2	1	06/13/2011	40	Utility
NSE	Assisted Migration	4	06/17/2011	19	Sawlog
NSE	Billy Goat Cleanup #3	1	06/27/2011	1	House Log
NSE	Bear Creek 2	3	07/07/2011	13	Utility
NSE	Jim Nail Salvage	1	07/18/2011	50	Utility
NSE	Bear Creek SMZ	1	07/20/2011	11	Sawlog
NSE	35 Times 2	2	07/21/2011	10	Sawlog
NSE	Bear Creek SMZ 2	1	08/08/2011	1	Sawlog
Subtotal	**12**	**24**		**217**	

Table II-18
State Timber Sales Sold – FY 08 through 14 – Southeast

Area	Sale Name	Acres	Sale Date	MBF	Product
	Fiscal Year 2012				
SSE	Chopsticks	-	10/14/2011	4	Sawlog
SSE	Blind Slough Salvage	1	01/30/2012	2	Sawlog
SSE	Beach Road #1	23	05/07/2012	191	Sawlog
Subtotal	**3**	**24**		**197**	
NSE	38 Mile Salvage	4	02/07/2012	100	Utility
NSE	37 Mile Creek	9	03/30/2012	4	Sawlog
NSE	KB7 Leftovers	3	07/03/2012	12	House Log
NSE	35 x 3	2	08/13/2012	5	Sawlog
NSE	Houselog Bonanza	3	08/22/2012	4	Sawlog
NSE	211 Road Salvage	3	08/24/2012	30	Fuel Wood
NSE	Windthrown	3	08/28/2012	6	Sawlog
Subtotal	**7**	**27**		**161**	
	Fiscal Year 2013				
SSE	S. Thorne Bay #3	196	11/17/2012	30	Sawlog
SSE	Whitman Lake Penstock	1	02/12/2013	0.2	Sawlog
SSE	Colier Tree	1	03/13/2013	8	Sawlog
SSE	Heceta Second Growth	137	07/22/2013	301	Utility
Subtotal	**4**	**335**		**339**	
NSE	Hemlock Revetment	3	10/08/2012	32	Sawlog
NSE	13 Mile Bench #2	3	02/22/2013	2	Utility
NSE	13 Mile Bench #2 Addition	1	03/14/2013	1	Sawlog
NSE	KB9	3	06/04/2013	7	House Log
NSE	KB 10	2	07/15/2013	19	Sawlog
NSE	Tenekee Hydro	4	09/09/2013	55	Sawlog
Subtotal	**6**	**16**		**116**	
	Fiscal Year 2014				
SSE	Whitman Lake Penstock #2	0.1	02/21/2014	2	Sawlog
SSE	Control Lake Timber Sale	10	02/28/2014	46	Sawlog
SSE	Hollis Slide USFS Wood	-	03/06/2014	4	Unknown
SSE	Blankenship ROW	-	03/11/2014	4	Sawlog
SSE	South Thorne Bay 4	98	03/12/2014	35	Sawlog
SSE	Naukati Decks	-	06/10/2014	2	Sawlog
Subtotal	**6**	**108**		**93**	
NSE	13 Mile Bench #5	1	02/12/2014	26	House Log
NSE	13 MIle Bench #6	1	03/14/2014	1	Sawlog
NSE	13 Mile Bench Birch	1	03/19/2014	2	Sawlog
NSE	KB14	5	07/15/2014	25	Utility
Subtotal	**4**	**8**		**54**	

APPENDIX D
EVALUATION AND INTEGRITY OF THE TONGASS NATIONAL FOREST OLD-GROWTH HABITAT CONSERVATION STRATEGY

Appendix D

Tongass National Forest

Evaluating Integrity of the Tongass National Forest Old-growth Habitat Conservation Strategy

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Introduction

This appendix provides an overview of the rationale and assumptions used for evaluating proposed changes to the 2008 Tongass Land and Resource Management Plan (2008 Forest Plan) in relation to the Tongass Old-growth Habitat Conservation Strategy (conservation strategy). The conservation strategy, built from current conservation science, provides for an ecological approach to conservation of old-growth forest and associated species in the Forest Plan, and consists of a system of old-growth reserves (OGRs) and management restrictions on matrix lands (non-reserve areas). Riparian, beach, and estuary habitats are considered contributing elements to the OGR component of the strategy in that they were designed to maintain landscape connectivity among large and medium OGRs and non-development LUD designations. An intensive scientific evaluation of the Conservation Strategy and species-specific viability assessments were included in the 1997 Forest Plan planning efforts (USDA Forest Service 1997b, Appendix N). This appendix builds on Appendix N of the 1997 Forest Plan and considers Appendix N a foundation and primary reference for the science behind the conservation strategy.

On May 27, 2014, the Tongass National Forest initiated an amendment designed to transition from timber harvest dominated by old-growth to young-growth over the next 10 to 15 years (79 FR 30075). The need for change comes from a July 2013 memo from U. S. Department of Agriculture Secretary Tom Vilsack (Secretary's Memorandum 1044-009). In this memo, the Secretary directs the Tongass to transition its forest management program to be more ecologically, socially, and economically sustainable by transitioning to young-growth harvest at the end of this 10 to 15 year period.

In response, the Forest Service is proposing to amend the 2008 Forest Plan and prepared this Environmental Impact Statement (EIS) to evaluate the proposed changes. Five alternatives were developed for detailed analysis, including the No Action (Alternative 1). Alternative 1 represents current management (i.e., the 2008 Forest Plan). Alternatives 2, 3, 4, and 5 (the Preferred Alternative) were designed to accomplish a more rapid transition to young-growth management than considered in the 2008 Forest Plan, while maintaining a viable timber industry in Southeast Alaska. The alternatives vary in how quickly the transition is reached, with some alternatives allowing young-growth harvest in non-development LUDs and modifying other contributing elements of the conservation strategy to accomplish the transition in a shorter time frame than the current Forest Plan. Alternative 5 is the proposed Forest Plan, and the Preferred Alternative. It was developed by the Tongass Advisory Committee, a FACA committee. Each of these alternatives is described in detail below.

New direction in the proposed Forest Plan was developed to facilitate this transition including the identification of lands suitable for timber production employing young-growth management. Under some alternatives, young-growth stands in the beach buffer and in RMAs outside of Tongass Timber Reform Act (TTRA) buffers or in non-development LUDs are considered suitable for timber production. The Forest Service has the dual responsibility of ensuring that the transition to young-growth management maintains a viable timber industry, while also maintaining the integrity of the conservation strategy. Other recent occurrences which affect the conservation strategy include the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (hereafter referred to as the National Defense Authorization Act for Fiscal Year 2015) and changes in the 2001 Roadless Rule. These factors, which are outside of the authority of the Forest Service, are also described below.

The remainder of this appendix is broken into five major sections. They (1) provide an overview of the current conservation strategy (2) describe the scope of the analysis and discuss new science relevant to the conservation strategy since 2008, (3) summarize the status of land management on the Tongass and changes to the conservation strategy since 2008, (4) describe proposed modifications to contributing elements of the conservation strategy and evaluate these modifications in the context of maintaining a functioning conservation strategy, and (5) present a summary of the findings of this evaluation which can be used to support the analysis of effects to biodiversity and wildlife presented in Chapter 3 of the EIS.

Appendix D

Old-growth Habitat Conservation Strategy

The conservation strategy was designed to maintain the integrity of the old-growth forest ecosystem (see USDA Forest Service 1997b, Appendix N pp. N-20 to N-24). This appendix presents the results of an evaluation of the ability of each of the alternatives analyzed in the EIS to maintain the integrity of the conservation strategy. Integrity is defined here based on standard language as 'an unimpaired condition' or "the quality or state of being complete or undivided" (http://www.merriam-webster.com/dictionary/integrity). It is assumed that integrity is maintained when the conservation strategy is expected to continue to function effectively regardless of alteration or modification of individual parts, that is, its functioning as a whole remains unimpaired. Accordingly, throughout this evaluation, focus is placed on the proposed modifications to any contributing elements of the conservation strategy, such as the beach and estuary fringe and RMAs, and the associated potential to affect the functioning of the conservation strategy.

The 1997 Tongass National Forest Plan established a comprehensive, science-based conservation strategy to provide for wildlife sustainability and viability across the Tongass. The conservation strategy was developed to maintain a functional and interconnected old-growth forest ecosystem on the Tongass by retaining intact, largely undisturbed habitat. In doing so, it was also intended to "[P]rovide sufficient habitat to preclude the need for listing of species under the Endangered Species Act, or from becoming listed as Sensitive due to National Forest habitat conditions" (USDA Forest Service 1997c, p.34). Its development is described in detail in Appendix N of the 1997 Forest Plan FEIS (USDA Forest Service 1997a, 1997b) which is the foundation for this current analysis and will not be cited repeatedly but is incorporated throughout by reference. The conservation strategy was subsequently reviewed to confirm its validity given any new conservation science since 1997 and the proposed changes to the Old-growth Habitat LUD and amended for incorporation into the 2008 Forest Plan (USDA Forest Service 2008a, 2008b; see below for additional discussion).

The conservation strategy includes two major components: (1) a forest-wide network of large, medium and small OGRs allocated to the Old-Growth Habitat LUD and other non-Development LUDs plus all islands less than 1,000 acres, and (2) a series of standards and guidelines applicable to lands where timber harvest is permitted (the matrix; USDA Forest Service 2008a, 2008b).

The system of OGRs was designed to maintain habitats of the species that have the most viability concerns (USDA Forest Service 2008b). Other forested non-development LUDs such as Wilderness, LUD II, Remote Recreation, and Semi-Remote Recreation contribute in a substantial way to the old-growth ecosystem. The intent of the reserve system was to ensure the maintenance of well-distributed, viable populations of all old-growth associated wildlife species across the Tongass, with focus on those species that are most sensitive to habitat loss and fragmentation. In general, the home range and dispersal capabilities of old-growth associated species were considered in determining the size, number and spacing of reserves. For the most recent complete review of the Forest Plan Conservation Strategy, including assumptions underlying the design of the OGR system, refer to Appendix D of the 2008 Forest Plan Final EIS (USDA Forest Service 2008b).

Within the matrix (areas outside of reserves), components of the old-growth ecosystem are maintained through standards and guidelines designed to provide for important ecological functions such as dispersal of organisms, movement between forest stands, and maintenance of ecologically valuable structural components such as down logs, snags, and large trees (USDA Forest Service 2008b). Matrix lands include Timber Production, Modified Landscape, and Scenic Viewshed, LUDs. Matrix management complements the reserve system by providing habitat at finer spatial scales, enhancing the effectiveness of reserves, and providing for landscape connectivity (USDA Forest Service 2008b). Standards and guidelines applicable to these lands include the 1,000-foot beach and estuary fringe, variable-width stream buffers (Riparian Management Areas (RMAs), TTRA buffers, etc.), project-level legacy old-growth forest structure retention requirements, and species specific standards and guidelines. In addition, other Forest-wide standards and guidelines preclude or limit timber harvest in areas of high-hazard soils, steep slopes, karst terrain, and visually sensitive travel routes and use areas, and require projects to be designed to maintain landscape connectivity (i.e., maintain corridors of forest among large and medium OGRs and other non-development LUDs at broad spatial scales). Additional detail on the rationale

behind the standards and guidelines within the matrix is provided in Appendix D of the 2008 Forest Plan FEIS (USDA Forest Service 2008b).

Young-growth forest stands within the matrix and within reserves have ecological values which contribute to the functioning of the reserve system. However, at the time of its development in 1997 it was assumed that the conservation strategy would maintain a functional and interconnected old-growth forest ecosystem without the additional contribution of previously harvested areas, either as young-growth or over time as these stands matured to old-growth condition. That is, it was designed acknowledging the consequences of past harvest and harvest proposed under the 1997 Forest Plan to ensure that an adequate amount of old-growth forest was protected within the planning area to maintain a functional and interconnected old-growth forest ecosystem, capable of supporting viable, well-distributed wildlife populations.

The 1982 Planning Rule stated that the maintenance of a viable population requires providing habitat to support "at least a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area" (36 CFR 219.19). In the context of the development of the conservation strategy, this was interpreted to mean that the condition of viable and well distributed allows for gaps within a species distribution as long as the population segments of the species continue to interact and are distributed throughout the planning area. (Appendix N (p. N-3), USDA FS 1997). The 2012 Planning Rule now requires that the responsible official determine whether or not the plan components ''provide the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area" (36 CFR 219.9). The 2012 Planning Rule defines a viable population as: ''A population of a species that continues to persist over the long-term with *sufficient distribution to be resilient and adaptable to* stressors and likely future environments'' (§ 219.19) (emphasis added). Therefore, the ability of the conservation strategy to function as intended can be gauged on the scale of the Forest and beyond; however, it is acknowledged that some portions of the Forest may be better meeting the intent of the conservation strategy than others. It should be noted that the wildlife components of the Forest Plan remain under the 1982 Planning Rule, and specific updates to meet 2012 Planning Rule requirements are not proposed under this Forest Plan Amendment.

Scope of the Analysis and Acknowledgement of New Science

The scope of this analysis is the individual proposed modifications to the contributing elements of the conservation strategy and the associated potential to affect its functioning. The proposed Forest Plan amendment does not propose changes to the framework of the conservation strategy or the size or spacing of OGRs except for adjustments due to the National Defense Authorization Act for Fiscal Year 2015. The proposed OGR modifications compensate for portions of individual OGRs that were located on National Forest System (NFS) lands that were conveyed to the Sealaska Native Corporation (see below). Therefore, this analysis is not a review of the underpinnings of the current conservation strategy. .

Recent advancements in the fields of conservation science and landscape ecology and new knowledge of individual species' biological needs is included in the following discussion. Some of these topics and others (described below) were identified during the original development of the conservation strategy for the 1997 Forest Plan and considered again during the Interagency Forest Plan Conservation Strategy Review (USDA Forest Service 2007) conducted for the 2008 Forest Plan Amendment (see *New Relevant Science Since 1997* in Appendix D, USDA Forest Service 2008b). The following discussion touches on some of the new science related these topic areas relevant to conservation planning on the Tongass National Forest.

Recent research confirms the importance of including freshwater systems in conservation strategy design (Nislow et al. 2010). The Tongass National Forest supports some of the most productive salmon spawning habitats in North America and salmon-derived nutrients are recognized as playing an important role in the productivity of coastal temperate forests (Hood et al. 2007; Fellman et al. 2008, 2009, D'Amore et al. 2011). The strong connections between aquatic and terrestrial ecosystems, as well as upstream and downstream linkages within stream and river systems, are also susceptible to disruption by human

actions and are therefore important elements to be considered in conservation planning (Nislow et al. 2010). Aquatic systems and hydrologic connectivity are afforded protection by Forest Plan Riparian and Beach and Estuary standards and guidelines which were developed in part based on recommendations put forth in an Anadromous Fish Habitat Assessment (AFHA 1995). Best management practices for riparian and stream management, implemented at the project level, also provide protection to these resources.

The contribution to conservation by matrix lands, or areas where active land management can occur, is receiving even greater emphasis. Matrix lands are critical to maintaining the connectivity of ecological flows across a landscape (e.g., flows of disturbance agents, organisms, water, and nutrients) and are also essential to the ability of protected areas to achieve their mandates for ecosystem conservation (Schmiegelow et al. 2006, Schmiegelow and Lisgo 2014). Conservation focused on the management of matrix lands is referred to as the reverse-matrix model of conservation design. Under this paradigm, the concept of habitat reserves as nodes of conservation land within a largely degraded environment is inverted, such that conservation lands are, in fact, the matrix within which development activities are carefully managed so as not to erode other values (Schmiegelow et al. 2006). More intensive activities would occur on “islands” within the sea of conservation land (Schmiegelow et al. 2006). Schmiegelow et al. (2006) identify four contributions of matrix lands to conservation goals including supporting populations of species, regulating the movement of organisms, buffering sensitive areas and reserves, and maintaining the integrity of aquatic systems. Thus, the ability to achieve conservation goals is clearly dependent in part on the management of activities within matrix lands.

The Tongass conservation strategy is a reserve-based design, recognizing different functions of the reserve system and matrix lands. Ecological values within the matrix are protected by standards and guidelines, such as the beach and estuary fringe and riparian buffers, which provide physical connectivity via protected forested corridors. Matrix lands are also protected by standards and guidelines implemented at the project-level which contribute to functional connectivity through the additional retention of old-growth forest in areas where timber harvest is restricted including areas of high-hazard soils, steep slopes, karst terrain, and visually sensitive travel routes and use areas (USDA Forest Service 1997c, p.32). However, the ecological functions of most upland young-growth stands were largely unacknowledged in the development of the conservation strategy except where they contributed to the beach and estuary fringe and riparian buffers.

Young-growth stands can provide a range of functions including serving as dispersal corridors between old-growth stands as well as providing buffers between areas of suitable habitat and human activity (e.g., buffering forests from edge effects). Although immediately after harvest and until they become more structurally complex, young-growth stands can create dispersal barriers for certain old-growth associated species, over time, young-growth stands have the potential to return to old-growth conditions, a process that can be accelerated through active management such as thinning. The Old-growth Habitat LUD standards and guidelines call for actions that would facilitate the transition to old-growth conditions. Similarly, Forest-wide standards and guidelines for landscape connectivity call for actions in young-growth stands to accelerate the development of old-growth characteristics in order to increase connectivity for wildlife and to provide higher quality habitat within the matrix lands. The transition to young-growth management under the proposed Forest Plan amendment has the potential to both positively and negatively affect the condition and quality of matrix lands, and thus their contribution to the conservation strategy. This topic is addressed below in the context of the proposed modifications to contributing elements of the conservation strategy.

Finally, the design of the original conservation strategy in 1997 was based in part on the needs of old-growth associated species (see Appendix N of the 1997 Forest Plan FEIS). In general, the home ranges and dispersal capabilities of these species were taken into account during the design of the reserve system, including reserve size, spacing, and number, as well as in the development of provisions for matrix management (USDA 1997b). Since 2008, there have been research publications that address some of these species including goshawks (Smith 2013), wolves (Person and Russell 2008, 2009; Weckworth et al. 2010, 2011; ADF&G 2012; Person and Logan 2012), brown bears (Flynn et al. 2009), marten (Flynn and Schumacher 2009, Pauli et al. 2015), deer (White et al. 2009) and flying squirrels

(Flaherty et al.2008, 2010; Pyare et al. 2010; Shanley et al. 2013; Smith 2012; Smith et al. 2011) which provide additional considerations regarding their conservation needs. Information from these studies, other relevant studies and other best available science would be used to review the conservation strategy design if, in the future, data from various sources suggest that the conservation strategy is no longer functioning as originally intended. However the results of the analysis in this appendix indicate the conservation strategy currently functions as intended and is expected to function regardless of which alternative is selected.

The conservation strategy was designed to maintain a resilient old-growth forest ecosystem in the face of uncertainty, including uncertainty associated with climate change. Climate change in Southeast Alaska may result in increased blowdown, increased tree mortality from insects and disease, increased fire frequency and severity, warmer temperatures and changes in precipitation patterns, and greater weather extremes (Haufler et al. 2010, Shanley et al. 2015). These effects are anticipated to result in changes to vegetation and thus, the suitability of wildlife habitats protected by the conservation strategy. Although the extent of changes in vegetation expected as a consequence of climate change is unknown, analysis on the neighboring Chugach National Forest suggests that the temperate coastal rainforest is expected to be resilient (see Hayward et al. *in prep*).

Current Status of Land Management on the Tongass

This section describes the land management activities that have altered the context within which the conservation strategy was designed. These include actual timber harvest levels, mapping updates that have resulted in a net increase in the amount of productive old-growth (POG) forest estimated on the Tongass, modifications to the conservation strategy since 2008, and Non-NFS land management decisions.

Projected Versus Actual Timber Harvest Levels

The design of the conservation strategy was intended to achieve multiple use objectives by allowing for activities such as timber harvest, recreation, and infrastructure development. Therefore, it was developed in the context of maintaining a robust timber harvest program over the life of the approved Forest Plan, while conserving old-growth forest and associated species. However, market conditions and other factors have resulted in harvest levels (in both spatial extent and volume) that are much lower than anticipated. Both the 1997 and 2008 Forest Plan EISs include projections of the amount of original productive old-growth (POG) forest[1] (existing in 1954 prior to large-scale timber harvest) remaining after 100 years (timber sale rotation) based on a decadal Allowable Sale Quantity (ASQ). The conservation strategy was based on an assumed harvest rate of about 83,400 acres per decade. If harvest took place at this decadal rate from 1998 to 2015 and then continued until 2041, approximately 334,600 acres will have been harvested. In contrast, combining the actual acres harvested from 1998 to 2015 with the projected harvest of old-growth under each of the alternatives would produce a total of 54,400 to 81,600 acres of POG harvest through 2041. The acreage difference between these scenarios would result in between 253,000 and 280,200 fewer acres of harvested POG by 2041. Thus, matrix lands contain a substantially greater amount of POG than was assumed in the 1997 Forest Plan revision and many OGRs and non-Development LUDs are surrounded by additional unharvested areas.

Road construction on the Tongass has occurred primarily to access timber resources and future new road construction is anticipated to be similarly motivated. Future road construction will vary among alternatives by the amount of old-growth harvest. The cumulative extent of roads after implementation of any of the action alternatives, however, will be lower than anticipated under the 1997 Forest Plan. The additional old-growth harvest that would have occurred under full implementation of the 1997 Forest Plan was 474,000 acres of old-growth forest after 100 years. This harvest would have resulted in the need to construct nearly 4,000 miles of new road. As a result, NFS lands on the Tongass would have about 8,500 miles of road. This level of new road construction would create greater human access, increase

[1] Productive forest is capable of producing at least 20 cubic feet of wood fiber per acre per year, or having greater than 8,000 board feet per acre.

road densities, and result in additional habitat fragmentation compared with the present and future under the current alternatives. Instead, only about 440 miles of new road have been constructed during the past 20 years; about 1,800 miles of new road were expected to be constructed by the 1997 Forest Plan during the first two decades at full implementation. Further, the total road mileage on NFS lands under the current alternatives would be a maximum of 6,148 after 100 years from the present. This is 2,000 miles less than predicted by the 1997 Forest Plan, used in the evaluation of the conservation strategy. In other words, the miles of new road constructed under the current alternatives after 100 years, would be less than half the additional new miles expected to be constructed by the 1997 Forest Plan.

Overall, the conservation strategy protects slightly more than 90 percent of all existing POG forests on the Tongass National Forest. This percentage assumes that old-growth forest is harvested at the maximum allowable rate in each future decade before sufficient young-growth forest has reached harvestable size and can replace old-growth in the harvest. If this maximum rate does not occur, then the percentage of POG retained will be higher.

Ongoing GIS Mapping Updates

GIS mapping updates have resulted in substantial changes in estimated extent of the Tongass land base and vegetation mapping categories since 2008. The Tongass land base acreage changed as a result of two factors. First, updates were made to improve the accuracy of shoreline mapping and to reflect the land adjustments that occurred since 2008, in particular the land adjustments in the National Defense Authorization Act for Fiscal Year 2015 discussed below. These land base changes have directly affected the acreages in each vegetation category. Second, vegetation mapping is continually being updated; these updates have occurred both opportunistically in association with individual projects and forest-wide. A January 2015, forest-wide update corrected the mapping of a large number of polygons that were incorrectly mapped as size class 3 (young-growth sawtimber, less than 150 years old). As these polygons were older than 150 years old, they were corrected to size class 4, which converted them to productive old growth.

Modifications to the Conservation Strategy Since 2008

Modifications to the strategy from 1997 to 2007 were incorporated into the 2008 Forest Plan Amendment. Since 2008, one project has included modifications to the system of old-growth reserves. The Big Thorne Timber Sale project, located in north central Prince of Wales Island within the Thorne Bay Ranger District included small old-growth reserve boundary modifications intended to trade areas of inventoried roadless area (which would become Old-growth Habitat LUD) for roaded portions of old-growth reserves (which would become a development LUD and available for timber harvest). Small OGRs were modified in Value Comparison Units (VCU) 5790, 5800, 5810, 5820, 5830, 5850, and 5950, resulting in a net increase of 645 acres of Old-growth Habitat LUD. The Big Thorne FEIS analysis concluded that the old-growth reserve modifications would provide comparable achievement of Old-growth Habitat LUD goals and objectives, and therefore assumed that the functioning of the conservation strategy (USDA Forest Service 2013) would be maintained. These modifications amended the 2008 Forest Plan

A correction to the 2008 Forest Plan was made in 2012 (Forest Plan Errata, February 6, 2012), to correct a mapping error for a small OGR in VCU 7470 on the Ketchikan-Misty Fiords Ranger District. As a result of the correction, the size of the small OGR, as well as the acres of POG contained within, increased. No other changes to the spatial distribution, size, and composition of the Old-growth Habitat LUD or other non-development LUDs have occurred since approval of the 2008 Forest Plan Amendment.

External Factors that Have Affected the Conservation Strategy Since 2008

The National Defense Authorization Act for Fiscal Year 2015 conveyed 69,585 acres of NSF forest lands to the Sealaska Native Corporation to fulfil the commitment in the Alaska Native Claims Settlement Act (Public Law 113-2910). The conveyance affected old-growth reserves on Prince of Wales Island and in VCUs 5900, 5940, 6160, 6170, 6180, 6190, 6200, 6750, 6760 and 6850, and two smaller islands to the west (Kosciusko Island [VCUs 5450 and 5460] and Tuxekan Island [VCUs 5560, 5570, 5600 and 5872]). These areas are now non-NFS lands which are managed for timber production. In an effort to address

these effects under the proposed Forest Plan amendment, the Forest Service elected to propose boundary modifications to compensate for the loss of OGR acres. An Interagency Old-growth Reserve Review report is included in Appendix E of this EIS which outlines the proposed OGR modifications and rationale. Collectively the boundary modifications result in a net increase in 6,171 acres of OGR and 7,148 acres of POG forest included in the reserve system from existing (post-conveyance) levels. These modifications are part of Alternatives 2, 3, 4, and 5.

Another factor affecting the conservation strategy is the 2001 Roadless Area Conservation Rule (Roadless Rule). Inventoried roadless areas provide large, relatively undisturbed blocks of important habitat for a variety of terrestrial and aquatic wildlife and plants. Since its adoption in 2001, the Roadless Rule has been the subject of litigation concerning how it is to be applied to the Tongass. The suitable land base where timber harvest can occur has continually decreased over the years on the Tongass. One reason for the decrease is the withdrawal of inventoried roadless areas from lands suitable for timber production (see Forest Plan Appendix A).

When the 2008 Forest Plan was approved, the Tongass National Forest was temporarily exempted from the Roadless Rule per the 2003 Tongass Exemption (68 FR 75136). Exempting the Tongass from the application of the roadless rule left intact all old-growth reserves, riparian buffers, beach fringe buffers, and other protections contained in the 1997 Forest Plan, but made approximately 300,000 roadless acres available for forest management, including lands in development LUDs.

In 2011, the United States District Court, District of Alaska set aside the 2003 Tongass Exemption and reinstated the Roadless Rule with respect to the Tongass. A March 2014 ruling by the Ninth Circuit Court of Appeals reversed that decision. The Ninth Circuit Court of Appeals subsequently granted a petition for rehearing en banc, held in December 2014 before an eleven judge panel. On July 29, 2015, a six judge majority of the en banc panel held that USDA's justification for the Tongass Exemption was inadequate under the Administrative Procedure Act, holding it did not provide a reasoned explanation for contradicting the findings in the 2001 Record of Decision for the Roadless Rule. The majority upheld the District Court's reinstatement of the Roadless Rule. Consequently, the Roadless Rule remains in effect in Alaska and the Forest Service continues to apply the Rule to the Tongass National Forest. Therefore, inventoried roadless areas maintain additional old-growth forest that augment the amount maintained by the contributing elements of the conservation strategy (USDA Forest Service 2008c, page 21).

Proposed Modifications to Contributing Elements of the Conservation Strategy

This section describes the proposed modifications to the contributing elements of the conservation strategy. The Tongass National Forest timber program has historically focused on economical harvest of old-growth to "seek to meet" demands as directed by TTRA and to provide jobs to local communities in Southeast Alaska. The 2008 Forest Plan (Alternative 1) would transition to young-growth timber program in about 32 years, which reflects when the oldest young-growth stand within the development LUDs reach Culmination Mean Annual Increment (CMAI). On the Tongass National Forest, the CMAI occurs in stands at approximately 80 to 100 years. Therefore, to speed the transition to young-growth management over the next 10 to 15 years, the action alternatives propose young-growth harvest within non-development LUDs, the beach and estuary fringe, RMAs, and other areas within the matrix where suitable young-growth is available in order to get the necessary timber volume to meet these demands, such that at the end of this period the vast majority of timber sold by the Tongass National Forest will be young-growth. Anticipated transition times range from 12 years under Alternative 2 to 16 years under Alternatives 4 and 5.

Overall Approach to Young-growth Management

The general approach to young-growth management proposed under the alternatives is to speed the transition to a young-growth timber program. Young-growth harvest activities would occur within a previously disturbed footprint in areas of past timber harvest, and would maximize the use of existing or decommissioned roads to access harvest units where possible. The associated shift away from POG forest harvest would reduce the amount of future timber harvest and associated activities within intact and/or

unroaded areas. The alternatives that propose the fastest transition through more aggressive harvest strategies would result in less new road construction and less timber harvest in untouched areas; that is more timber harvest/road building would occur within previously disturbed areas, than alternatives with longer transition times. This tradeoff is the paramount difference among the alternatives.

Over half of the past timber harvest on the Tongass National Forest occurred when relatively few restrictions were in place in the 1960s and 1970s during the initial period of commercial-scale timber harvest and prior to the adoption of the first Forest Plan in 1979. Little protection was afforded to features such as the beach and estuary fringe, RMAs, and other sensitive areas identified now at the project level, such as karst and steep slopes, during this time. Future young-growth management activities would be required to comply with requirements for maintaining landscape connectivity, scenery, protecting steep slopes, high vulnerability soils, karst, and TTRA buffers under the proposed Forest Plan. Thus, young-growth harvest unit size in most cases would be smaller than the original units. Created openings within the beach and estuary fringe, RMAs, and OGRs proposed under the alternatives have the potential to reduce the functioning of these areas (discussed in detail below); however commercial thinning would enhance the habitat value of these areas by promoting the development of fewer, larger trees.

Old-growth Habitat LUD and Other Non-Development LUDs

The system of old-growth reserves (Old-growth Habitat LUD) and other non-development LUDs was established for the purpose of maintaining a functional and interconnected old-growth ecosystem (p. 3-11, USDA Forest Service 1997c). Of the 5.4 million acres of original (1954) POG that occurred on NFS lands on the Tongass National Forest about 92 percent remains in 2015. About 67 percent of the original acreage is protected within the reserve system. No changes are proposed to the size or spacing of the reserve system or the productive old-growth forest within these areas under the proposed Forest Plan amendment. Moreover, under all of the action alternatives the transition to young-growth management would substantially reduce the long-term POG forest harvest levels, with all of the alternatives retaining approximately 91 percent of the original POG after 100 years of plan implementation.

Currently, limited management of young-growth stands within the Old-growth Habitat LUD and some other non-development LUDs is allowed under the Forest Plan (Alternative 1) when conducted for the purpose of habitat enhancement (e.g., pre-commercial thinning to accelerate stand development toward old-growth conditions and other young-growth treatments to increase connectivity for wildlife). Under Alternatives 1 and 4, forest land in the non-development LUDs is identified as not suited for timber production. Under Alternatives 2, 3, and 5 (Old-growth Habitat LUD only), forest land in non-development LUDs is identified as suited for young-growth timber production. Even-aged commercial young-growth harvest in these LUDs could increase habitat fragmentation or perforation and reduce the ecological contribution of young-growth stands to the reserve system by setting back the trajectory toward late seral forest condition by delaying the development of old-growth stand characteristics such as snags, downed logs, and diverse tree canopy layers required by some POG-associated species (e.g., marten, goshawks, flying squirrels). Effects would be greatest under Alternatives 2 and 3 which allow multiple entries into harvested stands which would intensify and prolong the effects; the size of created openings are limited by only by scenery issues, similar to the current Forest Plan . Effects would be less under Alternative 5 which includes a one-time entry constraint and limits the size of created openings to less than 10 acres with maximum removal of up to 35 percent of the area of the original harvested stand, allowing the majority of each stand to mature to old-growth conditions after harvest (Tables 1 and 2). Thinning the entire stand could also be used to accelerate old-growth characteristics. Under Alternatives 2, 3, and 5, individual small OGRs could be modified to compensate for young-growth harvest. No harvest, except personal use and potentially salvage, would occur in OGRs or other non-development LUDs under Alternatives 1 and 4.

Young-growth forest comprises a relatively small proportion of the total area of these LUDs. The majority of the young-growth acres in the Old-growth Habitat LUD are concentrated in the North Central Prince of Wales and East Chichagof Island biogeographic provinces. The majority of the suitable young-growth acres in other non-development LUDs concentrated in the North Central Prince of Wales, West Baranof Island, and Kuiu Island biogeographic provinces (Table 3). These biogeographic provinces are therefore also where past timber harvest was concentrated.

Under Alternatives 2, 3, and 5 the maximum amount of young-growth harvest in the Old-growth Habitat LUD would comprise approximately 3.3 percent, 2.8 percent, and 0.2 percent of the forest land (young-growth, POG, and unproductive forest) within the Old-growth Habitat LUD Forest-wide, respectively (Table 3). By biogeographic province, maximum young-growth harvest would comprise 0 to 13.5 percent of forest land within the Old-growth Habitat LUD under Alternative 2, 0 to 7.8 percent under Alternative 3, and 0 to 0.8 percent under Alternative 5 (Table 3). Under Alternatives 2 and 3, the maximum amount of young-growth harvest in other non-development LUDs would comprise less than 1 percent of the forest land within these LUDs (Table 4). By biogeographic province, maximum young-growth harvest would comprise 0 to 9.7 percent of forest land within these LUDs under Alternative 2 and 0 to 8.8 percent under Alternative 3 (Table 4).

Suitable young-growth stands within OGRs and other non-development LUDS are typically located along the shoreline or adjacent to existing road systems. These easily accessible stands, particularly when located near other suitable young-growth stands in development LUDs, may be selected to avoid indirect effects to intact, relatively undisturbed POG forest within OGRs and other non-development LUDs.

Table 1
Proposed Young-growth Harvest after 100 Years in the Old-growth Habitat LUD and Other Non-Development LUDs by Alternative

	Proposed Young-growth Management in Non-development LUDs				
Alternative	**Non-Development LUDs where Young-growth Harvest Allowed**	**Number of Entries**	**Harvest Opening Limits**	**Stand Retention Limits**	**Total Projected Young-growth Harvest (Acres)**
Alternative 1	NA	NA	NA	NA	0
Alternative 2	Non-development LUDs[1]	Multiple	Limited by Scenery only	None	44,507
Alternative 3	Non-development LUDs[1]	Multiple	Limited by Scenery only	None	39,043
Alternative 4	NA	NA	NA	NA	0
Alternative 5	Old-growth Habitat LUD	One-time	10 acres or less	Maximum removal of 35 percent of original harvested stand acres	1,811

Note: NA = not applicable
[1] Does not include Experimental Forest, LUD II, Municipal Watershed, National Monument, Research Natural Area, Wilderness Monument, Wild River, and Wilderness

Young-growth forest stands have ecological values which contribute to the functioning of the reserve system. However, at the time of its development in 1997 it was assumed that the conservation strategy would maintain a functional and interconnected old-growth forest ecosystem without the additional contribution of previously harvested areas, either as young-growth or over time as these stands matured to old-growth condition. For this reason, and due to the spatial distribution and quantity of suitable young-growth, harvest in the Old-growth Habitat LUD and other non-development LUDs proposed under Alternatives 2, 3, and 5 would be expected to have a zero risk for Alternatives 1 and 4, a very low risk for Alternatives 2 and 3, and an almost zero risk for Alternative 5 of reducing the ability of the reserve system to maintain a functional and interconnected old-growth ecosystem, Therefore, all of the alternatives would maintain the integrity of the conservation strategy by maintaining the functioning of the reserve system.

Table 2
Proposed Young-growth Harvest by Treatment by Alternative

Category	Period	Acres by Treatment				
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Old-growth Habitat LUD	1st 15 years	0 ac	2,477 CC ac	2,181 CC ac	0 ac	1,811 PC ac
	Last 85 years	0 ac	29,163 CC ac	24,005 CC ac	0 ac	0 ac
Other Non-Dev. LUDs	1st 15 years	0 ac	810 CC ac	726 CT ac	0 ac	0 ac
	Last 85 years	0 ac	12,058 CT ac	12,131 CT ac	0 ac	0 ac
Beach and Estuary Fringe	1st 15 years	0 ac	8,791 CC ac	7,819 CT ac	4,436 CT ac	3,903 PC ac
	Last 85 years	0 ac	13,079 CT ac	22,950 CT ac	6,678 CT ac	0 ac
RMA	1st 15 years	0 ac	2,327 CT ac	0 ac	0 ac	1,089 PC ac
	Last 85 years	0 ac	23,703 CT ac	0 ac	0 ac	0 ac

[1] CC = Clearcut;; CT = Commercial Thin

Note:

For CT, only 33% of the stand is removed; therefore, 1,000 ac of CT is roughly equivalent to removing 333 ac of trees spread over 1,000 ac

For PC under Alternative 5, only 35% of the stand is removed in patches no larger than 10 ac; so 1,000 ac of these created openings is roughly equivalent to removing 350 acres of trees in patches spread over 1,000 ac

Table 3
Distribution of Young-growth Harvest Acres (over 100 years) within the Old-growth Habitat LUD by Biogeographic Province and Alternative

	Biogeographic Province	Forest Land Acres[2]	Estimated Maximum Young-growth[1] Harvest in the Old-growth Habitat LUD (Young-growth Harvest Acres / % of Forest Land Acres in LUD)							
			Alts 1 and 4		Alt 2		Alt 3		Alt 5	
1	Yakutat Forelands	8,386	0	0%	8	0.1%	7	0.1%	0	0.0%
2	Yakutat Uplands	2,336	0	0%	0	0.0%	0	0.0%	0	0.0%
3	East Chichagof Island	150,445	0	0%	6,121	4.1%	5,045	3.4%	360	0.2%
4	West Chichagof Island	21	0	0%	0	0.0%	0	0.0%	0	0.0%
5	East Baranof Island	35,255	0	0%	1,198	3.4%	978	2.8%	66	0.2%
6	West Baranof Island	65,340	0	0%	2,038	3.1%	1,309	2.0%	124	0.2%
7	Admiralty Island	0	0	0%	0	0.0%	0	0.0%	0	0.0%
8	Lynn Canal	19,541	0	0%	855	4.4%	549	2.8%	51	0.3%
9	North Coast Range	58,511	0	0%	0	0.0%	0	0.0%	0	0.0%
10	Kupreanof/Mitkof Island	85,029	0	0%	2,470	2.9%	2,145	2.5%	129	0.2%
11	Kuiu Island	24,071	0	0%	938	3.9%	818	3.4%	55	0.2%
12	Central Coast Range	30,526	0	0%	48	0.2%	43	0.1%	3	0.0%
13	Etolin Island & Vicinity	95,865	0	0%	2,406	2.5%	2,133	2.2%	132	0.1%
14	North Central Prince of Wales	203,406	0	0%	10,844	5.3%	9,312	4.6%	622	0.3%
15	Revilla Island/ Cleveland Pen.	103,574	0	0%	2,445	2.4%	2,265	2.2%	131	0.1%
16	Southern Outer Islands	13,263	0	0%	573	4.3%	508	3.8%	34	0.3%
17	Dall Island and Vicinity	2,776	0	0%	0	0.0%	0	0.0%	0	0.0%
18	South Prince of Wales	35,627	0	0%	290	0.8%	313	0.9%	15	0.0%
19	North Misty Fiords	5,072	0	0%	227	4.5%	83	1.6%	14	0.3%
20	South Misty Fiords	0	0	0%	0	0.0%	0	0.0%	0	0.0%
21	Ice Fields	8,702	0	0%	1,177	13.5%	679	7.8%	74	0.8%
	Forest-wide	**947,746**	**0**	**0%**	**31,640**	**3.3%**	**26,186**	**2.8%**	**1,811**	**0.2%**

[1] For modeling purposes, it was assumed, based on an evaluation of economics, that the minimum harvestable age for young growth is 65 to 75 years old, depending on site index.
[2] Includes young-growth, productive old-growth, and unproductive forest; note that existing acreage does not include minor changes in the North Central Prince of Wales biogeographic province resulting from the proposed OGR modifications (Appendix E).

Table 4
Distribution of Young-growth Harvest Acres (over 100 years) within Other Non-Development LUDs Allowing Harvest[1] by Biogeographic Province and Alternative

			Estimated Maximum Young-growth[2] Harvest in Other Non-Development LUDs (Young-growth Harvest Acres / % of Forest Land Acres)					
	Biogeographic Province	Forest Land Acres[3]	Alts 1, 4, and 5		Alt 2		Alt 3	
1	Yakutat Forelands	34,086	0	0%	13	<0.1%	13	<0.1%
2	Yakutat Uplands	5,763	0	0%	218	3.8%	216	3.8%
3	East Chichagof Island	22,368	0	0%	186	0.8%	159	0.7%
4	West Chichagof Island	20,992	0	0%	0	0%	0	0%
5	East Baranof Island	51,589	0	0%	90	0.2%	90	0.2%
6	West Baranof Island	164,412	0	0%	2,508	1.5%	2,302	1.4%
7	Admiralty Island	55,246	0	0%	19	<0.1%	64	0.1%
8	Lynn Canal	112,641	0	0%	27	<0.1%	27	<0.1%
9	North Coast Range	173,152	0	0%	0	0%	252	0.1%
10	Kupreanof/Mitkof Island	68,844	0	0%	516	0.8%	498	0.7%
11	Kuiu Island	114,990	0	0%	618	0.5%	602	0.5%
12	Central Coast Range	141,205	0	0%	477	0.3%	415	0.3%
13	Etolin Island & Vicinity	7,722	0	0%	0	0%	0	0%
14	North Central Prince of Wales	60,718	0	0%	5,890	9.7%	5,326	8.8%
15	Revilla Island/ Cleveland Pen.	240,157	0	0%	983	0.4%	1,670	0.7%
16	Southern Outer Islands	24,468	0	0%	810	3.3%	764	3.1%
17	Dall Island and Vicinity	76,236	0	0%	242	0.3%	240	0.3%
18	South Prince of Wales	62,168	0	0%	128	0.2%	127	0.2%
19	North Misty Fiords	58,540	0	0%	49	0.1%	49	0.1%
20	South Misty Fiords	0	0	0%	0	0%	0	0%
21	Ice Fields	122,223	0	0%	92	0.1%	43	<0.1%
	Forest-wide	**1,617,519**	**0**	**0%**	**12,868**	**0.8%**	**12,857**	**0.8%**

[1] Includes Semi-Remote Recreation, Remote Recreation, Special Interest Area, Recreational River, and Scenic River.
[2] For modeling purposes, it was assumed, based on an evaluation of economics, that the minimum harvestable age for young growth is 65 to 75 years old, depending on site index.
[3] Includes young-growth, productive old-growth, and unproductive forest.

Proposed Modifications to Forest Plan Standards and Guidelines

This section describes the proposed modifications to contributing elements of the conservation strategy that are specifically addressed through Forest Plan standards and guidelines.

Beach and Estuary Fringe

The beach and estuary fringe is a 1,000-ft wide corridor adjacent to saltwater shorelines; it is consists of POG, but is also comprised of unproductive forest, previously harvested forest, and non-forest types. It serves as a transition zone between upland forest and saltwater influences, and as such is distinguished as a separate ecosystem (microclimate) within the larger old-growth forest ecosystem. The beach and estuary fringe is considered a high value habitat for many species including brown bears, black bears, bald eagles, goshawks, deer, marten, and others (Appendix D, USDA Forest Service 2008b). The beach and estuary fringe also provides horizontal or low-elevation connectivity between watersheds, many of which otherwise have very steep slopes and/or non-forested ridge tops, offering important travel corridors for wildlife. Although not explicitly discussed in the conservation strategy, the beach and estuary fringe also provides an important function to the marine and estuarine environment by reducing downslope effects to marine waters (e.g., sediment runoff), shading shoreline beach areas, providing large-woody debris and other organic inputs to the marine and estuarine systems, and providing bank stability (root system of large trees). The beach and estuary fringe is particularly critical on the Tongass National Forest given the extensive amount of shoreline (more than 17,000 miles) that exists on more than 22,000 islands.

Young-growth stands within the beach and estuary fringe are lower value habitat for old-growth associated wildlife species because they do not possess the stand characteristics required by some species (snags, downed logs, large trees). However, they contribute to functional connectivity for the movement and dispersal of wildlife and serve as buffers between areas of suitable habitat and human activity. It can be assumed that the integrity of the conservation strategy is maintained when the beach and estuary fringe continues to provide the functions of a transition zone between interior forest and saltwater influences, landscape connectivity, and water quality and habitat benefits to the marine environment.

The 2008 Forest Plan, Alternative 1, includes forest-wide Beach and Estuary Fringe standards and guidelines that prohibit timber harvest within 1,000 feet inland from mean high tide. This buffer was intended to provide effective landscape linkages to enhance the reserve system, protect bald-eagle habitat, buffer the primary beach fringe zone (0 to 500 feet of the shoreline) from wind throw, maintain a functional interior forest zone within the beach fringe, and sustain habitats for goshawks (Appendix D, USDA Forest Service 2008b). Currently, limited management of young-growth stands within the beach and estuary fringe is allowed under the Forest Plan for the purpose of habitat enhancement (e.g., pre-commercial thinning to accelerate stand development toward old-growth conditions).

Under Alternatives 2, 3, 4, and 5 forest land in the beach and estuary fringe is identified as suitable for young-growth timber production, and commercial young-growth harvest and road construction/reconstruction in the beach and estuary fringe is allowed under these alternatives (Table 5). Young-growth harvest in the beach and estuary fringe has the potential to locally decrease buffer width and reduce its effectiveness in facilitating the movement of organisms across the landscape and providing habitat for wildlife species that are negatively affected by edge. Alternatives that allow clearcutting (Alternatives 2 and 5), or the greatest amounts of road construction/reconstruction (Alternatives 2 and 3) are most likely to increase habitat fragmentation if openings are too large to be crossed by species with limited dispersal capabilities. Young-growth harvest may also delay the development of old-growth stand characteristics in the beach and estuary fringe or may enhance the growth of the remaining trees through thinning.

Table 5
Proposed Young-growth Harvest after 100 Years in the Beach and Estuary Fringe by Alternative

	Beach and Estuary Fringe Management Approach					
Alternative	Number of Entries	Harvest Opening Limits	Stand Treatments and Timing Restrictions[1]	Timber Removal Limits	Additional Measures	Projected Harvest over 100 yrs (Acres)
Alternative 1	NA	NA	NA	NA	NA	0
Alternative 2	Multiple	Limited by Scenery only	CC for first 15 years; CT thereafter	None	1,000-foot-wide corridor adjacent to even-aged harvest units	21,871
Alternative 3	Multiple	NA	CT only (no time limit)	Maximum removal of 33 percent basal area	None	30,769
Alternative 4	Multiple	NA	CT only (no time limit)	Maximum removal of 33 percent basal area	None	11,114
Alternative 5	One-time	10 acres or less	PC or CT for first 15 years	Maximum removal of up to 35 percent of original stand acres	200-ft buffer adjacent to shoreline	3,903

Note: NA = not applicable
[1] CC = Clearcut; PC = Patch Cut; CT = Commercial Thin

The most intensive young-growth harvest in the beach and estuary fringe would occur under Alternative 2 which proposes the greatest amount of harvest and would allow clearcutting to the shoreline during the first 15 years after plan approval and commercial thinning thereafter (Table 2). Alternative 2 includes the following management approach: When even-aged management of young growth occurs in the beach and estuary fringe, the intent is to maintain an approximate 1,000-foot wide protected corridor adjacent inland of the harvest unit to function as alternate, low elevation, forested habitat and corridor. This corridor should be in POG or young-growth, where present, that meets the objectives of the beach fringe, and should be located less than 800 feet in elevation. Beach and estuary standards and guidelines would apply as if this were the original beach buffer. Effects under this alternative would be long-term as multiple entries into stands, or reharvesting the same stand, would be allowed over the planning horizon. Under Alternative 2, shifting the beach and estuary fringe inland would maintain some level of connectivity between watersheds but would locally reduce the ability of the buffer to serve as a transitional zone between interior forest and marine influence.

Less intensive effects to the beach and estuary fringe would occur under Alternatives 3 and 4 (second and third most young-growth acres proposed for harvest, respectively) which would allow commercial thinning (multiple entries) throughout Forest Plan implementation (Tables 2 and 5). Commercial thinning would maintain more of the functions of the beach and estuary fringe than clearcutting or group selection; however, some harvested stands would be managed (i.e., could have more than one entry) over the long-term (i.e., 60 or more years after initial entry).

The effects would be even lower to the beach and estuary fringe under Alternative 5 which proposes the least amount of harvest. Although Alternative 5 would allow created openings of up to 10-acre or commercial thinning, harvest would be limited to the first 15 years after Forest Plan approval (Tables 2 and 5) and only 3,550 acres of young-growth are projected to be managed with no more than 35 percent of each stand harvested). Alternative 5 also includes a 200-foot-wide forested buffer along the shoreline adjacent to harvest units which would continue to protect forest in the beach and estuary fringe for connectivity and habitat while the harvested stand matures. Thus, the functioning of the beach and estuary fringe may be reduced in places due to the reduced buffer, but effects would be long-term and more localized.

Overall, suitable young-growth comprises a small portion of the total amount of beach and estuary fringe within each biogeographic province, most of which occurs in the Etolin Island and Vicinity, North Central Prince of Wales, and Revilla Island/Cleveland Peninsula biogeographic provinces (Table 6). Forest-wide maximum young-growth harvest would affect approximately 2.4 percent, 3.3 percent, 1.2 percent, and 0.4 of the forest land within the beach and estuary fringe (all acres included) under Alternatives 2, 3, 4, and 5, respectively (Table 6). By biogeographic province, maximum young-growth harvest would affect 0 to 5.6 percent of forest land within the beach and estuary fringe under Alternative 2, 0 to 8.1 percent under Alternative 3, 0 to 3.5 percent under Alternative 4, and 0 to 1.1 percent under Alternative 5. Due to the localized nature of anticipated effects, under all of the alternatives the beach and estuary fringe would continue to act as a transition zone between interior forest and saltwater influences, maintain landscape connectivity, and provide benefits to the marine environment across the planning area. Therefore, it would be expected that there may be localized reductions in the ability of the beach and estuary fringe to function as intended under the conservation strategy under each of the alternatives but Forest-wide effects would not measurably reduce the functioning of this contributing element of the conservation strategy.

Table 6
Distribution of Young-growth Harvest Acres (over 100 years) within the Beach and Estuary Fringe by Biogeographic Province and Alternative

	Biogeographic Province	Forest Land Acres in Beach & Estuary Fringe[2]	Estimated Maximum Young-growth Harvest[1] in the Beach Fringe (Young-growth Harvest Acres / % of Forest Land Acres))									
			Alt 1		Alt 2		Alt 3		Alt 4		Alt 5	
1	Yakutat Forelands	6,467	0	0%	7	0.1%	11	0.2%	3	<0.1%	2	<0.1%
2	Yakutat Uplands	8,397	0	0%	0	0%	0	0%	0	0%	0	0%
3	East Chichagof Island	63,036	0	0%	2,087	3.3%	2,470	3.9%	741	1.2%	420	0.7%
4	West Chichagof Island	37,246	0	0%	0	0%	0	0%	0	0%	0	0%
5	East Baranof Island	30,341	0	0%	1,513	5.0%	2,103	6.9%	992	3.3%	314	1.0%
6	West Baranof Island	79,821	0	0%	1,168	1.5%	1,525	1.9%	177	0.2%	80	0.1%
7	Admiralty Island	79,128	0	0%	12	<0.1%	54	0.1%	0	0%	0	0%
8	Lynn Canal	17,923	0	0%	261	1.5%	231	1.3%	13	0.1%	58	0.32%
9	North Coast Range	46,054	0	0%	44	0.1%	227	0.5%	0	0%	8	0.0%
10	Kupreanof/Mitkof Island	38,537	0	0%	2,165	5.6%	3,135	8.1%	450	1.2%	398	1.0%
11	Kuiu Island	70,721	0	0%	944	1.3%	1,351	1.9%	266	0.4%	175	0.2%
12	Central Coast Range	23,755	0	0%	584	2.5%	788	3.3%	211	0.9%	74	0.3%
13	Etolin Island & Vicinity	54,051	0	0%	2,922	5.4%	4,247	7.9%	1,874	3.5%	594	1.1%
14	North Central Prince of Wales	88,369	0	0%	4,856	5.5%	6,872	7.8%	2,946	3.3%	815	0.9%
15	Revilla Island/ Cleveland Pen.	84,629	0	0%	3,957	4.7%	5,892	7.0%	2,588	3.1%	728	0.9%
16	Southern Outer Islands	44,539	0	0%	779	1.7%	1,062	2.4%	683	1.5%	164	0.4%
17	Dall Island and Vicinity	22,452	0	0%	89	0.4%	132	0.6%	0	0%		0.0%
18	South Prince of Wales	48,991	0	0%	438	0.9%	605	1.2%	169	0.3%	68	0.1%
19	North Misty Fiords	26,483	0	0%	44	0.2%	64	0.2%	0	0%	4	0.0%
20	South Misty Fiords	53,091	0	0%	0	0%	0	0%	0	0%	0	0.0%
21	Ice Fields	0	0	0%	0	0%	0	0%	0	0%	0	0%
	Forest-wide	**924,030**	**0**	**0%**	**21,871**	**2.4%**	**30,769**	**3.3%**	**11,114**	**1.2%**	**3,903**	**0.4%**

[1] For modeling purposes, it was assumed, based on an evaluation of economics, that the minimum harvestable age for young growth is 65 to 75 years old, depending on site index.
[2] Includes young-growth, POG, and unproductive forest.

Riparian Management Areas

Riparian areas are the corridors along streams and rivers which provide an interface between upland forests and riverine influences, distinguishing them as a unique ecosystem within the larger forest ecosystem. Riparian areas support some of the most productive stands of old-growth on the Tongass National Forest, and provide habitat for species associated with aquatic environments (e.g., amphibians and furbearers such as river otters) and terrestrial species for which fish are an important food sources (e.g., brown bears and black bears). Riparian areas follow the dendritic nature of river systems and provide forested corridors connecting higher elevation regions in upper watersheds with lower elevation forests in the valley bottoms, providing connectivity within watersheds. Young-growth stands within the riparian areas comprise lower value habitat for old-growth associated wildlife species; however, they maintain functional connectivity for the movement and dispersal of wildlife and serve as buffers between areas of suitable habitat and human activity.

Riparian areas are protected through use of the Fish and Riparian Standards and Guidelines that prohibit timber harvest within a certain distance of streams (depending on stream type or process group). These areas include the 1990 TTRA 100-foot-wide buffers and additional distances intended to preserve the functions of the riparian areas with the sum of both designated as RMA (Section 102 of TTRA). They are intended to maintain anadromous fish habitat (e.g., supplying large-woody debris), maintain water quality (shading, reducing sediment runoff), and provide elevational connectivity within watersheds (Appendix D, USDA Forest Service 2008b). It can be assumed that the integrity of the conservation strategy is maintained when riparian areas continue to support aquatic and terrestrial habitats, maintain water quality and provide landscape connectivity. Currently, limited management of young-growth stands within RMAs is allowed under the 2008 Forest Plan (Alternative 1) when conducted for the purpose of habitat enhancement (e.g., pre-commercial thinning to accelerate stand development toward old-growth conditions).

Commercial young-growth harvest and road construction/reconstruction in the RMA (outside of TTRA buffers), is proposed under Alternatives 2 and 5 within the development LUDs and those non-development LUDs discussed above; no young-growth harvest would occur in the RMA under Alternatives 1, 3, and 4 (Tables 2 and 7). Alternative 2 would allow commercial thinning throughout the life of the Forest Plan. Alternative 5 could be more intense in that it would allow clearings of up to 10 acres or commercial thinning within RMAs, but only during the first 15 years after Forest Plan approval. Young-growth harvest in the RMA has the potential to locally decrease buffer width and reduce its effectiveness in facilitating the movement of organisms across the landscape and reduce the function of riparian areas. Young-growth harvest may also delay the development of old-growth stand characteristics in RMAs. Effects to the conservation strategy would be least under Alternative 5 due to the one-time entry constraint and limited number of harvested acres (Table 7). Under both alternatives, TTRA buffers would continue to protect aquatic systems and maintain functions such as large-woody debris input, shading, and nutrient inputs to streams. Additionally TTRA buffers would maintain elevational connectivity, though potentially through narrower corridors where young-growth harvest units occur.

Overall, suitable young-growth comprises a small portion of the total amount of RMA (outside of TTRA buffers) within each biogeographic province (Table 8). Suitable young-growth in RMAs is spread throughout the forest, with larger concentrations occurring in the North Central Prince of Wales, West Baranof Island, and East Baranof Island biogeographic provinces (Table 8). Forest-wide maximum young-growth harvest would affect approximately 6.7 percent and less than 1 percent of the forest land within RMAs, outside of TTRA buffers under Alternatives 2 and 5, respectively (Table 8). By biogeographic province, maximum young-growth harvest would affect 0 to 17.2 percent of forest land within RMAs (outside of TTRA buffers) under Alternative 2 and 0 to 0.8 percent under Alternative 5 (Table 8). Due to the localized nature of anticipated effects, under all of the alternatives riparian areas would continue to maintain aquatic and terrestrial habitats, maintain water quality, and provide landscape connectivity across the planning area. Therefore, it would be expected that there may be localized reductions in the ability of the RMAs to function as intended under the conservation strategy under each of the alternatives but Forest-wide effects would not measurably reduce the functioning of this contributing element of the conservation strategy.

Table 7
Proposed Young-growth Harvest after 100 Years in Riparian Management Areas (Outside of TTRA buffers) by Alternative

Alternative	RMA Management Approach					Total Projected Harvest (Acres)
	Number of Entries	Harvest Opening Limits	Stand Treatments and Timing Restrictions[1]	Timber Removal Limits	Additional Measures	
Alternative 1	NA	NA	NA	None	NA	0
Alternative 2	Multiple	NA	CT only (no time limit)	None	NA	26,030
Alternative 3	NA	NA	NA	None	NA	0
Alternative 4	NA	NA	NA	None	NA	0
Alternative 5	One-time	< 10 acres	PC or CT for first 15 years	Maximum removal of up to 35 percent of original harvested stand acre	NA	1,089

Note: NA = not applicable
[1] CC = Clearcut; PC = Patch Cut; CT = Commercial Thin

Table 8
Distribution of Young-growth Harvest Acres (over 100 years) in Riparian Management Areas by Biogeographic Province and Alternative

	Biogeographic Province	Forest Land Acres in RMAs Outside of TTRA Buffers)[2]	Estimated Maximum Young-growth Harvest[1] in RMAs (Young-growth Harvest Acres / % of Forest Land Acres))					
			Alts 1, 3, and 4		Alt 2		Alt 5	
1	Yakutat Forelands	28,564	0	0%	36	0.1%	1	<0.1%
2	Yakutat Uplands	4,059	0	0%	28	0.7%	1	<0.1%
3	East Chichagof Island	41,682	0	0%	5,040	12.1%	222	0.5%
4	West Chichagof Island	4,388	0	0%	0	0.0%	0	0%
5	East Baranof Island	8,949	0	0%	1,540	17.2%	68	0.8%
6	West Baranof Island	17,541	0	0%	2,725	15.5%	113	0.6%
7	Admiralty Island	16,096	0	0%	0	0.0%	0	0%
8	Lynn Canal	16,156	0	0%	1,551	9.6%	70	0.4%
9	North Coast Range	22,508	0	0%	12	0.1%	0	0%
10	Kupreanof/Mitkof Island	18,557	0	0%	637	3.4%	25	0.1%
11	Kuiu Island	14,984	0	0%	867	5.8%	38	0.3%
12	Central Coast Range	27,947	0	0%	945	3.4%	38	0.1%
13	Etolin Island & Vicinity	11,947	0	0%	797	6.7%	33	0.3%

Table 8 (continued)
Distribution of Young-growth Harvest Acres (over 100 years) in Riparian Management Areas by Biogeographic Province and Alternative.

	Biogeographic Province	Forest Land Acres in RMAs Outside of TTRA Buffers)[2]	Estimated Maximum Young-growth Harvest[1] in RMAs (Young-growth Harvest Acres / % of Forest Land Acres))					
			Alts 1, 3, and 4		Alt 2		Alt 5	
14	North Central Prince of Wales	49,627	0	0%	7,842	15.8%	314	0.6%
15	Revilla Island/ Cleveland Pen.	36,834	0	0%	2,017	5.5%	82	0.2%
16	Southern Outer Islands	5,553	0	0%	431	7.8%	16	0.3%
17	Dall Island and Vicinity	2,830	0	0%	4	0.1%	0	0%
18	South Prince of Wales	10,457	0	0%	183	1.7%	7	0.1%
19	North Misty Fiords	16,858	0	0%	320	1.9%	15	0.1%
20	South Misty Fiords	17,462	0	0%	0	0.0%	0	0%
21	Ice Fields	17,489	0	0%	1,056	6.0%	46	0.3%
	Forest-wide	390,490	**0**	**0%**	26,030	6.7%	1,089	0.3%

[1] For modeling purposes, it was assumed, based on an evaluation of economics, that the minimum harvestable age for young growth is 65 to 75 years old, depending on site index.
[2] Includes young-growth, productive old-growth, and unproductive forest.

Legacy Forest Structure

The Legacy Forest Structure (Legacy) standard and guideline was added to the Forest Plan in 2008, and was intended as an ecological approach to Forest-wide retention of old-growth habitat characteristics (e.g., large trees, downed logs, and snags) in high risk biogeographic provinces. The Legacy standard and guideline evolved from considerations presented at the Interagency Conservation Strategy Review workshop (USDA Forest Service 2007) and replaced species-specific goshawk foraging and marten standards and guidelines. It applies to those VCUs that have had or are anticipated to have high levels of timber harvest (a list is provided in the Forest Plan; USDA Forest Service 2008a) for old-growth harvest openings greater than 20 acres in size.

Alternative 1 includes the current Legacy standard and guideline. Alternatives 2, 3, 4, and 5 include the current Legacy standard and guideline with a proposed clarification that the VCUs where the Legacy standards and guidelines apply should be verified during project-specific planning and analysis based on harvest standards listed in the Forest Plan. The Legacy Forest Structure standard and guideline would continue to maintain habitats used by old-growth associated species in the VCUs where it applies.

Wildlife

Alternatives 2, 3, 4, and 5 propose a revision to the Goshawk standards and guidelines which address nesting habitat. These standards and guidelines expand the requirement to maintain 100 acres of POG forest surrounding a nest tree or nest site to include the largest diameter young-growth forest if POG alone is not sufficient. The proposed modification would provide greater protection to goshawks and their habitat, and therefore would strengthen this standard and guideline because goshawks will nest in maturing young-growth forest with sufficient structure, if mature and old-growth forest is unavailable, and will also forage in these areas (Reynolds et al. 2006; Boyce et al. 2006). Therefore, the proposed

modification would provide enhanced protection to goshawk habitat in situations where there are less than 100 acres of POG surrounding a nest tree or nest site.

Other Non-wildlife Standards and Guidelines

The current Forest Plan includes a number of other standards and guidelines which preclude or significantly limit timber harvest to protect resources other than wildlife. They apply to areas of high hazard soils, steep slopes, karst terrain, scenic integrity objectives (SIOs) for visually sensitive travel routes and use areas, and timber stands that are technically not feasible to harvest. The retention of old-growth forest provided by these standards and guidelines enhances the conservation strategy, although they were designed with effects to visual resources in mind rather than their potential benefits to wildlife exclusively (Appendix D, USDA Forest Service 2008b).

Alternatives that modify the current standards and guidelines to make young-growth available for harvest would reduce the amount of "additional" retention of forest within the matrix; however, they would not result in additional POG harvest. Alternatives 2, 3, and 4 would allow commercial thinning of young-growth in high vulnerability karst areas. Alternatives 2, 3, and 5 would change the SIO to low SIO for young-growth harvest which allows for larger openings.

Integrity of the Conservation Strategy

Land management on the Tongass National Forest presents a careful balance between ecological, economic, and social (community) values. The conservation strategy is intended to maintain ecological values and certain economic and social values, while allowing other multiple uses (e.g., timber production, renewable energy/infrastructure development, recreation, tourism, mining, and subsistence) to occur on the Tongass National Forest. As such, the conservation strategy is not "risk free" but is intended to balance an acceptable level of risk in ensuring support of well-distributed, viable wildlife populations while meeting the requirements of the National Forest Management Act (PL 86-517; 16 USC §528) and Multiple Use Sustainable Yield Act (PL 94-588; 16 USC §1600).

Overall, the conservation strategy is functioning under conditions that represent stronger conservation practice than anticipated at the time of its development. Actual and projected old-growth harvest under the existing Forest Plan are far below levels predicted under the 1997 Forest Plan, which formed the context within which the conservation strategy was analyzed and intended to function. This has occurred because of economics and a significant decline in the timber industry due to various factors. But most importantly, with the 2001 Roadless Rule in effect, inventoried roadless areas (approximately 2,143,000 acres of development LUDs in roadless areas containing about 823,000 acres of POG) make a major contribution to the maintenance of ecological function on the Tongass National Forest but do so outside of the elements of the conservation strategy. Under the 1997 Forest Plan, it was projected that 84 percent of the original (1954) POG forest would remain in 100 years (Table 9). Under the preferred alternative (Alternative 5) and the other action alternatives, 91 percent of the original POG forest is anticipated to remain. This equates to approximately 400,000 acres of additional old-growth than were assumed during the development and evaluation of the conservation strategy. Likewise, under the 1997 Forest Plan approximately 8,500 miles of roads were anticipated to exist by 2095, whereas under the current Forest Plan Amendment alternatives less than 6,200 miles of roads are anticipated by 2095. This translates to substantially lower road densities under the current Forest Plan and the action alternatives, compared to the 1997 Plan (Table 9). The additional area of POG will function as additional reserves, enhancing the existing reserves, and increasing the effectiveness of the matrix when located around harvest units. As such, the substantially greater spatial extent of old-growth forest on the landscape and fewer roads across the planning area would outweigh the local, adverse effects of young-growth harvest proposed in the Old-growth Habitat LUD, the beach and estuary fringe, and RMAs that would result under the action alternatives as described below.

Proposed modifications to contributing elements of the conservation strategy (e.g., beach and estuary fringe, RMAs, and non-development LUDs) under Alternatives 2, 3, 4, and 5 have the potential to result in localized reductions in the functioning of these elements. That is, young-growth harvest will locally alter forest structure and may reduce connectivity, but the beach and estuary fringe and RMAs would continue to function as intended across the planning area by serving as ecological transition zones, maintaining freshwater and marine aquatic and terrestrial habitat, and providing landscape connectivity. Therefore,

none of the alternatives, when considered in whole, would reduce the ability of the conservation strategy to maintain a functional and interconnected old-growth ecosystem across the planning area and the overall functioning of the conservation strategy in terms of its ability to maintain viable, well-distributed populations of wildlife across the planning area would remain.

Under all of the alternatives the extent of localized effects to contributing elements of the conservation strategy would depend on project-level decisions and strategic implementation of standard and guidelines, such as the landscape connectivity standard and guideline, which are intended to provide important safeguards towards ensuring the sustainability of populations of old-growth associated species. The consideration of geographic scale is important on the Tongass National Forest because it is an island ecosystem, with individual islands at times functioning as metapopulations (many independent populations with limited interchange) for some species that do not frequently disperse between islands. The responsibility for ensuring the effectiveness of the conservation strategy at finer scales (i.e., biogeographic provinces or groups of island), falls on decisions made at the project scale taking into account the configuration of individual landscapes. All projects must demonstrate consistency with Forest Plan components, such as the Landscape Connectivity, Legacy, and species-specific standards and guidelines. This ensures that the Forest Plan is implemented effectively across the planning area, including portions, such as the North Central Prince of Wales biogeographic province which have experienced larger amounts of timber harvest and associated developments than other areas. Thus, the primary difference among alternatives is how the transition to young-growth management would be reached, including the timing, intensity, and extent of old-growth versus young-growth harvest; therefore, the alternatives vary in the approach employed to maintain the integrity of the conservation strategy. However, under all alternatives the integrity of the conservation strategy would be maintained.

The following paragraphs summarize characteristics of each alternative and review how each maintains the integrity of the conservation strategy, beginning with the current Forest Plan (Alternative 1). The action alternatives are then described in order of the level of risk they present to localized reductions in the functioning of contributing elements of the conservation strategy, from greatest to least risk.

Under Alternative 1, the current Forest Plan, the integrity of the conservation strategy would be maintained because no modifications to its contributing elements are proposed. The conservation strategy would continue to function as designed. As outlined above, the history of old-growth harvest since 1997 results in a stronger conservation environment than anticipated when the Forest Plan was developed and analyzed. Therefore, under Alternative 1 it is expected that viable, well-distributed wildlife populations would be maintained across the planning area (USDA Forest Service 2008b). The level of old-growth harvest would be much lower than allowed by the existing Forest Plan, in order to transition toward a greater level of young-growth harvest. However, Alternative 1 would not expedite the transition to young-growth management to the degree of the action alternatives, and therefore, would result in the greatest amount of old-growth timber harvest among the alternatives.

Alternative 2 would have the greatest risk of localized reductions in the functioning of contributing elements of the conservation strategy because it would result in the most young-growth harvest, would allow clearcutting young growth in non-Development LUDs, would allow clearcutting young growth in the beach and estuary fringe for the first 15 years after Forest Plan approval, and would allow commercial thinning of young growth in RMAs (Table 9). Alternative 2 would mitigate beach fringe harvest by shifting the beach and estuary fringe inland, maintaining elements of horizontal connectivity between watersheds but reducing effectiveness to serve as a transitional zone between interior forest and marine influence in those areas of harvest. Alternative 2 would result in the shortest transition time (about 12 years) and would therefore result in the lowest amount of old-growth harvest, minimizing the amount of new road construction and POG harvest in undeveloped/intact areas.

Alternative 3 would have the second greatest risk of localized reductions in the functioning of contributing elements of the conservation strategy. It would result in the second highest amount of young-growth harvest, but unlike Alternative 2 would not allow clearcutting in the beach and estuary fringe (commercial thinning only) or any harvest in RMAs. However, this alternative would involve the greatest amount of road construction/reconstruction some of which would occur within the beach and estuary fringe.

Alternative 3 would result in the second shortest transition time (about 13 years), and therefore would result in the second lowest amount of POG harvest (Table 9).

Alternative 5 would have the third greatest risk of localized reductions in the functioning of contributing elements of the conservation strategy. It would allow created openings of less than 10 acres or commercial thinning of young growth in the beach and estuary fringe and RMAs but only during the first 15 years after Forest Plan approval; effects to wildlife habitat and connectivity would be minimized by limiting the size of harvest openings, allowing removal of a maximum of 35 percent of a previously harvested stand, and implementing a one-time entry stipulation. Additionally, Alternative 5 would maintain a beach and estuary buffer, albeit at a reduced width (200-feetwide), adjacent to the shoreline, which would maintain some connectivity. Alternative 5 would allow young-growth harvest in the Old-growth Habitat LUD during the first 15 years after Forest Plan approval, but would not allow harvest in any other non-development LUD (Table 9). Alternative 5 would result in the third shortest transition time (about 16 years), and would result in the third lowest amount of POG harvest.

Alternative 4 would have the lowest risk of localized reductions in the functioning of contributing elements of the conservation strategy because no harvest would occur in any non-development LUD or within RMAs, and only commercial thinning of young growth would be allowed within the beach and estuary fringe. Alternative 4 would affect the smallest land base (Phase I lands only), and would result in the third shortest transition time (about 16 years; same as Alternative 5), but with the least amount of total harvest (Table 89).

One of the objectives of the Forest Plan was to “”[P]rovide sufficient habitat to preclude the need for listing of species under the Endangered Species Act, or from becoming listed as Sensitive due to National Forest habitat conditions” (USDA Forest Service 2008a p. 2-4). Although no terrestrial species in Southeast Alaska are listed under the ESA, petitions have been filed for the Alexander Archipelago wolf (2011), Queen Charlotte goshawk (1994), and Prince of Wales flying squirrel (2011). The conservation strategy was designed to conserve, and thereby avoid the need to list these and other old-growth associated species. All of the alternatives are expected to maintain a functional and interconnected old-growth ecosystem, capable of supporting well-distributed, viable wildlife populations of wildlife across the planning area; therefore none of them are expected to increase the likelihood of species listing under the ESA.

Monitoring, the systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships (36 CFR 219.19), is a quality control process for implementation of the Tongass Forest Plan. It provides the public, the Forest Service, and other involved resource agencies with information on the progress and results of Forest Plan implementation. As such, monitoring, along with the evaluation of that monitoring, comprise an essential feedback mechanism within an adaptive management framework to keep the Forest Plan dynamic and responsive to changing conditions. The evaluation process also provides feedback that can trigger corrective action, adjustment of plans and budgets, or both, to facilitate feasible and meaningful action on the ground.

The Forest Plan monitoring program is an important mechanism for confirming that the transition to young-growth management is achieving the desired effects. It allows the Forest Service to respond to new information and/or changing conditions, thereby working to ensure that there are no unintended consequences of the transition to a young-growth based timber program. The monitoring program is being modified concurrently with the proposed Forest Plan amendment to meet the requirements of the 2012 Planning Rule (Forest Service Handbook 1909.12, chapter 30, section 32.3). The Forest Service is developing monitoring questions associated with biodiversity, wildlife, and streams and fish habitat (among other topics) which speak to the effects of young-growth management. Draft monitoring questions address the ability of young-growth harvest to improve habitat for wildlife and timber production, and the ability of riparian vegetation to support key riparian functions. Monitoring data will allow the Forest Service to evaluate and change silvicultural prescriptions and other practices as needed to ensure continued functioning of contributing elements of the conservation strategy across the planning area.

Table 9
Summary of Effects by Alternative and Comparison with 1997 Forest Plan

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Projected acres of POG harvested under 1997 Forest Plan through 2095	474,000	474,000	474,000	474,000	474,000
Actual acres of POG harvested since 1995 plus projected acres of harvest under 2016 Forest Plan through 2095	100,517	70,274	73,233	80,262	80,144
Projected Percent of POG remaining in 2095 under 1997 Forest Plan	84	84	84	84	84
Projected Percent of POG remaining in 2095 under 2016 Forest Plan	90	91	91	91	91
Projected Road Miles/Road Density (mi/sq mi) on NFS Lands under 1997 Forest Plan in 2095	8,500 mi 0.32 mi/mi^2	8,500 mi 0.32 mi/mi^2	8,500 mi 0.32 mi/mi^2	8,500 mi 0.32 mi/mi^2	8,500 mi 0.32 mi/mi^2
Projected Road Miles/Road Density (mi/sq mi) on NFS Lands under 2016 Forest Plan in 2095	6,036 mi 0.23 mi/mi^2	6,148 mi 0.23 mi/mi^2	6,113 mi 0.23 mi/mi^2	5,964 mi 0.23 mi/ mi^2	6,086 mi 0.23 mi/ mi^2
Estimated Years to Fully Transition to Young-growth Management	32 years	12 years	13 years	16 years	16 years
Projected Young-growth Harvest in Old-Growth Habitat LUD (acres)	0	31,640	26,186	0	1,811
Projected Young-growth Harvest in Old-growth Habitat LUD as a % of Forest Land Acres in Old-growth Habitat LUD	0%	3.3%	2.8%	0%	0.2%
Projected Young-growth Harvest in Other Non-Dev. LUDs (acres)	0	12,868	12,857	0	0
Projected Young-growth Harvest in Other Non-Dev. LUDs as a % of Forest Land Acres in Other Non-Dev. LUDs	0%	0.8%	0.8%	0%	0%
Projected Young-growth harvest in Beach and Estuary Fringe (ac)	0	21,871	30,769	11,114	3,903
Projected Young-growth Harvest in Beach/Estuary Fringe as a % of Forest Land Acres in Beach/Estuary Fringe	0%	2.4%	3.3%	1.2%	0.4%
Projected Young-growth harvest in RMAs outside of TTRA Buffers (acres)	0	26,030	0	0	882
Projected Young-growth Harvest in RMAs as a % of Forest Land Acres in RMAs	0%	6.7%	0%	0%	0.3%

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APPENDIX E
INTERAGENCY OLD GROWTH RESERVE REVIEW

Interagency Old Growth Reserve Review
Sealaska Land Conveyance
September 2015

Meeting date: Craig Ranger District, February 3-5, 2015

Attendees: Steve Brockmann (USFWS), Steve Bethune (ADF&G), Mark Minnillo (ADF&G); USFS: Brian Logan, Marla Dillman, Ray Slayton, Sally Burch, Lucy Maldonado (Day 1 only), Molly Simonson (note taker).

INTRODUCTION

The Sealaska Land Entitlement finalization of the Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015 conveyed 69,585 acres of Tongass National Forest lands to Sealaska Corporation to fulfill the commitment in the Alaska Native Claims Settlement Act. Included in these acres are areas that are designated as Old Growth Reserves (OGRs) in the 2008 Tongass Land and Resource Management Plan (Forest Plan). All of the OGRs reduced by the conveyance addressed here are on Prince of Wales Island and two smaller islands to the west.

On February 3, 2015 an interagency review team (IRT) met to develop a biologically preferred option for OGRs that meets Forest Plan Appendix K criteria and to document why other proposals are not recommended. The IRT was comprised of biologists from the U.S. Fish and Wildlife Service (USFWS), the Alaska Department of Fish and Game (ADF&G), and the U. S. Forest Service (USFS) who met in Thorne Bay to review the small OGRs affected by the land conveyance.

This meeting addressed how small OGRs have been affected by the Sealaska Land Entitlement finalization. The IRT came up with an interagency recommendation (biologically preferred location IOGRs) for each small OGR affected and one medium OGR.

The 2008 Forest Plan uses Land Use Designations (LUD) to guide the management of NFS lands within the Tongass. Each designation provides for a unique combination of activities, practices and uses. LUD II areas are congressionally designated areas in a roadless state to retain the wildland character. Wildlife and fish habitat improvement and primitive recreational facility development may be permitted. Timber harvesting is limited to insect and disease control. Roads will not be built except to serve mining and other authorized activities and vital Forest transportation and utility system linkages. LUD IIs are also designated as large OGRs. Large OGRs have not been reviewed since 1997. Some of the LUD IIs changed as a result of the land conveyance. The 2008 Forest Plan defines LUD II as Congressionally designated areas that should be managed in a roadless state to retain the wildland character. Wildlife and fish habitat improvement and primitive recreational facility development may be permitted. Timber harvesting is limited to insect and disease control. Roads will not be built except to serve mining and other authorized activities and vital Forest transportation and utility system linkages.

Our process was to look at large and medium OGRs and then move on to small OGRs.

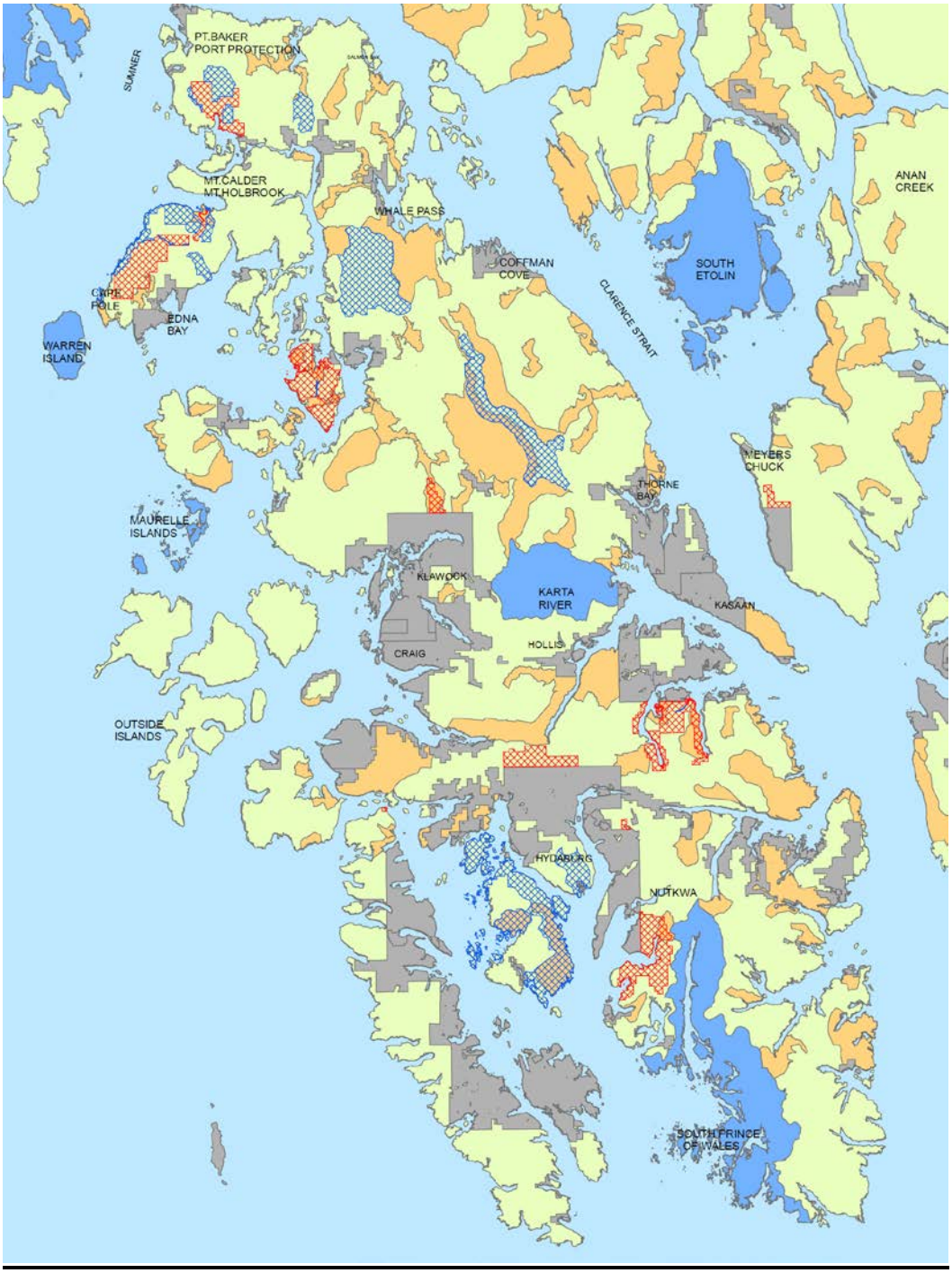
The land conveyance directly affected OGRs on POW, and neighboring islands) in VCUs 5450,

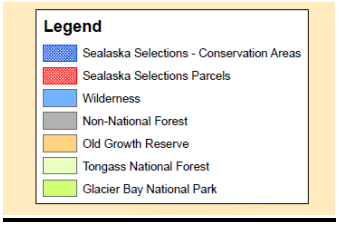
5460, 5560, 5570, 5600, 5872, 5900, 5940, 6180, 6190, 6200, and 6850 (see map 1).

This document will discuss the effects to the VCUs listed above as well as OGRs in VCUs that were indirectly impacted by the land conveyance; most of these VCUs involve the medium OGR. These VCUs include 6160, 6170, 6750 and 6760.

VCUs 5450, 5460 are on Kosciusko Island; 5560, 5570, 5600 and 5872 are on Tuxekan Island; while 5900 and 5940 (Election Creek); 6180, and 6190 were a medium OGR in the Old Thom's Research Natural Area; 6200 (Dog Salmon) and 6850 (Nutkwa) are all Prince of Wales Island.

The 2015 Interagency review team proposal for the medium also affects VCUs 6160, 6170, 6750 and 6760.





Map 1

Conservation Strategy

Small OGRs were analyzed extensively during the 2008 Forest Plan Amendment process (USFS 2008), and many were modified. This review is discussed as the 2006 IRT. The Forest Plan allows line officers to further modify the size and location of OGRs under certain circumstances (Forest Plan Appendix K). Modifications of small OGRs require an interagency review to ensure that OGRs meet Forest Plan criteria. Alternative locations for OGRs "must provide comparable achievement of Old–growth Habitat LUD goals and objectives" (Forest Plan, p. 3-57 and 3-62).

Goals

- Maintain areas of old-growth forests and their associated natural ecological processes to provide habitat for old-growth associated resources.
- Manage early seral conifer stands to achieve old-growth forest characteristic structure and composition based upon site capability. Use old growth definitions as outlined in Ecological Definitions for Old-growth Forest Types in Southeast Alaska (R10-TP-28).

Objectives

- Provide old-growth forest habitats, in combination with other LUDs, to maintain viable populations of native and desired non-native fish and wildlife species and subspecies that may be closely associated with old-growth forests.
- Contribute to the habitat capability of fish and wildlife resources to support sustainable human subsistence and recreational uses.
- Maintain components of flora and fauna biodiversity and ecological processes associated with old-growth forests.
- Allow existing natural or previously harvested early seral conifer stands to evolve naturally to old-growth forest habitats, or apply silvicultural treatments to accelerate forest succession to achieve old-growth forest structural features. Consider practices such as thinning, release and weeding, pruning, and fertilization to promote accelerated development of old-growth characteristics.
- To the extent feasible, limit roads, facilities, and permitted uses to those compatible with old-growth forest habitat management objectives.
- Significant modifications to OGRs (e.g. a land conveyance or substantial timber harvest) require consideration and review of factors such as connectivity, size, and shape of the reserve, as well as the basic assumptions behind the existing reserve location.

Pursuant to Forest Plan Appendix K, OGR boundary changes require an interagency team of USDA Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), and Alaska Department of Fish and Game (ADF&G) biologists to jointly evaluate the location and habitat composition of the OGRs by reviewing such things as productive old growth (POG) blocks within a VCU.

One goal of the Forest Plan is to maintain healthy forest ecosystems with a mix of habitats at different spatial scales capable of supporting the full range of naturally occurring flora, fauna, and ecological processes characteristic of Southeast Alaska. To accomplish this goal, an old-growth habitat conservation strategy was incorporated into the Forest Plan. This strategy consists of two components. The first is a forest-wide system of old-growth reserves (OGRs) comprised of lands classified by the Forest Plan as non-development land use designations (LUDs). These LUDs include, among others, Wilderness, Wilderness National Monument, Remote and Semi-Remote Recreation, Wild Rivers, Municipal Watersheds, and Old-growth Habitat LUDs. The Old-growth Habitat LUD is further subdivided into small, medium, and large old-growth

reserves. The second component of the old-growth strategy is the set of standards and guidelines for habitats that occur within the "matrix" or lands outside of the non-development LUDs.

OGR Criteria

The Forest Plan Appendix K and 2008 Forest Plan FEIS Appendix D describe the requirements for OGRs in detail. Primary OGR habitat criteria are summarized below. OGR calculations are based on the acres of National Forest Service lands within the VCU.

- Small OGRs should encompass a contiguous landscape representing at least 16 percent of each VCU with at least 50 percent of that area in productive old growth (POG). The preferred biological objective is for each small OGR to contain at least 800 acres of POG.
- OGRs must contain a minimum of 400 acres of POG.
- Where VCU boundaries do not match watershed or ecological boundaries, up to 30 percent of the OGR may be mapped in an adjacent VCU if the OGR objectives are met.
- VCUs that are separated by saltwater channels, reserves may be separated, but attempt to retain 800 acres of productive old growth in each.
- OGR boundaries should follow recognizable features that are identifiable on the ground such as streams, roads, distinctive ridges, watershed boundaries, or v-notches.
- OGRs should be located so that spacing is maintained in the four cardinal directions.
- Reserves should be more circular rather than linear to maximize the amount of interior forest habitat.
- The amount of early seral habitat (young growth) and roads should be minimized within the OGRs.
- Existing large blocks of contiguous high-volume old-growth forest should not be further fragmented by timber harvesting or road building.
- Incorporate wider corridors. Designed corridors should be of sufficient width to minimize edge effect and provide interior forest conditions.
- Do not differentially cut low altitude, high-volume old growth [represented by marten winter habitat: high-POG $\leq$800 feet elevation]
- Site-specific factors in placing reserves should be considered to help meet multiple biodiversity or wildlife habitat objectives. Factors include, but are not limited to:
    1. The largest remaining blocks of contiguous old growth within a watershed. Old-growth forest that constitutes scattered fragments of unsuitable timberland generally did not contribute to meeting small reserve design.
    2. Rare features such as underrepresented forest plant associations or stands with some of the Forest's highest volume timber stands (defined as high-POG and particularly SD67).
    3. Known or suspected goshawk nesting habitat (defined as high-POG <1000 feet elevation).
    4. Known or suspected marbled murrelet nesting habitat. [Represented by large tree SD67]
    5. Important deer winter range to maintain important deer habitat capability to meet public demand for use of the deer resource (defined as high-POG <800 feet elevation

on south and west aspects for deep snow habitat and POG <1500 feet elevation for average winter habitat).

Other Forest Plan Direction

Forest Plan Management Prescriptions for Old-growth Habitat (Forest Plan FEIS p. 3-62)

- During project-level environmental analysis, for projects areas that include or are adjacent to mapped old-growth habitat reserves, the size, spacing, and habitat composition of mapped reserves may be further evaluated (See Appendix K for mapping criteria.)
- Adjust reserves not meeting the minimum criteria to meet or exceed the minimum criteria. Reserve location, composition, and size may otherwise also be adjusted.
- Alternative reserves must provide comparable achievement of the Old-growth Habitat LUD goals and objectives. Determination as to comparability must consider the criteria listed in Appendix K.
- Adjustments to individual reserves are not expected to require a significant plan amendment. Adjustments Forest-wide shall be monitored yearly to assess whether a significant plan amendment is warranted on the basis of cumulative changes.

Forest-wide Standards and Guidelines for Landscape Connectivity (Forest Plan p. 4-91):

Design projects to maintain landscape connectivity. The objective is to maintain corridors of old-growth forest among large and medium Old-growth Habitat reserves (Appendix K) and other Non-development LUDs at the landscape scale. Review forest connectivity within and between OGRs and non-development LUDs during environmental review of projects proposing timber harvest, road construction, or other significant vegetation alteration. Where existing corridors are insufficient or vulnerable to harvest, stands of POG should be provided as corridors or small reserves should be relocated.

HISTORY OF THE OGRS

The following documents provide the history of OGRs:

Developmental and National Setting LUD's and VPOP (February 1997)
Forest Plan (1997)
Prince of Wales Island Interagency OGR Review Report (2002)
Final Forest Plan (2008) OGR spreadsheet (09_092909_OGR_Tracking_Table.xls)

Individual NEPA documents that included OGRs analysis:

Central Prince of Wales (CPOW) EIS (1993) -VCU 5542
Polk Inlet EIS (1995) - VCUs 6180, 6190 and 6200
Control Lake EIS (1998) -VCUs 5940, 5950 and 5960
Cholmondeley EIS (1998) -VCUs 6160, 6170, 6750 and 6760
Kosciusko DEIS (2002) -VCUs 5450 and 5460
Tuxekan Timber Sale DEIS (update 2004) – VCUs 5560, 5570, 5600 and 5872
Staney Timber Sale (TEAMS) (2005) –VCU 5900
Big Thorne EIS (2013) -VCU 5950

Not covered under any previous NEPA (except Forest Plan) – 6850

ANALYSIS OF THE OGRS

Past reviews of the small OGRs include the 2002 Review of the OGRs on Prince of Wales Island (2002 POW review team) and a 2006 Tongass wide review of the OGRs, including those on Prince of Wales, for the 2008 Forest Plan amendment (2006 IRT).

The goals of the 2015 IRT included:

- Review purpose, rational, and objectives used by previous interagency review teams for locating current OGRs;
- Identify biologically preferred OGR locations for OGRs located in VCUs 5450, 5460, 5560, 5570, 5600, 5872, 5900, 5940, 6180, 6190, 6200, and 6850.

ANALYSIS OF OGRS by VCU

Kosciusko Island

Pre-conveyance: During the 2006 OGR review for the 2008 Forest Plan amendment the designated OGRs in VCUs 5450 and 5460 were combined. All the OGR in VCU 5460 were counted towards the OGR in VCU 5450. The acres designated as a Special Interest Area (SA) LUD in VCU 5460 function and count as OGR acres in VCU 5460. The required amount of acres for a small OGR is met in VCU 5460 by the designation of an SA in this VCU under the 2008 Forest Plan. Both OGRs were modified to exclude units proposed in the Kosciusko Timber Sale. Acknowledge The IRT recommended that that Forest Road 1525225 which occurs within the OGR be closed.

Post Conveyance: On Kosciusko Island the Defense Authorization Act for 2015 conveyed almost 12,000 acres of National Forest land to the Sealaska Corporation. Nearly all of the acres were productive forest lands (11,161 acres) and the majority of these acres are young growth timber (7,328 acres).

The land conveyance minimally affected the currently designated small OGR boundaries in VCU 5450 and 5460. The conveyance removed a small portion of the OGR in VCU 5450 in the southwest corner and the OGR in VCU 5460 lost the small western finger.

VCU 5450 -Survey Cove

In the 1997 TLMP there were two disconnected OGRs in this VCU that are mapped as small OGRs (see Figure 1). The western OGR is overlap from and applies to VCU 5450.

Pre-conveyance: The 2002 POW review team relocated the 1997 TLMP small OGR to increase POG acres because the 1997 TLMP OGR was mostly muskeg. The 2002 POW review team proposal expanded the OGR to the south and northeast to pick up POG acres. Since there is not enough POG remaining in this VCU the 2002 POW review team expanded the OGR into adjacent VCU 5460. This OGR was linear, contained second growth, roads, and higher elevation stands. The OGR did not include preferred habitat but it did include the only remaining habitat.

2006 IRT recommended adopting the 2002 POW review team OGR. The proposed 2006 IRT OGR in VCU 5450 overlaps into VCU 5460.

The 2006 IDT noted that the 2006 IRT OGR (that was originally proposed by the 2002 POW review team) included units in the Kosciusko Timber Sale and modified the IOGR to exclude these units. A project level review was recommended to consider adding second growth habitat to make the OGR more circular.

Post Conveyance: The conveyance removed a small southwest portion of the OGR in VCU 5450. The land conveyance resulted in the removal of 68 acres from the OGR in VCU 5450; 53 of these acres were POG. The resulting OGR still meets minimum Forest Plan acre and POG acre requirements.

2015 IOGR Rationale/Notes: This VCU has been heavily impacted by past harvest. There are no large contiguous blocks of POG left in VCU 5450. In order to replace the acres of POG lost due to the land conveyance the 2015 IRT proposes adding acres from adjacent VCU 5460. The block of POG added from VCU 5460 is one of the largest remaining patches of contiguous old growth in that VCU. The 2015 IRT proposal also adds acres and POG acres to the OGR in VCU 5450 from the adjacent VCU (5460) to try to compensate for the overall loss of POG in VCU 5450. Adding the acres from VCU 5460 to the proposed 2015 biologically preferred OGR also helps to maintain connectivity through the central portion of south Kosciusko Island; this is especially important at the landscape scale when considering that this area is now surrounded by lands in other ownerships. The 2015 IRT proposal would add 1260 total acres and 904 acres of POG to the OGR. As a result of these additional acres the 2015 IRT OGR would exceeds both the minimum acre requirements and the POG acres requirements. The 2015 IRT felt this was necessary given the amount of past harvest in the area, the current lack of remaining POG and lack of connectivity in this portion of Kosciusko Island (see Figure 1).

Comparison of Small OGR in VCU 5450

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	10,764		
Non-NFS land (acres)	3,109	6,249	6,249
NFS land Total (acres)	7,655	4,515	4,515
16% of NFS land (Min. Req. OGR acres)	1,211	722	722
All Non-development LUD in VCU	1,993	1,917	1,994
Small OGR (total acres)[1/]	1,454	1,386	2,652[1/]
8% of NFS land (Min. POG Req. acres)	605	361	361
OGR POG (total acres)[2/]	867	814	1,718
All Non-development POG (acres)	1,267	1,220	1,468
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU 5460			
Total OGR Acres	266	260	1,448
OGR POG Acres	266	260	1,159
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	Yes	Yes
Minimizes roads (total road miles)	3.9	3.9	4.8
Includes streams (Class I stream miles)	0.0	0.0	6.2
Minimizes early seral habitat (acres)	293	293	463
Includes largest remaining block of POG in VCU?	No	No	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	499	453	1,016
Deep snow deer/marten habitat (acres) [4/]	297	271	742
Goshawk and murrelet nesting habitat (acres) [5/]	703	656	1,273
Other Considerations			
Maintains Connectivity	No	No	Yes
Low elevation POG (acres)[6/]	423	391	1,150

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types; see Issue 3)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5460 -Edna Bay

Pre Conveyance: In the 1997 TLMP there were two disconnected areas in this VCU that were both designated as small OGRs (see Figure 1). The western OGR was overlap from and applies to the OGR in VCU 5450. The eastern OGR counted towards the OGR in this VCU (5460). The acres in the western OGR that count towards the OGR in VCU 5450 are discussed above under that VCU.

Since eastern OGR was short total acres the 2006 IRT recommended expanding it to the north to create a more circular reserve and form a connection with the low elevation pass between Van Sant Creek and Trout Creek (in VCU 5430), where evidence of high deer use has been observed. This OGR includes the high vulnerability karst on west side of Van Sant Creek and a portion of the POG remaining at Van Sant Cove. The 2006 IRT recommended prioritizing second growth included in the OGR for thinning.

The 2006 IRT IOGR included units proposed in the Kosciusko Timber Sale. The 2006 IRT responded that it was preferable that the IOGR maintain the travel corridor/pass located on the east side of the VCU. The modified the IOGR excluded the Kosciusko Timber Sale units but maintains the low elevation east-west travel corridor/pass between Van Sant Creek and Trout Creek (in VCU 5430). The 2006 team recommended that Forest Service Road 1525225 be closed.

For the 2008 Forest Plan the eastern OGR designation was changed from small OGR to SA; the boundary of the OGR was not changed. The acres now designated as SA count and function as the OGR in this VCU. A portion of this SA overlaps into adjacent VCU 5430. The contiguous acres of this SA in VCU 5430 also count towards the OGR in VCU 5460. There is another non-contiguous SA in VCU 5430 that functions as the OGR for VCU 5430

Post conveyance: The land conveyance resulted in the loss of the western finger of the western OGR in this VCU; however these acres count towards the OGR in VCU 5450. The land conveyance also changed the area that was designated as SA to a LUD II designation. The boundaries of the SA/LUD II area were not changed (see Figure 1).

2015 IOGR Rationale/Notes: For 2015 IRT comments on the affects to the western OGR see discussion under VCU 5450 above.

Under the 2008 Forest Plan the SA in VCU 5460 functioned as the OGR in this VCU. As part of the defense bill the SA LUD in VCU 5460 was converted to a LUD II which the 2015 IRT believes meets the intent of and functions as an OGR in this VCU. The minimum acreage criteria and POG acres required for a small OGR are met by the LUD II area. Therefore no changes are recommended and no additional acres are required for this SA/LUD II/OGR.

Acreage differences in this OGR/SA/LUD II shown in the comparison table between pre conveyance and post conveyance are due to GIS edits, no changes were made to the boundary (see Figure 1).

Comparison of Small OGR in VCU 5460*

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	14,655		
Non-NFS land (acres)	4,055	5,326	5,326
NFS land Total (acres)	10,600	9,329	9,329
16% of NFS land (Min. Req. OGR acres)	1,697	1,493	1,493
All Non-development LUD in VCU	1,508	1,501	1,501
Small OGR (total acres)[1/]	0	1, 656	1, 656
8% of NFS land (Min. POG Req. acres)	849	746	746
OGR POG (total acres)[2/]	0	1,167	1,167
All Non-development POG (acres)	1,214	1,207	1,207
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU 5430			
Total OGR Acres	519	519	519
OGR POG Acres	305	305	305
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	No	No	No
Minimizes roads (total road miles)	3.2	3.2	3.2
Includes streams (Class I stream miles)	0.6	0.6	0.6
Minimizes early seral habitat (acres)	360	360	360
Includes largest remaining block of POG in VCU?	Yes	Yes	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	935	935	935
Deep snow deer/marten habitat (acres) [4/]	494	494	494
Goshawk and murrelet nesting habitat (acres) [5/]	1,068	1,068	1,068
Other Considerations			
Maintains Connectivity	Yes	Yes	Yes
Low elevation POG (acres)[6/]	561	561	561

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)
*Acreage differences between pre and post conveyance due to GIS map edits and not boundary changes

Sealaska Land Conveyance effect to SA/OGR in VCU 5410 with ROW at Shipley Bay

There are no mapped OGR acres in this VCU; all acres are mapped as SA or LUD II acres. The SA in this VCU is in two separate pieces. The northwestern piece functions as the OGR for VCU 5430. This piece was originally contiguous with the large Mt Calder-Mt Holbrook LUD II; however due to the land conveyance Sealaska now has a road right of way (ROW) through here to potentially connect to the old LTF/MAF in Shipley Bay. As a result of the ROW the portion of the OGR/LUD II in VCU 5430 is now disconnected from the large Mt Calder –Mt Holbrook LUD II area (see Figure 1).

These acres in the northwestern mapped SA/OGR in VCU 5430 are contiguous with the western OGR/SA acres in VCU 5410. Combining the northern SA/OGR in VCU 5430 (4,669 acres) with the western portion of SA/OGR in VCU 5410 (3,234 acres) for a total of 7,933 acres. The POG acres when these two areas are combined equal 6,008 acres. The small OGR requirements for this VCU are at least 2,522 acres with 1,261 acres of POG (without the reduction in required acres in the OGR due to the overall loss of Forest Service acres in the VCU). The Sealaska land conveyance resulted in a portion of the SA/OGR in this VCU being disconnected to the Mt Calder-Mt Holbrook LUD II area; however, despite loss of the connectivity between the OGR/LUD II in VCU 5430, the area still has adequate protected habitat to meet minimum small OGR requirements in this VCU. The 2015 IRT recommends no additional OGR designations in this VCU.

VCUs 5450 and 5460 and Right of Way in VCU 5410

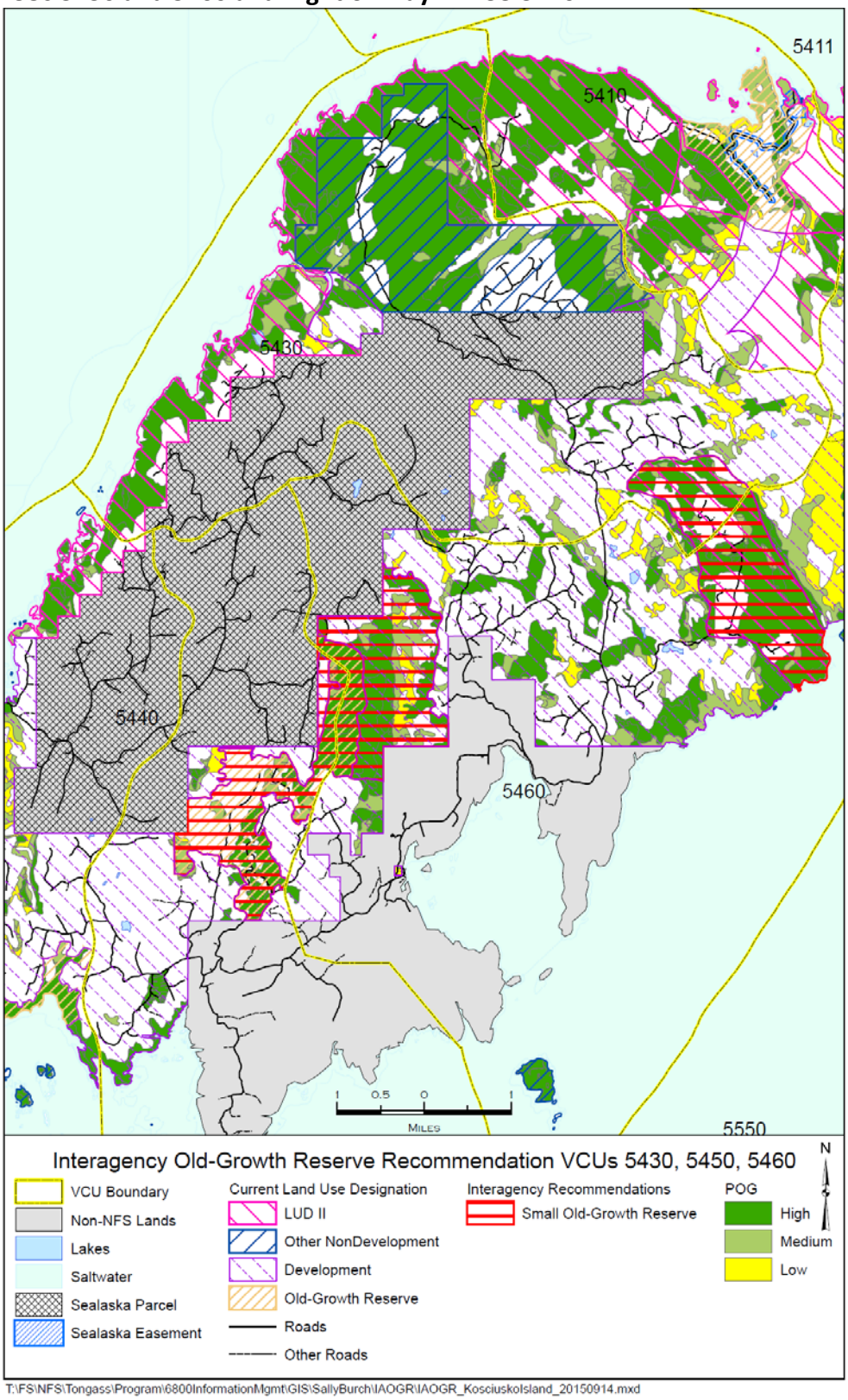


Figure 1

Tuxekan Island

VCU 5560 -Northwest Tuxekan

Pre Conveyance: The 2006 IRT proposed to adopt the POW 2002 Review and Tuxekan Timber Sale Draft ROD proposal to relocate 1997 Forest Plan small OGR. This proposal added the largest remaining block of POG that includes south-facing slopes, high value deer winter range, and goshawk and murrelet nesting habitat. This proposal increased total acres in the OGR and includes some young growth acres.

The 2008 Forest Plan Amendment reduced the size of the small OGR to meet minimum acre criteria but retained the largest remaining block of POG, south-facing slopes, high value deer winter range, and potential goshawk and murrelet nesting habitat.

The OG LUD was added to this VCU because while the non-development LUD acres in this VCU meet the acre criteria for a small OGR these acres occur on a series of small islands and not on Tuxekan Island.

Post Conveyance: Most of the land in this VCU is now in Sealaska ownership including the entire area that was designated as small OGR in this VCU. The remaining acres of non-development LUD in this VCU are on small islands mostly to the north of Tuxekan Island. These acres of non-development meet the Forest Plan minimum acres requirements for a small OGR.

2015 IOGR Rationale/Notes: Most of the remaining Forest Service acreage in VCU 5560 is on El Cap Island and other small, isolated, non-timbered islands. There is only one substantial block of POG in Forest Service ownership left in this VCU on Tuxekan Island. The 2015 IRT recommends that this block be included in the OGR. Most of the block of POG is within the beach buffer and therefore low elevation POG. The 2015 IRT recommends that the OGR in this VCU connect with the OGR in VCU 5570 to maintain this block. The 2015 IOGR proposal in VCU 5560 is contiguous with the 2015 IOGR proposal in VCU 5570. These two OGRs provide some connectivity between Tuxekan Island and mainland POW via a saltwater channel (see Figure 2).

Comparison of Small OGR in VCU 5560

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	6,789		
Non-NFS land (acres)	843	4,359	4,359
NFS land Total (acres)	5,946	2,430	2,430
16% of NFS land (Min. Req. OGR acres)	951	374	374
All Non-development LUD in VCU	3,055	1,866	2,321
Small OGR (total acres)[1/]	1,016	0	455
8% of NFS land (Min. POG Req. acres)	476	187	187
OGR POG (total acres)[2/]	882	0	378
All-Non-development LUD POG (acres)	2,167	1,229	1,609
Acreage requirements met? (Total/POG)	Yes/Yes	No/No	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	Yes
Minimizes roads (total road miles)	1.6	0.0	0.0
Includes streams (Class I stream miles)	4.2	0	0.6
Minimizes early seral habitat (acres)	0	0	57
Includes largest remaining block of POG in VCU?	Yes	No	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	361	0	331
Deep snow deer/marten habitat (acres) [4/]	418	0	363
Goshawk and murrelet nesting habitat (acres) [5/]	418	0	363
Other Considerations			
Maintains Connectivity	Yes	No	Yes
Low elevation POG (acres)[6/]	882	0	381

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5570 -Northeast Tuxekan

VCU 5570 is separated by a saltwater channel with a portion of the VCU on Tuxekan Island and part on Prince of Wales Island.

Pre conveyance: The OGR in VCU 5570 overlaps into both VCU 5560 and VCU 5600. This overlap is not required to meet acre criteria but to follow recognizable features. The 2006 IRT adopted the 2006 Tuxekan Timber Sale Draft ROD OGR that relocated the small OGR to increase POG, maintain low elevation habitat, deer winter range, murrelet nest, and potential goshawk nesting habitat. The 2006 IRT OGR was adopted in the 2008 Forest Plan.

Post Conveyance: The Sealaska land conveyance resulted in the loss of most the acres designated as small OGR in this VCU. The remaining acres of OGR are now isolated and surrounded by lands in other ownership.

2015 IOGR Rationale/Notes: The 2015 IRT recommends replacing the acres remaining in the existing small OGR on Tuxekan with acres on the northern tip of the island adjacent to the 2015 IRT proposed OGR in VCU 5560 (see Figure 2). The intent of these acres is to provide connectivity between the large LUD II area around Sarkar Lake in VCUs 5541 and 5542 (on POW mainland) and the IRT proposed small OGR in VCU 5560 (on Tuxekan). The connectivity factor is of higher importance than trying to exclude the second growth that occurs within the 2015 IRT proposed OGR. The 2015 IRT recommends selecting an area, mostly beach buffer, which is across the saltwater channel on mainland POW. Most of these proposed acres on mainland POW are still in VCU 5570; however in order to provide compete connectivity to the large LUD II area acres in VCU 5542 were also included. These acres across the channel would extend from just south of Dargon Point north to Kahli Cove. Even though these two areas are separated by a saltwater channel they will contribute to the connectivity across to mainland POW. The saltwater channel is at the most about 1 mile across; however this channel is interspersed with many smaller islands which would facilitate dispersal. By selecting the acres on mainland POW connectivity is improved between Tuxekan Island and the large LUD II area around Sarkar Lake. This LUD II area is then connected to other OGRs and LUD II areas on POW.

Comparison of Small OGR in VCU 5570

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	8,520		
Non-NFS land (acres)	1,487	3,812	3,812
NFS land Total (acres)	7,033	4,708	4,708
16% of NFS land (Min. Req. OGR acres)	1,128	738	738
All Non-development LUD in VCU	1,556	737	2,304
Small OGR (total acres)[1/]	1,309	328	1,566
8% of NFS land (Min. POG Req. acres)	564	369	369
OGR POG (total acres)[2/]	884	280	810
All Non-development LUD POG (acres)	4,097	576	1,328
Acreage requirements met? (Total/POG)	Yes/Yes	No/No	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU 5560			
Total OGR Acres	103	0	0
OGR POG Acres	55	0	0
Small OGR LUD Overlap into Adjacent VCU			
VCU 5600			
Total Acres	93	0	0
POG Acres	62	0	0
Small OGR LUD Overlap into Adjacent VCU			
VCU 5542			
Total Acres	0	0	70
POG Acres	0	0	58
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	Yes
Minimizes roads (total road miles)	3.4	0.4	4.4
Includes streams (Class I stream miles)	4.0	0.6	2.6
Minimizes early seral habitat (acres)	9	9	734
Includes largest remaining block of POG in VCU?	Yes	No	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	444	66	432
Deep snow deer/marten habitat (acres) [4/]	567	102	666
Goshawk and murrelet nesting habitat (acres) [5/]	567	102	666
Other Considerations			
Maintains Connectivity	Yes	No	Yes
Low elevation POG (acres)[6/]	884	280	810

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5600 -Southwest Tuxekan

Pre Conveyance: The 2006 IRT proposed to adopt the 2002 POW IRT and Tuxekan Timber Sale Draft ROD that modified the small OGR to increase acres to meet total and POG acre requirements; include both deer winter range and the largest contiguous block of POG, as well as the low elevation pass between the east fork of Karheen Creek and the large lake in VCU 5800. This modified OGR also follows recognizable features and improves connectivity. The OGR is linear in shape because VCU is fragmented by past harvest. The OGR was designed to include remaining POG and maintain connectivity.

Post Conveyance: Due to the Sealaska land conveyance there is very little Forest Service land remaining in this VCU. Conveyance reduces connectivity between OGRs in VCUs 5600 and 5872, which were linear spanning Tuxekan Island.

2015 IOGR Rationale/Notes: The Sealaska land conveyance results in little National Forest Service (NFS) land remaining in this VCU. The 2015 IRT suggested OGR includes most of the remaining NFS land in the VCU and as a result exceeds the 16 percent of NFS land in the VCU requirement in the Forest Plan (see Figure 2). Biologically Preferred OGR enhances connectivity to the beach.

Comparison of OGR in VCU 5600

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	6,026		
Non-NFS land (acres)	2	5,264	5,264
NFS land Total (acres)	6,024	762	762
16% of NFS land (Min. Req. OGR acres)	964	122	122
All Non-development LUD in VCU	1,213	563	761
Small OGR (total acres)[1/]	1,059	556	755
8% of NFS land (Min. POG Req. acres)	482	61	61
OGR POG (total acres)[2/]	788	373	526
All Non-development LUD POG (acres)	861	373	526
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	No	No	Yes
Minimizes roads (total road miles)	0.9	0.0	0.0
Includes streams (Class I stream miles)	5.2	3.8	4.8
Minimizes early seral habitat (acres)	0	0	21
Includes largest remaining block of POG in VCU?	No	No	No
Rare/Underrepresented features (large tree POG acres) [3/]	382	95	116
Deep snow deer/marten habitat (acres) [4/]	474	165	299
Goshawk and murrelet nesting habitat (acres) [5/]	506	165	299
Other Considerations			
Maintains Connectivity	Yes	No	Yes
Low elevation POG (acres)[6/]	756	373	526

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5872 -Southeast Tuxekan

Pre Conveyance: The 2006 IRT recommended adopting the past interagency proposal and Tuxekan Timber Sale Draft ROD that recommended relocating the small OGR to include the largest remaining block of POG and increase deer winter range.

Post Conveyance: Due to the Sealaska land conveyance there is very little Forest Service land remaining in this VCU. The 2015 IRT suggested OGR includes most of the remaining NFS land in the VCU and as a result exceeds the 16 percent of NFS land in the VCU requirement in the Forest Plan.

2015 IOGR Rationale/Notes: The 2015 IRT recommend the 1997 TLMP OGR boundary with some modifications (see Figure 3). Nichen Cove on Tuxekan Island has human impacts and activities (log transfer facility and roads etc.). The 2015 IRT determined that it was less important to include the Nichen Cove area in the OGR as one criterion is to reduce road miles in an OGR.

The conveyance eliminates connectivity with the small OGR in VCU 5600 (see Figure 2). The Biologically Preferred OGR adds connectivity to the beach.

Comparison of Small OGR in VCU 5872

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	3,310		
Non-NFS land (acres)	0	2,087	2,087
NFS land Total (acres)	3,310	1,223	1,223
16% of NFS land (Min. Req. OGR acres)	530	196	196
All Non-development LUD in VCU	553	228	858
Small OGR (total acres)[1/]	536	227	857
8% of NFS land (Min. POG Req. acres)	265	98	98
OGR POG (total acres)[2/]	501	219	474
All Non-development LUD POG (acres)	501	219	474
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	Yes
Minimizes roads (total road miles)	1.8	0.0	0.0
Includes streams (Class I stream miles)	0.7	0.5	3.5
Minimizes early seral habitat (acres)	1	1	5
Includes largest remaining block of POG in VCU?	Yes	No	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	293	32	36
Deep snow deer/marten habitat (acres) [4/]	295	36	51
Goshawk and murrelet nesting habitat (acres) [5/]	314	36	51
Other Considerations			
Maintains Connectivity	Yes	No	Yes
Low elevation POG (acres)[6/]	482	219	474

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5560, 5570, 5600 and 5872

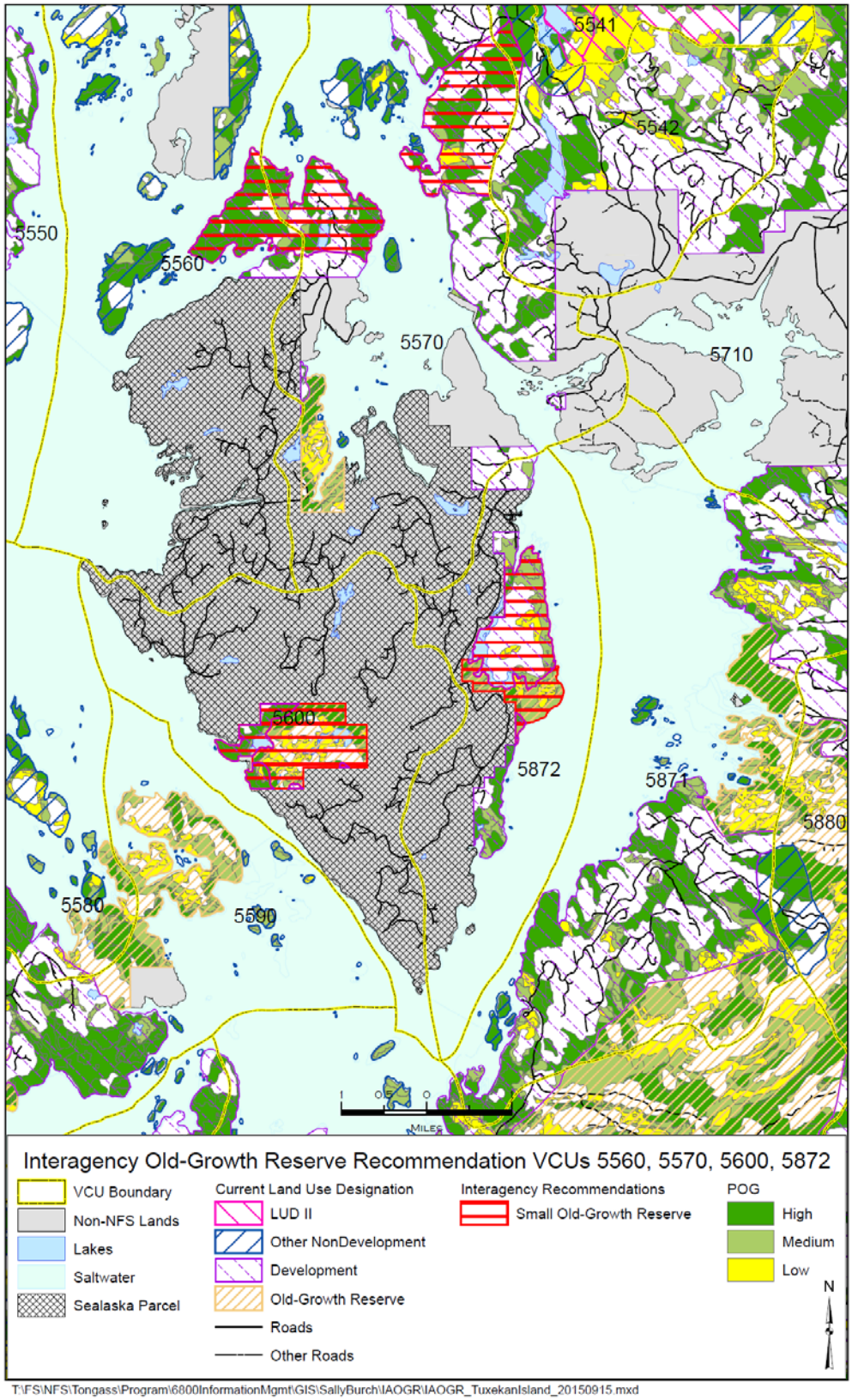


Figure 2

VCU 5940 -Election Creek

Pre-Conveyance: During the 2006 review it was proposed to revert to the 1997 TLMP OGR to exclude contracted Timber Sale units. The 2006 IRT proposed to add an area east of the 1997 TLMP OGR to maintain connectivity.

A project level review was recommended because the 2006 IDT Forest Plan proposed OGR did not maintain east/west connectivity. Although the proposed OGR does maintain the largest contiguous block of POG and north/south connectivity, it is important to also maintain east/west connectivity in the area because of the amount of past harvest that has occurred in this area.

Post Conveyance: The land conveyance resulted in the loss of the largest contiguous block of POG as well as connectivity between VCU 5940 and VCU 5900 (north/south connectivity). The connectivity between VCUs 5940 and 5900 provided connectivity between the OGR in VCU 5940 and OGRs in VCUs to the north.

2015 IOGR Rationale/Notes: Most of the existing small OGR in this VCU was conveyed to Sealaska. The 2015 IRT proposes that the small remaining portion of the original OGR along the western edge of the land conveyance be dropped. The 2015 IRT proposed the small portion along the eastern edge of the Sealaska land conveyance be kept and expanded to the east to the VCU line with VCU 5950 to connect with the current OGR that exists in VCU 5950 (see Figure 3). This will provide the east/west connectivity mentioned in the 2006 review. This connectivity will help to compensate for the loss of the north/south connectivity lost due to the land conveyance.

The 2015 IRT proposed OGR in VCU 5940 is short both total and POG acres; however the IRT determined that this was acceptable due to the fact that the proposed OGR is adjacent to the IRT proposed OGR in VCU 5950 and the connectivity that the placement of the OGR here provides. The OGR in VCU 5950 connects to the large Honker OGR complex via roadless. The 2015 IRT OGR includes all remaining acres in this VCU east of the land conveyance; any additional acres in this VCU would be separated by Sealaska land.

The conveyance splits this small OGR. The Biologically Preferred alternative maintains connectivity to small OGRs in VCUs 5900 and 5950 (see Figure 3).

Comparison of Small OGR in VCU 5940

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	33,334		
Non-NFS land (acres)	15,737	17,587	17,587
NFS land Total (acres)	17,597	15,747	15,747
16% of NFS land (Min. Req. OGR acres)	2,816	2,520	2,520
All Non-development LUD in VCU	2,770	1,072	1,952
Small OGR (total acres)[1/]	2,270	1,072	1,499
8% of NFS land (Min. POG Req. acres)	1,408	1,260	1,260
OGR POG (total acres)[2/]	1,824	438	607
All Non-development LUD POG (acres)	1,824	438	805
Acreage requirements met? (Total/POG)	No/Yes	No/No	No/No*
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	No
Minimizes roads (total road miles)	3.9	1.2	1.2
Includes streams (Class I stream miles)	5.3	0.2	0.2
Minimizes early seral habitat (acres)	83	83	90
Includes largest remaining block of POG in VCU?	Yes	No	No
Rare/Underrepresented features (large tree POG acres) [3/]	735	71	71
Deep snow deer/marten habitat (acres) [4/]	786	32	53
Goshawk and murrelet nesting habitat (acres) [5/]	1,344	243	203
Other Considerations			
Maintains Connectivity	NA	No	Yes
Low elevation POG (acres)[6/]	945	65	125

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)
*See discussion for this VCU and VCU 5950

VCU 5950 -Big Salt

The land conveyance did not impact the OGR in this VCU directly; however, the 2015 IRT proposes expanding the OGR in this VCU to the north and west (see Figure 3). The 2015 IRT also proposes an expansion of the current OGR to the southeast to include an area of contiguous high volume POG (HPOG). This additional HPOG in VCU 5950 helps to compensate for loss of high volume POG in VCU 5940. This area of HPOG in VCU 5950 is currently mapped as roadless.

The existing 2008 Forest Plan OGR in VCU 5950 was modified under the Big Thorne EIS. The current proposed 2015 IRT expansions avoid Big Thorne units.

The east/west connectivity that this OGR modification helps to provide includes a connection with currently mapped roadless acres in VCU 5950 that then connects to the OGR in VCU 5960 which is included as part of the large Honker OGR complex (OG LUD designated areas as well as other non-development LUDs).

Comparison of Small OGR in VCU 5950

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	21,465		
Non-NFS land (acres)	3,741	3,741	3,741
NFS land Total (acres)	17,724	17,724	17,724
16% of NFS land (Min. Req. OGR acres)	2,836	2,836	2,836
All Non-development LUD in VCU	4,230	4,230	5,215
Small OGR (total acres)[1/]	2,037	2,037	3,567
8% of NFS land (Min. POG Req. acres)	1,418	1,418	1,418
OGR POG (total acres)[2/]	1,261	1,261	1,969
All Non-development LUD POG (acres)	2,161	2,161	2,694
Acreage requirements met? (Total/POG)	No/No	No/No	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	Yes	Yes
Minimizes roads (total road miles)	2.6	2.6	5.5
Includes streams (Class I stream miles)	2.9	2.9	6.3
Minimizes early seral habitat (acres)	256	256	295
Includes largest remaining block of POG in VCU?	No	No	No
Rare/Underrepresented features (large tree POG acres) [3/]	477	477	755
Deep snow deer/marten habitat (acres) [4/]	488	488	786
Goshawk and murrelet nesting habitat (acres) [5/]	875	875	1,223
Other Considerations			
Maintains Connectivity	Yes	Yes	Yes
Low elevation POG (acres)[6/]	755	755	1,100

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 5900 -North Election Creek

Pre Conveyance: This OGR is directly north of and contiguous with the OGR in 5940. As mapped the small OGR in VCU 5900 is 2,406 acres in size with 1,161 acres of POG (and 571 acres of high volume POG).

The 2002 POW review team modified 1997 TLMP small OGR to increase total acres. This proposal removed high-elevation areas from side slopes of middle fork of Staney Creek and adds low elevation stands along the north fork of Staney Creek, adds high value deer winter range and potential goshawk and murrelet nesting habitat. Addition of POG will aid in maintaining flying squirrel habitat. About 50 percent of POG is in riparian buffer. This OGR provides connectivity through the Staney Creek watershed to the Small OGR in VCU 5940. The 2006 Forest Plan adopted this proposal.

Pre Conveyance: The land conveyance reduced the OGR in this VCU by 83 acres. As a result of the land conveyance the OGR in this VCU does not meet the minimum acres and POG acres requirements for a small OGR in this VCU (see Figure 3).

2015 Rationale/Notes: The 2015 IRT did not evaluate the OGR in this VCU. This OGR will still connected to the remaining OGR in VCU 5940 and so is connected through that OGR and the OGR in VCU 5950 to the Honker OGR. Via e-mails the OGR in this VCU was modified to improve the connectivity between this OGR and the OGR in VCU 5940. As a result of the land conveyance the remaining corridor connecting these two OGRs was less than 1,000 feet wide. With the proposed modification the corridor width now exceeds 1,000 feet in width. The modification results in the addition of about 395 total acres with about 189 of those acres being POG. The modification also added about 60 acres of young growth to the OGR.

Comparison of Small OGR in VCU 5900

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	13,795		
Non-NFS land (acres)	0	168	168
NFS land Total (acres)	13,795	13,627	13,627
16% of NFS land (Min. Req. OGR ac)	2,207	2,180	2,180
All Non-development LUD in VCU	2,406	2,323	2,323
Small OGR (total acres)[1/]	2,406	2,232	2,627
8% of NFS land (Min. POG Req. acres)	1,104	1,090	1,090
OGR POG (total acres)[2/]	1,172	1,098	1,287
All Non-development LUD POG	1,172	1,098	1,287
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	N/A		
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	N/A		
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	Yes	Yes
Minimizes roads (total road miles)	6.9	6.6	7.2
Includes streams (Class I stream miles)	12.5	11.7	11.7
Minimizes early seral habitat (acres)	435	435	+60
Includes largest remaining block of POG in VCU?	No	No	No
Rare/Underrepresented features (large tree POG ac) [3/]	532	489	519
Deep snow deer/marten habitat (acres) [4/]	592	548	554
Goshawk and murrelet nesting habitat (acres) [5/]	615	571	648
Other Considerations			
Maintains Connectivity	Yes	Yes	Yes
Low elevation POG (acres)[6/]	1,114	1,041	1,041

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCUs 5900, 5940 and 5950

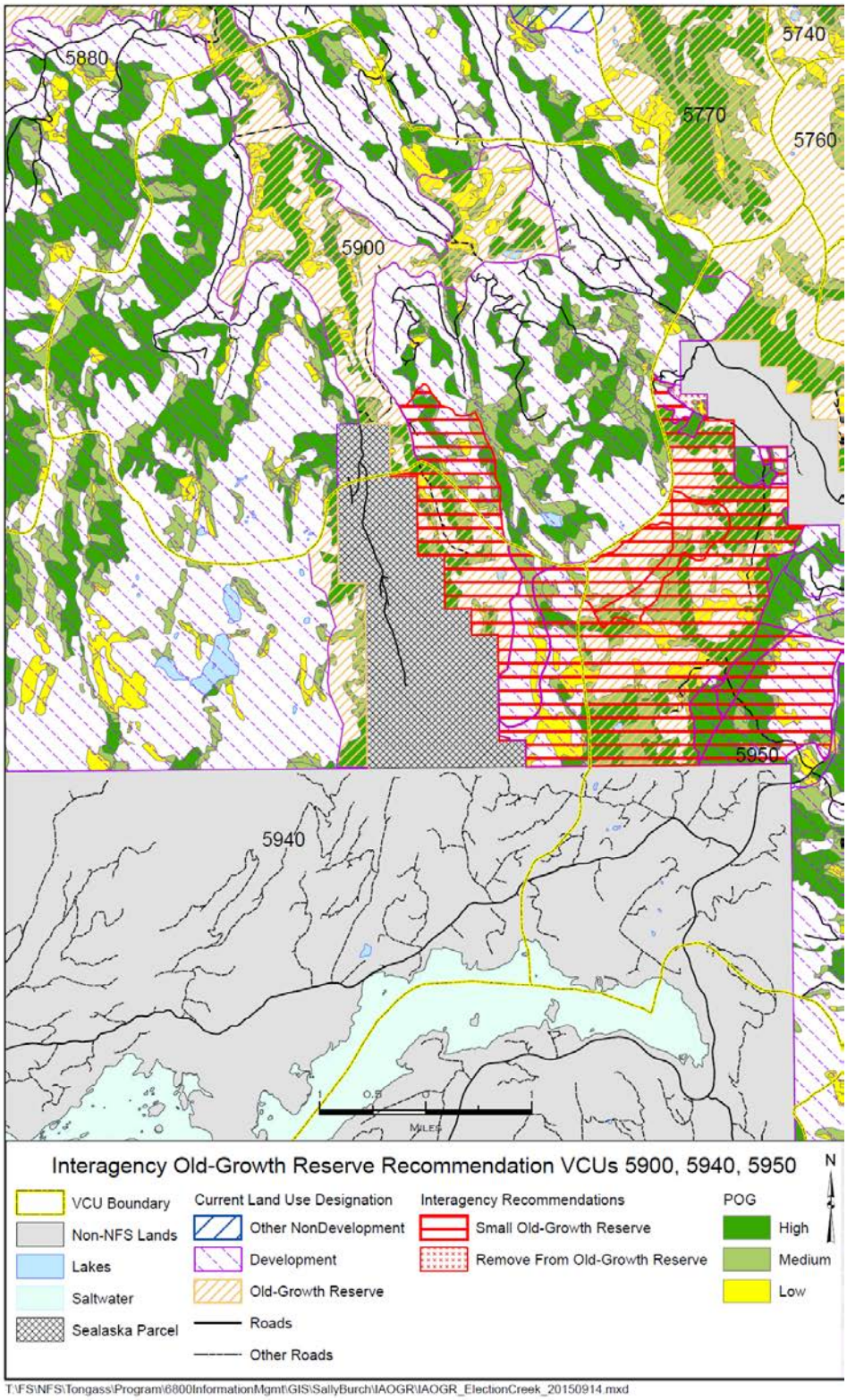


Figure 3

VCU 6850 -Nutkwa

Pre Conveyance: The OGR in this VCU is contiguous with non-development LUDs in VCU compartments of this VCU; VCU 6851 and VCU 6852.

The OGR maintains HPOG, deer winter range, and a low elevation corridor connecting Keeta Inlet to Nutkwa Lagoon.

Post Conveyance: The land conveyed to Sealaska consisted of mostly high volume POG; however even with land conveyance the remaining OGR will still be contiguous with the SPOW wilderness as well as Nutkwa LUD II area. The remaining OGR maintains some low elevation connection between Keeta Inlet and Nutkwa Lagoon.

2015 Rationale/Notes: The 2015 IRT recommends moving the OGR to the south to include the largest remaining contiguous block of POG outside the existing OGR. This modified OGR also includes potential murrelet and goshawk nesting habitat, western facing slopes, and provides an elevational corridor from the alpine to the saltwater (see Figure 4).

Comparison of Small OGR in VCU 6850

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	17,490		
Non-NFS land (acres)	5,248	14,241	14,241
NFS land Total (acres)	12,242	3,249	3,249
16% of NFS land (Min. Req. OGR acres)	1,959	520	520
All Non-development LUD in VCU	2,221	1,001	1,985
Small OGR (total acres)[1/]	2,058	914	984
8% of NFS land (Min. POG Req. acres)	980	260	260
OGR POG (total acres)[2/]	1,458	453	555
All Non-development LUD POG	1,500	484	1,038
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU 6870			
Total OGR Acres	16	16	7
OGR POG Acres	3	3	0
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	Yes
Minimizes roads (total road miles)	0.0	0.0	0.0
Includes streams (Class I stream miles)	1.0	0.0	0.0
Minimizes early seral habitat (acres)	0	0	0
Includes largest remaining block of POG in VCU?	No	No	Yes
Rare/Underrepresented features (large tree POG acres) [3/]	468	16	120
Deep snow deer/marten habitat (acres) [4/]	501	11	90
Goshawk and murrelet nesting habitat (acres) [5/]	858	227	342
Other Considerations			
Maintains Connectivity	Yes	No	Yes
Low elevation POG (acres)[6/]	745	16	1,119

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 6850

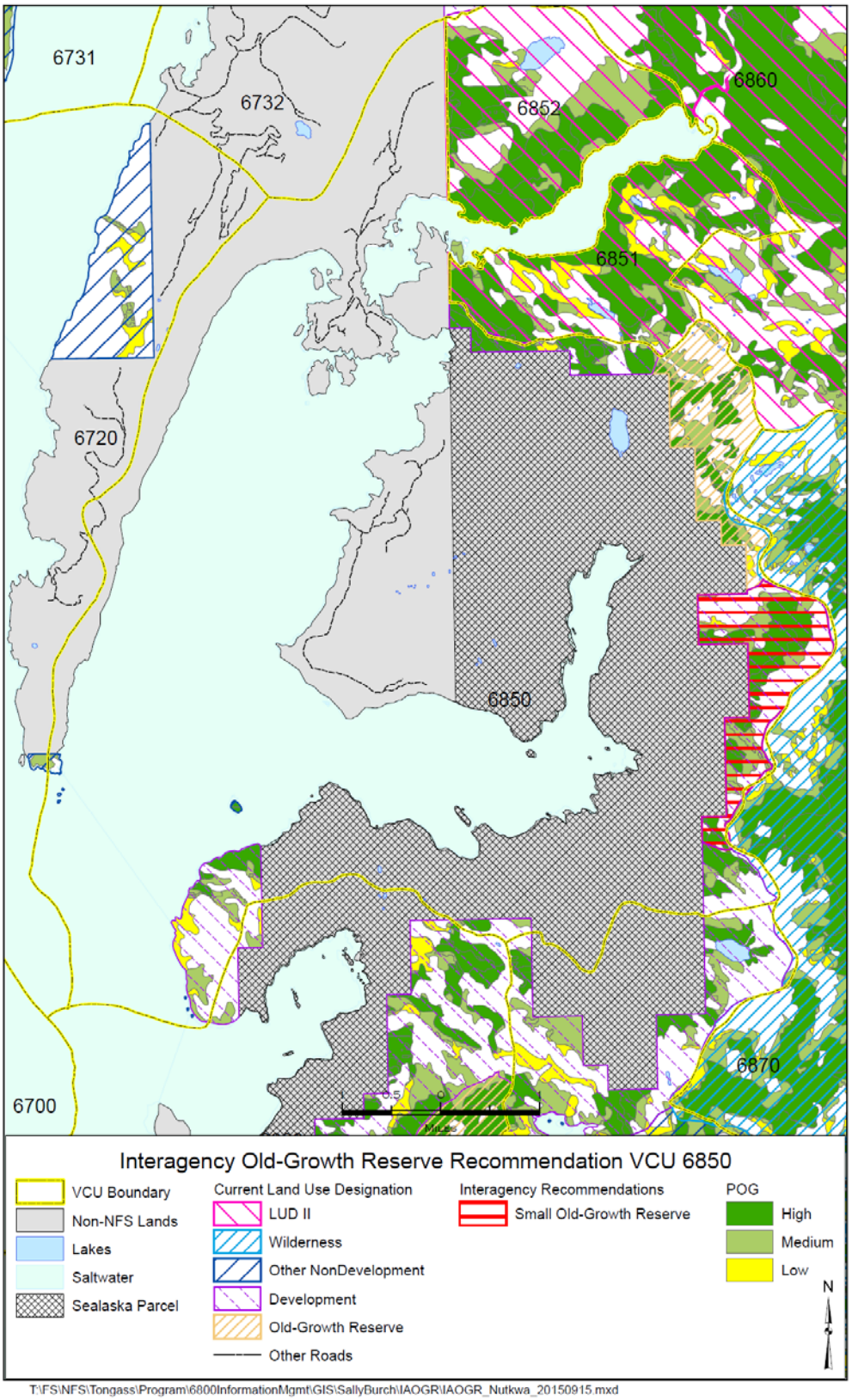


Figure 4

VCU 6200 -Dog Salmon

This small OGR was only minimally impacted by the land conveyance; however most of these acres were high volume POG. The OGR was adjusted to compensate for this loss. The 2015 IRT recommendation includes the addition of a similarly sized piece of high volume POG just to the south of what was conveyed (see Figure 5).

Comparison of Small OGR in VCU 6200

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	24,800		
Non-NFS land (acres)	1,310	4,013	4,013
NFS land Total (acres)	23,490	20,787	20,787
16% of NFS land (Min. Req. OGR acres)	3,758	3,326	3,326
All Non-development LUD in VCU	3,874	3,710	3,943
Small OGR (total acres)[1/]	3,827	3,707	3,940
8% of NFS land (Min. POG Req. acres)	1,879	1,663	1,663
OGR POG (total acres)[2/]	1,907	1,836	1,919
All Non-development LUD POG (acres)	1,918	1,836	1,919
Acreage requirements met? (Total/POG)	Yes/Yes	Yes/Yes	Yes/Yes
Small OGR LUD Overlap into Adjacent VCU			
VCU	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OGR LUD Overlap from Adjacent VCU			
VCU	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	Yes	Yes
Minimizes roads (total road miles)	13.7	13.1	13.1
Includes streams (Class I stream miles)	9.3	8.9	8.9
Minimizes early seral habitat (acres)	716	716	745
Includes largest remaining block of POG in VCU?	No	No	No
Rare/Underrepresented features (large tree POG acres) [3/]	963	912	991
Deep snow deer/marten habitat (acres) [4/]	836	796	796
Goshawk and murrelet nesting habitat (acres) [5/]	1,357	1,306	1,387
Other Considerations			
Maintains Connectivity	Yes	Yes	Yes
Low elevation POG (acres)[6/]	1,217	1,156	1,156

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

VCU 6200

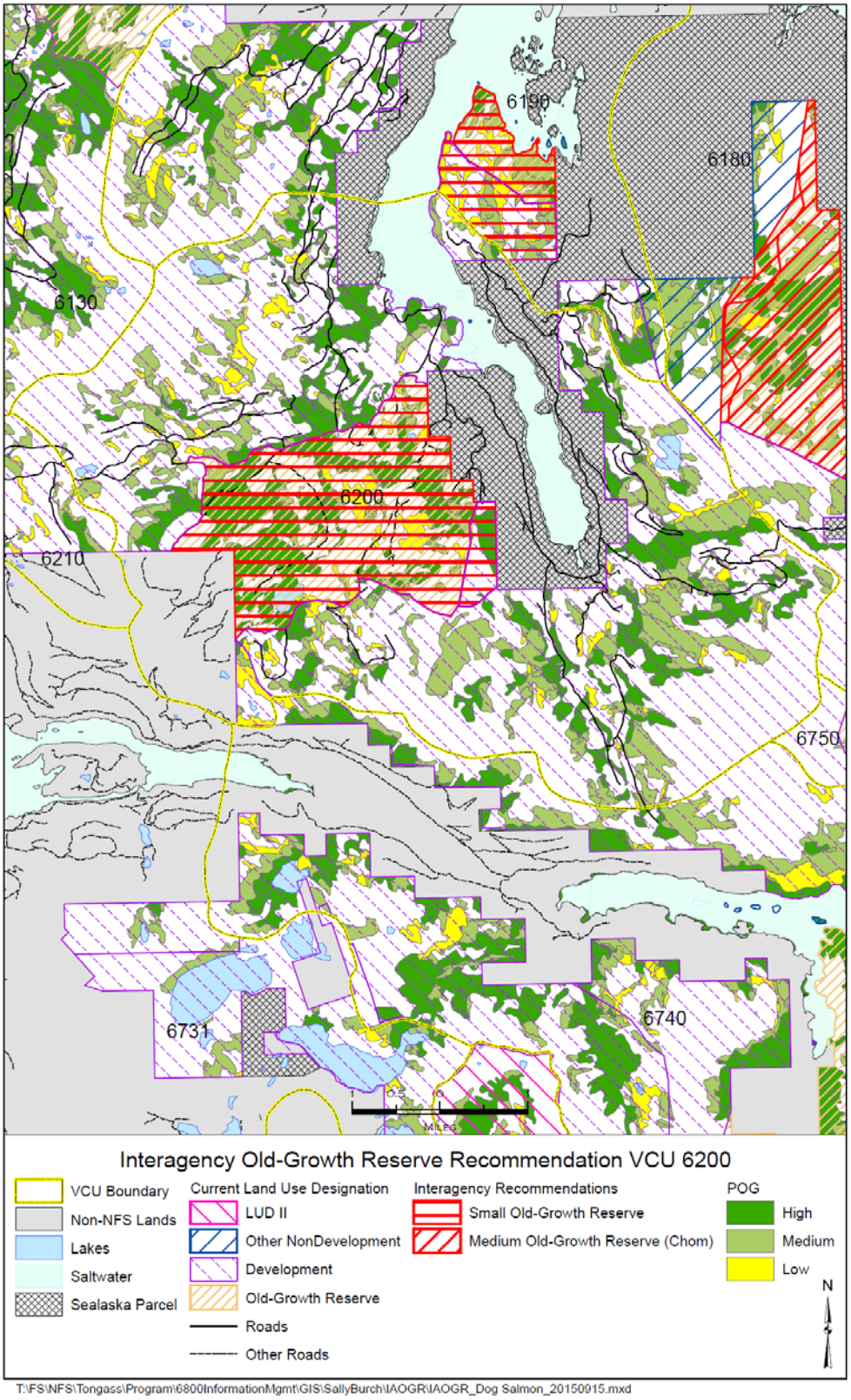


Figure 5

Old Thom's Medium

Pre-Conveyance: The medium OGR in this area consisted of acres designated as OGR in VCUs 6180 and 6190 and the Old Thom's Natural Research Area (RNA) in VCU 6180. Included in the RNA was a USGS Gauging Station. Medium OGRs are supposed to be approximately 10,000 acres in size with a minimum of 5,000 acres of POG and a minimum of 2,500 acres of HPOG, and no farther than 8 miles from other medium or large OGRs, in the four cardinal directions (1997 Forest Plan Appendix K).

Post Conveyance: The Sealaska land conveyance affected the medium OGR in VCUs 6180 and 6190. The resulting acres do not meet the criteria in the 1997 TLMP Appendix K for a medium OGR. The loss of the medium OGR violates the 8 mile proximity requirement for the medium OGRs.

2015 IOGR Rationale/Notes: Options for remedying the loss of the medium in this area include establishing new medium OGR, and/or adjusting/expanding current existing ones to decrease distance between OGRs. The 2015 interagency group considered the intent of the Conservation Strategy at the larger landscape scale for this land area. Lands near Sunny Cove are particularly valuable for wildlife, and could be a small OGR; however, Sunny Cove by itself can't replace or replicate the medium OGR that was lost. Sunny Cove is an intact watershed that may serve as a good replacement for the Old Thom's RNA. The Sunny Cove small OGR in VCU 6750 is near the Cholmondeley medium OGR (VCUs 6170 and 6760) (see Figure 6).

There was discussion as to whether to add the entire Cholmondeley medium to the remaining Old Thom's medium, drop part of the existing Cholmondeley medium, or trade it out entirely (but that option doesn't account for the loss of the Old Thom's medium OGR).

The replacement of the medium in the Old Thom's area needs to be considered at a landscape scale across many VCUs. The proposed replacement of the medium in this area impacts VCUs 6160 (Monie Lake), 6170 (Clover Bay), 6180 (Old Thom's), 6190 (Goose Bay), 6750 (Sunny Creek) and 6760 (Cholmondeley) (see Figure 6).

The discussion involved trying to connect what is left of the Old Thom's medium OGR in VCU 6190 to what was the proposed 2006 interagency medium OGR in VCUs 6160, 6170, 6750 and 6760. The 2006 proposed medium OGR boundary would be modified in VCU 6750. The 2015 IRT proposed enlarging the 2006 OGR in VCU 6750 to include acres to the north to connect to the southern boundary of VCU 6180. The 2015 IRT proposal is to build off the remaining medium OGR acres in VCU 6180 and increase the OGR to the south to connect to the proposed OGR in VCU 6750. A disconnected piece of remaining OGR in VCU 6190 south of Goose Bay would be expanded to include all reaming Forest Service acres in this area. VCU 6190 also includes acres across Polk Inlet. The piece south of Goose Bay was included to help minimize the distance between medium OGRs. It is a small isolated piece of OGR that does include low elevation POG habitat (see Figure 6).

The proposed new medium OGR has a total of 19,060 acres with 8,387 of POG and 4,121 acres of high volume POG. This new OGR is circular and includes only 0.7 miles of road, has 34 miles of Class I streams, only 229 acres of young growth, includes the largest block of POG, 1,184 of large tree POG (SD67), 2,697 acres of deep snow deer and marten habitat and 3,971 acres of

potential goshawk and murrelet nesting habitat. This OGR maintains connectivity and includes 5, 745 acres of low elevation POG.

VCU 6160 -Monie Lake

Pre Conveyance: Prior to the 2008 Forest Plan this VCU included both a medium and a small OGR. The location of the OGR was very controversial. It was recommended to consider this OGR for future review. The 1997 TLMP small OGR is linear along the beach fringe, contains few south facing slopes with POG, little habitat for goshawks or marbled murrelet and does not contain the largest contiguous blocks of POG in the watershed.

The 2002 POW review proposed changing the TLMP small OGR to a medium OGR and relocating the OGR to increase acres of POG and high volume POG and make the OGR more circular. The 2002 proposal includes most of the largest blocks of contiguous POG, potential goshawk and murrelet nesting habitat and important deer winter range. The proposed medium OGR would occur along the shore of VCUs 6160, 6170, 6750 and 6760. The 2002 POW review added entire Monie Lake watershed from Lake to shoreline and includes large blocks of POG in this area. The proposed medium would eliminate the need for a small OGR in VCUs 6160 and 6750.

The 2006 IRT biologically preferred OGR in this VCU changed the designation from a small OGR to a medium OGR. The OGR in this VCU would be combined with the OGRs in VCUs 6170, 6750 and 6760 to form a medium OGR.

Post Conveyance: The OGR in this VCU was not directly impacted by the land conveyance.

2015 IRT: The 2015 IRT proposes that the medium OGR in this VCU be the same as the biologically preferred IOGR proposed for the 2008 Forest Plan (2006 IRT IOGR). The existing small OGR in VCU 6160 is expanded; as a result the small amount of existing medium OGR acreage goes away (see Figure 6).

VCU 6170 -Clover Bay

Pre Conveyance: The 2002 POW IRT relocated the TLMP OGR to increase acres of POG and high volume POG and to make more circular. The proposal included most of the largest blocks of contiguous POG, potential goshawk and murrelet nesting habitat and important deer winter range. The OGR in this VCU would be part of the medium OGR that also includes acres in VCUs 6160, 6170, 6750 and 6760.

The 2006 IRT biologically preferred OGR in this VCU changed the designation from a small OGR to a medium OGR. The OGR in this VCU would be combined with the OGRs in VCUs 6750 and 6760 to form a medium OGR.

Post Conveyance: The OGR in this VCU was not directly impacted by the land conveyance.

2015 IRT: The 2015 IRT proposes that the medium OGR in this VCU be the same as the IOGR as proposed for the 2008 Forest Plan (2006 IRT IOGR) (see Figure 6).

VCU 6180 -Old Thom's Research Natural Area

Pre Conveyance: The 2006 IRT modified the 1997 TLMP medium Old Thom Medium OGR by adding acres to south to increase both POG and high volume POG. The medium OGR maintains connectivity in area heavily fragmented by harvest and private lands.

Post Conveyance: Most of what was medium OGR/RNA in this VCU was lost due to the land conveyance.

2015 Review: The 2015 IRT recommends including both the remaining OGR acres and the remaining RNA acres in the proposed medium. The southern boundary of this proposed modified medium OGR will be a Sealaska ROW. This ROW interrupts the connectivity of the medium OGR with other proposed OGR acres in this VCU. The interagency group felt that this ROW was narrow enough as to not pose a significant problem for most species. The 2015 IRT proposed additional acres south of the ROW provide connectivity to OGR acres in VCU 6750 (Sunny Cove). These acres also include low elevation habitat around the south end of McKenzie Inlet (see Figure 6).

VCU 6190 -Goose Bay

Pre Conveyance: According to 2002 POW IRT the medium IOGR exceeded the minimum acre criteria for POG and high POG and it was mentioned to consider reducing OGR size to allow for future management activities.

The 2006 review team recommended modifying the 1997 TLMP medium Old Thom's OGR by adding acres to the south. This modification increased both POG and high POG acres. The added area includes both roads and second growth stands.

The consensus of the 2006 review team was to not adopt the IOGR so as to maintain future harvest opportunities because while the IOGR is preferred biologically reverting to the 1997 TLMP OGR still maintains the integrity of the OGR.

Post Conveyance: Most of what was medium OGR/RNA in this VCU was lost due to the land conveyance.

2015 Review: The 2015 IRT recommends the creation of a new small OGR in this VCU. Alternatives for a small include the Goose Bay area which is currently mapped as part of the medium that was lost. The Goose Bay area is relatively intact, with the last portion of low-elevation POG in this VCU remaining on Forest Service land.

VCU 6750 -Sunny Cove

Pre Conveyance: Prior to the 1997 TLMP, the entire Sunny Cove areas was proposed as a Habitat Conservation Area (HCA). The 1997 TLMP excluded most of the south facing slopes on the north side of Sunny Creek. The 1997 TLMP OGR includes high elevation, low volume isolated patches of narrow strips of timber.

In the 1997 TLMP this VCU contained a small OGR. The 2006 IRT changed the 1997 TLMP small OGR to a medium OGR and added acres to increase POG. The 2006 IRT proposal included most of the largest blocks of contiguous POG, potential goshawk and murrelet nesting habitat, important deer winter range and added a corridor that connects this OGR to the OGR in VCU 6170. The medium OGR would occur along the shore of VCUs 6160, 6170, 6750 and 6760. This proposal dropped the 1997 TLMP small OGR in VCU 6750 and added an area north of Sunny Cove and along Sunny Creek to connect to OGR in VCU 6760. This medium OGR would include acres in VCUs 6160, 6170, 6750 and 6760. This proposal did not include changes to the OGR in VCU 6760 but did included changes to the OGR in VCU 6160 and VCU 6170.

The proposed OGR includes HPOG and low elevation on both sides of Sunny Creek and higher elevation on south side of Sunny Creek. It also includes the large blocks of POG in this area. This option would eliminate the need for a small OGR in VCU 6750. The Polk Timber Sale EIS confirmed the value of wildlife habitat in this only unharvested drainage and avoided harvest in this area. This proposal does not include high value deer winter range north of Sunny Creek or goshawk use areas identified during field work for the timber sale (prey remains).

The 2006 IRT recommended a review of this OGR especially if the Cholmondeley Timber Sale is not completed.

The 2006 IRT changed the small OGR in this VCU (6750) to a medium OGR. Past review document assumed OGR acres in VCU 6160 (Monie Lake) was part of the medium OGR. The location of the medium was very controversial.

The 2006 Interagency Team preferred location was not implemented because there is a proposal for a timber sale with a supplemental ROD in this area. If the timber sale does not occur, then consider implementing the interagency OGR. Management recommended adoption of the Cholmondeley Timber Sale NEPA decision and Forest Plan Amendment OGR.

In the 2006 review the Forest Supervisor decided on the 1997 TLMP OGR. It was also recommended that potential future LTF/MAF sites be maintained in VCUs 6150 or 6160.

Post Conveyance: The OGR in this VCU was not directly impacted by the land conveyance.

2015 Review: The 2015 IRT proposes that the medium OGR in this VCU be reverted back to the IOGR for the 2008 Forest Plan (2006 IRT IOGR). The 2015 IRT proposed moving the current small OGR from the west side of Sunny Creek to the east side and changing the designation from a small OGR to being included as part of the proposed medium (see Figure 6). This proposal includes most of the largest blocks of contiguous POG, potential goshawk and murrelet nesting habitat, important deer winter range and adds a corridor that connects this OGR to the OGR in VCU 6170. The value of this area as an unharvest watershed has been recognized since the Polk Timber Sale EIS (1995).

VCU 6760 -Cholmondeley

Pre Conveyance: The 2006 IRT proposed modifying the 1997 TLMP medium OGR by adding acres to the west to connect to Sunny Point and proposed OGR in VCU 6750. This proposal includes most of the largest blocks of contiguous POG, potential goshawk (prey remains were found) and murrelet nesting habitat and important deer winter range.

Post Conveyance: The OGR in this VCU was not directly impacted by the land conveyance.

2015 IRT: The 2015 IRT proposes that the medium OGR in this VCU be reverted back to the IOGR for the 2008 Forest Plan (2006 IRT IOGR) (Figure 6).

Medium OGR VCUS 6160, 6170, 6180, 6190, 6200, 6750 and 6760

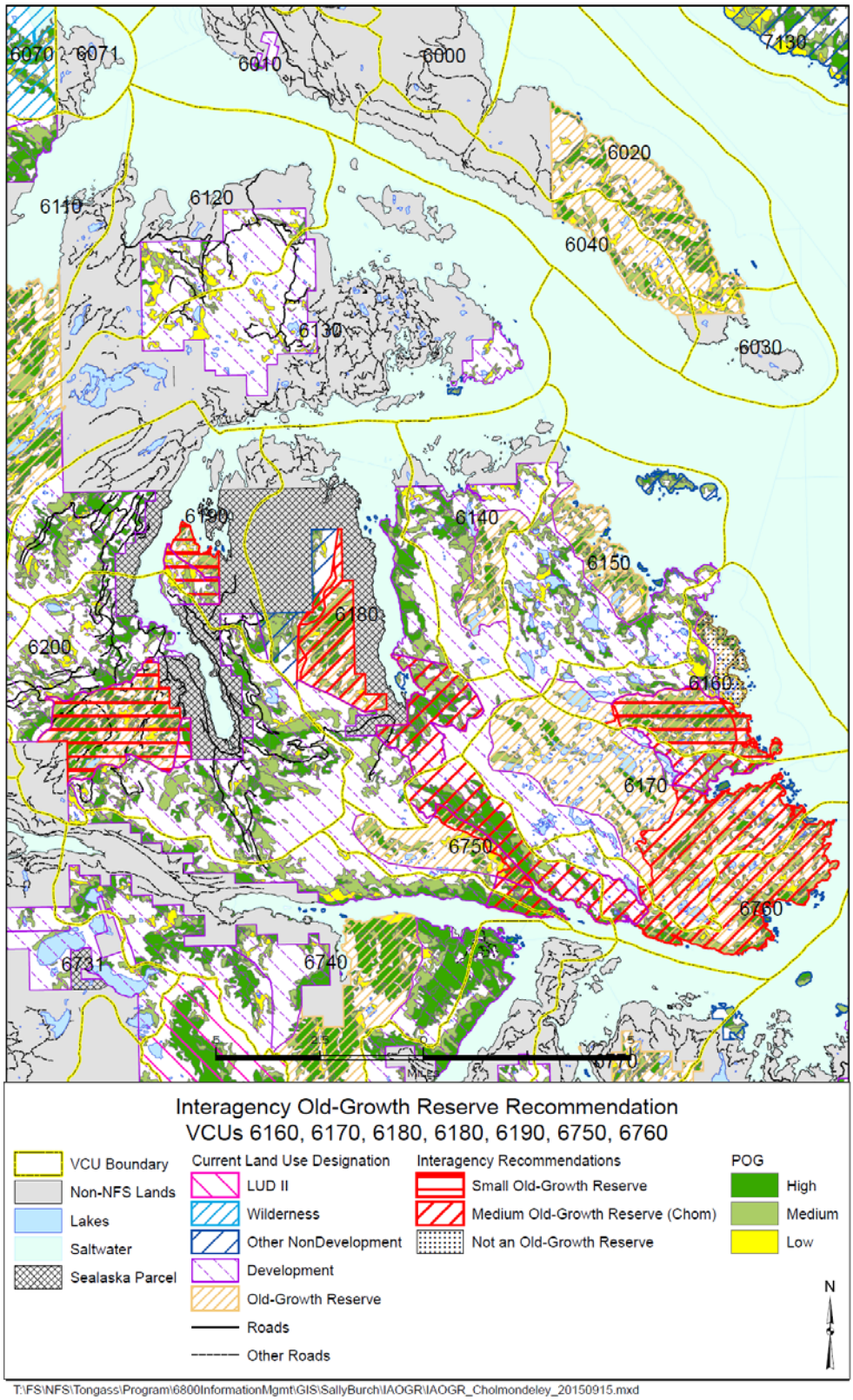


Figure 6

Comparison of Medium OGRs in VCUs 6160, 6170, 6180, 6190, 6750, and 6760 (Monie Lake and Old Thom Medium OGRs)

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land ownership All VCUs (acres)	63,348		
Non-NFS land (acres)	4,651	12,842	12,842
NFS land Total (acres)	58,697	50,801	50,801
Min. Req. OGR acres	10,000		
Min. Req. POG acres	5,000		
Min. Req. High-Volume POG acres	2,500		
Old Thom Medium OGR (VCUs 6180/6190)			
Total Medium OGR Acres	10,238	4,159	See Below
Total Medium OGR POG Acres	7,184	2,030	
Total Medium OGR High-Volume POG Acres	4,293	652	
Acreage requirements met? (Total/POG/HPOG)	Yes/Yes/Yes	No/No/No	
Monie Lake Medium OGR (VCUs 6160, 6170, 6760)			
Total Medium OGR Acres	15,527	15,527	See below
Total Medium OGR POG Acres	4,223	4,223	
Total Medium OGR High-Volume POG Acres	1,429	1,429	
Acreage requirements met? (Total/POG/HPOG)	Yes/No/No	Yes/No/No	
New Cholmondeley Medium OGR (VCUs 6170, 6180, 6750, and 6760)			
Total Medium OGR Acres	See Above	See Above	19,060
Total Medium OGR POG Acres			8,387
Total Medium OGR High-Volume POG Acres			4,121
Acreage requirements met? (Total/POG/HPOG)			Yes/Yes/Yes
Contributing VCUS			
VCU 6160			
Total land ownership (acres)	6,207		
Non-NFS land (acres)	0	0	0
NFS Land (acres)	6,207	6,207	6,207
Total Medium OGR (acres)	691	691	0
All Non-development LUD in VCU (acres)	1,954	1,954	4,091
Medium OGR POG (acres)[2/]	16	16	0
Medium OGR High-volume POG (acres)	0	0	0
All Non-development LUD POG in VCU (acres)	620	620	1,822
All Non-development LUD High-volume POG in VCU (ac)	132	132	473
VCU 6170			
Total land ownership (acres)	14,370		
Non-NFS land (acres)	0	0	0
NFS Land (acres)	14,370	14,370	14,370
Total Medium OGR (acres)	10,786	10,786	5,721
All Non-development LUD in VCU (acres)	10,927	10,927	11,876
Medium OGR POG (acres)[2/]	2,321	2,321	1,809
Medium OGR High-volume POG (acres)	827	827	591
All Non-development LUD POG in VCU (acres)	2,443	2,443	2,802
All Non-development LUD High-volume POG in VCU (ac)	942	942	1,016
VCU 6180			
Total land ownership (acres)	18,234		
Non-NFS land (acres)	1,075	6,573	6,573
NFS Land (acres)	17,159	11,661	11,661
Total Medium OGR (acres)	8,730	3,703	4,820
All Non-development LUD in VCU (acres)	8,854	3,755	6,068
Medium OGR POG (acres)[2/]	6,009	1,715	2,408

Comparison of Medium OGRs in VCUs 6160, 6170, 6180, 6190, 6750, and 6760 (Monie Lake and Old Thom Medium OGRs)

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
Medium OGR High-volume POG (acres)	3,655	610	1,186
All Non-development LUD POG in VCU (acres)	6,033	1,739	2,924
All Non-development LUD High-volume POG in VCU (ac)	3,657	612	1,273
VCU 6190			
Total land ownership (acres)	12,071		
Non-NFS land (acres)	3,563	5,962	5,962
NFS Land (acres)	8,508	6,109	6,109
Total Medium OGR (acres)	1,543	492	0
All Non-development LUD in VCU (acres)	1,649	497	1,101
Medium OGR POG (acres)[2/]	1,176	315	0
Medium OGR High-volume POG (acres)	638	41	0
All Non-development LUD POG in VCU (acres)	1,210	320	647
All Non-development LUD High-volume POG in VCU (ac)	655	44	69
VCU 6750			
Total land ownership (acres)	6,887		
Non-NFS land (acres)	11	11	11
NFS Land (acres)	6,876	6,876	6,876
Total Medium OGR (acres)	0	0	3,984
All Non-development LUD in VCU (acres)	2,522	2,522	6,024
Medium OGR POG (acres)[2/]	0	0	2,187
Medium OGR High-volume POG (acres)	0	0	1,673
All Non-development LUD POG in VCU (acres)	968	968	2,774
All Non-development LUD High-volume POG in VCU (ac)	409	409	1,797
VCU 6760			
Total land ownership (acres)	5,579		
Non-NFS land (acres)	0	0	0
NFS Land (acres)	5,579	5,579	5,579
Total Medium OGR (acres)	4,014	4,014	4,534
All Non-development LUD in VCU (acres)	4,067	4,067	4,615
Medium OGR POG (acres)[2/]	1,886	1,886	1,983
Medium OGR High-volume POG (acres)	601	601	671
All Non-development LUD POG in VCU (acres)	1,925	1,925	2,022
All Non-development LUD High-volume POG in VCU (ac)	614	614	682
Appendix D General Design Criteria and Other Considerations			
Old Thom Medium OGR			
Appendix D Design Criteria			See Below
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	Yes	No	
Minimizes roads (total road miles)	0.0	0.0	
Includes streams (Class I stream miles)	10.7	2.9	
Minimizes early seral habitat (acres)	9	9	
Includes largest remaining block of POG in VCU?	Yes	No	
Rare/Underrepresented features (large tree POG acres) [3/]	3,229	456	
Deep snow deer/marten habitat (acres) [4/]	2,982	123	
Goshawk and murrelet nesting habitat (acres) [5/]	4,293	652	
Other Considerations			
Maintains Connectivity	Yes	No	
Low elevation POG (acres)[6/]	4,218	473	
Monie Lake Medium OGR			
Appendix D Design Criteria			See Below

Comparison of Medium OGRs in VCUs 6160, 6170, 6180, 6190, 6750, and 6760 (Monie Lake and Old Thom Medium OGRs)

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	No	No	
Minimizes roads (total road miles)	0.0	0.0	
Includes streams (Class I stream miles)	24.6	24.6	
Minimizes early seral habitat (acres)	0	0	
Includes largest remaining block of POG in VCU?	No	No	
Rare/Underrepresented features (large tree POG acres) 3/	378	378	
Deep snow deer/marten habitat (acres) 4/	1,196	1,196	
Goshawk and murrelet nesting habitat (acres) 5/	1,429	1,429	
Other Considerations			
Maintains Connectivity	Yes	Yes	
Low elevation POG (acres)6/	3,417	3,417	
Proposed New Cholmondeley Medium OGR			
Appendix D Design Criteria	See Above	See Above	
Circular rather than linear to maximize interior habitat/minimize fragmentation effects			Yes
Minimizes roads (total road miles)			0.7
Includes streams (Class I stream miles)			34.0
Minimizes early seral habitat (acres)			229
Includes largest remaining block of POG in VCU?			Yes
Rare/Underrepresented features (large tree POG acres) 3/			1,884
Deep snow deer/marten habitat (acres) 4/			2,697
Goshawk and murrelet nesting habitat (acres) 5/			3,971
Other Considerations			
Maintains Connectivity			Yes
Low elevation POG (acres)6/			5,745

1/Medium OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should also include 2,500 acres of high-elevation POG
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

Comparison of Small OGR in VCU 6160

	Pre-conveyance	Post-conveyance	2015 Biologically Preferred
General VCU Info./Forest Plan Appendix K Criteria			
Total land all ownership (acres)	6,207		
Non-NFS land (acres)	0		0
NFS land Total (acres)	6,207		6,207
16% of NFS land (Min. Req. OGR acres)	992		992
All Non-development LUD in VCU (acres)	1,954		4,091
Small OGR (acres)[1/]	1,247		2,558
8% of NFS land (Min. POG Req. acres)	496		496
OGR POG (acres)[2/]	597		1,441
All Non-development LUD POG in VCU (acres)	620		2,460
Acreage requirements met? (Total/POG)	Yes/Yes		Yes/Yes
Small OG LUD Overlap into Adjacent VCU			
VCU #	NA	NA	NA
Total OGR Acres			
OGR POG Acres			
Small OG LUD Overlap from Adjacent VCU			
VCU #	NA	NA	NA
Total Acres			
POG Acres			
Appendix D General Design Criteria			
Circular rather than linear to maximize interior habitat/minimize fragmentation effects	No		Yes
Minimizes roads (total road miles)	0.0		0.0
Includes streams (Class I stream miles)	5.2		8.0
Minimizes early seral habitat (acres)	0		0
Includes largest remaining block of POG in VCU?	No		Yes
Rare/Underrepresented features (large tree POG acres) [3/]	38		270
Deep snow deer/marten habitat (acres) [4/]	132		325
Goshawk and murrelet nesting habitat (acres) [5/]	132		379
Other Considerations			
Maintains Connectivity	Yes		Yes
Low elevation POG (acres)[6/]	597		1,255

1/Small OGR includes all OG and other Non-Dev LUDs that apply to the VCU to meet Forest Plan Standard and Guidelines for this reserve. This includes overlap into adjacent VCUs and excludes Non-Dev LUD in the VCU not associated with this reserve.
2/ Should be approximately 50% of OGR acres
3/ SD67 type
4/ High-volume POG ≤ 800 feet in elevation
5/ High-volume POG all elevations (indicative of optimal goshawk and marbled murrelet nesting habitat due to presence of large trees and snags, though both species may use all POG types)
6/ All POG ≤ 800 feet in elevation (representative of low-elevation travel corridors important for many species)

Interagency Old Growth Reserve Review
Sealaska Land Conveyance

September 2015

9/11/15

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APPENDIX F
COMPARISON OF DIRECTION BY ALTERNATIVE

Appendix F

Comparison of Direction by Alternative

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TABLES

Table F-1. Comparison of Young-Growth Direction by Alternative F-5

Appendix F
Comparison of Direction by Alternative

Introduction

Chapter 5 of the Forest Plan contains the proposed direction for Alternative 5 (the Preferred Alternative). Direction in Chapter 5 applies to the entire plan area (forest-wide) or to specific LUDs as explained in Chapter 3. Management direction includes plan components and management approaches. This appendix shows how direction for the other alternatives compares to Alternative 5, whether direction is identical, or how it differs. This appendix follows the organization of Chapter 5 and presents the comparison in this order: Young Growth, Renewable Energy, Transportation System Corridors, and Forest-wide direction.

Young-Growth Direction

Table F-1, located at the end of this appendix, displays the proposed young-growth direction for Alternative 5 (the Preferred Alternative), which is the basis for the Forest Plan (see Forest Plan Chapter 5). The table also shows how direction for the other alternatives compares to Alternative 5, whether direction is identical, or how it differs.

Management approaches for young growth for Alternative 5 are presented in the Forest Plan Chapter 5 and are not repeated here. The following sections present how Alternatives 2 through 5 Management Approaches compare to those of Alternative 5. No management approaches would apply to Alternative 1, the No Action Alternative.

Management Approaches for Young Growth

Alternative 5:

See Forest Plan Chapter 5.

Alternative 2-4:

The intent is that responsible officials engage stakeholders (for example, conservation interests, timber operators, permitted user groups, and other interested parties) early and often to best design projects that meet ecological, social, and economic interests. Such inclusion would surface and resolve differences, and minimize and avoid social, environmental, and natural resource conflicts. At the earliest possible time, Interdisciplinary Teams (IDTs) would engage scientific and technical expertise, and knowledge of local resources to encourage creative thinking and enhance integration and coordination among jurisdictions.

The intent is that during project planning, IDTs identify other resource opportunities in the project area, and integrate these opportunities into the project design. (See definition for Integrated Resource Management in Chapter 7.) When designing young-growth projects that would advance old-growth characteristics in the beach fringe, riparian management area (RMA), or old-growth reserve (OGR), IDTs seek out stakeholders to encourage creative and innovative approaches for developing silvicultural treatments that imitate the natural scale and distribution of disturbance patterns on the Tongass (e.g., wind-thrown timber that creates gaps and patches; landslides that create corridors and gaps; mortality that naturally thins stand). The intent is that treatments in RMAs would address stream process group objectives. (Consult Appendix D, and Exhibit 2 in the Tongass Young Growth Management Strategy [USDA Forest Service 2014d].)

Where appropriate, line officers would use Stewardship Authority (FSH 2409.19, Chapter 60) and other authorities to help achieve land management goals while meeting regional and local community needs.

Management Approaches for Beach and Estuary Fringe

Alternative 5:

See Forest Plan Chapter 5.

Alternative 2:

The intent is that the IDT assesses the highly productive, sensitive, and valuable fish and wildlife habitat found in estuaries to determine how to protect these important resources. Forest Plan Appendix D provides guidance for delineating RMAs associated with estuarine stream process group.

The intent is that the IDT consult and integrate permit holders, local users, and user groups in planning in the development of any management activity.

When even-aged management of young growth occurs in the beach and estuary fringe, the intent is to maintain an approximate 1,000-foot-wide protected corridor adjacent and inland of the harvest unit to function as an alternate, low elevation, natural habitat corridor.

Alternative 3:

Same as Alternative 5.

Alternative 4:

Same as Alternative 5 with the addition of:

To maintain or improve habitat conditions and long-term ecological function, it is expected that the IDT would minimize the size of created openings in stands previously treated for wildlife and fish habitat purposes.

Management Approach for Karst and Cave Resources

Alternatives 2-4:

Same as Alternative 5.

Management Approaches for Recreation and Tourism

Alternatives 2-4:

Same as Alternative 5.

Management Approaches for Riparian

Alternative 2:

Same as Alternative 5.

Alternative 3:

No management approaches.

Alternative 4:

To maintain or improve habitat conditions and long-term ecological function, it is expected that the IDT would minimize the size of created openings in stands previously treated for wildlife and fish habitat purposes.

Management Approaches for Scenery

Alternatives 2-4:

No management approaches.

Management Approaches for Soil and Water

Alternatives 2-4:

Same as Alternative 5.

Management Approaches for Timber

Alternatives 2-4:

Same as Alternative 5.

Management Approaches for Wildlife

Alternative 2:

It is expected that project IDT and the interagency review team of USDA Forest Service, U.S. Fish and Wildlife Service, and Alaska Department of Fish and Game biologists would jointly work to identify young growth for harvest within the Old-growth Habitat LUD that can be exchanged for old growth from adjacent landscapes, where a net gain of productive old growth habitat in the Old-growth Habitat LUD is possible while maintaining and enhancing landscape connectivity. (See Appendix K.)

Alternative 3:

It is expected that project IDT and the interagency review team of USDA Forest Service, U.S. Fish and Wildlife Service, and Alaska Department of Fish and Game biologists would jointly work to identify young growth for harvest within the Old-growth Habitat LUD that can be exchanged for old growth from adjacent landscapes, where a net gain of productive old growth habitat in the Old-growth Habitat LUD is possible while maintaining and enhancing landscape connectivity. (See Appendix K.)

When implementing young-growth timber harvest projects larger than 20 acres in VCUs that have had concentrated past timber harvest, it is intended that 30 percent of the young growth stand acres should be left. The purpose is to retain sufficient residual trees to diversify the structural characteristics of the stand and provide for future recruitment of snags. The VCUs where this is intended to apply are ones in

which 33 percent or more of the productive old growth has been harvested since 1954. (Consult Forest Plan Chapter 4 under Wildlife section (WILD1), IV. Legacy Forest Structure

Alternative 4:

When implementing young-growth timber harvest projects larger than 20 acres in VCUs that have had concentrated past timber harvest, it is intended that 30 percent of the young growth stand acres should be left. The purpose is to retain sufficient residual trees to diversify the structural characteristics of the stand and provide for future recruitment of snags. The VCUs where this is intended to apply are ones in which 33 percent or more of the productive old growth has been harvested since 1954. (Consult Forest Plan Chapter 4 under Wildlife section (WILD1), IV. Legacy Forest Structure.)

To maintain or improve habitat conditions and long-term ecological function, it is expected that the IDT would minimize the size of created openings in stands previously treated for wildlife and fish habitat purposes.

Renewable Energy Direction

All plan content for Renewable Energy presented in proposed Plan Chapter 5 apply to Alternatives 3 and 4. They do not apply to Alternative 1, No Action. For Alternative 2, the plan components are identical to the preferred alternative except S-RE-SCENE-01. Under Alternative 2, the following standard would be applied:

> S-RE-SCENE-01: Apply the Low Scenic Integrity Objective (SIO) to renewable energy sites. (Consult Forest Plan Chapter 4, Scenery Preparation: SCENE2 section.)

Management Approach for Renewable Energy

The management approaches for Renewable Energy presented in Chapter 5 apply to all action alternatives. (They do not apply to Alternative 1, No Action.)

Transportation System Corridors Direction

All plan components for Transportation System Corridors presented in Chapter 5 apply to all action alternatives. (They do not apply to Alternative 1, No Action.)

Management Approach for Transportation System Corridors

The management approaches for Transportation System Corridors presented in Chapter 5 apply to all action alternatives. (They do not apply to Alternative 1, No Action.)

Forest-Wide Direction

Chapter 5 of the Forest Plan includes Forest-wide plan Desired Conditions (Chapter 2), Multiple-use Goals and Objectives (Chapter 2), Standards and Guidelines (Chapter 4). The proposed direction presented for Alternative 5 (the Preferred Alternative) applies to all Action Alternatives.

Table F-1 displays the proposed Young-Growth direction for Alternative 5 (the Preferred Alternative), for which the Forest Plan has been prepared (see Chapter 5). This table also shows how direction for the other alternatives compares to Alternative 5, whether direction is identical, or how it differs. The LUDs that a particular plan component would apply to are indicated using the following abbreviations: Old-growth habitat (OGH); Remote Recreation (RM); Recreation River (RR); Special Interest Area (SA); Semi-Remote Recreation (SM); Scenic River (SR); Scenic Viewshed (SV); Modified Landscape (ML); Timber Production (TM)

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Young Growth (YG)				
Desired Condition (DC)				
DC-YG-01: Young-growth forests produce desired resource values, products, services and conditions in ways that sustain the diversity and productivity of ecosystems. Lands suitable for timber production produce sawtimber and other wood products on an even-flow, long-term sustained yield basis; the timber yield contributes to the projected timber sale quantity (PTSQ).Timber and other ecosystem services from young-growth forest resources provide economical and sustainable opportunities that support Southeast Alaska communities. [OGH, SV, ML, TM]	Desired Conditions for young-growth timber are found in Chapter 4 of the approved 2008 Forest Plan under Timber and in the Tongass Young Growth Management Strategy Exhibit 1-Timber Approach (2014).	DC-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-01 is identical to Alternative 5. [SV, ML and TM LUDs only]
DC-YG-02: Pre-commercial thinning treatment of young-growth timber stands approaching, or at, the stem-exclusion stage, increase stand growth and vigor (e.g., larger trees, small canopy gaps, diverse understory).Treatments occur where highest productivity, harvest operability and access is favorable. [OGH, SV, ML, TM]		DC-YG-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-02 is identical to Alternative 5. [SV, ML and TM LUDs only]
DC-YG-03: Harvesting of young-growth stands provides opportunities to improve or maintain fish and wildlife habitat by accelerating old-growth characteristics. [OGH]		DC-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-03 is identical to Alternative 5. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
DC-YG-04: Harvesting of young-growth stands in Riparian Management Areas (RMAs) and Beach Fringe provides opportunities to improve or maintain fish and wildlife habitat by accelerating old-growth characteristics. [OGH, SV, ML, TM]		DC-YG-04 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	**DC-YG-04:** Harvesting of young-growth stands in the Beach Fringe provides opportunities to improve or maintain fish and wildlife habitat by accelerating old-growth characteristics. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-04 is identical to Alternative 3. [SV, ML and TM LUDs only]
DC-YG-05: At the end of the planned rotation for young growth, stands are in a condition whereby regeneration harvests using even-aged, two-aged or uneven-aged silvicultural systems are feasible and appropriate. [SV, ML, TM]		DC-YG-05 is identical to Alternative 5. [RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-05 is identical to Alternative 5. [RM, RR, SA, SM, SR, SV, ML and TM LUDs only	DC-YG-05 is identical to Alternative 5. [SV, ML and TM LUDs only]
Suitability of Lands (SUIT)				
SUIT-YG-01: Lands within Old-growth Habitat, Scenic Viewshed, Modified Landscape, and Timber Production LUDs are suitable for young-growth timber production, unless they do not meet the other suitability requirements (See Appendix A). Timber management within these LUDs is compatible with desired conditions for young-growth management. [OGH, SV, ML, TM]	Suitability of lands for timber production are found in Appendix A of the current 2008 Forest Plan.	**SUIT-YG-01:** Lands within Old-growth Habitat, Remote Recreation, Recreational River, Special Interest Area, Semi-remote Recreation, Scenic River, Scenic Viewshed, Modified Landscape, and Timber Production LUDs are suitable for young-growth timber production if they meet the other suitability requirements in 36 CFR 219.11. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	SUIT-YG-01 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	**SUIT-YG-01:** Lands within Scenic Viewshed, Modified Landscape, and Timber Production LUDs are suitable for young-growth timber production if they meet the other suitability requirements in 36 CFR 219.11. [SV, ML and TM LUDs only]
Objectives (O)				
O-YG-01: During the 15 years after plan approval, the amount of young-growth offered would gradually increase to exceed 50 percent of the timber offered annually. [OGH, SV, ML, TM]	Objectives for young-growth timber are found in Chapter 4 of the approved 2008 Forest Plan under Timber and in the Tongass Young	O-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	O-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	O-YG-01 is identical to Alternative 5. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
O-YG-02: During the 15 years after plan approval, offer increasing annual volumes of economically viable young-growth timber. Old-growth timber harvest would gradually be reduced to an average of 5 million board feet (MMBF) annually, to support local mills and investments in re-tooling, depending on markets and demand. [OGH, SV, ML, TM]	Growth Management Strategy Exhibit 1-Timber Approach (2014).	O-YG-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	O-YG-02 is identical to Altern 5. [OGH, RM, RR, SA, SM, S ML and TM LUDs only]	O-YG-02 is identical to Alternative 5. [SV, ML and TM LUDs only]
O-YG-03: Annually, pre-commercially thin 4,000 to 7,000 acres of young-growth stands. [OGH, SV, ML, TM]		O-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	O-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	O-YG-03 is identical to Alternative 5. [SV, ML and TM LUDs only]
Goals (G)				
GL-YG-01: Provide a stable young-growth timber supply that sustains long-term timber yields while maintaining or improving habitat conditions for wildlife and fish at the landscape level (see Proposed Forest Plan Appendix B). [OGH, SV, ML, TM]	Goals for young-growth timber are found in Chapter 4 of the approved Forest Plan under Timber and the Tongass Young Growth Management Strategy Exhibit 1-Timber Approach (2014).	**GL-YG-01:** Provide a stable young-growth timber supply that sustains long-term timber yields without impairment of the productivity of the land, with consideration being given to ecological, social, and economic factors. See Tongass Young Growth Management Strategy (2014). [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-01 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-01 is identical to Alternative 2. [SV, ML and TM LUDs only]
GL-YG-02: Pre-commercially treat stands to reduce or eliminate stem exclusion, to decrease stand rotation time, and provide future silvicultural opportunities. [OGH, SV, ML, TM]		GL-YG-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-02 is identical to Alternative 5. [SV, ML and TM LUDs only]
GL-YG-03: Create opportunities in young-growth management and the use of forest products in a manner that enhances the economic vitality of the region and the resilience of local communities. [OGH, SV, ML, TM]		GL-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-03 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-03 is identical to Alternative 5. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
GL-YG-04: Harvest of young-growth timber supports a variety of mill sizes and operators across the forest, including small and micro sales that support economic opportunities. [OGH, SV, ML, TM]		GL-YG-04 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-04 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-04 is identical to Alternative 5. [SV, ML and TM LUDs only]
GL-YG-05: Make available a variety of potential forest products that support the development of an integrated industry based primarily upon young-growth timber harvest. [OGH, SV, ML, TM]		GL-YG-05 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-05 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GL-YG-05 is identical to Alternative 5. [SV, ML and TM LUDs only]
Standard (S)				
S-YG-01: When harvesting trees prior to the culmination of mean annual increment (CMAI) of growth under the authority granted by Public Law 113–291, Sec. 3002, subsection (e)(4)(A), the limitation of subsection (e)(4)(B) shall be applied. [OGH, SV, ML, TM]	Standards for young-growth timber are found in Chapter 4 of the approved Forest Plan under Timber and the Tongass Young Growth Management Strategy Exhibit 1-Timber Approach (2014).	S-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-01 is identical to Alternative 5. [SV, ML and TM LUDs only]
Beach and Estuary Fringe (BEACH)				
Desired Condition (DC)				
DC-YG-BEACH-01: Active management of young-growth stands within the beach and estuary fringe supports a range of social, economic and ecological needs. These areas provide habitat and connectivity for wildlife and opportunities for accelerating old-growth characteristics while also providing commercial timber byproducts. [OGH, SV, ML, TM]	Desired Condition of the beach and estuary fringe are found in Chapter 4 of the approved 2008 Forest Plan under Beach and Estuary Fringe.	DC-YG-BEACH-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-BEACH-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-BEACH-01 is identical to Alternative 5. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Objectives (O)				
O-YG-BEACH-01: Offer about 3,500 acres of young-growth in the beach and estuary fringe to provide commercial timber during the 15 years after Plan approval. [OGH, SV, ML, TM]	Objectives of the beach and estuary fringe are found in Chapter 4 of the approved 2008 Forest Plan under the Beach and Estuary Fringe section.	**O-YG-BEACH-01:** Offer about 11,300 acres of young-growth in the beach and estuary fringe to provide commercial timber during the 15 years after Plan approval. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	**O-YG-BEACH-01:** Offer about 8,000 acres of young-growth in the beach and estuary fringe to provide commercial timber during the 15 years after Plan approval. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	**O-YG-BEACH-01:** Offer about 5,500 acres of young-growth in the beach and estuary fringe to provide commercial timber during the 15 years after Plan approval. [SV, ML and TM LUDs only]
Suitability of Lands (SUIT)				
SUIT-YG-BEACH-01: Young growth stands within the beach and estuary fringe are suitable for timber production; timber management within these stands is compatible with desired condition DC-YG-BEACH-01. See SUIT-YG- 01 and Appendix A. [OGH, SV, ML, TM]	Lands within the beach and estuary fringe are not suitable for timber production. See DEIS Chapter 2 for Alternative 1 Suitability.	SUIT-YG-BEACH-01 is identical to Alternative 5. See SUIT-YG -01 and DEIS Chapter 2 for Alternative 2 Suitability. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	SUIT-YG-BEACH-01 is identical to Alternative 5. See SUIT-YG- 01 and DEIS Chapter 2 for Alternative 3 Suitability. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	SUIT-YG-BEACH-01 is identical to Alternative 5. See SUIT-YG- 01 and DEIS Chapter 2 for Alternative 4 Suitability. [SV, ML and TM LUDs only]
Standards (S)				
S-YG-BEACH-01: The maximum size of any created opening for commercial timber harvest in the beach fringe must not exceed 10 acres and a maximum removal of up to 35 percent of the acres of the original harvested stand is allowed. Commercial thinning is limited to 35 percent of the stand's basal area. A combination of the two treatments may be used, with no more than 35 percent of the total stand removed in either basal area and/or acres. TTRA and other administratively withdrawn areas do not count towards the stand's total acreage. [OGH, SV, ML, TM]	Standards and Guidelines for the beach and estuary fringe are found in Chapter 4 of the approved 2008 Forest Plan under the Beach and Estuary Fringe section.	**S-YG-BEACH-01:** Even aged management is not allowed in young-growth stands within the beach and estuary fringe after 15 years from plan approval. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-BEACH-01: Even-aged management of young-growth timber is not allowed for commercial timber harvest purposes. Commercial Thinning is allowed. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-BEACH-01 is identical to Alternative 3. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
S-YG-BEACH-02: Harvest of commercial timber within young-growth stands is limited to a one-time only entry and to the first 15 years unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. [OGH, SV, ML, TM]		S-YG-BEACH-02 does not apply. See S-YG-BEACH-01 above.	S-YG-BEACH-02 does not apply.	S-YG-BEACH-02 does not apply.
S-YG-BEACH-03: Commercial harvest within beach fringe and estuary is not allowed within a minimum 200-foot forested buffer beginning at mean high tide (that is, a no commercial harvest buffer). This does not preclude wildlife enhancement projects and providing access to timber harvest units as long as process group objectives can be met in the RMA. [OGH, SV, ML, TM]		S-YG-BEACH-03 does not apply.	S-YG-BEACH-03 does not apply.	S-YG-BEACH-03 does not apply.
Facilities (FAC)				
Standard (S)				
S-YG-FAC-01: Authorize only those facilities (recreation and administrative) that are compatible with young-growth objectives O-YG-01 and O-YG-02. [OGH, SV, ML, TM]	Standards and Guidelines for facilities are found in Chapter 4 of approved 2008 Forest Plan.	S-YG-FAC-01 is identical to Alternative 5	S-YG-FAC-01 is identical to Alternative 5	S-YG-FAC-01 is identical to Alternative 5
Karst and Cave Resources (KC)				
Desired Condition (DC)				
DC-YG-KC-01: The karst and cave ecosystems (or landscapes) maintain natural processes and the productivity, while providing for other land uses. [OGH, SV, ML, TM]	Desired Conditions for Karst and Cave Resources are found in Chapter 4, Karst and Cave Resources, and Appendix H of the approved 2008 Forest Plan.	DC-YG-KC-01 is identical to Alternative 5	DC-YG-KC-01 is identical to Alternative 5	DC-YG-KC-01 is identical to Alternative 5

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Standard (S)				
S-YG-KC-01: Commercial timber harvest is not allowed on lands identified as high vulnerability karst lands. (Consult Appendix H.) [OGH, SV, ML, TM]	Standards and Guidelines for Karst and Cave Resources are found in Chapter 4, Karst and Cave Resources, and Appendix H of the approved 2008 Forest Plan.	S-YG-KC-01: Commercial thinning on high vulnerability karst is allowed on a case-by-case basis. (See young-growth management on karst in Appendix H) [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-01 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-01 is identical to Alternative 2. [SV, ML and TM LUDs only]
S-YG-KC-02: On lands identified as medium vulnerability karst (see Appendix H), patch clearcuts are allowed but may not exceed 10 acres with a maximum removal of 35 percent of the acres of the original harvested stand. [OGH, SV, ML, TM]		S-YG-KC-02: Even-age management is allowed on moderate vulnerability karst when karst management objectives (Appendix H) can be met. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-021 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-02 is identical to Alternative 2. [SV, ML and TM LUDs only]
S-YG-KC-03: Even-aged management is allowed on lands identified as low vulnerability karst lands. (Consult Appendix H.) [OGH, SV, ML, TM]		S-YG-KC-03: Even-age management is allowed on low vulnerability karst when karst management objectives (Appendix H) can be met. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-03 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-KC-03 is identical to Alternative 2. [SV, ML and TM LUDs only]
Lands (LAND)				
Standard (S)				
S-YG-LAND-01: Authorize only those uses that are compatible with young-growth objectives O-YG-01 and O-YG-02. [OGH, SV, ML, TM]	Standards and Guidelines for Lands are found in Chapter 4 of the approved 2008 Forest Plan.	S-YG-LAND-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-LAND-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-LAND-01 is identical to Alternative 5. [SV, ML and TM LUDs only]
Recreation and Tourism (REC)				
Standard (S)				
S-YG-REC-01: Authorize only those uses that are compatible with young-growth objectives O-YG-01 and O-YG-02. [OGH, SV, ML, TM]	Standards and Guidelines for Recreation and Tourism are found in Chapter 4 of the approved 2008 Forest Plan.	S-YG-REC-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-REC-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-REC-01 is identical to Alternative 5. [SV, ML and TM LUDs only]

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Riparian (RIP)				
Desired Condition				
DC-YG-RIP-01: Active management of young-growth stands that are suitable for timber production within riparian management areas (RMAs) supports a range of social, economic and ecological needs. These areas are managed to accelerate old-growth characteristics in order to improve riparian functions for soil, water, fish, wildlife and other resources (see Appendix D), while also providing a commercial timber byproduct. [OGH, SV, ML, TM]	Desired Conditions for riparian management areas are found in Chapter 4, Riparian, and Appendix D of the approved 2008 Forest Plan	DC-YG-RIP-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-RIP-01 is identical to Alternative 1.	DC-YG-RIP-01 is identical to Alternative 1.
Suitability of Lands (SUIT)				
SUIT-YG-RIP-01: Young-growth stands within RMAs (excluding Tongass Timber Reform Act buffers) are suitable for timber production; timber management within these stands is compatible with desired condition DC-YG-RIP-01. See SUIT-YG-01 and Appendix A for Alternative 5. [OGH, SV, ML, TM]	Lands within Riparian Management Areas are not suitable for timber production. See DEIS Chapter 2 for Alternative 1.	SUIT-YG-RIP-01 is identical to Alternative 5. See SUIT-YG-TIM-01 and DEIS Chapter 2 for Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Lands within Riparian Management Areas are not suitable for timber production. See DEIS Chapter 2 for Alternative 3.	Lands within Riparian Management Areas are not suitable for timber production. See DEIS Chapter 2 for Alternative 4.
Objectives (O)				
O-YG-RIP-01: During the 15 years after plan approval, treat about 900 acres of young-growth in RMAs to provide a commercial timber byproduct. [OGH, SV, ML, TM]	Objectives for riparian management areas are found in Chapter 4 of the approved Forest Plan under Riparian (RIP2).	**O-YG-RIP-01:** During the 15 years after plan approval, treat about 1,600 acres of young-growth in RMAs to provide a commercial timber byproduct. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Identical to Alternative 1.	Identical to Alternative 1.

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Standards (S)				
S-YG-RIP-01: The maximum size of any created opening for commercial timber harvest in the RMA must not exceed 10 acres and a maximum removal of up to 35 percent of the acres of the original harvested stand is allowed. Commercial thinning is limited to 35 percent of the stand's basal area. A combination of the two treatments may be used, with no more than 35 percent of the total stand removed in either basal area and/or acres. TTRA and other administratively withdrawn areas do not count toward the stand's total acreage. [OGH, SV, ML, TM]	Standards and Guidelines for riparian management areas are found in Chapter 4 of the approved 2008 Forest Plan under the Riparian section.	**S-YG-RIP-01:** Even-aged management is not allowed in RMAs. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Identical to Alternative 1.	Identical to Alternative 1.
S-YG-RIP-02: Harvest of commercial timber within young-growth stands is limited to a one-time only entry and to the first 15 years unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. [OGH, SV, ML, TM]		**S-YG-RIP-02:** Commercial thinning is allowed in RMAs with a maximum removal of 33 percent of the stand. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]		
Scenery (SCENE)				
Standards (S)				
S-YG-SCENE-01: Apply the Very Low Scenery Integrity Objectives (SIO) for young-growth harvest. (Consult Forest Plan Chapter 4, Scenery Preparation: SCENE2 section.) For combined young-growth and old-growth projects within the same viewshed, apply the Very Low SIO. [SV, ML, TM]	Standards and Guidelines for Scenery are found in Chapter 4 of the approved 2008 Forest Plan under the Scenery section.	**S-YG-SCENE-01** is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	**S-YG-SCENE-01:** For young-growth harvests outside of Timber Production LUD, adopted Scenery Integrity Objectives for Each Land Use Designation shall be reduced by one level. (Consult Chapter 4 of the approved 2008 Forest Plan under the Scenery section There is no change to the SIOs for the Timber Production LUD. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Identical to Alternative 1.

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Soil and Water (SW)				
Desired Conditions (DC)				
DC-YG-SW-01: Long-term soil quality and site productivity in the suitable land base is not impaired and is capable of supporting the regeneration, growth and successional pathways of naturally occurring plant communities. (Consult FSM 2554 Supplement No.: R-10 2500-2006-1.) Soil surface erosion and mass wasting from management activities is minimized. [OGH, SV, ML, TM]	Desired Conditions for Soil and Water are found in Chapter 4 of the approved 2008 Forest Plan under the Soil and Water section.	DC-YG-SW-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-SW-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	DC-YG-SW-01 is identical to Alternative 5. [SV, ML and TM LUDs only]
Guidelines (G)				
G-YG-SW-01: During timber harvest or vegetation treatment operations, dense slash and woody debris accumulations are not allowed. [OGH, SV, ML, TM]	Standards for Soil and Water are found in Chapter 4 of the approved 2008 Forest Plan under the Soil and Water section.	G-YG-SW-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	GS-YG-SW-01 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	G-YG-SW-01 is identical to Alternative 5. [SV, ML and TM LUDs only]
G-YG-SW-02: Ground-based yarding should avoid creating ruts that are more than 12 inches deep. [OGH, SV, ML, TM]	Guidelines for Soil and Water are found in Chapter 4 of the approved 2008 Forest Plan under the Soil and Water section.	G-YG-SW-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	G-YG-SW-02 is identical to Alternative 5. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	G-YG-SW-02 is identical to Alternative 5. [SV, ML and TM LUDs only]
Wildlife (WILD)				
Desired Conditions (DC)				
DC-YG-WILD-01: Active management of young-growth stands within the Old-growth Habitat LUD supports the integrated consideration of social, economic and ecological needs of regional and local communities. Young-growth stands within the Old-growth Habitat LUD maintain habitat and connectivity for wildlife and are managed to accelerate development of old-growth characteristics while also providing commercial timber byproducts. [OGH]	Desired Conditions for wildlife management in young-growth timber are found in Chapter 4 of the approved Forest Plan under the Wildlife section.	**DC-YG-WILD-01:** Non-development LUDs, maintain habitat and connectivity for wildlife at the landscape scale while also providing commercial timber byproducts. [OGH LUD only]	DC-YG-WILD-01 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Identical to Alternative 1.

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
DC-YG-WILD-02: In the Old-Growth Habitat LUD, treated young-growth emulates the natural scale and distribution of disturbance patterns (for example, wind-thrown timber that creates gaps and patches; landslides that create corridors and gaps; and mortality that naturally thins stands). [OGH]		DC-YG-WILD-02 does not apply.	DC-YG-WILD-02 does not apply.	DC-YG-WILD-02 does not apply.
Objective (O)				
O-YG-WILD-01: During the 15 years after plan approval, treat about 1,800 acres of young-growth in the Old-growth Habitat LUD to promote the development of old-growth characteristics while also providing commercial byproducts. [OGH]	Objectives for wildlife management in young-growth timber are found in Chapter 4 of the approved 2008 Forest Plan under the Wildlife section	During the 15 years after plan approval, treat about 3,200 acres of young growth in the Old-growth Habitat LUD to promote the development of old-growth characteristics while also providing commercial byproducts. [OGH LUD only]	During the 15 years after plan approval, treat about 2,200 acres of young growth in the Old-growth Habitat LUD to promote the development of old-growth characteristics while also providing commercial byproducts. [OGH LUD only]	Identical to Alternative 1.
Standards (S)				
S-YG-WILD-01: The maximum size of any created opening in the Old-growth Habitat LUD must not exceed 10 acres and a maximum removal of up to 35 percent of the acres of the original harvested stand is allowed. Commercial thinning is limited to 35 percent of the stand's original basal area. A combination of the two treatments may be used, with no more than 35 percent of the total stand removed in either basal area and/or acres. TTRA and other administratively withdrawn areas do not count towards the stand's total acreage. [OGH]	Standards for wildlife management in young-growth timber are found in Chapter 4 of the approved 2008 Forest Plan under the Wildlife section.	**S-YG-WILD-01:** Allow management of young growth stands to produce commercial wood products in all LUDs suitable for timber production. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	S-YG-WILD-01 is identical to Alternative 2. [OGH, RM, RR, SA, SM, SR, SV, ML and TM LUDs only]	Identical to Alternative 1.
S-YG-WILD-02: Commercial young-growth harvest within the Old-Growth Habitat LUD is limited to a one-time only entry unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. [OGH]		S-YG-WILD-02 does not apply.	S-YG-WILD-02 does not apply.	S-YG-WILD-02 does not apply.

Table F-1.
Comparison of Young-Growth Direction by Alternative

Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Guideline (G)				
G-YG-WILD-01: Road construction should be kept to the minimum necessary for the removal of young-growth timber within the Old-Growth Habitat LUD. [OGH]	Guidelines for wildlife management in young-growth timber are found in Chapter 4 of the approved 2008 Forest Plan under the Wildlife section.	G-YG-WILD-01 is identical to Alternative 5. [OGH LUD only]	G-YG-WILD-01 is identical to Alternative 5. [OGH LUD only]	G-YG-WILD-01 does not apply.

Land Use Designations: Old-growth habitat (OGH); Remote Recreation (RM); Recreation River (RR); Special Interest Area (SA); Semi-Remote Recreation (SM); Scenic River (SR); Scenic Viewshed (SV); Modified Landscape (ML); Timber Production (TM).

APPENDIX G
TIMBER DEMAND AND SUPPLY

Appendix G

Tongass National Forest

Timber Demand and Supply

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Appendix G

Tongass National Forest Timber Demand and Supply

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October 26, 2015

Summary

Since 1990, when the Tongass Timber Reform Act (Public Law 101-626) required the Tongass National Forest to take economics into account in planning timber sale programs, multiple demand studies have been published by the US Forest Service Pacific Northwest (PNW) Research Station assessing derived demand for Alaska forest products. Demand assessment information is incorporated into short-term timber sale planning through a supply model and into long-term planning through the Forest Plan process. Appendix G supports Forest Plan amendment environmental impact statement (EIS) text, provides additional information regarding Daniels et al. (in press) demand estimates, and outlines how Daniels et al. (in press) demand projections are incorporated into annual timber sale offer target calculations for the Tongass National Forest.

Introduction

Section 101 of the 1990 Tongass Timber Reform Act (TTRA) states:

> Subject to appropriations, other applicable law, and the requirements of the National Forest Management Act of 1976 (Public Law 94-588), except as provided in subsection (d) of this section, the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle.

The 1997 Record of Decision for the Tongass Land and Resource Management Plan revision committed the US Forest Service to develop procedures to ensure annual timber sale offerings would be consistent with implementing TTRA's "seek to meet" market demand language. Those procedures were completed in 2000 and have become known as the "Morse methodology", in acknowledgement of the author, and are based on the following assumptions:

- Forest products markets are volatile, especially in the short term.
- Southeast Alaska timber purchasers have few alternative suppliers if they cannot obtain timber from the Tongass National Forest. Oversupplying this market has relatively few adverse economic effects; undersupplying it can have much greater negative economic consequences.
- It takes years to prepare national forest timber for sale, including completion of environmental impact statements.
- It is difficult to estimate Tongass National Forest timber demand, even a year or two in advance.
- To remain competitive, Alaska's forest products industry must be able to respond to rapidly changing market conditions.

The Morse methodology establishes a system that strives to build and maintain sufficient volume of timber under contract (i.e., timber purchased but not yet harvested – the primary indicator of timber inventory available to the industry) to allow the industry to react promptly to market fluctuations. Industry actions such as annual harvest levels are monitored and timber program targets are developed by estimating the amount of timber needed to replace volume harvested from year to year. The Morse methodology is self-correcting: if harvest levels drop below expectations, future timber sale offerings will also be reduced to levels needed to maintain the target level of volume under contract. Conversely, if harvest levels unexpectedly rise, future timber sale targets will also increase to ensure inventory of volume under contract is not exhausted. By dealing with uncertainty in a flexible science-based manner, the Morse methodology is an example of adaptive management. The US Forest Service intended for the Morse methodology to be the means by which the agency complies, year-to-year, with the annual demand portion of TTRA's "seek to meet" requirement. Similarly, the agency intended to comply with the requirement to seek to meet demand "for each planning cycle" through a series of annual applications of the Morse methodology.

During the past 25 years, the PNW Research Station has published several studies in support of Tongass National Forest land management planning that estimate derived demand for Southeast Alaska timber including Brooks and Haynes (1990, 1994, 1997), Brackley et al. (2006a), and Daniels et al. (in press). Procedures developed by Morse (2000) to estimate the timber offer target (supply) incorporate demand estimates from PNW studies as a spreadsheet input. PNW derived demand projections are trend projections. The Morse methodology relates these derived demand projections into an annual calculation of timber sale offer levels.

Procedures developed by Morse (2000) to estimate annual timber sale offering targets from the Tongass National Forest address the uncertainty associated with forecasting market conditions, considering the continuing transformation of the timber industry and the inability of the US Forest Service to respond quickly to market fluctuations due to the time it takes to prepare timber for sale. The basic approach is to allow the industry to accumulate an adequate volume under contract (i.e., a measure of inventory), then monitor industry behavior and adjust timber program levels to keep pace with harvest activity. Key economic indicators and stumpage market conditions are also monitored. Of noteworthy importance, the Morse methodology underwent rigorous technical and public review before it was implemented. Since the method was initially developed by Morse (2000), inputs to the model have been adjusted to reflect new understandings and information including share of raw material provided by the Tongass National Forest to local processors, amount of time between timber sale purchase and harvest, and sawmill capacity. In this way, the approach has allowed for adaptations to better reflect current conditions.

An update of the timber demand assessment by Brackley et al. (2006a) was requested from the PNW Research Station to inform new efforts to amend the Tongass Land and Resource Management Plan. New timber demand projections were also needed to accommodate changes in forest policy regarding Tongass National Forest timber harvest, land ownership, shipping policy, and profile of foreign log demand. PNW Research Station published new demand projections (Daniels et al. in press), in support of forest plan amendment efforts, with three alternative future scenarios. Scenario 1 incorporates the young growth transition and resulting changing quality of timber from the Tongass over time. Scenario 2 builds upon Scenario 1 by adding markets for wood energy products. Scenario 3 is motivated by uncertainty surrounding the domestic housing market and assumes a rebound in construction activity by only considering the pre-recession rate of growth in domestic lumber. New timber demand projections do not require significant change in the basic methodology for timber offer calculations in the procedure outlined by Morse (2000).

During the 1990s, competition with production in other regions and market conditions led to the closure of Southeast Alaska's two pulp mills and numerous other sawmill closures. From 2002 to 2006, the Tongass National Forest supplied approximately 65 percent of wood sawn by local sawmills (Kilborn et al. 2004; Brackley et al. 2006b; sawmill survey data collected by Dan Parrent of US Forest Service and on file with the US Forest Service Alaska Region). This percentage has increased in recent years with the Tongass National Forest providing an estimated three-quarters (78%) of wood sawn by local sawmills in 2013; nearly one-quarter (21%) of sawn wood originated from State of Alaska lands. State lands comprise a small percentage of Southeast Alaska forest lands and cannot indefinitely supply such a high

proportion of timber needed by remaining sawmills. A very small proportion (< 1%) of sawn timber has come from private lands in recent years. On average, the ten remaining local sawmills in the study operated at approximately 15 percent of their estimated capacity in 2013 (sawmill survey data collected by Dan Parrent of US Forest Service and on file with the US Forest Service Alaska Region).

The primary destination for Southeast Alaska sawn wood is other US states. Brackley and Haynes (2008) concluded many of the lumber and wood product markets Alaska sawmills compete in are higher-end markets in which foreign and domestic prices have become fairly similar, through market arbitrage. Haynes at al. (2007) found that since 1994, the value of US forest product exports has been in gradual decline while the value of imports has steadily increased. Hansen (2006) further states US companies have historically jumped into the export market when the domestic market is down – and shifted back to the US market when the domestic market improves. Haynes et al. (2007) state US demand for forest products is varied and large, averaging 71 cubic feet per person per year. Furthermore, per capita consumption of wood products in the US has been relatively constant for 50 years. Since the national recession (2007 – 2009) and prolonged period of economic recovery, the US market has been slowly rebounding with housing starts and forest product prices again on the rise. Global population growth will also drive increases in wood products demand both domestically and internationally.

In 2007, the US Forest Service in Alaska approved a new policy under which timber purchasers may ship to Lower 48 states unprocessed certain small-diameter and low-quality logs harvested from the Tongass National Forest, up to 50 percent of the volume harvested on each sale. This interstate shipment policy places purchasers of Tongass National Forest timber in a similar position as their counterparts in the Lower 48, where there is no restriction on interstate shipments of timber harvested from National Forest System lands. Implementation of this policy has made Alaska forest products producers more competitive with their counterparts in the Lower 48 states. Of noteworthy importance, the emergence of the Tongass National Forest as an international supplier of softwood logs is a major development since the prior demand study (Brackley et al. 2006a) that Daniels et al. (in press) incorporated into new demand projections.

On the supply side, the cost of preparing stumpage for sale and delivering it to sawmills has increased due to decreased size of sales, increased fuel costs, legal and procedural challenges to federal timber sales, and more constraints on harvest activity in the interest of resource protection. The uncertainty surrounding Tongass National Forest sale quantities has increased the risk faced by potential purchasers and investors in local processing capacity.

Demand Estimation

The method to project Alaska timber harvest and output followed by Daniels et al. (in press) is essentially the same as employed in previous estimates of Alaska timber demand by Brooks and Haynes (1990), Brooks and Haynes (1994), Brooks and Haynes (1997), and Brackley et al. (2006a). Derived demand is estimated by converting the volume of demand for Alaska forest products in all markets, foreign and domestic, to the timber volume required to produce those products. In the model, ratios are used to assign a portion of the total global demand to producing regions. Daniels et al. (in press) then estimate Alaska forest products output, by product, required to meet projected demand and calculate the raw material requirements necessary to support this production, using explicit product recovery and conversion factors. The total raw material requirement (i.e., total derived demand for timber) is a combined projection of timber harvest from private ownership, national forest, and non-national forest public owners. Projected national forest timber demand is the quantity of timber required to satisfy projected derived demand given harvest by other owners, explicit assumptions about markets, and implicit assumptions about prices. The study analyzes past trends over a period of nearly 25 years (1990 to 2013), which forms the basis for a 15-year projection (2015 to 2030) incorporating three key parameters:

1. The level of forest product imports in Canada and Pacific Rim nations. Daniels et al. (in press) define the Pacific Rim as Japan, Korea, and China. Based on other research regarding these markets, Daniels et al. (in press) projects imports of sawn wood products and softwood logs will increase over the next 15 years.

2. The share of Canadian and Pacific Rim markets that will be supplied by US forest products producers will remain relatively constant.
3. The share of US exports to Pacific Rim and Canada that will come from Alaska. Daniels et al. (in press) examines three alternative assumptions regarding future trends of Alaska's share of US exports to the Pacific Rim and Canada.

Daniels et al. (in press) assembled historic data describing relevant components of the Alaska forest products sector and calculated possible future wood needs by analyzing trends that influence harvests. They also used assessments of current markets from other analysts. Data from the historic period of 1990 to 2013 were used as the basis for projecting the future (2015 to 2030) to avoid overemphasizing short-term cycles. Trends in imports and consumption (for example, sawn wood in the Pacific Rim) and production trends represented by shipments (for example, lumber to all destinations) comprise the basic structure of the model. Demand for wood products is global in nature and the US is a net importer of timber. A sawmill in Alaska has the option to ship products to international export destinations, new markets in the Lower 48, or local Alaska purchasers. Price is the primary determinant of where products will be shipped. There are many high-value products (e.g., large timbers for architectural designed buildings and shop grades of lumber) that are shipped to the Lower 48 from Alaska. The vast majority of timber harvested in Alaska, however, is exported as softwood logs to Pacific Rim nations.

The demand model calculates the quantity of national forest timber needed by sawmills and exporters as a residual necessary to balance the model. In other words, Daniels et al. (in press) estimated the roundwood equivalent of all material used to produce products from Alaska and subtracted estimated future volume harvested from other landowners to derive national forest roundwood needs (i.e., the "residual"). Of noteworthy importance, the results in Daniels et al. (in press) reflect standing timber volume necessary to meet product demand from federal, state, and private lands.

Stumpage price projections in PNW Research Station demand studies are linked to price series used and projected in Resource Panning Act assessments (i.e., Haynes et al. 2007). Stumpage prices in Alaska are estimated as a function of Washington and Oregon prices. Alaska markets directly interact with producers and consumers in other US regions through this price relationship. Brackley and Haynes (2008) explain that "market arbitrage is used to understand parity among prices in spatially distinct markets where there is the opportunity for open exchange (trade). Market arbitrage is a powerful force that keeps prices of different species, grades, and locations within some fixed proportion to each other. Abstracting from transportation and transactions costs, for example, prices of one species and grade will not exceed prices for other species of similar grade in the long run because of possibilities of substitution." Tying price in Alaska to price in the Pacific Northwest is how market arbitrage is implicitly included in the demand assessment. The mix of products that enter end markets from Alaska are, on average, higher quality and more valuable than the average lumber markets in Washington, Oregon, and British Columbia (Brackley and Haynes 2008). The type of lumber products in the demand projections reflects this higher value by the type of markets they compete in. Although price is not explicit in the PNW Research Station demand studies, it is reflected through this mix of generally higher-value products that go into various end markets and by the assumption that Alaska price is a function of US price.

Southeast Alaska is one of the last places in western North America that produces products from slow-grown large old trees. Alaska's old-growth trees, and some younger trees, have special high-quality strength and appearance characteristics. Wood products manufactured in Alaska are generally destined for high-end markets, such as window casings and door moldings. These markets are arbitraged throughout the Pacific Rim, meaning prices for these products are similar regardless of what market it enters – domestic or foreign. Brackley and Haynes (2008) illustrate how Alaska producers have shifted in and out of domestic markets. Daniels et al. (in press) accounted for this market arbitrage by assuming export products would be synonymous with products that could be sold in domestic or foreign markets based on price.

Data regarding domestic end markets for sawn wood production from Southeast Alaska have been available since about 2000, however, information on domestic end markets can be difficult to verify. A major unresolved challenge is determining how much of the product shipped to the Pacific Northwest is

ultimately transshipped to another final destination. Transshipments are products that are shipped to foreign markets from a different customs district than the one in which they were manufactured. In the case of Southeast Alaska, lumber manufactured in Alaska is oftentimes shipped to foreign markets from the Seattle customs district, making it difficult to track many of the very recent end markets and subsequent demand for manufactured products from Alaska. Trade statistics for softwood log exports from Alaska are also confounded by transshipments. Other data used in the Daniels et al. (in press) analysis includes harvest of sawlogs and utility logs from all Southeast Alaska ownerships, production of lumber and other products from Southeast Alaska sawmills, log and lumber shipments out of Alaska to various destinations, Alaska market share of US forest products, and US market share in Canada and Pacific Rim nations.

Daniels et al. (in press) developed a baseline demand model, projecting from 2015 to 2030, to construct three scenarios representing alternative futures for timber harvest – all incorporating a transition from predominantly old growth to young growth timber harvest. The baseline demand model assumes projected trends in imports, consumption, and market share will remain constant. Additional assumptions include softwood log exports from all owners will continue at current five-year average, "other" production will remain constant, markets for utility logs and other low grade material will remain elusive, and the large majority of residues are sold. Alternative future scenarios reflect conditions related to changing timber quality, growing wood energy markets, and rebounding housing market demand.

> Scenario 1. The first scenario incorporates the young growth transition and resulting changing quality of timber from the Tongass National Forest over time. It includes a transition period of ten years of tapering levels of old growth harvest as the industry adjusts and more young growth becomes available. By 2025, old growth harvest will be limited to five million board feet annually for small and micro sales designed to provide raw material for small businesses and specialty products. Prior to 2025, scenario one reflects the baseline model.
>
> Scenario 2. The second scenario builds upon the first scenario by adding markets for wood energy products. It is US Forest Service policy to support the conversion from distillate fuel to wood-based energy in Southeast Alaska's residential, commercial, and industrial sectors. Expanding markets for biomass energy will impact Tongass National Forest timber harvest by generating demand for two biomass sources – sawmill residues and low- and utility-grade logs. Scenario two includes derived demand estimates as the conversion is phased in over time.
>
> Scenario 3. The third scenario is motivated by uncertainty in the US housing market – a traditional driver of global lumber demand. Notably, scenario three assumes a higher trajectory for the market by considering only pre-recession (prior to 2007) domestic consumption growth rates. During recent years, US sawnwood consumption levels have grown at levels nearly matching those of the pre-recession housing boom. The third scenario is based on the possibility that domestic sawnwood demand growth will continue at a pre-recession rate throughout the projection period.

Daniels et al. (in press) indicate there are several challenges with developing timber demand projections. Most notable is the lack of published market data for Alaska forest products. Their analysis was based primarily on two data sources – one of which only collects data from a predetermined set of sawmills. The second data source is a full census survey of sawmills, but is only completed every five years. Furthermore, because Southeast Alaska forest products industry is relatively small, issues related to confidentiality and disclosure further hindered data collection and analysis.

Using Derived Demand Estimates to Estimate Supply

Determining what demand estimates mean for timber sale offered from the Tongass National Forest involves taking the results from Daniels et al. (in press) and using them as input to a supply calculation that seeks to meet annual market demand from the forest. Derived demand projections in Daniels et al. (in press) are one of the inputs to the timber offer calculation developed by Morse (2000). In the development of the original model (Morse 2000), the derived demand input was total harvest volume, over time, from PNW Research Station projections developed by Brooks and Haynes (1997). Timber volume in the Daniels et al. (in press) demand projections, including scenarios one, two, and three, include export logs, lumber, residue, and "other" forest products (i.e., bowls, furniture, houselogs, molding, shakes, posts and poles, and siding). Table G-1 summarizes estimated sale volume represented by Daniels et al. (in press) in their projections.

Table G-1
Tongass National Forest Timber Sale Volume to Meet Derived Demand as Reported in Daniels et al. (in press)

	Projected Tongass National Forest Timber Harvest (MMBF; includes logs, lumber, residue, and other)		
Year	Scenario 1 Young Growth Transition	Scenario 2* Wood Energy Growth	Scenario 3* Housing Market Recovery
2015	40.9	40.9	40.8
2016	41.6	41.6	41.6
2017	42.3	43.4	42.5
2018	43.1	46.3	43.3
2019	43.8	49.2	44.1
2020	44.5	52.1	45.0
2021	45.3	55.1	45.8
2022	46.0	58.0	46.7
2023	46.7	60.9	47.5
2024	47.5	63.8	48.4
2025	44.0	63.0	45.0
2026	44.5	65.7	45.6
2027	45.0	68.4	46.2
2028	45.5	71.0	46.8
2029	45.9	73.7	47.4
2030	46.4	76.4	47.9

* Scenario 2 and Scenario 3 include the transition to predominantly young growth timber harvest (Scenario 1).

Demand numbers reported by Daniels et al. (in press) are projections of how much wood will be used to meet derived demand projections. Timber sales take years to process and can be held for several years by the purchaser in anticipation of future needs. Sales must be planned and timber made available in advance of projected needs. The derived demand projections do not include increased timber sale volume in anticipation of increases in wood processing (i.e., increasing use of existing infrastructure, construction of new sawmills). Additional timber to supply existing infrastructure operating at higher capacity or the construction of new sawmills would need to be sold in preceding years to provide sufficient timber supply.

Demand is an estimate, and translating that demand to on-the-ground sale numbers is also an estimate. The derived demand projections developed by Daniels et al. (in press) are used to estimate the market demand for the current Tongass National Forest planning cycle. They are also, as noted above, an important input to the model (Morse 2000) that the US Forest Service uses to compute the offer target or supply of timber from the Tongass National Forest in a given year. That procedure is outlined in the following section.

Development of Timber Sale Requirements to Meet Market Demand

New demand projections in Daniels et al. (in press) required that the spreadsheet model outlined in Morse (2000) for estimating timber sale goals be slightly modified to reflect the three alternative future

scenarios. Modification of the spreadsheet model allows continued implementation of Forest Service Sale Preparation Handbook direction (FSH 2409.18, R-10 Supplement 2409.18-2006-5; Ch. 11.4), which states that the procedure outlined in Morse (2000) will be followed in developing short-term offer targets.

The general approach of the timber sale offer model (Morse 2000) is to consider timber requirements of the region's sawmills at different levels of operation and under different assumptions about market conditions and technical processing capacity. These assumptions provide a basis for estimating the volume of timber likely to be processed by the industry as a whole in any given year. The specific steps in the process are outlined below.

Volume of Timber Processed Locally. The first step in the calculations adjusts sawmill capacity estimates by the utilization rate assumed for each of the three scenarios, and by the percent of volume expected to come from the Tongass National Forest. This provides an estimate of the volume of logs from the Tongass National Forest likely to be processed into lumber by sawmills in Southeast Alaska under the different scenarios. These figures are then adjusted upward to account for species and grades of timber that are not processed into lumber locally. Given this set of assumptions, the timber supply expected to be consumed in a given fiscal year is then computed.

Inventory Requirements. The second stage provides an estimate of the volume of uncut timber inventory to carry under different demand scenarios. As described on pages 19-20 of Morse (2000), target inventory levels depend on the volume expected to be processed each year and the amount of time needed to replenish inventory. The relationship is summarized in Morse (2000; equation 2, page 20) and by the timber inventory requirements in the model itself. Because the volume of timber expected to be processed varies by scenario, timber inventory requirements also vary from one scenario to another.

Harvest Projections. The next step in the process is to incorporate the derived demand estimates developed by Daniels et al. (in press), adjusted as shown in Table G-1.

Range of Expected Timber Purchases. By subtracting the volume under contract at the beginning of the year from the required inventory, the projected inventory shortfall is calculated. The low range of expected timber purchases is replacement for the volume harvested; the high range is the volume harvested plus the inventory shortfall so that the inventory requirement is met at the end of the year.

Between fiscal years 1999 and 2008, annual US Department of the Interior and Related Agencies Appropriations Acts allocated specific funds to the Tongass National Forest for the purpose of preparing a reliable timber supply. These "pipeline" funds were in addition to regular agency funding for forest management and timber sales. While "pipeline" funding varied by fiscal year, ranging from four to five million dollars, the objective remained the same – to establish a three-year timber supply to provide industry enough volume to maintain a viable inventory for financial integrity and to respond to market changes. While US Congress discontinued "pipeline" funding, the Tongass National Forest still strives to maintain a three-year timber supply.

Three-Year Timber Supply. The annual timber supply needs from the Tongass National Forest is considered synonymous with the annual timber consumption (i.e., the amount that is expected to be harvested in a given year). To estimate the three-year timber supply, the annual consumption is multiplied by three years.

Timber Pipeline. The Tongass National Forest timber pipeline was established as a process to "ramp-up" to the three-year supply over a period of years. It takes approximately four years to get a project through the analysis and preparation process – to be ready to offer for sale. The additional average annual volume needed to meet the three-year timber supply in a given fiscal year is the three-year timber supply of timber inventory minus timber inventory requirement, spread evenly over a four-year period.

Total Timber Sale Requirement. By taking the median between the low and high range of the volume expected to be purchased, and combining it with the average annual pipeline volume, the total volume anticipated for purchase is estimated.

The measure of meeting TTRA's "seek to meet" requirement while also developing a three-year timber supply is volume sold from the Tongass National Forest. To meet these objectives, a sufficient amount of

volume must be offered to account for any fall-down between the volume offered and the volume sold. The final step in projecting the amount of volume to be purchased is to evaluate the anticipated volume that needs to be offered.

Timber Sale Fall-Down. Historically, there has been a difference between volume offered and volume sold from national forest timber sales. The reluctance of purchasers to buy timber sales tends to increase as markets decrease and/or logging costs increase. Mason et al. (2004) examined why some offerings in Southeast Alaska go unsold and concluded that the probability of a timber sale being successfully sold is tied to downstream markets that are inherently difficult to predict rather than factors directly controlled by the US Forest Service.

Projected Offer Objectives. To project the amount of volume that needs to be offered for each of the alternative scenarios, the total timber sale projection is increased to account for fall-down and litigation to provide a rough estimate of the volume to be offered for each scenario to meet timber sale objectives.

Conclusion

Many challenges have confronted the Southeast Alaska forest products industry over the past two decades. Southeast Alaska's two pulp mills and numerous sawmill facilities have closed. Remaining active sawmills operate at about 15 percent of their estimated capacity, on average. During 2013, the Tongass National Forest supplied approximately three-quarters of logs for local sawmills followed by one-quarter from state land; less than one percent is from private lands. The destination for material sawn in Southeast Alaska is now primarily other US states (Kilborn et al. 2004; Brackley et al. 2006b; Backley and Crone 2009; Alexander and Parrent 2010, 2012). Demand for Southeast Alaska sawnwood products in export markets continues to be relatively low, while exports of softwood logs have remained strong. Hansen (2006) states US companies have historically jumped into the export market when the domestic market is down, and shifted back to the US market when the domestic market improves. In recent years, the US domestic market has been attractive with rising housing starts and forest product prices.

On the supply side, the cost of preparing stumpage for sale and delivering it to sawmills in Alaska is generally higher than in Oregon and Washington, due to transportation and labor costs, decreased timber sale size, increased fuel costs, legal and procedural challenges to federal timber sales, and more constraints on harvest activity on federal lands in the interest of resource protection. The uncertainty surrounding Tongass National Forest sale quantities has increased the risk faced by potential purchasers and investors in local processing capacity.

In choosing the timber sale offer level, it is important to anticipate the consequences of decisions. In terms of short-term economic consequences, over-supplying the market is less damaging than under-supplying it. If more timber is offered than purchased in a given year, the unsold volume is still available for purchasing off-the-shelf or re-offered at a minimal investment. However, a significant shortfall in timber supply available for harvest can be financially devastating to the industry.

The purpose of this paper is to identify the extent to which economic analysis contributes to this decision-making process. In the final analysis, planning a timber sale program is an exercise in professional judgment and needs to consider more than economic factors. Realistic timeframes account for delays in timber sale preparation, administrative appeals, and/or litigation with sufficient contingent volume included in the annual timber sale program. Budget and organizational constraints also limit the extent to which the US Forest Service can respond to economic cycles and associated fluctuations in timber demand. These are all important considerations in evaluating market demand for timber and setting timber offerings.

Acknowledgements

This paper was improved with information provided by multiple staff at the US Forest Service Alaska Region, Tongass National Forest, and PNW Research Station.

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APPENDIX H
LIMITED EXPORT POLICY

Appendix H
Alaska Limited Export

The concerns raised in public comment that log exports reduce the number of local jobs are not new and are not unique to the Tongass National Forest. Reviewers claim timber export employs fewer people than are required to process wood products domestically, or in this case, in Southeast Alaska. As a result then, fewer manufacturing facilities are built to process timber domestically, or within Southeast Alaska. Historically, those arguments have been effective in raising public concern and have resulted in legislation restricting exports since the 1930s. However, it has been long recognized that special circumstances exist in Alaska such that limited export allowance of forest products from the Tongass actually works to maintain local industry. Accordingly, the Forest Service allows, but appropriately limits, the export of unprocessed timber from National Forests in Alaska under general authority of the Organic Administration Act,[1] National Forest Management Act (NFMA),[2] and 36 Code of Federal Regulations (CFR) 223.201.

One of the primary goals of the Tongass National Forest timber program is to contribute to the local and regional economies of Southeast Alaska. In keeping with this long-standing goal, current law allows timber harvested from federal lands in Alaska to be shipped out of Alaska only if "the supply of timber for local use will not be endangered."[3] In 2007, the Forest Service Region 10 approved a Limited Export Policy in an effort to boost appraised values and provide purchasers economical sale opportunities and additional processing options. In this case, such shipments actually increase the utilization of timber harvested on the Tongass because it allows local sawmills to make a profit when they purchase timber sales, keeping loggers, road construction crews, transporters and sawmill workers employed. These goals remain on the Tongass today, and will be especially important as the Tongass National Forest accelerates the transition to young-growth harvest.

Background

For over 100 years, numerous laws, regulations, and policies have imposed varying degrees of export restrictions on timber harvested from Alaska federal lands. The common thread and purpose has always been to sustain the local timber industry. From the beginning, the 1897 Organic Administration Act prohibited interstate export of national forest timber.[4] However, in departmental appropriations acts from 1917 to 1926, Congress granted the Secretary of Agriculture the discretionary authority to allow interstate exports.[5] The 1926 Exportation of Timber Act permanently codified this Secretary's authority to allow interstate exports of National Forest System (NFS) timber if, "in the judgment of the [Secretary of Agriculture], the supply of timber for local use will not be endangered thereby."[6]

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[1] Organic Administration Act of 1897 (Organic Act), Act of June 4, 1897, ch. 2, 30 Stat. 11, 34-36 (codified as amended at 16 U.S.C. §§ 473-482, 551 (2000)).
[2] National Forest Management Act of 1976, 16 U.S.C. §§ 1600, 1611-1614 (2000) (amending Forest and Rangeland Renewable Resources Planning Act of 1974, Pub. L No. 93-378, 88 Stat. 476).
[3] 16 U.S.C. § 616 (1960) (originally enacted in 1926). Further detail on implementing this requirement is provided by regulations found at 36 C.F.R. 223.201.
[4] Organic Administration Act of June 4, 1897, Ch. 2, 30 Stat. 11, as amended; 16 U.S.C. §§ 473-475, 477-482, 551. The Act of May 14, 1898 extended the homestead laws to Alaska, and authorized the sale of timber from public lands in Alaska for use only within the Territory.
[5] 16 U.S.C. § 461 (1960).
[6] 16 U.S.C. § 616.. Local use, the primary qualifier for future regulating decisions, was later interpreted as "the supply of timber for local consumptive use rather than the supply of timber to meet the needs of local mills processing timber for non-local markets as well as local markets." *See* Brief Summary of General Counsel's Memorandum of July 10 in Reply to the Questions Submitted by Senator Morse of Oregon relative to the Secretary's Authority to Sell Timber from the National Forests for Export. [Date unknown]. Washington, DC: U.S. Department of Agriculture, Office of the General Counsel: 4. This interpretation remains the primary authority regarding timber sales from National Forests in Alaska.

In 1928, the Secretary exercised his discretion and permitted export from all States, except from the Territory of Alaska.[7] The prohibition on the export of logs from Alaska originated in a 1928 memorandum from then Regional Forester W.B. Greeley who sought to promote development of Alaska's pulp and paper industry by requiring primary manufacture of high-grade Sitka spruce and hemlock to bolster the value of lower-value material for the pulp and paper mills. The prohibition of raw log exports from Alaska did not appear in federal regulations until 1946, where discretionary authority was expressly granted to the Chief of the Forest Service to consent to export allowances for certain product considerations.[8] Those regulations were again modified in 1974 to delegate exclusive approval authority to the Alaska regional forester.[9] The regulations, still in effect, recognize Alaska's unique circumstances by allowing national forest lands timber purchasers, who cannot locate a buyer in their market area, to apply for an export exemption:[10]

> ***36 CFR 223.201 Limitations on Unprocessed Timber Harvested in Alaska***
> *Unprocessed timber from [NFS] lands in Alaska may not be exported from the U.S. or shipped to other States without prior approval of the Regional Forester. This requirement is necessary to ensure the development and continued existence of adequate wood processing capacity in Alaska for the sustained utilization of timber from the National Forests which are geographically isolated from other processing facilities. In determining whether consent will be given for the export of timber, consideration will be given to, among other things, whether such export will: a) permit more complete utilization on areas being logged primarily for local manufacture; b) prevent loss or serious deterioration of logs unsalable locally because of an unforeseen loss of market; c) permit the salvage of timber damaged by wind, insects, fire, or other catastrophe; d) bring into use a minor species of little importance to local industrial development; or e) provide material required to meet urgent and unusual needs of the Nation.*

Several other special accommodations recognizing the circumstances in Alaska have been made.[11] For example, another disadvantage for Alaska is that the available old-growth is often defective, with over 50 percent of some harvests unsuitable for sawing and therefore of limited market value. Because the local sawmills did not have the capacity to utilize the volume of chips produced from national forest timber, in 1977 the Forest Service removed the export ban of chips, effectively expanding market opportunity for the sale of chips made from those defective logs.[12] Similarly, export of salvage materials were expressly allowed to boost the local industry during the early 1980's global recession that depressed timber prices.[13]

Another hurdle for the Alaska timber industry is that no timber sale on the Tongass National Forest may be advertised if the appraised value is deficit when using residual value appraisal and red cedar domestic processing. This restriction was first imposed by Section 318 of the Consolidated Appropriations Resolution, 2003 (Public Law 108-7), with identical language included in subsequent annual appropriations acts. [14] In 1969, yellow cedar was declared (by both Secretaries of Agriculture and Interior)

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[7] The Secretary has consistently interpreted 16 U.S.C. § 616 as authorizing the conditioning of export upon primary manufacture within the State of Alaska. *See also* 36 C.F.R. 221.25(g) (1970)).
[8] Lane, Christine L. 1998. *Log export and import restrictions of the U.S. Pacific Northwest and British Columbia: past and present*. Gen. Tech. Rep. PNW-GTR-436. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
[9] 36 CFR 223.161 (1974) (current version at 36 CFR 223.201).
[10] 36 CFR 223.201.
[11] Lane, Christine L. 1998. *Log export and import restrictions of the U.S. Pacific Northwest and British Columbia: past and present*. Gen. Tech. Rep. PNW-GTR-436. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.; i.e., substitution does not apply to Alaska (U.S. Department of Agriculture, Forest Service, Alaska Region. 1987. USDA Forest Service Manual; Alaska Region Supplement 275).
[12] Lane, Christine L. 1998. *Log export and import restrictions of the U.S. Pacific Northwest and British Columbia: past and present*. Gen. Tech. Rep. PNW-GTR-436. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Federal Register. 1977. Vol. 42, No. 129. Wednesday, July 6.
[13] Lane, Christine L. 1998. *Log export and import restrictions of the U.S. Pacific Northwest and British Columbia: past and present*. Gen. Tech. Rep. PNW-GTR-436. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
[14] Most recently as part of the Carl Levin and Howard P. 'Buck' McKeon national Defense Authorization Act for Fiscal Year 2015, Public law No. 113-291, December 19, 2014, 128 Stat. 3729, section 3720(e)(4).

surplus to Alaska domestic manufacturing needs and continues to be freely exportable to foreign markets. Section 318 allowed red cedar to be shipped to the Lower 48 when local domestic markets do not exist. Because, before 2007, the Alaska Region only approved out-of-state shipments on a case-by-case basis after the sale, the appraisals (developed before the sale) assumed that all timber except Alaska yellow cedar would be processed in Alaska. The list of export policy changes spanning 100 years is long, but the clear focus throughout this time has been on the need to ensure the development and continued existence of adequate wood processing capacity for the sustained utilization of timber.

Section 705(a) of the Alaska National Interest Lands Conservation Act (ANILCA), as amended by Section 101 of the Tongass Timber Reform Act (TTRA), also guides the timber program on the Tongass. TTRA provides that the Secretary of Agriculture shall "…seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand for timber from such forest for each planning cycle." Although all national forests are required to estimate demand for timber during forest planning efforts, the "seek to meet" requirement is unique to the Tongass National Forest.

Alaska Region Limited Export Policy

In keeping with the regulations cited above, shipment outside Alaska of unprocessed timber from NFS lands requires prior approval by the regional forester. Historically, such approvals were granted on a case-by-case basis at the request of the purchaser after the sale was awarded. The Forest Service began analyzing the benefits and potential impacts of easing the export restriction on the Tongass as early as 1978.[15] As timber prices fell dramatically in response to the so-called Great Recession of 2007 to 2009 and prolonged period of economic recovery, the Forest Service recognized that because Alaska is far from most of its markets, it is the first to suffer in a recession and the last to benefit from economic recovery.

The wood products market crises made it difficult for the Forest Service to offer timber that would appraise positive, yet Section 318 prohibits the Forest Service from offering sales that do not. Timber values are lower in Alaska than elsewhere, largely due to higher operating and transportation costs in Alaska.[16] Even if deficit sales could be offered, doing so would not be economically viable in the long run, since the purchasers would most likely lose money on them.

Non-federal lands adjacent to the Tongass National Forest have no log export restrictions so the Tongass National Forest has historically been the major supplier of timber to local sawmills. Unless the Tongass National Forest can offer a reliable supply of timber with a positive appraisal, the few remaining locally-owned sawmills in Southeast Alaska would find it very difficult to stay in business. Closure of the remaining sawmills, even on a temporary basis, would run counter to the objective of supporting local economies and wood processing capacity in Southeast Alaska.

Because Southeast sawmills do not have extensive supplies of timber available, even a short-term hiatus in offering sales from the Tongass National Forest could result in losses from which the sawmills, the rest of the timber industry in Southeast Alaska, and the entire Tongass timber program might never recover. Once a sawmill shuts down, re-opening becomes more difficult over time, as skilled employees find other jobs, equipment becomes obsolete or is sold, and capital becomes more difficult to obtain. Cessation of the program and the related private-sector activities would have very noticeable adverse consequences in several local economies across Southeast Alaska.

[15] Darr, David R. 1978. *Potential Impact of Easing the Log Export Restriction on the Tongass National Forest*. USDA Forest Service Resource Bulletin PNW-77. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station, available at http://www.fs.fed.us/pnw/pubs/pnw_rb077.pdf (citing the 1969 recommendation of the Public Land Law Review Commission to ease the export restriction to allow higher stumpage revenues).
[16] Alaska Dept. of Labor. *Alaska Economic Trends*, at 11 (Dec. 2003), available at http://labor.alaska.gov/trends/dec03.pdf.

The Forest Service recognized appraisals of proposed Tongass timber sales would rise if they assumed that a portion of the unprocessed Sitka spruce and hemlock logs were to be shipped to lower 48 markets, such that timber sale appraisals would reflect beneficial pricing in markets outside of Alaska. That assumption would be possible if shipments were approved prior to the sales being appraised, instead of authorizing shipments only after the timber is sold. Allowing routine interstate shipment of a portion of unprocessed Sitka spruce and hemlock logs from Alaska provides Alaska operators the opportunity to capture some of the economic efficiency available from the vertical integration (*i.e.* consolidation) that exists in the lower 48. This approach would also lower some of the operating and transportation costs that are deducted from selling prices in the appraisal calculations. Between the higher prices and lower costs, limited interstate shipments significantly increase the likelihood that timber sales in parts of the Tongass would have a positive appraisal under poor market conditions. Such shipments would also increase the utilization of timber harvested on the Tongass.

Consequently, the Forest Service analyzed seven limited export scenarios it designed to establish a programmatic approach that would best meet the following objectives:

1. Ensure that economic timber sales can continue to be offered from the Tongass National Forest.
2. Ensure the continuation of wood processing capacity in Alaska.
3. Minimize the amount of unprocessed logs being shipped outside of Alaska.
4. Maximize employment in the United States from timber harvest activities conducted on the Tongass.

It is important to recognize that, to some degree, these are competing objectives. For example, if the first objective were all that mattered, positive appraisals could be achieved by allowing all logs to be shipped out-of-state without any in-state processing. That approach would result in positive appraisals under most market conditions in most areas of the Tongass, so timber could continue to be offered for sale. It would not, however, support continuation of Alaska's wood processing capacity or minimize the shipment of unprocessed logs out-of-state Likewise, if the third objective were all that mattered, it could be accomplished by not allowing any shipment of unprocessed logs outside of Alaska. As described above, however, that approach would soon prevent many Tongass sales from being offered, which would endanger the continuation of wood processing capability rather than ensure it. Without a reliable supply of timber from the Tongass, the remaining locally-owned sawmills would probably be forced to close.

Consistent with the results of that analysis, in 2007 the Alaska regional forester adopted the *Limited Export Policy*, intended to boost appraised timber values, provide economic sale opportunities for purchasers, and provide additional processing options for purchasers. The policy modified how timber sales were appraised and allowed timber purchasers options on shipping certain small diameter logs from national forest timber sales to the Lower 48 states. Designed to allow flexibility for timber purchasers, the Limited Export Policy was not, nor is today, something mandated by the Forest Service on a timber purchaser or automatically or immediately applied to all timber sales. Rather, the policy is applied by request of the timber purchaser after the contract offering is awarded or any time thereafter.

The Limited Export Policy established a programmatic limited approval for export so that total shipments of unprocessed logs outside of Alaska were limited to no more than 50 percent of the total volume of all species harvested on each sale. This included shipments of western red cedar to the Lower 48 and exports of Alaska yellow cedar to foreign markets. Requests to ship more than 50 percent of the total volume of a sale out of Alaska continued to be considered on a case-by-case basis.

Restrictions on the out-of-state shipment of unprocessed logs were put in place, among other things, to ensure the continuation of wood processing capability in Alaska. The programmatic limited approval of interstate shipments achieved that result by increasing the Forest Service's ability to design sales with greater utilization and a positive appraisal.

In recognizing that the Limited Export Policy is intended to support local manufacturing in down markets, the Limited Export Policy is reviewed on an annual basis to determine whether it should be adjusted or discontinued. Since 2007, the policy has continued, with modifications, which have provided additional options for purchasers while maintaining goals established by the Agency. Although improvements to markets have occurred since 2007, challenges continue for purchasers seeking domestic markets for Alaska timber.

After a year of implementation, it became clear that the interstate shipment of unprocessed Sitka spruce and hemlock did not offset costs for fuel, barging/shipping, insurance, and manufacturing being experienced by Southeast Alaska's timber industry. A corresponding decline in orders and values for wood chips in the Lower 48 states, coupled with 12 consecutive quarters of decline in the softwood lumber indices, threatened the viability of the timber industry, and dependent Southeast Alaska communities. Thus, in 2008 the regional forester responded to industry request by expanding the scope of the policy to also allow foreign export in 2008 for existing contracts if a premium was paid for certain species. The policy was again expanded in November 2009 to apply to all contracts and allowed export of unprocessed Sitka spruce and hemlock logs, up to 50 percent of the total sale sawtimber volume, to be shipped to the most advantageous markets. At that time, a foreign market appraisal was established for use on timber sales to reflect export values for Sitka spruce and hemlock.

In 2011, the policy was expanded to consider applications on settlement sales. Beginning in 2012, in a continuing effort to encourage and support domestic processing, the regional forester agreed to begin reviewing requests to allow increased export of Western hemlock and Sitka spruce from sales where an approved export permit was already in place. This increase in export has been approved on a case-by-case basis, in exchange for purchasers providing an equivalent amount of Alaska Yellow Cedar to small business operators who would process the timber locally. In 2014, the regional forester approved a rebate for young-growth Sitka spruce when timber had been appraised for export, but primary manufacture occurs in Alaska.

The regional forester noted in the 2015 review that, while improvements occurred nationally over the past three years, challenges continue for purchasers seeking domestic markets for Alaska timber. As a result of this review, the Limited Export Policy remained in place for calendar year 2015. The current residual value appraisal allows a higher percentage of volume to be appraised for domestic processing, when indicated advertised values are very positive for a planned sale offering. Domestic processing is encouraged when a perceived opportunity exists. For example, sales with greater quantities of large diameter hemlock and Sitka spruce volume may be profitable for processing locally (i.e., > 20 inches for hemlock and > 18 inches for Sitka spruce). Hemlock and Sitka spruce volume approved for export that has not been appraised using the residual value appraisal have a premium fee requirement of $40/MBF for shipment of these species out of Alaska. The regional forester also continues to encourage and support domestic processing by considering requests on a case-by-case basis, to allow increased export in exchange for equivalent volume supplied directly to small local operators who would process the timber locally.

The Limited Export Policy was developed under existing authority, which up until 2007 had been exercised only on a case-by-case basis; the only difference is to grant such limited authority for interstate shipments of unprocessed Sitka spruce and hemlock logs on a programmatic basis applicable to all sales across the Tongass. The Forest Service undertook notice and comment rulemaking in adopting regulations allowing the limited export of forest products in Alaska, as well as in granting this authority to the Alaska regional forester. The Limited Export Policy represents the exercise of the regional forester's express authority to provide "prior approval" for limited export allowances consistent with the regulation. The establishment of a programmatic policy was needed to ensure the continued existence of adequate wood processing capacity in Alaska. The policy also permits more complete utilization of small diameter and low grade logs which cannot be profitably processed in Alaska. By limiting export of unprocessed Sitka spruce and hemlock logs to no more than 50 percent of the total sale sawtimber volume, the policy

ensures that the Tongass timber program will continue to be operated primarily for local manufacture. The 2007 Limited Export Policy is reviewed on an annual basis and adjustments have been made reflecting the current needs of the industry based on that review. As the young-growth transition proceeds, additional policy changes may become necessary to align with market developments.

Effects Analysis

The authorization for limited interstate shipments of unprocessed Sitka spruce and hemlock logs may increase the amount of harvest on the Tongass above the amount that could occur without it. This is the case because with the positive appraisal requirement, many sales would not be offered if not appraised for export. However, in order to ensure that timber sale offerings are consistent the agency's obligations under TTRA, timber sales must be offered so long as there is a demand for Tongass timber. The Limited Export Policy provides flexibility for the region to balance the economics of timber sales to meet both of those statutory requirements.

While it may be the case that more timber is cut than without the policy because sales would not appraise positive and could not be offered, this does not increase the amount of timber harvested beyond that analyzed and disclosed pursuant to the National Environmental Policy Act (NEPA), NFMA, and the Administrative Procedures Act. The policy itself has no environmental effects—implementation of the policy involves further Forest Service action, which is subject to NEPA analysis, including public notice and opportunity for comment.

NEPA analysis of the effects of the Limited Export Policy has been conducted at both at the programmatic and site-specific levels since its adoption. While analysis at the forest plan level assists the agency in selecting among management alternatives, the forest plan itself also does not authorize the harvest of timber without further, site-specific NEPA review. Project-level NEPA analyses evaluate the effects of timber sales in light of the policy including potential effects on in-state employment and the financial efficiency of project alternatives. Project-level NEPA documents also describe how each specific timber sale meets the TTRA requirement to seek to meet market demand for Tongass timber while also providing for the multiple use and sustained yield management of the Forest's renewable resources.

When it was adopted, the Limited Export Policy was also applied to projects already approved but not yet fully implemented. In each of those cases, an evaluation was completed to determine whether limited interstate shipments of unprocessed timber would meaningfully change the environmental effects of the project in a manner that was relevant to issues that were factors in the NEPA analysis and decision. Such determinations were and continue to be rare, because the environmental effects of timber harvest activities do not materially change as a function of where the timber is processed.

Timber sales are sold to purchasers with different business goals and ever-changing markets. Historically, the percentage of the volume harvested on the Tongass that has been shipped out-of-state has fluctuated so it is not possible to precisely predict what will be manufactured locally. Therefore, a range of employment and income figures is considered the most reasonable approach to display potential effects of the policy on jobs and income. Most of the purchasers, since they are trying to make a profit, want to optimize the value of their products and use export as a means to do this. At the present time, some of the volume from larger sales is shipped out of state to optimize the return to the purchaser. Information on the amount of volume exported from 2001 to 2015 is located on the Tongass website (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3845620.xlsx) and shows an annual range of 2.7 MMBF to 19.5 MMBF. The highest volume reflects a 2005 salvage sale from the Yakutat Ranger District, the value of which the Forest Service wanted to ensure was captured before the wood decayed. On average, export represented only 28.2 percent of what was harvested during that period. Thus, an average of 71.8 percent of the timber harvested on the Tongass National Forest over the last 15 years received primary manufacture in Alaska sawmills.

Estimated employment is analyzed and presented as a range based on the existing Limited Export Policy. Direct employment and income estimates are presented as a range in the 2016 Forest Plan Amendment Final Environmental Impact Statement (FEIS) in Table 3.22-19. These estimates are for employment that would take place in Southeast Alaska. Although estimates of value for timber in the various alternatives are based on maximizing shipments of timber sold out of state (Table 3.22-17), purchasers have the choice to sell as much as they can to other markets as allowed under the Limited Export Policy, or process part or all of the material in local sawmills. Actual employment and income in Southeast Alaska would depend on choices made by purchasers; those choices may change as markets and prices shift. Under current market conditions, purchasers are likely to export as much as they can while processing enough material locally to keep manufacturing facilities open, and take advantage of opportunities to produce high-value sawn material in Southeast Alaska.

Transportation and other services include water transportation, independent trucking, stevedoring, scaling, and export marking and sort yard employment for export volume, and water transportation, scaling, and independent trucking for locally-sawn volume. Export employs more workers in transportation and other services per MMBF harvested than domestic production. This is reflected in the range of values presented in the FEIS.

When the Limited Export Policy was adopted in 2007, the Forest Service utilized the NEPA Economic Analysis Tool-RV (NEAT-R) model to analyze the policy potential effects on employment to aid the agency in selecting among various alternatives in its NEPA analysis. NEATR calculated jobs in two categories: logging and sawmill. Following adoption of the policy, sawmill jobs were presented as a range, representing 50 to 100 percent domestic processing. The job calculation for 50 percent export assumed a 50 percent reduction in sawmill jobs, but did not consider that export supported transportation-related, as well as logging jobs. In March 2011, the Forest Service implemented a new model, known as the Financial Analysis Spreadsheet Tool-RV (FASTR), which addressed this shortcoming by estimating jobs in four categories: logging, sawmill, transportation related to domestic manufacturing, and transportation related to export. The model estimates jobs and associated income by utilizing annual trend-based employment information collected by the agency from 2007 to 2010. These annual sawmill surveys continue to inform the employment coefficients assigned to job categories in the FASTR model.

As described in the Plan Amendment FEIS, the analysis presents a range for annualized sawmill jobs which reflects the range of export options that may be available to a timber sale purchaser. The employment and income analysis in the FEIS assumed a range from maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent of Alaska yellow cedar (see Table 3.22-19 in the FEIS). It may overestimate the low range since the volume that can be shipped is limited to certain species and grades unless exemptions are approved by the current export policies. The analysis in the FEIS also presents employment and income estimates for this range.

The assumptions used with respect to the Limited Export Policy for the financial, employment, and income analyses are appropriate for programmatic analysis. Additional analyses will be conducted as part of the project-specific environmental analysis that will be prepared as part of future timber sale projects, as done since the Limited Export Policy was adopted. These analyses take into account the Limited Export Policy as well as any other potential restrictions on export or production in place at that time.

While the current policy allows case-by-case consideration for export in quantities beyond that which is programmatically approved by the regional forester, for the purposes of the programmatic analysis, it is reasonable to evaluate the upper limit as prescribed by the current version of the Limited Export Policy. If purchasers were allowed on a case-by-case basis to export a larger share of a particular sale in unprocessed form, there would be a commensurate reduction in sawmilling jobs and an increase in transportation-related jobs. This is explained in the Plan Amendment FEIS. In such cases, the agency undertakes analysis to determine the significance of the change.

The information presented in the Plan Amendment DEIS reflects the current industry and recent trends that are operating in Southeast Alaska. It is not intended to illustrate the full extent of the reduction in wood products employment that has occurred since it peaked at 3,543 jobs in 1990. At that time, there were two 50-year contracts that guaranteed a steady supply of timber. These long-term contracts involved supplying two pulp mills, which required a large workforce both to supply and operate the mills. A more complete explanation of the timber industry since 1990 is in the 2008 Forest Plan Amendment FEIS, p. 3-499 to 3-511.

Looking Forward

In 2010, the US Department of Agriculture announced a “Transition Framework” Policy aimed at diversifying the Southeast Alaska economy and shifting the timber industry to young-growth harvest and management. In 2013, Secretary Vilsack announced the Department’s goal “to effectuate this transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young-growth.” Since that time, the US Forest Service, USDA Rural Development, local businesses, conservation groups, and others have been evaluating how the region can develop a locally-based, properly-scaled young-growth industry that provides greater economic security for local communities, builds regional knowledge and skillsets, and restores critical forest habitat in the Tongass.

The agency has the authority to amend the forest plan to accelerate the transition to young-growth, which is one step in addressing sustainable forestry in Southeast Alaska. Additional steps in the Tongass Advisory Committee’s (TAC) detailed transition implementation recommendations provide guidance on elements for success in implementing the transition, and identify opportunities by which the agency, stakeholders, and greater community will share ownership of the transition strategy and embrace its successful implementation. The work done by the TAC offers the possibility of a regionally focused, collaborative path toward an innovative opportunity for a viable young-growth timber industry while honoring the suite of economic, ecological, social, and cultural values inherent in the forest. The TAC provided detailed recommendations for targeted investment, financial assistance, and financing mechanisms for stand inventory, research, infrastructure, and retooling. These investments are intended to help communities and businesses successfully transition to, and thrive within, a new young-growth economy.

A recent report by Government Accountability Office (http://gao.gov/products/GAO-16-456) outlines additional steps taken or planned by the Forest Service, including comparing potential market prices for young-growth timber or products to the cost to harvest, transport, and process the timber; refining of young-growth timber data; lengthening the duration of small sale contracts to provide small sawmill owners with flexibility; and expanding collaborative projects to support job creation through sustainable forest management and improve predictability of timber supply.

It is important to retain the expertise and infrastructure of the existing industry to allow businesses the opportunity to quickly retool. These businesses are fundamental to both the young-growth and restoration components of the future timber program, and to the economic vitality of the region. The Forest Service will continue to offer a supply of old-growth while increasing the supply of young-growth to provide the industry the opportunity to develop new markets, learn new skills, and acquire new equipment. This will include offering old-growth timber sales like the Big Thorne timber sale to provide “bridge timber, as well as continuation of the micro-sale programs and old-growth small sale program which target niche markets. In addition, young-growth timber sales may include old-growth to help boost appraisal values of young-growth sales until a reliable supply of economically viable young-growth may be established. It has been acknowledged since 2000, that the transition to young-growth in Southeast Alaska would be shortened and more abrupt because less unmanaged second growth, which has characteristics

intermediate between old-growth and young-growth, is available to ease the transition.[17] This is why bridge timber is a critical factor to maintain a viable industry while the transition takes place.

Successfully transitioning the Tongass timber sale program from one based on old-growth to young-growth is dependent on a range of economic, social, and ecological factors, not all of which are under Forest Service control. Since the closure of the pulp mills, there is no local market for lower-grade materials that historically supplied the mills. Without the opportunity to export these products, utility and lower grade materials would be left in the woods. Allowing export of these materials which have no local market allows for more complete utilization of Tongass National Forest resources. Similarly, in the early years of the transition it may be the case that there is a very limited local market for young-growth logs. In order to keep local operators in business, young-growth timber sale purchasers will have the option to export those logs which cannot be locally utilized, consistent with the Limited Export Policy. As the Forest Service builds the capability to provide a reliable supply of economically viable young-growth timber, local processing capability is expected to develop to utilize the material that has formerly been left in the woods or is currently being largely exported.

The agency's long-range goal to ensure that Tongass timber is available primarily for local and domestic processing is a priority, in order to create more local economic benefits. Therefore, a glide path of increasing supply of young-growth gradually over time makes sense. Alternatively, young-growth might be entirely exported, a scenario that may not result in the same amount of local economic and community benefits. However, consistent with existing authority to allow export of forest products from public lands, export allowances may not endanger the supply of timber for local use. As shelf volume for young-growth becomes available as the young-growth ages and the economics and market demand become more favorable, industry can re-tool. As the local demand for young-growth grows, the export of unprocessed young-growth logs should taper down so as to provide a supply of Tongass timber for local use. The transition is not expected to "generate jobs" but rather support existing jobs. Once the timber supply reaches a long-term stability above the needs of the current operators, other timber industry operators may move into Southeast Alaska. Currently, those purchasers that have been interested are discouraged by the lack of a stable timber supply.

The 2016 forest plan amendment FEIS was designed to analyze the feasibility of shifting from an old-growth forest management regime towards young-growth management on an accelerated timeline, so that within 10 to 15 years the vast majority of timber sales on the forest will be from young-growth forests. How rapidly and effectively this is accomplished depends on local support from Alaska markets for young-growth forest products. The ability to export some timber beyond Alaska may serve as a strategic option that can be used to help maintain workforce skills, industry expertise, and the physical infrastructure needed to develop a future young-growth industry. The Limited Export Policy will continue to be subject to review and modification on an annual basis, as noted above.

Although the Tongass young-growth resource is several years away from being able to support a region-wide industry, local harvesters, processors, builders and others are already building the skills, knowledge, infrastructure and demand needed to capture emerging opportunities. Still, transitioning to a young-growth timber program is dependent on many factors outside the Forest Service's control, including timber markets, industry changes, uncertainty in future supply, and litigation among others. Yet it is important to consider the different factors that could influence the duration and trajectory of switching to young-growth, such as changes in policy, the role of state and private timber lands and public-private partnerships. Given the high cost of operating in Alaska, it is important that this transition be planned in a way that allows wood processors a maximum of options, including current limited export options provided by the Limited Export Policy.

[17] Duncan, Sally, based on science by Eini Lowell, Glenn Christensen, and Jim Stevens. *Facing the Challenge of the Young, the Small, and the Dead: Alaska's New Frontier*. USDA Forest Service Pacific Northwest Research Station Science Findings, Issue 30, Dec. 2000, *available at* http://www.fs.fed.us/pnw/sciencef/scifind30.pdf.

Conclusion

It is commonly claimed that allowing limited log exports reduces the number of local jobs, but this has not proven true for the Tongass National Forest. In practice, the current Limited Export Policy has allowed a steady supply of volume from the Tongass National Forest which supports the local industry. Eliminating the Limited Export Policy under current market conditions would result in a significant reduction in volume, value, and jobs. The purpose of all Forest Service export policy changes have focused on the development and continued existence of adequate wood processing capacity needed to meet national, regional, and forest management goals and objectives. The ultimate purpose of allowing export on a limited basis is to help achieve forest plan goals and objectives for which the effects have been analyzed during development of the Forest Plan as amended. The key goal is to accelerate the transition to young-growth while seeking to provide a supply of timber that meets planning cycle and annual demand from the Tongass. The Limited Export Policy is even more vital to sustain the local industry during the transition to young-growth by allowing timber purchasers to export lower value logs while establishing a market for young-growth sawn products.

APPENDIX I
DEIS COMMENTS AND RESPONSES

COMMENT SUMMARY and RESPONSES
2015 TONGASS AMENDMENT DRAFT EIS

June 2016

Appendix I

DEIS Comments and Responses

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Attachment A **Letters from Agencies, Elected Officials, and Tribal Governments**

Appendix H

Comments and Responses

A. Introduction

The Tongass Land and Resource Management Plan Amendment Draft Environmental Impact Statement (EIS) and the Draft Proposed Land and Resource Management Plan were completed and mailed out in November 2015 to organizations and individuals on the Tongass National Forest's mailing list. On November 20, 2015, an NOA of the DEIS was published in the Federal Register (80 FR 72719), which started the 90-day public comment period. The document and supporting documents were also posted on the project web site (http://www.fs.usda.gov/goto/R10/Tongass/PlanAmend).

This appendix presents a summary of the comments received during the public comment period and provides the Forest Service's responses to these comments. In addition, Attachment A provides copies of the letters received from government agencies, elected officials, and tribal governments.

Public Meetings

In January and February 2015, public open house were held in Juneau, Sitka, and Ketchikan to engage the public in the planning process and share information about the progress being made on the Proposed Forest Plan and DEIS. All of the open house materials were posted on the Forest Plan Amendment Web site.

In January and February 2016, the Forest Service hosted nine public open house meetings, each followed by a subsistence hearing. These public open house meetings were held in the following Southeast Alaska communities: Klawock, Ketchikan, Wrangell, Petersburg, Juneau, Sitka, Hoonah, Yakutat, and Kake. Participants had the opportunity to review the contents of the Proposed Forest Plan, including the five alternatives analyzed in the DEIS. Forest Service staff provided an overview, listened to public concerns, and was available to answer questions. The public was informed on how to submit comments, invited to submit written comments during the open house, and informed on the date comments must be received by. Although an ANILCA Section 810 evaluation and determination was not required for approval of a Forest Plan amendment (see Subsistence section in Chapter 3 of FEIS), subsistence hearings were held after each open house meeting, which gave the public an opportunity to provide oral testimony regarding concerns about the Proposed Forest Plan Amendment on subsistence uses.

Public Input

The Forest Service received more than 165,000 comments during the public comment period. These pieces of input, referred to here as "comment documents," were provided in a number of different forms, including email, letter, fax, public testimony, and written comments. As part of the initial comment evaluation process, comment documents were initially divided into unique comment documents and form comment documents. Less than 1 percent of these documents received were classified as unique comment documents; with the rest being either form letters or non-substantive comments. Comments are considered substantive when they are within the scope of the proposal, are specific to the proposal, have a direct relationship to the proposal, and include supporting reasons for the responsible official to consider.

Many of the comments received by the Forest Service during the public comment period were determined to be form letters. A document was considered to be a form letter when copies of the same or substantially similar document (letter, email, comment form, etc.) were submitted by five or more people. Form letters are typically generated by special interest organizations that encourage their members to

write letters, and provide a written template for them to use. In some cases members are encouraged to add their own personal message to the template.

A total of 16 different form letter templates were identified. These templates are summarized below:

- Form letter template one requested that the Tongass "take bold action to protect the Tongass" and stated that "15 years for a transition is far was too long" to protect the sensitive resources found on the Tongass. It went on to say that the range of alternatives considered in the EIS was inadequate, and requested that the logging of old-growth be ended immediately.
- Form letter template two stated that "Alaskan's want a Tongass Forest plan that works for all of us, not just the timber industry", and that the Forest Service should shift their priorities to "meet the needs of the local small mills who are adding a tremendous amount of value to their produces". The form letter went on to ask the Forest Service to enhance the salmon and tourism sectors of the economy.
- Form letter template three addressed the role the Tongass plays in global climate change, and stated that "old-growth is much more valuable for carbon storage than timber production".
- Form letter template four urged the Forest Service to ensure that the amendments to the Forest Plan protect high value fish watersheds and make the production of wild salmon, trout, and steelhead their highest management priority.
- Form letter template five requested that the clearcutting of old-growth be ended in 5 years instead of 15 years. It further stated that the 17 million that is annually generated by timber in the region is less than 1 percent of the combined 2 billion generated by fishing and tourism in the region, and that the Forest Service should focus on these resources instead of timber.
- Form letter template six stated that the draft plan is inconsistent with the current U.S. policies regarding climate change, and that the forest plan should focus on establishing an economic future for southeast Alaska that is based on restoration, recreation, fishing, and tourism instead of timber.
- Form letter template seven requested that the practice of "industrial-scale clearcutting" of old-growth be stopped as soon as possible.
- Form letter template eight requested that the Tongass transition away from harvesting old-growth sooner than 10 years, and that the Forest Service should "stop preparing more old-growth timber sales like the massive and highly ill-advised Big Thorne Project".
- Form letter template nine requested that all proposed harvesting of old-growth be removed from the plan. The form letter also requested that the Tongass "stop cutting its budget for programs that support education, tourism, recreation, and public outreach".
- Form letter template ten requested that clearcutting be ended in 3 years not 15. It further requested that the Tongass manage and protect the forests instead of "selling them at wholesale rates to Asia".
- Form letter template eleven stated that because the Prince of Wales wolves are no longer protected under the ESA, protecting the old-growth trees on the Tongass, which the wolves depend on, is critically important.
- Form letter template twelve requested that the Tongass end all "large-scale clearcutting of old growth as soon as possible", and that the old-growth trees are far more valuable standing than they are cut down. Reasons to support this claim is that these trees provide habitat for wildlife, have benefits to carbon sequestration, have cultural values, and provide opportunities for tourism.

- Form letter template thirteen requested that the Tongass adopt Alternative 5; remove salmon producing watersheds, priority conservation areas, and roadless areas from the timber pool; and make Fish Bay and old-growth reserve.
- Form letter template fourteen requested that forests in general be preserved globally to enhance carbon sequestration and protect wildlife habitats.
- Form letter template fifteen requested that instead of clearcutting the maturing forests found on the Tongass to "prop up a timber industry in economic transition", the Forest Service should focus on the restoration of forests and watersheds.
- Form letter template sixteen requested that the Forest Service "not pass the Tongass Land Management Plan", and stated that there is more than enough renewable timber in the U.S.

The large number of documents reflects the importance of the Tongass National Forest at a national level. It also reflects the membership and geographic reach of the organizations that prepared the original written templates.

The total number of form comment documents received in response to this Draft EIS (over 165,000) is more than double the comments received on the 2008 Forest Plan DEIS (82,407).

Comment Document Evaluation

Each comment document was assigned a unique identifier (number) upon receipt and entered into a database. Documents were numbered in the order received by the comment management team. Summary demographic information for each response was entered into a database, including the name and address of the comment author (when provided), the type of comment author (individual, government agency, environmental organization, etc.), and the method of transmittal (online comment form, email, U.S. Mail, public hearing testimony, hard copy comment form).

Members of the comment management team read each comment document and identified the comments within each document. Comments were identified for one copy of each form comment document. Comments were defined for the purposes of this initial identification phase as a coherent segment of text that stood alone as a suggestion, idea, request, or critique. Comments were delineated on a hard copy of the comment document and each comment was assigned a number. The comment number was entered into a database and assigned to a coding category. Up to three key words or terms that further characterized the comment, along with additional notes, were entered in separate fields in the database, as appropriate. The initial coding categories corresponded for the most part with the resource areas addressed in the Draft EIS. A copy of each coded comment document was scanned and saved as a unique PDF file.

Comment Summaries and Responses

The database allowed the comments to be sorted by coding category and key words. Resource specialists and members of the Forest Service interdisciplinary team reviewed all the comments and consolidated the individual comments into logical comment summaries, developed responses to the comment summary, and revised the analysis or text in the Final EIS, as appropriate. The comment summaries and responses are presented in Section B of this appendix. Some comment summaries represent a concern raised once; others represent a concern, opinion, or preference that was repeated in a number of different comments.

Many of the comments consisted of statements of opinion or preference, and while they were considered, they did not require a written response. For substantive comments that require a response, comment summaries and responses are presented in Section B for a number of these types of comments, primarily to provide information to the public or clarify popular misconceptions. In some cases, comments prompted the Forest Service to review additional references that were submitted and some of these have been included in the EIS where they improved the analysis or discussion.

Appendix I

In accordance with 40 Code of Federal Regulations (CFR) 1503.4, the Forest Service generally considered responding in five basic ways to the substantive public comments identified in the following sections.

Modifying alternatives.

Developing and analyzing alternatives not given serious consideration in the Draft EIS.

Supplementing, improving, or modifying the analysis that the Draft EIS documented.

Making factual corrections.

Explaining why the comments do not need further Forest Service response.

Review of the public comments resulted in Alternative 5 being modified between the Draft and Final EIS to add a 100-foot no harvest buffer around anadromous lakes. Additionally, some wording that was deleted in the Proposed Forest Plan was restored (See Chapter 1, *Changes between Proposed Forest Plan and Forest Plan*.) After substantial consideration, it was decided that the range of alternatives was sufficient. The results of the public involvement and comment process did, however, lead to a number of improvements, clarifications, and updates between the Draft and Final EIS. These changes are identified where applicable in the following section (Section B).

The following section presents the comments and responses developed by the resource specialists and Forest Service managers that comprise the Interdisciplinary Team for this project. Copies of the comment documents received during the public comment period from government agencies, elected officials, and tribal governments are presented in Attachment A. All of the responses received are available for review in the project planning record.

B. Comments and Responses

General Comments (GEN)

COMMENT

GEN-1: The DEIS project planning record was incomplete. Scoping comments were missing and were not considered or responded to during the development of the DEIS. (NGO2-101)

RESPONSE

The planning record includes documents that support analytical conclusions made and alternatives considered throughout the planning process. It also includes all comments received during opportunities for public participation provided during the planning process (e.g., scoping, DEIS, and objections). The planning record also tiers to and incorporates by reference records from the 1997 Forest Plan Revision, 2003 SEIS, and the 2008 Forest Plan amendment. All timely comments, including any attached references or exhibits, have been considered and are included as part of the planning record for this Tongass Forest Plan amendment process.

The May 27, 2014 Notice of Intent (NOI) (79 FR 30074) included instructions in the "Addresses" section about how to submit written comments. All comments, including any attached references and exhibits that were submitted during the scoping comment period (May 28 – June 26, 2014) were included in the USDA Forest Service Comment Analysis and Response Application (CARA) database and were considered by the interdisciplinary team (IDT) during the scoping process. The CARA database is used to collect all letters and comments for a particular project in an easily accessible and searchable centralized repository regardless of how they were received. If written comments were submitted via U.S. mail or facsimile, the Forest Service scanned these documents and uploaded them into the CARA database.

The process of scoping is an integral part of environmental analysis, and provides an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." (40 CFR 1501.7) The Forest Service Handbook (FSH 1909.15, Ch. 10, sec. 11) also provides guidance for conducting scoping to include refining the proposed action, determining the responsible official and lead and cooperating agencies, identifying preliminary issues, and identifying interested and affected persons. The results of scoping are used to clarify public involvement methods, refine issues, select an interdisciplinary team (IDT), establish analysis criteria, and explore possible alternatives and their probable environmental effects.

In July and August 2014, the IDT conducted a content analysis on the scoping comments received, and included this analysis (excel spreadsheet) as record 769_02_000017 (planning record index # 817) in the planning record. The planning record also included record 769_02_000024 (planning record index # 908), which was a link to the CARA database where the public could access all scoping comments. This link includes both scoping comments and DEIS comments.

The FEIS planning record has been updated to include all comments (in .pdf) received during a formal comment period to include scoping and DEIS comments. Subsistence testimony provided during the subsistence hearings for the DEIS was transcribed and are also included in the planning record.

COMMENT

GEN-2: The Forest Service should add information from Secretary's Memorandum regarding the retention of existing industry and the need for old-growth timber until the transition is complete.

RESPONSE

Text was added to Chapter 1, Introduction, to clarify. Further, the Need statement in Chapter 1 makes it clear that the transition is intended to be implemented in a manner that preserves a viable timber industry. Chapter 2, Alternatives Considered in Detail, discloses that all alternatives were designed to correspond with current demand projections with old growth making up a decreasing percentage of the total. Old-

growth volume would continue to decrease until it reaches about 5 MMBF per year and it would remain at that level, to support limited small timber operators.

The Secretary's Memorandum 1044-009 is included in the planning record, and has been made available on the Tongass Plan Amendment website http://www.fs.usda.gov/goto/R10/Tongass/PlanAmend

COMMENT

GEN-3: The effects of a larger harvest on the environment, commercial fishing, and tourism are unsupported by the record

RESPONSE

You are correct that a larger harvest does not always mean greater environmental effects. It depends on the type of harvest, the location of harvest, and whether old growth or young growth is being harvested, among other factors. These are the types of questions that are the primary subjects analyzed in the FEIS. The FEIS record supports the document. Thank you for your comment.

COMMENT

GEN-4: An Executive Summary should be included in the FEIS.

RESPONSE

A plan amendment summary was provided as part of the proposed Forest Plan and Draft Environmental Impact Statement (DEIS) for the Tongass National Forest. This summary was made available on the CD-ROM, on the Tongass Plan Amendment website http://www.fs.usda.gov/goto/R10/Tongass/PlanAmend, and was made available at the public open house meetings / subsistence hearings in January 2016. A summary will also be included as part of the Final Environmental Impact Statement (FEIS) package.

COMMENT

GEN-5: Concerns were expressed that the amendment process is being rushed to comply with a directive from the Secretary of Agriculture and is unlikely to produce a viable, sustainable transition plan.

RESPONSE

See response to P&N-3 and P&N-4

If a need for change is determined by the responsible official an amendment may be considered. Plan amendments are intended to be an adaptive management tool to keep plans current, effective, and relevant between required plan revisions (every 15 years) (see FSH 1909.12 Chapter 20, Section 21.3).

COMMENT

GEN-6. The Forest Plan should provide sustainable management, maintain a viable timber industry with local processing, and encourage renewable energy development.

RESPONSE

We appreciate this input. The range of alternatives analyzed in detail support these and other goals to varying degrees.

COMMENT

GEN-6: Protect Tongass old growth and/or stop clearcutting.

The Forest Service should protect the Tongass and stop industrial-scale logging, clearcutting, and high-grading old-growth, or stop resource extraction altogether. The Forest should be protected for its many values (e.g. habitat, streams, fisheries, species diversity, runoff and flood control, recreation, hunting and subsistence, commerce, its role in addressing air quality and climate change, the potential for

undiscovered value, and providing human health benefits) and to preserve the forest for future generations. Some recommended the entire forest be set aside as a national park or wilderness.

RESPONSE

See responses to TIM-19, ALT-3, and ALT-11.

COMMENT

GEN-7: The Forest Service did not do enough public notification for this project and information was hard to find.

RESPONSE

Public notification and opportunities to participate and comment are described in Chapter 1.

COMMENT

GEN-8: Suggestions to recommend Wilderness or other special designation for specific areas including all of the areas proposed for protection by Trout Unlimited, Audubon Alaska, Southeast Alaska Conservation Council, and Tenakee Inlet by the Chichagof Conservation Council, among other areas.

RESPONSE

Wilderness designations are outside of the scope of this plan amendment, as well as outside of the authority of the Forest Service.

Purpose and Need (P&N)

COMMENT

P&N-1: The purpose and need section ignores some of the aspects outlined in the Secretary's Memo, such as transitioning forest management on the Tongass to be more ecologically, socially, and economically sustainable. Commenters believe that the Secretary's intent to transition away from old-growth harvesting in 10 to 15 years "so that after this timeframe the vast majority of timber sales on the forest will be from second-growth forests," was meant to end old-growth logging on the Tongass. Commenters are concerned that the DEIS preferred alternative (Alternative 5) increases rates of old-growth logging higher than the recent 10-year average for at least another 16 years.

RESPONSE

The Purpose and Need statement responds to the Secretary's Memorandum 1044-009 that directs a "transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth." The Secretary did not envision an end to old-growth logging, and this is made clear in the Memo under 1. PURPOSE AND BACKGROUND where it reads as follows:

> "To ensure a smooth transition, the Forest Service will continue to offer a supply of old growth timber while increasing the supply of young growth to provide industry in Alaska the opportunity to develop new markets, learn new skills, and acquire new equipment. The continuation of limited sales of old growth timber is essential to maintain the existing industry until young growth can efficiently be processed. The Forest Service will also continue the Tongass National Forest's micro-sale program and the old growth small sale program that targets niche markets, while developing a new integrated program of work focused on young growth, ecological restoration, and forest stewardship that protects and restores the Forest's extraordinary fish and wildlife habitat."

The 2008 Forest Plan "planned" for a longer transition to young-growth management, and the ROD made it clear that there was an "expected increase in young-growth management over the next few planning cycles." (USDA 2008a, p. 10). The Secretary's memo directs the Tongass National Forest to "expedite" this transition.

Basic tools used in the development of the alternatives include recent draft timber demand projections in Daniels et al. (USDA 2015). Alternatives 1 through 5 were designed to correspond with current demand projections and produce a projected timber sale quantity (PTSQ) of about 46 MMBF per year during the next 15 years, with old growth making up a decreasing percentage of the total. Old-growth volume would continue to decrease until it reaches about 5 MMBF per year and it would remain at that level, to support limited small timber operators. As more young growth becomes economic to harvest, the PTSQ would be allowed to increase. In no case, would the harvest level be allowed to exceed the sustained yield limit (SYL).

Also, see the recently finalized Tongass National Forest timber demand: projections for 2015 to 2030 (Daniels et al 2016), available online at: http://www.treesearch.fs.fed.us/pubs/50909

COMMENT

P&N-2: Changes to the Forest Plan's direction for transportation does not fulfill the Purpose and Need. The Purpose and Need section of the DEIS simply states that "[c]hanges to the Forest Plan are needed to make the development of renewable energy resources more permissible, including considering access and utility corridors to stimulate economic development in Southeast Alaska communities." The new Transportation Systems Corridor direction in the Proposed Forest Plan is not related to or limited to renewable energy projects.

RESPONSE

The responsible official has the discretion to determine whether and how to amend the plan (36 CFR 219.13(a)). Based on comments received on the Five-Year Review of the Forest Plan, completed in 2013, the responsible official determined that there was a need "to make the development of renewable energy resources more permissible, including considering access and utility corridors to stimulate economic development in Southeast Alaska communities, and provide low carbon energy alternatives, thereby displacing the use of fossil fuel."

The responsible official has the authority to remove the existing Transportation and Utility System (TUS) Land Use Designation (LUD) overlay under the action alternatives in the DEIS under 36 CFR 219.13(a). The last sentence of 36 CFR 219.13(a) states that: "Except as provided by paragraph (c) of this section, a plan amendment is required to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area (including management areas or geographic areas)." (Emphasis added). The Department added the phrase "including management areas or geographic areas" to the final planning rule to clarify that an amendment is required for any change in how or whether plan components apply to those areas (77 FR 21238). That addition to the final rule and the provision that an amendment is necessary to remove plan components shows that the proposed amendment is legitimate. An amendment may remove all the plan components within a LUD and remove the LUD itself.

To meet the purpose and need, new direction (i.e., plan components and management approaches) was developed for renewable energy. To ensure future project decision-making was consistent with the amended plan, the responsible official decided to remove the TUS LUD and add to and modify the TUS LUD management prescription as plan components (see 36 CFR 219.7 (e)) in the amended plan. This new direction for renewable energy and transportation systems corridors is applied to the remaining 18 LUDs.

The intent of the Forest Plan direction for transportation systems corridors is not to change the process the Forest Service will go through when developing future transportation systems. The purpose of the plan direction for transportation systems corridors is the same as the 2008 TUS LUD management prescription; to facilitate the availability of National Forest System land for the development of existing and future transportation systems such as those identified by the State of Alaska in the current version of the Southeast Alaska Transportation Plan (SATP) and applicable laws. (See Forest Plan Chapter 5.) The applicable transportation systems corridors direction in Chapter 5 is included for each LUD in Chapter 3 in a table that cross-references, by category, the plan content, found in Chapter 5.

COMMENT

P&N-3: The Department of Agriculture's policy to expedite a transition away from old-growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests as expressed in the Secretary's Memorandum (1044-009), is premature and would not restore a viable timber supply in Southeast Alaska.

RESPONSE

Under the direction of Thomas Vilsack, Secretary of Agriculture, the U.S. Department of Agriculture (USDA) administers the U.S. Forest Service. The Secretary of Agriculture is a member of the president's cabinet who takes the lead with USDA for the development of implementing policy on a variety of programs and services. The Secretary's Memorandum (1044-009) *Addressing Sustainable Forestry in Southeast Alaska* was signed on July 2, 2013 and sets forth USDA policy for the Forest Service on the Tongass National Forest. Secretary Vilsack was quoted in a USDA Forest Service news release on July 2, 2013:

> "Today, I am outlining a series of actions by USDA and the Forest Service that will protect the old-growth forests of the Tongass while preserving forest jobs in southeast Alaska… I am asking the Forest Service to immediately begin planning for the transition to harvesting second growth timber while reducing old-growth harvesting over time."

The actions outlined in the Secretary's Memo that are carried forward in the amended plan are focused on conserving old-growth temperate rainforests of the Tongass, while ensuring a transition to second-growth forests so that current forest industry can continue to provide jobs and opportunities in Southeast Alaska. A transition timeframe of 10 to 15 years is intended to conserve old growth forests while allowing the forest industry time to adapt to this shift away from old-growth to young-growth forest management.

Flexibility, like that provided by Congress in the National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291, December 19, 2014, 128 Stat. 3729, section 3720(e)(4)) allows the harvest of trees prior to the culmination of mean annual increment of growth on lands identified as suitable for timber production to facilitate the transition from commercial timber harvest of old growth stands.

Alternatives 1 through 5 in the EIS were designed to correspond with current demand projections and produce a projected timber sale quantity (PTSQ) of about 46 MMBF per year during the next 15 years, with old growth making up a decreasing percentage of the total. As more young growth becomes economic to harvest, the PTSQ would be allowed to increase. In no case, would the harvest level be allowed to exceed the sustained yield limit (SYL).

See response to P&N-9.

COMMENT

P&N-4: The young-growth inventory and associated modeling used by the agency for the amended plan is not reliable to support the purpose and need.

RESPONSE

The 2008 Forest Plan Record of Decision (ROD) highlights the uncertainty about short- and long-term social, economic, and environmental risks and preparing to adjust promptly if conditions change. The responsible official noted in the 2008 ROD that there was an "…expected increase in young-growth management over the next few planning cycles; and the increasing public interest in this conversion, which will ultimately reduce the need for old-growth timber resources…" (USDA 2008a, P. 10).

With this in mind, the agency has made a concerted effort in the last decade to increase knowledge and information of the young-growth resource that is being used as the forest moves toward a forest management program that is focused on young-growth management. The agency has expended considerable effort and funds to acquire data and expertise to prepare for and define realistic expectations for a transition to young-growth forest management. In 2009, the Tongass acquired the Forest Projection and Planning System (FPS) software to serve as the Forest's primary growth and yield model, which allows us to store, track and grow our stand inventory. This model is spatially explicit and is robust enough to handle forest wide analyses. This model has also allowed us to apply stand information that was collected in one stand to similar stands. As more data is collected on the ground, this model will become a more robust resource management tool.

The Tongass is an annual contributor to the Forest Biometrics Research Institute (FBRI) which is a non-profit public corporation dedicated to research, development, service and education organization in the field of forest inventory, forest growth and forest planning for sustainable and scientific forest management. This ensures that the regional species library used in the FPS growth and yield library remains certified and updated in a manner that is repeatable and scientifically based. In order to provide updated information to FBRI, the Tongass has funded the Pacific Northwest Research Station's (PNW) Juneau Forestry Sciences Laboratory to remeasure their extensive network of permanent growth and yield plots. The permanent plots of the Cooperative Stand Density Study that were established 40 years ago provide long-term growth response of thinned and unthinned even-aged stands at over 50 locations throughout southeast Alaska. PNW is also monitoring permanent plots established in the 1920s. The long-term growth and yield record from the PNW permanent plots was used to create the southeast Alaskan variant of FPS in 2005 and more recently collected data were used in the 2015 recalibration of the Southeast Alaska information.

Some of the efforts that have been undertaken since 2005, more information is included in FEIS and the planning record:

- 2005 and 2011 - Two large scale young growth inventories of the Forest's oldest young-growth stands.

1. 2009 - FPS growth and yield model software obtained to serve as the Forest's primary growth and yield model to store, track and grow our stand inventory forward in time.
2. 2010 - ongoing work with FBRI to establish the Tongass Inventory Database within the FPS growth and yield model, FBRI developed a forest wide site productivity based upon a stratified distribution of Forest Inventory Analysis (FIA) site measurements across the Forest.
3. 2014 - Tongass, in conjunction with Sealaska, signed a cost share agreement with the Working Forest Group to hire an independent consultant to evaluate the FPS model who found the overall volume projections are within an acceptable range.
4. 2014 – a review of the young-growth forest management and conditions in GIS was conducted.
5. 2015 - "Woodstock", a forest management modeling system was used for long term strategic planning in order to define the long-term, non-declining, sustained yield from our land base.
6. 2016 – Challenge cost share agreement with the State of Alaska to conduct the currently ongoing young growth inventory. See response to ECON-6.

COMMENT

P&N-5: The need expressed in the "purpose and need" section of the EIS is not warranted. Fuel prices have dropped precipitously over the last year or so, and there is no factual basis to support a pending climate change impact on the quality of life in the region.

RESPONSE

See responses to P&N-1 and P&N-3.

The Forest Service identified the need to make the development of renewable energy resources more permissible…thereby displacing the use of fossil fuel" is a valid one. A fall 2015 science update entitled *Energy Anxiety*, published by the USDA Forest Service Pacific Northwest Research Station states, "[r]ecently, crude oil prices have dropped considerably, but it is unclear what percentage of these cost savings will find its way to remote communities. The statewide average annual energy costs per household are frequently more than twice the national average. The price of heating oil, diesel fuel, and gasoline weighs heavily on Alaskans, particularly for isolated and economically struggling villages." (USDA 2015k) The Climate and Air section in Chapter 3 of the FEIS includes a section on climate change, and the effects of climate change are disclosed.

COMMENT

P&N-6: The purpose and need statement is arbitrarily narrow and results in a range of alternatives that limit the transition timeframe and timber volume. Some concerns expressed that this results in a transition that is too slow and focused on timber industry needs, while other express the opposite, that this results in a transition that is too fast with not enough timber volume.

RESPONSE

See response to P&N-3.

The Purpose and Need was based on a need for change. Chapter 1 of the FEIS includes a section entitled, *Factors That Led to the Need for Change*, which provides the context for the factors that led to a need for change.

The responsible official has the discretion to determine whether and how to amend the plan (36 CFR 219.13(a)) and the Forest Service has flexibility in defining the purpose and need for action so long as it is not arbitrarily narrow. The Purpose and Need responds partly to the Secretary's Memorandum that directs a "transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth." Secretary Vilsack's memorandum also guides that the transition should be implemented in a manner that preserves a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. The Purpose and Need also responds to information generated during the Five-Year Review of the Forest Plan in 2013. The scope of the plan amendment is narrow because it is an amendment; not a revision, and the range of alternatives in the DEIS concentrate solely on the need for change as documented in the 5/27/14 NOI and the refined Purpose and Need statement in the DEIS.

The Secretary's Memo stated that "[the 10-15 year] timeframe will conserve old growth forests while allowing the forest industry time to adapt." The Secretary did not envision an end to old-growth logging, and this is made clear where the Memo reads, "To ensure a smooth transition, the Forest Service will continue to offer a supply of old growth timber while increasing the supply of young growth to provide industry in Alaska the opportunity to develop new markets, learn new skills, and acquire new equipment. The continuation of limited sales of old growth timber is essential to maintain the existing industry until young growth can efficiently be processed." In terms of "preserving a viable timber industry that provides jobs and opportunities for Southeast Alaska residents," an effort to document current timber industry trends and to project future timber demand was undertaken. The Tongass National Forest requested the Pacific Northwest Research Station to update long-term Tongass National Forest timber demand projections, 2015 – 2030. During the past 25 years, the U.S. Forest Service, Pacific Northwest (PNW) Research Station has published several studies in support of Tongass National Forest land management planning that estimate derived demand for Southeast Alaska timber including Brooks and Haynes (1990, 1994, 1997), Brackley et al. (2006a), and Daniels et al. (2016). Daniels et al. (2016) is the fifth such analysis performed since 1990 to assist forest planners in meeting statutory requirements for estimating planning cycle demand for timber from the Tongass National Forest. The PNW Research Station's timber demand projections are based on solid economic theory, peer-reviewed methodology, and rigorous and objective analysis.

The intent of the Tongass Timber Reform Act (TTRA) was to maintain a timber industry in southeast Alaska while providing more resource protection, particularly forested buffers to fish-bearing streams in support of economic diversity. Providing old-growth 'bridge' timber during the transition is designed to fulfill the 'seek to meet' intent of TTRA. This will give industry the needed time to retool their mills or new industry to start up. Determining what demand estimates mean for timber sales offered from the Tongass National Forest involves taking the results from Daniels et al. (2015, 2016) and using them as input to a supply calculation that seeks to meet annual market demand from the forest. The derived demand projections developed by Daniels et al. were used to estimate the market demand for the current Tongass National Forest planning cycle, which is 46 MMBF per year.

Alternatives were modeled to ensure that land allocations and output schedules for alternatives are realistic and meet Forest Plan direction in a cost-efficient manner. Results from the modeling process are only approximations of what to expect when any given alternative is implemented. The main purpose of modeling is to aid planners in estimating likely future consequences of management prescriptions. A choice between alternatives can be made even though the model may lack precision in describing specific attributes of a given alternative.

All action alternatives in the DEIS were developed to address the significant issues and meet the Purpose and Need. It is not always possible to provide all resource use opportunities in the amounts desired by everyone. The National Forest Management Act (NFMA) mandates the Forest Service to provide for multiple use and the sustained yield of the products and services obtained from the Forest. In an effort to help the Forest Service balance multiple use goals on the Tongass and continue to seek input from and work with stakeholders in the region towards this transition, the USDA established a Federal Advisory Committee under the Federal Advisory Committee Act to advise the Secretary and Chief on transitioning the Tongass to young-growth forest management. The committee, known as the Tongass Advisory

Committee (TAC), consisted of members from the timber industry, conservation community, Native interests, state and local governments and other interests.

In January 2015, the TAC recommended the Purpose and Need should consider an alternative that "[maximizes] the opportunities for social and economic returns from other economic sectors that depend on the Forest." The Under Secretary responded to the TAC in writing in May 2015 stating the following:

> "Let me be clear that USDA's top priority with the Transition Framework is maintaining resilient communities in Southeast Alaska… Including the language in the Purpose and Need as you suggest would broaden the scope of the Plan Amendment in a way that would require a corrected NOI, and an additional public comment period prior to the Draft Environmental Impact Statement (DEIS). We therefore propose recognizing the values that your suggested language addresses, without changing the purpose and need under NEPA. Meeting your interests this way, the agency could recognize the range of social and economic values supported by the Tongass, without needing to re-issue the NOI for a new round of public comment."

The TAC recommendations were carried forward in the amended plan as Alternative 5 (preferred alternative), and this will enable the Forest to move out of old growth as quickly as possible and accelerate the transition while sustaining an economically viable timber industry. The agency has the authority to amend the forest plan, which is one step in addressing sustainable forestry in Southeast Alaska. Additional steps in the TAC's detailed implementation recommendations provide guidance on elements for success in implementing the transition, and identify opportunities by which the agency, stakeholders, and greater community will share ownership of the transition strategy and embrace its successful implementation. The work done by the TAC offers the possibility of a regionally focused, collaborative path toward an innovative opportunity for a viable young-growth timber industry while honoring the suite of economic, ecological, social, and cultural values inherent in the Forest. The TAC provided detailed recommendations for targeted investment, financial assistance, and financing mechanisms for stand inventory, research, infrastructure, and retooling. These investments are intended to help communities and businesses successfully transition to, and thrive within, a new young-growth economy.

Plan amendments are intended to be an adaptive management tool to keep plans current, effective, and relevant between required plan revisions (every 15 years). Amendments help Responsible Officials adapt an existing plan to new information and changed conditions. Maintaining plans through amendment also may reduce the workload for subsequent plan revisions. Amendments may be broad or narrow in scope, depending on the need to change the plan. An assessment for a plan amendment is not required, but may be developed at the discretion of the Responsible Official (see FSH 1909.12, chapter 10, section 15). Whether an amendment is proposed in response to changing conditions or in relation to a specific project, the Responsible Official should keep the scope and scale of the process, including public participation, commensurate with the scope of the plan amendment (CFR 219.13(b)(2)).

The Forest Service has the authority to amend the forest plan, which is one step in addressing sustainable forestry in Southeast Alaska. Additional steps in the TAC's detailed implementation recommendations provide guidance on elements for success in implementing the transition, and identify opportunities by which the agency, stakeholders, and greater community will share ownership of the transition strategy and embrace its successful implementation. The work done by the TAC offers the possibility of a regionally focused, collaborative path toward an innovative opportunity for a viable young-growth timber industry while honoring the suite of economic, ecological, social, and cultural values inherent in the Forest. The TAC provided detailed recommendations for targeted investment, financial assistance, and financing mechanisms for stand inventory, research, infrastructure, and retooling. These investments are intended to help communities and businesses successfully transition to, and thrive within, a new young-growth economy.

A recent report by Government Accountability Office (http://gao.gov/products/GAO-16-456) outlines additional steps taken or planned by the Forest Service, including comparing potential market prices for young-growth timber or products to the cost to harvest, transport, and process the timber; refining of young-growth timber data; lengthening the duration of small sale contracts to provide small-mill owners

with flexibility; and expanding collaborative projects to support job creation through sustainable forest management and improve predictability of timber supply.

COMMENT

P&N-7: The Forest Service has abandoned prior commitments to Southeast Alaska communities, citing the July 2013 memo, signed by USDA Secretary Vilsack, to expedite the transition from old-growth to young-growth timber harvest while supporting a viable timber industry, retaining industry expertise and infrastructure, and ensuring young-growth harvest in tandem with continued old-growth harvest to maintain the industry during the transition.

RESPONSE

Chapter 1 of the FEIS includes a section entitled, *Factors That Led to the Need for Change*, which provides the context for the factors that led to a need for change. One of the factors discussed in this section is about collaboration and the important relationships that were established that laid the groundwork for the "Transition Framework."

In a May 24, 2014 letter to the Tongass Futures Roundtable, signed by Alaska Regional Forester Beth Pendleton, the agency effectively announced the "Transition Framework". The letter indicated the Agency's belief that it is possible to "provide economic opportunity and jobs to local residents and to sustain a viable timber industry while at the same time transitioning from timber harvesting in roadless areas and old-growth forests to long-term stewardship contracts and young-growth management." (USDA 2014). The letter further outlines an approach to collecting input from Southeast residents and communities, a priority to support regional economic diversification, and a new vision for forest management. Since this time, the agency has invested significant resources in conducting public outreach, facilitating economic development, and amending the forest plan. As stated in the original letter announcing the "Transition Framework", the agency maintained focus on the overarching goal of working with community members to create jobs in Southeast Alaska (USDA 2010).

In an effort to document current timber industry trends and to project future timber demand, the Tongass National Forest requested the U.S. Forest Service, Pacific Northwest (PNW) Research Station update long-term Tongass National Forest timber demand projections, 2015 – 2030. During the past 25 years, the Pacific Northwest Research Station has published several studies in support of Tongass National Forest land management planning that estimate derived demand for Southeast Alaska timber including Brooks and Haynes (1990, 1994, 1997), Brackley et al. (2006a), and Daniels et al. (in press). Daniels et al. (in press) is the fifth such analysis performed since 1990 to assist forest planners in meeting statutory requirements for estimating planning cycle demand for timber from the Tongass National Forest. PNW Research Station's timber demand projections are based on solid economic theory, peer-reviewed methodology, and rigorous and objective analysis.

PNW Research Station scientists made two trips to Southeast Alaska with the specific purpose of collecting information and data from public and private sector stakeholders. Multiple meetings were conducted during summer and fall 2014 with the State of Alaska Department of Natural Resources, Alaska Mental Health Trust, Sealaska Corporation, Thuja Plicata, Western Gold Cedar Mill, Good Faith Lumber, and ALCAN Forest Products. Information provided by the aforementioned, among many other sources, where considered in the development of long-term timber demand projections.

Additionally, Management Approaches in Chapter 5 for the Forest Plan state the intent to "engage stakeholders (for example, conservation interests, timber operators, permitted user groups, and other interested parties) early and often to best design projects that meet ecological, social, and economic interests. Such inclusion would surface and resolve differences, and minimize and avoid social, environmental, and natural resource conflicts. At the earliest possible time, IDTs would engage scientific and technical expertise, and knowledge of local resources to encourage creative thinking and enhance integration and coordination among jurisdictions."

COMMENT

P&N-8: The purpose and need statement is arbitrarily narrow, resulting in a range of alternatives that is not broad enough to address ecological and social and economic sustainability. Concern was expressed about the ecological and socio-economic changes that have occurred in the region since the 1997 Forest Plan was revised. The forest plan should be revised since the 2012 Planning Rule requires that "plans to be "revised at least every 15 years." (36 CFR 219.7(a))

RESPONSE

See responses to P&N-6 and P&N-7.

The purpose and need does not support a plan revision. We are making changes to:

1. Amend plan direction for timber harvesting to expedite the transition to young-growth forest management
2. Amend the plan direction to make the development of renewable energy resources more permissible, and
3. Make miscellaneous technical adjustments to the plan.

Because the 2008 plan amendment essentially completed the process of revising the Tongass Forest Plan that was initiated in 1987, the Forest Plan will not need to be revised again until 2023, unless changed conditions require it sooner. (USDA 2008a). No matter when the time starts to do a plan revision, the annual appropriations acts for the Department of the Interior, Environment, and Related Agencies have regularly permitted Forest Service land management plans to be more than 15 years old if USDA is acting in good faith to update the plans. The Chief's schedule for plan revision is available online at http://www.fs.fed.us/emc/nfma/index.htm

COMMENT

P&N-9: The purpose and need is arbitrarily narrow because it is unreasonable to focus an entire Plan Amendment on satisfying the perceived needs of two timber exporters at the expense of social, economic and ecological sustainability.

RESPONSE

See responses to P&N-1, P&N-6, P&N-7 and ALT-1.

The need for change comes from a July 2013 memo from U. S. Department of Agriculture Secretary Tom Vilsack (Secretary's Memorandum 1044-009) directing the Tongass to transition its forest management program to be more ecologically, socially, and economically sustainable, as well as information generated during the Five-Year Review of the Forest Plan in 2013.

COMMENT

P&N-10: Purpose and Need aims to support a marginal component of the regional economy instead of recreation, wildlife and fishing, which are the regional economic drivers. The Purpose and Need arbitrarily focuses on preserving a viable timber industry and fails to respond to changed conditions and circumstances in terms of multiple uses that are relevant to public land management in southeast Alaska. The amended plan does not meet the substantive requirement to provide for social, economic and ecological sustainability (36 CFR parts 219.8) and that substantial changes are needed to allow for a broader planning process.

RESPONSE

See responses to P&N-6, P&N-9, ALT-1

Chapter 1 of the FEIS includes a section entitled, *Factors That Led to the Need for Change*, which provides the context for the factors that led to a need for change. The purpose and need responds to the

specific factors identified in the Secretary's memo - primarily rapid reduction of old-growth harvest and maintenance of a viable timber industry. The purpose and need does not respond to changed conditions and circumstances in terms of other multiple uses because changes that have occurred and will occur in these areas are generally well within the range of changes anticipated by the 1997 Revision and the 2008 Amendment. The Responsible Official determines how broad or narrow the scope of the amendment will be and thereby what provisions of the Rule apply; based on the narrow scope of this amendment, the sustainability provision at 36 CFR 219.8 was not invoked.

COMMENT

P&N-11: Consolidating the modifications made to the Forest Plan since its approval does not require an early transition to young-growth harvesting.

RESPONSE

Chapter 1 of the FEIS includes a section entitled, *Factors That Led to the Need for Change*, which provides the context for the factors that led to a need for change.

It is not necessary to transition to young-growth harvesting to consolidate the modifications to the Forest Plan. However, this is a good opportunity to include the amendments made since the decision for the Forest Plan was signed in 2008, update the land status from the recent Sealaska land entitlement finalization in the Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015, and include new resource inventory and information. This is similar to what was done with the 2008 amendment when there were changes to the Land Use Designations and other updates. This keeps the Forest Plan current as described in FSH 1909.12, chapter 20, section 21.3.

Range of Alternatives (ALT)

COMMENT

ALT-1: The development of the preferred alternative (Alternative 5) focused narrowly on the sustaining or increasing jobs that facilitate the timber industry transition. Options for sustaining or increasing jobs in other industry sectors should have been considered.

RESPONSE

See responses to P&N-6, P&N-7, and P&N-9.

In a September 30, 2013 memo entitled, *Tongass Land and Resource Management Plan 5-Year Review Determination*, the responsible official acknowledged the Secretary of Agriculture's commitment to approve the establishment of an advisory committee under the Federal Advisory Committee Act (FACA) as amended (5 U.S.C, App. 2), and he proposed establishment of such committee to provide stakeholder input on the transition (USDA 2013). In an effort to assist the Forest Service in balancing multiple use goals on the Tongass and ensuring input from and work with stakeholders in the region towards this transition, the USDA established an advisory committee to provide advice and recommendations to the Secretary and Chief on transitioning the Tongass on transitioning to young growth forest management. A charter was established under FACA for the advisory committee that outlined the objectives and scope of advice sought from the committee.

The advisory committee, known as the Tongass Advisory Committee (TAC), offers a regionally focused, collaborative path toward an innovative opportunity for a viable young-growth timber industry while honoring the suite of values – economic, ecological, social, and cultural – inherent in the Forest. Their recommendations related to modifications of the forest plan were carried forward in the amendment as Alternative 5 (preferred alternative), which enables the Forest to move out of old growth as quickly as possible and accelerate the transition while sustaining an economically viable timber industry.

The agency has the authority to amend the forest plan, which is one step in addressing sustainable forestry in Southeast Alaska as outlined in the Secretary's Memo. Additional steps in the TAC's detailed implementation recommendations provide guidance on elements for success in implementing the transition, and identify opportunities by which the agency, stakeholders, and greater community will share ownership of the transition strategy and embrace its successful implementation. The work done by the TAC offers the possibility of a regionally focused, collaborative path toward an innovative opportunity for a viable young growth-timber industry while honoring the suite of economic, ecological, social, and cultural values. The TAC provides detailed recommendations for targeted investment, financial assistance, and financing mechanisms for stand inventory, research, infrastructure, and retooling. These investments are intended to help communities and businesses successfully transition to, and thrive within, a new young-growth economy.

COMMENT

ALT-2: The range of alternatives is arbitrarily narrow and a supplemental DEIS is warranted. Alternatives should have considered economic contributions of other industry sectors, such as the fishing and tourism industries that contribute to the region's most important economic sectors.

RESPONSE

See responses to P&N-4, P&N-6, P&N-7 and P&N-9.

COMMENT

ALT-3: The agency failed to fulfill its obligations under NFMA with respect to wildlife and plant populations because it did not analyze a no old-growth logging alternative in the EIS. Dismissal of the no old-growth harvest alternative was improper and no rationale was given. All Old-growth should be unsuitable for timber production and the PTSQ for old-growth should be zero.

RESPONSE

See response to PLR-2.

An alternative that immediately eliminates old-growth logging was analyzed during the 1997 Forest Plan Revision (Alternative 1). This analysis is an amendment to that revision and further consideration is not necessary. The rationale for not selecting that alternative is discussed on p. 16 in the record of decision (ROD) of the 1997 Forest Plan Revision (USDA 1997a).

In terms of meeting the purpose and need for the amended plan, an immediate end to old-growth logging would not allow industry to transition. Under the TTRA (Public Law 101-626), as amended, the Forest Service is obligated, subject to applicable law, to meet market demand annually and for the planning cycle.

COMMENT

ALT-4: The Purpose and Need did not accurately reflect the Secretary's intent to transition "no later than 10 to 15 years" and that the agency erred by eliminating from detailed analysis an alternative that proposes a five-year transition. The agency's rationale for not analyzing this proposal in detail is flawed.

RESPONSE

The Secretary's Memo stated that "[the 10-15 year] timeframe will conserve old growth forests while allowing the forest industry time to adapt." In terms of "preserving a viable timber industry that provides jobs and opportunities for Southeast Alaska residents," a report was completed by the US Forest Service Pacific Northwest (PNW) Research Station assessing derived demand for Alaska forest products. The derived demand projections developed by Daniels et al. were used to estimate the market demand for the current Tongass National Forest planning cycle, which is 46 MMBF per year. The derived demand projections developed by Daniels et al. were used to estimate the market demand for the current Tongass National Forest planning cycle, which is 46 MMBF per year. Determining what demand estimates mean for timber sales offered from the Tongass National Forest involves taking the results from Daniels et al. (2015) and using them as input to a supply calculation that seeks to meet annual market demand from the forest.

The Forest Service considered a Five-Year Transition Alternative in the DEIS and it was modeled and extensively analyzed; however, there were several reasons that this alternative did not meet the Purpose and Need and it was not carried forward for detailed analysis.

The goal of the Five-Year transition proposal was to increase young-growth volume during this 5-year period to transition out of old growth logging more rapidly. Several "sideboards" were provided as part of this proposal to include the following: 1) total volume ≤35 MMBF per year after the transition (31.5 MMBF of young growth and 3.5 MMBF of old growth); 2) harvest only in Development LUDs; 3) old-growth harvest only in Timber Sale Program Adaptive Management Strategy Phase I lands and outside of 2001 Roadless Areas; 4) young-growth harvest allowed only in Phase I lands outside of 2001 Roadless Areas; 5) no harvest in beach and estuary fringe, RMAs, or in low, medium, or high vulnerability karst; and 6) apply CMAI flexibility - stands as young as 55 years of age (producing one-log/ tree).

When modeled, this proposal showed that it would provide for a more rapid transition compared to the other alternatives, but would not allow the Forest Service sufficient time to offer enough economic old-growth and young-growth volume during the next 10 or more years to maintain viable timber industry. Rationale for not analyzing in detail is disclosed in Chapter 2 of the EIS.

COMMENT

ALT-5: The Forest Service should complete all old-growth timber sale planning and offerings within five years or sooner.

RESPONSE

The Secretary's Memo stated that "[the 10-15 year] timeframe will conserve old growth forests while allowing the forest industry time to adapt." The Secretary did not envision an end to old-growth logging, and this is made clear where the Memo reads, "To ensure a smooth transition, the Forest Service will continue to offer a supply of old growth timber while increasing the supply of young growth to provide industry in Alaska the opportunity to develop new markets, learn new skills, and acquire new equipment. The continuation of limited sales of old growth timber is essential to maintain the existing industry until young growth can efficiently be processed."

Timber sale scheduling, as with any project scheduling, needs to be flexible to accommodate changes in policy, needs, timber appraisals, and funding. Intensive inventory work has been begun to identify the next old-growth 'bridge' timber projects but is at a stage where all of these projects cannot be identified. An effort is being made to include young-growth timber offerings along with old-growth timber to facilitate the transition. In order to have a successful transition to young-growth management, industry needs time to convert or retool to manufacture smaller logs and support with old-growth timber.

The suggested estimate that all sales need to be planned and sold by 2018 is contrary to the process used to offer Forest Service timber. Sales are typically spread out over time to account for demand, market fluctuations, and availability of NEPA cleared timber. These will be sales of various sizes and would not require a 10-year contract. Old-growth is planned to be offered throughout the range of the transition years and beyond

COMMENT

ALT-6: The range of alternatives does not include restoration options that focus on restoring the forest to natural processes that preserve remaining old-growth and allow young-growth forests set aside for conservation purposes to mature naturally and eventually develop increased wildlife habitat value. Economic considerations could reallocate the old-growth timber budget toward restoration, supporting the fishing and tourism industries, as well as selective logging for high-end specialty lumber operations. The Forest Service should prioritize spending to improve wildlife habitat, restore watersheds, and address the unmet needs of tourism, recreation, and commercial and sport fishing and hunting users.

RESPONSE

The proposed amendment has a narrow scope, which is fundamentally different from a plan revision. The scope of the amendment is defined in the Purpose and Need. As such, this proposal is outside of the scope of the plan amendment. The responsible official has the discretion to determine whether and how to amend the plan (36 CFR 219.13(a)). Amending the Forest Plan responds to the July 2013 memo from the Secretary of Agriculture directing the Tongass National Forest to transition its forest management program to be more ecologically, socially, and economically sustainable. The Forest is also being responsive to comments from the Five-Year Review of the Forest Plan. All action alternatives in the DEIS were developed to address the significant issues and meet the Purpose and Need and are designed to protect and maintain natural processes. Setting aside young-growth forests for conservation purposes does not meet the Purpose and Need.

The approved (2008) forest plan, and the ongoing program of the Tongass National Forest under that plan currently includes restoration actions particularly in young-growth stands, riparian areas and stream courses. Restoration activities would occur under all alternatives.

COMMENT

ALT-7: The range of alternatives should have included eliminating even-flow harvest.

RESPONSE

Managing on a non-declining even-flow is a requirement established by the National Forest Management Act. (See Pub. L. 93-378, §13, as added Pub. L. 94-588, §11, Oct. 22, 1976, 90 Stat. 2957.) See

response to comment TIM-5. It is the goal of the Tongass to provide an even-flow of timber on a sustained-yield basis and in an economically efficient manner. The amount of timber offered each year is based on the objective of offering enough volume to meet the projected annual demand. That annual demand projection starts with installed mill capacity, and then looks to industry rate of capacity utilization under different market scenarios, the volume under contract, and a number of other factors, including anticipated harvest and the range of expected timber purchases.

An even-flow harvest scenario provides potential purchasers sufficient volume to maintain their operations, keep skilled workers and allow them to maintain/ increase their skills, ensure their employees steady employment, and allow the purchasers to secure the financial support as needed. Fluctuation in harvest already occurs with the markets, the amount of timber available and at which location due to mobilization and to some extent the weather. This is one of the reasons that 3 years of volume under contract is preferable to allow these fluctuations.

COMMENT

ALT-8: Support for Alternative 5 because it transitions away from old-growth timber harvesting and protects some of the most important salmon producing watersheds and other biologically rich areas. Some expressed that it is a workable option that still provides some old-growth to local mills, but could be modified to exclude old-growth and/or clearcutting or to transition faster. Alternative 5 also opportunities for management of young growth that is in the stem exclusion phase.

RESPONSE

Thank you for your comment. The rate of transition is based on the availability of suitable young-growth that can be harvested economically. We agree that young-growth management will enhance forage availability and achieve the desired condition of stands faster in many locations. Alternative 5 also protects roadless areas, T77 watersheds and TNC/Audubon conservation priority areas from old-growth harvest.

See response to TIM-8 and YGAT-2.

COMMENT

ALT-9: The range of alternatives does not include an environmentally preferred alternative. There are many similarities between the action alternatives and that it is difficult to characterize which alternative is the environmentally preferable.

RESPONSE

The Forest Service has provided a reasonable range of alternatives that address the significant issues in different ways and varying degrees, and the analysis that has been completed is adequate to discuss preferences among alternatives based on relevant factors to identify an environmentally preferable alternative.

The mere presence of timber harvest in young-growth or the amount of harvest does not preclude resulting benefits, such as commercial thinning in stands to encourage growth of the residual trees and promote understory. Each alternative differs in terms of suitability of lands (i.e., determination made regarding the appropriateness of various lands within a plan area for various uses or activities, based on the desired conditions applicable to those lands) and other plan components (goals; desired conditions; objectives; standards; guidelines) that provide direction and may apply forest-wide or to specific LUDs.

The alternative or alternatives that are considered to be environmentally preferable will be identified in the record of decision.

See response to comments ALT-3, ALT-6, and ALT-11.

COMMENT

ALT-10: Specific high-value suitable lands should be removed from the timber base, and managed primarily for restoration and for special management. On these lands, the Forest Service should not permit new roads, except for spur roads which extend less than one-quarter of a mile from an existing road. These areas should be identified for a microsale program designed in collaboration with local communities.

RESPONSE

See response to ALT-6 regarding restoration options in alternatives.

The lands identified as suitable for timber production were determined by using a collaborative approach either by the Tongass Advisory Committee (Alternative 5) or by the Forest Service interdisciplinary team that includes a cooperative agency, the U.S. Fish and Wildlife Service (Alternatives 2, 3 and 4).

Areas that are to be restored or enhanced are also determined through the interdisciplinary process including public involvement or collaboration.

The lands proposed for special management (identified by commenters) will be managed in accordance with Forest Plan direction with various silvicultural prescriptions considered. Extensions of roads or new roads will be the minimum amount needed to access the timber and will consider the effects to various resources as well as the length. Areas for microsales are identified by potential purchasers and will reflect their needs.

Incidentally, for the microsale program, the potential purchasers identify the dead and down trees for harvest; not the Forest Service. That way, the purchaser is identifying trees that suit the needs of their operation.

COMMENT

ALT-11: The DEIS failed to analyze a reasonable range of alternatives by unreasonably rejecting the conservation group alternative that would complete the transition within five years. This alternative was based on using the agency's authority to follow industry practice by cutting trees well before they reached CMAI, minimizing environmental impacts and maximizing reliability by avoiding sensitive areas, and enhancing economic viability by focusing on stands near existing road infrastructure and off of steep slopes. The proposal took into account research and analysis undertaken by Mater, Ltd., based on Forest Service data, which concluded sufficient volume should be available close to currently open FS roads in the Southern Tongass, in the existing suitable land base, and avoiding sensitive lands, to conclude a transition to young growth within 5 years. None of the specific reasons in the DEIS for not carrying forward this alternative for detailed analysis, or some version of it consistent with existing data and the basic request of the conservation groups, is well-founded or supported.

RESPONSE

Although the Forest Service did commit to a quick transition in 2010 the Transition Framework (May 2010), and initiated a process to transition the timber program on the Tongass National Forest to young growth management, many questions persisted about what the transition means, why we are doing it, how we plan to accomplish it, and how it fits in with other programs. In January 2013, a "Leader's Intent" document was released by the R10 Regional Forester and the Tongass Forest Supervisor that explicitly outlined the vision and goals for the future young-growth timber program on the Tongass National Forest. While the document affirms that a future forest industry will be supported mainly by young growth harvest, it acknowledges that the transition to young growth will be gradual rather than abrupt to allow time for the young trees to mature and allow operators to adjust, adapt, and develop markets for new products (Leaders Intent, January 2013).

While it is pointed out that industry in other parts of the country has been able to transition more quickly than 10-15 years, the direction for the Tongass has been clear that industry will have at least 10-15 years

(see Leader's Intent, January 2013) and USDA Secretary's Memorandum 1044-009 (July 2013) to transition. This length of time is not only to allow for a re-tooling of industry, but will also allow for the current young-growth stands to mature to a point where there are significant acreages of an age and size that could be economically harvested. The Tongass has worked diligently to update forest inventories that have improved our understanding of the age, location, and amount of young growth across the Tongass, and helped clarify the challenges in establishing an economically viable young growth program due to the relatively young age of the available stands. While there is a long history of timber harvest on the forest, large acreages were not harvested until the startup of the pulp mills in the mid-1950s. This means that many of the oldest young-growth stands are still just barely 60 years old. This age is considered to be on the low end of stands that may have economical value.

The comment is a misinterpretation of the reason why the Forest Service cannot move more quickly than 10-15 years. In Chapter 2, the DEIS provided detailed rationale for not carrying forward alternatives that would complete the transition soon (specifically looking at immediate and 5-year timeframes). Based on current demand projections, neither of these alternatives would provide sufficient timber volume to maintain the current industry (Table 2-1) due to the lack of economically viable young-growth timber. The Tongass Young Growth Management Strategy (2016), exhibit 9, shows acres of harvest by suitability by age class. Young-growth acres that were harvested prior to 1960 are fairly limited, but after 1960, there is an increasing amount of young-growth acreage that will be available for harvest making the transition much more feasible in 10-15 years.

Four scenarios were developed in response to USDA Secretary's Memorandum 1044-009 (July 2013). The resulting paper, Scenario Analysis: Young Growth Management on the Tongass National Forest, was completed in August, 2013 but was authorized for internal use at the time. The report analyzed four scenarios related to the transition of the timber program on the Tongass National Forest away from a reliance on old growth forest stands toward a reliance primarily on the harvest of young growth forest stands, to evaluate ways to achieve such a transition within 10-15 years.

The report concluded that the only option that seems to have a realistic chance of achieving the Secretary's goals of implementing the transition to young growth management over the next 10-15 years while maintaining the current forest products industry was to make changes to the Tongass Forest Plan to allow young growth timber to be harvested in most areas where it currently is not allowed (for example, in the beach fringe and riparian management areas), except for roadless and congressionally designated areas. Specifically, the report concluded that:

"There appear to be three ways to transition the Tongass timber program to young growth: wait at least 10 years for young growth stands to mature further before beginning the transition in earnest; provide additional funding for a sustained annual expenditure of several million dollars for a thinning program; or make changes to the Tongass Forest Plan to allow young growth timber to be harvested in most areas where it currently is not allowed, except for roadless and congressionally designated areas.

Only the last option, represented in this paper by Scenario 4, seems to have a realistic chance of achieving the Secretary's goals of implementing the transition over the next 10-15 years while maintaining the current forest products industry.

In addition to modifying the Forest Plan, transitioning under Scenario 4 requires the following:

> "Enactment of the Sealaska Lands bill, S.340 as currently drafted, including the limited exemption from current CMAI requirements." (since completed); and
>
> "Completion of the Alaska Mental Health Trust land exchange."

See above discussion relating to the scenario's analysis. The conclusion was that even with a removal of the requirement to meet Culmination of Mean Annual Increment (CMAI) prior to rotational harvest, the most aggressive scenario analyzed in the Scenario Analysis: Young Growth Management on the Tongass National Forest still requires a timeline of 10-15 years.

In regards to 'delayed regeneration', in Ms. Mater's report from November, 2015, it is stated that "Years to reach breast height is notably different based on stand age: 12 years for stands harvested 50-55 years

ago; 9 years for stands harvested 45-49 years ago; and just 3 years for stands harvested 40-45 years ago." This is not consistent with findings from PNW growth and yield studies and we believe this statement is erroneous. The CSDS data show that the time required to reach breast height (4.5 feet) ranges from 6 to 11 years and typically it takes 7 to 9 years. Counting the annual rings in increment cores under field conditions is subject to considerable error. The age data for the CSDS study was obtained from prepared cores in the laboratory, with magnification used as necessary.

Although a GIS analysis of the entire forest may show enough acres of young-growth, it cannot reflect the great amount of variability in site productivity, growth rates, species composition and access to a mill and/or market across the entire forest, which spans a very large geographical area. These factors are incredibly important when considering and planning for a transition to young-growth. If the young-growth stands are not economically viable at age 55, then they cannot be harvested and therefore do not help contribute to the supply of volume in an immediate transition to young-growth. Many acres, particularly on the more remote districts that do not have mills or other processors like Sitka and Juneau Ranger Districts, will not meet the economic requirements. In accordance with Public Law 113-291, young-growth timber sales may not be offered unless they represent non-deficit sales. A transition to young growth cannot only be based upon modeled, available volumes.

In order to provide updated information to FBRI for the Southeast Alaska library update, the Tongass has funded the Pacific Northwest Research Station's (PNW) Juneau Forestry Sciences Laboratory to remeasure their extensive network of permanent growth and yield plots. The permanent plots of the Cooperative Stand Density Study (a.k.a. the Farr Plots) were established 40 years ago and provide us with the long-term growth response of thinned and unthinned even-aged stands at over 50 locations throughout southeast Alaska. PNW is also monitoring permanent plots established by R.F. Taylor in the 1920s. The long-term growth and yield record from the PNW permanent plots was used to create the southeast Alaskan variant of FPS in 2005 and more recently collected data were used in the 2015 recalibration of the Southeast Alaska library.

Planning Rule (PLR)

COMMENT

PLR-1: The explanation in the DEIS of how the 2012 planning rule applies to the amendment is arbitrary and capricious because the "Forest Service is merely picking and choosing which provisions of each planning rule to apply."

The Forest Service should have complied with section 219.9 since a valid decision document cannot be written without explaining how the amendment complies with the 2012 planning rule's substantive requirements. The Forest Service quotes section 219.14(a)(2) that says the decision document must include: "An explanation of how the plan components meet the sustainability requirements of § 219.8, the diversity requirements of § 219.9, the multiple-use requirements of § 219.10, and the timber requirements of § 219.11."

The 2012 planning rule requires plans to provide for social, economic, and ecological sustainability (36 CFR 219.8), and the preferred alternative is contrary to the provisions in the 2012 planning rule on ecological integrity and ecosystem diversity (36 CFR §§ 219.8(a), 219.9(a)).

The Forest Service is charged with sustaining wolf and wildlife populations at scales smaller than the entire forest. The 2012 planning rule requires plans to maintain and restore ecosystem function on the watershed level because of the following statement from 36 CFR 212.9(a)(1): "As required by § 219.8(a), 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 their structure, function, composition, and connectivity."

A plan revision is needed to remove the existing Transportation and Utility System overlay LUD under the action alternatives in the DEIS. Under the 2012 planning rule, the amendment process should not be used to add or remove a geographic or management area delineation from a Forest Plan. Instead, the amendment process envisions changing the way in which the Forest Plan components interact with a particular geographic or management area delineation. (36 CFR § 219.13(a)).

RESPONSE

The Forest Service believes that the Agency has followed the requirements for a plan amendment process (36 CFR 219.13) and applied the rule appropriately. The Agency—

Began scoping for the plan amendment with a notice in the *Federal Register* on May 27, 2014, as required by 36 CFR 219.16 (79 FR 30074).

Applied the best available scientific information in analyzing the effects of the proposal and the alternatives, as required by 36 CFR 219.3.

Gave public notice and gave ample opportunities for public participation, as required by 36 CFR 219.4. (See Forest Plan newsroom web page and DEIS p. 1-6.)

Wrote the proposed direction in Chapter 5 of the proposed amended plan in the form required by 36 CFR 219.7(e).

Will give the public an opportunity to object to the proposed decision, as required by 36 CFR 219 subpart B.

Developed the proposed amendment to change substantive direction about timber harvest for purposes of timber production and for other multiple use purposes, including improving wildlife or fish habitat, so that it meets the 2012 Rule's substantive requirements regarding timber harvest for timber production and other multiple-use purposes, as required by 36 CFR 219.11.

Integrated plan components for renewable energy direction and transportation systems corridors into the proposed plan amendment after consideration of the appropriate placement and sustainable management of infrastructure, as required by 36 CFR 219.10(a)(2) and (3).

After careful consideration the Agency has concluded that the only practical way to interpret the 2012 planning rule's application to plan amendments is to focus on the proposed action—the responsible official's proposed action will determine the scope and scale of the change to the plan. To have the scope of an amendment be determined by all the possible resource effects could have a cascading effect, necessitating a broadening of the responsible official's proposed action, and a change to the plan with respect to any and every affected resource.

The rule does not explicitly direct how changes to an "old rule" plan are to be made with "new rule" amendments, but it clearly does not change the fundamental principle that a line officer proposes and decides on an action. The rule provides that "[p]lan amendments may be broad or narrow, depending on the need for change," and that "[t]he responsible official has the discretion to determine **whether** and **how** to amend the plan." (36 CFR 219.13(a)) (emphasis added). The rule reinforces the principle by providing that the rule "does not compel a change to any existing plan." (36 CFR 219.17(c)).

Furthermore, the rule continues to say at 36 CFR 219.17(c) that "None of the requirements of this part apply to projects or activities on units with plans developed or revised under a prior planning rule until the plan is revised under this part, except that projects or activities on such units must comply with the consistency requirement of § 219.15 with respect to any amendments that are developed and approved pursuant to this part." This provision reflects the Agency's intent that an amendment of an "old rule" plan will not require the entire plan to conform to the new rule's substantive provisions (§§ 219.8 through 219.11) and to be subject to the new rule's consistency provisions (§ 219.15).

The following words from the preamble for the planning rule show that the Department does not expect plan amendments to be comprehensive and meet all of the substantive provisions (36 CFR 219.8-219.11) of the planning rule: "[P]lans will be kept more current, effective, and relevant by the use of more frequent and efficient amendments, and administrative changes over the life of the plan, also reducing the amount of work needed for a full revision. Plan amendments incrementally change the plan as need arises. Plan amendments could range from project specific amendments or amendments of one plan component, to the amendment of multiple plan components." (77 FR 21237 (April 9, 2012)).

Because the responsible official has the discretion to determine whether and how to amend the plan, the responsible official has the discretion to determine the specific changes to propose and approve. Here, the forest supervisor has the duty to determine the purpose and need for the proposal. The purpose and need for the specific changes proposed to the Tongass plan do not support making extensive changes to conform the plan to §§219.8-219.10.

The provision in 36 CFR 219.13(a), that the responsible official has the discretion to determine how to amend the plan, has been interpreted by some people to confer discretion regarding the amendment process, but not the scope and scale of the actual proposal. Such an interpretation, however, overlooks the fact that the rule already sets out a required process for plan amendment, at 36 CFR 219.13(b).

Section 219.17(c) clearly states that the rule does not compel any changes to any existing plan. Therefore, the responsible official, not the rule, determines the scope of any amendment. By choosing the scope and scale of the proposed plan amendment, the responsible official determines which of the new rule's substantive provisions or parts thereof are applicable.

The determination of which of the new rule's substantive provisions are applicable, that the amendment meets them, and the finding that the amendment is not opposed to the Rule's substantive provisions must be supported by rationale, as documented in the DEIS.

In this case, the Tongass proposed plan amendment appropriately meets the applicable provisions of 36 CFR 219.11 and 219.10(a)(2) and (a)(3) and will not be opposed to any of the other substantive provisions of the 2012 rule.

With respect to whether removing the existing Transportation and Utility System overlay LUD may be achieved through an amendment, the Rule provides an unequivocal affirmative answer. The last sentence of 36 CFR 219.13(a) states that: "Except as provided by paragraph (c) of this section [regarding administrative changes], a plan amendment is required to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area (including management areas or geographic areas)." (Emphasis added.) The Department added the phrase "including management areas or geographic areas" to the final planning rule to clarify that an amendment is required for any change in how or whether plan components apply to those areas (77 FR 21238). An amendment may remove all the plan components within a LUD and remove the LUD itself.

COMMENT

PLR-2: The proposed plan amendment does not meet requirements for viability, and does not meet the viability requirements of 1982 rule (section 219.19 of the 1982 rule). The proposed amendment would make substantive changes to the existing wildlife standards and guidelines thereby affecting the Tongass National Forest Old-growth Habitat Conservation Strategy. Those changes make the diversity requirements in 36 CFR 219.9 of the 2012 rule applicable. The Forest Service should therefore comply with 36 CFR 219.9.

RESPONSE

The Tongass Land and Resource Management Plan was developed using the 1982 rule. No obligations exist from the 1982 rule, as that rule no longer exists (36 CFR 219.17(c)). Implementing the viability requirement of the now superseded planning regulations, the Tongass Forest Plan contains a goal of providing an abundance and distribution of old-growth habitat to maintain viable populations of wildlife in the forest. The proposed amendment retains that goal in the Old-growth Habitat Conservation Strategy (hereafter 'Conservation Strategy') and the Wildlife Forest-Wide Standards and Guidelines, with plan direction to "Provide the abundance and distribution of habitat necessary to maintain viable populations of existing native and desirable non-native species well-distributed in the planning area (i.e., the Tongass National Forest)." (WILD1IIB, Proposed Forest Plan, p. 4-82).

Whether the diversity requirements of the 2012 rule applies to this amendment is determined by what the responsible official proposes. Here, the proposal is focused on accelerating the transition to young-growth timber harvest. The timber focus of the amendment therefore causes the 2012 rule's timber provisions, at section 219.11, to apply. The proposed amendment would not change the plan's Conservation Strategy for wildlife, and so does not require the application of section 219.9. Even so, the Tongass Old-growth Habitat Conservation Strategy ("Conservation Strategy") in the forest plan meets the intent of the 2012 planning rule to provide the ecological conditions to both maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area. The amended plan also provides the additional species-specific plan components to maintain viable populations. The amended plan, under any alternative proposed, will therefore be at least as protective as 36 CFR 219.9.

At this time, the responsible official does not propose to redesign the Tongass Conservation Strategy in light of 36 CFR 219.9 for diversity of plant and animal communities. In particular, the regional forester is retaining and using the list of Alaska Region Sensitive Species ("sensitive species") for the Tongass and is not designating species of conservation concern (SCC) at this time under 36 CFR 219.9.

The proposed amendment includes plan components to improve habitat conditions in young growth stands and, as part of that direction, to mitigate effects on fish and wildlife, consistent with 36 CFR 219.11(c) and 36 CFR 219.11(d)(3). This amendment triggers section 219.11(d)(3), which requires that timber harvest "would be carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and aesthetic resources." Also, section 219.11(c) gives discretion to allow timber harvest for purposes other than timber production including improving fish and wildlife habitat. The amended plan therefore includes S&Gs to mitigate effects of harvest on fish and wildlife.

The plan as amended will continue to fulfill our obligations under the NFMA to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area to meet overall multiple-use objectives." (16 U.S.C. 1604(g)(3)(B)). The plan as amended would continue the

Tongass strategy to provide for the diversity of plant and animal communities, through management of both ecosystem conditions (the Conservation Strategy) and species-specific conditions (through S&G's) as set forth in the 2012 planning rule at 36 CFR 219.9. This approach is sometimes characterized as the 'coarse-filter/fine-filter' approach to conservation.

The coarse-filter/ fine-filter approach is a complementary ecosystem and species-specific approach to provide for the diversity of plant and animal communities and the long-term persistence of native species in the plan area. This approach is a well-developed concept in the scientific literature and has broad support from the scientific community. Indeed, this approach has been used on the Tongass since 1997.

The coarse filter focuses on ecological integrity, maintaining or restoring characteristics of the environment as expressed by features such as composition, structure, function, and connectivity of ecosystems, to maintain diversity and persistence of native species. Land management units with ecosystems exhibiting a high level of integrity or with plans that maintain and restore ecosystems are assumed to support the conservation of the vast majority of species.

The fine filter, and associated plan components, complements the coarse filter by providing for additional specific habitat needs or other ecological conditions of at-risk species, when the responsible official determines those needs are not met through the coarse-filter.

Implementing the viability requirement of the now superseded planning regulations, the 1997 Forest Plan developed a conservation framework for wildlife and integrated several elements into its Tongass Conservation Strategy. The proposed amended plan retains that framework, including a standard requiring the plan provide the abundance and distribution of habitat necessary to maintain viable populations of existing native and desirable non-native species well-distributed in the plan area. Below we explain the Tongass Conservation Strategy, the history of the Tongass Conservation Strategy, the proposed amendment, the effects of the proposed amendment on the Tongass Conservation Strategy, and the effects of the proposed amendment to species.

The Tongass Conservation Strategy

The Tongass National Forest Old-growth Habitat Conservation Strategy also uses the approach to conservation outlined at 219.9 in the 2012 Rule, the so-called coarse-filter/fine-filter approach to maintain ecological integrity while allowing multiple uses to occur. The Agency designed the Tongass Conservation Strategy to provide the spatial extent, distribution, and connectivity of old-growth forest ecosystems to support well-distributed, viable populations of old-growth associated species. Based on principles of conservation, a network of large, medium, and small sized old-growth reserves (OGRs) allocated to the Old-Growth Habitat Land Use Designation (LUD) plus all small islands less than 1,000 acres remain intact. This largely undisturbed habitat is distributed across the Tongass National Forest. In addition to the broad, ecosystem-focused OGRs, additional conservation measures are provided through the standards and guidelines that apply to timber harvest in the matrix (DEIS, p. 3-186).

The old-growth reserves retain ecosystem integrity by maintaining a functional and interconnected ecosystem. The standards and guidelines applicable to matrix lands ensure ecological conditions that support at-risk species and other old-growth associated species. The plan includes specific direction to provide ecological conditions for many species, including: bald eagle, brown bear, goshawk, heron, marbled murrelet, marten, mountain goat, river otter, deer, and wolf.

At-risk species include federally listed species under the Endangered Species Act (ESA), and sensitive species. No federally listed fish species originate from Alaska streams. Some federally listed fish stocks occur in marine waters near the forest (DEIS, p. 2-110). No federally listed plants occur on the Tongass National Forest. The regional forester identified 16 plants which are known or suspected to occur on the Tongass as sensitive species (DEIS, p. 3-134). Some federally listed wildlife species occur in the marine waters: humpback whale, fin whale, sperm whale, and Steller sea lion (Western Alaskan distinct population segment) (DEIS, p. 3-210).

The proposed amended plan adds standards to protect the Aleutian Tern and black oystercatcher, which were identified as sensitive species since the plan was last amended. Although several species were also

removed from the species list, the proposed amended plan retains standards and guidelines protecting those species.

History of the Tongass Conservation Strategy

The Tongass Old-Growth Conservation Strategy was designed through a collaborative effort by a broad range of scientists, Alaska Department of Fish and Game, and U.S. Fish and Wildlife Service, and underwent intensive peer review. The strategy was initially established as part of the 1997 plan revision process. The Tongass Conservation Strategy was developed to maintain a functional and interconnected old-growth forest ecosystem on the Tongass by retaining intact, largely undisturbed habitat. Outside of reserves, components of the old-growth ecosystem are maintained by standards and guidelines to protect important areas and provide old-growth forest habitat connectivity. A series of expert risk assessment panels prepared viability risk assessments based on this framework. Using the panels' assessments, the Agency determined that there was a moderate to very high probability of maintaining sufficient habitat to maintain viable populations of wildlife species on the Tongass under the 1997 Plan.

The Agency believes those probability estimates are very conservative because the panels of experts assumed timber harvest at 267 MMBF annually for 100 consecutive years, with no change in applicable S&Gs. (ROD 2008, p. 19)

The Tongass Conservation Strategy was designed to take into account extensive timber harvest on non-NFS lands and relied little on non-NFS lands to maintain ecological integrity. (DEIS, p 3-202 to 203). The strategy maintains habitat for well-distributed, viable wildlife populations in the plan area (DEIS, Appendix D, p. D-16).

The 2008 Tongass amended plan added to the Tongass Conservation Strategy a forest-wide legacy forest structure standard, replacing the 1997 goshawk foraging and marten habitat S&Gs. This standard applies to watersheds with high levels of timber harvest. It requires the retention of forest structural components such as patches of large trees, downed logs, and snags (dead trees) after timber harvest.

The 2008 amended plan enhanced the network of small OGRs by reconfiguring the network based on an interagency review to increase habitat protection and to reduce operational conflicts. In addition, the 2008 amended plan increased the amount of land allocated to other non-development LUDs by 69,000 acres, effectively increasing the extent of the old-growth habitat reserves.

In 2015, the National Defense Authorization Act for Fiscal Year 2015 conveyed 69,585 acres of NFS land to the Sealaska Native Corporation. To compensate for the loss of OGR lands, the Agency proposed boundary modifications that would result in a net increase of 6,171 acres of OGR and 7,148 acres of productive old growth (POG) forest included in the reserve system from existing (post-conveyance) levels. (DEIS, Appendix E).

The Proposed Amendment

The proposed amendment accelerates the transition to young-growth timber harvest and makes the development of renewable energy more permissible. The proposed amendment maintains the integrity of the Tongass Conservation Strategy. To ensure the transition does not adversely affect wildlife, the proposed amendment includes standards and guidelines to improve wildlife habitat conditions and long–term ecological function in young growth stands. (36 CFR 219.11(d)). In addition, the proposed amendment makes technical corrections to fix clerical errors, to conform the plan to changes of new statutory or regulatory requirements, and to add explanatory material about how the amendment will apply to projects on the ground.

The proposed amendment accelerates the transition time from primarily old growth harvest to primarily young growth harvest from 32 years to 16 years resulting in a reduction in the extent of old-growth forest harvest. The proposed amendment would change the suitability of specific young-growth stands in beach and estuary fringe, old growth habitat LUD, and riparian areas from "not suitable for timber production" to "suitable for timber production." (DEIS, Appendix D, Table 2, p. D-9).

By shifting away from old-growth harvest, the Agency would preserve undeveloped land in unroaded areas, contributing to unfragmented wildlife habitats. Young-growth timber harvest would occur within the previously harvested footprint and maximizes the use of existing roads to access young-growth stands. The proposed amendment identifies 11 percent of the productive forest land as suitable. However, the proposed amendment would only harvest 0.8 percent of the productive old growth (POG) after 100 years. Under the proposed amendment, the annual PTSQ would be 46 MMBF during the first decade and 56 MMBF during the second decade (DEIS, p. 3-307). Therefore, more old-growth is retained under the proposed amendment than under the current plan. (DEIS, Appendix D, p. D-7).

Alternatives 2, 3, and 4 would relax the S&Gs for “high vulnerability” karst areas. Alternatives 2, 3, and 5 would relax the scenic integrity objectives to allow additional harvest. Given that these non-wildlife S&Gs are not part of the Conservation Strategy, relaxing these S&Gs will have no effect on the functioning of the Conservation Strategy. (DEIS, Appendix D, p. D-16).

Effects of the proposed amendment on the Tongass Conservation Strategy

The Agency has disclosed the effects of the proposed amendment on plant and animal communities in the environmental impact statement. The Tongass Conservation Strategy, particularly the extent and distribution of old-growth habitat, has been found to be stronger than anticipated in the 1997 analysis. Past and projected harvest of old-growth forest are far lower than predicted in 1997. In addition, the Forest Plan designates Inventoried Roadless Areas, even if part of the land within the forest development LUD, as not suited for timber production, subject to the District Court of Alaska’s 2011 judgment reinstating the Roadless Rule on the Tongass (Organized Village of Kake v. USDA, 1:09-cv-00023 (May 24, 2011)). Timber harvest in these roadless areas is prohibited (Appendix D, p D-6). The forest contains about 111,000 more acres of POG today, than was predicted in 1997 (DEIS, Appendix D, D-17). Today, 92 percent of the original productive old growth that was inventoried in 1954 (5.4 million acres) still occurs on the Tongass. Under all alternatives, we estimate 91 percent will remain in 100 years. (DEIS, p. 3-195; DEIS Table 3.9-12).

Within the Old-growth Habitat LUD and other non-development LUDS, young-growth forest stands do have ecological value. Under the action alternatives, openings created by even-aged timber harvest provide abundant forage for deer as sunlight reaches the forest floor enhancing the growth of forage (DEIS, p. 3-217). In addition, thinning of young-growth stands in the stem exclusion stage would also improve the forage for deer for 15 to 25 years (DEIS, p. 3-244). The Tongass Conservation Strategy, as designed in 1997, did not rely on the value of young-growth forest stands when assessing the risk to viability of old-growth associated at-risk species (DEIS, Appendix D, p. D-8). For this reason, and due to the spatial distribution and quantity of suitable young-growth harvest in the non-development LUDs, harvest of young-growth in these areas would pose a zero to very low risk, depending on the selected alternative, to the function and integrity of the Tongass Conservation Strategy that maintains old-growth associated species (e.g., marten, goshawks, flying squirrels). (DEIS, Appendix D, p. D-7 to D-10). Therefore, there would be no change to the functioning of this contributing element of the Conservation Strategy. (DEIS, Appendix D, p. D-8).

The beach and estuary fringe is a 1,000-ft wide corridor adjacent to saltwater shorelines; it consists of productive old growth, unproductive forest, young growth forests, and non-forest types. For all alternatives, due to the very local nature of effects, the beach and estuary fringe would continue to act as an ecological transition zone between interior forest and saltwater influences, maintain landscape connectivity, and provide benefits to the marine environment across the planning area, including sustain habitats for goshawks and bald eagles. (DEIS, Appendix D, p. D-11 to D-13). Therefore, there would be no measurable change to the functioning of this contributing element of the Conservation Strategy. (DEIS, Appendix D, p. D-13).

For all alternatives, the riparian areas would continue to maintain ecological functions of aquatic and terrestrial habitats, maintain water quality, and provide connectivity across the planning area for all the alternatives due to the local and short term nature of effects to the riparian areas. (DEIS, Appendix D, p. D-14). Therefore, there would be no measurable change to the functioning of this contributing element of the Conservation Strategy. (DEIS, Appendix D, p. D-14).

Effects of the proposed amendment to species

Across the landscape of Federal and non-Federal lands within the boundary of the Tongass, ecological conditions (habitat) support viable populations of fish, plants, and wildlife. The likelihood of a wildlife population persisting over time has been suggested to be related to maintaining 20 to 50 percent of the habitat on the landscape (DEIS, p-3-261). Looking at all lands, all of the biogeographic provinces on the Tongass are projected to maintain at least 57 percent of the original (1954) POG after 100 years of Forest Plan implementation under the proposed amendment. (DEIS, p. 3-261).

The Agency prepared a draft biological evaluation (BE) to analyze and document the effects of the proposed action on sensitive species. The review included consideration of the following sensitive species: Steller sea lion (Eastern Alaskan DPS), Queen Charlotte goshawk, Aleutian tern, black oystercatcher, and Kittlitz's murrelet. The overall findings for all sensitive species was that the plan, as amended, may affect individuals but is not likely to result in a trend toward federal listing or loss of viability of the species.

Allowing harvest in young-growth stands in the Old-growth Habitat LUD and other non-development LUDS, the beach and estuary fringe, and the riparian management areas may reduce the local function of these areas to for some species, and but opening up these areas for commercial harvest would also allow for commercial thinning to improve habitat quality in lower value stands. (DEIS, p. 3-237).

All of the alternatives would maintain the integrity of the Conservation Strategy by maintaining the functioning of the system of old-growth reserves in the Old-growth Habitat LUD and other non-development LUDS (DEIS, Appendix D, p. D-8). Also, the effects to the beach and estuary fringe would be short-term (10-15 years) after each entry and more localized in these areas (DEIS, Appendix D, p. D-12. Also, because of the local nature of effects under all of the alternatives, riparian areas would continue to maintain aquatic and terrestrial habitats, maintain water quality, and provide landscape connectivity across the planning area (DEIS Appendix D, p. D-14).

In addition, "all of the alternatives are expected to maintain a functional and interconnected old-growth ecosystem, capable of supporting well-distributed, viable wildlife populations across the planning area; therefore none of them are expected to increase the likelihood of species listing under the ESA." (DEIS, Appendix D, p 18).

The 2012 rule at 36 CFR 219.17(c) makes it clear that the responsible official determines the scope and content of any amendment and therefore determines which substantive provisions of the 2012 rule are applicable. This determination must be supported by rationale and informed by the best available scientific information and cannot be opposed to the applicable substantive provisions of the 2012 rule.

The proposed amendment meets the applicable substantive provisions of the 2012 rule, i.e., 36 CFR 219.11. In addition, the amended plan will meet the intent, if not the letter, of other substantive provisions of the 2012 rule, such as the diversity provisions of 36 CFR 219.9. The amended plan would retain the underlying plan's coarse/fine filter approach to maintain ecological integrity and provide ecological conditions for at-risk species. None of the proposed alternatives would reduce the ability of the Conservation Strategy to maintain a functional and interconnected old-growth ecosystem across the planning area and the overall functioning of the Conservation Strategy in terms of its ability to maintain viable, well-distributed populations of wildlife across the planning area would not be affected. The amended plan will be consistent with the NFMA requirement to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area to meet overall multiple-use objectives" (16 U.S.C. 1604(g)(3)(B)). Therefore, no additional changes are needed to the amended plan to implement any other substantive provisions of the rule. (36 CFR 219.8 through 219.11).

COMMENT

PLR-3: Concerns were expressed about the approach that was taken to amend the 2008 Forest Plan saying it is confusing and will likely result in decisions that are inconsistent and lead to conflict. The priority of direction now includes both direction from both the 1982 and 2012 planning rules. There is acknowledged variance among standards and guidelines between Chapters 3, 4 and 5 and inconsistent definition of terms. Using the blended planning rule

approach is confusing and would likely contribute to inconsistent and poorly understood decision making.

RESPONSE

Additional text has been added to Chapter 1 of the Forest Plan to clarify; see Priority of Direction.

COMMENT

PLR-4. The proposal implicates wildlife habitat and makes substantive changes to the existing wildlife standards and guidelines previously contained for the Forest Plan Conservation Strategy, and that these changes make the diversity requirements of the 2012 Planning Rule (36 CFR 219.9) applicable.

RESPONSE

See response to PLR-2.

COMMENT

PLR-5: The 2012 Planning Rule represents the best available scientific process for maintaining diversity of plant and animal communities, but the Forest Plan Amendment did not name species of conservation concern, nor employ an updated population viability analysis. The Forest Service must explain that the Forest Plan Amendment complies with NFMA's diversity mandate, and this explanation must be added to the FEIS and record of decision (ROD).

RESPONSE

See response to PLR-2.

COMMENT

PLR-6: The agency is required to identify species of conservation concern to comply with the 2012 Planning Rule's monitoring provisions. Not updating the monitoring plan as part of the Forest Plan Amendment represents a waste of government resources.

RESPONSE

See response to PLR-2 regarding diversity requirements of 36 CFR 219.9.

The plan monitoring program has been modified to meet the requirements of 36 CFR 219.12 (c). The final planning directives, (Forest Service Handbook [FSH] 1909.12, ch. 30, sec. 32.3) provide guidance regarding identifying species of conservation concern (SCC) when transitioning to the plan monitoring program. Because SCC is a new category of species that did not exist before the 2012 Planning Rule, there is no requirement for SCC to be identified and monitored before a plan is revised under the rule.

COMMENT

PLR-7: To comply with 36 CFR 219.14, the Forest Service cannot amend a forest plan under the 2012 Planning Rule without first implementing the four substantive provisions (sections 219.8, 219.9, 219.10 and 219.11). Nothing in section 219.14 or the preamble to the 2012 Planning Rule indicates that the Forest Service intended those explanations to be discretionary.

RESPONSE

See response to PLR-1 for planning rule applicability and PLR-2 regarding diversity requirements of 36 CFR 219.9. Chapter 2 of the DEIS (p. 2-3) explains how the 2012 Planning Rule applies.

The proposed plan amendment adds provisions to and modifies provisions of the 2008 Forest Plan. As explained in Chapter 6 of the amended plan, the 2012 Planning Rule requirements for project consistency with plan components apply only to additions and modifications (36 CFR 219.15(d)).

The Agency has reviewed the wording of both the 1982 planning rule and the 2012 planning rule dealing with the NFMA requirements of providing for diversity of plant and animal communities. The Agency has disclosed the effects to plant and animal communities in the EIS.

The final planning directives, effective January 30, 2015, are now available. These directives are the key set of agency guidance documents that direct implementation of the 2012 planning rule. The Agency's goal is to ensure an adaptive land management planning process that is inclusive, efficient, collaborative and science-based to promote healthy, resilient, diverse and productive National Forests and Grasslands. The final directives will support consistent approaches to achieving the broad goals of the 2012 planning rule.

The 2012 planning rule was developed through the most collaborative rulemaking effort in Agency history. The complete planning rule, including the preamble and rule text, along with other informational materials, is listed in the News section below.

Please see the Collaboration and Public Involvement webpage for information on the collaborative efforts used during development of the rule. Links are also located in the left banner of this website providing information on the history of forest planning; the basics on what's involved in forest planning and why it's important; as well as answers to frequently answered questions (FAQs) about the rulemaking process.

Text has been added to Chapter 1 of the Forest Plan to clarify; see Priority of Direction. Additionally, management approaches have been added to Chapter Five to clarify the intent to consider all resources in Renewable Energy and TSC planning.

COMMENT

PLR-8: Changes made to the old-growth Conservation Strategy in the amendment are significant and trigger compliance with the viability requirements of 36 CFR 219.9 of the 2012 Planning Rule. The approach to modifying the Conservation Strategy without conducting a new viability analysis for each affected species violates NEPA and NFMA.

RESPONSE

See response to PLR-2.

COMMENT

PLR-9: Concerns were expressed regarding the proposed Amendment's "Priority of Direction" in Chapter 1 of the Proposed Forest Plan. The problem with the Amendment's priority of direction is that Chapter 5 plan components were developed under the 2012 Planning Rule without regard to wildlife viability or diversity. Chapter 5 direction now takes priority over all other plan direction, but wildlife diversity was not properly considered in developing those priority components. That represents an arbitrary and capricious agency decision, and it is inconsistent with NFMA and both 2012 and 1982 Planning Rules.

RESPONSE

See response to PLR-1 and PLR-2.

Text has been added to Chapter 1 of the Forest Plan to clarify; see Priority of Direction. Additionally, management approaches have been added to Chapter Five to clarify the intent to consider all resources in Renewable Energy and TSC planning.

Timber (TIM)

COMMENT

TIM-1: Use of the Sustained Yield Limit is incorrect. This limit includes logging on lands not suited for timber production. This violates the National Forest Management Act, the Multiple-Use Sustained-Yield Act, and implementing regulations.

RESPONSE

Refer to Table 3.13-10 in the DEIS. This table shows the PTSQ as compared to the Sustained Yield Limit (SYL) which is the amount of timber, meeting applicable utilization standards, "which can be removed from [a] forest annually in perpetuity on a sustained-yield basis" (16 U.S.C. part 1611(a); 36 CFR 219.11(d)(6)). It is the volume that could be produced in perpetuity on lands that may be suitable for timber production. Calculation of the limit includes volume from lands that may be deemed not suitable for timber production after further analysis during the planning process. The calculation of the SYL is not limited by land management plan desired condition, other plan components, or the planning unit's fiscal capability and organizational capacity. The SYL is not a target but is a limitation on harvest. Chapter 5 of the Forest Plan now includes the following forest-wide timber standard:

S-TIM-01: Not including salvage or sanitation harvest, the quantity of timber sold in a decade may not exceed the sustained yield limit of 2480 million board feet (MMBF).

The PTSQ of each of the alternatives is an indicator of possible future timber supply level that each alternative would produce. PTSQ is the estimated quantity of timber meeting applicable utilization standards that is expected to be sold during the plan period. The PTSQ is also based on the planning unit's fiscal capability and organizational capacity. It should be noted in Table 3.13-10, that the percentage of the SYL that each PTSQ represents ranges from 36 to 54 percent, depending on the alternative, with the preferred alternative representing 38 percent of the SYL. These percentages are for decades 3 and later; for decades 1 and 2 the percentages range from 19 to 27 percent.

COMMENT

TIM-2: Young-growth harvest should increase at a rate equivalent to the decrease in old-growth harvest.

RESPONSE

Page 9 of the Tongass Advisory Committee's Final Recommendations (Forest Plan, Appendix B) refers to replacing old-growth harvest with young growth on a one-to-one volumetric basis. This is addressed in the Forest Plan, Chapter 5 under the Forest-wide Multiple-use Goals and Objectives (Chapter 2) section where forest-wide timber objectives O-TIM-01 and 02 refer to offering a combination of old growth and young growth to meet demand. Forest-wide objective O-TIM-01 refers to the one-to-one exchange where it states …"When young growth offered is less than 41 MMBF, provide old growth to make up the difference and achieve the annual market demand of 46 MMBF."

COMMENT

TIM-3: The Forest Service should cease its practice of implementing project-specific plan amendments to facilitate timber sale planning at the expense of the Conservation Strategy.

RESPONSE

See response to PLR-1.

A plan amendment process relies on the Responsible Official's identification of the need to change a plan. If a proposed project is not consistent with the plan, the Responsible Official has the option to start a plan amendment that, if approved, would accommodate the project. The final planning directives (FSH 1909.12, chapter 20, section 21.31) provide guidance for project-specific plan amendments and administrative review.

See Management Approaches for Wildlife in Forest Plan Chapter 5, Young Growth plan content.

COMMENT

TIM-4: The Forest Service should release a full and detailed sale schedule for the transition and identify the caps that will not be exceeded during Transition Years.

RESPONSE

The Woodstock model analysis involved first maximizing young-growth harvest under a non-declining even flow and then adding old-growth volume to reach an annual average harvest of 46 MMBF and maximizing the net present value. The alternatives were designed to include the maximum amount of young growth that can be sold on a sustainable basis, but this amount is limited by the economics of young-growth harvest. Figures 3.22-12 to 3.22-16 in the Final EIS display the amount of young-growth and old growth projected to be sold during 5-year periods, based on modeling. However, these amounts would be affected by the actual annual demand, market fluctuations, NEPA-cleared volumes available, and other factors, so specific limits on old-growth harvest cannot be committed to in advance. The only commitment that can be made is that young-growth volume will replace old-growth volume over time as rapidly as the economic availability of young-growth allows (see the response to Comment TIM-2).

FSH 1909.12, Section 22.34 states that the plan should not include a “to do” list of projects and expected dates. While a full and detailed schedule for the next 5 years is certainly desirable and every effort will be made to obtain it, it is not immediately able to be produced. An intense inventory of young growth is just now begun in collaboration with the State of Alaska to get information that will better enable the Forest Service to identify those areas of both young growth and old-growth that meet the criteria of feasible, economic offerings and meet all Forest Plan Direction.

Two tables have been added to Forest Plan Appendix A. 1) Vegetation Management Practices (acres) Annual Average per Decade; and 2) Average volume outputs for the 1st and 2nd decades for Tongass National Forest planned timber sale program.

In addition, the following forest-wide timber standard has been added to Chapter 5 of the Forest Plan:

> S-TIM-01 Not including salvage or sanitation harvest, the quantity of timber sold in a decade may not exceed the sustained yield limit of 2480 million board feet (MMBF).

COMMENT

TIM-5: The Forest Service should manage on an even-flow, long-term sustained yield basis.

RESPONSE

The Tongass is currently and will continue to manage on a non-declining even-flow as required by the National Forest Management Act. (See Pub. L. 93-378, §13, as added Pub. L. 94-588, §11, Oct. 22, 1976, 90 Stat. 2957.) For the Forest Plan in 1997 and in 2008, the Allowable Sale Quantity was determined for suitable lands. It was determined that 267 MMBF/year could be harvested on the suitable lands on an even-flow, long-term sustained yield basis. The analysis in this EIS determines how much all lands that carry productive forest land could produce if these lands were not withdrawn from the suitable base due to legislated or administrative withdrawals. This is the sustained yield limit (SYL). Projected Wood Sale Quantity (PWSQ) is an estimate of the volume of all timber and other wood products that is expected to be sold during the plan period from expected harvests for any purpose (except salvage harvest or sanitation harvest) on all lands in the plan area. The PWSQ includes all woody material likely to be sold from these harvests whether or not the woody material meets the utilization standards. The Projected Timber Sale Quantity (PTSQ) is an estimate of the volume of timber that is expected to be sold. PWSQ and PTSQ must take into account the fiscal capability of the planning unit and be consistent with all plan components. The PWSQ and PTSQ have been determined in the proposed Forest Plan and includes both young-growth and old-growth yields.

Two tables have been added to Forest Plan Appendix A. 1) Vegetation Management Practices (acres) Annual Average per Decade; and 2) Average volume outputs for the 1st and 2nd decades for Tongass National Forest planned timber sale program.

In addition, the following forest-wide timber standard has been added to Chapter 5 of the Forest Plan:

S-TIM-01 Not including salvage or sanitation harvest, the quantity of timber sold in a decade may not exceed the sustained yield limit of 2480 million board feet (MMBF).

COMMENT

TIM-6: The Forest Service should not allow old-growth clearcutting as part of a stewardship contract. Concerns were expressed in reference to the Big Thorne Stewardship Integrated Resource Timber Contract where this sale included thinning of young growth stands that provided stewardship credits for large old-growth clearcuts. This does not follow the original intent of stewardship contracts.

RESPONSE

Stewardship contracts are but one mechanism for funding resource enhancement projects. Stewardship was not used for years in the Alaska Region even though it was used elsewhere in the Forest Service for the very reason you mention. However, by not using the money generated from stewardship contracts, we were losing the opportunities to fund not only precommerical thinning, but also other projects such as trail restoration and stream enhancement. As we transition to young-growth, less and less old-growth forest will be harvested and eventually stewardship contracts may not be used for the remaining old-growth harvest.

COMMENT

TIM-7: Ecological concerns should be considered as a priority as part of "favorable logistical access" in Timber Sale planning.

RESPONSE

The first management approach for young-growth in Chapter 5 of the Forest Plan states: "The intent is that young-growth areas are generally treated in priority of most return and least environmental risk." Favorable logistical access is an economic criteria and is considered along with "least environmental risk."

Additional management approaches for young growth provide the intent for integrated resource management when designing projects. For example, "The intent is that responsible officials engage stakeholders (for example, conservation interests, timber operators, permitted user groups, and other interested parties) early and often to best design projects that meet ecological, social, and economic interests. Such inclusion would surface and resolve differences, and minimize and avoid social, environmental, and natural resource conflicts."

COMMENT

TIM-8: Trees are a renewable resource and removal of old-growth habitat is not an irreversible commitment.

RESPONSE

Irreversible includes loss of future options, primarily for non-renewable resources but also includes those that are only renewable over long periods of time. Under the current Forest Plan 100 year rotation, young-growth timber in development LUDs would be re-harvested before the stands develop old-growth characteristics (150+ years). Following complete removal of the overstory, it may take 300 years or more for a stands in Southeast Alaska and Northern coastal British Columbia to develop old-growth ecological characteristics (Orians and Schoen 2013). Therefore, clearcut timber harvest creates a permanent loss of old-growth habitat within development LUDs and a permanent reduction of habitat capability to support old-growth associated species.

COMMENT

TIM-9: A complete inventory and a better growth model are needed for young growth.

RESPONSE

The Tongass has conducted young growth inventories covering 60,000 acres and we are planning new inventories of all young growth stands over 55 years old and 15,000 acres in stands 40 to 55 years old. Additionally, The Forest Planning and Projection System (FPS) growth and yield model is well tested and calibrated with long-term growth and yield data from Pacific Northwest.

See response to P&N-4.

COMMENT

TIM-10: Agency fails to completely identify Tongass lands not suited for timber production. The Forest Service should remove all unsuitable lands from the development LUD Group in the FEIS to assure the public that the Projected Timber Sale Quantity is consistent with all plan components. Neither the public nor agency must await a Plan Revision before removing these unsuitable acres from the timber base.

RESPONSE

The model implementation reduction factor (MIRF) is intended to capture those acreages that have been mapped as "suitable" but are actually not suitable due to unmapped streams or unstable slopes or other resource features that would preclude timber harvest. See the Forest Plan FEIS, Appendix B, pp. B-17, B-23 and B-24. MIRF does not influence how much is scheduled but rather helps identify how much is available for scheduling. We start out with the mapped suitable lands, which represents what is suitable based on GIS mapping. Then we apply the MIRF and reduce the acreage of the mapped suitable, producing an estimate of the actual suitable acreage. Finally, the scheduled suitable acreage is that acreage that was needed to meet the outputs over 100 years based on the Woodstock model. An explanation of how the scheduled acreage was determined has been added to the FEIS, Appendix B. The suitable acres not scheduled are not harvested because of economics or they were not needed to achieve modeling objectives. The acres are still considered to be suitable and may be harvested in the next planning cycle if they still meet the criteria for suitable at the time.

During forest land and resource management planning, the Forest Service is required to identify lands suited and not suited for timber production (36 CFR 219.11). Suitability of Lands is considered a plan component in the 2012 Planning Rule, and modifying or removing suitable lands requires a plan amendment. The Forest Service followed the guidance in Forest Service Handbook (FSH 1909.12, chapter 60) to meet the requirements in 36 CFR 219.11. A review of the suitable lands was completed for Alternative 5 (preferred alternative) and it is displayed in Appendix A of the Forest Plan. This has been carried forth and unsuitable acres have been removed from the timber base.

Proposed LUD changes common to the action alternatives are described in Chapter 2 of the FEIS. No other LUD changes are proposed to remove the lands not suited for timber production from the Development LUDs and incorporate these lands into the natural setting LUDs because that would require additional scoping.

COMMENT

TIM-11: The proposed Forest Plan objective O-TIM-01 violates the Tongass Timber Reform Act (TTRA) because it essentially makes the planning cycle demand projection of 46 MMBF into an annual timber target.

RESPONSE

As discussed in Appendix G to the Draft EIS, Section 101 of the 1990 Tongass Timber Reform Act (TTRA) states:

> Subject to appropriations, other applicable law, and the requirements of the National Forest Management Act of 1976 (Public Law 94-588), except as provided in subsection (d) of this section, the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle.

Starting in 1990, the PNW Research Station has developed a series of trend projections that estimate market demand for each planning cycle (Brooks and Haynes 1990, 1994, 1997; Brackley et al. 2006a, Daniels et al. 2016). These studies address the planning cycle demand portion of TTRA's "seek to meet" requirement. The Forest Service developed the Morse methodology in 1990 as a means to comply, year-to-year, with the annual demand portion of the "seek to meet" requirement. This is discussed further in Appendix G to the Draft EIS.

The comment is concerned that a new Forest Plan objective for Timber (O-TIM-01) included in the Draft Forest Plan essentially makes the latest planning cycle projections (Daniels et al. 2016) equivalent to meeting annual market demand, with the level fixed at 46 MMBF each year. This is not the case. The Morse methodology will continue to be used to comply, year-to-year, with the annual demand portion of the "seek to meet" requirement. The Forest-wide multiple-use objectives O-TIM-01 and O-TIM-02 have been revised in the Final Forest Plan to make this clearer and avoid further confusion.

COMMENT

TIM-12: The legacy forest structure standard should be designed specifically for young-growth harvest, and new Forest Plan components should consider the amount and distribution of residual old-growth and require retention of additional young-growth as necessary to meet the intent of the standard. The Forest Service should develop guidance on treatments that would accelerate succession of retained young-growth toward old-growth conditions. If retention of structure in young-growth stands would delay the transition to primarily young-growth harvest, additional alternatives that use a longer transition period should be developed and fully evaluated.

RESPONSE

Alternatives 3 and 4 included the following management approach for wildlife (FEIS Appendix F):

"When implementing young-growth timber harvest projects larger than 20 acres in VCUs that have had concentrated past timber harvest, it is intended that 30 percent of the young growth stand acres should be left. The purpose is to retain sufficient residual trees to diversify the structural characteristics of the stand and provide for future recruitment of snags. The VCUs where this is intended to apply are ones in which 33 percent or more of the productive old growth has been harvested since 1954. (Consult Forest Plan Chapter 4 under Wildlife section (WILD1), IV. Legacy Forest Structure.)"

Forest-wide wildlife standard for Legacy Forest Structure in Chapter 4 in the Forest Plan was clarified to make this more clear by adding the following clarification:

"The list of VCUs where Legacy Standards and Guidelines apply should be verified during project-specific planning and analysis based on the harvest standards above."

Specific stand treatments are determined at the project level after site-specific analysis by an interdisciplinary team (IDT), and the IDT can recommend the use of legacy retention or similar measures to the responsible official through the harvest prescription or as project mitigation measures.

In responding to the USDA Secretary's Memo (1044-009), the Forest Service identified the need (in Purpose and Need) to expedite the transition away from old-growth timber harvesting and towards a forest products industry that uses predominantly second-growth – or young-growth – forests. The goal is to "transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth." A longer transition period does not meet Purpose and Need. Action alternatives are not "reasonable" if they do not respond to the purpose and need for the action.

Developing additional alternatives outside the range of alternatives analyzed in the DEIS would require a supplement.

COMMENT

TIM-13: The Forest Plan authorization for clearcutting young-growth is arbitrary and does not include a justification for clearcutting. The DEIS never considers whether clearcutting should be the primary method for removing trees given that less destructive means of removing the trees are available. Clearcutting it is not the optimum method if there other ways to achieve regeneration goals, such as maintaining stands of Sitka spruce or Alaska yellow cedar within timber units, or through pre-commercial or commercial thinning.

RESPONSE

The silviculture prescriptions, such as clearcutting or thinning, are not decided at the Forest Plan level. Therefore, a justification for clearcutting is not required. Any clearcut prescriptions at the project level will have a justification at that time. The Forest Plan has the latitude for all prescriptions to be used (see Chapter 4 of the Forest Plan, Timber section, Silvicultural Examination and Prescription: TIM2) and further direction is provided in the Forest Service Handbooks.

The timber section in Chapter 3 of the FEIS, Table 3.13-8 displays the timber management practices as *modeled*. As explained in the text, this does "not limit the manager's ability to use any regeneration method to best meet project goals and objectives."

COMMENT

TIM-14: The Forest Service should take closer account of the TAC's detailed recommendation that if any suitable young-growth acres are removed from the timber base as a result of future review processes, an equal number of acres should be added to the young-growth base.

RESPONSE

Alternative 5 is based on the Final Tongass Advisory Committee (TAC) Final Recommendations (Forest Plan, Appendix B). Under Alternative 5, areas identified as not suited for timber production are partially based on the Land Use Designation (LUD). On Page 4 of the TAC recommendations, *Overarching Principles* (4) states "Co-intent occurs on all suitable and non-suitable acres, and with proper S&Gs can work to meet multiple uses associated with the Forest." However, on page 6, under *Recommendations for Land Use Designations and Standards and Guidelines*, the TAC recommended that "the USFS does not seek young growth volume or change S&Gs…" in specific non-development LUDs and areas (e.g., Remote Recreation LUD, roadless areas, high vulnerability karst, steep slopes).

The only Forest Plan LUDs not included in this list that address forested land as not suited for timber production are the Research Natural Areas LUD and Experimental Forest LUD. Research Natural Areas are unmodified environments where natural processes prevail and therefore do not lend themselves to timber production and young-growth harvest would be incompatible. Experimental Forests are to be managed for the purpose for which they were established. Young-growth harvest has occurred in the Maybeso Experimental Forest for research needs rather than for timber production goals.

The TAC did recommend to "Fully utilize currently allowed prescriptions in beach buffer, Old Growth Reserves, and Riparian Management Areas (RMAs) (outside of TTRA) that improve fish and wildlife habitat and create a commercial by-product." Further, young growth volume produced from these treatments should be counted toward the Projected Timber Sale Quantity (PTSQ) (Page 7 for Final TAC Recommendations). These were included in Alternative 5 (DEIS, p. 2-34).

To represent a more complete application of young-growth harvest on lands suited for timber production, Alternatives 2 and 3 would allow harvest in both development and non-development LUDs, except for Congressionally designated and administratively withdrawn areas and islands < 1,000 acres. In addition, Alternative 2 also considered the portions of inventoried roadless areas (IRAs) that were roaded before the 2001 Roadless Rule and during the 2001 Roadless Rule exemption period for the Tongass to be

suitable for young-growth and old-growth harvest, after rulemaking to modify 36 CFR 294.13(b)(4). Alternative 3 assumed 2001 Roadless Rule changes would occur, and considered lands in 2001 Roadless Rule IRAs to be suitable for timber production after rulemaking to modify 36 CFR 294.13(b)(4). Therefore, these two alternatives expand the suitable young-growth timber base as part of the range of alternatives considered in the DEIS.

COMMENT

TIM-15: The Forest Service should take closer account of the TAC's detailed recommendations, including additional federal aid, new policies for planning and overseeing sales, and new oversight panels.

RESPONSE

These recommendations, while important, are not part of the analysis for the impacts of the Forest Plan amendment on various resources. Rather, they are items that will come into play during the implementation of the amended Plan, if adopted. These items are more dependent on outside influences rather than things that can be developed for a Forest Plan. While the timber demand calculation does come into play in providing a reliable supply of timber, there is no way to guarantee this supply primarily due to the fact that most of our timber harvest projects are litigated and the decision to implement them is often dictated by the courts.

COMMENT

TIM-16: One entry into the beach and estuary fringe will not advance the stand to late seral stage, especially if a 200-foot strip is left along the shoreline.

RESPONSE

The young-growth plan components and management direction for Beach and Estuary Fringe (BEACH) in Chapter 5 of the Forest Plan are based on the Tongass Advisory Committee recommendations (Alternative 5).

The integrity of the Conservation Strategy was included as an issue for the proposed Forest Plan Amendment; one part of that concern was the effect harvest within contributing elements of the Conservation Strategy (such as the beach fringe, RMAs, and Old-growth Habitat LUD) could have on wildlife species that depend on these areas for part or all of their life cycle. Limited young-growth harvest is allowed in these areas under the 2008 Forest Plan but because the volume from any trees cut or removed does not count as commercial timber volume, these treatments are often prohibitively expensive and therefore not utilized or result in heavy slash accumulation that reduces the effectiveness of the treatment as a habitat improvement. The proposed changes to the Forest Plan under Alternative 5 would make it easier to include these stands along with nearby young growth in traditional development LUDs and allow for more flexibility in choosing a harvest prescription that will benefit the stand.

The plan amendment is designed to produce a transition to young-growth management over the next 10-15 years (life of the plan). Under Alternative 5, we do not foresee a need to enter the young-growth stands in the beach, RMA, and Old-growth Habitat LUD more than once during that timeframe. Under the proposed Forest Plan, there are young growth standards that constrain re-entry in these areas unless there is scientific justification to do so. (See S-YG-BEACH-02, S-YG-RIP-02, and S-YG-WILD-02 in Chapter 5.) Habitat improvement projects could also be conducted in the future to meet LUD objectives (current process).

Alternative 5 does not prevent treating all young-growth acres in the beach, RMA, and Old-growth Habitat LUD, but does set standards for those treatments and establishes desired conditions. All young-growth acres could be treated with commercial thinning (up to 35 percent removal) or up to 35 percent of the stand acres could be harvested if an even-aged prescription is used. Site specific analysis at the project level will compare the existing stand characteristics to the desired conditions and determine if and how the stand should be treated to achieve the desired conditions; some acres may already be moving toward old-growth conditions naturally while others may be in a dense, stem exclusion phase requiring treatment.

A buffer immediately adjacent to the shoreline would contribute to future structural complexity of the stand. It would provide a minimal wind buffer, some snow interception, provide for wildlife movement, or the trees/root systems could be used as denning sites for marten or river otter. The trees may be large enough, or approaching the size needed, to be used as perching or roosting trees for eagles. Likely these trees are beginning to produce cones and can serve as a seed source for the adjacent harvest.

COMMENT

TIM-17: The Forest Service should modify its use of the term "young-growth." Suggestions included defining it to include 130-150 year old trees or, conversely, that this is too old and an age of 40 to 80 years is more appropriate.

RESPONSE

Young growth stands that would be harvested under the proposed amendment are typically a minimum of 65-75 years old (DEIS page 3-310), and have not yet reached the understory reinitiation stage which occurs at around 150 years of age in Southeast Alaska (Alaback 1984). See Forest Plan Chapter 7, Glossary. On the Tongass, a forest younger than 150 years old is considered young-growth forest.

COMMENT

TIM-18: Why was the TAC only given 10-15 years to make the transition happen? The transition in such a short time is destined to fail.

RESPONSE

Please see Response to P&N-1. The timeframe of 10 to 15 years came from the Secretary's Memorandum 1044-009 that directed a "transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth." This was used as a goal for the design of the TAC alternative and the action alternatives analyzed in the FEIS. As can be seen, in Chapter 2 of the DEIS, two of the alternatives fully achieved this goal and three alternatives, including the TAC alternative, required more than 15 years to fully transition.

COMMENT

TIM-19: The DEIS and Forest Plan failed to consider plan components that reduce the scale and size of old-growth clearcuts. The DEIS identifies NFMA requirements to limit clearcutting, and national directives to limit clearcutting except when essential to meet Forest Plan objectives, but then it arbitrarily picks out timber economic objectives from the Forest Plan to the exclusion of multiple use objectives. [DEIS at 3-299-300].

RESPONSE

The purpose and need and the resulting scope of this amendment does not include limiting the size of old-growth clear cuts. Currently, most old-growth clear cuts on the Tongass are less than the maximum allowed under NFMA. The DEIS section referred to in the comment simply describes the options that are available for timber management. As the transition occurs, old-growth timber harvest will be reduced, thus also reducing clearcutting of old-growth stands. See forest-wide timber objective O-TIM-01 in Chapter 5.

COMMENT

TIM-20: The Forest Plan failed to develop measures to respond to Alaska Yellow Cedar Decline. Harvest of healthy Alaska Yellow Cedar should be limited with the goal of maintaining healthy stands.

RESPONSE

While there is much of uncertainty on the effects of continuing climate change on Alaska yellow-cedar (AYC) populations and regeneration, the Forest has ensured long-term survival by allocating much of the Alaska yellow-cedar's range on the Tongass to non-Development LUDs, while also practicing active forest management like thinning and planting to encourage future establishment and survival of future

AYC trees. All of these practices are already part of the Forest Plan, TIM-2, and will continue to be practiced.

A report, A Climate Adaptation Strategy for Conservation and Management of Yellow-Cedar in Alaska, PNW-GTR-917, January 2016 (Hennon et al., 2016) acknowledges that the health of yellow-cedar varies throughout its extensive range, with nearly 600,000 acres of declining trees mapped. Within these areas, up to 70 percent of the Alaska yellow-cedar are dead and/or dying from climate caused cedar decline. Although it is declining in some areas, in northern areas of Southeast, the tree appears healthy and the projections for its survival is optimistic. Hennon et al., 2016 acknowledges that while yellow-cedar may be declining at a fast rate in some areas, the species is unlikely to become extinct according to models that have projected survival to the year 2080.

According to Hennon et al., 2016, active forest management offers the most direct opportunity for adapting to climate change and responding to yellow-cedar decline (page 189). Forest management practices can increase the abundance of yellow-cedar in habitats that are expected to be favorable into the future, and other approaches can be used to restore some ecosystem functions in decline-affected forests. The Tongass has used precommercial thinning and tree planting to favor Alaska yellow-cedar in areas where they can be expected to thrive in the future.

The Tongass has planted over 1000 acres of Alaska yellow-cedar since 2012, selecting recently harvested areas that are north facing, higher elevation and contain well-drained soils in an effort to re-establish cedar seedlings in areas that will be best suited for survival in a changing climate. While deer predation can cause mortality in young AYC trees in some areas, the Tongass has worked in conjunction with the U.S. Forest Service, Pacific Northwest (PNW) Research Station, Sealaska, and Oregon State University to conduct studies to determine successful methods to ensure seedling survival. The Forest also precommercially thins between 5,000 to 7,000 acres of young conifer stands a year. Since approximately 1990, Alaska yellow-cedar has been the preferred species in nearly all contracts, allowing growing space free from competition from the faster growing Sitka spruce and western hemlock. On the other hand, past practices favored Sitka spruce. Therefore older young growth stands are predominately spruce and hemlock with a very low cedar component.

The Center for Biological Diversity petitioned for listing Alaska yellow-cedar for endangered status under ESA in July 2014. The U.S. Fish and Wildlife Service ruled in April 2015 that the petition warranted further research, but a final ruling has not been issued.

COMMENT

TIM-21: The Forest Service should stop harvesting old-growth and mature young-growth immediately or within 5-years. Currently planned old-growth timber sales should be stopped.

RESPONSE

Refer to ALT-3 and ALT-4.

Conservation Strategy (CONS)

COMMENT

CONS-1: The changes proposed in the Forest Plan, such as implementing silvicultural treatments on a programmatic scale without any scientific support for its assumptions and conclusions, adversely affect the long-standing wildlife Conservation Strategy. The DEIS does not disclose or analyze the broad scope of these changes, or consider the significant uncertainties and unknown risks associated with plan components for commercial thinning and patch clearcuts in protected areas. The Forest Service also ignores relevant science that has developed since the 2008 Forest Plan was adopted, including science that questions many of the assumptions of the Conservation Strategy itself. All of these considerations are exacerbated by the fact that the Proposed Forest Plan dramatically changes the agency's approach to resolving conflict between plan provisions. Under the Proposed Forest Plan, Chapter 5 would prevail over the rest of the plan in the event of conflict or discrepancies between directions. the consequences of this dramatic change in management is not addressed in the DEIS.

RESPONSE

The Tongass Conservation Strategy was designed to maintain viable and well distributed populations of old-growth associated species. Most of the proposed changes in this amendment pertain to young-growth; old-growth harvest remains unsuitable in conservation areas such as non-development LUDs, beach and estuary fringe, and riparian management areas. Completely changing the Conservation Strategy to a different approach would be outside the scope of this amendment.

This amendment considers effects of allowing young-growth harvest and renewable energy siting in contributing elements of the Conservation Strategy (beach, RMA, and Old-growth Habitat LUD).

DEIS Appendix D contains a review of possible effects to Conservation Strategy changes that are proposed, such as young-growth harvest in the beach fringe. Forest-wide, suitable acres of young growth in the beach fringe, RMA, and Old-growth Habitat LUD are about 2 percent, 4 percent, and 3 percent of the total acres in that component, respectively. Projects must still maintain landscape connectivity per WILD1.VI.A (Chapter 4) and several Young Growth plan components inChapter 5 set constraints and expectations on young growth harvest:

DC-YG-01 references sustaining diversity and productivity of ecosystems;

DC-YG-03 and DC-YG-04 reference maintaining or improving fish and wildlife habitat by accelerating old-growth conditions;

GL-YG-01 provides a constraint for maintaining or improving habitat conditions at the landscape level;

DC-YG-BEACH-01 states that the beach and estuary fringe provide habitat and connectivity for wildlife and opportunities for accelerating old-growth characteristics;

S-YG-BEACH-01 and 02, S-YG-RIP-01 and 02, and S-YG-WILD-01 and 02 set constraints for maximum limits on opening sizes and allow for only one entry per stand in the beach fringe, RMAs, and Old-Growth Habitat LUD;

S-YG-BEACH-03 provides a constraint for a minimum 200-foot-wide forested no commercial harvest corridor;

DC-YG-RIP-01 states that RMAs are managed to accelerate old-growth characteristics in order to improve riparian functions for soil, water, fish, wildlife, and other resources; and

DC-YG-WILD-02 states that in the Old-Growth Habitat LUD young growth stand treatments emulate the natural scale and distribution of disturbance patterns.

In addition several management approaches in Chapter 5 explain the intent of implementation for these plan components.

For renewable energy sites, DC-RE-02 states that renewable energy resources are developed in a manner that would maintain and protect NFS lands and resources; a management approach for renewable energy was added to the Forest Plan that explains the intent that renewable energy plan components do not change the need to ensure that resource protection measures are incorporated during project-level planning, construction, and operation of renewable energy sites.

The Forest is not changing its approach to resolving conflict between provisions of the Plan. Under the 2008 Forest Plan, Chapter 3 direction (LUD-specific standards and guidelines) prevailed over Ch. 4 (Forest-wide standards and guidelines) just as it does under this Forest Plan; this amendment simply adds that Chapter 5 direction, which is new, prevails over Chapter 3 only in the event of conflicting direction. Standards and guidelines in Chapters 3 and 4 still apply except in a few instances where Chapter 5 provides a specific plan component such as suitability for young-growth harvest that would be relevant to a particular project. In Chapter 1 of the Forest Plan, under the Priority of Direction section, t content was added to make clear that when applying Chapter 5 direction, all laws, regulations, and policy pertaining to management of National Forest resources will be followed, such as Clean Water Act, Endangered Species Act, and approved best management practices to avoid, minimize, or mitigate environmental impacts.

Silviculture prescriptions, such as clearcutting or thinning, are not decided at the Forest Plan level; a model was run to allow resource specialists to analyze potential effects but this does not limit the options available to be implemented at the project level after site-specific analysis. See also TIM-13 response regarding silvicultural prescriptions

COMMENT

CONS-2: The Proposed Forest Plan disregards the original Tongass Conservation Strategy, which was set up to protect apex predators. The Proposed Forest Plan pushes back the original sideboards of the Conservation Strategy. This is most dramatically evident on Prince of Wales Island, where 94 percent of the contiguous large-tree old-growth stands have been eliminated since 1954 (Albert and Schoen 2013). As a result, we can expect significant declines in Sitka black-tailed deer populations. The preferred alternative in the Proposed Forest Plan will erode the original Tongass Conservation Strategy, increase risks to the Archipelago wolf, and is contrary to the provisions in the 2012 planning rule on ecological integrity and ecosystem diversity (36 CFR. 219.8(a), 219.9(a))

RESPONSE

See responses to CONS-1, PLR-2, WOLF-3, and WOLF-5, and EIS Appendix D.

Overall, the Conservation Strategy is functioning under conditions that are much better than anticipated at the time of its development. Actual and projected old-growth harvest levels under the current Forest Plan (Alternative 1) are far below levels predicted under the 1997 Forest Plan, which formed the context within which the [original] Conservation Strategy was intended to function. This has occurred largely because of economics and a significant decline in the timber industry due to various factors (Appendix D, FEIS).

This Forest Plan reduces the amount of old-growth harvest in about 10-15 years, while increasing the amount of young-growth harvested. During this transition timeframe, harvest of old-growth will occur in the same land use designations as the 2008 Forest Plan (Timber Management, Modified Landscape, and Scenic Viewshed) and is within the effects considered and disclosed in the 1997 and 2008 Forest Plan Conservation Strategy analyses. The Forest Plan also allows for young-growth harvest in portions of the contributing elements of the Conservation Strategy (e.g., beach and estuary fringe, RMAs, and non-development LUDs). Proposed modifications to contributing elements of the Conservation Strategy under the action alternatives have the potential to result in localized reductions in the functioning of these elements. That is, young-growth harvest may locally alter forest structure and reduce connectivity, but the beach and estuary fringe and RMAs would continue to function as intended across the planning area by serving as ecological transition zones, maintaining freshwater and marine aquatic and terrestrial habitat, and providing landscape connectivity (Appendix D, FEIS). The Forest Plan includes several plan components that ensure that young-growth projects would maintain habitat and connectivity for wildlife

and opportunities for accelerating development of old-growth characteristics. (See Forest Plan Chapter 5 young growth direction.) The young growth direction also includes management approaches that describe the principal strategies and program priorities the Responsible Official intends to employ to carry out projects and activities developed under the Plan. Management approaches are intended to assist the IDT to design projects that would maintain or move the forest toward desired conditions. (See Chapter 6, Project Consistency Requirements.)

The Forest Plan is a programmatic document that sets guidance for activities Forest-wide. Including specific components for one location, for example Prince of Wales Island, are generally not included in programmatic direction.

The 94 percent (Albert and Schoen 2013) large-tree reduction since 1954 pertains to high-volume stands which are defined differently by Albert and Schoen (2013) than large-tree for the Forest Service analysis. Further, this reduction is true of the existing condition, not a result of this plan amendment.

In addition, the numbers calculated for the Forest Plan amendment do not match those of Albert and Schoen (2013) for either large tree or high volume: page 3-204 of the DEIS shows original acres of high-volume in the North Central Prince of Wales biogeographic province on all lands (NFS and non-NFS) to be 479,014 acres with 54 percent remaining and page 3-205 shows large-tree POG in that province to be 235,402 acres with 50 percent remaining while Albert and Schoen indicate 77,536 hectares (about 191,514 acres) of original high-volume with 6 percent remaining.

COMMENT

CONS-3: Alternative 5 is not an acceptable alternative because it compromises the integrity of the Conservation Strategy. The Forest Service has concluded that the "beach fringe was a very key feature of the overall Tongass Conservation Strategy." Beach and riparian buffers are essential to maintaining viable populations of old-growth dependent wildlife and marine-associated species. The Forest Service should not relax protections for the areas by allowing young-growth harvest in them. The Forest Service has not properly accounted for the major impacts that would result from relaxing protections for these areas.

RESPONSE

Beach fringe and riparian management areas provide landscape connectivity functions and old-growth habitat for numerous species. These areas are not suited for old-growth timber production as in the 1997 and 2008 Forest Plans. In some cases, young growth in these areas is not functioning to its potential as forested habitat; the desired condition for such stands is to accelerate development of old-growth characteristics, maintain habitat and connectivity, and emulate the natural scale and distribution of disturbance. Several species-specific standards and guidelines also remain in place, such as nest and den buffers and protection of waterfowl and shorebird habitat. Each project decision must say how the project is consistent with plan components, including desired conditions.

Forest-wide, suitable acres of the maximum amount of young growth that would be harvested in beach fringe, RMA, and OG LUD under any alternative comprise a very small component of the forest land within each of these plan components. Forest-wide maximum young-growth harvest would affect approximately 2.4 percent, 3.3 percent, 1.2 percent, and 0.4 of the forest land within the beach and estuary fringe under Alternatives 2, 3, 4, and 5, respectively. Likewise, Forest-wide maximum young-growth harvest would affect approximately 6.7 percent and less than 1 percent of the forest land within RMAs, outside of TTRA buffers, under Alternatives 2 and 5, respectively. Finally, under Alternatives 2, 3, and 5 the maximum amount of young-growth harvest in the Old-growth Habitat LUD would comprise approximately 3.3 percent, 2.8 percent, and 0.2 percent of the forest land (young-growth, POG, and unproductive forest) within the Old-growth Habitat LUD Forest-wide, respectively, and less than 1 percent of the forest land within other non-development LUDs (Alternatives 2 and 3 only). are about 2 percent, 4 percent, and 3 percent of the total acres in that component, respectively. Therefore, proposed modifications to contributing elements of the Conservation Strategy (e.g., beach and estuary fringe, RMAs, and non-development LUDs) under Alternatives 2, 3, 4, and 5 have the potential to result in localized, temporary reductions in the functioning of these elements (see response to CONS-1 and

CONS-2). That is, young-growth harvest may locally alter forest structure and reduce connectivity, but the beach and estuary fringe and RMAs would continue to function as intended across the planning area by serving as ecological transition zones, maintaining freshwater and marine aquatic and terrestrial habitat, and providing landscape connectivity. Additionally, as noted above, the transition to young-growth management would result in a significant reduction in the amount of projected old-growth harvest. Therefore, none of the alternatives would reduce the ability of the Conservation Strategy to maintain a functional and interconnected old-growth ecosystem across the planning area. When this is considered in conjunction with the plan components that are in place for young growth harvest in these areas (see CONS-1), any effects are anticipated to be localized and temporary.

Overall, the Conservation Strategy is functioning under conditions that are much better than anticipated at the time of its development. Actual and projected old-growth harvest levels under the current Forest Plan (Alternative 1) are far below levels predicted under the 1997 Forest Plan, which formed the context within which the Conservation Strategy was intended to function. Under the 1997 Forest Plan, it was projected that 84 percent of the original (1954) POG forest would remain in 100 years. Under the Proposed Forest Plan (Alternative 5) and the action alternatives, 91 percent of the original POG forest is anticipated to remain. This equates to approximately 400,000 acres of additional old-growth than were assumed during the development of the Conservation Strategy. These additional POG acres may function as additional reserves, enhance existing reserves, or increase the effectiveness of the matrix when located around harvest units. Moreover, with the Roadless Rule in effect, inventoried roadless areas (approximately 2,148,000 acres of development LUDs in roadless areas containing about 828,000 acres of POG) make an additional contribution to the maintenance of ecological function on the Tongass National Forest but do so outside of the elements of the Conservation Strategy. As such, the substantially greater presence of old-growth forest on the landscape across the planning area would outweigh the localize effects of young-growth harvest proposed in the Old-growth Habitat LUD, the beach and estuary fringe, and RMAs that would result under the action alternatives.

The Forest Service analyzed and disclosed the potential environmental consequences of young-growth harvest to contributing elements of the Conservation Strategy (e.g., beach and estuary fringe, RMAs, and non-development LUDs) under Alternatives 2, 3, 4, and 5 in the FEIS (See FEIS Chapter 3, Biodiversity section, Effects to the Old-Growth Forest Ecosystem). Appendix D of the FEIS also includes a section about the Integrity of the Conservation Strategy and discusses the ability of each alternative to maintain the integrity of the Conservation Strategy.

The proposed amendment retains the goal of providing an abundance and distribution of old-growth habitat to maintain viable populations of wildlife in the forest in its Wildlife Forest-Wide Standards and Guidelines, with plan direction to “Provide the abundance and distribution of habitat necessary to maintain viable populations of existing native and desirable non-native species well-distributed in the planning area (i.e., the Tongass National Forest).” (WILD1IIB, Proposed Forest Plan, p. 4-82).

See responses to PLR-2 and FEIS Appendix D.

COMMENT

CONS-4: The DEIS and Forest Plan lack detail on the harvest prescriptions for harvest in the beach fringe, Riparian Management Areas, and non-development LUDs. For example, the number of units, gaps between them, and the number of units in the specific area need to be explored and direction developed appropriately. We appreciate that the overarching LUD management goal and future desired conditions would define what is technically allowable and feasible in these areas, but there are few details as to how this will happen. The Forest Service should take steps towards figuring out how this is accomplished through pre-project planning with stakeholders and a clear process for reviewing projects to figure out how the goals were accomplished and what lessons were learned to ensure that these carry over to future projects. The Forest Service should also include direction in the Forest Plan to invest in scientific research to assess and monitor ecological conditions in the beach fringe, Riparian Management Areas, and non-development LUDs with the intention of strengthening management approaches and treatments.

RESPONSE

The Forest Plan includes plan components related to harvest of young growth in beach and estuary fringe, RMAs, and the Old-Growth Habitat LUD. The desired conditions, goals, objectives, standards, and guidelines work together, to provide overall direction and set sideboards for the project managers and resource specialists who will be implementing the Forest Plan. Management approaches add additional guidance by stating the intent of the plan components. Appendix D Table 2 contains a modeled estimate of harvest types by alternative for the beach, RMA, and Old-Growth Habitat LUD; specific stand prescriptions will be determined for each project based on site-specific information and are not included in the Forest Plan (see TIM-13). Appendix B contains a compatibility matrix for what harvest can be done in each LUD under each alternative: see Tables B-2.1 through B-2.5.

The plan monitoring program was revised to meet the 2012 Planning Rule requirements at 36 CFR 219.12 and is now a separate document, but part of the Forest Plan (http://www.fs.usda.gov/goto/Tongass/Monitoring). This document outlines what monitoring the Tongass plans to conduct. Monitoring must be within the technical and financial capabilities of the Forest. In addition to Forest-wide monitoring outlines in the plan monitoring program, project-level monitoring can also be done if recommended by the interdisciplinary team that evaluates the project and approved by the Responsible Official (decision-maker).

The Forest Plan is not the appropriate document to determine where money will be invested. Funding for Forest Service work comes through a variety of sources but is primarily allocated annually through Congress; this allocation is specific to a particular resource and cannot be used for other purposes. In addition, the National Forest System does not conduct independent research, although it can recommend projects and coordinate with its research branch, universities, and other interested partners. For example, there is currently ongoing research on a Tongass-Wide Young Growth Study to look at different treatment options in young growth and a cost share agreement with the State of Alaska for young growth inventory work.

See response to SPEC-42.

COMMENT

CONS-5: The amendment calls for the harvest of young-growth in beach buffers and key old growth habitat, however there is no mention of prioritizing certain places. The Forest Service should prioritize young-growth treatments to improve degraded habitats and improve deer numbers, especially in areas close to towns and villages to ensure subsistence opportunities are equal across the Tongass.

RESPONSE

The Forest Plan is a programmatic document that sets guidance for activities Forest-wide. Chapter 2 of the Forest Plan provides a forest-wide subsistence objective to “evaluate and consider the needs of subsistence users in making project land management decisions.”

Young-growth direction in Chapter 5 of the Forest Plan includes plan components and management approaches that are specific to young-growth management. The following management approach for young growth would allow for the consideration of other opportunities in the project area:

> “The intent is that during project planning, IDTs identify other resource opportunities in the project area, and if approved by the responsible official, integrate these opportunities into the project design. (See definition for Integrated Resource Management in Chapter 7.) When designing young-growth projects that would advance old-growth characteristics in the beach fringe, RMA, or old-growth reserve (OGR), IDTs seek out stakeholders to encourage creative and innovative approaches for developing silvicultural treatments that imitate the natural scale and distribution of disturbance patterns on the Tongass (e.g., wind-thrown timber that creates gaps and patches; landslides that create corridors and gaps; mortality that naturally thins stand).”

The Tongass Young Growth Strategy does outline some broad priorities and general options for young growth treatments across the Tongass. This type of priority setting is usually completed at the district or island level rather than at the Forest Plan level so that site-specific needs and information can be incorporated into the project, such as treatments that benefit local subsistence use patterns and winter habitat conditions.

See response to SUB-1.

COMMENT

CONS-6: The 1997 Forest Plan intended that early seral stands in non-development LUDs would be managed so that they develop into old-growth, but the Proposed Forest Plan dismisses these early seral stands as unimportant to the Conservation Strategy. Under Alternative 5, the Tongass Advisory Committee (TAC) recommended significant changes to the Tongass Conservation Strategy. Specifically, the preferred alternative calls for logging of young-growth stands in OGRs, Beach/Estuary Fringe Buffers, and Riparian Management Areas. This violates the intent of the original VPOP Strategy, and also stands at odds with the scientific underpinnings of the Conservation Strategy. Harvesting young-growth forest and building roads in buffers and reserves will seriously harm the Conservation Strategy. The DEIS states that "Continued inventories and monitoring of established nest protection buffers will help to inform future decisions," but there are no specifics on how this monitoring will be accomplished and what measures will be used to gauge continued success of the goshawk in heavily managed timber production areas. The Forest Service should leave intact beach- and estuarine-fringe forests, Riparian Management Areas, and OGRs. Allowing new clearcuts, of whatever size, in OGRs, beach buffers and Riparian Management Areas will reduce populations of goshawks and other forest-dwelling birds. These areas were set aside as reserves because they were considered critical to the long-term viability of many wildlife species across the forest.

RESPONSE

See also PLR-2, CONS-1, CONS-7, GOSH-2

Chapter 3 of the FEIS (Biodiversity section) states that "of the approximately 506,000 acres of young-growth forest on the Tongass National Forest, about 76 percent of young growth is older and in the stem exclusion stage. This type of stand condition has very low species diversity." The stem exclusion phase has little to no forage species important to deer and some small mammals, is often too dense to be used as foraging habitat for goshawks, and may not yet have large enough trees to be used for eagles to nest. These stands may be just reaching cone-bearing age so may also not be important for red squirrels. Treatment of these stands may open the canopy to allow more light to reach the forest floor which may assist in forage production; treatment can also be aimed at improving to tree spacing to increase growth. Each stand will be evaluated for treatment options by an interdisciplinary team of resource specialists. For example, a project evaluation can include consideration of existing and desired habitat conditions, adjacent landscape and habitat types, reserve connectivity, known wildlife usage in and near the project, insect and disease conditions, access and operability, and LUD. Young growth treatments in beach fringe, RMAs, and Old-Growth Habitat LUD should accelerate the stand toward old growth characteristics (desired conditions). Ten acre openings is the maximum allowed; it is not required to be that size. Openings may be less depending on stand size (cannot be over 35 percent of the stand) and the ability to achieve desired conditions. Management of young-growth stands through release, pre-commercial, and commercial thinning has the potential to increase biodiversity by concentrating growth in fewer, larger trees that, if allowed to grow over time, promote conditions that accelerate natural succession in order to achieve old-growth stand characteristics at a faster rate than would occur without treatment (Caouette et al. 2000; Carey 2003).

Alternative 3 and 4 consider allowing only commercial thinning in the beach fringe rather than a maximum 10 acre opening. Alternatives 3 and 4 also considered applying legacy standards and guidelines to young growth harvest. These are available options for the Responsible Official to choose for the decision.

The beach fringe and Old-Growth Habitat LUD discouraged road construction but it was allowed under some circumstances in the 2008 Forest Plan, as it would be under the proposed amendment. This amendment recognizes that some road construction or reconstruction may be required to access young growth for the transition; it includes a guideline (G-YG-WILD-01) to keep road construction to the minimum necessary in the Old-Growth Habitat LUD and a standard (S-TSC-WILD-01) to design and construct transportation system corridors to maintain wildlife habitat corridors between OGRs, RMAs, and beach fringe.

The intent of the Conservation Strategy was focused on the viability of old-growth associated/ dependent species and at that time no young growth management was foreseen in the life of the plan. Therefore, the intent was focused on old-growth and only precommercial treatments were envisioned for young-growth. Multiple criteria are considered during the design of old-growth reserves (see Appendix K), not just whether or not the reserve contains young growth or roads; Appendix K still allows for project-level review of reserves under this amendment. (See Young-growth Management Approach for Wildlife in Chapter 5 of the Forest Plan).

The created openings of up to 10-acres in the Old-growth Habitat LUD, beach buffers and RMAs was to provide more economical offerings to allow a more rapid transition to young-growth management. The TAC recommendation was to allow these openings to emulate the natural scale and distribution of disturbance patterns on the Tongass (e.g., wind-thrown timber that creates gaps and patches, landslides that create corridors and gaps, mortality that naturally thins stand, etc.) that correspond with silvicultural treatments. (See Young Growth Management Approaches in Chapter 5 of the Forest Plan.) While most natural disturbance results in openings are smaller than 10 acres, wind events and landslides have created this type of landscape. This type of management is limited to the first 15 years after plan approval and may result in up to 6,803 acres harvested across the Tongass within Old-growth Habitat LUD, beach buffers and RMA outside the TTRA buffer (FEIS Appendix D, Table 2). The 10-acre opening is a maximum and may be used in conjunction with thinning up to 35 percent of the stand. The shape and size of the clearcut could be designed to conform and blend with the landscape to minimize effects wildlife habitat. Forest Plan Standards (S-YG-BEACH-02, S-YG-RIP-02, S-YG-WILD-02) constrain young-growth harvest in these areas to a one-time only entry and to the first 15 years unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. Every project and activity must be consistent with the applicable plan components, including the desired conditions. (36 CFR 219.15(d))

COMMENT

CONS-7: Concentrating logging on small isolated portions of the Tongass exacerbates an already troubling situation and compromises the Conservation Strategy. These areas are of critical importance to several old-growth dependent species. According to the DEIS, the vast majority of the stands in the Tongass result in negative stumpage value and the isolated areas that reflect positive stumpage values are located in a very concentrated portion of the Tongass. The DEIS never discloses the average stumpage values across the Tongass or the location of the only stands that appraise positively. The analysis also does not appear in the planning record.

RESPONSE

In order to transition to primarily young growth harvest, it is necessary to enter the same areas that old-growth harvest has occurred in the past because that is where the young growth and associated infrastructure are located. Many of the oldest young growth stands that will be ready for commercial harvest over the next 15 years have received no intermediate treatments, are in a stem exclusion phase, and were logged prior to current standards and guidelines so may occur in more sensitive areas than would be allowed under the 2008 Forest Plan direction. Most of the younger young growth stands (those less than 25 years) have received some precommercial thinning treatment; important deer forage may persist for longer in these areas and the trees may grow faster, delaying the onset of stem exclusion. Young growth could also receive additional intermediate treatments.

Some areas of the Forest are important to both wildlife and timber harvest, such as Prince of Wales Island. Viability analyses that occurred leading up to the 1997 Forest Plan acknowledged that there could

be gaps in distribution of some species but that overall viability could be maintained across the Forest. It is possible that Prince of Wales is a location where some species are not contiguous across the entire island (i.e., gaps exist). The Conservation Strategy protects a series of large, medium, and small old-growth habitat reserves (including non-development LUDs) as well as standards and guidelines for matrix management. Although the amendment would include harvest of young growth in some Conservation Strategy elements such as beach fringe, Riparian Management Areas, and Old-Growth Habitat LUDs, the range of alternatives includes varying levels of protection of these areas through new young growth plan direction, but no old growth harvest would be allowed in these areas under any alternative.

The suitable land base where timber harvest can occur has continually decreased over the years. The latest reductions in this suitable land base are within the Inventoried Roadless Areas. The Preferred Alternative (Alternative 5) also proposes no old-growth harvest outside the Phase 1 lands as identified by the decision on the 2008 Forest Plan Amendment (ROD pp. 64 to 66) or within T77 watersheds and The Nature Conservancy /Audubon Priority Conservation Priority Areas (See Forest Plan Appendix A).

By restricting this land base, the timber harvest becomes more concentrated into small areas. It is also true that the economics of timber harvest tend to concentrate harvest. The Forest Service is required to issue only positive sales, but specific locations of these are not known until project-level analyses are conducted. However, on the other hand, more and larger areas will not have any old-growth timber harvest and will maintain the old-growth characteristics and contribute to maintaining the integrity of the Tongass Conservation Strategy. This is a trade-off for resources that should provide both habitat for old-growth associated and dependent species and a timber base for commercial timber harvest.

In order to transition in 10-15 years as outlined in the Secretary's Memo and brought forward in the Purpose and Need, all young-growth lands were considered. Since the age of the young-growth stands is a limiting factor, the oldest stands of young growth are being considered for harvest to facilitate the transition. If the oldest young-growth stands are not included in the earliest phase of the transition, it is highly unlikely the Forest Service could meet the Purpose and Need of the amendment. Therefore, old-growth timber harvest would continue for a longer time period. If young-growth harvest is not allowed in the most areas, opportunities to improve habitat conditions for wildlife and fish and stand function in places that would potentially benefit from restoration work and advancement of seral stages toward old-growth conditions, would be lost.

An updated productive old-growth analysis including a high volume productive old-growth and a large tree productive old-growth analysis has been provided in the Forest Plan Amendment FEIS (Chapter 3, Biodiversity section).

An updated financial analysis is provided in the Forest Plan Amendment FEIS (Chapter 3, Economics section) and includes the net revenues or stumpage values (see Table 3.22-16). Viewed over 15-year and 100-year planning horizons, all five alternatives would result in positive net revenues (stumpage values). Alternatives 1, 4, and 5 also would result in positive net revenues over the 25-year planning period; Alternatives 2 and 3 would result in negative net revenues for the 25-year period. FEIS Appendix B describes and documents the analytical processes and models used for the 2016 Forest Plan Amendment FEIS.

COMMENT

CONS-8: Forest Service must examine the adverse effects of second-growth logging on the overall Conservation Strategy because not all second-growth stands have the same ecological value.

RESPONSE

Not all young-growth stands have the same habitat value. Young-growth stands that have reached the stem exclusion stage may not be fully functioning in terms of habitat value; these stands could benefit from treatment such as those proposed during this amendment.

FEIS Appendix D describes the effects to the Conservation Strategy of logging young growth in beach buffers, RMAs, and Old-Growth Habitat LUDs. Chapter 5 of the Forest Plan contains several plan

components related to young growth management in these contributing elements to the Conservation Strategy, including desired conditions to accelerate old-growth characteristics in those stands. Each project implemented under the Forest Plan will evaluate site-specific conditions and resource concerns to determine whether, how, and when to log young-growth stands. Part of that analysis by the interdisciplinary team should include looking at where on the landscape stands proposed for harvest occur, the current condition of those stands, and the harvest prescription to advance those stands toward the desired condition. Landscape connectivity would also be reviewed (See WILD1.VI.A, page 4-86 of the Forest Plan.) Every project and activity must be consistent with the applicable plan components (36 CFR 219.15(d)).

See response to PLR-2 and FEIS Appendix D.

COMMENT

CONS-9: Changes to the Tongass Conservation Strategy and transportation management in the Proposed Forest Plan are significant enough to require a plan revision. The NFMA requires land management plans to be revised at least every 15 years, or sooner if physical conditions or demands on the land and resources have changed sufficiently to affect overall goals or uses for the entire unit.

RESPONSE

Effects to the Tongass Conservation Strategy from proposed changes to the Forest Plan have been evaluated and discussed in Appendix D of the Forest plan Amendment FEIS concluding that the integrity of the Conservation Strategy is maintained under all alternatives. This Strategy was designed to provide habitat for old-growth associated and dependent species. Since the proposed action alternatives target a more rapid transition to young growth harvest, there would be a corresponding lower amount harvest of old-growth harvest to meet demand . As noted under CONS-3, the Conservation Strategy is functioning under conditions that are much better than anticipated at the time of its development in 1997. Actual and projected old-growth harvest levels under the current Forest Plan (Alternative 1) are far below levels predicted under the 1997 Forest Plan, which formed the context within which the Conservation Strategy was intended to function

Some young-growth harvest is proposed in the beach buffer, Riparian Management Areas and the Old-growth Habitat LUD. However, constraints are in place to limit the size of the openings and the level of thinning. See young growth direction in Chapter 5 of the Forest Plan and response to CONS-1. Forest Plan Standards (S-YG-BEACH-02, S-YG-RIP-02, S-YG-WILD-02) constrain young-growth harvest in these areas to a one-time only entry and to the first 15 years unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. Every project and activity must be consistent with the applicable plan components, including the desired conditions. (36 CFR 219.15(d)). The desired conditions in these areas is to mantain connectivity for wildlife and to accelerate old-growth conditions.

See response to PLR-1 and CONS-3.

COMMENT

CONS-10: The Forest Service should clarify old-growth habitat reserve modification procedures for small OGRs to require comparable conservation value (see Appendix D of the 2008 Plan) and modify Chapter 3, Old-Growth LUD, WILD1 to read “”Alternative reserves must provide comparable achievement of the Old- growth Habitat LUD goals and objectives within each VCU.

RESPONSE

The responsible official has the discretion to determine whether and how to amend the plan. See 36 CFR 219.13.a and FSH 1909.12, Chapter 20, Section 21.3. For this amendment, the scope is focuses on making changes primarily to facilitate a transition to primarily young growth harvest in about a 15 year timeframe and on making separate renewable energy and transportation systems corridors plan components (to replace the TUS overlay). Modifying criteria for small OGRs, which are part of the

Conservation Strategy, is outside of the scope of this focused amendment. Many of the recommendations from the 5-year review were not incorporated into this amendment.

OGR modification procedures are outlined in Appendix K of the forest plan (now with clarifications for young-growth harvest in the Old-growth Habitat LUD). At the project level, proposed OGR modifications would be required to provide comparable achievement of Old-growth Habitat LUD goals and objectives compared to the original OGRs.

Plan components are considered together and interact to form the overall direction; every project decision must describe how the project is consistent with plan components, including meeting the desired condition of the LUD.

COMMENT

CONS-11: Large forest openings and extensive timber thinning without appropriate slash treatments can interfere with animal movements and increase vulnerability of some species to predation, harvest by humans, and/or exposure to deep snow and severe weather. The selected alternative should limit young-growth treatments to actions that maintain or improve wildlife habitat in beach and estuary fringe forest. These actions should include: openings that are limited to two acres or less in order to maintain hunting habitat for goshawks and provide thermal cover for deer; slash that is treated to allow unconstrained movement of deer, bears, wolves, and other species; and openings in the beach fringe that maintain a corridor of mature or old forest that is no less than 660 feet wide to maintain effective thermal cover (Concannon 1995).

RESPONSE

See CONS-3, CONS-4, CONS-6, CONS-12, and SPEC-6.

Plan components are considered together and interact to form the overall direction; every project decision must describe how the project is consistent with plan components, including meeting the desired condition. For beach and estuary fringe, those desired conditions include providing habitat and connectivity and accelerating the development of old-growth characteristics (DC-YG-BEACH-01).

Management approaches are used to guide project implementation of the Forest Plan components (desired conditions, objectives, standards, guidelines, suitability of lands, and goals if stated); they relate to the desired conditions and describe the principal strategies and program priorities the Responsible Official intends to use to carry out projects. The Forest Plan includes an intent statement for young growth harvest prescriptions and opening sizes in the beach and estuary fringe to consider spatial and temporal conditions of the adjacent landscape, and intends for treatments to facilitate a more rapid recovery of late successional forest characteristics. (See management approaches for beach and estuary fringe in Chapter 5 of the Forest Plan.)

The recommendation from the Tongass Advisory Committee represented in Alternative 5 is that any created opening size must not exceed 10 acres or to thin the stand in no more than 35 percent of the stand's basal area. Site-specific openings determined at the project level will vary in size and shape. Alternatives 3 and 4 considered only commercial thinning in the beach fringe rather than a maximum 10 acre opening. Alternatives 3 and 4 also considered applying legacy standards and guidelines to young growth harvest (see Appendix F of the FEIS). These are available options for the Responsible Official to choose for the decision. No old-growth harvest is planned under any alternative in the beach and estuary fringe, Riparian Management Area, or Old-Growth Habitat LUD.

Recent studies of slash treatment, such as Module IV of the Tongass-wide Young Growth Study and observation of commercial thinning of ongoing commercial young-growth sales and older young-growth treatments, will be used to determine which slash method is included in the silvicultural prescription to meet resource objectives. Specific harvest prescriptions and slash treatment will be determined at the project level to consider site specific conditions (see TIM2, WILD2). Silvicultural prescriptions are determined at the project level (see TIM2). The recommended slash treatment may depend on the silvicultural prescription used, the density of the existing stand, utilization specifications, and the location

of the treated stand on the landscape. Landscape connectivity will also be evaluated at the project level (WILD1.VI).

COMMENT

CONS-12: Young-growth treatments in the Old-growth Habitat LUD should be designed to accelerate development of old-growth characteristics without compromising landscape connectivity and animal movement.

RESPONSE

See responses to TIM-13, CONS-1, and SPEC-6.

The Old-Growth Habitat LUD does play an important role in the Conservation Strategy. In some instances, young-growth stands within the boundary of this LUD are not fully functioning for wildlife needs. Individual stand treatments will be determined at the project level. Plan components are considered together and interact to form the overall direction; every project decision must describe how the project is consistent with plan components, including meeting the desired condition. For Old-Growth Habitat LUD, those desired conditions include maintaining habitat and connectivity and accelerating the development of old-growth characteristics (DC-YG-WILD-01) and treating young-growth to emulate the natural scale and distribution of disturbance patterns (DC-YG-WILD-02).

Management approaches are used to guide project implementation of the Forest Plan components (desired conditions, objectives, standards, guidelines, suitability of lands, and goals if stated); they relate to the desired conditions and describe the principal strategies and program priorities the Responsible Official intends to use to carry out projects. The Forest Plan includes an intent statement for Old-Growth Habitat LUD harvest prescriptions and opening sizes to consider spatial and temporal conditions of the adjacent landscape; intends for treatments to facilitate a more rapid recovery of late successional forest characteristics; and allows for an Old-Growth Habitat LUD to be modified to exclude young-growth proposed for harvest if a net gain in old-growth can be achieved and Forest Plan Appendix K criteria can be met (see management prescriptions).

COMMENT

CONS-13: The Forest Service's refusal to undertake a comprehensive review of the Conservation Strategy—its scientific underpinnings, its overall validity, and its species-specific validity - along with the 2016 amendments, is arbitrary, capricious, and contrary to NEPA, NFMA, and the 1982 Rule.

RESPONSE

See responses to PLR-1, and PLR-2, CONS-1, and Appendix D of the FEIS.

COMMENT

CONS-14: The Forest Service must re-evaluate the integrity of the Conservation Strategy to bring the plan into compliance with the 1982 Rule.

RESPONSE

See response to PLR-1, PLR-2, CONS-1, and Appendix D in the FEIS.

COMMENT

CONS-15: The changes proposed by the 2016 Forest Plan Amendments cannot be reconciled with the Conservation Strategy, and therefore are inconsistent with the 1982 rule.

RESPONSE

See responses to PLR-1, PLR-2, and CONS-1 and Appendix D in the FEIS.

COMMENT

CONS-16: The analysis of impacts to the Conservation Strategy was deferred to project-level decisions, and this approach is not reasonable for three reasons: 1) the agency has a duty at the programmatic stage of analysis, where it is required analyze the cumulative effects of localized impacts across a broader landscape; 2) there is precedent for the agency manipulating the elements of the Conservation Strategy to effectuate timber harvest goals, at the expense of other resources considerations; and 3) there is a significant risk that this approach will lead to significant impacts escaping meaningful review when tiering and site-specific projects will not be given the full level of environmental review required by NEPA.

RESPONSE

See also PLR-2 and Appendix D.

The proposed Forest Plan does not change the old growth Conservation Strategy, although effects to elements of the Conservation Strategy may occur (see Appendix D). The FEIS and Appendix D analyzed possible impacts to the Conservation Strategy of the proposed Forest Plan and concluded that the integrity of the Conservation Strategy is maintained. Estimated young growth harvest within the beach and estuary fringe over 100 years would range from only 0.4 percent of the total forested beach and estuary fringe acres for the preferred alternative (Alternative 5) to 3.3 percent for Alternative 3. For RMAs, the preferred alternative would harvest an estimated 0.3 percent of the total forested habitat in RMAs over 100 years, while the other alternatives would harvest between 0 and 6.7 percent. Estimated young growth harvest within the Old-growth Habitat LUD for the preferred alternative is 0.2 percent of the total forest land area within the Old-growth Habitat LUD, while the other alternatives would harvest an estimated 0 to 3.3 percent over 100 years. At the project level, the interagency review process outlined in Appendix K can be used to modify an Old-growth Habitat LUD with proposed young-growth harvest so this number could be lower once the site-specific project review and decision are implemented.

The Forest Plan is programmatic and provides overall direction for projects implemented under the plan. The FEIS and Appendix D did not defer the effects analysis of the Conservation Strategy to the project level but acknowledged that additional site specific analysis occurs at the project level. The sideboards set in the Forest Plan by lands suited for timber production, standards and guidelines, and other plan components and content were used to evaluate the expected outcomes at the Forest Plan level, but because individual projects and activities are not yet proposed, site specific information is not available for the programmatic review. Thus, additional analysis occurs at the project level to include any localized resource effects and to ensure the project implements the relevant Forest Plan requirements, such as the landscape connectivity standard and guideline (WILD1.VI.A). The DEIS looked at the Conservation Strategy from overall integrity of the strategy; cumulative effects during project analysis look at past, present, and reasonably foreseeable projects in the analysis area to further ensure the Conservation Strategy is maintained during project implementation.

The FEIS version of Appendix D has been expanded and an evaluation of the integrity of the Conservation Strategy under the no action and action alternatives is presented. The conclusion is that the integrity of the Strategy would be maintained under any of the alternatives. We believe the documentation for this conclusion is clearly presented.

COMMENT

CONS-17: Some old-growth reserves (OGRs) were included in the conveyance of the nearly 70,000 acres of NFS land in the Tongass to Sealaska under the National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291). These circumstances require a re-evaluation of the entire network of OGRs on northern Kuiu Island and on Prince of Wales Island and its adjacent islands because the function of some other OGRs and matrix lands may be affected by nearby transfer lands that can be expected to logged more intensively than anticipated under the prior federal ownership. This re-evaluation is necessary to ensure the integrity of the Conservation Strategy as a whole in those areas.

RESPONSE

FEIS Appendix E explains the modifications made to the small OGRs on Prince of Wales Island. These modifications were done by interagency biologists from US Fish and Wildlife Service, State of Alaska Department of Fish and Game and US Forest Service and represent the biologically preferred alternative. No OGRs were affected on Kuiu Island or elsewhere. No effort was made during these modifications to avoid higher productive forested lands to allow for more intensive management. The evaluation of these modifications followed the Forest Plan, Appendix K direction. Both the Appendix K criteria and the Appendix D criteria plus an evaluation of low elevation Productive Old-growth (POG) were used in evaluation. Also the small OGRs were examined to see if they still provided connectivity as the previous design did. As currently done at the project level, the old-growth matrix lands as they relate to connectivity will be further examined at the project level to disclose the effects.

The tables in the FEIS Appendix E evaluate the pre-conveyance, post-conveyance and the interagency' s biologically preferred OGR designs using the Forest Plan Appendix K and FEIS appendix D criteria. In some cases, the post-conveyance design still meets the OGR design criteria and the biologically preferred design is identical. No other designs were proposed to balance other resource considerations (Forest Plan Appendix K, p. K-2.)

This approach does not preclude that further analysis may occur during project-level analysis. One of the TAC's recommendations was to "The USFS should prioritize utilizing OGR modification processes to capture …additional young growth acres within OGRs, putting particular emphasis on adjacent landscapes, where a net gain of productive old growth habitat is possible, while maintaining and enhancing landscape connectivity."

Public Law 113-291 also amended ANILCA, Section 508, to include 152,000 acres of LUD II Conservation Areas. These areas primarily focused on protecting old-growth forest. A LUD II is a Congressionally-designated land allocation and the Land Use Designation cannot be changed except by an act of Congress. More than 31,000 of these areas were previously allocated to Development LUDs and now contribute to the Conservation Strategy.

COMMENT

CONS-18: There should be a provision and standards and guidelines prescribing that, during the OGR modification process, there should be no net loss of protected POG across the Forest.

RESPONSE

The Forest Plan includes a young-growth management approach for wildlife for adjusting OGRs if young-growth harvest is proposed within the current boundaries. The intent is that an "exchange" of young growth and old growth could be made – where the boundary of the reserve is adjusted to remove young growth and add an equivalent acreage of productive old growth. The objective of this direction would be to achieve a net increase in productive old growth acres, whenever possible. When applied at the project level, this would lead to an increase of productive old growth in the reserve network.

COMMENT

CONS-19: Forest Service should use science review process to assess the new and modified OGRs before issuing the FEIS. If the review of the modified OGRs indicates they are unlikely to meet the reserve system intent, especially in heavily-logged areas, and more old-growth logging occurs on nearby USFS land, the opportunity to create a more effective system in those areas may be lost.

RESPONSE

The reserve system has to be only on NFS lands where the USFS has jurisdiction for management of those lands. The interagency team has recommended modifications to the reserves to best meet the criteria for such reserves on remaining NFS lands adjacent to the transferred lands. The interagency recommendations for the modified reserves are included in all action alternatives. Project level reviews of old growth reserves can also occur if the interdisciplinary resource team identifies a concern about the

location or functionality of a reserve within the project area. In addition, if young growth harvest is proposed within Old-Growth Habitat LUD, an interagency team can recommend modifying the boundary to exclude young growth if additional old growth can be included for a net increase of old growth within the reserve.

Appendix K of the Forest Plan provides the procedures for modifying old-growth habitat reserves. These procedures were followed; they do not include a Science Review.

COMMENT

CONS-20: Alternative 5 should be rejected because it increases the number of watersheds that would exceed a road density greater than 1 mile / square mile by 20 percent.

RESPONSE

The Watershed Condition Framework (USDA Forest Service 2011) concluded that a watershed with a road density of less than 1 mile / square mile is considered "properly functioning." Table 3.4-5 in the DEIS indicates that currently 9.6 percent of 6th field subwatersheds exceed 1 mile / square mile road density and Alternative 5 would take that to 11.0 percent after 100 years of implementation on NFS lands. This would leave 89 percent of the watersheds on the Tongass National Forest with less than 1 mile / square mile of road after 100 years of assumed maximum harvest and road building allowed under the Forest Plan. Across all NFS lands on the Tongass, this is an average of 0.23 mile / square mile road density. When all ownerships are considered (Table 3.4-13 in the DEIS), 19.8 percent of watersheds would exceed 1 mile / square mile after 100 years of full implementation under Alternative 5, which leaves over 80 percent of the watersheds in Southeast Alaska in a properly functioning condition, and an overall average of 0.45 miles / square mile.

COMMENT

CONS-21. The EIS should include the most recent inventory of global temperate rainforest and evaluate the importance of the Tongass' intactness (DellaSalla et al 2011).

RESPONSE

This reference has been added in the FEIS.

COMMENT

CONS-22. The EIS should include an old-growth analysis by watershed.

RESPONSE

See FEIS Chapter 3, Biodiversity section. In Chapter 3, Tables 3.9-12 through 3.9-14 present the estimated percent of original productive old-growth (POG), original high-volume POG, and original large-tree POG remaining after 100 years by biogeographic province and alternative. In addition, Table 3.9-15 presents the number and acreage of intact large watersheds under existing condition and after 100 years by biogeographic province and alternative. These tables demonstrate the percentage of old growth in these various categories that will be preserved. Tongass old growth is defined as stands with trees at least 250 years of age. Also see FEIS Appendix D.

Young Growth in Audubon/TNC and T77 Watersheds (YGAT)

COMMENT

YGAT-1: The Forest Plan lacks substantive requirement to reduce or mitigate potential impacts from young-growth timber sales in these watersheds.

RESPONSE

The Forest Service may apply project-specific mitigation to reduce effects to fish and wildlife habitat, or elect to apply the 'no net loss" concept outlined in the TAC overarching principals. These measures are determined based on the specific conditions of planned and proposed sales following project-specific analysis by an interdisciplinary team. For all land-disturbing activities, BMPs from the National Core BMP Technical Guide FS-990a are applied to maintain the chemical, physical, and biological integrity of the Nation's waters. Applicable BMPs are also found in the Alaska Region Soil and Water Conservation Handbook, FSH 2509.22. Plan components from Chapters 3, 4, and 5 also apply.

COMMENT

YGAT-2: The Forest Service should recognize the exceptional fish and wildlife values of the T77 watersheds and TNC/Audubon conservation priority areas. Some recommend that they be remove from the suitable timber base altogether. The Forest Service should preserve these watersheds and make production of wild salmon, trout and steelhead their highest management priority.

RESPONSE

The Forest Service recognizes the exceptional fish and wildlife values of the T77 watersheds. These watersheds, along with watersheds in LUD II status are considered the pillar of commercial, sport, and subsistence wild salmon harvest in the region and provide a large contribution to the southeast Alaska economy. Alternative 5 identified old-growth stands within the T77 watersheds as not suitable for timber production, except for small sales after the transition is complete. If young-growth harvest is not allowed to be harvested in these watersheds, opportunities to improve habitat conditions for wildlife and fish and stand function in places that would potentially benefit from restoration work and advancement of seral stages toward old-growth conditions, would be lost.

Further, in order to transition in 10-15 years as outlined in the Secretary's Memo and brought forward in the Purpose and Need, all young-growth lands were considered. Since the age of the young-growth stands is a limiting factor, the oldest stands of young growth are being considered for harvest to facilitate the transition. If the oldest young-growth stands are not included in the earliest phase of the transition, it is highly unlikely we could meet the Purpose and Need of the amendment. Under Alternative 5, the lands inside T77 watersheds and TNC/Audubon conservation priority areas, include almost 17,000 acres of suitable young-growth that would be at least 60 years old by the end of the 15-year transition period. The Tongass Advisory Committee recognized this need to facilitate the transition, and recommended that these areas be identified as suitable for young-growth timber production.

COMMENT

YGAT-3: Should have a more Rigorous Scientific Review of Projects likely to be implemented in certain High-value Watersheds.

RESPONSE

Language in Chapter 5 of the forest plan has been edited to better reflect the intent of the TAC recommendations for the "high-value fish watersheds". Alternative 5 now includes Management Approach language explaining the agency's intent to conduct an internal scientific review with stakeholders to determine likely impact to fish and wildlife habitat from proposed young-growth timber projects that intersect with the "high-value fish watersheds" identified in Appendix B of the Final TAC

Recommendations (Forest Plan Appendix B). Project-specific analysis by an interdisciplinary team will determine if additional mitigation measures are needed.

See response to comment SPEC-39.

COMMENT

YGAT-4: Forest Service should clarify that all old-growth stands in the T77 watersheds and TNC/Audubon conservation priority areas will be protected and removed from the suitable timber base as recommended by TAC.

RESPONSE

Forest Plan Appendix B has been updated to reflect the Final Tongass Advisory Committee (TAC) recommendations. We believe that the term used on p. 13 of the final TAC recommendations – TNC/Audubon conservation priority areas – means the same as what is stated in the text on page 38 of the TAC recommendations - TNC/Audubon Core Conservation Areas. Unfortunately, these terms are a bit confusing but they both together comprise the Conservation Priority Watersheds. During the drafting of the Proposed Forest Plan, the TAC provided the Forest Service a map (project record 769_05_000771), and the legend term on that map - Conservation Priority Watersheds - includes two categories: Core Areas of Biological Value and High Value Watersheds (dark green and light green, respectively). This is what was used to identify the TNC/Audubon conservation priority areas in the analysis.

Proposed LUD changes common to the action alternatives are described in Chapter 2 of the FEIS. No other LUD changes have been made to incorporate lands not suited for timber production into the natural setting LUDs. Old-growth harvest from T77 watersheds and TNC/Audubon conservation priority areas is excluded under Alternative 5. (See FEIS Chapter 2, Alternative 5 description and Forest Plan Appendix A.) This was not clear in the DEIS and the suitability map did not show that all of these areas had been removed. The map for Alternative 5 in the FEIS clearly shows that they have been removed from the old-growth suitable base.

COMMENT

YGAT-5: The Forest Service should set up a phased approach for young-growth logging and create two phases, similar to the approach used in the 2008 Plan. Doing so would ensure that TNC/Audubon conservation priority areas could be set aside into Phase 2 for young-growth harvesting, while all other young-growth lands would be in Phase 1.

RESPONSE

In order to meet the timeline for the young growth transition as outlined in the Undersecretary's memo, all young growth lands were considered. Since the age of the young growth stands is a limiting factor, the oldest stands of young growth are being considered for harvest to facilitate the transition. If the oldest young growth stands are not included in the earliest phase of the transition, it is highly unlikely we could meet the purpose and need of the amendment.

Forest Plan Appendix B has been updated to reflect the Final Tongass Advisory Committee (TAC) recommendations regarding. TNC/Audubon conservation priority areas are discussed in Chapter 2 of the FEIS under Alternative 5, and also in Forest Plan Appendix A.

COMMENT

YGAT-6: The Forest Service should not preclude any timber harvest in the T77 watersheds. There are already too many restrictions affecting communities.

RESPONSE

Alternatives 1 through 4 considered this option.

Best Available or Relevant Science (BAS)

COMMENT

BAS-1: The Forest Service should comply with NFMA's regulatory requirements to base its decision on the best available science.

RESPONSE

The interdisciplinary team has used the best available scientific information to amend the plan and to modify the plan monitoring program to meet the requirements of the 2012 Planning Rule (36 CFR 219.12(c)). The responsible official will document how the best available scientific information was used to inform the plan decision. The record of decision (ROD) for the plan amendment will include documentation of how the best available scientific information was used to inform planning, the plan components, and other plan content, including the plan monitoring program. Further, numerous refinements and updates were made to the EIS between the DEIS and FEIS (e.g., climate change assessment, Conservation Strategy assessment).

In regards to the Tongass Old-growth Habitat Conservation Strategy, recent advancements in the fields of conservation science and landscape ecology and new knowledge of individual species' biological needs are discussed throughout the Wildlife and Biodiversity sections of the EIS, as well as in Appendix D. Many of these topics, including the importance of strong connections between aquatic and terrestrial ecosystems and upstream and downstream linkages within stream and river systems, the contribution of matrix lands to conservation, and the range of ecological functions provided by young-growth stands were identified during the original development of the Conservation Strategy for the 1997 Forest Plan and considered again during the Interagency Forest Plan Conservation Strategy Review (USDA Forest Service 2007) conducted for the 2008 Forest Plan Amendment. Appendix D of the EIS touches on some of the new science related these topic areas relevant to conservation planning on the Tongass National Forest. Information from these studies, other relevant studies and other best available science would be used to review the Conservation Strategy design if in the future, data from various sources suggest that the Conservation Strategy is no longer functioning as originally intended. However the results of the analysis in Appendix D indicate the Conservation Strategy currently functions as intended and is expected to function regardless of which alternative is selected.

COMMENT

BAS-2: The DEIS Fails to Include or Address Relevant Science.

RESPONSE

See response to BAS-1.

Air Quality (AIR)

COMMENT

AIR-1: The DEIS should evaluate health risks associated with increased utilization of biomass for energy and heat stating that NEPA requires the Forest Service to consider the health effects of federal actions. [40 C.F.R. § 1508.8]. The reason for this request was due to a citation presented stating that "[b]urning biomass could lead to significant increases in emissions of nitrogen oxides, particulate matter and sulfur dioxide and have severe impacts on the health of children, older adults, and people with lung diseases." [Exh. 50 at 5 (Vick 2011)]. Despite federal directives, the DEIS never addressed the issue of air pollution caused by wood combustion and concludes that the analysis of air quality effects in the DEIS is conclusory, misleading and fails to consider the adverse health impacts caused by wood combustion. The USFS should explain the linkage between Juneau's past exceedance in National Ambient Air Quality Standards (NAAQS) to wood combustion. And to address why the USFS concludes that the greatest risk to air quality in the region arises from cruise ship emissions in Wilderness. Additionally, scoping comments requested that the DEIS review public safety concerns with biomass combustion facilities and disclose the risk of explosions to the public.

RESPONSE

Comments suggest that disclosure of the risks to human health caused by pollutants, in particular those created by the combustion of wood projects (biomass burning or other wood burning in wood stoves) be presented more clearly. Comments also suggest the specific causes attributed to the 1990's exceedance of National Ambient Air Quality Standards in the city of Juneau be disclosed. Comments also suggest that the analysis in the DEIS inadequately evaluates the effects of air pollution on Tongass resources, in particular human health and provide some citations for us to review and consider in our analysis.

This amendment is not focused on biomass. Some portion of the harvested timber may be used in energy production as biomass but the amount and timing of such use is uncertain. Therefore, the consequences of harvesting as biomass is not a focus of the analysis. Discussion of biomass and its production of particulate and other air pollutants are identified in the FEIS Chapter 3 Air section.

Biomass boiler facilities in schools, hospitals, health clinics and office buildings, proposed in any plan by the USDA Forest Service would be required to undergo project-level NEPA analysis, which indeed would evaluate the risks to human health as a possible consequence of these types of actions. The Forest Plan Amendment, however, is not a focused project plan on biomass facilities or any other specific renewable energy proposal. The Plan Amendment provides for opportunities for any proponent of renewable energy, including the development of biomass facilities, to consider such actions through additional project-level NEPA.

With regard to the causation of exceeded the NAAQS which occurred in the Juneau area during 1990-97, the EIS indicates that the sources of pollutants are probably local and anthropogenic (Dillman et al. 2007) (see page 3-19). The exact sources of these air pollutants is uncertain since the Forest Service has no jurisdiction for monitoring on non-NFS lands. The EPA through ADEC issues air permits to industrial sources that demonstrate compliance with the Alaska Ambient Air Quality Standards, which are identical to the National Ambient Air Quality Standards (NAAQS). The primary standards were developed to protect public human health and the secondary standards to protect public welfare. Linking pollutants to specific sources would be speculative on our part; however possible sources for particulates are described in Dillman et al. (2007). Because we currently do not have an abundance of biomass boiler facilities on the Tongass N.F. they currently are considered to provide low levels of particulate into the atmosphere and are not currently contributing to levels of air pollution that would trigger exceeding NAAQS. The discussion in Chapter 3.1 concerning air pollution sources discusses cruise ship emissions in Wilderness as one of the greatest contributors to particulate into the atmosphere which currently has the greatest risk to air quality in the region. When and if biomass facilities or other additional uses of biomass are proposed on National Forest System Lands, the sources and its affects will be properly analyzed through project-specific NEPA.

The Forest Service does acknowledging that an increase in wood burning could adversely impact air quality, but has not quantitatively analyzed those impacts. Because this amendment does not propose any specific biomass or wood-burning energy development, we have no specific parameters to evaluate for any of the alternatives. EPA and ADEC have regulatory responsibility, under the Clean Air Act, for air quality related to these kinds of sources. The enforcement of the applicable regulations by these agencies is anticipated to keep any potential adverse effects within the standards for air quality; therefore we conclude that no significant indirect effects from the uses of the Tongass National Forest should occur.

Geology/Soils and Physical Setting (SOIL)

COMMENT

SOIL-1: The EIS incorrectly describes the history of Glaciation of Tongass.

RESPONSE

This section of the EIS was intended to tell the reader that the long history of glaciation shaped the landscape of Southeast Alaska. We agree that the data presented in this paragraph misses an important point, namely that by about 13,500 years ago much of southeast Alaska was ice free (Geology section, page 3-25 in the DEIS). This particular paragraph of the introduction has been in the Forest plan EIS since 1997 and was not updated for the amendment. The statement was not an “effort to halt responsible development and utilization of the forest”. A sentence has been added to this paragraph in the FEIS to clarify that by about 13,500 years ago much of Southeast Alaska was ice free.

Streams and Watersheds (S&W)

COMMENT

S&W-1: Stream surveys are inadequate and critical information concerning the stream miles by class in the whole forest is not presented. These gaps—and the failure to acknowledge or analyze them— have the result that the DEIS understates the likely effects of logging and roadbuilding on aquatic habitat.

RESPONSE

The DEIS (and FEIS) discloses that streams may be missing from the corporate layer at the forest level. During project planning, field surveys are conducted to add and correct streams to support effects analysis and ensure stream protection during project implementation according to Forest Plan standards and guidelines. Field efforts place high priority on areas with high probability of unmapped fish streams. Standard field procedures are followed (USDA Forest Service 2015c).

During project planning, field surveys are conducted to add and correct streams to support effects analysis and ensure stream protection during project implementation according to Forest Plan standards and guidelines. Field efforts place high priority on areas with high probability of unmapped fish streams. Standard field procedures are followed (USDA Forest Service 2015c). Decisions at the project level will consider the additional streams and effects. Text was added to the water section to clarify the meaning of the percent water bodies in watersheds within 300 feet of roads and the footnote on Table 3.4-1 has been revised to state that additional unmapped streams are present, as opposed to unmappable.

COMMENT

S&W-2: The DEIS presents a misleading picture of current watershed condition in areas impacted by logging.

RESPONSE

Text additions were added in the FEIS to clarify status of watersheds and the source of that information. Additional details for each watershed are available in the project record and on an interactive map available to the public at http://apps.fs.fed.us/nfs/nrm/wcatt/WCFMapviewer/

Effects to specific watersheds proposed to be harvested in the future, including young-growth harvest in RMAs outside of TTRA buffers, would be evaluated during project-specific analysis.

COMMENT

S&W-3: Standards and Guidelines for stream surveys are not implemented before decisions on road building and harvest are made, especially for small headwater streams.

RESPONSE

See response to S&W-1.

Annual BMP monitoring results summarized in the annual Forest Plan Monitoring and Evaluation reports include additional detail on the implementation of forest plan standards and guidelines for stream protections. These are available in the record.

COMMENT

S&W-4: The DEIS does not properly assess sedimentation effects of log landings.

RESPONSE

Landings in the Tongass system are generally part of the road systems, which was assessed to their effect to water quality sediment as well as fish in both water and the fish sections. Text was modified to include reference to landings when discussing effects of roads.

Fish (FISH)

COMMENT

FISH-1: Logging, particularly old-growth, adversely affects salmon species. Additionally, the TTRA buffer does not prevent harvest in Riparian Management Areas (RMAs) of class III and IV streams, including patch cuts in Alternative 5, which may affect sediment, flow and nutrient in downstream fish bearing streams.

RESPONSE

Alternatives 1, 3 and 4 would generally prevent harvest in RMAs, including Class III streams. Alternatives 2 and 5 require that treatments in RMA must achieve stream process group objectives (Appendix D). In these alternatives, some harvest in the form of thinning in young-growth RMA is proposed outside of TTRA buffers along Class I, II and III streams. A watershed analysis, as described in Forest Plan Appendix C, would be needed for implementing any alternative that proposed to enter the RMA. BMPs for all alternatives combined with the Fish and Riparian Standards and Guidelines also apply. In addition, under Alternative 5, a 100-foot no harvest buffer has been applied around anadromous lakes

COMMENT

FISH-2: Logging results in elevated stream temperatures that are detrimental to fish and conditions may worsen in the project area considering future climatic change caused stream temperature increases.

RESPONSE

The Forest Service believes that the current and Final Proposed Forest Plan Standards and Guidelines (refer to Chapter 4, Chapter 5, and Appendix D) minimize riparian harvest in order to maintain stream-side shade. Chapter 3 Water and Fish sections disclose and discuss likely effects of past and planned riparian harvest on stream temperatures. The Forest Service does not see a need for additional restrictions at the Forest Plan level. Analysis conducted under the NEPA process would evaluate site-specific resource impacts and cumulative effects from individual timber sales or other extractive activities, and adjustments would be made as needed to ensure protection of these resources.

Additional information regarding temperature effects on small streams has been added. See Chapter 3 Water.

COMMENT

FISH-3: Logging increases stream flow, which is detrimental to fish.

RESPONSE

Stream flow effects will be extremely difficult to ultimately resolve given a number of limitations including disentangling the effects of multiple vegetation and road management treatments (including young-growth harvest) that overlap in both time and space, along with potential effects attributable to climate change (Grant et al. 2008). The EIS acknowledges uncertainty with respect to the effects of timber harvest and roads on stream flows.

COMMENT

FISH-4: Logging increases sediment input in streams including from increased landslides and may be a greater issue for Alternative 5, which would allow harvest to the banks of some class III and all class IV streams.

RESPONSE

The preferred alternative would allow harvest to the banks of Class III streams in existing young-growth stands for the first 15 years following signing of the ROD. All alternatives allow harvest to the banks of

Class IV streams. For steep slopes (>72%) and Class IV streams a slope stability analysis is required (page 4-61 and 5-11) and this requirement will minimize the number of management induced landslides and sediment to stream courses.

The standards, guidelines and management approaches in Chapter 5 describe how project level interdisciplinary teams are to consult Appendix D for objectives for riparian areas (including lakes and Ponds and Class III streams) and to protect those resources while providing a commercial young-growth product. All BMPs designed to keep sediment out streams and lakes still apply. Annual BMP monitoring conducted in 2014 concluded that prescribed BMPs were mostly or fully implemented during timber harvest, road, and facilities activities and have been effective in limiting or preventing sediment transport to streams (USDA Forest Service 2015)[1]. Timber harvest within riparian areas will still need to move the stand toward old-growth conditions to meet the objectives of the RMA.

The data presented in Table 3.3.5 in the DEIS was based on an assumption that a similar rate of landslide occurrence would occur as a result of young-growth harvest as occurred as a result of old-growth harvests. The estimate is based on the best available science at this time and the DEIS (pages 3-43 and 44) discusses the factors that contribute to the uncertainty. The draft forest plan still requires a slope stability analysis for timber harvest on slopes over 72%, although the on-site analysis of slope stability is not required for young-growth stands. The DEIS page 3-43 and 44 explains why this is a reasonable approach and why harvest on slopes over 72 percent will likely become less of an issue (page 3-43). The Forest Service has no data regarding landslide frequencies as a result of young-growth harvest in southeast Alaska. Text in the Chapter 3 Water was modified for clarification.

COMMENT

FISH-5: Logging in riparian areas including outside of the TTRA 100-foot buffers reduces large woody debris to streams, affecting fish habitat.

RESPONSE

Most of the large woody debris recruited to stream channels would occur from the TTRA buffer. However, some reduction in woody debris in stream channels could occur in RMAs outside of the TTRA buffer depending on alterative. Riparian Management objectives would be maintained as proposed under Alternatives 1, 3, and 4. Alternatives 2 and 5 require that management in young growth riparian areas accelerate old-growth characteristics to improve riparian function, but would allow some harvest in young-growth outside of TTRA buffers (refer to Water section). Alternative 2 allows only for commercial thinning of up to 33 percent of stand basal area over more than 36,000 RMA acres. This Alternative would likely have additional adverse effects to fish habitat not common to the other alternatives and could result in a loss of large woody debris to portions of floodplain and alluvial fan channel types. While Alternative 5 allows up to 10 acre openings and commercial thinning totaling no more than 35 percent of the total stand acres, it is estimated to be about 900 acres of total harvested RMA area and will only occur in the first 15 years of the finalization of the Plan Amendment. With these restrictions, the overall areas affected would be small relative to the total RMA acres in the Tongass. A watershed analysis (as described in Forest Plan Appendix C) would be needed for implementing any alternative that proposed to enter the RMA.

COMMENT

FISH-6: Logging adversely affects food for salmon by allowing harvest along class III and IV streams.

RESPONSE

It is understood that much of the food supply in fish streams originates from Class III streams and a significant portion of that food source is terrestrial, entering from riparian vegetation. Alternatives 1, 3 and 4 would generally prevent harvest in RMAs, including Class III streams. Alternatives 2 and 5 require that treatments in RMA must achieve stream process group objectives (Appendix D). In these alternatives,

[1] USDA Forest Service. 2015. Annual Monitoring and Evaluation Report for Fiscal Year 2014. R10-MB-770. Ketchikan, Alaska. Available online at: http://www.fs.usda.gov/detail/tongass/landmanagement/planning/?cid=stelprd3856205

some harvest in the form of thinning in young-growth RMA is proposed outside of TTRA buffers along Class I, II and III streams. A watershed analysis, as described in Forest Plan Appendix C, would be needed for implementing any alternative that proposed to enter the RMA. BMPs for all alternatives combined with the Fish and Riparian Standards and Guidelines also apply. As is noted in the Fish Section of the EIS, while changes to riparian vegetation on fishless streams will alter the composition of the food sources transported downstream, the overall effect on downstream fish streams over the long term is not clear, as actions near these small streams may have additional effects on stream production (Wipfi and Gregovich 2002).

COMMENT

FISH-7: Forest Service must retain or improve existing protections in both riparian and shoreline areas to protect salmon.

RESPONSE

The proposed plan components and BMPs would adequately protect fish and water resources on the Tongass National Forest and additional restrictions at the Forest Plan level are not necessary. Analysis conducted under the NEPA process would evaluate site-specific resource impacts and cumulative effects from individual timber sales or other extractive activities, and adjustments would be made as needed to ensure protection of these resources. The amount and location of land available for timber harvest varies by Alternative. Plan components protect watershed resources and watershed analysis will be conducted where conditions indicate the need.

COMMENT

FISH-8: Road construction in riparian areas increases stream temperature.

RESPONSE

The EIS Water and Fish sections discussion acknowledges and addresses the effects of roads and harvest on water quality, stream flow, and watershed condition. The EIS acknowledges that risks to aquatic resources would increase with more harvest and associated road construction and would vary by alternative (refer to the Fish and Water sections including additional text to the water section addressing potential temperature effects of roads). Site-specific evaluations, and if needed based on standard and guidelines, watershed analysis would be conducted for all timber harvest proposals to evaluate if specific adverse effects would occur and identify how best to modify the actions to minimize these specific effects.

COMMENT

FISH-9: Roads increase stream flow and peak flow timing, impacting stream channels and degrading fish habitat. The Forest Service should adopt a plan that involves fewer newly constructed road miles.

RESPONSE

The DEIS discusses and analyzes the effects of harvest and roads on streamflow on pages 3-64 through 3-68. The cumulative effects of roads and timber harvest on streamflow are discussed on pages 3-77 through 3-80.

COMMENT

FISH-10: Roads increase sediment entering streams and adequate stream buffers would reduce this sediment input.

RESPONSE

The EIS acknowledges the risks of roads to streams and the need to control sediment delivery to water bodies. Standards and guidelines for road construction have been developed to keep these risks at low levels with measures such as avoiding steep, unstable slopes, taking roads out of use after harvest is complete, including removal or stormproofing culverts. Recent monitoring demonstrates that the

maintenance program practices are effective in minimizing sediment transport from roads (USDA Forest Service 2015). Potential sediment effects are evaluated on a site-specific basis during the NEPA evaluation of timber sales and other projects, and as needed adjustments will be made to reduce the risks and ultimately the effects of roads to streams and control sediment delivery to water bodies.

COMMENT

FISH-11: Habitat access and fish passage at road crossings of streams must be considered and adequately monitored.

RESPONSE

Providing for fish passage at stream and road intersections to ensure fish migration is an important consideration when constructing, reconstructing, or storing forest roads. Standards and Guidelines direct specialists to avoid location of roads near fish-bearing streams and to seek locations that avoid fish streams, crossing streams when other locations are not feasible and fish habitat can be protected. All fish stream crossing installations in all action alternatives will be designed to meet fish passage standards. The Tongass National Forest strives to incorporate an adaptive management process to achieve the desired management goals and objectives for the fish passage at road crossings program. The adaptive management approach includes a continuous process of using, or developing, state-of-the-art assessment and restoration techniques followed by monitoring and adjustment of the techniques accordingly.

The Forest Service plans to continue to monitor all new and recent culvert installations in fish streams. A subsample of culverts installed from 1998 to present in fish streams are monitored annually. Only non-bottomless culvert installations are evaluated since they are more problematic for fish passage than bridges and bottomless culverts which routinely do not impede fish passage.

Furthermore, the transition to young growth will be managed at a pace that allows operators to adjust, adapt, and develop markets for new products. The duration and scale at which old growth harvest will be needed is unclear. Factors such as the role of State and private land in contributing wood supply to a viable industry; the availability of suitable young growth that is mature and economic to harvest; export and domestic processing policies; and fluctuations in domestic and world markets for forest products must be considered but are unpredictable, and will influence the timeframe for transition.

COMMENT

FISH 12: The Forest Service must consider options that would lessen road-building and protect salmon from its serious, varied harms.

RESPONSE

In the DEIS- Transportation, affected environment page 3-273 there is a description of the intent of the road construction to provide access to NFS lands. As mentioned in the environmental consequence section, page 3-275 the Forest will implement the Best Management Practices to protect water quality. The potential effects to the resources such as plants and fish are discussed in the subject resource sections. Relative to concerns associated with invasive plants, in the Plants, Environment & Effects section on page 3- 156 there is a discussion about the potential effects from road construction. This section mentions that the potential effect on risk of increased invasive plants as inferred from the amount of anticipated soil disturbance associated with alternative 5 would be intermediate relative to the other alternatives. There is a discussion in the cumulative effects section relative to invasive plants on pages 3-159- 3-160. In the end of this section the intent of the application of mitigation through the standards and guidelines as well as ongoing invasive control measures will contribute to minimize the cumulative effects of road building. The environmental effects relative to water are addressed in the section starting on page 3-49 and specific description relative to roads and road construction starts on 3-65. This section examines the miles of projected road construction relative to road densities as well as projected construction and reconstruction in beach/ estuary areas and riparian management areas. In the summary of this section on page 3-77, the analysis concluded that alternative 5 would have little overall effect to water quality in comparison to the current condition. The discussion of the cumulative effects of water

associated with roads starts on page 3-77. In this section, the Forest states that the application of the Best Management Practices will moderate the effect of the proposed action. In reference to details about the cumulative increase of estimated road miles is included on page 3-79. The environmental effects to fish are addressed starting on page 3-97 and a description of the fish and aquatic resources as well as streams and watersheds follows. Mention of roads and associated impacts is included on page 3-104, culvert replacements and removals at road crossings on page 3-109. Specific discussion of fish passage across roads is included on page 3-114- 3-115 and details associated with the number of stream crossings by alternative is displayed. Detailed description of alternative 5 and the potential impact on riparian management areas is included on page 3-123.

COMMENT

FISH 13: Inappropriately designed or located hydroelectric projects harm salmon.

RESPONSE

The analysis presented in this EIS is programmatic and provides overall Forest-wide direction. Project specific analyses are conducted for specific projects, such as hydropower developments. Project-level analyses quantify all the impacts—beneficial and adverse—of a proposed project. Potential impacts may include impacts to fish. Analysis conducted under the NEPA process would evaluate site specific resource effects and cumulative impacts from hydropower developments, and adjustments would be made as needed to ensure protection of resources.

Additional information has been added to the Fish section of the FEIS under the Renewable Energy Development subsection.

Chapter 5 of the Forest Plan includes the following renewable energy standard for fish:

“Assure that renewable energy projects continue the productivity of existing fish populations and habitat.”

COMMENT

FISH 14: The Forest Service should consult with the National Marine Fisheries Service on Essential Fish Habitat.

RESPONSE

The reasons for not consulting with NMFS regarding EFH is provided on page 3-125 in the DEIS. The EFH assessment and NFMS consultation will occur at the project scale for projects that affect essential fish habitat.

COMMENT

FISH-15: Climate change poses a serious threat to salmon that could be exacerbated by proposed actions in the Draft Forest Plan.

RESPONSE

The Forest Service has modified the Fish section discussion on climate change. We believe the current discussion of effects of climate change on fish resources and their habitat is adequately addressed in this section as revised.

COMMENT

FISH 16: Forest Service should measure the economic contributions of salmon produced on the Tongass.

RESPONSE

This request is beyond the scope of this Forest Plan Amendment.

COMMENT

FISH-17: One commenter noted that the DEIS overstates log transfer and log storage facilities effects on marine habitat, while another indicated that LTF facilities assessment was incomplete inaccurate and did not consider the current and future effects of these facilities on the marine fish and habitat conditions. It was also noted that the considered actions should be addressed in an Essential Fish Habitat (EFH) assessment.

RESPONSE

Explanation of need and potential number of LTFs is included in the Transportation Section of the FEIS. The effects of LTFs on marine fish, shellfish and habitat conditions was modified, expanded and presented in the Fish Section of the FEIS. The analysis includes further descriptions of mitigation and monitoring actions, state law requirements, and Forest Service limitations in place to protect marine resources from LTF and log storage sites and notes that future development of a substantial number of new LTF facilities is unlikely considering projected future harvest. The reasons for not developing and EFH analysis at this planning level is presented in the Fish section.

COMMENT

FISH-18: The Forest Plan should address road long-term road maintenance obligations under the CWA exemption for construction and maintenance of forest roads. It is not enough to only consider the initial construction of a road, and treat BMP violations that emerge later as merely part of an existing condition that are unrelated to any project decision.

RESPONSE

The DEIS/FEIS adequately discloses the effects of roads on fish passage and BMP compliance. The Forest Service plans to continue to address past culvert problems as funding is available. Determining funding levels is outside the scope of this Forest Plan Amendment EIS. Current standards and guidelines and Forest Service Handbook direction for culvert installation have requirements to ensure fish passage is provided when fish are present at the crossing areas. All road construction and reconditioning will be completed in conformance with Forest Plan Standards and Guidelines and best management practices (BMPs). Recent monitoring demonstrates that the current maintenance program practices are effective in minimizing sediment transport from roads (USDA Forest Service 2015)

As is stated in the DEIS (and FEIS) the Forest Service considers fish passage to be an important priority and has an ongoing program to eliminate or replace culverts that do not provide passage. Information on the status of the current culvert inventory relative to fish passage can be found in the Fish section of the Draft and Final EIS. The number of potential stream crossings identified in the EIS provides a relative approximation of the potential number of culverts by alternative (Table 3.6-4 on DEIS page 114-115); an exact number of future culverts cannot be determined prior to site-specific analyses. The exact number of culverts would be determined at a project level and the potential effects would be addressed as part of the project-specific NEPA analysis at that time. The Forest has a substantial database that identifies the status of nearly all existing fish stream – road crossings and includes detailed fish passage information (available in the project record).

COMMENT

FISH-19: The analysis of the effects from road crossings, both new and reconstructed, on fish passage and associated stream sediment is deficient in the DEIS.

RESPONSE

Additional information and clarification has been added to the Fish section of the Final EIS discussing risks to streams and fish habitat from road reconstruction including stream crossings. The Forest Service agrees that providing for fish passage at stream and road intersections to ensure fish migration is an important consideration when constructing, reconstructing, or storing forest roads. Current standards and guidelines direct specialists to avoid location of roads near fish-bearing streams and to seek locations that

avoid fish streams, crossing streams when other locations are not feasible and fish habitat can be protected. All fish stream crossing installations in all action alternatives will be designed to meet fish passage standards (refer to references cited in https://www.researchgate.net/publication/265814797_Road_Surface_Erosion_Part_1_Summary_of_Effects_Processes_and_Assessment_Procedures for further information).

COMMENT

FISH-20: The DEIS fails to recognize that damage to fish habitat means loss of fish production and harm to the fishing industry.

RESPONSE

See response to FISH-1. Effects to fish populations from future actions cannot be directly quantified given the number of outside variables, such as ocean conditions and population fluctuations. However, past, present and future actions are discussed by quantifying factors known to have increased risk to fish habitat. All of the proposed alternatives have a substantial number of measures that would be implemented during timber harvest to protect fish habitat, many of which were not in place during most of the past timber harvest.

COMMENT

FISH-21: The DEIS does not clearly present effects to fish populations and watershed conditions.

RESPONSE

The DEIS/FEIS adequately discloses and discusses the effect of each alternative, including relative to road-related parameters, in the Water and Fish sections of Chapter 3. These and other site-specific variables would be evaluated more precisely during project-level planning.

COMMENT

FISH-22: Fishing, largely commercial, has devastated populations of the wild salmon and steelhead in our rivers throughout Southeast Alaska.

RESPONSE

The FEIS provides baseline information on commercial fish harvest, including past harvest in Chapter 3 Fish. In Chapter 3 Wildlife, the FEIS acknowledges that the amount of human activity in the marine environment associated with Forest management activities is only a fraction of the total amount of human activity occurring in the marine environment. Some of the other activities include commercial fishing, sport fishing, hunting, subsistence, tourism, and mariculture. Assessing the overall effects of past commercial fishing on wild populations throughout Southeast Alaska is outside of the scope of this amendment.

Riparian (RIP)

COMMENT

RIP-1: No-cut buffers should apply to all anadromous water bodies, including lakes, ponds, and wetlands.

RESPONSE

All alternatives provide old growth no-harvest buffers along Class I, II, and III streams. TTRA directs that no commercial timber harvest is allowed within a minimum of 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream. RMAs outside of TTRA are protected in accordance with the intent of the Anadromous Fish Habitat Assessment (1995), through application of the direction contained in Riparian Management Area Standards and Guidelines (Appendix D) and through application of BMPs. Riparian buffers vary in width, depending on site-specific conditions, including stream class, channel type, and the risk of windthrow. The areas identified in the comment are generally included in the riparian buffers.

In reference to young-growth outside of TTRA buffers, Alternatives 1, 3 and 4 would generally prevent harvest in RMAs. Alternatives 2 and 5 allow only for commercial thinning in RMA's with maximum removal varying from 33 percent (Alternative 2) to 35 percent with created openings (< 10 acres) allowable. Commercial thinning in Alternative 2 would occur over a majority of all the available young-growth RMA areas. Alternative 5 commercial thinning is limited in area based on model assessment. Forest Plan Standard S-YG-RIP-02 constrains young-growth harvest in these areas to a one-time only entry and to the first 15 years unless best available scientific information shows that additional entries are: a) warranted, and b) meet the LUD objectives. However, the harvest prescription is less restrictive. Under all alternatives, any commercial harvest in RMAs (excluding TTRA buffers) must be compatible with direction contained in Riparian Management Area Standards and Guidelines (Appendix D). A watershed analysis would be required for implementing any alternative that proposed to enter RMA. BMPs combined with the Fish and Riparian Standards and Guidelines would also apply. Every project and activity must be consistent with the applicable plan components, including the desired conditions. (36 CFR 219.15(d))

In addition, under Alternative 5, a 100-foot no harvest buffer has been applied around anadromous lakes.

COMMENT

RIP-2: The language of TTRA mandates buffers of "at least" 100 feet and the effect of an RMA would seem to be widening that buffer.

RESPONSE

Forest Plan Appendix D provides a detailed description of the standards and guidelines applicable in Riparian Management Areas, including the requirements of TTRA.

COMMENT

RIP-3: The proposed action is concentrating timber production in the most valuable areas. Targeting riparian areas for timber harvest will use and develop legacy roads and landings that should be allowed to continue their natural path to restoration, especially in floodplains and on alluvial fans. Harvesting in riparian areas will affect LWD recruitment, sediment delivery, and hydrologic connectivity.

RESPONSE

See response to FISH-5 and FISH-10. The DEIS/FEIS discloses these effects, which must also be considered at the project level. Under all alternatives, any commercial harvest in RMAs must be compatible with direction contained in Riparian Management Area Standards and Guidelines (Forest Plan Appendix D). A watershed analysis (Forest Plan Appendix C) would be required for implementing any

alternative that proposed to enter RMA. BMPs combined with the Fish and Riparian Standards and Guidelines would also apply.

The DEIS acknowledges that existing legacy roads would be reconstructed. However, it is unlikely that many of the original valley bottom (floodplain and alluvial fan) legacy roads would be used to access timber because of the risk to productive fish habitat and cost of reconstruction. This would be evaluated at the project-scale.

Botanical Resources (BOT)

COMMENT

BOT-1: Sensitive Plants: The USFS should provide more detail in the Forest Plan Amendment regarding the largest population of one sensitive plant, lesser round-leaved orchid, and the recent monitoring results indicating a decline in known sightings within the Big Thorne Project area on Prince of Wales Island. The USFS should also address climate change as a threat to the species. The FEIS should more specifically address these concerns and the body of literature related to this sensitive plant.

RESPONSE

Forest Service policy requires that a review of programs and activities be conducted to determine their potential effect on threatened and endangered species, species proposed for listing, and Regional Forester-designated sensitive species (FSM 2670.31-2670.32). The Forest Service has prepared a Biological Evaluation (see FSM 2670.3) for Plants for the Forest Plan Amendment (see Forest Plan Amendment Planning Record) that presents the analysis and determination of effects for the Forest Service sensitive species, including the lesser-round leaved orchid. Preparation of a Biological Evaluation (BE) as part of the National Environmental Policy Act (NEPA) process ensures that sensitive species receive full consideration in the decision-making process.

Sensitive plants are those plants identified by the Regional Forester for which population viability is a concern on National Forest System (NFS) lands within the region. A viability concern is identified by either a significant existing or predicted downward trend in population numbers or density, or a significant existing or predicted downward trend in habitat capability that would reduce a species' existing range in the planning area. For forest planning purposes, a planning area is one or more identified National Forest(s) (FSM 2605).

The analysis area for the Plan Amendment Plant BE is the Tongass National Forest (i.e., the plan area), which includes all biological populations existing in whole or in part of the plan area. Because population viability is evaluated at a Forest-level, we considered all known occurrences of the lesser round-leaved orchid throughout the plan area, which includes a larger land base than the analysis conducted for the Big Thorne Timber Sale (i.e., Big Thorne project area).

Recent population mapping of all occurrences of the lesser round-leaved orchid by the Alaska Natural Heritage Program conducted in 2015 using national mapping standards and definitions of populations[2] resulted in 61 distinct populations. Of the total area occupied by the 61 known populations, 44 percent is located within non-development LUDs and 56 percent is located within development LUDs (USDA Forest Service 2015).

We acknowledge that approximately 50 percent of the known occurrences of lesser round-leaved orchids occur on Prince of Wales Island. Therefore, half of the known occurrences exist elsewhere on the Tongass. The largest occurrences are concentrated in east-central Prince of Wales Island near Thorne Bay, AK. Other concentrations are on western Revillagigedo Island, Gravina Island, and southern Etolin Island. The northern limit of known occurrences on the Tongass is on Wrangell Island. (USDA Forest Service 2015).

A recent pilot monitoring of population trend for this species on Prince of Wales Island suggests a potential decrease in population density of 57 percent in a two-year monitoring period (USDA Forest Servie 2015). The severity of the potential downward trend emphasizes the need for continued monitoring of lesser round-leaved orchid to understand whether the short-term pattern observed suggests a possible concern about the long-term persistence of this species on this portion of the Tongass. Factors related to a potential downward trend are uncertain and may include a this species' inherent dormancy (and therefore cryptic nature); mycorrhizal associations of the plant and soil; herbivory; changes in soil

[2] Populations are defined differently than occurrences. Rare and sensitive plant occurrences documented in the Tongass National Forest database do not always correspond to the definition of a population.

moisture regime over the long term as a result of long-term climatic variation; management impacts, such as changes in light and soil regimes as a result of timber harvest and road construction, among other factors. Furthermore, the monitoring sample size was small, resulting in high variation among the sample plots. A larger number of sample plots would be needed to reduce this variation. Thus, we have a limited ability to make robust conclusions regarding trends indicated by the monitoring results. Because monitoring is focused on a small sample of known locations, which are limited to only a portion of the Forest over a two-year monitoring period, inferences regarding downward trends may only apply to populations on the portion of Prince of Wales Island where monitoring has occurred. Current monitoring, does not sample populations across the full range of this species in the plan area and; therefore, should not be used to make accurate inferences as to this species' viability status across the Tongass.

Substantial timber harvest and road construction has occurred within development LUDs within the range of this species on the Tongass. The Old-growth Conservation Strategy provides for large reserves of old-growth habitat, in particular within the non-development LUDs; resulting in conserving at least 40 percent of the known populations of lesser-round leaved orchid and their habitat across the Forest.

Key threats to this species and its habitat in the development LUDs continue to be impacts from timber harvest and road construction. These threats were analyzed in Chapter 3 of the DEIS (pages 3-142 through 3-159) and in the Draft Plant BE (see Forest Plan Amendment Planning Record). Several large-scale harvests of mostly mature to old-growth timber are currently being planned within the range of this species. If implemented, these projects could impact a substantial amount of habitat and known occurrences. However, Forest-wide standards and guidelines in the approved Forest Plan (USDA 2008b, page 4-41) have been implemented in current and on-going project NEPA analysis and have provided protection of many lesser round-leaved orchids occurrences by buffering and avoiding known occurrences during timber layout for several timber sale areas; illustrating a concerted effort to avoid and minimize impacts to known occurrences from timber harvest and road construction. Continued implementation of the standards and guidelines are fully anticipated for the life of the Plan Amendment and therefore, impacts will be minimized.

Predicted increase in average temperatures in southeast Alaska due to climate change could theoretically expand the range of the lesser round-leaved orchid and other sensitive plants northward on the Tongass. Recent collaboration with the Alaska Natural Heritage Program will provide the Tongass with better information on future climate change scenarios associated with several sensitive plants (work in progress). Until we receive this work on species assessments and the associated climate change scenarios, the future expansions or contractions in sensitive plant ranges within the Planning Area is uncertain. Unlike the research and findings related to the effects of yellow-cedar due to climate change (Hennon et. al. 2016), no specific work has been done on any of the sensitive plants in Region 10 related to climate change impacts on their distribution and extent.

Fragmentation of habitat due to past and potential future management activities could inhibit the ability of lesser round-leaved orchid and its habitat to adapt or migrate. As the level of old-growth harvest decreases under this Forest Plan's transition period, fragmentation will become less of a concern. The lesser round-leaved orchid is also subject to browsing or grazing by a number of herbivores, but the effects of herbivory on the Tongass populations is currently not known. Collection or trampling by recreationists is likely to be a minor threat, since the flowers are small and the plant can be difficult to see in its shady forest habitat. Additionally, the rarity of this species across its range may be at least partially due to the rarity of its pollinators.

We recently evaluated the lesser-round leaved orchid in light of the Tongass old-growth Conservation Strategy and our most recent information on the numbers of occurrences within the plan area (USDA-FS 2015). We concluded that with 44 percent of their population areas occurring within non-development LUDs, combined with the on-going and active implementation of 2008 Forest Plan direction in this Forest Plan for avoiding and minimizing impacts to this species, that current science evidence does not indicate a substantial concern for the capability of lesser round-leaved orchid to persist over the long-term in the Tongass plan area (USDA Forest Service 2015).

Furthermore, in our evaluation of the direct, indirect, and cumulative effects as required through the BE process, we considered timber harvest and road construction – the two management actions identified in

this Plan Amendment NEPA analysis as most impacting - and conclude that the consequence of adverse effects on currently unknown and known occurrences in the Tongass would be low because approximately 40 percent of the known occurrences are not currently threatened by proposed management activities. In addition, Forest-wide standards and guidelines under all alternatives would consider protection to minimize impacts to known occurrences of this species and new occurrences of this species located during project surveys. Because, at the most, approximately 17 known occurrences are expected to be within old-growth harvest units, and another 29 known occurrences are expected to be within young-growth harvest units, out of the 291 distinct occurrences on the Tongass, there would be a relatively low level of risk to this species' viability. Because of this plant's abundance outside the Tongass no alternative would result in a trend toward federal listing (see the Biological Evaluation for Plants in the planning record, USDA 2016)

COMMENT

BOT-2: The DEIS needs to provide more detail about Forest Service plans to treat invasive plants – particularly the use of herbicides.

RESPONSE

Currently the Forest uses over 30 specific mitigation measures for invasive plant prevention and control for all management actions, ranging from timber sale programs, transportation planning and maintenance programs, renewable energy development, recreation and wilderness management and other special uses. Mitigation measures are identified in a draft guidance document that is currently undergoing revision (Krosse, P. March 2014). This document follows specific guidance for prevention and control measures as described in FSM 2900 (Invasive Species Management – November 2011). Additional directives associated with integrated pest management include FSM 2070 (Native Plant Material Policy) and FSM 2150 (Pesticide Use Management and Coordination Policy), the latter of which is particular to the use of herbicides. The draft guidance document provides 38 specific best management practices (BMPs) associated with invasive plants along with several exhibits which provide more information and direction on process and methods for applying these mitigation measures.

Due to the draft status of this document, it is premature to include it in the FEIS. However, the full intent of implementing mitigation measures associated with invasive plant management is comprehensively delineated in FSM 2900, which is incorporated by reference in the FEIS.

Wildlife (WILD)

COMMENT

WILD-1: The Forest Service has not provided its assessment of wildlife viability or disclosed its reasoning and conclusions in the DEIS as it relates to well-distributed, viable populations.

RESPONSE

See response to PLR-2.

A thorough viability analysis was conducted during the 1997 Forest Plan revision. The Tongass Conservation Strategy was designed to provide enough old-growth habitat strategically placed across the Tongass National Forest to provide for viable and well distributed populations under old-growth logging for 100 years; old-growth associated species were emphasized because that habitat is what was targeted for harvest at the time. The basic Conservation Strategy of old-growth habitat reserves is still in place under this proposed amendment; no old-growth harvest is proposed in areas important to the Conservation Strategy such as old growth reserves, beach and estuary buffers, and riparian management areas.

Young-growth harvest in conservation areas (Old-Growth Habitat LUD, RMA, beach) is limited by plan components established in Chapter 5 and include: maximum opening size, maximum percent of each stand that could be harvested, a one-time entry per stand, and desired conditions to accelerate old-growth characteristics. If young growth harvest is proposed within Old-Growth Habitat LUD, an interagency biologist team will review the possibility of modifying the boundaries to exclude that young-growth in exchange for increasing the old-growth protected within the reserve boundary.

One purpose and need of this amendment is to transition to primarily young-growth harvest in about 15 years. Although old-growth harvest will still occur under the amended Forest Plan, it will be at levels lower than those analyzed under the 1997 Forest Plan and will be for a shorter duration (10-15 years) than previously evaluated (100 years). There will be a phased approach to the transition - the maximum old-growth harvest (for 10 years or so) and maximum young-growth harvest (beyond 15 years) will not be taking place at the same time. . In addition, the level of old growth harvest that occurred since 1997 has been less than the maximum anticipated in the mid-1990s viability analysis.

Standards and Guidelines in Chapter 4 also remain in place, such as designing projects to maintain landscape connectivity; nest buffers for goshawks, marbled murrelets, and herons and raptors; and den buffers for wolves.

COMMENT

WILD-2: The Forest Service should make a concerted effort to maintain remaining wildlife corridors and leave strips in heavily fragmented developed areas.

RESPONSE

One Forest-wide Goal stated in Chapter 2 of the Forest Plan is “Maintain the abundance and distribution of habitats, especially old-growth forests, to sustain viable populations in the planning area” and this is considered during project planning. In addition, Forest-wide Standard and Guideline WILD1.VI pertains to Landscape Connectivity: projects are to be designed to maintain landscape connectivity between large and medium Old-Growth Habitat reserves and other forested non-development LUDs, and young-growth treatments that accelerate old-growth characteristics should be considered in beach fringe, riparian buffers, and other lands not suitable for timber production.

In order to transition in 10-15 years as outlined in the Secretary’s Memo and brought forward in the Purpose and Need, all young-growth lands were considered. Since the age of the young-growth stands is a limiting factor, the oldest stands of young growth are being considered for harvest to facilitate the transition. Many of the older young growth stands were harvested prior to having the current standards and guidelines and other restrictions in place; these older young growth stands that will have restrictions

or limitations on harvest under the proposed Forest Plan that will contribute to protection of habitat. For example, some of the oldest young-growth stands may have unmapped streams that will require stream buffers. Some areas may occur on soils that would have harvest deferred on them under the current forest plan. These areas are expected to add structure and habitat in patches and/or corridors in many of the older young growth stands.

All alternatives provide old growth no-harvest buffers along Class I, II, and III streams. TTRA directs that no commercial timber harvest is allowed within a minimum of 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream.

See response to CONS-11.

COMMENT

WILD-3: Specific attention should be made to improve habitat conditions in ecologically important areas and emphasize timber production in intensive rotational forestry areas near mills and roads.

RESPONSE

"Include a young-growth management program to maintain, prolong, and/or improve understory forage production, and to improve habitat distribution, including future old-growth characteristics in young-growth timber stands for wildlife on lands both suitable and not suitable for timber production" is a Forest-wide Objective from Chapter 2 of the Forest Plan and is considered during project planning. At the Forest Plan level, land use designations are used to designate general areas where development such as timber harvest can occur. Site-specific information regarding economics (for example, logistics and proximity to infrastructure) and resource considerations (for example, ecological importance) are evaluated by an interdisciplinary team during project planning. Specific stand treatment objectives are also completed at the project level.

The Tongass uses intermediate silvicultural treatments to meet a variety of objectives in our young-growth stands. Precommercial thinning is the most predominant management tool prescribed to improve tree growth and stand vigor, as well as allow for more light to reach the understory, allowing a more robust and persistent understory including forage. Follow up treatments can be planned for young growth where the objective is other than long-term rotational harvest. Some of these treatments may include creation of canopy gaps, pruning and/or slash reduction. In areas of timber intensive objectives, precommercial thinning can improve the understory and stand health for the benefit of wildlife and other resources during the decades the stand is growing prior to reaching economical or ecological maturity.

COMMENT

WILD-4: The LRMP suitability determinations failed to respond to multiple use values in heavily logged biogeographic provinces on the central and southern end of the Tongass where high volume and large tree POG already have substantial cumulative impacts.

RESPONSE

The DEIS acknowledged that parts of the Forest have been logged more intensively than others, including Prince of Wales Island. The DEIS, page 3-202, states: "As development continues through timber harvest and associated activities such as roadbuilding, and community expansion, particularly in areas where extensive development as already occurred (i.e., Prince of Wales Island), maintaining connectivity and roadless refugia will become increasingly important, particularly for wide-ranging species whose distribution depends on some level of connectivity across the landscape." In addition, Tables 3.9-16, 3.9-17, and 3.9-18 show cumulative impacts by biogeographic province for total POG, high-volume POG, and large-tree POG for all ownerships across Southeast Alaska, clearly showing some biogeographic provinces with higher percentage harvest than others.

In order to expedite transition away from harvesting old growth, all young-growth lands were considered. Since the age of the young-growth stands is a limiting factor for commercial harvest, the oldest stands of

young growth are being considered for harvest to facilitate the transition, and it is necessary to harvest older young-growth stands in these areas of the Forest in order to meet the stated Purpose and Need of the amendment. This harvest also provides an opportunity to improve habitat conditions for wildlife and fish and improve stand function in places that could benefit from restoration; the opportunity to advance these stands toward old-growth conditions would be lost if young growth was not considered in previously harvested areas.

Old growth timber harvest will be limited to the Timber Management, Modified Landscape, and Scenic Viewshed LUD as is allowed under the 1997 and 2008 Forest Plans. Changes to these LUDs as suitable for old growth harvest are not proposed as part of this amendment. Legacy standards and guidelines apply to old-growth harvest in heavily harvested VCUs. To complete the transition to primarily young growth harvest, it is inherently necessary to do that young growth harvest in areas with previous old growth harvest. Roadless area direction also limits timber harvest to areas that have roads, which generally means past timber harvest.

Also see WILD-6

COMMENT

WILD-5: All alternatives would result in federal lands remaining at the stem exclusion phase which is not consistent with the need to provide long-term understory forage production.

RESPONSE

The EIS acknowledges that the management of young-growth stands for commercial timber harvest will reset the stand development process when even-aged harvest is used, transitioning older young-growth stands currently in the stem exclusion stage back to stand initiation. Young growth stands that would be harvested under the proposed amendment are typically a minimum of 65-75 years old (DEIS page 3-310), and have not yet reached the understory reinitiation stage which occurs at around 150 years of age in Southeast Alaska (Alaback 1984); Alaback also found that forests with open, patchy canopies tend to produce the most understory vegetation while those even-aged forests in the 30 – 150 year produced the least understory vegetation.

Over time, active management of these stands for commercial timber harvest (repeated entries) would delay the development of old-growth. Alternative 5 addresses this by including a one-time entry for young-growth harvest in the beach fringe, RMAs, and Old-Growth Habitat LUD during the first 15 years after Plan approval (S-YG-BEACH-02, S-YG-RIP-02, and S-YG-WILD-02) and a desired condition to accelerate old-growth conditions in these areas (DC-YG-BEACH-01, DC-YG-RIP-01, and DC-YG-WILD-01). Ultimately, all of the action alternatives would result in the maintenance of more old-growth forest across the landscape than originally assumed during the development of the 1997 Tongass Conservation Strategy.

COMMENT

WILD-6: Cumulative effects of non-federal logging heightens the need to downscale federal second growth logging. This is especially apparent in areas such as Kosciusko Island, which was acknowledged by the Forest Service in other analysis, and likely in POW and southern Revilla due to the scale of foreseeable Sealaska and Alaska Mental Health Trust logging, other smaller scale areas.

RESPONSE

The Draft EIS presents the cumulative effects of old-growth timber harvest under each alternative in Section 3.9 – Biodiversity (Table 3.9-16). As noted in the comment, the EIS describes assumptions made about future harvest on non-NFS lands. However, the EIS analysis assumed that these harvested lands never return to old-growth condition (i.e., they are conservatively assumed to make no contribution over time to the old-growth land base once harvested). This assumption also is conservatively used for existing young-growth on non-NFS and NFS lands.

The cumulative effects discussion notes that the future cumulative reduction in POG would result in increased fragmentation and loss of connectivity. It further notes, that edge effects such as shifts in species composition may reduce natural biodiversity over time by favoring some species over others and that these effects would be lessened by the action alternatives which propose a transition to young-growth harvest. Based on the analysis included in Table 3.9-16, additional discussion has been added to the Final EIS identifying where on the Tongass, these effects are most likely to occur (i.e., those areas that have experienced the most past harvest). However, more detailed, location-specific analyses of cumulative effects, such as in the Kosciusko Vegetation Management and Watershed Improvement EA referenced by the commenter, necessarily occur at the project-level where proposed harvest units can be identified and effects can be evaluated in the context of the surrounding landscape (i.e., the presence and proximity of non-NFS lands, future land exchanges, and other factors in relation to proposed harvest units or other activities on NFS lands). Any future proposed project on the Tongass would undergo its own NEPA analysis and must demonstrate consistency with the Landscape Connectivity standard and guideline. Moreover, it is possible at the project level to adjust the location of proposed actions to minimize cumulative impacts. For these reasons, the cumulative effects analysis in this EIS adequately addresses timber harvest on non-NFS lands and therefore does not warrant republication of the Draft EIS.

Also see WILD-4.

COMMENT

WILD-7: The Forest Service needs to provide more information on how young-growth management will benefit wildlife and explain what is meant by "maintain" and "improve."

RESPONSE

The 2012 Planning Rule (36 CFR 219.19) defines maintain for ecological conditions: "To keep in existence or continuance of the desired ecological condition in terms of its desired composition, structure, and processes." It also says this may be done by active or passive management or both depending on the circumstances. Although "improve" is not defined in the Planning Rule, the general definition would simply mean to make better, which in this case would be to move the habitat toward the Forest Plan desired conditions, or toward the habitat conditions needed to support a particular species if that is the objective of a specific project. Habitat preferences are discussed in the FEIS for selected species (Wildlife section) and in general terms of old-growth (Biodiversity section). It should be noted that the wildlife components of the Forest Plan remain under the 1982 Planning Rule, and specific updates to meet 2012 Planning Rule requirements are not proposed under this Forest Plan Amendment.

The transition to young-growth harvest proposed in the action alternatives would have a beneficial effect to wildlife species associated with old-growth forest by reducing the amount of old-growth timber harvest that would occur over the planning horizon. As described in Appendix D, about 400,000 additional acres of old growth will occur on the Tongass after 100 years of implementation under one of the current transition alternatives compared with the amount of old growth projected to be existing in 100 years under the 1997 Forest Plan. When developed for the 1997 Forest Plan, the Conservation Strategy was based on this assumed harvest level. This factor alone provides a tremendous benefit for those wildlife species that use old-growth habitat. Similarly, the overall level of road construction would be reduced substantially from the level assumed under the 1997 Forest Plan. Over 2,000 fewer miles of road would be developed over 100 years, which is expected to have substantial benefits for species affected by road density (e.g., wolf, marten). Finally, direct benefits of young-growth management will result by moving stem exclusion stage stands back to the stand initiation stage; this will be especially beneficial in locations with very high densities of stem exclusion stage forest. The EIS also notes in a number of locations the potential benefits of precommercial and commercial thinning and other silvicultural treatments.

COMMENT

WILD-8: The DEIS inappropriately grouped golden-crowned kinglet with early seral species.

RESPONSE

The EIS affected environment of Section 3.10 – Wildlife correctly describes the golden-crowned kinglet as being associated with old-growth interior forest conditions. The effects analysis correctly identifies this species as one that primarily nests in POG forest, and therefore could be affected by old-growth timber harvest. The statement identifying this species as being associated with early seral habitat has been corrected.

COMMENT

WILD-9: The amount of old-growth logging proposed likely violates the Endangered Species Act.

RESPONSE

The Tongass does not have any threatened or endangered species under ESA that use old-growth forests.

WILD-10. The Forest Service should evaluate the cumulative effects of logging on all lands, including State managed lands, on wildlife and habitat connectivity.

RESPONSE

Cumulative effects to wildlife considered in Chapter 3 Wildlife, including evaluating deer habitat capability from all land ownerships. When combined with other management activities occurring on non-NFS lands, all alternatives would produce additional impacts associated with continued old-growth harvest to species for which this forest type is optimal habitat, such as goshawks, marten, mountain goats, red squirrel, red-breasted sapsucker, hairy woodpecker, brown creeper, and bat species. However, these declines in habitat (and associated effects such as fragmentation) would be lessened to some extent through the transition to young-growth harvest on NFS lands under Alternatives 2, 3, 4, and 5.

COMMENT

WILD-11: Commercial thinning is not beneficial to wildlife or their habitats. Second growth stands should be allowed to return to old growth stands in order to protect wildlife.

RESPONSE

Additional text has been added to the Final EIS to acknowledge that although research has shown that the removal of commercial-sized trees can promote tree growth and understory vegetation development, there remains some uncertainty about the effectiveness of young-growth treatments in benefiting wildlife

COMMENT

WILD-12: Logging in beach fringe, riparian areas, and old-growth reserves should be prohibited, or at least deferred for 15 years to protect sensitive avian species. Literature related to the effects of timber managed on avian species is limited in the EIS, and additional references should be added. Furthermore, the Marbled Murrelet (*Brachyramphus marmoratus*) should be considered in the forest planning.

RESPONSE

The potential adverse effects to wildlife associated with young-growth harvest in the beach and estuary fringe, RMAs, and the Old-growth Habitat LUD are discussed in the Wildlife section and more broadly, in the context of the Forest Plan conservation strategy, in Appendix D of the EIS. The EIS analysis includes alternatives which do not include harvest within the beach and estuary fringe, RMAs, and/or the Old-growth Habitat LUD.

The marbled murrelet was one of the species selected for detailed evaluation during the development 1997 Forest Plan conservation strategy. For the 1997 Forest Plan, a series of panel assessments were conducted for a select group of species, including the marbled murrelet (Smith 1996), to evaluate the likelihood that various plan alternatives would maintain an abundance and distribution of habitat sufficient

to support viable and well-distributed populations across the planning area over the planning horizon. The panel assessment process was designed to provide the context for, and guide the development of, the Forest Plan Conservation Strategy. The results of the panel assessments are included in Appendix N to the 1997 Forest Plan FEIS (USDA Forest Service 1997b) and summarized (and supplemented with new information) in Appendix D of the 2008 Forest Plan FEIS (USDA Forest Service 2008b). A more detailed discussion of the marbled murrelet has been added to the Final EIS including an additional discussion of viability, drawing from the findings of the 1997 panel assessments has been added to the Final EIS. Specific Forest Plan components for this species are not proposed under this focused Forest Plan Amendment.

COMMENT

WILD-13: The EIS underplays the importance that deadwood (both standing and on the ground) has to wildlife. Furthermore, the EIS should consider the effects that forest management would have on all endemic avian subspecies in Southeast Alaska that may be restricted to a limited area (e.g., Swainson's Thrush and Song Sparrow), as well as Marbled Murrelet. In addition to protecting the 100 acres surrounding goshawk nests, the EIS should adopt guidelines for conservation within the projected goshawk foraging territory.

RESPONSE

The ecological values of young-growth stands are discussed in the Wildlife Section of the EIS and in Appendix D. The marbled murrelet was one of the species selected for detailed evaluation during the development 1997 Forest Plan conservation strategy. Additional discussion of this species has been added to the Final EIS. As noted in the comment, many species rely on habitats within the beach and estuary fringe. Effects of young-growth harvest on a subset of wildlife species, representative of others with similar habitat characteristics, is included in the Wildlife section including a discussion of endemic species. At the project level, additional endemic species could be addressed in detail taking into account site-specific landscape characteristics and species of greatest conservation need. These would include additional endemic species limited to certain portions of the Alexander Archipelago. Regarding goshawks, no additional changes in goshawk standards and guidelines are proposed under this Forest Plan Amendment. The DEIS statement about monitoring is in reference to the Tongass Monitoring and Evaluation Program; although the program is concurrently undergoing review, no changes are proposed under this Forest Plan Amendment.

See response to WILD-12

COMMENT

WILD-14: The productivity of thinned forests can diminish after 20-30 years following thinning treatment. The longevity of treatments should be considered when modeling the benefits of these treatments on deer habitat, as multiple treatments over time may be necessary to maintain adequate wildlife habitat.

RESPONSE

The interagency deer model does not have the capability of taking into account different types of young-growth treatments. Therefore, it is conservative in that it does not account for the benefits of young-growth management over time, including methods such as pruning that might extend the longevity of young-growth treatments. However, these benefits are described qualitatively in the discussion in the Wildlife section under Deer. A statement has been added to the final EIS disclosing that the forage in clearcuts is of lower nutritional quality than that of old-growth forest.

Deer (DEER)

COMMENT

DEER-1: Forest Service should avoid projects that are likely to reduce deer populations in areas where deer density is already below Forest Service standards.

RESPONSE

An interdisciplinary team of resource specialists reviews possible effects of the project during project specific analysis, including changes in deer habitat. That analysis includes site-specific and landscape factors at an appropriate scale for each species. Each project implemented under the amended plan must document in the project decision how the project is consistent with the applicable plan components, including standards and guidelines.

No changes are proposed to Chapter 4 standards and guidelines for deer density. WILD1.XIV.A.2 is a guideline to ensure consideration and evaluation of deer habitat needs during project planning, not a bare minimum deer density requirement for all agency actions. Use of the words “where possible” and “generally considered” convey that this is not an absolute requirement: “Provide, where possible, sufficient deer habitat capability to first maintain sustainable wolf populations, and then to consider meeting estimated human harvest demand. This is generally considered to equate to the habitat capability to support 18 deer per square mile (using the habitat capability model outputs) in biogeographic provinces where deer are the primary prey of wolves.” In addition, it goes on to say the biologist should consider additional local factors rather than relying solely on model outputs. Many places on the forest may not meet this number naturally and there are places where deer are not the primary prey item. This standard and guideline, while important, is only one part of a comprehensive strategy for maintaining population viability.

COMMENT

DEER-2: Deer model results were not presented by WAA, denying the public a clear view of the Plan’s impact. Table 3.10-10 is mislabeled with a title saying that the data in the table is by WAA, when in fact it is by province.

RESPONSE

This information was summarized in the FEIS and is available by WAA in the project record. The title of Table 3.10-10 has been corrected.

COMMENT

DEER-3: The DEIS should present deer model results for all lands; not just for NFS lands only. This practice of limiting the analysis of such impacts to only federal lands conceals impacts because the indirect effect of the alternatives acts on the environment as a whole regardless of land ownership, even if the direct effect is just on the federal land. (NGO2-061)

RESPONSE

The Tongass National Forest is the largest land owner in Southeast Alaska. Non-National Forest (NFS) ownerships lands are not governed by the same management direction as the Tongass National Forest (Forest Plan standards and guidelines, for example). In addition, the Forest Service does not maintain habitat data for all of the non-NFS lands in Southeast Alaska to be able to enter accurate data into the model. For these reasons, a zero value is assigned to all non-National Forest ownerships to provide a worst-case analysis. In addition, non-NFS lands are not within the jurisdiction of the Forest Service to determine what activities will take place or when / where those activities will occur (if any). Therefore, results are presented for NFS land only. Although reasonably foreseeable activities on other lands can be generalized (DEIS page 3-260 and Appendix C) to include probable timber harvest, road building, residential development, mining, recreation and tourism, specific size and timing of such activities over the planned 100 year harvest rotation are not known. As an example, although an Alaska Mental Health

Trust land exchange is proposed, various alternatives are being considered and a selected alternative is years away; therefore a site specific analysis under a separate NEPA is considered to evaluate effects of all alternatives of that proposal.

Table 3.10-15 in the FEIS shows deer density across all ownerships. The habitat capability outputs are still based on NFS land only but the density calculation is now shown for both NFS and all lands.

COMMENT

DEER-4: The DEIS violates NEPA by presenting deer model results as percent change, which is poor quality, misleading information because it conceals both the state of the environment and the impacts upon it. Deer model results should show an alternative with an immediate end to old-growth logging and a 250 year output.

RESPONSE

The deer model is used as a relative comparison tool between alternatives and at the Forest scale represents a general trend across the planning area. Percent change is used since these are modeled results, not actual deer known to inhabit the forest. Differences among deer habitat capability (theoretical deer numbers) do occur in the alternatives but the differences are small, as displayed in Table 3.10-10 in the DEIS.

The Forest Plan amendment is proposing changes primarily to young growth harvest; stands that would be proposed for harvest are assumed by the deer model to currently be in the stem exclusion phase because they are all over 25 years old. The deer model does not assign differing values to varying harvest levels (thinning versus clearcutting) so the model assumes that harvest of a stand will reduce the winter value to zero or nearly zero. In this case, some alternatives propose clearcutting while others propose more thinning of young growth stands. Therefore modelled differences between alternatives, especially when looking forest-wide or by biogeographic province, seem slight.

Programmatic planning at the forest level also includes evaluation of all lands suitable for harvest so the modeled habitat capability includes more harvest than is likely to occur once field reconnaissance and resource analysis are completed at the project level. At the project level, a site specific analysis can refine the projected effects of the project, including the specific stands proposed for harvest and what harvest prescriptions would be used, information on project area wildlife use and habitat conditions, and juxtaposition of those stands to each other as well as to known travel corridors.

The reason for the slight increase in the short-term is the harvest of stem exclusion phase stands which have minimal to no value in the model; the stand initiation phase these stands would be in for about the first 25 years post-harvest are modeled to have varying levels of forage value depending on other components of the model such as aspect and average snow levels. The deer model is used as a comparison tool between alternatives and represents a general trend. A 100-year rotation length is modeled, so both the 25 year post harvest (stand initiation) and 100-year post harvest (stem exclusion) phases are presented for comparison for each alternative considered in detail. The Forest Plan is intended to provide direction for 10-15 years but the model assumes the same direction (standards and guidelines) and maximum harvest rates for the full 100 years. In addition, all non-NFS lands are considered by the model to have zero winter habitat value for deer, providing a conservative estimate of habitat capability. A 250-year column would represent a return to old-growth conditions and is not necessary to present in the table as it would be similar to the original habitat capability.

All alternatives that were considered in detail were analyzed using the deer model. In depth resource analysis, such as calculating habitat capability, is not done for alternatives considered but eliminated from detailed study. Chapter 2 of the FEIS, provides the reasons for eliminating alternatives, which includes an alternative for the immediate end to old-growth logging and another for transition within 5 years.

COMMENT

DEER-5: Managing forage and habitat for the Sitka Black-tailed deer would have a positive effect on the Wolf. The Forest Service should specify an objective for improvement in winter habitat

conditions for Sitka black-tailed deer within young-growth stands on Prince of Wales Island, sufficient to offset the ongoing effects of forest succession into stem exclusion. The objective should include precommercial thinning along with other treatments.

RESPONSE

Alexander Archipelago Wolves eat a variety of prey, with Sitka black-tailed deer a primary species especially in areas where other ungulate prey is not available, such as on Prince of Wales Island. Managing for a sustainable deer population in these areas would benefit wolves, although predator-prey relationships have a number of other factors besides just the population level. In some cases, deer forage species may be increased when a young growth stand is treated (harvested) but generalizing that large clearcuts will maintain deer populations is overstating the role of one aspect of a complex population dynamic.

Deer are considered and analyzed at the project level so that site-specific factors can be considered, such as local winter habitat capability (a critical season for deer survival), levels of subsistence use in the project area, and how different habitat types are spatially arranged. An interdisciplinary resource team works together to propose projects and analyze potential effects of the project; determining the type of harvest (for example, clearcut or commercial thinning) that will best contribute toward achieving desired conditions is part of that process.

The Forest Service is actively conducting precommercial thinning on young-growth lands. Over 200,000 acres have been precommercially thinned on the Tongass since 1979. In recent years, precommercial thinning has averaged approximately 5,600 acres per year.

COMMENT

DEER-6. The Forest Service should approve actions with the least impact on Sitka Black-tailed Deer habitat. Support was expressed for the actions or alternatives with the least impact on Sitka black-tailed deer habitat.

RESPONSE

We appreciate the input provided.

Wolves (WOLF)

COMMENT

WOLF-1: Prince of Wales Wolves are in serious decline and continued logging will hasten the decline. The Forest Service must address the decline in deer winter habitat and wolves on the Prince of Wales Archipelago in the FEIS. Additionally, the Forest Service must explain whether and how the Proposed Forest Plan fulfills the agency's obligations under NFMA to ensure the viability of the wolf.

RESPONSE

See responses to WOLF-2 and DEER-5.

COMMENT

WOLF-2: The Draft Forest Plan directly violates the agency's obligation under NFMA to adopt a Forest Plan that ensures the wolf remains viable in the Tongass. The Forest Service does not disclose how much of the Tongass is not expected to meet deer habitat capability of 18 deer / square mile.

RESPONSE

Table 3.10-14 of the Draft EIS summarizes the percentage of WAAs across the Tongass that would meet the 18 deer per square mile (modeled deer density based on the interagency deer model) Wolf Standard and Guideline after implementation of the alternatives. Changes in modeled deer habitat capability by biogeographic province are presented in Table 3.10-10 under Deer, but additional information relating this to the wolf standard and guideline has been added to the FEIS in the Wolf section.

Additional information has also been added to the FEIS summarizing the findings of the recent U.S. Fish and Wildlife wolf status assessment (USFWS 2015), which notes that even with continued decline of wolves in GMU 2, viability of the species is anticipated to be maintained in Southeast Alaska. The integrity of the Tongass Conservation Strategy would be maintained by all alternatives (see FEIS Appendix D), and therefore no change is necessary to maintain a well-distributed and viable wolf population (see Forest-wide Standard and Guideline WILD1IIB).

See responses to PLR-2 and DEER-1.

COMMENT

WOLF-3: The FEIS must disclose and explain the agency's assessment of the relevant science and explain its conclusions for a viable well distributed wolf population in light of the recent USFWS Wolf Findings. The Forest Service should strengthen the plan provisions governing wolves.

RESPONSE

The FEIS has incorporated additional information related to the recent status assessment for the Alexander Archipelago Wolf (USFWS 2015).

Per Forest Plan WILD1.XIV.A.1, an interagency Wolf Technical Committee has been established and is reviewing information pertinent to wolf management. One objective is to develop recommendations for wolf and associated deer habitat management for Prince of Wales Island; findings and recommendations from their work is not yet available.

Strengthening the plan provisions governing wolves is outside of the scope of this narrow amendment. No changes to WILD1.XIV (wolf standards and guidelines) are proposed.

See also response to WOLF-2.

COMMENT

WOLF-4: The Forest Service needs to update DEIS based on USFWS Findings on the wolf.

RESPONSE

The FEIS has incorporated additional information related to the recent status assessment for the Alexander Archipelago Wolf.

COMMENT

WOLF-5: On Prince of Wales the Forest Service should develop a Wolf Habitat Management Program, reduce road densities, and avoid reducing deer habitat capabilities.

RESPONSE

Human harvest of wolves is outside the scope of the amendment. Harvest and bag limits are set by the Federal Subsistence Board and the State of Alaska Board of Game. Chapter 4 standard and guideline WILD1.XIV.A.1.c states that in areas where wolf mortality concerns have been identified and road access is a significant contributing factor that road densities of 0.7 to 1.0 mile per square mile may be necessary but the decision to close specific roads is made at the district, island, or project level through Access Travel Management plans and is based on an evaluation of all affected resources.

See responses to WOLF-2 and WOLF-3.

COMMENT

WOLF-6: The design of very large OGRs in 1997 under the Conservation Strategy was arbitrary and insufficient for sustainability or viability of wolf populations.

RESPONSE

The Conservation Strategy was implemented in 1997 as an overall conservation framework for wildlife. It provides for the diversity of plant and animal communities as required by NFMA. Redesigning the very large Old Growth Habitat reserves, one component of the Conservation Strategy, is outside the scope of this focused amendment. All alternatives maintain the integrity of the Conservation Strategy. Potential effects are discussed in Appendix D.

See also PLR-2.

COMMENT

WOLF-7: The Conservation Strategy was not revisited after the deer model was corrected.

RESPONSE

See PLR-2 regarding Conservation Strategy design.

The deer habitat suitability model is one tool used by resource managers to evaluate effects. It is used to compare the relative differences between alternatives. The model is periodically reviewed and updated to reflect current habitat relationships and modeling techniques. The design of the Conservation Strategy did not rely solely on deer habitat capability; the panel of experts considered many other factors in establishing the conservation framework to maintain viable and well distributed wildlife populations across the Tongass. Redesigning the Conservation Strategy is not part of this focused amendment.

COMMENT

WOLF-8: The 2008 and Proposed Forest Plans' wolf guidelines are unenforceable, violating NFMA by not ensuring viability.

RESPONSE

See responses to PLR-2, DEER-1, WOLF-2, and WOLF-3.

COMMENT

WOLF-9: The cumulative impacts of the alternatives to wolves and hunters were not disclosed in the DEIS.

RESPONSE

See responses to DEER-1, DEER-2, and DEER-3.

COMMENT

WOLF-10: The road density analysis for wolves was calculated using all lands when it should have included only roads below 1200 feet. High road density is a concern and should be reduced to be within the Forest Plan standard and guidelines.

RESPONSE

Road density below 1200 feet elevation has been added to the FEIS.

Appendix N of the 1997 Forest Plan FEIS explains the road density standard and guideline that is in the Forest Plan:

> The Forest Plan contains a forest-wide standard and guideline that outlines a cooperative interagency analysis to identify regions where wolf mortality is apparently excessive. In such areas we would attempt to determine if the mortality is unsustainable and identify the probable causal factors of the excessive mortality. If road access and specific roads are identified as contributing to excessive mortality, then road closures or access management recommendations can be made and actions taken. In addition, seasons, harvest methods and bag limits need to be considered as population management tools by the ADF&G and Federal Subsistence Board as a cooperative approach to managing wolf mortality at a sustainable level. The Forest Plan, a programmatic forest plan, does not prescribe a rigid open road density limit. The Wolf Assessment Panel recommended not using a specific road density "rule of thumb." This was contrary to Kirchhoff (1993) and Pletscher (1994) who recommended a road density limit of no more than one mile of open road/square mile. Appendix 13 lists WAA's that currently exceed the 0.7 mile road density identified in the Wolf Assessment and the miles of existing road that would have to be closed to reduce road densities to within these identified limits. Establishing a rigid road density level, and arbitrarily closing roads to meet this density, provides no management assurance that wolf conservation objectives would be achieved, and may unnecessarily limit overall public use of an established road system that may otherwise have no specific adverse impact on wolf mortality. Management recommendations for road and access management, if necessary, would result from the site-specific analysis discussed above that would identify a problem requiring a local and cooperative management resolution. Open road densities above or indeed below these referenced densities may be appropriate to effectively manage road-access related wolf mortality. This approach is taken by the Forest Plan.

Per Forest Plan WILD1.XIV.A.1, an interagency Wolf Technical Committee has been established and is reviewing information pertinent to wolf management on Prince of Wales Island.

COMMENT

WOLF-11: The DEIS does not consider flaws in the recent Archipelago Wolf ESA listing decision.

RESPONSE

The USFWS is the agency responsible for implementing the Endangered Species Act nationally, along with National Marine Fisheries Service for marine species. The FEIS reviewed and incorporated

information from the recent USFWS status assessment (2015) and listing decision (2016) and believes it to be the best available science.

COMMENT

WOLF-12: The Forest Plan should refer to wolves as grey or timber wolves, not Alexander Archipelago wolves.

RESPONSE

The FEIS has been updated to reflect the recent USFWS determination. No changes were made to the Forest Plan use of Alexander Archipelago wolf terminology, since this is the subspecies common name.

Goshawk (GOSH)

COMMENT

GOSH-1. The Queen Charlotte Goshawk is a sensitive species and the Forest Service must maintain viable populations and habitat distributed across the range to avoid extirpation and/or federal listing. The DEIS does not provide a meaningful analysis for goshawks that includes continued old-growth logging in addition to young growth harvest in the beach fringe, RMAs, and Old-Growth Habitat LUD; cumulative effects of NFS and non-NFS lands including the Sealaska conveyance and old-growth harvest since 2008; or at a site specific scale for high-risk VCUs. The DEIS should have responded to concerns about the adequacy of the Conservation Strategy, considered alternative nest management strategies, and manage young growth to return it to old growth conditions.

RESPONSE

A review of the potential effects to the Conservation Strategy from the amendment is presented in Appendix D, as well as discussion on habitat for species intermixed in DEIS Chapter 3 analysis of Biodiversity and Wildlife. All alternatives include a proposal to adopt the interagency recommended Old-Growth Habitat reserve modifications that were necessary as a result of the Sealaska land conveyance on Prince of Wales and surrounding islands. See also the PLR-2 response regarding the Conservation Strategy.

The 1982 Planning Rule (in effect at the time of the 1997 and 2008 Forest Plans) directed that “fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area.” The 1997 Forest Plan developed a conservation framework for wildlife that employed this now superseded regulation; this proposed amendment carries forward that Conservation Strategy and contains a goal of providing an abundance and distribution of habitats to sustain viable populations in the planning area (Tongass National Forest).

The goshawk is a Region 10 sensitive species. Goshawks are analyzed in the Biological Evaluation, available in the planning record. The DEIS provides a summary of that analysis on pages 3-211 to 3-212 and 3-240 to 3-241 in the DEIS. The finding for goshawk is “may impact individuals but would not result in loss of viability of this species or a trend toward federal listing.” This finding took into account habitat needs and proposed management activities, and Forest Plan direction for goshawks. In 2007, the USFWS confirmed the Queen Charlotte goshawk Southeast Alaska Distinct Population Segment to not be warranted for listing under the Endangered Species Act.

In addition, the 1997 and 2008 Forest Plan FEIS’s provide additional information on goshawk. These analyses included assumptions that old growth would be harvested at the maximum allowable rate under Forest Plan direction for 100 years and still found that goshawk populations would remain viable in the planning area; old growth harvest has been far less than that anticipated in those analyses. In the long-term this proposed amendment would further reduce old-growth harvest, although there is a necessary transition time until a primarily young growth harvest industry is anticipated; this is about 16 years under the preferred alternative. There is potential for short term localized disturbance to individual goshawks in beach fringe, RMAs, and Old Growth Habitat LUDs, which is taken into account in the BE finding for this species.

Tables 3.9-12and 3.9-13 display Forest-wide (range of the goshawk) by biogeographic province total POG and high-volume POG; about 91 percent total POG and about 83 percent high-volume POG are expected to remain on the Forest under the preferred alternative (Alternative 5). These provide a good estimate of goshawk preferred habitat for analysis at the programmatic (Forest Plan) level. A smaller scale taking into account site specific information is done at the project level.

The young growth proposed for harvest in the beach fringe, RMAs, and Old-Growth Habitat LUD should accelerate those stands toward old-growth conditions (desired conditions DC-YG-BEACH-01, DC-YG-RIP-01, and DC-YG-WILD-01). Forest-wide, suitable acres of young growth in beach fringe, RMA, and OG LUD are about 2 percent, 4 percent, and 3 percent of the total acres in that component, respectively.

Standards in these areas allow for a one time entry with a maximum of 10 acre openings and a maximum of 35 percent of the acres or basal area to be removed; these are the upper limits and it is unknown how often these maximums would meet the stated desired conditions. Project decisions will have to disclose how they meet plan components, including desired conditions. In addition, within Old Growth Habitat LUD, young growth treatments should emulate the natural scale and distribution of disturbance patterns (DC-YG-WILD-02). The Old-Growth Habitat LUD could also be modified using Appendix K process and criteria to eliminate young growth and gain old-growth within the reserve boundary if the interagency team thought this exchange beneficial (management approach).

Existing nest buffer standards and guidelines remain in the Forest Plan, with the clarification that if there is not 100 acres of POG available, then the largest diameter young growth may be substituted. See the GOSH-2 response.

Existing Forest Legacy standard and guideline also remains. This standard and guideline was implemented in the 2008 Forest Plan in place of a species-specific goshawk standard and guideline; this was to provide a more comprehensive approach (versus species-specific) and applies to high-risk VCUs across the Forest instead of just on Prince Of Wales Island. The proposed Forest Plan amendment clarified the existing standard and guidelines to apply to any VCU found during project level review to have POG harvest over 33 percent, not just those listed in the Forest Plan. Alternatives 3 and 4 also considered having it apply to young growth harvest in addition to old-growth harvest; this option is available to the responsible official to choose as part of the decision.

COMMENT

GOSH-2: Comment recommends updating standards for management of goshawk nesting habitat to not remove nest buffers after two years of inactivity and to incorporate post-fledging areas.

RESPONSE

Buffers for known nests remain intact; the buffers that may be removed after two years of inactivity are for probable nest stands where no nest was located / confirmed. A clarification was made to the Forest-wide Standards and Guidelines for Northern Goshawk (including the Queen Charlotte goshawk subspecies) (WILD4, II. Sensitive Species, A.1.c. Nesting Habitat) to clarify that if productive old-growth alone is not sufficient to maintain an area of not less than 100 acres around a nest, the largest diameter young-growth forest will be used. Addition of new standards and guidelines for goshawk, such as addition to management of post-fledging areas, were not included as part of this focused amendment.

COMMENT

GOSH-3. The 2008 Forest Plan FEIS (Appendix C, page C-3) concluded that the Sealaska conveyance would require a plan revision based on the changes and inability to make up lost lands in the reserve system; it is arbitrary for the agency to reverse its previous position without an adequate explanation.

RESPONSE

Although Appendix C of the 2008 Forest Plan FEIS indicated that the proposed Sealaska conveyance would require a plan revision (C-3), it also indicated this was still only proposed legislation that it was not possible to identify the types of Tongass lands and resources that would likely be affected by the proposal and “Consequently, the discussion of forest management implications for the potential conveyances is necessarily quite general” (C-2). The 2008 Record of Decision clarified this to state that “If at a later date one or both of these proposals become law, an analysis of the effects will be necessary to determine if a revision or amendment of the Forest Plan is warranted” (page 54). Thus, this amendment includes a review of the Old-Growth Habitat LUD affected by the conveyance, and proposes to adopt the interagency location for these reserves under all action alternatives (see Appendix E of the FEIS).

Prince of Wales Spruce Grouse (PGR)

COMMENT

PGR-1: The DEIS does not disclose the Proposed Forest Plan's risks to the spruce grouse. The Forest Service must explain and the FEIS must disclose whether and how the Forest Plan will ensure the continued viability of Prince of Wales spruce grouse.

RESPONSE

Alternatives are ranked in relative order (comparison) of the amount of POG they harvest (DEIS page 3-260) and thus the amount of fragmentation and potential risk to Prince of Wales Spruce Grouse. A short-term benefit from increased forage availability may occur under all alternatives.

Spruce Grouse is not a Management Indicator Species or a Region 10 sensitive species nor is it a species listed as threatened, endangered, proposed, or candidate under the Endangered Species Act. The population is large enough to support harvest (hunting). The current regulations issued from ADF&G have a harvest season of August 1 – May 15 with a bag limit of 5 grouse / day. The effects analysis acknowledges the species' susceptibility to overharvest (DEIS page 3-233). A discussion of potential effects to spruce grouse in relation to timber harvest and road development is included in the FEIS. Road closures are managed at the district / island level through the Access and Travel Management Plans.

This species is also known to use young growth forest about 15-30 years in age. Proposed young-growth harvest under the Forest Plan amendment is for commercial harvest and would be in stands older than those used by spruce grouse.

See response to PLR-2.

Crossbills (CROSS)

COMMENT

CROSS-1: The DEIS does not adequately address effects to red crossbills or recognize them as a "species of greatest conservation need."

RESPONSE

A general analysis of migratory birds was included in the DEIS, including birds that use hemlock/spruce/cedar forest as their primary habitat; individual species were not analyzed.

Red crossbill is included in the most recent Alaska Comprehensive Wildlife Conservation Strategy as a species in two species groups: a) landbirds with long-term declines and b) landbirds sensitive to forest management (ADF&G 2006, Appendix 3). Within the "landbirds with long-term declines" group, species of particular concern included the Olive-sided flycatcher, Blackpoll warbler, and Rusty blackbird; the red crossbill was identified as a species with "widespread declines but not in Alaska," approximately 5 percent of the global population estimated in Alaska, and a slightly increasing abundance trend across the state (ADF&G 2006, Appendix 4). The State of Alaska is in the process of updating the strategy; the recent Alaska Wildlife Action Plan review draft (ADF&G 2015) does not include the red crossbill on the list of "Species of Greatest Conservation Need." In addition, the 2010 Audubon Alaska "Watchlist" does not include the red crossbill on its list of Alaska species vulnerable or declining and warranting conservation attention.

Northern Flying Squirrel (NFSQ)

COMMENT

NFSQ-1: The Forest Service has not considered available information or cumulative effects on Northern Flying Squirrel.

RESPONSE

The DEIS acknowledges that flying squirrels have limited dispersal capability and that abundance may be reduced through forestry practices that reduce the structure or age of residual stands or create openings too wide (page 3-259). Some additional discussion has been added to the FEIS regarding cumulative effects to flying squirrel and flying squirrel viability.

The 1982 Planning Rule (in effect at the time of the 1997 and 2008 Forest Plans) directed that "fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area." The 1997 Forest Plan developed a conservation framework for wildlife that employed this now superseded regulation; this proposed amendment carries forward that Conservation Strategy and contains a goal of providing an abundance and distribution of habitats to sustain viable populations in the planning area (Tongass National Forest). NFMA requires forest plans to "provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area." This is achieved through implementation of the Conservation Strategy and Forest Plan direction.

Kittlitz's Murrelet (KMUR)

COMMENT

KMUR-1: The DEIS does not consider effects of climate change on Kittlitz's Murrelet.

RESPONSE

The Biological Evaluation (BE) concludes that the proposed amendment may affect individuals but is not likely to cause a trend toward listing for this species (located in planning record). Page 25 of the BE acknowledges that disturbance or displacement of foraging Kittlitz's murrelets could slightly impact foraging success or energy reserves (indirect effects of associated marine traffic near young growth or renewable energy site management).

Cumulative effects for TES species are considered in the BE on pages 29-31, including a paragraph on general climate change. Climate change could affect the Kittlitz's murrelet if saltwater glaciers melt and change preferred foraging habitat or if preferred nesting habitat (unvegetated scree slopes, cliffs, rock ledges) are affected such as by vegetation encroachment; quantifiable information is not available on what those effects might be and any such effects would be distant in the future and unrelated to the Forest Plan amendment.

Marten (MART)

COMMENT

MART-1: Forest Service needs to address the status of the Pacific marten and explain how the Draft Forest Plan affects its viability in the Tongass.

RESPONSE

See response to PLR-2.

The DEIS acknowledges there are two lineages of marten in Southeast Alaska (page 3-220). The FEIS adds language regarding taxonomic uncertainty of the marten and the recent information suggesting two distinct species (Dawson and Cook 2012). Additional discussion has been added to the FEIS.

COMMENT

MART-2: The DEIS fails to meaningfully examine the impacts associated with the Draft Forest Plan's proposal to log in OGRs, beach fringe, and riparian buffers on marten.

RESPONSE

Marten are strongly associated with old growth (late successional) forest and riparian areas including the breach fringe. Only young growth harvest would be authorized in the beach fringe, riparian areas, and Old-Growth Habitat LUD under the amendment; old growth harvest would remain not suited for timber production in these areas. Young growth harvest in these areas would be aimed to accelerate old growth conditions in these areas under the preferred alternative (desired conditions), which should benefit marten. Alternatives 3 and 4 consider implementing legacy standards in young growth harvest; all alternatives would evaluate landscape connectivity among reserves during project analysis.

All alternatives provide old growth no-harvest buffers along Class I, II, and III streams. TTRA directs that no commercial timber harvest is allowed within a minimum of 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream. Alternative 5 allows up to 10 acre openings and commercial thinning totaling no more than 35 percent of the total stand acres in beach fringe, RMA, and Old-Growth Habitat LUD, and will only occur in the first 15 years of the finalization of the Plan Amendment; it is estimated to be about 3,500 acres of beach fringe, 900 acres of total harvested RMA area, and 1,800 acres of Old-Growth Habitat LUD. With these restrictions, the overall areas affected would be small relative to the total beach, RMA, and Old-Growth Habitat LUD acres in the Tongass.

COMMENT

MART-3: The DEIS misses important recent information (Goldstein et al. 2013[3]) that marten use young growth and did not evaluate viability.

RESPONSE

See response to PLR-2.

Additional information on marten use of young growth habitat and marten viability has been updated in the FEIS.

The marten effects analysis in the DEIS focuses on old-growth (POG) timber harvest because 1) the strong association of marten with structural complexity typically found in old-growth forest, 2) the importance of low elevation high volume POG to marten in winter, and 3) preference for landscapes with forest interior habitat conditions. However, DEIS page 3-250 acknowledges that both old-growth and young-growth harvest would reduce the vertical and horizontal structural complexity needed by marten.

[3] Goldstein, M.I., L.H. Suring, C.D. Vojta, M.M. Rowland, and C. McCarthy. 2013. Developing a Habitat Monitoring Program: Three Examples from National Forest Planning. *in* USDA Forest Service. 2013. A Technical Guide for Monitoring Wildlife Habitat. GTR-WO-89.

In addition, road density is displayed in Table 3.10-12 for NFS lands and for all ownerships. Under the preferred alternative about 12 percent of the WAAs on the Forest would exceed 1 mile per square mile road density for all roads, with less than 3 percent of WAAs exceeding that when open roads on NFS lands are considered.

Alternatives 3 and 4 considered applying legacy forest structure during young growth harvest in those high risk VCUs listed in WILD1.IV; this demonstrates consideration of science indicating marten's use of young growth. This option is available for the responsible official to choose as part of the decision.

The 1982 Planning Rule (in effect at the time of the 1997 and 2008 Forest Plans) directed that "fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area." The 1997 Forest Plan developed a conservation framework for wildlife that employed this now superseded regulation; this proposed amendment carries forward that Conservation Strategy and contains a goal of providing an abundance and distribution of habitats to sustain viable populations in the planning area (Tongass National Forest).

Black Bear (BLABE)

COMMENT

BLABE-1: The DEIS's cursory analysis of black bears does not rise to the level of a hard look required by NEPA and the Forest Service should employ the 2012 Planning Rule.

RESPONSE

Black bears need old growth forest for denning but during the spring and summer seasons use a variety of habitats, including young clearcuts. Anadromous (Class I) streams are important to bears in the late summer as they build fat reserves for hibernation; these are protected from harvest under the proposed amendment. Inventoried Roadless Areas will also provide areas of undisturbed habitat for black bears beyond what was anticipated during the 1997 Forest Plan viability analyses. Large and medium reserves are also not scheduled for harvest; small reserves may have up to 35 percent of the young growth harvested but the reserve may be modified at the project level to exclude the proposed harvest and replace it with old growth if the interagency team proposes such modification. The black bear population in much of southeast Alaska appears stable (ADFG 2015[4]).

All alternatives provide old growth no-harvest buffers along Class I, II, and III streams. TTRA directs that no commercial timber harvest is allowed within a minimum of 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream. While Alternative 5 allows up to 10 acre openings and commercial thinning totaling no more than 35 percent of the total stand acres, it is estimated to be about 900 acres of total harvested RMA area and will only occur in the first 15 years of the finalization of the Plan Amendment. With these restrictions, the overall areas affected would be small relative to the total RMA acres in the Tongass.

See also PLR-2.

[4] ADF&G. 2015. Black Bear Management Report. Individual Game Management Unit (GMU) reports for GMUs 1A, 1B, 1C, 1D, 2, 3, and 5 were accessed at http://www.adfg.alaska.gov/index.cfm?adfg=wildliferesearch.smr20145

Brown Bear (BROBE)

COMMENT

BROBE-1: The DEIS needs to analyze Brown Bear effects more fully and use the 2012 Planning Rule.

RESPONSE

Brown bears do need large areas of undisturbed habitat. Additional undisturbed habitat beyond the 1997 and 2008 analyses will be maintained in Inventoried Roadless Areas in the future; no young growth or old growth harvest will take place in these areas under the selected alternative. Young growth harvest that would be available for harvest in the Old Growth Habitat LUD is primarily located in small reserves near current development LUDs, not in the medium and large reserves that are more important for brown bears. Much of the prime brown bear habitat on the Forest is located in areas protected by the Forest Plan – Wilderness, LUD II, and other non-development LUDs on the mainland, Admiralty and Baranof Islands, and portions of Chichagof Island. Prince of Wales Island contains a large portion of the young growth that would be harvested under the amended Forest Plan; no brown bears persist on this island which further reduces risk to the species.

All alternatives provide old growth no-harvest buffers along Class I, II, and III streams. TTRA directs that no commercial timber harvest is allowed within a minimum of 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream. While Alternative 5 allows up to 10 acre openings and commercial thinning totaling no more than 35 percent of the total stand acres, it is estimated to be about 900 acres of total harvested RMA area and will only occur in the first 15 years of the finalization of the Plan Amendment. With these restrictions, the overall areas affected would be small relative to the total RMA acres in the Tongass.

See also PLR-1 and PLR-2.

Bats (BAT)

COMMENT

BAT-1: The DEIS fails to consider or disclose impacts on Keen's Myotis and other bat species.

RESPONSE

Seven species of bats are known to occur in Alaska; all but the little brown bat is restricted to Southeast Alaska (http://www.adfg.alaska.gov/index.cfm?adfg=citizenscience.batsinak). Bats occur in low densities in Alaska, and distribution, abundance, and behavior are poorly understood; ADF&G has ongoing research and monitoring efforts to learn more about the bats in Alaska (http://www.adfg.alaska.gov/index.cfm?adfg=citizenscience.bats). Timber harvest may be a threat to little brown bats, but activity was rare in young growth forest (http://www.adfg.alaska.gov/index.cfm?adfg=littlebrownbat.main). Across North America, large scale wind energy developments and White-Nose Syndrome (a fungal infection) are causing high mortality of bats. White-Nose Syndrome has not been documented in Alaska; the nearest known location is a recent confirmed infection in Washington state (http://www.usgs.gov/newsroom/article.asp?ID=4496#.Vww6GnL2ZMw). The Draft Forest Plan is not proposing to harvest old-growth in riparian management areas (RMAs) but may have limited young-growth harvest in these RMAs; bat activity in young growth is low.

Amphibians (AMPH)

COMMENT

AMPH-1: The Forest Service must include an analysis of potential impacts on amphibians from logging and roads.

RESPONSE

A discussion of amphibians has been added to the Final EIS. This includes a discussion of those species potentially present on the Tongass, as well as potential effects associated with old-growth and young-growth timber harvest such as fragmentation, road mortality, exposure to contaminants along roads, and cumulative effects associated with climate change.

Possible effects to riparian areas, which could influence amphibians survival and production, are also disclosed in the FEIS in the *Water, Wetlands*, and *Fish* sections.

COMMENT

AMPH-2: Amphibians are especially susceptible to air pollution.

Because amphibians' skin is permeable, they are especially susceptible to the harmful effects of air pollution. Atmospheric contaminants such as acidic compounds may also be deposited in aquatic ecosystems where amphibians live. In Southeast Alaska, air pollution from local or global sources may be contributing to a decline in amphibians' numbers.

The DEIS predicts that "direct effects on air quality from forest management activities would be temporary and limited in nature" and may include emissions from industrial processing sites and firewood burning. It also notes that, cumulatively, air pollution from wood processing could "increase somewhat if more wood is burned to produce energy." The Forest Service should consider the potential consequences of worsened air quality for amphibians in the FEIS, in light of their sensitivity to this kind of pollution.

RESPONSE

None of the alternatives are expected to result in long-term adverse impacts to air quality or compliance with air quality standards. All air quality effects associated with equipment usage, wood processing, etc. would be temporary and localized, and would occur infrequently over the planning horizon. Therefore, no effects to amphibians are anticipated in association with reduced air quality.

Subsistence (SUB)

COMMENT

SUB-1: The Forest Service must engage communities to identify and prioritize restoration areas that will enhance local subsistence opportunities.

RESPONSE

Prioritizing restoration treatments is done at a scale smaller (districts and project level) than the Forest Plan. During every EIS the Forest Service holds subsistence hearings as required by ANILCA section 810 in addition to public scoping and comment periods. These provide opportunities for communities, tribal members, subsistence users, and others to speak specifically to project effects to subsistence use.

COMMENT

SUB-2: The treatment of subsistence deer hunting in the DEIS is arbitrary and masks local impacts to abundance and distribution of subsistence resources.

RESPONSE

At the programmatic level (Forest Plan), the DEIS conclusion of a significant possibility of a significant restriction on subsistence uses, particularly for deer, acknowledges that cumulatively across the Forest there could be areas where subsistence uses may be impacted. Each project that uses an EIS must hold a subsistence hearing to determine whether the project would have a significant possibility of a significant restriction on subsistence uses. This allows for site specific information to be used in the analysis such as what subsistence resources occur in the project area and may be affected, what levels of use occur in the project area by subsistence and non-subsistence users, and for subsistence users of the project area to tell managers what impacts the project may have on them. Subsistence uses would be given preference over non-subsistence uses if any restrictions are determined necessary. The Forest Plan determined an overall possible risk while project-level subsistence evaluations better identify specific impacts to abundance and distribution, access to resources, and competition with non-rural users.

COMMENT

SUB-3: The Forest Service should conduct a more thorough ANILCA Section 810 Analysis.

RESPONSE

Each project that requires an EIS must hold a subsistence hearing (ANILCA 810(b)) to determine whether the project would have a significant possibility of a significant restriction on subsistence uses. Individual projects are not proposed at the programmatic level; the Forest Plan subsistence analysis acknowledges that cumulatively across the Forest there could be areas where subsistence uses may be impacted (makes a finding that a significant possibility of a significant restriction on subsistence uses, particularly for deer, may occur when the Forest Plan is fully implemented). Subsistence hearings were held across the Forest during the comment period. Site specific information such as what subsistence resources occur in the project area and may be affected, what levels of use occur in the project area by subsistence and non-subsistence users, and for subsistence users of the project area to tell managers what impacts the project may have on them would be incorporated in to ANILCA 810 analysis at the project level.

COMMENT

SUB-4: The Forest Service should include greater protections for subsistence uses and hunting in the Plan, especially in areas already highly impacted by past practices.

Changes to subsistence standards and guidelines (Chapters 3 and 4 of the Plan) are outside the scope of this focused plan amendment.

Karst (KARS)

COMMENT

KARS-1: The DEIS does not adequately disclose the effects of changes to the degree and methods of logging permitted in karst lands. Some suggest that forest management activities should not take place in and around sensitive karst landscapes.

RESPONSE

The DEIS does not allow for any less restrictive methods of timber management on karst lands than from those in the 2008 Forest Plan. The 2008 Forest Plan, Appendix H, V. Young-Growth Management on Karst, Page H-8 states that; "Commercial thinning is appropriate on low to moderate vulnerability karst lands when the karst management objectives can be met. Generally, no thinning shall be permitted on lands determined to be of high vulnerability such as within 100 feet of a cave entrance, a karst feature accepting surface flow, or of the edge of a sinking or losing stream within 0.25 mile upstream of their swallow hole or loss point. On a case-by-case basis, other karst features will be assessed as to their susceptibility to surface disturbing activities, the proposed harvest method, and the thinning prescription. The area surrounding these features is still considered high vulnerability and should be mapped as such; however, thinning of this sensitive area might be considered permissible. All features not fully protected would be buffered from their center to just outside the lip of the sink allowing for thinning within the area that would normally be a non-harvest buffer. It is probable that a zone equal to one tree height be left untreated to ensure that no material will be placed in these features. All thinned timber will be directionally felled from the untreated area surrounding the karst feature and split yarded from the area. Any material landing on the slope break of the feature or within the feature will be hand removed. No yarding across or through the untreated area surrounding the feature will be allowed. Directional falling and split yarding away from the karst depressions and features should provide adequate protection for water quality and karst features. It is believed that the benefit of hydrologic recovery of the areas adjacent to these features outweighs the risk of harvest. Again this should be assessed on a case-by-case basis."

The same process for assessing the vulnerability of karst lands and determining appropriate timber management methods exist in the DEIS. Even-aged management on low vulnerability karst and limited clear-cutting in medium vulnerability karst has always been allowed, although more restrictive guidelines than normally employed on non-karst lands may be needed on medium vulnerability karst. Alternatives 1 through 4 would be managed in similar fashion so long as karst management objectives could be met. Under Alternative 5, created openings are limited to 10 acres with a maximum removal of 35 percent of the original stand. Project-specific karst evaluations would still be required and effects would be avoided or minimized through project and site specific management prescriptions, such as requiring partial suspension yarding or limiting the size of openings moderate changes to precipitation throughfall.

The Tongass is not opening up all high vulnerability karst areas to timber management. There would be no additional harvest in any areas mapped as high vulnerability karst under Alternatives 1 and 5. Alternatives 2, 3, and 4 each allow for commercial thinning on high vulnerability karst on a case-by-case basis when the karst management objectives can be met (Draft DEIS, p. 3-33, paragraph 1). Alternatives 2, 3, and 4 each allow for commercial thinning on high vulnerability karst lands but does not guarantee it. Based on our experience, we believe that carefully planned and implemented commercial thinning of young growth stands on high vulnerability karts can be neutral or even beneficial to the karsts, where appropriate.

We believe the activities discussed above could be implemented with careful planning. We also recognize the shortage of monitoring on the effects to karst from second growth management and acknowledge there is some uncertainty. However, at the project-scale, karst resources will continue to be evaluated and effects from harvests on medium and high vulnerability karst lands will be addressed through project-specific prescriptions.

Low vulnerability karst lands are not sensitive to management activities due to the depth of overlying material (e.g. glacial till) and low hydrologic conductivity. There would be no change to management practices on these lands between any alternatives.

Text has been added to the Karst section of Chapter 3.

COMMENT

KARS-2: The Forest Plan should clarify how young-growth stands in Geologic Special Interest Areas can be managed (See Timber Resource Planning TIM4) and the Kruzof Geological special interest area should be designated as a National Monument with no harvest.

RESPONSE

Many of the Geologic Special Interest Areas created for their intensity of karst development contain areas of past harvest. We recognize the sensitivity of these areas to disturbance, timber management, and road construction. However, we believe that careful commercial thinning of some of the young-growth stands in these areas should be considered when karst and cave resource values are not compromised. Preliminary data (Prussian, 2011) does support the concept that commercial thinning of the older young-growth stands on karst, returning the stand to closer-to-pre-harvest tree spacing, hastens the hydrologic recovery of the site. Reducing the canopy cover could restore the 'health' of young growth forests on karst lands by increasing the volume of throughfall, flushing sedimentation out of diffuse and discrete karst openings, and reconnecting surface to subsurface flow pathways. The management of older young-growth stands can also hasten the return to more natural stand characteristics and conditions.

Thinning of heavily stocked young-growth stands can increase tree growth, improve stand stability and health of the trees, and increase the amount of light and rainfall that reaches the understory. These may benefit areas of karst that were previously harvested. Some treatments may be prescribed on karst areas where it is determined, through site specific analysis, that it could benefit the resource and not compromise or damage the karst resource.

Designation of the National Monuments are outside of the scope of this amendment and the authority of the Responsible Official.

COMMENT

KARS-3: The Forest Plan should address active management of young growth stands in Karst formations and how harvest should be accomplished to minimize any negative impacts while generating volume.

RESPONSE

The young-growth plan components in Chapter 5 ensure that karst ecosystems "maintain natural processes and productivity, while providing for other land uses." (See desired condition DC-YG-KC-01 in Chapter 5.) Alternatives 2, 3 and 4 include young-growth standard S-YG-KC-01 that allows commercial thinning on high vulnerability karst on a case-by-case basis (DEIS, Appendix F). The management approach for karst and cave resources in Chapter 5 also provides direction to evaluate karst vulnerability.

COMMENT

KARS-4: Alternative 3 should prohibit commercial timber harvest on High Vulnerability Karst.

RESPONSE

The range of alternatives analyzed in detail included support these and other goals to varying degrees. Table 2-17 in Chapter 2 shows that Alternatives 1 and 5 (preferred alternative) do not allow commercial timber harvest on high vulnerability karst while Alternatives 2, 3, and 4 allow commercial thinning.

See response to KARS-1.

COMMENT

KARST-5: High-vulnerability karstlands should be fully protected from timber harvest. The prescriptions available for medium-vulnerability karstlands should be limited.

RESPONSE

Among the five alternatives, some allow no entry into high-vulnerability karst and some allow commercial thinning only. No specific additional restrictions are added for moderate vulnerability karst; however, many of the existing Forest-wide standards and guidelines are specific to moderate vulnerability karstlands.

Road Density (RD)

COMMENT

The Forest Service needs to actively reduce road densities, stop wolf harvest, and end old-growth clearcutting to save wolves.

RESPONSE

Wolf harvest bag limits are not within the scope of the Forest Plan amendment. The Federal Subsistence Board works with the State of Alaska Board of Game to set seasons and bag limits for subsistence and sport harvest.

Specific harvest prescriptions, such as even-aged management, are determined at the project level, not the programmatic Forest Plan level, after a review of each stand's goals, needs, and resource concerns. See also TIM-13.

Young growth harvest within the Old-Growth Habitat LUD could require roads to be constructed but that would depend on site-specific conditions such as existing access and the harvest prescription for the stand. When young-growth harvest is proposed within an Old-Growth Habitat LUD, an interagency biologist team would review the location and design of the reserve and could recommend a modification to the LUD boundaries to exclude the young-growth stand to be harvested if adjacent old-growth could be added and if it would better meet the criteria in Forest Plan Appendix K.

Road density is evaluated as part of project planning; site specific resource concerns are identified and evaluated during that process. Access Travel Management plans and road maintenance objectives are generally reviewed during each project as well. Often, road closures for existing roads are prioritized based on funding, resource concerns, and access needs for resource management activities; closed roads (ML1) may or may not be physically barricaded but are not open for public use.

COMMENT

RD-2: Forest Service has not Fulfilled Road Density Goals in the 2008 Plan for wolf populations and does not identify where several WAAs exceed 0.7 mile per square mile.

RESPONSE

Table 3.10-4 in the DEIS displays road density for all roads and for open roads, both on NFS lands only and for all land ownerships. Average road density across all Wildlife Analysis Areas (WAAs) is provided in the FEIS. WILD1.XIV.A.1(c) includes a total road density of 0.7 to 1.0 miles per square mile in areas where wolf mortality concerns have been identified and road access was determined to be a significant contributing factor; not all WAAs are required to have road densities less than 0.7 miles per square mile. Resource concerns, such as road density, are evaluated at the project level; decisions under the amended Forest Plan are required to say how they meet the plan components which include standards and desired conditions. See also RD-1.

An interagency Wolf Technical Committee has been established and is currently working on wolf management concerns on Prince of Wales Island. Findings and recommendations of that committee are not yet available.

COMMENT

RD-3: The Plan Amendment should bring greater clarity to the road density issue by defining the various terms for Tongass road closures. The Plan Amendment does not presently define "open road," "closed road," and "decommissioned road." (See Plan Amendment Glossary for lack of definitions for these terms; although "open road mileage" is defined, "open road" is not).

RESPONSE

Maintenance Level 1 (ML1) roads are considered closed (Transportation section DEIS page 3-273); open roads are roads in ML 2-5. Closed roads may or may not be physically blocked but use is illegal on roads designated as ML 1 status; these roads do not show up on the Motor Vehicle Use Maps available to the public. The Table 3.10-4 in the DEIS displays road density for all roads and for open roads, both on NFS lands only and for all land ownerships. In the FEIS, this table has been expanded to include a break down by Wildlife Analysis Area (WAA). Pages 3-224 to 225 in the DEIS include information on wolf harvest and the role of road access in that harvest, and acknowledges possible consequences of such harvest vulnerability. The Forest Plan Glossary has been updated to clarify that roads in ML 2-5 are considered when calculating open road density.

COMMENT

RD-4: The Forest Service should add a standard and guideline in its Transportation System Corridors direction to maintain Tongass WAAs at a threshold of 0.7 mi/mi2. WAAs that presently exceed the 0.7 mi/mi^2 threshold should have no net gain in roads (new road additions should be countered by road closures/decommissioning). WAAs that exceed 1.0 mi/mi^2 should receive priority efforts to reduce road densities.

RESPONSE

Standards and Guidelines are included under the primary resource that is driving that particular standard. In this case, the suggested standard and guideline are primarily a wildlife concern not a transportation concern. WILD1.XIV.A.1(c) on page 4-88 includes a similar road density (total road density of 0.7 to 1.0 miles per square mile) in areas where wolf mortality concerns have been identified and road access was determined to be a significant contributing factor. An interagency Wolf Technical Committee has been established and is currently working on issues related to wolf management concerns on Prince of Wales Island.

Access Travel Management plans are completed at the island, district, or project levels to allow for more localized analysis of road densities in relation to resource concerns and which roads are needed to access areas for resource management (or those that are not needed which can be closed). In addition, road closures are prioritized based on financial constraints in addition to resource concerns.

COMMENT

RD-5: We are concerned that the cumulative effects on transportation arising from the inter-linkage of logging road systems, is not disclosed or considered in the EIS. Important choices are being made without benefit of good information.

RESPONSE

The DEIS/FEIS adequately discloses the effects of roads. In the affected environment sections the cumulative effects of all existing roads, including open, closed, and decommissioned roads, are addressed. In the effects sections, the assessments include the estimated future roads on NFS lands and on non-NFS lands over a 100-year period.

COMMENT

RD-6: The extent of sediment delivery from roads that results from construction, reconstruction, and storage of logging roads is not well addressed. Increased use of roads also has the effect of increasing sediment delivery to streams. Many studies show increased logging traffic elevates sediment delivery to streams.

The DEIS seems to suggest the agency is using the road storage strategy as a back-door way to avoid complying with the Clean Water Act, rather than as a considered transportation strategy. Where a road truly is justified, the best public interest seems to be met by just building and properly maintaining that road. The second-growth transition provides an opportunity to focus

logging in fewer areas, which means fewer roads should be need to access them, and so a straight-forward road management strategy becomes increasingly more affordable and desirable.

RESPONSE

The DEIS recognizes that roads are a major source of resource effects. The Water and Fish sections provide extensive analysis and quantification of road effects on streams and fish, including sediment effects. The analysis addresses existing roads, stored roads, decommissioned roads, reconstructed roads, and new roads.

Road storage is a management tool to reduce long-term costs, by minimizing road maintenance costs, and reducing effects on streams and fish. If a road is important for recreation or other purposes, it is managed differently. Storage, which results in road closure, also helps address potential effects on wolves, by reducing access. Most roads accessing young-growth stands will not be needed, after harvest, for many decades.

Transportation and Utility System LUD Overlay (TUS)

COMMENT

TUS-1: The amended plan should reinstate the Transportation and Utility Systems LUD overlay and the "windows" and "avoidance" language because it discouraged road building in Wilderness LUDs and some non-development LUDs, and required transportation projects to first consider feasible alternatives. The Forest Service should either reinstate the overlay, or add new direction for completing a transportation avoidance analysis in the same LUDs where the overlay applied in the 2008 Forest Plan.

RESPONSE

The intent of the Forest Plan direction for transportation systems corridors is not to change the process the Forest Service will go through when developing future transportation systems. The purpose of the plan direction for transportation systems corridors is the same as the 2008 TUS LUD management prescription; to facilitate the availability of National Forest System land for the development of existing and future transportation systems such as those identified by the State of Alaska in the current version of the Southeast Alaska Transportation Plan (SATP) and applicable laws. (See Forest Plan Chapter 5.) The applicable Transportation Systems Corridors direction in Chapter 5 is included for each LUD in Chapter 3 in a table that cross-references, by category, the plan content, found in Chapter 5.

When developing future transportation systems, the project must be designed to be consistent with the applicable plan direction. For example, Forest-wide desired condition DC-02:

> Transportation systems support community resilience, resource management, and provide for current and future land management needs, subject to applicable laws. Transportation systems avoid, minimize, or mitigate adverse effects to natural and cultural resources.

The decision document (Decision Memo, Decision Notice, Record of Decision) for a transportation activity or project must describe how the project or activity is consistent with DC-02 and other applicable plan direction, and this process is described in the *Project Consistency Requirements* section in Chapter 6 of the Forest Plan.

The Forest Service will continue projects and activities under the direction in Chapters 2, 3 and 4. The Chapter 5 plan direction for Transportation Systems Corridors will take precedence only in the event of conflicting direction. (See Priority of Direction section in Chapter 1 in Forest Plan.) If there is no direction in Chapter 5 on a specific forest resource, then Chapter 3 direction takes precedence for that resource.

The following language was added to the Forest Plan in Chapter 1, Priority of Direction:

> Chapter 5 assumes all laws, regulations, and policy pertaining to management of National Forest resources will be followed. Ground-disturbing projects will use the approved best management practices (BMPs) (National Core BMP Technical Guide FS-990a and Alaska Region Soil and Water Conservation Handbook, FSH 2509.22) to avoid, minimize, or mitigate environmental impacts.

COMMENT

TUS-2: Removal of Transportation and Utility System LUD should not be done under an amendment. A change of this nature should be done through the Forest Plan revision process described in 36 CFR 219.7 rather than the amendment process set forth in 36 CFR 219.13.

RESPONSE

The Notice of Intent (NOI) that was published on May 27, 2014 in the Federal Register (79 FR 30074) stated under the "Purpose and Need for Action" that [the Forest Service] will also evaluate other changes suggested in the 5-year review. Concerns were consistently expressed during the Five-Year Review of the 2008 Forest Plan regarding the impact of high fossil fuel prices; the adverse effect of high energy costs on economic diversification and sustainable economic development; and increasing climate change

on the quality of life in Southeast Alaska. Concerns were also expressed that the 2008 Plan's direction regarding transportation and utility systems, including the Transportation and Utility System (TUS) overlay Land Use Designation (LUD), were overly complex, confusing, and difficult to implement, creating an impediment to development of hydropower, other types of renewable energy, and transmission lines needed to connect communities to sources of electric power. Based on this review, the responsible official determined to propose changes to the Forest Plan to make the development of renewable energy resources more permissible -- including allowing greater project-level consideration of transportation and utility corridors and removing the TUS overlay LUD -- to facilitate renewable energy development in Southeast Alaska communities, provide low-carbon energy alternatives, and reduce the use of fossil fuels.

Removing the existing Transportation and Utility System LUD through a plan amendment is permissible. The last sentence of 36 CFR 219.13(a) states that: "Except as provided by paragraph (c) of this section [regarding administrative changes], a plan amendment is required to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area (including management areas or geographic areas)." (Emphasis added.) The Department added the phrase "including management areas or geographic areas" to the final planning rule to clarify that an amendment is required for any change in how or whether plan components apply to those areas (77 FR 21238). An amendment may remove all the plan components within a LUD and remove the LUD itself.

See responses to P&N-2 and PLR-1.

COMMENT

TUS-3: The Forest Service should clarify that the transportation systems corridors direction in Chapter 5 of the Forest Plan applies to major roads only and not to all roads, such as those defined in Chapter 7 (Glossary) under the term "Forest transportation system. This clarification is needed because removal of the Transportation and Utility Systems LUD leaves a gap in that major public roads would otherwise receive special consideration under the 2008 Forest Plan. The Forest Service should clarify in both the FEIS and the Forest Plan that any new transportation direction applies only to major roads.

RESPONSE

The management prescription goal in the 2008 Transportation and Utility Systems LUD, and the purpose of the plan direction for transportation systems corridors in Chapter 5 is to facilitate the availability of National Forest System land for the development of major roads; existing and future transportation systems such as those identified by the State of Alaska in the current version of the Southeast Alaska Transportation Plan (SATP) and applicable laws. (See page 5-13 of the Proposed Forest Plan Chapter 5 for this description.) The transportation systems corridors direction in Chapter 5, including Forest-wide plan components DC-02, DC-03 and DC-04, was written with this purpose in mind.

The transportation systems corridor direction is not intended to address the forest transportation system, which is defined in the glossary in Chapter 7 as "[t]he system of National Forest System (NFS) roads, trails, and airfields on NFS lands (36 CFR 212.1)." The Transportation section in Chapter 3 of the FEIS describes both major roads and forest transportation systems. (See subsections for Regional Transportation System and National Forest System Roads.) Forest-wide transportation standards and guidelines were included in the Proposed Forest Plan on pages 4-74 through 4-80. The Proposed Forest Plan also included standards and guidelines that describe Transportation Planning in TRAN 3, and the maintenance levels in TRAN 6 & TRAN 7. The first part of the following standard and guideline TRAN4 I. D. was removed in the Proposed Forest Plan:

> D. Cooperate with the Alaska Department of Transportation and Public Facilities and the Federal Highway Administration in the administration of the Forest Highway Program. Provide nominations of routes to be upgraded and encourage their transfer to state jurisdiction, in order to provide safe facilities and adequate maintenance between communities linked by the Forest Transportation System. (Consult FSM 7700.) (emphasis added)

This standard and guideline has been added back into the Forest Plan and was clarified. It now reads as follows:

> D. Cooperate with the Alaska Department of Transportation and Public Facilities and the Federal Highway Administration in the administration of the Federal Highway Programs. Provide nominations of routes to be upgraded and encourage their transfer to state jurisdiction, in order to provide safe facilities and adequate maintenance between communities linked by the Forest Transportation System. (Consult FSM 7700.) (emphasis added)

A discussion about the Southeast Alaska Transportation Plan (SATP) was included in Chapter 3 of the DEIS in the Transportation section on pages 3-271 to 3-273. The 2004 SATP was incorporated into the 2008 Forest Plan and direction was provided for it in the Transportation and Utility LUD. A draft SAPT was published in June 2014 (ADOT&PF 2014), and the DEIS provided a description of the intent of the road construction to provide access to NFS lands. Because the Proposed Forest Plan removed the Transportation and Utility Systems LUD, the SATP was incorporated into the Proposed Forest Plan and direction for it was provided in the transportation systems corridors direction in Chapter 5.

The Transportation environmental consequences section in Chapter 3 of the DEIS disclosed the following on p. 3-277:

> "Proposed new plan components for Transportation Systems Corridors (TSC) would replace the direction currently found in the Transportation and Utility System LUD. TSC plan components apply only to major road systems such as state and federal highways, railroads, and those identified by the State of Alaska in the current version of the SATP and applicable laws (for example, Section 4407 of Public Law 109-59, Title XI of the Alaska National Interest Lands Conservation Act, Public Law 96-487)… When planning future transportation projects, these plan components would apply. Prior to this, all other applicable Forest Plan LUD direction would remain in effect." (emphasis added)

COMMENT

TUS-4: The Proposed Forest Plan does not clearly indicate how the transportation systems corridors direction for major roads in Chapter 5 is to be applied with other LUD restrictions governing roads. Removal of the "avoidance area" and "window" designations in the Proposed Forest Plan makes it easier to build projects, eliminating a protective barrier to siting major roads on the majority of the Tongass. The DEIS does not disclose this change, or analyze its significant environmental effects or compliance with NFMA. Therefore, the Forest Service should make it explicit that major roads are subject to Chapter 3 road restrictions for individual LUDs in the Proposed Forest Plan.

RESPONSE

In the introduction to Chapter 5 of the Proposed Forest Plan, an explanation was provided stating that "[a] plan amendment is required to add, modify, or remove existing plan direction, or to change how or where one or more plan components apply to all or part of the plan area (including Land Use Designations) (36 CFR 219.13(a))." On page 5-3 of the Proposed Forest Plan under the section entitled "Changes Made in the 2008 Forest Plan" the Forest Service disclosed the following:

> The Transportation and Utility System overlay LUD was removed, as well as all associated direction (i.e., "window" and "avoidance area") in the LUD Standards and Guidelines pertaining to application of this overlay LUD. No other LUDs were removed. Other LUD boundaries were modified to reflect changes since 2008.

Removal of the TUS overlay LUD was also disclosed in Chapter 2 of the DEIS on p. 2-10 under the section entitled, "Proposed LUD Changes Common to the Action Alternatives."

The management prescription in the 2008 Transportation and Utility Systems LUD, and the purpose of the plan direction for transportation systems corridors in Chapter 5 is to facilitate the availability of

National Forest System land for the development of major roads; existing and future transportation systems such as those identified by the State of Alaska in the current version of the Southeast Alaska Transportation Plan (SATP) and applicable laws. (See page 5-13 of the Proposed Forest Plan Chapter 5 for this description.) The transportation systems corridors direction in Chapter 5, including Forest-wide plan components DC-02, DC-03 and DC-04, was written with this purpose in mind.

The Introduction to Chapter 3 of the Proposed Forest Plan explained how the plan direction for transportation systems corridors in Chapter 5, is applied to the LUDs by the table that cross-references the applicable direction that applies to the LUD.

When developing future transportation systems corridors, the project must be designed to be consistent with the applicable plan direction. For example, development of a major road must be consistent with forest-wide desired condition DC-02:

> Transportation systems support community resilience, resource management, and provide for current and future land management needs, subject to applicable laws. Transportation systems avoid, minimize, or mitigate adverse effects to natural and cultural resources.

The Forest Service will continue projects and activities under the direction in Chapters 2, 3 and 4. The Chapter 5 plan direction for transportation systems corridors will take precedence only in the event of conflicting direction. (See Priority of Direction section in Chapter 1 in Forest Plan.) If there is no direction in Chapter 5 on a specific forest resource, then Chapter 3 direction takes precedence for that resource.

See responses to PLR-1 and TUS-1 regarding NFMA compliance.

COMMENT

TUS-5: The Forest Service must make the Chapter 5 plan direction for transportation systems corridors clearer, since the direction in Chapter 5 will have priority over all other plan direction in Chapters 3 and 4 if a conflict or discrepancy in directions occur. The Forest Service must thoroughly explain what will constitute a conflict in this context, describe the extent of potential conflicts, and provide examples of the circumstances under which Chapter 5 direction would or would not have priority over direction in Chapters 3 and 4. The Old Growth Habitat LUD direction in Chapter 3 precludes roads unless there is no feasible alternative, but Chapter 5 transportation systems corridors direction applies to the Old Growth Habitat LUD, which allows the Forest Service to build a major road for which there may be a feasible alternative. The Forest Service has failed to disclose its obligations under NEPA and NFMA with respect to the transportation changes.

RESPONSE

The Forest Service Handbook ([FSH] 1909.12, chapter 20, section 22.2) indicates that if a plan has direction that overlaps, the plan must clearly explain which direction has priority. The explanation regarding priority is located in Chapter 1 of the Forest Plan, in the Priority of Plan Direction section, as well as in the introduction section in Chapter 5.

Until the Forest Service implements this new direction on a site-specific transportation project, providing examples of conflicts of direction, or describing the extent of potential conflicts is not warranted at a programmatic level. When developing future transportation systems, the project must be designed to be consistent with the applicable plan direction in Chapter 5. For example, wildlife standard S-TCS-WILD-01, and forest-wide desired condition DC-02.

> S-TSC-WILD-01: Design and construct transportation systems to maintain wildlife habitat corridors between old-growth reserves (OGRs), riparian management areas (RMAs), and beach and estuary fringe.

> DC-02: Transportation systems support community resilience, resource management, and provide for current and future land management needs, subject to applicable laws.

> Transportation systems avoid, minimize, or mitigate adverse effects to natural and cultural resources.

The decision document (Decision Memo, Decision Notice, Record of Decision) for the project or activity must describe how the project or activity is consistent with S-TSC-WILD-01, DC-02, and other applicable plan direction, and this process is described in the Project Consistency Requirements section in Chapter 6 of the Forest Plan.

On p. 3-277 of the DEIS in the Transportation environmental consequences section, the Forest Service disclosed that under the action alternatives:

> "With this amendment, the existing transportation and utility LUD and avoidance areas would be removed from the Forest Plan. TSC plan components, e.g., standards and guidelines to the Forest Plan, would take precedence over other forest-wide and LUD-specific standards and guidelines (subject to applicable laws) where TSC are proposed or exist."

See response to PLR-1 and TUS-2 regarding NFMA compliance.

COMMENT

TUS-6: Removal of the Transportation and Utility System LUD in the action alternatives violates the 2012 Planning Rule and requirements of the National Environmental Policy Act (NEPA) because specific geographic management areas were removed from the Forest Plan. Removal of the LUD does not fulfill the stated purpose of the proposed plan amendments, and removal was not disclosed as a secondary purpose for the plan amendment. These geographic corridors connecting the communities located within the boundaries of the Tongass National Forest are intended to be developed and operated as transportation and utility systems in accordance with the State of Alaska's Southeast Alaska Transportation Plan (SATP). Neither the published notice of intent nor the DEIS purpose and need statement disclose the intent to eliminate the TUS LUD. The NEPA requires the significant federal action be disclosed and fully analyzed prior to implementation.

RESPONSE

See responses to P&N-2, TUS-2 and TUS-3. See response to PLR-1 and TUS-2 regarding NFMA compliance.

COMMENT

TUS-7: The Forest Service's conclusion in the DEIS, that there is considerable uncertainty about the future development of Southeast Alaska's road system, is unsupported. This conclusion was used to create transportation systems corridor objective O-TSC-01 in Chapter 5 of the Proposed Forest Plan. Development and delivery of transportation projects in the established transportation and utility corridors is accomplished, in part, by the stability and predictability of the geographically designated Transportation and Utility System (TUS) LUD. This objective (O-TSC-01) is extremely limited and contradictory to the many upcoming and reasonably foreseeable highway projects. With nearly 200 miles of state highway construction recently completed and planned for the near future - and congressionally granted easements underlying hundreds of miles of the TUS LUD - this objective does not reflect the planned development in the TUS LUD.

RESPONSE

The Southeast Alaska Transportation Plan (SATP) states the following on page 2:

> "Alaska may see a decrease in funding in the future. The federal highway trust fund is no longer sufficient to cover surface transportation needs and must be supplemented by the federal general fund, or restructured. State funding which pays for all operating and some capital expenses is expected to decrease as state revenues decline, primarily due to oil

> production declines and price fluctuations. Consequently, the Department must plan for the possibility of reduced financial resources. The SATP recommendations need to account for this year to year uncertainty and plan for periods of reduced funding." (ADOT&PF 2014)

The recent work completed on the roads that were improved through Western Federal Lands funding were relocation and reconstruction of existing roads on Prince of Wales Island. Easements have been given for some sections of the roads on Prince of Wales Island as well as on some roads on other islands to the State of Alaska. These road sections are included in the roads illustrated on Map 21 Prince of Wales Corridors from the Southeast Alaska Transportation Plan, an approved component of the Alaska Statewide Transportation Plan, August 14, 2004. Many of the sections of road illustrated on this map have not been constructed and some sections will not be constructed but were alternative roads. Several maps are included in the Southeast Transportation Plan show roads that will be difficult to construct and expensive to construct considering the terrain, landslides, cultural resources, aquatic resources, stream crossings as well as ferry transportation required to connect some waterways.

Updates to the potential routes and forecasted costs are included in the Southeast Alaska Transportation Plan 2014 Draft. The Forest Plan present and reasonably foreseeable actions and projects (DEIS Appendix C) were developed to be consistent with the Southeast Transportation Plan that provides set of proposed road and utility corridors the State of Alaska is pursuing to meet future transportation and energy needs of Southeast Alaska. The Forest Plan objectives are written to be "…concise, measurable, and time-specific…based on reasonably foreseeable budgets." (FSH 1909.12 Ch. 20, sec. 22.12). Objective O-TSC-01 was written to be achievable and realistic given the fiscal and time constraints as well as anticipated litigation.

COMMENT

TUS-8: The Forest Plan direction for renewable energy and transportation systems corridors direction in Chapter 5 may prove workable for the Forest Service, but the Section 4407 easements and the SATP corridors in the existing TUS LUD must be recognized in the Forest Plan for the multiple-agency and multiple-year planning required to connect the communities of Southeast Alaska. It is unclear how removing the Transportation and Utility System (TUS) LUD will better facilitate the availability of NFS land for the development of existing and future transportation systems, since the State currently holds easements over the vast majority of the TUS LUD. Removal of the of the TUS LUD will likely have the effect of making NFS land less available, create future use conflicts, and deter development of existing and future transportation systems. The depiction of the corridors on the TUS LUD maps in the 2008 plan was informative and consistent with the management direction in the plan concerning the priority of TUS development in those corridors. The State, regulatory agencies, and the public require the disclosure and predictable management of the transportation and utility corridors in the TUS LUD.

RESPONSE

Chapter 3 of the DEIS Transportation section (pages 3-271 to 3-273) included a discussion about the Final Southeast Alaska Transportation Plan (SATP), and described the intent of the road construction to provide access to NFS lands. Pages 3-274 and 3-275 of the DEIS provided a discussion about the TUS LUD under the 2008 Forest Plan. On p. 3-277 of the DEIS in the Transportation environmental consequences section, the Forest Service disclosed that under the action alternatives:

> "Under Alternatives 2, 3, 4, and 5, the existing TUS LUD would be removed from the Forest Plan. Proposed new plan components for Transportation Systems Corridors (TSC) would replace the direction currently found in the Transportation and Utility System LUD. TSC plan components apply only to major road systems such as state and federal highways, railroads, and those identified by the State of Alaska in the current version of the SATP and applicable laws (for example, Section 4407 of Public Law 109-59, Title XI of the Alaska National Interest Lands Conservation Act, Public Law 96-487)."

The Proposed Forest Plan LUD map for Alternative 1 included the TUS LUD, while the LUD map representing Alternatives 2-5 did not include the Section 4407 of Public Law 109-59 easements and the

SATP corridors. FEIS maps have been corrected to include the Section 4407 easements and the SATP corridors.

The management prescription goal in the 2008 Transportation and Utility Systems LUD, and the purpose of the plan direction for transportation systems corridors in Chapter 5 is to facilitate the availability of National Forest System land for the development of major roads; existing and future transportation systems such as those identified by the State of Alaska in the current version of the SATP and applicable laws. (See page 5-13 of the Proposed Forest Plan Chapter 5 for this description.) The transportation systems corridors direction in Chapter 5, including Forest-wide plan components DC-02, DC-03 and DC-04, was written with this purpose in mind.

COMMENT

TUS-9: There is no management advantage by replacing TUS LUD with transportation systems corridors direction in Chapter 5. Without the TUS LUD, the specific property and development rights granted by Congress are not recognized. The TUS LUD provides predictability and transparency, and minimizes potential conflicts with underlying LUD goals and associated management prescriptions should transportation development occur. The TUS LUD represents "a 'window' through the underlying LUD through which roads and/or utilities can be built. To provide the predictability and transparency necessary for the continued development of the infrastructure connecting the communities of Southeast Alaska, the Forest Service should preserve the TUS LUD.

RESPONSE

The Proposed Forest Plan transportation systems corridors direction in Chapter 5 was developed to replace the TUS LUD direction. The TUS LUD direction in the 2008 Forest Plan took precedence over underlying LUDs regardless of whether the underlying LUD was a TUS "Avoidance LUD." Similarly, the applicable transportation systems corridors direction in Chapter 5 takes precedence over other forest-wide and LUD-specific standards and guidelines where transportation systems corridors exist or are proposed. The Introduction to Chapter 3 of the Proposed Forest Plan explained how the plan direction for transportation systems corridors in Chapter 5 is applied to the LUDs and is represented in the table that cross-references the applicable direction that applies to the LUD.

The Proposed Forest Plan LUD map for Alternative 1 included the TUS LUD, while the LUD map representing Alternatives 2-5 did not include the Section 4407 of Public Law 109-59 easements and the SATP corridors. FEIS maps have been corrected to include the Section 4407 easements and the SATP corridors.

The management prescription goal in the 2008 Transportation and Utility Systems LUD, and the purpose of the plan direction for transportation systems corridors in Chapter 5 is to facilitate the availability of National Forest System land for the development of major roads; existing and future transportation systems such as those identified by the State of Alaska in the current version of the SATP and applicable laws. (See page 5-13 of the Proposed Forest Plan Chapter 5 for this description.) The transportation systems corridors direction in Chapter 5, including Forest-wide plan components DC-02, DC-03 and DC-04, was written with this purpose in mind.

See response to TUS-8. Regarding the removal of the Transportation and Utility Systems LUD and adding new direction, see responses to P&N-2, PLR-1, and TUS-2.

COMMENT

TUS-10. The practice of road decommissioning is expensive, wasteful, unnecessary, and reduces ancillary community benefits. Roads support tourism by providing access for a wide variety of activities, including hunting, fishing, hiking, birding, wildlife viewing, photography, recreational vehicle use, boating/kayaking, and more.

RESPONSE

Future transportation needs are considered using the travel analysis process. See Forest Service Travel Planning Handbook FSM 7709.55. Some travel management issues (such as response to visitor demand, open road density, and other wildlife issues) should be considered at a broad scale, while other issues (such as potential conflicts among uses on a particular trail and mitigation measures for a particular stream crossing) are best evaluated at a reduced scale. Travel analysis is often the point where broad-scale issues can be identified. Site-specific issues are addressed at the project level.

Renewable Energy (REN)

COMMENT

REN-1: The Forest Service is commended for emphasizing renewable energy in the Proposed Forest Plan, but encouraging renewable energy at the expense of essential environmental protections takes this policy too far. The Forest Service has not explained why it is necessary to locate renewable energy sites in what are currently "avoidance" areas, particularly in highly sensitive areas like beach and estuary fringe. The Proposed Forest Plan removes the "avoidance" area language that constrained hydroelectric projects in certain areas of the Forest unless an alternative location was not feasible. The renewable energy direction in Chapter 5 of the Proposed Forest Plan now has priority over other plan direction and overrides legally required environmental protection measures. The Proposed Forest Plan is inconsistent in describing the priority of direction that will apply, saying both that "[c]onsistent with the 2008 Forest Plan, renewable energy projects need to be consistent with the standards and guidelines for the respective LUDs affected by energy development" and that "should there be a conflict in direction, the proposed plan components in Chapter 5 would take priority over forest-wide and LUD-specific standards and guidelines (subject to applicable laws)." Neither the DEIS nor Proposed Forest Plan justifies the priority of direction with respect to renewable energy.

RESPONSE

Protection of forest resources is a priority when considering renewable energy development on National Forest System (NFS) lands. The Notice of Intent (NOI) that was published on May 27, 2014 in the Federal Register (79 FR 30074) stated under the "Purpose and Need for Action" that [the Forest Service] will also evaluate other changes suggested in the 5-year review." Concerns were consistently expressed during the Five-Year Review of the 2008 Forest Plan regarding the impact of high fossil fuel prices; the adverse effect of high energy costs on economic diversification and sustainable economic development; and increasing climate change on the quality of life in Southeast Alaska. Concerns were also expressed that the 2008 Plan's direction regarding transportation and utility systems, including the Transportation and Utility System (TUS) overlay Land Use Designation (LUD), were overly complex, confusing, and difficult to implement, creating an impediment to development of hydropower, other types of renewable energy, and transmission lines needed to connect communities to sources of electric power. Based on this review, the responsible official determined to propose changes to the Forest Plan to make the development of renewable energy resources more permissible -- including allowing greater project-level consideration of transportation and utility corridors and removing the TUS overlay LUD -- to stimulate renewable energy development in Southeast Alaska communities, provide low-carbon energy alternatives, and reduce the use of fossil fuels. The "window" and "avoidance" direction in the LUD management prescriptions was also removed because it was associated with application of the TUS LUD which was removed in the Proposed Forest Plan.

Chapter 5 of the Forest Plan includes renewable energy direction that was developed to replace the renewable energy direction in the TUS LUD. Like the TUS LUD direction in the 2008 Forest Plan, the renewable energy direction in Chapter 5 gets applied to a specific geographic location on the Forest (LUD). For example, guideline G-RE-FAC-01 and G-RE-FAC-02 in Chapter 5 of the Forest Plan include the following direction:

G-RE-FAC-01: Utility lines should follow existing or planned transportation systems corridors, including those identified in the Logging Systems and Transportation Analysis (LSTA) and Public Law 109-59.

G-RE-FAC-02: An alternative route can be considered if it reduces or minimizes resource impacts.

Each LUD in Chapter 3 of the Forest Plan provides a table indicating the renewable energy plan components that apply.

Not all NFS lands may be suitable for renewable energy. Chapter 5 includes the following suitability of lands plan component to identify the suitability of renewable energy in a particular area at the project level with site-specific analysis:

SUIT-RE-01: All NFS lands may be suitable for renewable energy sites on a case-by-case basis in consideration of the LUD, ecological and social values, and benefit to Southeast Alaska communities.

The interdisciplinary team (IDT) assigned to a renewable energy project will determine if the proposed renewable energy development is suitable based on the factors in SUIT-RE-01. The management approach for renewable energy further clarifies the intent of SUIT-RE-01 that "Identifying renewable energy sites as suitable is not a commitment but only an indication that the use might be appropriate."

Identifying suitability will help determine if future renewable energy projects and activities are consistent with the following desired conditions:

DC-RE-01: Renewable energy resources (subject to applicable law) contribute to the economic well-being of Southeast Alaska communities.

DC-RE-02: Renewable energy resources are developed in a manner that would maintain and protect National Forest System (NFS) lands and resources.

Protection of resources remains a priority and consistency with the Forest Plan and monitoring of results will continue. The Forest Service developed the set of plan components including the suitability of lands to integrate social, economic, cultural, and ecological considerations. When developing future renewable energy projects, the project or activity must be designed to be consistent with the applicable plan direction in Chapter 5. (Consult Chapter 6 of the Forest Plan regarding Project Consistency Requirements.)

The Proposed Forest Plan is not changing the process the Agency will go through when a proponent desires to develop a renewable energy project. The Forest Service will continue land administration activities under the direction in Chapters 2, 3 and 4. The Chapter 5 plan components take precedence only in the event of conflicting direction. The Forest Service Handbook (FSH) 1909.12, Chapter 20, Section 22.2 guides that if a plan has direction that overlaps, the plan must clearly explain which direction has priority. The Forest Service explained in the Proposed Forest Plan which direction has priority. (See Priority of Direction section in Chapter 1 on p. 1-4, Introduction section in Chapter 5 on p. 5-1, and in the introduction to Renewable Energy Direction section on p. 5-12.)

A Management Approach was added to the Forest Plan in Chapter 5 that reads as follows:

"The addition of the renewable energy plan components do not change the need to ensure that resource protection measures are incorporated throughout project-level planning, construction, and operation of renewable energy sites."

The following sentence was added to Forest Plan, Chapter 1, Priority of Direction:

"Chapter 5 assumes all laws, regulations, and policy pertaining to management of National Forest resources will be followed. Ground-disturbing projects will use the approved best management practices (BMPs) (National Core BMP Technical Guide FS-990a and Alaska Region Soil and Water Conservation Handbook, FSH 2509.22) to avoid, minimize, or mitigate environmental impacts."

COMMENT

REN-2: The Forest Service is right to encourage most kinds of renewable energy, but the definition of "renewable energy" in the Proposed Forest Plan is too broad because it extends to all renewable energy technologies regardless of their environmental effects. For example, poorly designed and located hydropower projects can adversely affect salmon, which are critical to the Southeast Alaskan way of life. The Forest Service should adopt a definition that focuses on beneficial technologies. The current definition does not differentiate between energy resources whose use will force climate change, such as biomass, and those whose use is essentially climate-neutral or even climate beneficial, such as wave action. The current definition does not exclude resources that replenish too slowly to matter for purposes of human civilization. Based on the current definition, old-growth forests that may take hundreds or thousands of years to replenish, but can ever truly be replenished, are classified as "renewable energy."

RESPONSE

The definition of renewable energy in the Proposed Forest Plan is consistent with the Forest Service Strategic Energy Framework, approved by the Chief in January, 2011. Environmental consequences associated with the utilization of various renewable energies are disclosed in a project-level environmental analysis (the reviewer's example of the potential for hydropower to adversely impact aquatic resources is one), but those do not change the fundamental definition of renewable energy. It is not the role of this plan to redefine a commonly agreed-upon term. The Forest believes it is appropriate to maintain the definition in the Forest Plan.

COMMENT

REN-3: If "renewable energy" was defined to focus on beneficial technologies, it would not include biomass. Biomass technology's effect on climate change, its potential demands on forest resources, its harmful emissions, and the fact that Tongass biofuels are not competitive in the market, makes it a mistake for the Forest Service encourage this as a type of renewable energy. The DEIS mentions a Forest Service goal of converting 30 percent of fuel oil heating to biomass. This goal does not exist as a plan component in the Proposed Forest Plan. To avoid confusion, the Forest Service should remove references to this goal from the FEIS for the reasons stated. The Forest Service has not considered the environmental effects of promoting biomass energy as NEPA requires. The Forest Service has not considered these issues, despite the fact that they are integral to understanding the environmental effects of the Proposed Forest Plan's new renewable energy direction. The Forest Service must consider all of these issues before it adopts forest plan components that promote biomass energy, such as those in the Proposed Forest Plan.

RESPONSE

A programmatic analysis of the Proposed Forest Plan's new renewable energy direction was provided on pages 3-289 to 3-290 in the DEIS. As stated on page 3-289 of the Renewable Energy section in Chapter 3 of the DEIS, the new renewable energy direction in Chapter 5 of the Proposed Forest Plan could affect other resources, and these effects are discussed in each respective resource section in the FEIS. The Forest Plan does not specifically authorize biomass projects. Rather, the Forest Plan provides overall strategic direction for management of the Tongass and encourages development of renewable energy without compelling specified Agency actions or guaranteeing specific results. Timber sales can currently support biomass energy products under the 2008 Plan. Several examples of current biomass projects were provided in the DEIS on page 3-286, and the Forest Service acknowledged that "successfully launched projects provide useful learning opportunities as case studies, but future projects will need to continue analyze overall cost savings based on choosing the right technology for the local biomass fuel supply (USDA Forest Service 2015k)."

The Forest Service's "goal to support a transition of 30 percent of the heating oil use in Southeast Alaska to biomass over the next decade (Deering 2014)" as stated in the DEIS on page 3-459, was used by the U.S. Forest Service, Pacific Northwest (PNW) Research Station in a baseline model that was used to construct three management scenarios representing alternative futures for timber harvest in southeast Alaska (Daniels et al., 2016). The Forest Plan includes the following forest-wide goal in Chapter 5:

G-RE-01: The Forest would proactively contribute to sustainable production of renewable energy and energy transmission and distribution across the Forest, on all lands and LUDs, after consideration of other resources and community benefits.

The Forest Service's role does not include performing human health risk assessments of the deployment and usage of materials derived from the National Forests. That role is appropriately held by regulatory agencies such as the EPA and ADEC. As such the Forest Service is not in a position to quantify the extent of "substantial risk to human health."

Site-specific locations and mitigation measures for proposed renewable energy projects would be determined by project-level planning and environmental analysis at the time a specific project is proposed. Issues related to these proposed projects would be disclosed at that time.

See response to REN-1 regarding application of new renewable energy direction in Chapter 5.

COMMENT

REN-4: There is support for providing Southeast Alaskans with clean, affordable and reliable energy, particularly in small communities like Kake, which depend on isolated electric systems that run on high cost diesel. Development of community-based renewable energy solutions is the most effective approach. The Forest Service should invest agency resources to help small, diesel-dependent communities transition to renewable energy. Examples include partnering with these communities to assist with public meetings, consensus building, site surveys, feasibility determination and project selection, and providing advice and resources to help these communities identify and implement energy efficiency and demand side management measures. Projects 5 MW or less, with minimal environmental impacts may qualify for a FERC exemption from licensing.

RESPONSE

Since 2010, USDA agencies, led by the Forest Service and Rural Development, have been directed to develop a strategy known as the Transition Framework to help Southeast Alaska communities transition to a more diversified economy. Renewable energy, forest restoration, young-growth management, and tourism are a few of the components of the transition strategy. This is discussed in Chapter 1 of the FEIS.

The Forest Plan plays a role in supporting the Transition Framework to help move Southeast Alaska communities to a more diversified economy and provides desired conditions/objectives to benefit communities powered by diesel. See response to REN-1 regarding application of new renewable energy direction in Chapter 5 of the Forest Plan.

COMMENT

REN-5: Sensitive habitats should be avoided when renewable energy facilities or transportation and utility corridors are proposed, studied, and ultimately developed. The Proposed Forest Plan's plan components should require siting roads and other infrastructure outside of OGRs, beach fringe, designated wildlife corridors, and other sensitive areas unless an analysis demonstrates that there are no practical alternatives. The action alternatives evaluated in the DEIS do not appear to require this analysis, which leads to the presumption that construction of roads and renewable energy facilities are allowed wherever they may be proposed, irrespective of habitat values. This proposed approach could undermine the integrity of the Conservation Strategy, which was designed to protect important habitat in specific locations from human impacts.

RESPONSE

The Forest Plan does not specifically authorize renewable energy projects. Rather, the Forest Plan provides overall strategic direction for management of the Tongass and encourages development of renewable energy without compelling specified Agency actions or guaranteeing specific results. The analysis presented in the Forest Plan FEIS is programmatic. Project level analyses are conducted for site-specific projects, such as renewable energy sites. Project level analyses quantify all the impacts—beneficial and adverse—of a proposed project. Potential impacts may include impacts to wildlife, wetlands, particular sectors of the economy, and other resources or uses.

Analysis conducted under the NEPA process would evaluate site-specific resource impacts and cumulative effects from renewable energy site development, and adjustments could be made as needed to ensure protection of these resources.

Renewable Energy desired condition DC-RE-02 in Chapter 5 of the Forest Plan requires that the Forest Service develop renewable energy resources "…in a manner that would maintain and protect National Forest System (NFS) lands and resources."

Protection of resources remains a priority and consistency with the Forest Plan and monitoring of results will continue. The Forest Service developed the set of plan components including the suitability of lands (SUIT-RE-01) to integrate social, economic, cultural, and ecological considerations. When developing future renewable energy projects, the project or activity must be designed to be consistent with the applicable plan direction in Chapter 5. (Consult Chapter 6 of the Forest Plan regarding Project Consistency Requirements.) See response to REN-1 regarding application of new renewable energy direction in Chapter 5.

COMMENT

REN-6: Proposed Renewable Energy direction is moving in the right direction, but lacks clear, enforceable direction necessary to promote renewable energy development. Suggested changes to Chapter 5 include:

- **Change wording in the introduction so that "preliminary stage" is not confused with the industry term "preliminary permit."**
- **Adding clear guidance to SUIT-RE-01 about how consideration to LUD, ecological and social values, and benefits to Southeast Alaska communities will be applied.**
- **Change O-RE-01(1) to include all communities in Southeast Alaska.**
- **Change wording in O-RE-01(2) to make it clear that "renewable energy capacity" is intended to be broadly interpreted to include increases in capacity, efficiency, and storage in support of Priority 1.**
- **Add a Management Approach to Facilities (FAC) to acknowledge that some renewable energy facilities may not have previously defined corridors. This is especially true for renewable sites not contemplated when corridors were originally established (e.g., wind, tidal, biomass).**
- **Change G-RE-FAC-01 to acknowledge that existing and planned transportation system corridors should be used when present.**
- **Change G-RE-FAC-02 to acknowledge that viable and beneficial alternative routes outside of established corridors may not be "linear".**
- **Revise scenery design management approach to not be unreasonable or render a project infeasible.**
- **Modify SUIT-RE-TRAN-01 and S-RE-TRAN-01 to provide clear interpretation on lands pertaining to renewable energy development within an Inventoried Roadless Area.**
- **Specify a thirty (30) day timeline for review and issuance of special use permits for exploratory and study activities.**
- **Specify authorized decision-making authorities for each subsection of the Renewable Energy Direction in such a way that helps streamline renewable energy permitting and development.**
- **Ensuring that renewable energy developers are able to construct roads, including in roadless areas.**

RESPONSE

The majority of the above suggestions have been incorporated into the Forest Plan as appropriate. The Forest Plan provides guidance in how LUDs and other resource values are to be addressed. The word "rural" was maintained primarily due to the fact that most of these communities are those that are currently not interconnected or have established renewable energy capabilities available. Specifying timelines for permitting response is outside the scope of the amendment. Agency policy provides for notification whether a proposal for a special use permit will receive further consideration (FSH 2709.11, chapter 10, section 10.3), and other agencies that may have authority over certain proposed energy projects, such as the Federal Energy Regulatory Commission, will establish timelines as appropriate.

The Forest Service developed the set of plan components including suitability of lands (SUIT-RE-01) to integrate social, economic, cultural, and ecological considerations. When developing future renewable energy projects, the project or activity must be designed to be consistent with the applicable plan components in Chapter 5. (Consult Chapter 6 of the Forest Plan regarding Project Consistency Requirements.)

Road development would be considered based on the siting of the project and the objectives of the LUD it is located in, in consideration of all applicable plan components.

COMMENT

REN-7: The renewable energy direction in the Proposed Forest Plan is vague, unenforceable, subject to broad interpretation, and fails to deliver the type of clear and consistent approach and understandable criteria that is required by renewable energy developers to undertake renewable energy development activities. The new direction will also require many assumptions and a great deal of discretion, which does not make renewable energy development more permissible. The renewable energy direction in the Proposed Forest Plan is not consistent with national energy policy and national energy security policy. Additionally, Public Law 106 -511 enacted on November 13, 2000 establishing the Southeast Alaska Intertie System is not referenced, explained, or identified. There is no discussion about how these laws could assist in the development of an enforceable renewable energy resource plan that would reduce air emissions, including greenhouse gases, from mining operations. A renewable energy resource plan or LUD should have been included in the Proposed Forest Plan to recognize pre-existing power site classifications and other potential renewable energy resources on the Tongass such as hydropower, geothermal, wind, tidal, or other renewable energy sites.

RESPONSE

The Forest Service is committed to playing a significant and long-term role in resolving challenges to our energy resources, on which our environment and quality of life depend. The Forest Service Strategic Energy Framework, approved by the Chief in January, 2011, sets direction and proactive goals for the Agency to significantly and sustainably contribute toward resolving U.S. energy resource challenges, by fostering sustainable management and use of forest and grassland energy resources. Challenges include the need to balance the social, environmental, and economic variables influencing and influenced by energy supply.

We acknowledge that a renewable energy plan for the Tongass may be valuable; however, this amended forest plan provides overall strategic direction for management of the Tongass and encourages development of renewable energy without compelling specified Agency actions or guaranteeing specific results.

The plan amendment proposed to remove the "avoidance areas" as the initial impediment for locating renewable energy projects. We understand that this alone does not provide certainty to project developers as they weigh the risks and economics of a project. However, whether a specific renewable energy plan exists will not reduce the need for the Forest to balance the social, environmental, and economic variables for those communities within southeast Alaska.

Response to comments related to mining are referenced under MIN-1 through MIN-8.

COMMENT

REN-8: Renewable Energy projects should not be prioritized based on market destination or end-line user as proposed in the renewable energy direction in Chapter 5 of the Proposed Forest Plan. The use of the term "export" to describe sale of renewable energy to markets outside of Alaska is inappropriate. Selling energy across state boundaries, and even across the Canadian border pursuant to North American Free Trade Act, is a well-established and commercially reasonable activity typical of the utility sector. Even if power is not sold locally, renewable energy projects in the Tongass create rural "green jobs," local expenditures, and local tax revenue in southeast Alaska, all of which are meaningful benefits, which the Forest Service should recognize. The Forest Service should ensure timely and adequate staff participation in all renewable energy development proposed on National Forest System lands, in accordance with FERC's permitting and licensing processes, and treat all developers equally without prioritizing projects based their intended market or user.

RESPONSE

The Forest Service acknowledges in the desired conditions of the Renewable Energy Direction that renewable energy projects contribute to the economic well-being of Southeast Alaska communities. To ensure Southeast Alaska has the benefit of sustainable economic development, the plan components provide for a priority consideration of renewable energy projects based on whether the projects lead to a decrease in the number of Southeast Alaska rural communities powered by diesel generators, an increase in energy capacity, efficiency, or storage at existing projects, or an export of renewable energy resources without power benefitting Southeast Alaska communities. This prioritization is consistent with the goals of the Transition Framework and the Secretary's Memorandum, and is reflected in the recommendations of the Tongass Advisory Committee. That group noted that relief to communities is ensured where the Forest Plan provides for increased access to new renewable energy and hydropower resources within the Tongass, thereby allowing communities to enjoy more affordable energy for current purposes and future growth, while also supporting the growth and prosperity of a new young growth manufacturing industry through more affordable renewable energy.

The Forest Service also acknowledges that adequate staff participation in all renewable energy development projects proposed on the Tongass is desirable; however, in the 2011 Forest Service Strategic Energy Framework, the agency identified the need to increase the Agency's institutional capacity with the specialized skills necessary to assess the effects of existing and new technologies that affect America's forests. The Tongass has similar challenges regarding capacity and specialized skills. Applying priority considerations to renewable energy projects also gives the Tongass an opportunity to respond to proposals more effectively given limited agency resources.

COMMENT

REN-9: The Proposed Forest Plan does not make it clearer and easier for roads and utility systems to be built to facilitate less expensive construction of renewable energy projects, or give greater assurance of speedy approval for roads or transmission facilities through roadless areas. These amendments would also aid economic development of mineral deposits in the forest. Transportation and utility access was guaranteed through most of the Tongass National Forest by Title XI of ANILCA, which set up a process guaranteeing access through conservation system units after the agency ruled that IRAs are covered under that definition. Although the existing alternatives propose to provide more "flexibility" on a "case-by-case" basis for roads and utilities, the language does not provide sufficient certainty of approval to encourage developers to advance costly reconnaissance studies of potential projects that could be impacted by 2001 Roadless Rule regulations. In order to prevent needless costs and development uncertainties, the Forest Service should determine how to handle future requests for renewable energy developments in 2001 roadless areas.

RESPONSE

Not all NFS lands may be suitable for renewable energy. Chapter 5 includes the following suitability of lands plan component to identify the suitability of renewable energy in a particular area at the project level with site-specific analysis:

SUIT-RE-01: All NFS lands may be suitable for renewable energy sites on a case-by-case basis in consideration of the LUD, ecological and social values, and benefit to Southeast Alaska communities.

See response to REN-1 regarding application of new renewable energy direction in Chapter 5. The new plan components are set to 'encourage renewable energy production' (Proposed Forest Plan, Page 5-12).

The Forest Service acknowledges that these new components will make it 'easier for roads and utility systems to be built'; 36 CFR 219.13 (a) allows for such LUD changes. See response to TUS-2. There is no authority for the responsible official to modify federal law enacted by Congress or be inconsistent with higher-level direction through forest planning (See Forest Plan Priority of Direction in Chapter 1).

Conservation system units on the Tongass National Forest are statutorily designated areas; roadless areas on the Tongass National Forest are administratively established, designated by the Secretary of Agriculture in accordance with the 2001 Roadless Rule. The Priority of Direction as explained on page 1-4 of the Proposed Forest Plan provides that higher-level direction (federal law and regulations) take precedence over the Forest Plan direction. The clear intent of the Proposed Forest Plan is to encourage renewable energy production within the laws and regulations. Changes to the 2001 Roadless Rule are outside of the scope of this amendment.

COMMENT

REN-10. The Forest Plan should incorporate the September 29, 2006 Memorandum of Understanding (MOU) between U.S. Department of Agriculture, Forest Service, Alaska Region, and the State of Alaska Department of Natural Resources and Alaska Department of Transportation and Public Facilities (FS Agreement No. 06MU-11100100-151; State of Alaska Agreement No. ADL 107516), which specifically identified rights of way for transmission corridors and log transfer facilities illustrated in Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEALU). The Forest Service must also consider the impacts of these reciprocal easements in the EIS.

RESPONSE

The FEIS acknowledges Public Law 109-59, as amended, and the rights-of-way and easements identified in Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEALU) Map 92337 under existing conditions in Chapter 3 under Land Uses, Ownership, and Adjustments and the Transportation sections. The MOU and easements for transportation and utility corridors are described and analyzed in the Transportation section in Chapter 3 of the FEIS.

Renewable energy guideline G-RE-FAC-01 in the proposed Forest Plan has been revised in the Forest Plan to include the easements as follows:

G-RE-FAC-01: Utility lines should follow existing or planned transportation systems corridors, including those identified in the Logging Systems and Transportation Analysis (LSTA) and Public Law 109-59.

Minerals and Mining (MIN)

COMMENT

MIN-1: The proposed TLMP Amendment should discuss the adverse impacts to the mining sector from re-imposition of the Roadless Rule on the Tongass.

RESPONSE

The 1872 Mining Law gives a statutory right of reasonable and necessary access related to the exploration and development of mineral properties, and the 2001 Roadless Area Conservation Rule (Roadless Rule) recognizes this right. This statutory right is subject to reasonable regulation for the protection of surface resources. If the inventoried roadless area is open to mineral entry, locatable mineral mining, including certain activities ancillary to the mining such as access roads for exploration and development, may be approved.

The Roadless Rule anticipates a number of other permissible activities, including exploration and development of leasable minerals, such as oil and gas or geothermal resources, hydropower projects, forest restoration projects, and certain special uses that do not involve road construction or reconstruction. The Forest Service will work with the project proponent to determine the permissible activities during NEPA analysis of a proposed project.

COMMENT

MIN-2: The TLMP Amendment should include mining in the multiple use strategy and include enforceable mechanisms to promote mineral and strategic mineral development, including a Mineral and Strategic Mineral LUD; interpreting "reasonable access" for mining operations within the Tongass to mean road access for mineral and leasable mineral development; including clear guidelines allowing for cutting trees in association with mining exploration and development access on the Tongass; and including an alternative that would allow access to future mineral leases (including geothermal leases) on the Tongass, even if such alternative(s) would require a modification to the Roadless Rule.

RESPONSE

As stated above, the 1872 Mining Law gives a statutory right of reasonable and necessary access related to the exploration and development of mineral properties, and the Roadless Rule recognizes this right. This statutory right is subject to reasonable regulation for the protection of surface resources. If the inventoried roadless area is open to mineral entry, locatable mineral mining, including certain activities ancillary to the mining such as access roads for exploration and development, may be approved. It is important to note that "reasonable access" does not have a strict interpretation, and in many cases road access is not the most reasonable alternative or the most cost efficient. If a mineral exploration or development project is proposed within an inventoried roadless areas, the Forest Service will work with the project proponent to determine the permissible activities, including reasonable access, during NEPA analysis of the proposed project.

Exploration and development of leasable minerals, such as oil and gas or geothermal resources, are not prohibited under the Roadless Rule.

COMMENT

MIN-3: Thirty day turnaround for issuance of Special Use Permits to those holding mining claims.

RESPONSE

Specifying timelines for permitting response is outside the scope of the amendment. There is no regulatory basis to provide mining claimants priority or special treatment when it comes to the processing of Special Use Permits. Agency policy provides for notification whether a proposal for a Special Use Permit will receive further consideration (FSH 2709.11, sec 10.3).

COMMENT

MIN-4: The Forest Service should allow roads through roadless areas to guarantee more affordable access to mineral developments. Any plan update should be modified to guarantee more affordable access to mineral developments.

RESPONSE

The Roadless Rule allows for the construction of roads in IRA's consistent with the level of locatable mineral exploration or development. Reasonable access in some of the more remote locations on the Tongass has frequently been interpreted in the past as helicopter or water access. The Bokan Mountain and Niblack Projects mentioned did not propose road access for their projects, likely due to the costs of construction and maintenance, as well as reclamation bonding for said access relative to the lesser costs of helicopter and boat access. Economics are only one of many variables considered in determining reasonable access.

Project-level decisions, such as access roads to specific mining projects, are beyond the scope of the Forest Plan (and thus the currently proposed amendment).

COMMENT

MIN-5. The impacts to mining from the President's November 3, 2015 Memorandum directing agencies to avoid and minimize harmful effects to natural resources caused by land- or water-disturbing activities, and to ensure that any remaining harmful effects are effectively addressed are impossible for the public to predict and must be disclosed in the EIS.

RESPONSE

Nationally, the Forest Service is developing a brief regulation that establishes clear goals for the use of mitigation on National Forest System lands and a set of directives in the Forest Service Manual and Handbook that clarify methods, tools, and their appropriate use to accomplish this. The regulation and guidance are in development. When draft regulation is developed, it will include an opportunity to provide specific input. When final, it will be provided to the Tongass and be implemented. Currently, the Final Directives are anticipated in late 2017. Additional information is available at: http://www.fs.fed.us/emc/nepa/FSMitigationPolicy.htm

COMMENT

MIN-6. Minerals management activities should be equally facilitated on any and all lands, not just what someone perceives as highest potential areas. See MG1.A (Forest Plan Chapter 3, Minerals).

RESPONSE

Changes to the Minerals overlay LUD standards and guidelines are outside of the focused scope of this Forest Plan amendment. Forest-wide Minerals and Geology Standards and Guidelines are provided in Chapter 4 of the Plan, where MG2.II provides direction to "encourage" exploration, development, and extraction of mineral on all lands open to mineral entry.

COMMENT

MIN-7. Forest Plan Chapter 3, Minerals, TRAN A, should not require reasonable access to mineral resources to be consistent with other resource values.

RESPONSE

Changes to the Minerals overlay LUD standards and guidelines are outside of the focused scope of this Forest Plan amendment. Ensuring other resources are protected during the planning, approval, and operation of roads for mineral exploration and development is consistent with the Mineral LUD goals, objectives, and desired conditions and locatable mineral regulations at 36 CFR 228, Subpart A.

COMMENT

MIN-8. The Forest Plan should acknowledge acceptance of other agency requirements and ability to jointly bond mineral projects.

RESPONSE

Changes to the Minerals overlay LUD standards and guidelines are outside of the focused scope of this Forest Plan amendment. 36 CFR 228.8(h) authorizes the Forest Service to accept certifications and other approvals issued by State or other Federal agencies with similar or parallel requirements. Further, Forest Service Manual 2817.24 provides that "All reasonable effort should be made, through agreements with States which require bonds for reclamation disturbances in National Forests, to avoid double bonding."

Wherever possible the Forest Service works cooperatively with states to avoid duplication or double bonding; however, The Forest Service should not waive its bond requirements in lieu of a state bond involving an instrument that is not acceptable to the Forest Service.

Carbon Storage and Global Warming (CARB)

COMMENT

CARB-1 and CARB-2: The Plan Amendment should better discuss and analyze the critical role of the TNF in global carbon sequestration and storage and the importance to the climate-change mitigation contributions of forests in general, and of the Tongass in particular. In particular the Forest Service should consider a no-harvest scenario as a mitigation measure to prevent a carbon flux deficit from federal forests in southeast Alaska. The FS did not consider the full body of science showing how each alternative will likely result in an increased concentration of CO_2 in the atmosphere in the near and long term.

RESPONSE:

Regarding the scope of the plan amendment, see response to PLR-1.

The suggestion that the Tongass "consider an alternative that would mitigate climate change by lowering CO_2 emissions and maximizing carbon storage" is beyond the scope of the amendment and would not meet the purpose and need of this action. That notice indicated that the purpose of the amendment was: "as needed to accomplish the transition to young growth management over the next 10 to 15 years while retaining the expertise and infrastructure of a viable timber industry in Southeast Alaska, as outlined by the Secretary in Memorandum 1044–009."

The analysis in the Forest Plan has been modified to acknowledge the substantial role the Tongass plays in carbon storage and the importance to climate change mitigation. Additional text has been added in Chapter 3.1 of the Final EIS (pages 3-13, 3-21, 3-23, 3-26). In response, we revised the evaluation of GHG storage and the comparison among alternatives in relative contribution to atmospheric GHG's to clarify the potential differences among alternatives in carbon sequestration and storage (pages 3-13-14). The analysis qualitatively discloses that carbon storage on the Tongass will remain substantial under each alternative (while disclosing the relatively small differences among alternatives). However, based on the scope of this amendment outlined in the 'Notice of Intent To Prepare An Environmental Impact Statement' published on 27 May, 2014, the purpose of the amendment is to: "accomplish the transition to young growth management over the next 10 to 15 years while retaining the expertise and infrastructure of a viable timber industry in Southeast Alaska, as outlined by the Secretary in Memorandum 1044–009." Comments suggests that the Tongass examine the contribution of the Tongass "in general" to climate change mitigation by discussing the role of undisturbed forest. As an amendment, rather than revision, the scope of options being considered does not include the potential for no timber harvest and therefore the consequences of such an alternative are not considered.

The Secretary's memo makes clear that the Department of Agriculture is committed to not only maintaining Southeast Alaska's exceptional natural resources in perpetuity but is equally committed to doing its part to ensure that communities within and adjacent to the Tongass National Forest are economically vibrant. The proposed action for the Amendment is intended to bring these two goals hand in hand. To do so, there will be costs and in the case of carbon storage we acknowledge that in order to bring to fruition the multiple-use objectives of this document as well as the overall mission of the Forest Service, the Tongass will incur a short- and mid-term net loss of total carbon storage through GHG emissions as a result of timber harvest on the Tongass.

COMMENT

CARB-3: The direct and indirect effects conclusion in the DEIS mistakenly describes the estimation of the effects of the Plan Amendment on carbon storage as "complex". There is disagreement with the DEIS' conclusion of no significant effect, claiming this conclusion is arbitrary.

RESPONSE:

Additional discussion and citations regarding the direct and indirect effects of logging under the Amendment have been added to the text in Chapter 3.1 of the Final EIS.

COMMENT

CARB-4: The DEIS was insufficient in identifying a relevant time frame in its climate change analysis and should establish quantifiable criteria for measuring carbon emissions and lost carbon storage according the Revised DRAFT CEQ.

RESPONSE

Additional discussion and citations regarding the differential ability of old-growth forest to sequester carbon dioxide and store carbon as well as a more explicit discussion about relevant timescale have been added to the text in Chapter 3.1 of the Final EIS. The Tongass National Forest currently sequesters large quantities of carbon (referred to it as the combined outcome of carbon "storage" and carbon "emissions"). Timber harvesting and forest management can affect a forest's ability to store carbon as well as emit carbon as carbon dioxide and other greenhouse gasses. The climate change discussion in Chapter 3's Affected Environment provide added discussion of the dynamics of carbon storage and loss due to proposed actions identified in this amendment. In summary, harvesting old growth creates a net release of CO2 into the atmosphere – particularly in short- and mid-term. There is uncertainty regarding long-term CO2 release particularly because of the importance of how the wood is used (durable or nondurable products), the regrowth of young forests, and market dynamics related to substitution.

The revised Chapter 3 also more clearly discloses uncertainty of GHGs contributions in the short- and long-term that result from timber harvest (both old-growth and young-growth) for each action alternative. The EIS does not present a quantitative analysis of carbon emissions, nor is there a requirement to do so (see response to CARB-23). Given the level of uncertainty in parameters related to the net contribution of GHGs, an attempt to quantify the evaluation would not provide clarity but instead result in a false sense of certainty. We qualitatively evaluate differences among the alternatives. The qualitative analysis provides the necessary level of information to evaluate the relative differences in carbon losses and gains for each alternative, thus providing the information for the deciding official on the relative contribution of GHGs from the proposed actions (USDA-Forest Service 2009).

COMMENT

CARB-5 and 6: The Forest Service's assumptions that carbon storage in wood products and thinning can offset emissions are incorrect. Also incorrect is the statement that "thinning activities may lead to a net gain or a net release of carbon…depending on how the thinning is conducted."

RESPONSE

Additional discussion and revisions in text have been added to Chapter 3.1 of the Final EIS regarding the effects of total carbon storage as a result of logging (both old-growth and young-growth forests) for each alternative. Additional discussion and citations regarding likely effects the social costs of carbon emissions as a result of proposed actions for each alternative have been added to the text in Chapter 3 of the Final EIS).

COMMENT

CARB-7, CARB-23 and CARB-24: The Forest Service should adopt the conservation alternative (e.g. no harvest alternative), provided by the Conservation Consortium, to comport with CEQ guidelines, the Paris climate agreement, and efforts to reduce climate damages from CO2 pollution. The FEIS should also include a cost-benefit analysis of avoiding damages to the environment cause by climate change "so as to level the economic playing field" in compliance with Executive Order 12866. A carbon life-cycle analysis should be presented to illustrate the outcome of the alternatives as well as an evaluation of the social cost of carbon emissions based on Executive Order 12866 and using the Interagency Working Group guidelines on carbon costing. (A GEOS Institute Analysis)

RESPONSE

See CARB-23 and CARB-24.

COMMENT

CARB-8: The DEIS arbitrarily and incorrectly characterizes the role of the public lands in southeast Alaska as insignificant by comparing global forest carbon sequestration to carbon storage in marine ecosystems. Further, this approach, which compares global storage in forests to global carbon storage in oceans (and, indeed, the atmosphere itself), fails to provide a cumulative effects analysis at a meaningful scale.

RESPONSE

Additional documentation and evaluation of cumulative effects of climate change have been added to the text in Chapter 3.1 of the Final EIS. See Response to CARB-4 for a fuller discussion of the effects analysis using a more meaningful time scale.

This section is made of 2 parts: 1) the effect of the project Amendment on climate change; and 2) the effects of climate change on the project Amendment. The first part of this section addresses the cumulative effects of GHG emissions and other contributors to climate change; while the second part addresses cumulative effects of the project on carbon sequestration (carbon storage and emissions).

This section highlights the conclusion that higher levels of harvest (e.g., the total available harvest under each of the alternatives) would only occur if additional manufacturing facilities and markets are developed, as well as other factors such as funding and staff levels. In addition, we added a brief discussion that addresses the different time scales these effects could have on carbon sequestration as discussed in Environmental Consequences section). The net contribution to atmospheric CO2 is lower given longer time scales due to regeneration, particularly if wood products include 'storage' products, if biomass substitutes for local fossil fuel use, and if market substitution (also called market leakage) is relatively high (e.g. Jonsson et al. 2012).

The global contribution of carbon storage that the Tongass provides is acknowledged in the Secretary of Agricultures memo to the US Forest Service in providing the scope and need for action to this Plan amendment. We have added language in Chapter 3.1 to further demonstrate our understanding of the forest's global importance in storing carbon. The Secretary's memo makes clear that the Department of Agriculture is committed to not only maintaining Southeast Alaska's exceptional natural resources in perpetuity but is equally committed to doing its part to ensure that communities within and adjacent to the Tongass National Forest are economically vibrant. The proposed action for the Amendment is intended to bring these two goals together. We acknowledge that in order to address the multiple-use objectives of this document we will incur a net loss of total carbon storage through GHG emissions as a result of timber harvest on the Tongass. No timber harvest, would not meet the purpose and need of the amendment and is outside the scope of the document.

COMMENT

CARB-9 and CARB-4: The DEIS's analysis is inaccurate because it ignores the differential ability of old-growth forest to sequester carbon dioxide and store carbon within the timeframe relevant to climate change mitigation. The Forest Service should evaluate timescale in light of scientific literature which suggests that "large-scale changes" in land use must occur within 10 to 15 years.

RESPONSE

Additional discussion and citations regarding the differential ability of old-growth forests to sequester carbon dioxide and store carbon as well as a more explicit discussion about relevant timescale have been added to the text in the Climate and Air section of the Final EIS. The Tongass National Forest currently sequesters large quantities of carbon (referred to as carbon "storage"). Timber harvesting and forest management can affect the timing (e.g., short- term mid-term) and net amount of carbon stored in forests. The climate change discussion in Chapter 3's Climate and Air section provides added discussion of the

dynamics of carbon storage and loss due to proposed actions identified in this amendment. In summary, harvesting old growth creates a net release of CO2 into the atmosphere – particularly in short- and mid-term. There is uncertainty regarding long-term CO2 release particularly because of the importance of the use of the wood, the regrowth of young forests, and market dynamics related to substitution (sometimes called market leakage – e.g. Jonsson et al. 2012).

As discussed in previous responses to comments (see CARB-4) a quantification of carbon flux due to the many pathways created naturally or by management actions proposed in this amendment is unnecessary to make an informed decision regarding the proposed action because a qualitative analysis provides the necessary level of information to evaluate the relative differences in carbon losses and gains for each alternative, thus providing the information for the deciding official on the relative contribution of GHGs from the proposed actions (USDA-Forest Service 2009). However, this amendment proposes to discontinue old-growth timber harvest after 15 years, and as such, we can expect a net decrease in carbon emissions from current levels through time.

COMMENT

CARB-10, CARB-1 and CARB-23: The DEIS's figure for the overall size of the carbon cycle is incorrect and should be corrected in the FEIS. A quantitative evaluation of the emissions savings or losses attributable to the Plan is insufficient, incorrect and misleading.

RESPONSE

We revised the EIS to more clearly describe the potential of the Tongass action and contributions to atmospheric greenhouse gasses. See responses to CARB-1 and 23 for additional details pertaining to these comments.

COMMENT

CARB-11: Forest Service Should Leverage Taxpayer Dollars to Help Local Communities Transition from Old-growth Logging, while also Contributing to Carbon Storage.

RESPONSE

The Tongass National Forest appreciates the support for the intent of the amendment – to help local communities transition from old-growth logging while continuing to contribute to carbon storage. Each of the action alternatives seek to help local communities transition to forest management based largely on harvest of young-growth forest and reduces harvest of old-growth forest over a 15 year transition period. Funding for these actions comes from the Federal budget process through the Department of Agriculture. The intent of this Plan Amendment is to provide opportunities for the development of project-level plans that implement the transition of predominantly old-growth logging to harvest of young-growth forests. An outcome of this transition is the contribution of increase carbon storage from its current condition on the National Forest.

COMMENT

CARB-12: The DEIS did not include all relevant literature in the analysis of carbon and suggest the agency explain how the various alternatives, including the selected alternative, affect the amount of stored carbon on the Tongass.

RESPONSE

We appreciate the additional references mentioned and have considered them in our analysis and conclusions regarding effects of each alternative on climate change. We revised the EIS to more clearly describe the potential of each alternative to contribution to atmospheric greenhouse gasses and the relative amount of stored carbon on the Tongass for each alternative and have cited the literature that supports our findings.

COMMENT

CARB-13: The FEIS should provide more detail, including stronger literature citations, regarding the recognition that rising temperature accelerates decomposition particularly in instances of old-growth logging and regarding changes in decomposition rates.

RESPONSE

We revised the evaluation of GHG storage and the comparison among alternatives in relative contribution to atmospheric GHG's. As noted in our analysis we emphasize the dynamics of soil organic matter decomposition are complicated due to the many different factors involved in the process and cite the most recent study that identifies a lack of consensus in the science community on the temperature sensitivity of soil carbon decomposition to changes in regional temperature (Davidson and Janssens 2006). Many factors, including the relative mix of soil organic matter along a continuum of decomposability, and an array of environmental constraints (abiotic and biotic conditions) obscure the intrinsic temperature sensitivity of soil organics to decomposition (Davidson and Janssens 2006) suggesting a clear evaluation of the outcome of warming climate on decomposition on the Tongass is not feasible. Depending on environmental features such as changes in soil moisture, changes in water table, changes in predominance of decomposition-resistant soil carbon, the rate of soil carbon movement into streams, lakes, and marine environments, and other factors outlined in the most comprehensive recent review by Davidson and Janssen (2006), the net direction (increase or decrease) in GHG contribution to the atmosphere as a result of decomposition of soil carbon is uncertain. However, the ultimate response is one of increased decomposition with increasing temperature (D'Amore, pers. comm. 2016).

COMMENT

CARB-14: The DEIS does not adequately describe the difference in resilience to climate change between old-growth and young forests. The FEIS should evaluate how each alternative will vary in its preservation of old-growth and how that may have bearing on overall forest resilience for future net carbon flux.

RESPONSE

We appreciate the input suggesting improvements in evaluation of the relative value of old-growth vs. young-growth forest for carbon storage particularly in light of the general understanding that old-growth (or primary forest) may be more resilient to climate change. In response, we revised the evaluation of GHG storage and the comparison among alternatives in relative contribution to atmospheric GHG's. We note however, that our analysis discloses that evaluation of the relative stability of biomes and the climate niche of dominant tree species on neighboring Chugach National Forest suggests that the temperate coastal rainforest of Alaska is particularly resilient to expected changes in climate in the region over the next 30 to 50 years (see Hayward et al. n.d.[5]: Chapter 6). Consequently, there is no direct evidence to suggest that that regenerating rainforest on the Tongass will be less resilient and therefore, that it will have reduced capacity for carbon storage under future climate conditions than it displays currently.

COMMENT

CARB-15: Rain and gale force winds are expected to increase in Southeast Alaska due to changes in climate. As such the agency should adopt mitigation policies, including standards and guidelines, in anticipation of rising winds and rain during this Plan Amendment related to soil and slope suitability, riparian area (RAW buffers) and other buffers around sensitive and important areas such as beach fringe.

RESPONSE

The current minimum size requirement for beach buffers (1,000 foot width from shoreline) and riparian management buffers (minimum of 100 feet on either side of Class I and II streams), will continue to be

[5] G. D. Hayward, S. Colt, M. McTeague, T. Hollingsworth. eds. (n.d.). Climate change vulnerability assessment for the Chugach National Forest and the Kenai Peninsula. Manuscript in preparation.

implemented for the 2016 amendment. While some young-growth timber harvest is proposed within these buffers under alternatives 2, 3, 4 and 5, the new standards identified in the amendment allow for only partial harvest of these areas (e.g. maximum size of 10 acres and up to 35% removal of the stand) and in the case of Alternative 2, not to exceed the 15 year transition. Furthermore, the forest plan standards and guidelines for Reasonable Assurance of Windfirmness (RAW) buffers and steep slopes are flexible in that the application of RAW buffers and soil conservation measures depends on the specific conditions encountered at each site. This flexibility allows the application of the RAW buffers and steep slope soil conservation practices to be tailored to site specific conditions and anticipated increases in precipitation resulting from a changing climate. The anticipated changes in climate may require a more conservative approach in areas already at risk for windthrow or loss of slope stability. The FEIS Climate and Air section of Chapter 3 discusses the risks and effects associated with anticipated climate change on the forest.

Monitoring of windthrow within stream buffers is ongoing on the forest and data from that monitoring is considered when designing projects and determining the need for, or design of RAW buffers. This monitoring began on the Tongass in 2000 and has continued yearly, for a total of 15 years of monitoring results (see annual Forest Plan Monitoring and Evaluation Reports at http://www.fs.usda.gov/main/tongass/landmanagement/planning). The proposed management within buffers under the amendment (size openings and percent harvest) have not yet been implemented, nor undergone monitoring to provide the Forest Service information on the effectiveness of the overall buffers when managed in this way. Through future monitoring the Tongass will evaluate effectiveness. Until new information is available the Tongass will use the standards, guidelines and management approaches identified in 2016.

COMMENT

CARB-16: The Forest Service should undertake a climate change resiliency assessment across the Tongass and an analysis to discover which watersheds will be most resilient to future climatic change. Additionally, the agency should invest in research to understand how climate change will affect stream flows, stream temperatures, and salmon populations/spawning success/ fish production.

RESPONSE

The Forest Service appreciates the suggestion to assess the climate change resiliency of the Tongass. The Tongass National Forest, in line with national policy has been collaborating with partners since 2012 improving understanding of the potential consequences of climate change for ecosystems and resources in southeast Alaska. The recently published assessment (EcoAdapt 2014[6]) is an example of this effort. Similarly, the USFS was the lead agency, collaborating with a wide array of partners, for a recent workshop examining water resources and anadromous fisheries in response to climate change [Climate Change in Southeast Alaska – Informing Sustainable Management of Water Resources and Anadromous Fisheries. April 12-15, 2016]. These accomplishments demonstrate that the Tongass recognizes the value of climate assessments and is actively incorporating climate science into its work. These efforts specifically focused on salmon and their fisheries. Regarding the suggestion that the Tongass "invest in research to understand how climate change will affect stream flows, stream temperatures, and salmon populations/spawning success/ fish production." Based on law and policy the National Forest System does not conduct research (cite law/policy) but is involved in cooperative and, administrative studies modeling hydrologic changes and consequences for salmon as well as several other climate change research studies in progress with the Forest Science Laboratory of the Pacific Northwest (PNW) Research Station.

COMMENT

CARB-17: Cited literature related to climate change in the Plan Amendment contains "hypothetical as well as irrelevant" information. The Plan Amendment's purpose and need to transitioning from and old-growth dominated harvest strategy to harvesting young growth trees is premature.

[6] EcoAdapt. 2014. A Climate change vulnerability assessment for aquatic resources in the Tongass National Forest. EcoAdapt, Bainbridge Island,WA

Furthermore, the amount of timber proposed for harvest over the transition period and its effects on total carbon storage is inconsequential at a global scale. The Amendment should clarify the carbon flux discussion, including the ultimate destiny of carbon storage and emissions after harvest.

RESPONSE

Best available science (e.g., IPCC 2014, Melillo et al. 2014, Millennium Ecosystem Assessment. 2005[7]) and broad science consensus indicates that the preponderance of evidence supports the contention that climate change is occurring and that human production of greenhouse gases is a major contributor. National policy as indicated by the 2012 Planning Rule (36 CFR 219) directs the Forest Service to disclose the consequences of its actions in relation to climate change. Regarding the relationship of forest condition on the Tongass and carbon storage, analysis of field data (Barrett et al. 2014) provides evidence regarding the status of carbon storage on the Tongass. The agency agrees that carbon in wood products is stored for variable periods of time, and potentially for long periods in structural lumber and other durable products (http://www.fs.fed.us/ecosystemservices/carbon.shtml). Revisions made in Chapter 3 of the FEIS (Climate and Air section) further clarify the status of carbon storage on the Tongass, to the extent that can be resolved with current scientific understanding.

COMMENT

CARB-18: The agency should improve the FEIS' discussion related to increased carbon emissions which would occur with additional biomass fuel development, including disclosure of the environmental effects caused by biomass fuel combustion for air quality and human health. Further, a more specific discussion should be added to the FEIS related to substituting biomass fuels for fossil fuels and compare these two energy systems in terms of total CO_2 emissions. Finally, the Amendment should prepare a "no- harvest" alternative to evaluate a more ambitious climate change mitigation strategy.

RESPONSE

This comment is outside the scope of this amendment. The Forest Service's role does not include performing human health risk assessments of the deployment and usage of materials derived from the National Forests. That role is appropriately held by regulatory agencies such as the EPA and ADEC. As such, the Agency is not in a position to quantify the extent of "substantial risk to human health".

Further the Forest isn't distinguishing between renewable energies, of which biomass is one type, nor is it authorizing specifically biomass. However, timber sales can and are currently being used to support biomass energy products. The Forest believes it is appropriate to maintain the goal as stated in the EIS; no change made. Also, see response to CARB-1 and CARB-2 for more discussion the "no harvest" alternative to mitigate for climate change.

COMMENT

CARB-19: The agency should remove biomass from its list of renewable energies and add more content about wood biomass combustion and the carbon cycle. More discussion on the effects of carbon emissions as a result of biomass fuel development on air quality should be included in the FEIS.

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[7] IPCC. 2014. Summary for policymakers. In: Field, C.B.; Barros, V.R.; Dokken, D.J.; Mach, K.J.; Mastrandrea, M.D.; Bilir, T.E.; Chatterjee, M.; Ebi, K.L.; Estrada, Y.O.; Genova, R.C.; Girma, B.; Kissel, E.S.; Levy, A.N.; MacCracken, S.; Mastrandrea; P.R.; White, L.L. eds. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA: 1-32.

Melillo, J.M.; Richmond, T.C.; Yohe, G.W., eds. 2014. Climate Change Impacts in the United States: The Third National Climate Assessment. U.S. Global Change Research Program. 841 p.

Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

RESPONSE

This is outside the scope of this amendment. The Forest Service's role does not include determining what type of renewable energy (e.g., zero-emitting vs. "dirty" energies) or performing human health risk assessments of the deployment and usage of materials derived from the National Forests. That role is appropriately held by regulatory agencies such as the EPA and ADEC. The Forest is not authorizing specifically biomass; however, sales can and are currently used to support biomass energy products. The Forest believes it is appropriate to maintain the goal as stated in the EIS and reiterates that it is not distinguishing between renewable energies. If the Forest were to begin to see numerous proposals for biomass utilization at a large scale, additional NEPA would then account for this.

Please refer to AIR-1 response for more information on the effects of increase carbon emissions on air quality.

COMMENT

CARB-20: DEIS failed to analyze lost opportunities for zero-emitting renewable energies caused by biomass facility subsidies.

RESPONSE

The amendment does not explicitly favor one form of renewable energy over another, nor is it focused on biomass. As the commenter notes, there have been a number of conversion to biomass fuel projects. The Forest is not authorizing specifically biomass; however, sales can and are currently used to support biomass energy products. The Forest believes it is appropriate to maintain the goal as stated in the EIS and reiterates that it is not distinguishing between renewable energies. The EIS clearly states that successfully launched conversion projects provide useful learning opportunities as case studies, but future projects will need to continue to analyze the cost/benefit savings based on choosing the right technology for the local biomass fuel supply. Each project will need to weigh the cost of converting to biomass with the cost of other readily available energy sources.

Please refer to AIR-1 response for more information on the effects of increase carbon emissions on air quality and GHGs.

COMMENT

CARB-021 and CARB-8: The Forest Service failed to adequately consider the cumulative effects of programmatic alternatives and climate change, as recommended by various climate change experts, also supported in agency documents, such as the Alaska Region's Climate Change Assessment (2010).

RESPONSE

Additional documentation and evaluation of cumulative effects of climate change have been added to the text in Chapter 3.1 of the Final EIS.

This section is made of 2 parts: 1) the effect of the project Amendment on climate change; and 2) the effects of climate change on the project Amendment. The first part of this section addresses the cumulative effects of GHG emissions and other contributors to climate change; while the second part addresses cumulative effects of the project on carbon sequestration (carbon storage and emissions).

This section highlights the conclusion that higher levels of harvest (e.g., the total available harvest under each of the alternatives) would only occur if additional manufacturing facilities and markets are developed, as well as other factors such as funding and staff levels. In addition, we added a brief discussion that addresses the different time scales these effects could have on carbon sequestration as discussed in Environmental Consequences section. The net contribution to atmospheric CO2 is lower given longer time scales due to regeneration, particularly if wood products include 'storage' products, if

biomass substitutes for local fossil fuel use, and if market substitution (also called market leakage)is relatively high (e.g. Jonsson et al. 2012[8]).

COMMENT

CARB-022 and CARB-23: The climate change analysis in the DEIS is insufficient and lacks usage of the most recent science specific to southeast Alaska. Furthermore, in addition to the Secretary of Agriculture's direction on the purpose and need for the Forest Plan Amendment, that purpose and need should also include changes in forest management and health as a consequence of a changing climate. Additional references, including EPA data (www3.epa.gov/climatechange/impacts/alaska.html) and the 2014 National Climate Assessment (http://nca2014.globalchange.gov/report/regions/alaska#intro-section) should be used in the FEIS as well as include a quantification of GHG emissions from the proposed action and "appropriate" quantitative or qualitative analytical methods.

RESPONSE

See CARB-23 response for specific address of quantification of GHGs.

COMMENT

CARB-23: Disclosure of the magnitude of carbon emissions, carbon storage, and ultimately carbon sequestration should be presented more clearly in light of the literature and that the disclosure should also more clearly present the importance of carbon stores on the Tongass National Forest. The analysis in the DEIS downplays the emissions of carbon that result from timber harvest. A carbon life-cycle analysis should be presented to illustrate the outcome of the alternatives. An evaluation of the social cost of carbon emissions based on Executive Order 12866 and using the Interagency Working Group guidelines on carbon costing should be conducted.

THE DEIS had several shortcomings in disclosure of the relationship between ongoing climate change and the resilience of the temperate coastal rainforest and the potential role of the Tongass as a climate refuge for biodiversity associated with coastal rainforests. In particular, the analysis did not sufficiently examine the potential impact of harvesting old-growth (and young-growth forest in old-growth reserves) or harvest of beach buffers on the resilience of the forest in response to changing climate. The DEIS did not reference a communication On January 2015, from the Federal Forest Carbon Coalition to Secretary Vilsack, Beth Pendleton, and Forrest Cole asking that management of the Tongass National Forest align with the Administrations climate direction.

RESPONSE- A. Forest Carbon

We appreciate input suggesting a more clear disclosure of carbon emissions, storage and ultimately carbon sequestration on the Tongass National Forest. The FEIS more clearly illustrates the role of the Tongass National Forest in carbon sequestration and discloses the relative differences among alternatives in carbon storage and sequestration at multiple temporal scales.

A quantitative carbon life-cycle analysis has not been conducted and is not included in the analysis. CEQ recommends that agencies determine the appropriate level of action for NEPA review at which to more rigorously evaluate the effects of GHG emissions and climate change – whether broad programmatic, landscape scale, or at a project/site specific levels of NEPA (79 FR 77824 Dec. 24, 2014). CEQ further indicates that agencies continue to have substantial discretion in how they tailor their NEPA process (79 FR 77824 Dec. 24, 2014) and that agencies should apply the philosophy of 'proportionality' and 'rule of reason' to determine the extent to which a particular analysis or approach to evaluation is useful to the

[8] Jonsson, R., W. Mbongo, A. Felton, and M. Boman. 2012. Leakage implications for European timber markets from reducing deforestation in developing countries. Forests 3:736-744.

public and to the decision-making process for distinguishing between alternatives (79 FR 77824 Dec. 24, 2014).

We determined that a qualitative analysis comparing the relative contribution of alternatives to carbon emissions or storage was most appropriate for understanding tradeoffs. Therefore we do not present a quantitative carbon life-cycle analysis. We contend that project-level analysis is the appropriate stage of planning for a more rigorous evaluation of carbon in this case because of the substantial reduction in uncertainty at the project-level regarding the estimates for parameters of a carbon life-cycle analysis (e.g. sources and extent of emissions during harvest, environmental conditions related to carbon loss and carbon capture during forest regeneration, and potential use of the wood). Furthermore, the narrow scope of this action as an amendment to the Forest Plan precluded the option to explore action alternatives specifically designed to promote carbon sequestration. Thus, the principles of proportionality and the 'rule of reason' suggest that a quantitative carbon life-cycle analysis, particularly an analysis with high uncertainty, would not contribute toward evaluation and decision making. It is important to emphasize the high uncertainty in estimates of short- medium- and long-term carbon emissions, storage, and sequestration (or in a carbon life-cycle analysis) for any alternative (explained further below). Given the high uncertainty in the carbon life-cycle analysis compared to the relatively small differences among alternatives in carbon sequestration (particularly in the medium- and long-term), the results of the analysis would not inform the decision.

The high uncertainty in a carbon life-cycle analysis associated with this amendment results from the substantial range of potential values for most of the parameters in the carbon life-cycle analysis and therefore the array of final results. Adequate quantitative analysis must present the many estimates of carbon associated with the different parameter estimates resulting from different assumptions related to uncertainty. For example, following timber harvest a substantial quantity of organic material remains on site and decomposes over time. The decomposition rates and extent of decomposition depend on a broad array of factors and therefore different carbon life-cycle estimates result from differing assumptions regarding decomposition. A recent study identifies the lack of consensus in the science community on the temperature sensitivity of soil carbon decomposition to changes in regional temperature (Davidson and Janssens 2006). Many factors, including the relative mix of soil organic matter along a continuum of decomposability, and an array of environmental constraints (abiotic and biotic conditions) obscure the rate of soil organic decomposition (Davidson and Janssens 2006). This suggests that a clear evaluation of the rate and extent of soil carbon decomposition on the Tongass has high uncertainty and a variety of estimates are reasonable. A qualitative evaluation, however, leads to conclusions that substantially reduce uncertainty – soil carbon decomposition will increase with increasing temperature (expected with climate change) (D'Amore, pers. comm. 2016), and those amendment alternatives which harvest more extensive areas will have higher rates of carbon emissions in the short- and medium-term.

High uncertainty confounding quantitative analysis also occurs because of the range of reasonable estimates for other features (in addition to soil carbon). Uncertainty in rates of forest regrowth after old-growth and young-growth harvest on the Tongass, amounts of wood material remaining following harvest, transportation methods and distances for logs and wood products, use of the wood, market dynamics related to substitution (sometimes called market leakage – e.g. Jonsson et al. 2012)), and product substitution all confound a quantitative carbon life-cycle analysis (see McKinley et al 2011 for a broad overview of the complexity of carbon life-cycle analysis). A quantitative analysis would be both misleading in its rigor and perceived precision (if the substantial uncertainties where not taken into account) or confusing (if the range of uncertainty in important parameters was taken into account and the full range of resulting estimates displayed).

We have not provided a rigorous evaluation of the differences among alternatives in the social costs that may result from carbon emissions and resulting short- medium- or long-term contributions to GHGs. Given the high uncertainty in carbon emissions, and particularly the relatively small differences among alternatives in carbon emissions, an evaluation of social costs would be highly speculative and contrary to CEQ guidance (79 FR 77817 Dec. 24, 2014)

Although an estimate of carbon emissions can be calculated (as illustrated by one commenter), the uncertainty in any estimate must be disclosed and the relative merit in considering that estimate

evaluated based on the degree of uncertainty. As described earlier, evaluation of carbon emissions, particularly over the mid- and long-term, is highly uncertain and that uncertainty far exceeds the potential differences among alternatives in carbon storage.

RESPONSE - B. Climate Change

We appreciate the input regarding the reduced probability of fire, the role of the temperate coastal rainforest potentially serving as a climate refugia and the resilience of the temperate coastal rainforest. The revised EIS includes these concepts. We carefully considered the input from the letter from the Federal Forest Coalition on January 2015, and concluded that the resilience of the temperate coastal rainforest in SE Alaska is maintained through the system of reserves and other non-development LUDs and therefore the broad region of SE Alaska will continue to serve a strong role as a climate change refugia. Under all of the amendment alternatives The Tongass National Forest will continue to maintain large intact areas, larger than those evaluated under the 1997 plan, and therefore, as outlined in the EIS, will continue to play a strong role in supporting biodiversity as a climate refugia and a region with resilient forests.

Regarding the contention that the preferred alternative, or any alternative, does not align with Executive Branch guidance because management will not conserve carbon sinks by protecting them in perpetuity. CEQ guidance (79 FR Dec. 24, 2014) and Executive Order 13653 do not require such.

COMMENT

CARB-24 and CARB-7: The agency should adopt the conservation alternative (e.g. no harvest alternative), provided by the Conservation Consortium, to comport with CEQ guidelines, the Paris climate agreement, and efforts to reduce climate damages from CO2 pollution. The FEIS should also include a cost-benefit analysis of avoiding damages to the environment cause by climate change "so as to level the economic playing field" in compliance with Executive Order 12866.

RESPONSE

In response to comments regarding the importance of the Tongass Rainforest as Alaska's first line of climate change defense and the importance to the Paris Climate change agreement, we revised the FEIS to clarify the role the Tongass plays in global carbon sequestration. The analysis acknowledges the substantial role the Tongass plays in carbon storage and the role it will continue to play under each of the alternatives. The analysis qualitatively discloses that carbon storage on the Tongass will remain substantial under each alternative (while disclosing the relatively small differences among alternatives). Further, there is no present legal mandate to stop or limit timber sales based on the Paris Climate Change Agreement. Refer to CARB-23 for a more robust explanation of the global role of the temperate rainforest in carbon sequestration and the subsequent analysis we conducted. Additional discussion regarding the role of the Tongass in global carbon sequestration has been added to the text in Chapter 3 of the Final EIS.

Based on the scope of this amendment outlined in the 'Notice of Intent To Prepare An Environmental Impact Statement' published on 27 May, 2014, the purpose of the amendment is to: "accomplish the transition to young growth management over the next 10 to 15 years while retaining the expertise and infrastructure of a viable timber industry in Southeast Alaska, as outlined by the Secretary in Memorandum 1044–009." Commenters suggest that only a no-logging scenario maintains carbon stores through time and while that may be true, an alternative designed to meet this scenario is outside the scope of the EIS. As an amendment, rather than revision, the scope of options being considered does not include the potential for no timber harvest and therefore the consequences of such an alternative are not considered.

The global contribution of carbon storage that the Tongass provides is acknowledged in the Secretary of Agricultures memo to the US Forest Service in providing the scope and need for action to this Plan amendment. The Secretary's memo makes clear that the Department of Agriculture is committed to not only maintaining southeast Alaska's exceptional natural resources in perpetuity but is equally committed to doing its part to ensure that communities within and adjacent to the Tongass National Forest are economically vibrant. The proposed action for the Amendment is intended to bring these two goals hand

in hand. To do so, there will be costs and in the case of carbon storage we acknowledge that in order to bring to fruition the multiple-use objectives of this plan as well as the overall mission of the Forest Service, the Tongass will incur a short- and mid-term net loss of total carbon storage through GHG emissions as a result of timber harvest on the Tongass.

Regarding CEQ guidelines, the Paris climate agreement, and efforts to reduce climate damages from CO2 pollution, the agency (USDA) has not yet provided final guidance or policy directed at their implementation. Therefore, there is no present legal mandate to stop or limit timber sales based on the Paris Climate Change Agreements, nor to follow proposed draft CEQ guidance regarding NEPA. To date, guidance from the agency includes an analysis of climate for project NEPA (2009) and for Plan Revisions (2010). The CEQ cited by commenters is currently in DRAFT form and has therefore not been fully vetted as established policy. While the Revised DRAFT CEQ directs agencies to adopt projects with low emission using a reference point of 25,000 metric tons of CO2 (e) on an annual basis, the CEQ further indicates that agencies continue to have substantial discretion in how they tailor their NEPA process (79 FR 77824 Dec. 24, 2014) and that agencies should apply the philosophy of 'proportionality' and 'rule of reason' to determine the extent to which a particular analysis or approach to evaluation is useful to the public and to the decision-making process for distinguishing between alternatives (79 FR 77824 Dec. 24, 2014). For this EIS, a quantitative carbon life-cycle analysis has not been conducted and is not included in the analysis. CEQ recommends that agencies determine the appropriate level of action for NEPA review at which to more rigorously evaluate the effects of GHG emissions and climate change – whether broad programmatic, landscape scale, or at a project/site specific levels of NEPA (79 FR 77824 Dec. 24, 2014).

We determined that a qualitative analysis comparing the relative contribution of alternatives to carbon emissions or storage was most appropriate for understanding tradeoffs. Therefore we do not present a quantitative carbon life-cycle analysis as proposed in the revised DRAFT CEQ. We contend that project-level analysis is the appropriate stage of planning for a more rigorous evaluation of carbon in this case because of the substantial reduction in uncertainty at the project-level regarding the estimates for parameters of a carbon life-cycle analysis (e.g. sources and extent of emissions during harvest, environmental conditions related to carbon loss and carbon capture during forest regeneration, and potential use of the wood). Furthermore, the narrow scope of this action as an amendment to the Forest Plan precluded the option to explore action alternatives specifically designed to promote carbon sequestration. Thus, the principles of proportionality and the 'rule of reason' suggest that a quantitative carbon life-cycle analysis, particularly an analysis with high uncertainty, would not contribute toward evaluation and decision making. It is important to emphasize the high uncertainty in estimates of short- medium- and long-term carbon emissions, storage, and sequestration (or in a carbon life-cycle analysis) for any alternative (explained further below). Given the high uncertainty in the carbon life-cycle analysis compared to the relatively small differences among alternatives in carbon sequestration (particularly in the medium- and long-term), the results of the analysis would not inform the decision.

As well, the commenter suggests that the agencies' preferred alternative is generally inconsistent with the COP climate agreements (Article 4 on greenhouse sinks) to conserve forests as a sink for atmospheric carbon and is well above the CEQ emissions reference. However, the Revised DRAFT CEQ does not establish regulatory requirements or compel agencies to prohibit or curtail GHG emissions. In conformance with NEPA's basic principles, it does not mandate particular results or insist that agencies select the alternative with the least GHG emissions and climate change effects.

The commenter also suggests that "in any cost-benefit analysis, it is imperative to incorporate the benefits (or cost savings) of avoiding damages to the environment, or, in this case, the climate, so as to level the economic playing field (although many ecosystem services critical to properly functioning forests are difficult to quantify)". We have not provided a rigorous evaluation of the differences among alternatives in the social costs that may result from carbon emissions and resulting short- medium- or long-term contributions to GHGs. Given the high uncertainty in carbon emissions, and particularly the relatively small differences among alternatives in carbon emissions, an evaluation of social costs would be highly speculative and contrary to CEQ guidance (79 FR 77817 Dec. 24, 2014)

COMMENT

CARB-25: Forest Service should provide specific forest-wide goals, objectives and desired conditions for the Tongass National Forest in meeting challenges of climate change.

RESPONSE

Climate change is addressed in the Forest Plan in a number of ways. In the Implementation chapter, for example, “Our role in addressing climate change” is listed as one of five Tongass-wide high priority actions developed each year to guide project implementation. More importantly, climate change is incorporated extensively throughout the new Tongass National Forest Monitoring Program, released in May 2016.

Ecosystem Services (ECOS)

COMMENT

ECOS-1: Forest Service should define performance metrics for salmon production and the economic contribution that salmon produced by the Tongass. Additionally provide the amount of renewable energy supplied by the Tongass. Both of these should be measured as part of the Ecosystem Services that the Tongass provides.

RESPONSE

This request is beyond the scope of this Forest Plan Amendment. It is noted that a national effort is underway to define a new and improved suite of performance metrics.

Economics of the Timber Industry (ECON)

COMMENT

ECON-1: The EIS discussion of small log manufacturing should be updated to explain that the manufacturing of young growth spruce and hemlock trees will not be financially feasible until the trees are at least 90 years old or until there are sufficient acres of 60-year old and older trees available to enable the amortization of a modern small log sawmill. The proposed alternatives would provide less than 10 percent of the volume necessary to supply a single local small log mill and the trees are too small to be profitably sawn in the existing sawmills. Most of the logs cut from these trees will be exported in unprocessed form and will not support local manufacturing jobs. The Forest Service should continue with the current Forest Plan and allow the young growth stands to grow for another 30 years at which time the trees will be larger and more valuable, and the volume will have doubled.

RESPONSE

Table 3.13-4 in the *Timber* section of the FEIS displays the acres of harvested even-aged young-growth forest by age class and LUD group. This section of the FEIS also describes young growth management on the Tongass and provides an overview of the direction provided in the Secretary of Agriculture's Memorandum 1044-009. Among other things, the Secretary directs the Forest Service to "(s)eek opportunities to supply sufficient old-growth "bridge timber" while the industry re-tools for processing young growth". All of the alternatives evaluated in the Draft EIS include old-growth "bridge timber" and provide for a PTSQ that is a mix of old-growth and young-growth timber in the short-run, with old growth decreasing as a share of this total volume (46 MMBF) over time as more young growth becomes economic to harvest.

The results of the financial analysis prepared for the FEIS indicated that, viewed over 25-year and 100-year planning horizons, all five alternatives resulted in positive net revenues (Table 3.22-16, p. 3-482). Positive values for the 5-year increments that comprise years 1 to 25 were in most cases due to the old-growth component of projected harvest, which generated net positive revenue for all alternatives and 5-year increments over the 25-year planning horizon. In contrast, in most cases net revenues generated by the young-growth component were negative (Figure 3.22-18, p. 3-483).

As discussed in the FEIS, this programmatic analysis suggests that individual timber sales offered under any of the alternatives in the first 25 years of the planning period will likely need to include a mix of old growth and young growth to appraise positive as required by Public Law 112-74, House Report 2055-257, Section 414. However, over time, the young-growth component also generates positive revenues under all alternatives, which is reflected in the discounted net revenues presented for the 100 year planning horizon in Table 3.22-16.

The financial analysis has been revised in the FEIS to more clearly explain what is included in this analysis. The estimates presented in the FEIS have also been updated in the FEIS. More detailed discussion of the modeling approach and the assumptions and values used to develop these estimates is provided in FEIS Appendix B Modeling and Analysis, which has also been updated. The results of the Woodstock modeling are used for the purposes of analysis in the FEIS and represent the best information available at this time. The timber demand study (Daniels et al. 2016) used to estimate the PTSQ of 46 MMBF are long-term projections that represent estimated demand for the planning cycle, also used in the FEIS for the purposes of analysis. The Forest Service will continue to evaluate annual market demand using the Morse methodology and may adjust the mix of old-growth and young-growth timber made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

The suggestion in the comment that the Forest Service continue to manage the Tongass under the 2008 Forest Plan and offer primarily old-growth timber sales for the next 30 years, while allowing young-growth stands to increase in age and size, does not meet the purpose and need of the proposed Forest Plan amendment.

COMMENT

ECON-2: Young growth timber is typically used for low value construction lumber. In order to compensate for the low value, new small log mills tend to rely on high volume processing and proximity to both their timber supply and markets. A young growth facility in Southeast Alaska would be at a competitive advantage due to the relative high cost and uncertainty of the timber supply and distance to markets. Viking Lumber has indicated they could process up to 8 to 10 MMBF of small logs over a period of several years, provided they are able to maintain full operations of their old-growth saw mill.

RESPONSE

As discussed in response to ECON-1, all of the alternatives evaluated in the Draft EIS include old-growth "bridge timber" and provide for a PTSQ that is a mix of old-growth and young-growth timber in the short-run, with old growth decreasing as a share of this total volume (46 MMBF) over time as more young growth becomes economic to harvest. As indicated in the comment and discussed in the FEIS, Viking Lumber's current small log line processes approximately 8 MMBF of logs annually, running one shift per day, 40 hours per week.

The exact transition trajectory cannot be predicted. Our EIS predictions are best on the best information we have available. If it turns out that young growth does not sell as fast as expected due to markets and economics, then a greater proportion of old growth could temporarily be included in the sale to make up for the deficit. While this continues, existing young-growth stands will be growing and the shelf volume for young growth will continue to grow.

COMMENT

ECON-3: The Daniels et al. (2016) study assumes that "existing mills will make any machinery upgrades necessary for the young growth transition, but rates of utilization may fluctuate". This is a poor assumption. The projected supply of young-growth timber is too small to support the investment necessary to construct a small log sawmill, which will cost more than $100 million. Small log mills in Arkansas, Florida, and another proposed for Washington State have respective annual capacities of 387 MMBF, 700 MMBF, and 200 MMBF.

RESPONSE

The assumption cited in the comment from Daniels et al. pertains to their Scenario 1, which is summarized in the Draft EIS (starting on p. 3-458) and discussed in detail in Daniels et al. (2016). Despite this assumption Daniels et al.'s Scenario 1 projects that timber demand would decrease relative to the baseline projections following the young-growth transition in 2025, as the transition would in effect result in a reduction in Pacific Rim demand for lumber processed in Southeast Alaska.

The annual capacities of the small log mills cited in the comment are larger than those identified in the Draft EIS. The Beck Group (2009), for example, identified sawmills in the coastal regions of Oregon and Washington that currently process western hemlock for framing lumber production, using comparable equipment configurations as Viking Lumber to process logs of comparable size and quality. They found that these generally comparable sawmills processed on average 23 MMBF of logs per year, based on operating a single shift per day (Beck Group 2009). Another example of the type of facility that could be developed to process young-growth timber in Southeast Alaska, the Vaagen Brothers mill in Colville in eastern Washington, produced a total of 273 MMBF of lumber in 2014, of which 135 to 140 MMBF was also sawn at the Colville mill.

COMMENT

ECON-4: The timber industry in Southeast Alaska has lost its economy of scale and much of the related infrastructure required to support a competitive industry. In the face of this decline, the remaining mills have been able to remain competitive by selling high value products that cannot be produced from young-growth timber.

RESPONSE

As discussed in response to ECON-1, all of the alternatives evaluated in the Draft EIS include old-growth "bridge timber" and provide for a PTSQ that is a mix of old-growth and young-growth timber in the short-run, with old growth decreasing as a share of this total volume (46 MMBF) over time as more young growth becomes economic to harvest. Old-growth volume would continue to decrease until it reaches 5 MMBF per year, at which point it would be stabilized at 5 MMBF per year to support a small sale and micro sale industry, and would remain at that level for the remainder of the planning period.

COMMENT

ECON-5: As currently scheduled, the Forest Plan will be amended before the Forest Service has completed the necessary studies to confirm the volume of young-growth timber available for harvest, the cost of harvesting young growth stands that are small and widely scattered, or confirm that it will be financially viable for a young-growth industry to develop and find markets for its products based on that volume. In the absence of this and other information that proves that a transition to young-growth can happen sooner than the industry's expectation of 30 years, it is inappropriate for the plan amendment to be proposed.

RESPONSE

As discussed in response to ECON-1, all of the alternatives evaluated in the FEIS include old-growth "bridge timber" and provide for a PTSQ that is a mix of old-growth and young-growth timber in the short-run, with old growth decreasing as a share of this total volume (46 MMBF) over time as more young growth becomes economic to harvest.

The Woodstock modeling analysis conducted in support of the Forest Plan amendment indicated that initially, older young growth stands can be harvested economically when combined with old-growth. The Woodstock model tracks the growth of young-growth stands over time and does not select stands for harvest until it is economical. This analysis is discussed in detail in the revised Appendix B to the FEIS.

In general, the results of the financial analysis prepared for the FEIS indicated that, in most cases, net revenues generated by the young-growth component in 5-year increments for the first 25 years following implementation would be negative. However, over time, the young-growth sale component would also be expected to generate positive revenues. The Forest Service will continue to evaluate annual market demand using the Morse methodology and may adjust the mix of old-growth and young-growth timber made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

Our analysis indicates that initially, older young growth stands can be harvested economically when combined with old-growth. The Woodstock model used tracked the age and growth of young-growth stands and did not select stands for harvest until they reached 65 to 75 years of age, depending on site class. These ages were based on discussions with industry who confirmed that minimum age required that two logs per tree could be obtained from the majority of trees in a stand and an evaluation of stand tables to determine what ages this occurred.

See response P&N-4 (Young growth Inventory)

COMMENT

ECON-6: Appendix B of the Draft EIS implies that new class/site index data was estimated and used to model wood availability, but no new field surveys were conducted to verify the accuracy of this site index information. Until these site index data are verified, it is impossible for the Forest Service and others to have faith in the accuracy of the estimates presented in the Draft EIS. The Forest Service, acting on the TAC recommendations, proposed in July 2015 to fund up to $4 million of studies to update the inventory of young-growth by location and to develop better data on the growth rates of young-growth trees. This study is unlikely to be completed prior to finalization of the new Forest Plan and is unlikely to produce the quality data necessary to forecast the forest-wide availability of young-growth timber.

RESPONSE

The Challenge Cost-Share agreement between the State of Alaska and the US Forest Service, which began in 2016, will inventory approximately 50,000 acres of young-growth timber to provide knowledge about the conditions and feasibility of the older young-growth timber stands. This inventory will also note logging systems needed to access these stands. This agreement has been already been funded. The transition timeline for the action alternatives proposed in the amendment is designed to accelerate this data collection on young-growth harvest by providing more opportunities to harvest the older young growth sooner than the 2008 Forest Plan direction allows. The Forest Service will continue to evaluate annual market demand using the Morse methodology and may adjust the mix of old-growth and young-growth timber made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

COMMENT

ECON-7: The financial analysis presented in the Draft EIS significantly overstates the likely value of the proposed timber volume to a purchaser. The Forest Service has only been able to achieve similar returns on about one-quarter of the old-growth timber sale volume planned each year, with three-quarters of planned timber sale volume never offered because it was not economic to harvest under the 2008 Forest Plan. The Draft EIS analysis anticipates a fourfold increase in returns, even though the Forest Service proposes to sell increasing volumes of lower value, young-growth timber.

RESPONSE

The financial analysis in the Draft EIS has been revised to more clearly explain what is included in this analysis. The estimates presented in the Draft EIS have also been updated. More detailed discussion of the modeling approach and the assumptions and values used to develop these estimates is provided in Appendix B to the EIS, which has also been updated.

The numbers reported in the financial analysis are derived from the Woodstock modeling conducted in support of the proposed Forest Plan amendment. As discussed in the Draft EIS (p. 3-481):

> Positive values for the 5-year increments that comprise years 1 to 25 are in most cases due to the old-growth component of projected harvest. The old-growth component generates net positive revenue for all alternatives and 5-year increments over the 25-year planning horizon (Figure 3.22-17). In contrast, in most cases net revenues generated by the young-growth component are negative (Figure 3.22-18).
>
> This programmatic analysis suggests that individual timber sales offered under any of the alternatives in the first 25 years of the planning period will likely need to include a mix of old growth and young growth to appraise positive as required by Public Law 112-74, House Report 2055-257, Section 414.

COMMENT

ECON-8: The financial analysis presented in the Draft EIS indicates that all plan alternatives have a positive net present value. In the absence of information on the cost of young-growth harvest and the potential products that will be manufactured from young-growth timber and associated costs and profits, it is impossible to accept that these estimates, which are based on conditions in the Lower 48 states, are potentially accurate. These estimates also fail to account for reductions in the value of productive old-growth when sale areas decrease in size and production costs rise.

RESPONSE

The costs and revenues associated with the young growth harvesting and manufacture were developed by a private consultant based on young growth in as similar as possible conditions in the Lower 48 states and adjusted for Southeast Alaska conditions. The Alaska region cost collection process will, over time, provide more refined costs and revenues to be used in the appraisal process. The Forest Service will

continue to evaluate annual market demand using the Morse methodology and may adjust the mix of old-growth and young-growth timber made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

COMMENT

ECON-9: The Draft EIS cites the Nature Conservancy's 2009 Beck report but fails to report that the Beck Group found that a small log manufacturing operation would be uneconomic unless the Forest Service subsidized the associated logging costs. In addition, the Alaska Forest Association reportedly identified several errors in the Beck Group analysis, which resulted in the costs to establish and operate a small log mill being significantly understated.

RESPONSE

The Draft EIS cites the referenced study prepared for the Nature Conservancy by the Beck Group (2009) in a number of ways, including the Beck Group's evaluation of the small log line at the Viking saw mill and their general characterization of the other mills currently operating on Prince of Wales Island. The Draft EIS also cites the Beck Group's (2009) finding that sawmills in the coastal regions of Oregon and Washington that currently process western hemlock for framing lumber production, using comparable equipment configurations as Viking Lumber, processed on average 23 MMBF of logs per year, based on operating a single shift per day. The Draft EIS does not use the findings of the Beck Group report to illustrate or support the economic feasibility of a young growth mill.

COMMENT

ECON-10: Processing logs and producing finished products represents a substantial component of a logs value. How will continued large-scale log export support the development of a sustainable and vibrant pool of small-scale, local wood processors?

RESPONSE

The purpose and need for the Forest Plan amendment responds to the July 2, 2013 memorandum from USDA Secretary Tom Vilsack which specifically directs the US Forest Service to expedite the transition from old-growth to young-growth timber harvest while maintaining a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. Among other things, the Secretary directs the Forest Service to "(s)eek opportunities to supply sufficient old-growth "bridge timber" while the industry re-tools for processing young growth" (Draft EIS, p. 3-297). All of the alternatives evaluated in the Draft EIS include old-growth "bridge timber" and provide for a PTSQ that is a mix of old-growth and young-growth timber in the short-run, with old growth decreasing as a share of this total volume (46 MMBF) over time as more young growth becomes economic to harvest.

The limited timber export policy and the young-growth transition are discussed in response to TEXP-3. As indicated in this response, the Forest Plan amendment is designed to analyze the feasibility of shifting from an old-growth forest management regime towards young growth management. How rapidly and effectively this is accomplished depends on local support from Alaska markets for young-growth forest products. The ability to export some timber beyond Alaska may serve as a strategic option that can be used to help maintain workforce skills, industry expertise, and the physical infrastructure needed to develop a future young-growth industry. The limited shipment policy will continue to be subject to review and modification on an annual basis, as noted above.

Public Costs (PUBC)

COMMENT

PUBC-1: The Draft EIS does not present the estimated costs and revenues to the U.S. Treasury associated with the proposed alternatives. Instead the Draft EIS presents estimated values to the purchaser (selling value minus costs for logging, transportation, manufacturing, profit, and risk), which are misleadingly identified as net revenues. The Final EIS must present actual past and expected future costs and revenues to the U.S. Treasury for the Tongass timber program.

RESPONSE

The financial analysis section in the Draft EIS has been revised to more clearly explain what is included in the analysis, with additional information provided in Appendix B Modeling and Analysis, which has also been revised. In addition, the revised financial analysis includes estimated Forest Service administrative costs per MBF and provides an estimate of net agency revenues (timber sale revenues minus timber variable costs).

Evaluating the past and expected future costs and revenues associated with the overall Tongass timber sale program is outside the scope of this Forest Plan amendment. Information on Tongass program administrative costs and revenues is, however, readily available to the public in the annual State of the Tongass National Forest report prepared by the Forest Service. The most recent version available online is for Fiscal Year (FY) 2013 (USDA Forest 2014). More recent information is available upon request.

COMMENT

PUBC-2: The net revenues presented in the Draft EIS represent the estimated values to the purchaser (selling value minus costs for logging, transportation, manufacturing, profit, and risk), and should, therefore, reflect the prices purchasers should be paying for Tongass timber. Data from the Draft EIS analysis indicates that the Forest Service is estimating pond log values of $351 per thousand board feet (MBF), which substantially exceeds the actual 5-year average from 2011 to 2015 of $57 per MBF. Neither the Draft EIS nor the planning record provide the assumptions used to develop these estimates, displaying only the final model outcomes. The Final EIS needs to more fully explain these estimates.

RESPONSE

As noted in response to PUBC-1, the financial analysis in the Draft EIS has been revised to more clearly explain what is included in this analysis. The estimates presented in the Draft EIS have also been updated. More detailed discussion of the modeling approach and the assumptions and values used to develop these estimates is provided in Appendix B Modeling and Analysis to the EIS, which has also been updated.

COMMENT

PUBC-3: The Draft EIS improperly excluded a detailed public investment analysis that disclosed the full cost of the Tongass timber program, including logging road costs, agency timber program administrative costs, the costs of timber program-related restoration projects, and NEPA costs. The Draft EIS also failed to estimate the costs, monetary and otherwise, on other forest values and users, including carbon storage, recreation and tourism, fisheries, and ecosystem services. NEPA requires that the agency provide at least a broad, informal cost benefit analysis of the proposed action, and CEQ regulations require that this analysis include discussion of the relationship between the analysis and any analysis of unquantified environmental impacts, values and amenities.

RESPONSE

As noted in response to PUBC-1, a detailed public investment analysis of the Tongass timber program is outside the scope of this Forest Plan amendment. Information on Tongass program administrative costs

and revenues is, however, readily available in the annual State of the Tongass National Forest report prepared by the Forest Service. In addition, the financial analysis section in the Draft EIS has been revised to include an estimate of net agency revenues (timber sale revenues minus timber variable costs) by alternative.

The Draft and Final EIS documents were prepared under the 2012 planning rule, which "does not include requirements to demonstrate that plans will maximize net public benefits or require valuation of economic efficiency or require present net value analysis as the 1982 rule did" (Federal Register [FR], Vol. 77, No. 68, 21187). The preamble to the Final 2012 planning rule and record of decision (FR, Vol. 77, No. 68, 21188), further notes that the:

> "Forest Service Handbook (FSH 1909.15.section 22.32) as well as NEPA regulations (40 CFR 1502.23) state that for purposes of complying with the [NEPA], the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations."

The handbook and NEPA regulations do, however, state that an EIS should indicate those considerations that are likely to be relevant and important to a decision, which may "include a variety of quantified or qualitative descriptions of costs and benefits that are linked to significant issue determinations for a particular forest plan" (FR, Vol. 77, No. 68, 21188). The Draft and Final EIS documents provide a detailed and extensive assessment of the effects of the alternatives on non-timber forest values and user groups. As discussed in the Draft EIS with respect to ecosystem services (p. 3-487):

> The effects of the alternatives on these types of services including the sections of the EIS that address watersheds, fisheries, soils, wildlife and subsistence use, heritage resources, and timber and vegetation, among others. Monetary values are not assigned to these services, but this does not lessen their importance in the decision making process.

In addition, as referenced in the Draft EIS (p. 3-487), ecosystem services are discussed at the forest planning level for the Tongass National Forest in the 2008 Forest Plan EIS (USDA Forest Service 2008b, p. 3-544 to 3-556).

COMMENT

PUBC-4: The Forest Plan amendment goes to great lengths to support about 200 timber jobs rather than allocating the associated funds to the fishing and tourism industries that support thousands of jobs. The Forest Service should take a "hard look" at this allocation and recognize the monetary and societal value of other forest uses, as well as seek ways to improve protections for fish and wildlife habitat and enhance visitor services.

RESPONSE

The management alternatives presented in the EIS are all designed to support sustainable levels of tourism and fishing. The *Economic and Social Environment* analysis presented in the EIS discusses the monetary and societal value of other forest uses at some length, including recreation and tourism, commercial fishing, mining, and the economic value of natural amenities and quality of life. The *Economic and Social Environment* section also addresses the potential impacts to these resources, as well as other non-value uses including passive use values and ecosystem services.

Under the current Forest Plan, Forest Service programs currently emphasize protection for fish and wildlife habitat and seek ways to enhance visitor services. These protections will remain in place in the proposed Forest Plan amendment, and the Forest Service will continue to work with other regional groups to develop visitor services, as appropriate.

Many factors affect the availability of public sector funds for multiple program areas. Consideration of funding strategies and resource allocation is outside the scope of this forest plan amendment and EIS.

Socioeconomics (SOC)

COMMENT

SOC-1: The Draft EIS acknowledges that the Tongass timber sale program causes significant adverse effects to the environment, but makes no attempt to evaluate the economic costs of these impacts, and disregards the extensive literature that discloses the economic value of non-timber forest uses, including hunting and wildlife viewing.

RESPONSE

The Draft EIS discusses the contribution of the timber and other natural resource-based industries to the regional economy in the *Economic and Social Environment* section. In addition to timber, this section provides a detailed discussion of the recreation and tourism, commercial fishing and seafood processing, and mining and mineral development sectors, and also addresses the importance of quality of life and natural amenities in attracting and retaining residents and businesses. Further, the *Communities* subsection of the Draft EIS provides detailed information on employment and economic conditions by community. Potential impacts to the regional economy are also assessed in the *Economic and Social Environment* section, including potential impacts to the timber, recreation and tourism, and commercial fishing and seafood processing sectors, as well as quality of life and natural amenities.

COMMENT

SOC-2: Contrary to federal policy, the Draft EIS makes no attempt to address the social costs of carbon dioxide released as a result of timber harvest. Federal agencies, including USDA and the Forest Service, have calculated the social costs of carbon from other federal land management actions.

RESPONSE

Additional discussion regarding the social costs of carbon has been added to the *Climate Change* section in the Final EIS.

COMMENT

SOC-3: The Draft EIS (pg. 3-441) appears to suggest that harvesting old-growth timber has negative impacts on tourism. This is a false assumption. Continued timber harvest and road development will enhance tourism.

RESPONSE

The text from the Draft EIS quoted in the original text of the above comment is part of a general introductory paragraph that addresses three different types of broad value: recreation and tourism; ecosystem values; and non-use values. The paragraph does not address the relationship between timber harvest and tourism. Potential impacts to recreation and tourism are evaluated in the *Recreation and Tourism* section of the Draft EIS, and the associated economic impacts are addressed in the *Social and Economic Environment* section.

COMMENT

SOC-4: The Draft EIS fails to show how the proposed alternatives will meet the goal of providing jobs for Southeast Alaska residents because the timber industry accounts for only a small share of regional employment. The Draft EIS fails to consider the impact of the limited export policy on the number of saw mill jobs supported per MMBF harvested, the share of logging jobs held by non-residents, or the potential for young growth logging to employ fewer workers due to increased mechanization, making it impossible to evaluate whether the proposed timber harvest levels will meet the goal of providing jobs for Southeast Alaska residents.

RESPONSE

Concerns regarding the scope of the Purpose and Need are addressed in detail in the *Purpose and Need* section of this comment response document (see, for example, P&N-10). The purpose and need for the amendment responds to the July 2, 2013 memorandum from USDA Secretary Tom Vilsack which specifically directed the US Forest Service to expedite the transition from old-growth to young-growth timber harvest while maintaining a viable timber industry that provides jobs and opportunities for Southeast Alaska residents.

Diversity of employment opportunities is important for any economy especially in small towns. The *Communities* section of the Draft EIS inventories estimated employment, by industry sector, for each community. Some small towns, such as Thorne Bay, are more focused on timber employment than others such as Skagway, where the economy is more based on tourism. In addition, transitioning to young growth timber management may disperse these jobs across the region. The oldest young growth is in the northern part of the Tongass National Forest, which may create possible niche markets in that subregion.

Concerns related to the limited timber export policy are addressed in detail in the Timber Export subsection of this comment response document. The comment notes that the sawmill jobs per MMBF harvested on the Tongass have declined since 2008 when the limited timber export policy was initiated, dropping from an average of 2.2 jobs/MMBF (2002 to 2007) to an average of 1.5 jobs/MMBF (2009 to 2014). This does not, however, capture the entire picture, as exporting unprocessed timber supports a different range of jobs than domestic processing with more of an emphasis on transportation and stevedoring than sawmilling. This is reflected in the estimated timber industry employment and income estimates presented by alternative in Table 3.22-18 in the Draft EIS (p. 3-484). As noted in footnote 5 to this table, export employs more workers in transportation and other services per MMBF harvested than domestic production. Transportation and other services for export volume include water transportation, independent trucking, stevedoring, scaling, and export marking and sort yard employment for export volume. Transportation and other services for locally sawn volume include water transportation, scaling, and independent trucking.

Local sawmilling and transportation-related employment estimates presented in Table 3.22-18 are based on a range, from maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent Alaska yellow cedar (see Table 3.22-18, footnote 4).

Non-resident employment in Southeast Alaska is discussed in the *Economic and Social Environment* section of the Draft EIS and summarized in Figure 3.22-2. Alaska currently employs a significant quantity of seasonal workers in resource-dependent industries because of the nature of this employment and the weather conditions. Nonresident workers as a share of direct employment in resource-dependent industries in Southeast Alaska range from 39.5 percent in the leisure and hospitality sector to 71.3 percent in the manufacturing sector (which mainly consists of employment in the seafood processing sector) (Figure 3.22-2). Many workers leave in the winter either because employment ends (i.e., tourist season ends) – or, they prefer to spend their wages somewhere where the cost of living is lower than Alaska. These are seasonal workers that do not become year-around residents.

Transitioning to young-growth timber harvest may result in a different range of types of employment than the current mix. Mechanical harvesters, for example, were they to be employed, require different maintenance, repair services, and transportation than conventional harvesting.

COMMENT

SOC-5: The Draft EIS fails to appreciate the full economic impact of commercial fishing. The ex-vessel value reported in the Draft EIS fails to account for the economic impact of in-state processing and the various goods and services provided to the fish harvesting and processing industries. The Draft EIS also fails to accurately identify the number of jobs provided by commercial and sport fishing. The economic value of commercial and sport fishing should be balanced against the value of logging.

RESPONSE

The text cited in this comment is from the introduction to the *Fish* section of the Draft EIS. The economic impacts associated with commercial fishing are described in more detail in the *Economic and Social Environment* section in Chapter 3 of the Draft EIS. A note referring the reader to the *Economic and Social Environment* section has been added to the introduction to the *Fish* section to avoid confusion. Direct employment in natural resource industries is, for example, compared in Table 3.22-3 and Figure 3.22-1, and a detailed discussion of the commercial fishing sector is provided in the subsection entitled *Commercial Fishing and Seafood Processing* (starting on p. 3-465 of the Draft EIS).

COMMENT

SOC-6: The Draft EIS indicates that the proposed alternatives would likely have negative effects on subsistence, but provides no information on the role that subsistence plays in communities or the socioeconomic importance of these potential adverse effects. There is a wealth of information on the topic, much of which has been developed by or with the cooperation of the Forest Service. Much of this information is available through the ADF&G, Division of Subsistence.

RESPONSE

The Draft EIS includes a substantial amount of information regarding subsistence activities including detailed analysis for each community within the region (see pp. 3-501 through 3-656). The Forest Service is aware that ADF&G has expertise in and publishes data and information on subsistence resources and activities. ADF&G subsistence data and information, including some developed by the Forest Service, is provided, cited, and discussed at length throughout the Draft EIS. In addition to publicly available data, ADF&G also provided the more detailed data used for the community-level analyses (pp. 3-501 through 3-656).

COMMENT

SOC-7: The Draft EIS indicates that the proposed alternatives would likely have negative effects on hunting, fishing, and wildlife-viewing, but provides no information about the economic importance of these activities. The Draft EIS should have cited the results of a report prepared for ADF&G that assessed the economic importance of wildlife in 2011 (ECONorthwest 2014).

RESPONSE

The economic importance of hunting, fishing, and wildlife-viewing is discussed in the *Economic and Social Environment* section of the Draft EIS starting on page 3-463 under *Recreation and Tourism*. Additional information from the report cited in the comment has been added to this section in the Final EIS.

COMMENT

SOC-8: The Draft EIS fails to assess the importance of resource-related amenities, such as access to fish, wildlife, and scenic unlogged forests, to the quality of life for local residents and the role these resources play in attracting and retaining residents and businesses. While these issues are discussed in the Draft EIS, the Draft EIS analysis is deficient because it does not include survey results from a report prepared for ADF&G that found that quality of life issues are important to many Southeast Alaska residents (ECONorthwest 2014). In addition, the Draft EIS fails to consider the impact of the alternatives on quality of life issues.

RESPONSE

The Draft EIS discusses the importance of resource-related amenities, such as access to fish, wildlife, and scenic unlogged forests, to the quality of life for local residents and the role these resources play in attracting and retaining residents and businesses in the *Economic and Social Environment* section of the Draft EIS starting on page 3-468 under *Natural Amenities and Quality of Life*. Potential impacts to quality of life issues are discussed in the Environmental Consequences part of the *Economic and Social Environment* section of the Draft EIS starting on page 3-486 under *Natural Amenities and Quality of Life*.

Additional information from the report cited in the comment has been added to this section in the Final EIS.

COMMENT

SOC-9: The Draft EIS would have presented a more complete portrait of the potential socioeconomic impacts of the alternatives if it had provided information about the net economic benefits local residents and visitors derive from wildlife, fish, scenery, and other resources. Specifically, the Draft EIS should have included information from a report prepared for ADF&G that assessed the economic importance of wildlife in 2011 (ECONorthwest 2014). In addition, the Draft EIS does not address the potential impacts of the alternatives on ecosystem services.

RESPONSE

The report referenced in the comment provides estimates of the "net economic benefits" of hunting and wildlife viewing for residents and visitors in Alaska in 2011. Net economic benefits as presented in this report include the amount residents and visitors spent on these activities plus a hypothetical amount they would have been willing-to-pay above the amount they actually did pay. In addition, the estimates also included the estimated amount survey respondents would theoretically be willing-to-pay to visit an area managed to ensure they would see a specific species and the amount they would be willing-to-pay into a wildlife conservation fund. The resulting estimates are, of course, considerable and provide an indication of the importance of wildlife to residents and visitors to Alaska. These types of non-use values (i.e., values that individuals assign to a resource independent of their use of that resource) are discussed further in the 2008 Forest Plan EIS (USDA Forest Service 2008b, p. 3-551 to 3-552).

The Draft EIS provides an overview of ecosystem services and references the detailed discussion in the 2008 Forest Plan EIS (USDA Forest Service 2008b, pp. 3-544 to 3-556). The discussion in the current Forest Plan EIS is located in the *Economic and Social Environment* section of the Draft EIS on page 3-487 under *Ecosystem Services*. The author of the above comment notes that there are many good introductions to the values of services derived from forest ecosystems and provides a list of references for the Forest Service to consider. Many of these references are included in the discussion in the 2008 Forest Plan EIS, which is incorporated in the current EIS, as noted above.

COMMENT

SOC-10: The Draft EIS does not assess the economic impacts and costs to businesses and communities in the event that the young-growth transition is not successful and existing timber operations go out of business. If Viking Lumber were to go out of business, for example, AP&T would experience a significant reduction in energy demand on Prince of Wales Island. This could potentially lead to a so-called "death spiral" whereby a drop in sales leads to an increase in rates to cover fixed costs, which in turn leads to further sales reductions.

RESPONSE

The purpose and need for the amendment responds to the July 2, 2013 memorandum from USDA Secretary Vilsack which directed the US Forest Service to expedite the transition from old-growth to young-growth timber harvest while maintaining a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. All of the alternatives, including No Action, are designed to expedite this transition. The amended Forest Plan under all alternatives would provide an annual average of 46 MMBF during the transition period and it is up to the industry to respond to the transition. The transition time frame provides opportunity for the existing industry to adjust or retool for a predominantly young-growth supply from the Tongass, as well as time for new operations to develop, if appropriate.

COMMENT

SOC-11: The Final EIS should identify the number of jobs that would be created for industry maintaining and decommissioning existing forest roads. Unlike the Draft EIS alternatives, this type of emphasis would create long-term, sustainable employment for timber industry workers.

RESPONSE

The Draft and Final EIS documents include five alternatives designed to meet the Purpose and Need for the Forest Plan amendment, as directed by the Secretary of Agriculture. This is explained further in the Purpose and Need section of the Draft EIS, starting at page 1-4. An alternative that does not include timber harvest would not meet the Purpose and Need. Information related to road maintenance and proposed decommissioning on the Tongass National Forest is available in the Access Travel Management Plans prepared for each Ranger District. These plans are available at the District offices.

Market Demand (MKD)

COMMENT

MKD-1a: The PNW Research Station demand study overestimates the likely actual demand for timber. All three scenarios evaluated in the study ignore the long-term decline in market demand and anticipate increasing demand over the next 15 years. These scenarios rely on misleading assumptions about the U.S. share of global timber markets, the portion of this share accounted for by federal harvest in Southeast Alaska, and in particular the assumption that the Tongass will retain the same share it currently has of rising global demand. The Forest Service should recognize that this approach has failed to accurately predict demand in the past, and consider a scenario that involves a continued decline in demand.

RESPONSE

During the past 25 years, the U.S. Forest Service, Pacific Northwest (PNW) Research Station has published several studies in support of Tongass National Forest land management planning that estimate derived demand for Southeast Alaska timber including Brooks and Haynes (1990, 1994, 1997), Brackley et al. (2006a), and Daniels et al. (2016). Daniels et al. (2016) is the fifth such analysis performed since 1990 to assist forest planners in meeting statutory requirements for estimating planning cycle demand for timber from the Tongass National Forest.

Projections of Alaska timber products outputs, the derived demand for logs, lumber, residues, and niche projects, and timber harvest by owner are developed using trend-based projections. “Derived demand”, in PNW Research Station studies, is defined as the volume of national forest harvest needed to meet projected consumption of Alaska forest products, over time, given the harvest levels of other owners and based on assumptions about product markets. Similar to prior studies, Daniels et al. (2016) estimate demand for Tongass National Forest timber using a materials balance approach based on forecasted trends in product markets. Projected harvest from the Tongass National Forest is calculated as the volume of timber required to meet the shortfall between projected demand and harvest from other ownerships, primarily Native Corporation and State of Alaska lands. Alternatively stated, derived demand for Tongass National Forest timber is computed as the residual – the quantity of national forest timber required to balance the market.

Demand for Tongass National Forest timber depends on final markets supplied by Alaska forest products. The PNW Research Station identified all markets receiving Alaska wood products including utility logs, softwood lumber, mill residue, and other niche products. Additional information was gathered regarding production, shipments, and relative scale of markets served. This information was combined with projections of total wood product consumption (for domestic markets) or imports in destination regions to arrive at the share of the market supplied by Southeast timber production. Historic market data was collected and assessed for each product market including softwood log exports, domestic log market, utility logs, lumber, and other products.

The PNW Research Station then developed a baseline model based on the assumption that the industry in southeast Alaska production would remain at post-2008 recession levels for the next 15 years, despite indications at the time the study was completed (summer 2015) that U.S. sawnwood consumption had reached levels approaching those seen during the pre-recession housing boom (Daniels et al. 2016). The baseline model was subsequently used to evaluate three scenarios representing different potential futures for timber harvest in Southeast Alaska. The first scenario (Scenario 1) assumed that the transition to young growth would occur by 2025, with old-growth harvest constrained to 5 MMBF for small sales and micro-sales from that point onward. As modeled, this scenario resulted in a reduction in Pacific Rim demand for dimensional lumber from Southeast Alaska that would in turn cause a decline in harvest from the Tongass relative to the baseline rate. The second scenario built upon the transition modeled in Scenario 1 by adding an expansion of bioenergy markets. Scenario 3 also built on the transition modeled in Scenario 1, but assumed increased demand for lumber from the Lower 48 States, by considering only the pre-recession rate of growth in domestic lumber consumption, as opposed to the more conservative growth rates used in the baseline model (Daniels et al. 2016). In other words, the PNW Research Station study assesses a range of potential demand scenarios that build upon a baseline model that employs

conservative assumptions regarding the development of future markets. The likelihood that baseline demand will drop below post-recession levels is considered very low.

Observed declines in timber harvest should not supplant the use economic theory and peer-reviewed methodology to project demand for Tongass National Forest timber in an objective and scientific manner. There are many extenuating circumstances, unrelated to market demand for forest products, that impact actual timber harvest including administrative appeals and delays, litigation, agency budget, and other administrative challenges.

COMMENT

MKD-1b: The Proposed Forest Plan and all of the alternatives (including no action) evaluated in the DEIS are based on an inflated estimate that market demand for timber will average 46 MMBF per year for the next fifteen years, regardless of the allocation between old-growth and second-growth. This results in the DEIS overstated the number of jobs supported and the overall economic benefits of logging. The Forest Service should revise this estimate downward and vary projected timber outputs by alternative.

RESPONSE

Concerns that the PNW Research Station demand study overestimates potential timber demand are discussed in response to MKD-1, above.

As discussed in Chapter 2 of the Draft EIS, the Proposed Action and range of alternatives developed for the Draft EIS were designed to maximize or emphasize the percentage of harvest volume coming from young growth as early as possible, while minimizing any potential effects on the old-growth Conservation Strategy and other resources. Alternatives 1 through 5 in the EIS were designed to produce a PTSQ of about 46 MMBF per year during the next 15 years, with old growth making up a decreasing percentage of the total. Old-growth volume would continue to decrease until it reaches about 5 MMBF per year and it would remain at that level, to support limited small timber operators. As more young growth becomes economic to harvest, the PTSQ would be allowed to increase.

In past Forest Plan revisions and amendments, varying demand scenarios were used to develop alternatives, including scenarios that allowed for growth and expansion of the current industry. In this amendment, the purpose and need requires the transition to a predominantly young-growth based industry and the reduction of old-growth harvest. The alternatives evaluated in the EIS differ in their approach to meeting this purpose and need, rather than varying the volume expected to be made available for harvest. Each alternative evaluated in detail in the EIS differs in terms of suitability of lands (i.e., determination made regarding the appropriateness of various lands within a plan area for various uses or activities, based on the desired conditions applicable to those lands) and other plan components (goals; desired conditions; objectives; standards; guidelines) that dictate direction and may apply forest-wide or to specific LUDs. These variations among alternatives affect the ability of each alternative to meet the purpose and need of the proposed amendment, and the speed at which the transition to young-growth could potentially occur.

The Forest Service will continue to evaluate annual market demand using the Morse methodology and may adjust the total volume, as well as the mix of old-growth and young-growth timber, made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

COMMENT

MKD-1c: The Draft EIS does not discuss current export market information compiled by the PNW Research Station and ignores the substantial weakening of export markets and the competitive disadvantage of Alaska and Pacific Northwest raw log exporters. Recent PNW Research Station press releases indicate that both the value and volume of log exports from Alaska and the West Coast are declining and at a much greater rate than other timber exporting regions.

RESPONSE

The Draft EIS provides an overview of the modeling approach used by the PNW Research Station to estimate market demand for timber (see pp. 3-455 to 3-460). More detailed information regarding the methodology and data sources used for the PNW Research Station study is provided in Daniels et al. (2016). These projections are based on longitudinal trend information available at the time the demand study was completed (summer 2015) and do not include data from the more recent PNW Research Station press releases and publications cited in the comment. The demand projections developed by Daniels et al. are based on long-term trends and represent long-term, planning cycle demand. Short-term fluctuations in demand are represented in the Morse methodology, which informs the amount of timber offered in a year.

COMMENT

MKD-2: The project record indicates that the DEIS inflates the volume of old-growth – 5 MMBF per year – needed to sustain small timber operators. An email exchange between the Regional Economist and the lead author of the PNW Research Station's demand study indicates that the volume used by small operators "is probably somewhere between 1.4 MMBF and 3.0 MMBF." This inflated estimate will result in future levels of old-growth logging that are higher than needed to support small operators.

RESPONSE

Data compiled from publicly available reports posted on the Alaska Region Forest Management and Accomplishment Reports web page indicates that from 2005 through 2014, small operators had an annual average of 11 MMBF of uncut timber under contract, ranging from an annual low of 6 MMBF in 2014 to a high of 17 MMBF in 2008 and 2009 (see the first table below). The same data source indicates that small operators harvested an annual average of 7 MMBF over the same time period, ranging from an annual low of 4 MMBF in 2006 to a high of 11 MMBF in 2011 (see the second table below). These data indicate that the annual estimate of 5 MMBF of old growth volume needed to sustain small timber operators is lower than the annual average volume harvested over the past 10 years. These numbers suggest that based on current and past volumes under contract and harvest levels, 5 MMBF is not an overstatement of the volume likely to be required by small operators.

See: http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785

Estimated Tongass National Forest Small Sale Volume Cut

Fiscal Year	Current Qty Est (rounded MMBF)	Volume Cut (rounded MMBF)	Remaining Vol (rounded MMBF)
2014	13	7	6
2013	19	10	9
2012	20	9	11
2011	19	9	10
2010	18	10	8
2009	24	7	17
2008	23	6	17
2007	23	7	16
2006	14	5	9
2005	13	5	8
Average	19	7	11

Calendar Year	Current Qty Est (rounded MMBF)	Volume Cut (rounded MMBF)	Remaining Vol (rounded MMBF)
2014	14	6	8
2013	17	9	8
2012	20	10	10
2011	19	11	8
2010	16	9	7
2009	22	7	15
2008	32	6	26
2007	22	6	16
2006	14	4	10
2005	13	5	8
Average	19	7	12

Source: USDA Forest Service 2016[9]

COMMENT

MKD-3: The Proposed Forest Plan explicitly adopts, for the first time, a fixed PTSQ. This new provision must comply with the 2012 planning rule, which requires that a Forest Plan provides for economic sustainability. The EIS must analyze whether the new PTSQ and the associated plan objective (O-TIM-01) comply with the economic sustainability requirement of the 2012 planning rules.

RESPONSE

Timber objectives O-TIM-01 and O-TIM-02 have been revised in the Final EIS. This is discussed further in response to Comment TIM-11. These revisions clarify that O-TIM-01 is not intended to be a fixed target.

COMMENT

[9] USDA Forest Service. 2016. Timber Volume Under Contract, various years. Available online at: http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785

MKD-4: Each year the Forest Service uses the Morse methodology to estimate the volume of timber it needs to offer for sale to maintain adequate inventory for purchasers. This methodology uses the PNW Research Station demand projections as part of this calculation, which tends to overstate the volume required, and will continue to do so in the future if the latest PNW Research Station projections (Daniels et al. 2016) are used. The Forest Service must monitor demand on an annual basis or develop different estimates that project lower demand than Daniels et al.

RESPONSE

Specific concerns regarding the PNW Research Station demand projections are discussed in response to MKD-1a and elsewhere in this comment response document. As discussed in response to comments regarding the economics of the timber industry (see, for example, ECON-1, -5, -6, and -8), the Forest Service will continue to evaluate annual market demand using the Morse methodology, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry. Revisions to the Morse methodology are outside the scope of this Forest Plan amendment.

COMMENT

MKD-5: The Draft Forest Plan sets a goal of maintaining a three-year supply of timber under contract based on "annual timber consumption (i.e., the amount that is expected to be logged in a given year)." If the annual amount expected to be logged is based on the PNW Research Station forecasts, it will likely be too high, and the over-estimate will then be tripled in an attempt to maintain a three-year supply, causing the Forest Service to waste public resources on the preparation of unnecessary timber sales.

RESPONSE

Specific concerns regarding the PNW Research Station demand projections are discussed in response to MKD-1a and elsewhere in this comment response document. The goal of maintaining a three-year timber supply is to allow flexibility for forest products businesses to plan their operations and to allow flexibility in the timing of selling final products. In order to accomplish this goal, there needs to be more timber under contract than actual timber harvest. Annual projected harvest is based on the Morse Methodology. The 2008 Forest Plan revision used the Morse Methodology consistently as has the annual market demand calculations. This is explained in the Big Thorne FEIS, Appendix A and other project EISs. These sections have been revised, over time, to clarify this concept for the public. The Forest Service will continue to evaluate annual market demand using the Morse methodology, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry. Revisions to the Morse methodology are outside the scope of this Forest Plan amendment.

COMMENT

MKD-6: The Morse methodology used by the Forest Service to estimate annual market demand is based in part on mill capacity, which it defines as "the amount of net sawlog volume that could be utilized by the sawmill, as currently configured, during a standard 250 day per year, two shifts per day annual operating schedule – and, not limited by availability of workforce, raw materials, or market conditions." The Draft EIS shows that utilization of active mill capacity has been significantly lower than this amount in recent years. Viking Lumber, for example, has a listed capacity of 80 MMBF, but has milled one-fifth of this amount.

RESPONSE

The Forest Service will continue to evaluate annual market demand using the Morse methodology, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry. Revisions to the Morse methodology are outside the scope of this Forest Plan amendment. It may also be noted that observed declines in timber harvest and utilization rates do not necessarily equate to a reduction in demand. There are many extenuating circumstances, unrelated to market demand for forest products, that impact actual timber harvest including administrative appeals and delays, litigation, agency budget, and other administrative challenges.

COMMENT

MKD-7: The Draft Forest Plan has raised the "volume-under-contract goal" revising it from 2 to 3 years supply to 3 years supply without explanation or related analysis. The proposed change should be deleted or the Forest Service should explain why the change is necessary.

RESPONSE

Language in the Draft Forest Plan was updated to "(p)rovide about 3 years supply of volume under contract to local mills and then establish NEPA-cleared volume to maintain flexibility and stability in the sale program" (p. 2-5). This objective is identified in the 2008 Forest Plan as "2 to 3 years supply of volume." This objective was revised in response to public concern and comments received during timber harvest project environmental analysis document reviews, which questioned whether the amount should be 2 or 3 years supply – or somewhere in between (2.5 years). In order to make the objective clearer, one number was used instead of the prior range. The higher number (3 years) was selected because it is more representative of our practices and provides more flexibility with a higher volume under contract to mitigate the impact of potential delays in offering timber volume. Factors causing potential delays in offering timber volume include policy changes or injunctions during litigation which preclude either harvesting or offering certain projects. Harvest levels also fluctuate with changing markets and the amount of timber available, and also vary due to mobilization and weather-related impacts. In short, three years of volume under contract is not a change from our current practices and is preferable to help address market fluctuations and other changes in conditions.

COMMENT

MKD-8: The PNW Research Station demand estimates do not comply with the requirements of TTRA because the analysis accounts for round log exports, which were limited from the Tongass in 1990 when TTRA was enacted. It was never the intent of Congress that the mills in Southeast Alaska would have to compete against the round log export market.

RESPONSE

As discussed in the Draft EIS, for the past 25 years, the Forest Service has commissioned the PNW Research Station to prepare a number of long-term projections of demand for Tongass timber over time, including Brooks and Haynes (1990, 1994, 1997) and Brackley et al. (2006a, 2006b). The PNW Research Station has prepared a similar analysis in support of the current proposed amendment of the Forest Plan (Daniels et al. 2016). Using methods adapted from the previous PNW Research Station analyses, Daniels et al. estimate demand for Tongass timber using a materials balance approach based on projected trends in product markets. The analysis projects future demand for timber ("derived demand") based on the overall end-market demand in foreign and domestic markets and the portion of that demand Alaska is likely to fill (based on historic trends).

The 2015 PNW Research Station study identified five primary timber products harvested from Southeast Alaskan forests -- softwood sawlogs, utility logs, softwood lumber, mill residue, and other products – and projected the associated demand by product. The analysis accounts for the demand for unprocessed logs and assumes that logs from the Tongass would continue to be exported. The limited export policy has affected the amount of logs available for local processing in recent years by allowing timber sales that would otherwise have been uneconomic to appraise positively and be made available for purchase. Part of the resulting sale may then be exported while the remaining volume is processed locally. Assuming that this practice would remain in place – by using recent trends to estimate future demand – reflects the current environment within which the Southeast Alaska timber industry operates. Viewed from a modeling perspective, the mills in Southeast Alaska are not competing with the round wood log export market. Timber export policy is discussed further in the Timber Export Policy section of this response to comments document.

COMMENT

MKD-9: The PNW Research Station study (Daniels et al. 2016) overestimates the volume of private timber that will be available for local processing, with volumes projected to increase from existing harvest levels (about 61 MMBF) to about 80 MMBF over the next 15 years. The study also overstates the volumes expected to be offered on state lands and assumes they will be offered on an annual basis. These overestimates result in the NFS volume being reduced to just 46 MMBF per year. Based on this low volume and the Forest Service's record of consistently underperforming on their timber sale volume, purchasers cannot risk investing in their businesses to stay competitive.

RESPONSE

The PNW Research Station long-term timber demand projections (Daniels et al. 2016) are based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by timber economists and forest researchers. The PNW Research Station study projected future demand for timber ("derived demand") based on the overall end-market demand in foreign and domestic product markets and the portion of that demand Alaska is likely to fill (based on historic trends). The baseline demand projections developed by the PNW Research Station were developed in three stages: 1) historic estimates of Alaska forest products output by product and destination were gathered and projected from 2015 to 2030; 2) the raw material requirements necessary to support this projected output were estimated by product type; and 3) the timber harvest equivalent was calculated and allocated by owner, including Native Corporation and State lands (Daniels et al. 2016). Based on historic trends, Daniels et al. assumed that Native Corporation harvest would be exported as unprocessed round wood, with none of this timber expected to be available for local processing. .For State harvest, Daniels et al. assumed that 70 percent of State logs would be exported as unprocessed round wood, with the remaining 30 percent processed in Southeast Alaska.

The PNW Research Station study developed projections for State and Native Corporation harvest as part of the baseline and three scenarios constructed as part of their study. State and Native Corporation harvest varied by scenario based on the underlying assumptions. Assuming that 30 percent of State harvest would be available for local processing results in an annual average of 6.2 MMBF (Baseline and Scenario 1) to 7.8 MMBF (Scenario 2) available from 2015 to 2030, equivalent to about 13 percent to 17 percent of the PTSQ. As discussed above, the Forest Service will continue to evaluate annual market demand using the Morse methodology or a similar process and may adjust the total volume, as well as the mix of old-growth and young-growth timber, made available for sale on a year-to-year basis, as needed to meet demand and the Secretary's direction to speed the transition toward a young-growth timber industry.

COMMENT

MKD-10: The PNW Research Station study's (Daniels et al. 2016) Scenario 2 assumes increased demand for wood-based energy products. The economics of wood-based energy products in Southeast Alaska are marginal even with extensive subsidies and Daniels et al.'s projected utility log harvest for this scenario overstates the utility log share of total harvest. Utility logs at most average about 15 percent to 17 percent of total harvest. Timber supply constraints effectively limit wood-based energy to sawmill residuals, most of which are already being effectively used.

RESPONSE

The PNW Research Station's timber demand projections are based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by timber economists and research scientists. "Derived demand", as defined by the PNW Research Station scientists, is the volume of national forest harvest needed to meet projected consumption of Alaska forest products, over time, given the harvest levels of other owners and based on assumptions about product markets. In addition to projecting baseline timber demand, scientists also developed three scenarios that represent a range of possible future market conditions. Scenario 2, the "wood energy" scenario, accommodates the US Forest Service's 30 percent conversion goal from distillate fuels to wood-based energy products for Southeast Alaska's residential, commercial, and industrial sectors. Scenario 2 and the other scenarios evaluated in

the demand study represent different futures and are an attempt to project the future based on past observations and potential future conditions that may or may not come to fruition.

COMMENT

MKD-11: The PNW Research Station demand study (Daniels et al. 2016) does not estimate the cost of accessing, transporting, and harvesting young-growth timber, and contains no Alaska-specific estimates of the cost of producing timber from young-growth timber. The absence of this analysis undermines the credibility of the study's estimates of young-growth demand.

RESPONSE

Daniels et al. (2016) is the fifth scientific analysis performed since 1990 to assist forest planners in meeting statutory requirements for estimating planning cycle demand for timber from the Tongass National Forest. "Derived demand", as defined by PNW Research Station scientists, is the volume of national forest harvest needed to meet projected consumption of Alaska forest products, over time, given the harvest levels of other owners and based on assumptions about product markets. The methodology used to develop these estimates is summarized in the Draft EIS and described in detail in the timber demand study (Daniels et al. 2016). This approach to estimating demand is not based on the type of cost data identified in the comment and, as a result, the PNW Research Station demand study did not develop these types of estimates.

The results of the PNW Research Station demand study are used in the Draft EIS to develop the PTSQ and compare the alternatives. As discussed in Chapter 2 of the Draft EIS, the Proposed Action and range of alternatives developed for the Draft EIS were designed to maximize or emphasize the percentage of harvest volume coming from young growth as early as possible, while minimizing any potential effects on the old-growth Conservation Strategy and other resources.

Although not part of the PNW Research Station demand study, the costs of accessing, transporting, and harvesting young-growth timber were estimated as part of the Woodstock modeling analysis prepared in support of the EIS analysis, and are included in the financial analysis of the alternatives. This is explained further in Appendix B to the Final EIS, which has been updated, as have the results of the financial analysis presented in the Final EIS.

COMMENT

MKD-12: The timber demand analysis prepared by the PNW Research Station was rushed and prepared without seeking input from the State of Alaska or the Southeast Alaska timber industry.

RESPONSE

Input was solicited from the State of Alaska and the Southeast Alaska timber industry as part of the timber demand analysis prepared by the PNW Research Station. Multiple meetings were conducted with the State of Alaska and the Southeast Alaska timber industry during the summer and fall of 2014. The following table lists the visits Dr. Jean Daniels, the lead author of the PNW Research Station demand analysis, made to speak with staff from the state and timber industry about the demand study, along with dates and locations, as well as anyone else who attended these meetings. This concern is also addressed in response to Comment P&N-9 in the Purpose and Need section of this response to comments volume.

Trip	*Date*	*Met with:*	*Where*	*Also in attendance:*
Ketchikan, AK, Summer, 2014	June 20, 2014	Owen Graham	Tongass NF SO	Su Alexander
	June 20, 2014	Clarence Clark	AK DNR, White Cliff Building	
Ketchikan, AK, Fall, 2014	September 15, 2014	Jim Tuttle	Sealaska Corp office	Clarence Clark

	September 15, 2014	Paul Slenkamp	Alaska Mental Health Trust, White Cliff Building	Clarence Clark
	September 15, 2014	Eric Nichols	Alcan Ward Cove export yard	Clarence Clark
POW Island, Fall, 2014	September 16, 2014	Ernie Eads	Thuja Plicata Mill	Clarence Clark
	September 16, 2014	Jim Harrison	Western Gold Cedar Mill	Clarence Clark
	September 16, 2014	Hans Kohn	Good Faith Lumber Mill	Clarence Clark

COMMENT

MKD-13: The PNW Research Station demand analysis was prepared because the Forest Service is planning to reduce the supply of old-growth timber in response to the Secretary's Memorandum. This restriction does not reduce demand, it limits supply. Supply is also limited due to the high costs of harvesting federal timber sales that are a result of the Forest Plan standards and guidelines. Daniels et al. (2016) indicate that existing mills are operating well below capacity, but do not explain that this is due to the constrained timber supply, not a lack of demand. Viking managers have, for example, repeatedly told the Forest Service that they would like to purchase more timber sales. Providing sufficient old-growth timber is the best approach to sustaining a viable timber industry and meeting the intent of TTRA's market demand provision.

RESPONSE

The Tongass National Forest has been directed, per the Secretary's Memorandum 1044-009: "To conserve the Tongass National Forest under the principles of the Multiple-Use Sustained- Yield Act of 1960, Tongass Timber Reform Act and other relevant statutes, we must speed the transition away from old-growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests. Moreover, we must do this in a way that preserves a viable timber industry that provides jobs and opportunities for residents of Southeast Alaska." This memorandum does not direct the Tongass National Forest to artificially limit timber supply, rather it directed the forest to expedite the transition from old-growth harvest to young-growth harvest while maintaining a viable timber industry.

The PNW Research Station has projected long-term timber demand, in support of forest planning efforts, for over two decades. The most recent report (Daniels et al. 2016) identifies a number of reasons for undertaking a new timber demand analysis. These include "evolving USDA policy limiting old-growth harvesting and encouraging the harvest of younger second-growth forest stands", the recent transfer of some NFS lands to the Sealaska Corporation, "the entry of Tongass sawlogs into international export markets, rising fuel costs, and efforts to promote biomass energy products and technology for space heating and electricity generation" (Daniels et al. 2016, p.1).

The USDA recognizes the importance of maintaining the existing infrastructure and providing old growth timber to "bridge" the transition to young growth and allow a market to develop for these products. The USDA also recognizes it is important to retain the expertise and infrastructure of the existing industry so businesses can re-tool. Since the Forest Service is also governed by the Multiple Use Sustained Yield Act, there are standards and guidelines in place for the protection of other resources. Efforts are made to reduce the costs of timber harvest and provide economic timber sales but costs are higher in Southeast Alaska than other parts of the country due to the high costs of supplies, difficult terrain and high transportation costs.

COMMENT

MKD-14: The PNW Research Station demand study states that the entry of Tongass sawlogs into international export markets invalidates prior demand assumptions. Tongass cedar sawlogs have been sold into international export markets for many decades, as have hemlock and spruce sawlogs on occasion. The current, temporary log export policy does not lower the demand for timber from the Tongass.

RESPONSE

Daniels et al. (2016, p. 1) identify a number of events that they believe "invalidate many of the assumptions for the last timber demand analysis." These include "evolving USDA policy limiting old-growth harvesting and encouraging the harvest of younger second-growth forest stands", the recent transfer of some NFS lands to the Sealaska Corporation, "the entry of Tongass sawlogs into international export markets, rising fuel costs, and efforts to promote biomass energy products and technology for space heating and electricity generation" (Daniels et al. 2016, p.1). In other words, increased log exports is just one of a number of changes from the last demand study. Daniels et al. do not state that increased log exports have reduced demand for timber from the Tongass.

Prior Pacific Northwest Research Station demand studies were conducted when Japan was the primary market for export logs from Alaska and before the Tongass National Forest began exporting to US domestic and other international markets. The relatively recent developments identified by Daniels et al. have changed the competitive position of Alaskan exports compared to Washington and Oregon. Furthermore, overall timber demand depends on markets for sawn wood and exports for softwood logs.

COMMENT

MKD-15: The proposed PTSQ in the Draft EIS and Forest Plan (46 MMBF) does not provide sufficient timber volume to meet the most recent annual market demand estimates prepared by the Forest Service. These estimates developed for FY2014 using the Morse Methodology indicate that annual demand for that FY was 142 MMBF. As a result, the proposed PTSQ fails to meet the requirements of TTRA Section 101 to seek to meet annual demand from the Forest. The Draft EIS does not explain why the new estimates are almost 100 MMBF lower than the 2014 annual estimate.

RESPONSE

Estimated annual demand for FY 2014 was developed using the Morse methodology, which uses information from a number of sources, including the long-term timber demand projections. These projections will be updated as part of the Forest Plan amendment process, which will affect estimated annual demand in future years. The proposed PTSQ is discussed further in the Purpose and Need section of this response to comments document.

COMMENT

MKD-16: The Tongass Timber Reform Act, sec. 101 requires the Forest Service to "seek to meet" timber demand, and, therefore, the use of an unpublished draft of timber demand projection is unacceptable in the Draft EIS. Further, the Draft EIS refers to the same study inconsistently as Daniels (2015), Daniels et al. (2015), and Daniels et al. (in press). In addition, the Draft Forest Plan itself makes no direct mention of the Daniels et al. study.

RESPONSE

The Draft PNW Research Station study was available for public review before the Draft EIS was published. While the associated technical paper was cited as "Draft" or "In press" in the Draft EIS, the projections themselves were finalized prior to completion of the Draft EIS analyses. The report has subsequently been published and is consistently cited throughout the Final EIS as Daniels et al. (2016). The full reference is as follows:

> Daniels, Jean M.; Paruszkiewicz, Michael D.; Alexander, Susan J. 2016**.** Tongass National Forest timber demand: projections for 2015 to 2030. Gen. Tech. Rep. PNW-GTR-934. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 53 p.

The Draft Forest Plan indirectly references the findings of the PNW Research Station demand study in the new Forest-wide timber objectives added as part of Chapter 5. These objectives have been revised in the Final Forest Plan. The Daniels et al. study is not directly referenced in the Draft Forest Plan. Similarly, the demand study conducted in support of the 2008 Forest Plan (Brackley et al. 2006) is not directly referenced in the 2008 Forest Plan.

COMMENT

MKD-17: The current Draft EIS understates market demand and establishes a PTSQ that is the volume the Forest Service wishes to add, rather than what the industry needs to continue operating. An unrealistic assessment of market demand may be considered a fatal flaw for a Forest Plan EIS. "The USFS' inflated assessment of market demand was successfully challenged in Natural Resource Defense Council v. USFS, 421 F.3d 797, 811-12 (9th Cir. 2005)." The same flaw exists for this plan, with market demand deflated to the point of being misleading.

RESPONSE

The market demand estimates used in the Draft EIS are PNW Research Station projections developed by Daniels et al. (2016). These demand projections are based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by PNW Research Station scientists. The methodology used to develop these projections is summarized in the Draft EIS and discussed in detail in Daniels et al. (2016). Specific concerns regarding the accuracy of the latest PNW Research Station projections are discussed elsewhere in this comment response document.

It may also be noted that the challenge to the market demand assessment cited in the comment related to an error in interpretation of the 1997 market demand calculations, not an "inflated" or "unrealistic" assessment. As explained by the court in the opinion for Natural Resource Defense Council v. USFS, 421 F.3d 797, 811-12 (9th Cir. 2005):

> "The Forest Service misinterpreted the 1997 Brooks and Haynes market demand projection within the published ROD and EIS. The Forest Service incorrectly thought that the projection numbers refer only to "sawlogs suitable for producing lumber," when they actually refer to "total National Forest harvest, including both net sawlog and utility volume." Because of the Forest Service's error, the ROD and EIS project an average market demand for Tongass timber nearly double that which Brooks and Haynes projected. The projected demand scenarios used by the ROD and EIS are 130 MMBF/year (low), 212 MMBF/year (medium), and 296 MMBF/year (high)."

This was one of the issues analyzed and updated by the Brackley et al. (2006) demand calculations for the 2008 Forest Plan Amendment FEIS, Appendix G.

COMMENT

MKD-18: Explain why the Draft EIS uses 25- and 100-year timeframes for comparison purposes. The lifespan of a Forest Plan is 15 years and Forest Service handbook direction requires that a Forest Plan must show volumes for PWSQ (Projected Wood Sale Quantity) and PTSQ (Projected Timber Sale Quantity) for two decades. Based on this requirement, analysis and comparison of alternatives should be based on a 20-year period. Projecting that a Forest Plan and PTSQ will not change over 25- and 100-year periods is misleading to the public.

RESPONSE

The use of 25- and 100-year frameworks is consistent with past Forest Plan EIS analyses and also allows an evaluation of the long-term implications of the alternatives with respect to the proposed young-growth transition. As modeled, the volumes available under the four action alternatives (Alternatives 2 through 5) would support a transition to young-growth by Year 25. In addition, in many cases, analysis results are presented in the Draft EIS by decade.

Concerns related to the treatment of the PWSQ and PTSQ in the Forest Plan are discussed elsewhere in this comment response document, see for example TIM-5. The Draft EIS does not assume that the PTSQ would remain unchanged following completion of the young-growth transition. As discussed in the

Draft EIS, once the transition occurs (with the share of total harvest comprised of old-growth stabilized at 5 MMBF), the amount of timber offered for sale would be allowed to increase above 46 MMBF as more young growth becomes economic to harvest.

COMMENT

MKD-19: The annual PTSQ of 46 MMBF is based on the baseline projections developed by the PNW Research Station, rather than Scenario 1, which assumes the young-growth transition would occur by 2025, with a subsequent decline in projected demand (see Table 2-1 in the Draft EIS). Using the baseline projection overstates potential demand, and compounds multiple other issues with the PNW Research Station projections.

RESPONSE

The Draft EIS compares the alternatives with three demand scenarios developed from the initial baseline projections. Using the baseline projections to estimate the PTSQ is consistent with this approach. It should also be noted that the annual average difference between the baseline and the Scenario 1 estimates developed by the PNW Research Station is 1.8 MMBF. The use of the baseline model projection is discussed further below in response to MKD-20.

COMMENT

MKD-20: The PNW Research Station demand projections are for a 15-year period. These projections should be for 20 years to allow development of the PWSQ and PTSQ. In addition, the PTSQ established in the Draft Forest Plan (46 MMBF) is less than the derived demand for the three scenarios developed by Daniels et al. (2016). The PTSQ should at least be equal to the largest derived demand volume for the first two decades of the plan.

RESPONSE

The Daniels et al. (2016) study of long-term timber demand projections is based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by timber economists and forest researchers. Daniels et al. avoids recommending any one scenario as a “most likely” projection because of the relatively high degree of uncertainty surrounding developments in Southeast Alaska. The baseline model, however, utilizes historical datasets necessary to represent Southeast Alaska timber markets and assumes the timber industry in Southeast Alaska will remain at post-2008 recession levels for the next 15 years. As such, the baseline annual average of 46 MMBF timber demand from the Tongass represents a conservative and rational estimate. In addition, the 46 MMBF projection is not only represented in the baseline model, but it is also represented in all three scenarios at different points in time, and these scenarios represent alternative futures for timber harvest in Southeast Alaska.

It should also be noted that the PNW Research Station projections estimate planning cycle demand. The Forest Service will continue to evaluate annual market demand using the Morse methodology and may adjust the mix of old-growth and young-growth timber made available for sale on a year-to-year basis, as needed to meet demand and the Secretary’s direction to speed the transition toward a young-growth timber industry.

COMMENT

MKD-21: The Draft EIS needs to clearly define the terms “viable timber industry” and “existing industry.” These terms need to be defined for the Forest Service to be able to: a) develop a Forest Plan that “preserves” or “retains” the timber industry, and b) assess positive or negative changes in the timber industry as a result of implementing the transition.

RESPONSE

The term “existing industry” refers to the industry as it currently exists, as described in the Draft EIS (pp. 3-448 through 3-454). The phrase “viable timber industry” as used in the Draft EIS refers to a timber industry that meets a dictionary definition of “viable”: i.e., Viable (adj) -- Capable of working successfully; feasible (Oxford Dictionary). The form that this industry will take is expected to evolve over time as the transition towards predominantly young-growth harvest occurs. In the short-run, in the absence of sufficient young-growth volume to meet average annual demand, the Forest Service will offer a mix of

old-growth and young-growth volume. Over time, the old-growth share will decrease as more young-growth timber becomes available to harvest. This is expected to be a period of transition that will allow the opportunity for existing operations to retool and/or new operations to develop in response to changing supply conditions. Small operators will continue to have the opportunity to process old-growth timber with an annual average of 5 MMBF of old-growth volume expected to be made available through and following the young-growth transition.

COMMENT

MKD-22: The Forest Plan amendment is based on a circular argument: the alternatives are all designed to meet a PTSQ that has clearly been limited in response to the Secretary's policy decision to accelerate a transition to young-growth harvesting. The Forest Service should adopt a No Action alternative that allows annual old-growth harvests of up to 167 MMBF in accordance with the 2008 Forest Plan, while also allowing the Forest Service to offer more young-growth sales to help begin a young-growth transition.

RESPONSE

As discussed in response to MKD-13 (above), the PNW Research Station has projected long-term timber demand, in support of forest planning efforts, for over two decades. The most recent report (Daniels et al., 2016), which is the fifth such analysis performed since 1990, identifies a number of reasons for undertaking a new timber demand analysis. These include "evolving USDA policy limiting old-growth harvesting and encouraging the harvest of younger second-growth forest stands", the recent transfer of some NFS lands to the Sealaska Corporation, "the entry of Tongass sawlogs into international export markets, rising fuel costs, and efforts to promote biomass energy products and technology for space heating and electricity generation" (Daniels et al. 2016, p.1).

The projections developed by Daniels et al. are based on economic theory, peer-reviewed methodology, and scientific and objective analyses, and use a "derived demand" approach. The analysis projects future demand for timber ("derived demand") based on the overall end-market demand in foreign and domestic markets and the portion of that demand Alaska is likely to fill (based on historic trends). Baseline demand projections Tongass timber were developed in three stages: 1) historic estimates of Alaska forest products output by product and destination were gathered and projected from 2015 to 2030; 2) the raw material requirements necessary to support this projected output were estimated by product type; and 3) the timber harvest equivalent was calculated and allocated by owner (Daniels et al. 2016). These baseline projections were used in the Draft EIS to develop the PTSQ. As this brief summary suggests, the baseline estimates developed by Daniels et al. were not constrained or otherwise affected by the Secretary's policy decision to speed up the transition to young-growth harvesting. The methodology employed to develop these projections is discussed in more detail in Daniels et al. (2016).

As discussed in Chapter 2 of the Draft EIS, the No Action Alternative represents current management direction (2008 Forest Plan) and includes the application of the Roadless Area Conservation Rule (2001 Roadless Rule). Under this alternative, timber harvest would follow the existing timber sale program adaptive management strategy in all phases outside of inventoried roadless areas. Timber management would be restricted to the development LUDs and no commercial harvest would be allowed in beach and estuary fringe or RMAs. In other words, the No Action alternative continues to follow 2008 Forest Plan management direction, but the upper harvest limit has been adjusted downward from an allowable sale quantity of 167 MMBF to a PTSQ of 46 MMBF in recognition of changed market and other conditions, as summarized above in the first paragraph of this response.

COMMENT

MKD-23: The Draft EIS fails to describe the uncertainties and risks associated with its Preferred Alternative. The Draft EIS fails to identify the share of projected harvest that would be exported as logs versus processed locally, and also fails to identify the final destination of these logs and wood products. The Draft EIS also fails to describe the uncertainties and risks involved in its demand projections, specifically the potential consequences should projected demand fail to materialize. This does a disservice to business owners and others who may make decisions based on these projections.

RESPONSE

As discussed in the Timber Export Policy section of this response to comments document, the Draft EIS makes several assumptions regarding the limited export policy, including the following:

- The financial analysis prepared for the Draft EIS (which has been updated for the Final EIS) assumed that all western redcedar would be processed domestically and that all Alaska yellow-cedar would be sent to markets outside of Alaska, with Western hemlock and Sitka spruce volumes and other species assumed for the purpose of this analysis to be divided equally between domestic production and export in accordance with the current limited export shipment policy (Draft EIS, p. 3-481).
- The timber-related employment and income estimates presented in Table 3.22-18 in the Draft EIS were based on a range, from maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent of Alaska yellow cedar. (Draft EIS, p. 3-484).

The assumptions used to develop the PNW Research Station demand projections are discussed in detail in Daniels et al. (2016). The demand study looked at export figures over the last 5 years and used these numbers to estimate softwood sawlog exports. These trend-based projections therefore reflect export trends in light of the export policy as well as the case-by-case export allowances beyond that programmatic approval.

The 2015 PNW Research Station study identified five primary timber products harvested from Southeast Alaskan forests: softwood sawlogs, utility logs, softwood lumber, mill residue, and other products. The projected allocation of Tongass timber by market is shown in Table 3.22-8 of the Draft EIS (pp. 3-456 to 3-457) and discussed in detail in Daniels et al. (2016).

The Draft EIS discusses factors affecting the projected demand and other factors that affect the timber sale program in the Timber section of Chapter 3 (pp. 3-310 to 3-311). Daniels et al. (2016, p. 45) provide the following discussion regarding sensitivity:

> "Our approach to incorporating and displaying uncertainty has two components. The first is the design and analysis of the three management scenarios. The second is a sensitivity analysis in which we examined the effects of changes in individual elements of the projections. The sensitivity analysis showed model results to be most sensitive to changes in Pacific Rim log export markets. This highlights the importance of competitiveness relative to producers in the Pacific Northwest and other global log suppliers. Our model showed that the young-growth transition is most likely to affect lumber production; maintaining Pacific Rim log export markets in the face of changing raw material quality and the high costs of harvesting and transporting material are central issues facing the competitiveness of the Alaska forest sector."

A reference to this discussion has been added to the section that summarizes the PNW Research Station demand projections in the Final EIS.

COMMENT

MKD-24: The PNW Research Station projections are not based on price, and therefore, are not really demand projections at all. Instead of considering price, the demand study assumes that the quantity produced will be determined by other factors that are subject to the Forest Service's decision-making authority. As a result, the "Forest Service is more or less saying that the demand for TNF timber will be however much it wants to log, based on its interpretation of 'multiple policies and objectives."

RESPONSE

The PNW Research Station demand projections are not based on price as explained in Daniels et al. (2016, pp. 21-22):

> Projected harvest from the Tongass National Forest is calculated as the volume of timber required to meet the shortfall between projected demand and harvest from other ownerships, primarily Native Corporation and State of Alaska lands. In other words, derived demand for Tongass timber is computed as a residual—the quantity of national forest timber necessary to balance the market. … Historical trends and assumptions about the share of harvest by other ownerships were used to project the share of future harvest to be met by the Tongass. The method is based on quantity, rather than price, because timber harvests from public lands are generally planned based on multiple policies and objectives, rather than on prices alone.

The methodology and data used to develop the PNW Research Station projections is further described in detail in Daniels et al. (2016). As stated in the above quote and explained in Daniels et al. (2016) and the Draft EIS, the demand estimates are based on historical trends and assumptions about the share of harvest, and are influenced by factors outside the Forest Service's decision-making authority.

The Forest Service disagrees with the characterization in the comment that the "Forest Service is more or less saying that the demand for TNF timber will be however much it wants to log, based on its interpretation of 'multiple policies and objectives.'" The demand projections prepared by Daniels et al. and reported in the Draft EIS are based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by PNW Research Station scientists.

COMMENT

MKD-25: The EIS should account for the impact of deficit timber sales and log export restrictions on the expected demand for wood products from young-growth logs and describe how these factors would cause the socioeconomic impacts of the alternatives to differ from those described in the Draft EIS.

RESPONSE

The demand projections developed in support of this EIS are discussed in the Draft and Final EIS documents and Daniels et al. (2016). Concerns regarding these projections are discussed elsewhere in this comment response document, see, for example, the response to MKD-1a. Daniels et al.'s (2016) approach to uncertainty is discussed in response to MKD-23.

The Draft EIS presents projected levels of annual employment and income by alternative in Table 3.22-18. These estimates are based on the maximum annual average harvest that could occur over the first decade following implementation (Years 1 to 10). All five alternatives are based on an annual PTSQ of 46 MMBF, with the proportion of the total that is made up of young growth increasing over time, and the share made up of old growth decreasing. The estimates presented in Table 3.22-18 are based on a range that accounts for variations in export restrictions and behavior. The estimates range from maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent of Alaska yellow cedar.

Further, the Draft EIS analysis recognizes that the numbers presented in Table 3.22-18 are estimates based on average jobs per MMBF ratios that were developed using harvest and employment data from 2007 to 2010. As discussed in the Draft EIS, actual employment and income in Southeast Alaska will depend on choices made by purchasers, and these choices may change as markets and prices shift. Actual employment and income will also vary as timber offerings are packaged to include some or all of the units, and individual sales targeted for different sized operators are developed.

COMMENT

MKD-26: The Forest Service must discard the Draft EIS and prepare a revised Draft EIS based on a new range of demand projections that employ a different methodology to those prepared by the PNW Research Station and more explicitly incorporate risk and uncertainty. The revised Draft EIS must describe risk and uncertainties and develop alternatives that explicitly address them by responding to a new range of demand projections, rather than the PTSQ used in the current DEIS.

RESPONSE

Specific concerns regarding the PNW Research Station demand projections are discussed in response to MKD-1a and elsewhere in this comment response document. The Forest Service disagrees with the assertions that the Draft EIS must be discarded and that a different methodology must be employed to estimate market demand. Concerns regarding the use of a range of demand projections and potentially varying levels of demand by alternative are discussed in response to MKD-1b.

COMMENT

MKD-27: The baseline projections developed by the PNW Research Station and presented in the Draft EIS Table 3.22-9 indicate that Native Corporation and State lands will account for a large share of timber harvest in Southeast Alaska over the next 15 years. The Draft EIS and supporting analyses do not consider whether this projected supply of non-federal timber would reduce the demand for federal timber or meet the Forest Service's objective to meet timber demand and support logging and export jobs.

RESPONSE

As discussed in the FEIS and in response to Comment MKD-1a (above), the projections developed by the PNW Research Station (Daniels et al. 2016) are based on "derived demand." "Derived demand" in PNW Research Station studies is defined as the volume of national forest harvest needed to meet projected consumption of Alaska forest products, over time, given the harvest levels of other owners and based on assumptions about product markets. Demand for Tongass National Forest timber is estimated using a materials balance approach based on forecasted trends in product markets. Projected harvest from the Tongass National Forest is calculated as the volume of timber required to meet the shortfall between projected demand and harvest from other ownerships, primarily Native Corporation and State of Alaska lands. In other words, derived demand for Tongass National Forest timber is computed as the residual – the quantity of national forest timber required to balance the market – and the projected supply of non-federal timber is part of the analysis used to determine the demand for federal timber.

Timber harvest on Native Corporation and State lands would support logging and export-related transportation jobs over the planning period, and in the case of State lands may also support mill jobs. These potential jobs would be in addition to those identified in Table 3.22-18 in the Draft EIS. The jobs presented in Table 3.22-18 are limited to those that would be supported by federal harvest only. Non-federal harvest would help support a viable timber industry by providing logging and export-related transportation employment, but would not supply sufficient old-growth "bridge timber" to allow the local saw mill industry to re-tool for processing young-growth.

Timber Export Policy (TEXP)

COMMENT

TEXP-1: The Draft EIS fails to consider alternatives in which the limited export policy is not continued unchanged and indefinitely, premising its analysis on the "assum[ption]" that "Western hemlock and Sitka spruce volumes . . . [will] be divided equally between domestic production and export in accordance with the current limited export shipment policy." This assumption – that the limited export policy will continue unchanged in its current form – has a strong effect on the projected timber sale quantity. To comply with NEPA and meet the project purpose and need, the EIS must evaluate alternatives that do not involve continuation of the limited export policy in its current form.

RESPONSE

Initially established in 2007, the Limited Export Policy is intended to boost appraised timber values, provide economic sale opportunities for purchasers, and provide additional processing options for purchasers. As discussed in the Draft EIS (pp. 3-453 to 3-454), the policy has continued since 2007 with modifications that have provided additional opportunities for purchasers. The policy modifies how timber sales are appraised and allowed timber purchasers options on shipping certain small diameter logs from national forest timber sales to outside Alaska. Designed to allow flexibility for timber purchasers, the limited export policy is not something mandated by the US Forest Service on a timber purchaser or automatically or immediately applied to all timber sales. Rather, the policy is applied by request of the timber purchaser after the contract offering is awarded or any time thereafter. Further, the policy is subject to review and modification on an annual basis.

The text from the Draft EIS cited in the above comment pertains to the financial analysis developed as part of the Woodstock modeling process. The financial analysis presented in the Draft EIS has been revised for the Final EIS and continues to assume for the purposes of analysis that the current limited export shipment policy remains in place. A detailed discussion of the methodology and assumptions used to develop this analysis is presented in Appendix B to the Final EIS.

The methodology employed to develop the PNW Research Station's timber demand estimates is summarized in the *Economic and Social Environment* section of the Draft EIS and described in detail in the PNW Research Station demand study (Daniels et al. 2016). The demand study looked at export figures over the last 5 years (during which the limited export policy has been in place) and used these numbers to estimate softwood sawlog exports.

The employment and income analysis in the Draft EIS assumed a range from maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent of Alaska yellow cedar (see Table 3.22-18 in the Draft EIS). The analysis in the Final EIS also presents employment and income estimates for this range.

The assumptions used with respect to the limited export policy for the financial and employment and income analyses are appropriate for this programmatic analysis. Financial efficiency analyses will be conducted as part of the project-specific environmental analysis that will be prepared as part of future timber sale projects. These analyses will take into account the limited export policy and/or other potential restrictions on export or production in place at that time. Project-specific analyses will also consider the employment and income implications of the export restrictions in place or expected to be in place at that time. The Limited Export Policy is discussed further in Appendix H.

COMMENT

TEXP-2: The Draft EIS does not analyze the full extent or impact of the export policy or how it increases the environmental impacts of federal logging. It states that the Forest Service allows the export of up to 50% of the western hemlock and spruce sawlog volume, and notes that Alcan must sell logs that cannot be exported to a processing facility in the state. Actual data show the Forest Service routinely waives these requirements, and allows Viking and Alcan to ship increasing proportions of timber out of the region as unprocessed logs. As a result, the EIS

should disclose that exports often exceed the prescribed limits and consider the additional implications for local employment.

RESPONSE

The timber industry employment and income estimates presented by alternative in Table 3.22-18 are based on a range, from a maximum possible shipment out of state (export of all Alaska yellow cedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of hemlock and Sitka spruce and export of 100 percent of Alaska yellow cedar. As noted in the comment and explained in the *Limited Export Policy* subsection of the Draft EIS, the Forest Service has allowed timber purchasers to exceed the maximum possible shipment on a case-by-case basis; and this could potentially happen again in the future. However, for the purposes of this programmatic analysis, it is reasonable to evaluate the upper limit as prescribed by the current version of the Limited Export Policy. If purchasers were allowed on a case-by-case basis to export a larger share of a particular sale in unprocessed form, there would be a commensurate reduction in sawmilling jobs and an increase in transportation-related jobs. A note explaining this possibility has been added to the Environmental Consequences part of the *Economic and Social Environment* section in the Final EIS.

As noted in response to TEXP-1, financial efficiency analyses that will compare the export policy in place at the time and domestic processing will be conducted as part of the project-specific environmental analysis prepared as part of future timber sale projects. Project-specific analyses will also consider the employment and income impacts of the current timber export policy. The Limited Export Policy is discussed further in Appendix H.

COMMENT

TEXP-3: The young-growth transition must end the practice of allowing the export of taxpayer-subsidized Tongass timber to compete with logs sold by private landowners on the export market.

RESPONSE

As discussed in response to TEXP-1, a limited shipment policy was instituted on the Tongass National Forest during 2007. The policy modified how timber sales are appraised and allowed timber purchasers options on shipping certain small diameter logs from national forest timber sales to outside Alaska. This policy is subject to review and modification on an annual basis.

The Forest Plan amendment is designed to analyze the feasibility of shifting from an old-growth forest management regime towards young growth management. How rapidly and effectively this is accomplished depends on local support from Alaska markets for young-growth forest products. The ability to export some timber beyond Alaska may serve as a strategic option that can be used to help maintain workforce skills, industry expertise, and the physical infrastructure needed to develop a future young-growth industry. The limited shipment policy will continue to be subject to review and modification on an annual basis, as noted above. The Limited Export Policy is discussed further in Appendix H.

COMMENT

TEXP-4: The Draft EIS does not evaluate the costs and benefits of the Limited Export Policy at all ecological, social, and economic scales.

RESPONSE

As discussed in response to TEXP-1, a limited shipment policy was instituted on the Tongass National Forest during 2007. The policy modified how timber sales are appraised and allowed timber purchasers options on shipping certain small diameter logs from national forest timber sales to outside Alaska. The limited shipment policy will continue to be subject to review and modification on an annual basis, as noted above. Changes to this policy are outside the scope of this Forest Plan EIS.

As noted in response to TEXP-1, financial efficiency analyses will be conducted as part of the project-specific environmental analysis that will prepared as part of future timber sale projects. These analyses will take into account the limited export policy and/or other potential restrictions on export or production in place at that time. Project-specific analyses will also consider the employment and income implications of

the export restrictions in place or expected to be in place at that time. The Limited Export Policy is discussed further in Appendix H.

Recreation and Tourism (R&T)

COMMENT

R&T-1: Tourism management is an important part of the region's economy and integral to the Purpose and Need and to addressing the Secretary's direction to make Forest management more ecologically, socially and economically sustainable and to consider diverse economies. The Forest Service should measure the jobs and economic contributions that recreation programs support in Southeast Alaskan communities. Tourism associations and businesses must be engaged as partners early in planning processes to build buy-in for projects. While tourism provides thousands of jobs and significant economic opportunity, the US Forest Service continues to decrease budgets for recreation, heritage, and wilderness programs.

RESPONSE

The Draft EIS acknowledges the economic importance of tourism to the region as a whole, as well as at the borough and community level (see the *Economic and Social Environment* section of the Draft EIS). The amended Forest Plan responds to the July 2013 memo from the Secretary of Agriculture directing the Tongass National Forest to transition its forest management program to be more ecologically, socially, and economically sustainable, while also being responsive to comments from the Five-Year Review of the Forest Plan. This is explained further in the Purpose and Need section of the Draft EIS, starting at page 1-4. See also the response to P&N-7.

The US Forest Service recognizes the importance of supporting regional economic diversification – and the relationship between public land management and creating economic opportunities for Southeast communities. The draft *Tongass National Forest Plan Monitoring Program* directs the Forest Service to assess whether the forest plan is providing "a diversity of opportunities for resource uses that contribute to local and regional economies of Southeast Alaska." The draft monitoring program further recommends studying employment trends for three primary industries – forest products, recreation and tourism, and seafood – on a biennial basis. This draft monitoring objective acknowledges the importance of the forest plan supporting a wide range of natural-resource employment opportunities across Southeast Alaska.

Recreation and tourism management direction continues to be provided in the Forest-wide Standards and Guidelines for Recreation and Tourism (Forest Plan, Chapter 4), as well as the management prescriptions for each LUD (Forest Plan, Chapter 3). The Forest Service will continue to work with the timber industry and other government agencies, as indicated in the Forest Plan (see, for example, the Forest-wide Standards and Guidelines for Recreation and Tourism, including those that specifically address Tourism [p. 4-41]).

Many factors affect the availability of public sector funds for multiple program areas. Consideration of funding strategies and resource allocation is outside the scope of this forest plan amendment and EIS.

COMMENT

R&T-2: The DEIS inadequately considers saturation at recreation sites, impacts to recreation opportunities and places and the benefits from expanding recreation. The Plan's suggestion that permit access be restricted in recreation places where demand exceeds supply is troubling as tourism businesses seek sustainable ways to grow. The Forest Service should consider prioritizing areas for recreation to address demand for recreation places exceeding supply, and recognize the significant undeveloped potential for tourism opportunities in small communities.

RESPONSE

The DIES acknowledged that demand appears to exceed supply in some recreation places, including bear-viewing areas and helicopter use in the immediate vicinity of urban areas (p. 3-347) and that management practices for specific areas will continue to be evaluated on a project-by-project basis and in accordance with the applicable Forest Plan standards and guidelines under all alternatives. Limiting access via permit is provided as an example of the type of management practice that would be evaluated in this way. The text is not intended to imply that the Forest Service plans to limit permit access as part of

this Forest Plan amendment. Forest Plan recreation and tourism management direction will continue to be provided in the Forest-wide Standards and Guidelines for Recreation and Tourism (Forest Plan, Chapter 4), as well as the management prescriptions for each LUD (Forest Plan, Chapter 3).

Expansion of recreation places is outside of the scope of the narrow scope of this amendment; however, the proposed changes do not preclude the consideration of recreation expansion in the future.

COMMENT

R&T-3: The US Forest Service has been directed, by Secretary Vilsack, to support communities and jobs while also making management more ecologically, socially, and economically sustainable. Tongass National Forest habitat supports wild salmon and the region supports a robust visitor industry. Despite a growing visitor industry, the US Forest Service continues to cut recreation program budgets that support the tourism industry, which is a socially, economically, and ecologically sustainable industry.

RESPONSE

In a memorandum dated July 2, 2013, USDA Secretary Tom Vilsack directed the US Forest Service to expedite the transition from old-growth to young-growth timber harvest while maintaining a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. Secretarial Memorandum 1044-99, *Addressing Sustainable Forestry in Southeast Alaska*, affirms the USDA's intent and priority to transition the Tongass National Forest to a more ecologically, socially, and economically sustainable forest management, over the next 10 to 15 years, while maintaining a viable timber industry. The Draft EIS, as prepared by the US Forest Service, describes and analyzes proposed changes to the forest plan to accomplish the transition to young-growth management as provided by Secretarial Memorandum 1044-99. While the memorandum encouraged a multifaceted approach to transitioning the Tongass National Forest, the primary focus is on transitioning the timber harvest program from predominantly old-growth to young-growth timber harvest while maintaining the timber industry.

As noted in response to R&T-1, the US Forest Service recognizes the importance of supporting regional economic diversification – and the relationship between public land management and creating economic opportunities for Southeast communities. The draft *Tongass National Forest Plan Monitoring Program* directs the Forest Service to assess whether the forest plan is providing "a diversity of opportunities for resource uses that contribute to local and regional economies of Southeast Alaska." The draft monitoring program further recommends studying employment trends for three primary industries – forest products, recreation and tourism, and seafood – on a biennial basis. This draft monitoring objective acknowledges the importance of the forest plan supporting a wide range of natural-resource employment opportunities across Southeast Alaska.

Many factors affect the availability of public sector funds for multiple program areas. Consideration of funding strategies and resource allocation is outside the scope of forest plan amendment.

COMMENT

R&T-4: Recreation has long been subsidized by the timber industry through the construction of roads, docks, and other infrastructure. The Forest Service should identify the cost of providing recreation opportunities on the Tongass and use this information to assess recreation user fees in the form of charges per person for facility maintenance.

RESPONSE

The Multiple Use - Sustained Yield Act of 1960 (or MUSYA) (Public Law 86-517) authorizes and directs the Secretary of Agriculture to develop and administer the renewable resources of timber, range, water, recreation and wildlife on the national forests for multiple use and sustained yield of the products and services. Roads and other infrastructure developed as part of the Forest Service's timber program are used for multiple uses including recreation and tourism.

The Forest Plan and Draft EIS do not identify the costs of administering recreation or other programs. This information is, however, readily available to the public in the annual State of the Tongass National Forest report prepared by the Forest Service. The most recent version available online is for Fiscal Year (FY) 2013 (USDA Forest 2014). More recent information is available upon request. In FY 2013, the total budget for the Tongass National Forest was $64.1 million, including: $6.8 million (11 percent) allocated to Recreation, Heritage, and Wilderness Management; $11.4 million (18 percent) allocated to Forest Management; and $12.5 million (20 percent) allocated to Capital Improvements, Infrastructure Maintenance, and Trail Building and Maintenance.

Recreation Fees (Outfitter/Guides & Collection Support, Recreation Sites & Collection Support, and National Pass Sales & Collection Support) accounted for 61 percent ($3.2 million) of the total revenues received by the Tongass National Forest, with Recreation Service Receipts accounting for an additional 2 percent ($0.1 million). Changes to existing user recreation fee structures are outside the scope of the proposed Forest Plan amendment.

COMMENT

R&T-5: How much is spent annually on personnel required to administer recreation on the Tongass National Forest? How much is spent maintaining roads and other infrastructure for recreation? How much of the existing NFS road system is unsupported by timber or recreation maintenance funds and expected to be decommissioned? The Forest Plan should require recreation users to pay for road maintenance in areas that are not presently being harvested. The Forest Plan should address "more systematic timber harvest" that will generate a steady stream of funds to maintain the existing road system and allow for expansion for future young growth harvest.

RESPONSE

As noted in response to Comment R&T-4, the state of the Tongass National Forest finances is reported each fiscal year and readily available to the public in the annual State of the Tongass National Forest report prepared by the Forest Service. The most recent version of this report available online is for FY 2013 (USDA Forest 2014). More recent information is available upon request. In FY 2013, the total budget for the Tongass National Forest was $64.1 million, including: $6.8 million (11 percent) allocated to Recreation, Heritage, and Wilderness Management; $11.4 million (18 percent) allocated to Forest Management; and $12.5 million (20 percent) allocated to Capital Improvements, Infrastructure Maintenance, and Trail Building and Maintenance. Information related to road maintenance and proposed decommissioning on the Tongass National Forest is available in the Access Travel Management Plans prepared for each Ranger District. These plans are available at the District offices.

As noted in response to Comment R&T-4, changes to existing recreation fee structures are outside the scope of the proposed Forest Plan amendment. In general, Congress appropriates funding for federal agencies and specifies how they may spend it. For the most part, increasing allowable harvest levels in the short-term would not necessarily generate additional funds for road maintenance. Increasing allowable harvest levels would also not be consistent with the Secretary's Memorandum 1044-009, which directs the Tongass National Forest to transition away from old-growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests.

COMMENT

REC-5. Suggestions for specific recreation areas and trails.

RESPONSE

Modification or creation of specific recreation areas, trails, and related facilities is outside of the scope of this focused plan amendment. These types of changes are generally best determined at the local planning unit**.**

Wild and Scenic Rivers (WSR)

COMMENT

WSR-1: There are currently no federal Wild and Scenic River designation in the Tongass and yet the Forest Service Management Plan specifies LUDS to protect these characteristic of 32 rivers that were previously recommended by the Forest Service for inclusion on this list. We do not support continued protection of these rivers under the current Wild, Scenic and Recreational LUD designations.

RESPONSE:

Changes to the Wild, Scenic and Recreational River LUDs is outside the narrow scope of this amendment.

Scenery (SCEN)

COMMENT

SCEN-1: The Forest Service should cease planning on components with lowered scenic integrity objectives.

We strongly object to the proposal to reduce scenic integrity objectives in Alternatives 2, 3, and 5. The NFMA directs that the forest planning process include a review of the esthetic impacts of clearcutting, and ensure that clearcuts do not conflict with esthetic resources or recreation. [16 U.S.C. § 1604(g)(3)(F)]. NEPA's policy purposes similarly include a goal of assuring "esthetically .. pleasing surroundings." [42 U.S.C. § 4331(b)(4)]. The proposed LRMP would create a patchwork of 10 acre clearcuts in the beach fringe and allow removal of up to 35% of a stand. [LRMP at 5-8]. The result would be a visual landscape that "appears heavily altered." [DEIS at 3-352].

The beach fringe clearcuts do not meet NFMA's standards. The DEIS recognizes that "Southeast Alaska possesses a remarkable and unique combination of features" that attract visitors and that "[m]ost visitors who travel long distances to see Alaska expect to find it in a wild and "unspoiled state." [FEIS at 3-321]. It further explains that:

Demand for scenic quality can best be represented by the increase in tourist related travel to the Tongass, as well as a heightened awareness and sensitivity to scenic resource values. These facts result in a strong indirect connection between scenic resource values and the economy of southeast Alaska. For example, Southeast Alaska's Inside Passage is advertised by the Division of Tourism, cruise ship operators, and the Southeast Alaska Tourism Council. Their marketing strategy focuses on the scenery of the Tongass National Forest as a major attraction. The visitors to Southeast Alaska would therefore, arrive with expectations and an image of the environment and scenery awaiting them. If current trends continue, demand for viewing scenic landscapes will increase. [Id. at 3-354].

Further, "[t]he ability to market Alaska tourism is dependent on meeting customer expectations of seeing and experiencing vast, untamed land and its wildlife." [FEIS]. Given these findings, it is arbitrary to degrade these valuable scenic landscapes in order to remove low value timber that can be obtained elsewhere. The discussion in the DEIS is not adequate to disclose the effects of this major change. It carries over the analysis from the 2008 TLMP FEIS and changes the numbers and the alternatives and uses the exact same locations as points of reference. It does not link the reduced scenery with areas identified as Visual Priority Routes – a process that took extensive professional work. If the Forest Service continues to proceed with this change, we believe that Tongass National Forest landscape architects should prepare the analysis and a resource report. A distant contractor punching in numbers into a previous analysis does not show the public the true visual impacts.

We would prefer, however, that the Forest Service eliminate this component of the LRMP. The proposed LRMP's scenery goal has two parts. It first provides that the Forest Service is to "[P]rovide Forest visitors with visually appealing scenery, with emphasis on areas seen from the Alaska Marine Highway, tour ship and small boat routes, state highways, major Forest roads, and population recreation places." [LRMP at 2-4]. But then, it provides that the Forest Service should "[r]ecognize that there will be areas where these landscapes are altered by management activities, particularly young-growth timber harvest, and the activity may visually dominate the characteristic landscape." [Id.]. We recommend that you delete this second sentence, and the entire Beach Fringe component of the Proposed Plan.[LRMP at 5-8].

The Beach Fringe logging component is also inconsistent with the proposed LRMP goal for recreation to "[p]rovide a range of recreation opportunities consistent with public demand, emphasizing locally popular recreation places and those important to the tourism industry." [LRMP at 2-4]. The DEIS describes recreation generally, and recognizes that it largely involves marine transportation to bays and along water ways. [DEIS at 3-326-335]. It describes generally some activities that have a low tolerance for other groups, or incompatible activities occurring in close proximity. [Id.] But it never consider the extent to which logging in particular is an incompatible activity that may discourage not only shoreline recreation, but even one of the most critical pieces of the tourism business – the returning customer.

RESPONSE

The alternatives show a range of SIOs for analysis. This range was developed in order that a range of young-growth harvests could be evaluated, especially during the early years with the idea that lower SIOs could help speed up the transition. Any young growth harvest will still require a NEPA analysis at the project level, so impacts to scenery will still be analyzed and disclosed on a project-by-project basis. Public involvement will also be a part of any future project.

Any clearcuts implemented in the suitable land base, including beach fringe, would meet NFMA requirements.

The analysis is linked to the analysis conducted for the 2008 TLMP FEIS so the reader can compare and contrast the visual effects represented in the 2016 alternatives with the visual effects of the 2008 alternatives. This consistency allows the reader to understand how management is changing over time. The analysis does involve all the VPRs on the Forest; Distance Zones and SIOs are both related to VPRs. This is a programmatic EIS; individual VPRs will be analyzed when projects are proposed in project-level NEPA analyses.

The Tongass Landscape Architects recommended the change to the Scenery goal (referenced as LRMP 2-4) by adding “particularly young-growth timber harvest” to reflect the emphasis that has been given to young-growth harvest by Leadership.

COMMENT

SCEN-2. Scenic Integrity Objectives are prejudicial and inconsistent with many local values going back generations.

RESPONSE

Changes to the definitions of scenic integrity objectives, are outside of the narrow scope of this Forest Plan amendment. In this amendment, changes are made only to where SIOs are applied, reducing the level of scenic integrity in areas of renewable energy and young growth harvest to Low and Very Low.

Scenic integrity terminology (High, Moderate, etc.) is not prejudicial, and refers to the level of the integrity, or intactness, of the landscape. It does not refer to a priority or value of the scenery. Scenic Integrity levels are defined within Agricultural Handbook Number 701, “Landscape Aesthetics: A Handbook for Scenery Management”, which is required to be used on all U.S. Forest Service lands and is not specific to the Tongass National Forest. Constituent analysis is a part of the Scenery Management system, with constituents not only being the local population of an area, but the entire American public.

COMMENT

SCENE-3. Suggestions for changes to Visual Priority Routes in Appendix F.

RESPONSE

Changes to Visual Priority Routes is outside the scope of this focused plan amendment.

Roadless Areas (RDLS)

COMMENT

RDLS-1: Forest Service Should Change the Amendment's Appendix A to Permanently Exclude Roadless Areas from Lands Suitable for Timber Production.

It appears that the Draft Forest Plan is intended to keep Inventoried Roadless Areas off limits to logging in its own right, regardless of the fate of the Roadless Area Conservation Rule in two pending court actions or in any future amendments to or litigation over that rule. Commenters appreciate this important amendment and strongly urge the Forest Service to adopt a final plan amendment that protects roadless areas from logging. The Forest Service should clarify this intent in Appendix A of the Proposed Forest Plan, the suitable lands analysis. That analysis identifies Inventoried Roadless Areas as not suitable for timber production on legal grounds in "Step 1," since logging on those lands is prohibited by the Roadless Rule. 22 This is correct, but it should be made clear that even if the Roadless Rule were struck down by a court, or amended by USDA, the intent of this forest plan amendment is to preclude logging in roadless areas, as stated in the DEIS. Therefore, the "Step 2" analysis should specify that Inventoried Roadless Areas would be deemed not suited for timber production even if they lost their protection under Step 1.

RESPONSE

The intent behind the suitability analysis for this Forest Plan amendment is to identify lands that are suitable for timber production. As the 2001 Roadless Area Conservation Rule (Roadless Rule) generally prohibits commercial timber harvest in Inventoried Roadless Areas (IRAs), the IRAs on the Tongass National Forest are considered not suited for timber production. The designation of these lands as unsuitable in Step 1 meets the intent of FSH 1909.12, Section 61.1.1.

FSH 1909.12, Section 61.2 provides guidance on determining, from those lands identified as tentatively suitable in Step 1, the lands that are suitable for timber production based on all the multiple-use objectives for the forest. As the lands within the IRAs on the Tongass National Forest are no longer considered tentatively suitable for timber production, there is no need to review their suitability under Step 2 of this process.

COMMENT

RDLS-2: Support for Updated Roadless Inventory and Rulemaking to Remove "Roaded Roadless" from the Inventory.

We had hoped the agency would use this amendment process to support additional rulemaking and update the 2001 roadless area inventory. Such an update would have removed the so-called "roaded roadless" from the inventory, areas that were roaded before the 2001 Roadless Rule or during the eight years the Tongass was exempted from the 2001 Roadless Rule. A rule change would also conserve roughly 500,000 acres of roadless wildlands under the 2001 Roadless Rule excluded from the Tongass roadless inventory used for developing the 2001 Roadless Rule because of assumed logging development that never occurred. Such action would conserve remaining intact old-growth habitat, maintain existing carbon stocks, and increase carbon stored.

RESPONSE

Alternative 2 considered harvest within "roaded roadless" subject to rule making.

This amendment to the Tongass Forest Plan is using the IRA boundaries identified in a set of maps associated with the Final EIS for the Forest Service Roadless Area Conservation Rule, Volume 2, dated November 2000. These maps identify 9.2 million acres in IRAs on the Tongass, and correspond closely with the 1996 roadless area inventory that was prepared for the 1997 Forest Plan Revision (USDA Forest Service 1997c).

COMMENT

RDLS-3: Application of 2001 Roadless Rule Requires Clarification.

Chapter 1 of the DEIS states that "the Tongass has been subject to the Roadless Rule since 2011 and remains so today." DEIS at 1-4. The framework for Alternative 5 states "this alternative would allow old-growth harvest only within Phase 1 of the timber sale program adaptive management strategy." Since the Phase 1 portion of the timber base included some Inventoried Roadless Areas, please clarify that this statement only applies to the developed portion of the Phase I base.

RESPONSE

In Chapter 2 of the FEIS, the Framework and Expected Outcomes section for Alternative 5 clarifies that, "(a)s in Alternatives 1 and 4, the 2001 Roadless Rule would apply and no old-growth or young-growth harvest would occur in roadless areas." Thus, it is clear that no harvest is allowed in those Inventoried Roadless Areas identified in the maps associated with the Final EIS for the Forest Service Roadless Area Conservation Rule, Volume 2, dated November 2000. Table 2-14 in Chapter 2 of the FEIS also shows that no harvest is allowed in Inventoried Roadless Areas in Alternative 5.

COMMENT

RDLS-4: Inventoried Roadless Areas Need to be Maintained.

We support the preferred alternative's adherence to the Roadless Area Conservation Rule given that inventoried roadless areas provide unique ecosystem, wildlife, and climate benefits to the national forest systems18. Alternatives 3 and 4 would violate the roadless rule and should be dismissed on those grounds alone. The idea that this administration might undo landmark protections like this is genuinely unacceptable.

RESPONSE

We believe Alternative 3 is reasonable. The State of Alaska's challenge to application of the 2001 Roadless Area Conservation Rule (Roadless Rule) in Alaska is pending in the District of Columbia District Court. Alternative 3 would allow young-growth and old-growth harvest in 2001 Roadless Rule IRAs. If this alternative were selected, harvest in IRAs would be deferred until agency rulemaking modified 36 CFR 294(b)(4)(2001). 2001 IRAs are removed from lands suitable for timber production in Alternative 4.

However, three of the alternatives analyzed in detail (Alternatives 1, 4, and 5) allow no harvest in roadless areas.

COMMENT

RDLS-5: Decisions regarding resource development within Inventoried Roadless Areas should be delegated to the local Forest or District.

The May 2009 Decision by Secretary of Agriculture, Tom Vilsack, to arrogate to himself all decisions regarding resource development in IRAs in the Tongass National Forest (now delegated to the Chief of the Forest Service), added national politics to decision making on such issues as issuance of a Special Use Permit; a decision that had previously been made by the Tongass Forest Supervisor and District Rangers. The Secretary's control of what had been local decision making on the Tongass has drastically altered the assumptions upon which the Forest Plan was promulgated in January 2008. For example, even were the

Tongass still exempt from the 2001 Roadless Rule, the Washington Office of the Forest Service could refuse to allow a project that is in an IRA to go forward for political reasons. The Chief of the Forest Service should re-delegate to the Forest Supervisor and District Rangers on the Tongass the authority to make permitting decisions within IRAs.

RESPONSE

This recommendation is outside to the decision authority of the Forest Supervisor, the Responsible Official for this decision.

Specific Comments on the Forest Plan and DEIS (SPEC)

COMMENT

SPEC-1: Forest Service Should Reinstate the Deleted Beach and Estuary Management Standards and Guidelines.

RESPONSE

The amended plan includes changes specific to young-growth forest management. The beach and estuary fringe standards and guidelines (BEACH 2, III. Management, 6 and 7) in Chapter 4 were removed as part of this amendment because the standards and guidelines were changed as a result of updating the suitability of lands as it pertains to lands suitable for young-growth timber production. Under Alternatives 2, 3 and 5, young-growth stands within the beach and estuary fringe are identified as suitable for timber production. The applicable standards and guidelines were deleted from Chapter 4 and rewritten and replaced by forest-wide standard (S-BEACH-01) in Chapter 5 to reflect that lands in the beach and estuary fringe are not suitable for old-growth timber production.

COMMENT

SPEC-2: The Forest Service should reinstate the deleted karst resources standards and guidelines in Chapter 4 of the Forest Plan.

RESPONSE

The amended plan includes changes to young-growth forest management. The karst standards and guidelines (KC1, IV. Young Growth Management on Karst) in Chapter 4 were removed, rewritten, and added to the young-growth direction in Chapter 5.

COMMENT

SPEC-3: The Forest Service should reinstate the timber sale preparation standards and guidelines in Chapter 4 of the Forest Plan.

RESPONSE

Some language that is covered in Forest Service directives (e.g., Forest Service Manual, Forest Service Handbook) and direction used at project level planning was deleted from the DEIS version of the Forest Plan. We added content at the beginning of Chapters 3, 4 and 5 of the Forest Plan to state that the chapter assumes all laws, regulations, and policy pertaining to management of National Forest resources will be followed. We added much of this language back in for the FEIS version of the Forest Plan.

COMMENT

SPEC-4: The Forest Service should reinstate the road and bridge reconstruction – location and design, standards and guidelines in Chapter 4 of the Forest Plan.

RESPONSE

In the Transportation section in Chapter 3 of the DEIS (affected environment), a description was provided regarding the intent of the road construction to provide access to NFS lands. In these introductory paragraphs, the road maintenance level system is also described. In Chapter 4 of the Forest Plan in the Transportation section, the standards and guidelines provide direction for Transportation Planning in TRAN 3, Road and Bridge reconstruction in TRAN5, and the maintenance levels in TRAN 6 and TRAN 7. The aspects of location are not relative since the roads exist; however, some of the mechanisms for reconstruction relative to slope stability and reconstruction of stream crossing features as well as bridge abutments could be included.

COMMENT

SPEC-5: The young growth desired condition DC-YG-04 in Chapter 5 of the Forest Plan should be rewritten. Accelerating old-growth characteristics in Riparian Management Areas (RMAs) and the beach fringe through young-growth harvest has not been scientifically demonstrated. Ten-acre clearcuts are not similar to natural disturbance patterns and would: 1) set back decades of progress toward mature, uneven-aged stand structure; 2) further fragment the older young growth that now exists; and 3) compromise the integrity of the old growth Conservation Strategy.

RESPONSE

To meet the purpose and need, the forest identified the oldest young-growth stands as lands suitable for timber production to begin the transition away from old-growth harvest. Some of the oldest young-growth stands are located in RMAs and the beach fringe, where past harvest occurred, but where the current Forest Plan prohibited commercial harvest. The alternatives analyzed in the FEIS include various levels of young-growth harvest in these areas as well as a range of potential treatment types. Additionally, young-growth direction (i.e., plan components and management approaches) for the beach and estuary fringe are applied so as to minimize impacts to these areas while also allowing some of the oldest trees to be harvested in support of the transition. All project-level decisions implementing the 2016 Forest Plan must be consistent with the plan components.

Effects to the old-growth forest ecosystem are disclosed in the FEIS in the Biodiversity section in Chapter 3, and Appendix D for the FEIS specifically discusses effects to the old-growth Conservation Strategy.

See response to FISH-5.

COMMENT

SPEC-6: The Forest Service should change young growth suitability SUIT-YG-01 in Chapter 5 of the Forest Plan. The Old-growth Habitat LUD should not be identified as suitable for young-growth timber production because it lacks scientific justification.

RESPONSE

As stated in Chapter 2 of the FEIS (How the 2012 Planning Rule Applies), the responsible official has determined that for this amendment only a part of the substantive provisions of 36 CFR 219.11 apply for this amendment. Using the provisions of 36 CFR 219.11(a), specific young-growth stands are identified as suitable for timber production. Such stands include young growth in the beach and estuary fringe, riparian management areas, and in the Old-Growth Habitat LUD.

COMMENT

SPEC-7: The Forest Service young-growth objective O-YG-01 in Chapter 5 of the Forest Plan should be changed to end old-growth clearcutting in no more than five years.

RESPONSE

See responses to P&N-1 and ALT-4. Young-growth objective O-YG-01 in the Forest Plan was written to be a concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition or conditions. That is to effectuate this transition, over the next 10 to 15 years, preserving a viable timber industry and allowing the forest industry time to adapt so that at the end of this period the vast majority of timber sold by the Tongass (i.e., gradually increase to exceed 50 percent of the timber offered annually) will be young growth.

COMMENT

SPEC-8: The young-growth objective O-YG-02 in Chapter 5 of the Forest Plan should be re-written to end to old-growth clearcutting before the end of the amended plan's lifespan, and preferably within five years, as one milestone within the overall 15 year transition.

RESPONSE

See responses to P&N-1, ALT-4, ALT-5, ALT-11, and SPEC-7.

COMMENT

SPEC-9: Forest Service should make the following changes to plan components for Wildlife in Chapter 5 of the Forest Plan.

9a The young-growth desired condition for wildlife DC-YG-WILD-01 in Chapter 5 of the Forest Plan should be changed to exclude active management of young-growth stands within the Old-growth Habitat LUD. The Old-growth Habitat LUD was set aside for ecological reasons and infringing onto those areas is not consistent with meeting social and economic needs. This LUD is a crucial component of the old-growth Conservation Strategy, and entering this LUD for young-growth timber production erodes the effectiveness of the Conservation Strategy and places undue risk on particular wildlife populations.

RESPONSE

See responses to CONS-1, PLR-1, PLR-2 and SPEC-6.

The Old-Growth Habitat LUD does play an important role in the overall Conservation Strategy. The Old-Growth Habitat LUD remains not suited for old growth timber production as in the 2008 Forest Plan. In some instances, young growth is within the boundary of this LUD and may not be fully functioning for wildlife needs. DC-YG-WILD-01 allows for young growth management within this LUD as long as habitat and connectivity is maintained and the treatment can move the stand toward old-growth characteristics. The Forest Plan also allows for an Old-Growth Habitat LUD to be modified to exclude young growth proposed for harvest if a net gain in old growth can be achieved through the boundary modification and Appendix K criteria can be met (see management prescriptions).

COMMENT

9b. The young-growth desired condition for wildlife DC-YG-WILD-02 in Chapter 5 of the Forest Plan should be rewritten. Ten-acre clearcuts do not emulate the natural scale and distribution of disturbance patterns, and there is no science to support this. The Forest Service should consider restoration treatment methods that would increase habitat value in second-growth forests, such as removing 1-3 trees in widely spaced gaps.

RESPONSE

See response to SPEC-6.

Desired conditions describe specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed. Desired condition DC-YG-WILD-02 ensures that young-growth treatments in the Old-growth Habitat LUD do not foreclose the opportunity to maintain or achieve natural scale and distribution of disturbance patterns over the long term. Young-growth standard S-YG-WILD-01 constrains the maximum size of openings to not exceed 10 acres. Specific harvest prescriptions will be determined at the project level after site-specific analysis by an interdisciplinary team of resource specialists. Project decisions must describe how the project is consistent with plan components, including meeting the desired conditions (see DC-YG-WILD-01 and DC-YG-WILD-02) if young-growth harvest is taking place in an Old-Growth Habitat LUD.

COMMENT

9c. Young-growth objective for wildlife O-YG-WILD-01 and young-growth standards for wildlife S-YG-WILD-01 and S-YG-WILD-02 in Chapter 5 of the Forest Plan should be removed because the Old-growth Habitat LUD should not be entered for young-growth harvest.

RESPONSE

See response to SPEC-6.

Objectives are measurable and time-specific statements to indicate the desired rate of progress toward desired conditions. Objective O-YG-WILD-01 estimates the number of acres to be treated over a 15 year time period to promote the development of old-growth characteristics within the LUD, and ensures that young-growth treatments in the Old-growth Habitat LUD do not foreclose the opportunity to maintain or achieve the development of old-growth characteristics over the long-term.

Standards are mandatory constraints on project and activity decision-making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements. This standard provides the constraints on commercial young-growth harvest to help achieve or maintain old-growth characteristics within the Old-growth Habitat LUD.

Standard S-YG-WILD-01 does not require the Old-Growth Habitat LUD to be entered nor does it require 10 acre openings. Rather, it constrains the maximum opening size and percent of stand removal. Every project analysis will use an interdisciplinary approach to review site-specific conditions and determine the harvest prescription that will best meet the desired conditions. Similarly, Standard S-YG-WILD-02 does not require the Old-Growth Habitat LUD to be entered. If a project proposes commercial young-growth harvest in this LUD, this standard provides a constraint for a one-time entry within the first 15 years of Plan approval, unless there is a compelling need to do so based on the best available science and to meet the LUD objectives. (Consult Chapter 3 Old-Growth Habitat LUD objectives.) In addition, an Old-Growth Habitat LUD with proposed young-growth harvest may be modified using Appendix K criteria, using an interagency review process, to exclude the proposed young-growth and include a net gain of old-growth from the adjacent landscape. (See Wildlife Management Approaches.)

COMMENT

9d. The young-growth goal for wildlife G-YG-WILD-01 in Chapter 5 of the Forest Plan should be re-written to state that no new roads should be built in the Old-growth Habitat LUD.

RESPONSE

The management prescription for the Old-growth Habitat LUD includes standards and guidelines for transportation (see Old-growth Habitat LUD Transportation Operations: TRAN in Chapter 3). Since the Old-growth Habitat LUD has been identified as suitable for young-growth timber production in the amended plan (see response to SPEC-6), goal G-YG-WILD-01 was written to ensure that roads used to access young-growth were kept to a minimum. Projects or activities must be consistent with this goal, as well as all other applicable plan components, such as DC-YG-WILD-01.

COMMENT

SPEC-10. Forest Service should make the following change to the plan component for Transportation Systems Corridors Direction in Chapter 5 of the Forest Plan.

The Transportation Systems Corridors objective O-TSC-01 should focus on improvements to existing travel corridors rather than new roads in areas with high road density. This is particularly an issue in areas on Prince of Wales Island where wolf mortality has increased in proportion to road density.

RESPONSE

Objectives are measurable and time-specific statements to indicate the desired rate of progress toward desired conditions. Objective O-TSC-01 is tied to Forest Desired Condition DC-03 in Chapter 5 of the Forest Plan.

The purpose of transportation systems corridors is to facilitate the availability of National Forest System lands for the development of existing and future transportation systems corridors such as those identified by the State of Alaska's Southeast Alaska Transportation Plan and applicable laws (for example, Section

4407 of P.L. 109-59, Title XI of the Alaska National Interest Lands Conservation Act, P.L. 96-487). These transportation system corridors are not part of the forest transportation system (see Chapter 7 glossary), such as roads that are used for timber harvest.

At the project level, an interdisciplinary team of resource specialists analyzes the site-specific resource concerns such as road density and provides that information to the public and the responsible official (decision-maker) to determine the best course of action, which may include relevant mitigation measures.

COMMENT

SPEC-11: Forest Service should add a standard and goal for Transportation Systems Corridors direction in Chapter 5 of the Forest Plan.

11a. The Forest Service should aim for no net gain in roads and add a standard for wildlife to the Transportation Systems Corridors direction in Chapter 5 of the Forest Plan to maintain road densities within Wildlife Analysis Areas (WAAs) at less than 0.7 mi/mi^2. If a new road goes into a particular WAA, the Service should close or decommission the equivalent road mileage within the same WAA.

RESPONSE

The Transportation Systems Corridors direction in Chapter 5 of the Forest Plan does not address the forest transportation system (see definition in Chapter 7 glossary). Chapter 4 of the Forest Plan includes Transportation standards and guidelines (see Transportation Improvement Planning: TRAN3; Road Maintenance: TRAN6; and Road Decommissioning: TRAN7), but there are no WAA road density thresholds.

The Transportation section in Chapter 3 of the FEIS (affected environment) describes the intent of the road construction to provide access to NFS lands. There is a discussion of road density and WAAs included in the Wildlife section in Chapter 3 of the FEIS (environmental consequences) and Table 3.10-12 compares by alternative the estimated average road density and percent of WAAs in road density categories on National Forest System lands and all lands combined, and a measurable increase is not anticipated.

Road closures are determined through an access travel management plan and project level planning efforts.

Standards and Guidelines are included under the primary resource that is driving that particular standard. In this case, the suggested standard and guideline are primarily a wildlife concern not a transportation concern. WILD1.XIV.A.1(c) on page 4-88 includes a similar road density in areas where wolf mortality concerns have been identified and road access was determined to be a significant contributing factor. An interagency Wolf Technical Committee has been established and is currently working on issues related to wolf management concerns.

COMMENT

11b. A goal for wildlife should be added to Transportation Systems Corridors direction in Chapter 5 of the Forest Plan to maintain the ability for wildlife to withstand illegal hunting pressure and should depend on limiting WAAs to road densities of less than 0.7 mi/mi^2. In WAAs that already exceed the 0.7 mi/mi^2 threshold, the Forest Service should actively close and decommission roads in order to alleviate the hunting access pressure in those areas, paying special attention to GMU 2.

RESPONSE

This request is outside of the scope of this focused amendment. Road management decisions are best made at the local planning unit in response to specific conditions. This type of change is best considered during a revision. It is notable, however, that road densities are expected to grow at a much lower rate than were predicted by the 1997 Forest Plan, under which the Conservation Strategy and species viability

were evaluated. The same is true of the level of old growth remaining after 100 years, being substantially greater under the current amendment alternatives than under the 1997 Forest Plan.

COMMENT

SPEC-12: Regarding the forest wide timber objectives O-TIM-01 and O-TIM-02 in Chapter 5 of the Forest Plan, the Forest Service should articulate a schedule for decreasing old-growth timber to ensure an end to old-growth clearcut logging before the end of the Plan, and preferably within 5 years of the Plan's implementation. Any post-transition harvest of old growth should be accomplished by single or small group tree selection rather than clearcutting. The overall forest transition may require moving away from even-flow timber harvest, allowing greater flexibility in annual harvest quotas.

RESPONSE

The Forest Plan is a broad plan that defines the appropriate uses in the Forest, sets overarching goals and objectives for the land use designations on the forest. The Forest Plan also sets forth desired conditions that describe specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed.

Specific prescriptions are developed at the stand level that are designed to meet forest plan goals and objectives, to move the stand towards a desired condition while considering the stand's current condition. Developing specific prescriptions at a Forest Plan level may not allow for flexibility at the stand level to account for the unique conditions that can be found at the stand level.

See response to Alt-4 and SPEC-7.

COMMENT

SPEC-13: The beach and estuary fringe, RMAs, and the Old-Growth Habitat LUD should be changed to not suitable for timber production in Appendix A of the Forest Plan.

RESPONSE

See response to SPEC-6.

Appendix A represents Alternative 5 (preferred alternative) and reflects final TAC recommendations (Forest Plan Appendix B). The TAC recommendations included commercial young-growth harvest in these areas. Appendix A in the Forest Plan has been updated and identifies lands as not suitable for old-growth timber production in the beach and estuary fringe, RMAs, and Old-Growth Habitat LUD, but suitable for young-growth timber production in these areas.

COMMENT

SPEC-14: The Forest Service should clarify the language in the forest plan regarding the status of lands in development LUDs that are not suitable for timber production, as well as other areas, such as The Nature Conservancy/Audubon priority conservation areas that are not suitable for timber production.

RESPONSE

Appendix A of the Forest Plan has been updated to reflect the preferred alternative and clarifications have been made.

COMMENT

SPEC-15: Incorrect potential entitlement for 5 new urban Native corporation – total acres is 115,000, not 184,320.

RESPONSE

The potential entitlement is 115,200 acres and the correction will be made. The text of the Senate Bill S.872 introduced on 3/26/2015 reads as follows:

"SEC. 43. URBAN CORPORATIONS FOR HAINES, KETCHIKAN, PETERSBURG, TENAKEE, AND WRANGELL.

"(a) OFFER OF COMPENSATION.—

"(1) IN GENERAL.—On incorporation of the Urban Corporations for Haines, Ketchikan, Petersburg, Tenakee, and Wrangell, the Secretary, in consultation and coordination with the Secretary of Commerce, and in consultation with representatives of each such Urban Corporation and the Regional Corporation for Southeast Alaska, shall offer as compensation, pursuant to this Act, 1 township of land (23,040 acres) to each of the Urban Corporations for Haines, Ketchikan, Petersburg, Tenakee, and Wrangell, in accordance with this subsection."

COMMENT

SPEC-16: As the dominant strategy for managing young-growth forests within old-growth habitat reserves, the Forest Service should develop an "old-growth restoration" management prescription that has been scientifically well vetted with a panel of experts.

RESPONSE

The Forest Plan is a broad plan that defines the appropriate uses in the Forest, sets overarching goals and objectives for the land use designations on the forest. The Forest Plan also sets forth desired conditions for each of the Specific prescriptions are developed at the stand level that are designed to meet forest plan goals and objectives, to move the stand towards a desired condition while considering the stand's current condition. Developing specific prescriptions at a Forest Plan level may not allow for flexibility at the stand level to account for the unique conditions that can be found at the stand level.

The Forest has implemented several scientifically rigorous studies that are designed to quantify how various prescriptions can meet specific objectives that are designed to improve wildlife habitat and move a stand towards old-growth conditions. The Tongass-wide Young-Growth Study (TWYGS) was begun in 2001. TWYGS is helping increase the knowledge of thinning and response of tree and plant vegetation. The plan is expected to continue for 20-30 years, if funding and support continue. The results of TWYGS should increase our knowledge of effects of thinning, inter-planting alder, pruning, girdling, and slash treatment for various objectives, including wildlife habitat improvement, and timber production.

The Prince of Wales Commercial Thinning Study was awarded as an integrated resources service contract at the end of FY2008. This study looks at 5 different commercial thinning prescriptions that offer a range of potential treatments that could be used on the Tongass. The 5 different prescriptions were implemented at three replicates: near Harris River, in the Maybeso Experimental Forest, and near Naukati. The objectives of the study are to assess how mechanized equipment operates, how the different prescriptions hold up to SE Alaska's weather, and what the understory response is after treatment. Long-term monitoring is helping to understand how a treated stand moves towards achieving old-growth structure.

COMMENT

SPEC-17: Young-growth harvest in RMAs (in or outside TTRA buffers) should only be allowed for habitat enhancement (e.g., to accelerate stand development toward old-growth conditions). One of the key processes and characteristics of old growth that is critical for the riparian zone is the creation of coarse woody debris inputs to streams which create diverse and structurally important habitats for aquatic invertebrates and fish. Using wide spaces in thinning treatments can more quickly grow large trees, which would provide these critical structures.

RESPONSE

In order to meet the timeline for the young growth transition as outlined in the undersecretary's memo, all young growth lands were considered. Since the age of the young growth stands is a limiting factor, the oldest stands of young growth are being considered for harvest to facilitate the transition. If the oldest young growth stands are not included in the earliest phase of the transition, it is highly unlikely we could meet the purpose and need of the amendment. Therefore, old growth timber harvest would continue for a longer time period.

Most of the large woody debris recruited to stream channels would occur from the TTRA buffer. However, some reduction in woody debris in stream channels could occur in RMAs outside of the TTRA buffer depending on alterative. Riparian Management objectives would be maintained as proposed under Alternatives 1, 3, and 4. Alternatives 2 and 5 require that management in young growth riparian areas accelerate old-growth characteristics to improve riparian function, but would allow some harvest in young-growth outside of TTRA buffers (refer to Water section). Alternative 2 allows only for commercial thinning of up to 33 percent of stand basal area over more than 36,000 RMA acres. This Alternative would likely have additional adverse effects to fish habitat not common to the other alternatives and could result in a loss of large woody debris to portions of floodplain and alluvial fan channel types. While Alternative 5 allows up to 10 acre open area cuts and commercial thinning totaling no more than 35 percent of the total stand acres, it is restricted to less than 900 acres of total harvested RMA area and will only occur in the first 15 years of the finalization of the Plan Amendment. With these restrictions, the overall areas affected would be small relative to the total available in the Tongass. A watershed analysis (as described in Forest Plan Appendix C) would be needed for implementing any alternative that proposed to enter the RMA. Per Plan Chapter 5 Management Approaches for Riparian, it is expected that the first priority for wood removed from RMAs will be to support local stream restoration needs.

COMMENT

SPEC-18: Specific Comments on Economic and Social Environment section of DEIS.

Nowhere in the Economic and Social Environment section on wood products is there any discussion on the cost to harvest and produce a manufactured product, either lumber or biomass (see lumber price graph). Please provide this missing information. Based on information on page 3-481 revenue estimates were made in the document. Based on this information when combining estimated yearly revenue for all timber sale within an alternative, as shown in text figures, results in some years projected into the future with negative revenue. Negative revenue would violate federal laws for federal timber sales. The estimated revenue values used for timber sales also does not include subsidies that the Forest Service contributes through sale preparation, support and administration and therefore estimates of positive review from the proposed options of timber sales are incorrect.

Using the discounted net revenue number for Alternative 5 from Table 3.22-16, the USFS is saying it will average a positive return of ~$98/MBF ($112.9 million divided by (46MM(annual volume) *25years)) over a 25-year period after subtracting its administrative cost.

RESPONSE

The statement on p. 3-481 in Chapter 3 of the DEIS under Financial Analysis has been corrected in the FEIS to refer to the costs used by the R10 Appraisal program instead of Forest Service administrative costs. The Forest Service administrative costs are not relevant to a programmatic EIS such as the Forest Plan Amendment since there is no actual volume (MMBF) realized through the NEPA process. Instead these costs are disclosed in project timber harvest EISs.

The correct costs used to determine the information on including the estimated logging costs associated with old growth harvest and young growth and estimated road and other transportation costs, are now disclosed in detail in Chapter 3 of the FEIS in the Economic and Social Environment section (affected environment) under "R10 Appraisal Costs."

The FEIS also discusses the fact that these estimates represent only a snapshot in time, and that they may change at the time of sale and are useful primarily for comparing alternatives. The R10 Appraisal was used as a tool for financial analysis and alternative comparison at the programmatic EIS level; it does not yield a timber sale appraisal. When actual timber sales are sold from a project after environmental analysis, the appraisal is based on the current appraisal bulletin, cost information, and a profit and risk allowance to determine stumpage values at the time of offering.

COMMENT

SPEC-19: When economics are relevant and important to a decision, economic information must be included in an EIS.

According to 40 CFR 1502.23, when economics are relevant and important to a decision, economic information must be included in an EIS.

> The DEIS documents do not detail the PLV used by the USFS. What is the PLV number for YG? What is the PLV for OG? Nothing in the documents tells the reviewer how the USFS determined the PLV and cost of future harvest 25 and 100 years out. Did the USFS use a set percentage increase over time? Please provide this missing information.
>
> In Appendix B (pg. B-13) when they performed the modeling exercise they used only the five southern districts on the Tongass for the first 15 years. By not considering/using the entire Tongass they misrepresent the actual cost of harvesting timber from the forest. See TWFG paper, *Analysis of Old Growth Inventory and Land Base Available for Operations within the Tongass National Forest, 2014*. In that document the cost of transportation from the northern part of the Tongass to the Viking mill in Klawock drives most volume available for harvest into negative value territory.
>
> Based on the Woodstock model (see attached TWFG sheet) for Alternative 5 and the statement on pg. 2-32 of the DEIS, by year 16 the volume of OG harvest will be reduced to 5MMBF per year or a total of 25MMBF for the period years 16-20. The Woodstock model shows the 25MMBF of OG producing a net return of $360.9/MBF. Refer to the net returns for Saddle Lakes and Big Thorne; the USFS has not produced an OG timber sale that generates a net return after administrative cost of $360.99.

Corrections or Revisions Needed

Page 3-450, DEIS: Table 3.22-5 shows the average timber harvest for State lands is 25.7 MMBF for the last 13 years; the average for the last seven years is a much lower 12.3 MMBF. The last seven years is a better indication of future volume based on the fact that Alaska Mental Health Trust and the University are not bound to manage on a sustained-yield basis.

RESPONSE

A cost-benefit analysis has not been displayed as a strict quantitative monetary analysis due to the many other considerations that must be given to other resources that have no dollar value assigned as 40 CFR 1502.23 recommends “For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations” (emphasis added). An analysis of the effects for each resource has been included with the ‘costs’ and ‘benefits’ explained either quantitatively or qualitatively. A summary of the effects by Alternative and the comparison of alternatives for each of the significant issues is in Chapter 2. In addition, a discussion of the Tongass Old-growth Conservation Strategy is displayed in the Forest Plan Amendment DEIS, Appendix D.

The pond log values are located on the RV spreadsheets. While this information is not included in the FEIS which is the summary of the analysis done for this amendment, they are located in the planning record.

The southern five districts were used instead of the entire Tongass National Forest due to their proximity to the majority of the existing mills. Timber harvest projects could occur on the northern part of the Tongass but would probably need to be 100% exported such as the Yakutat sale in the mid-2000s.

The analysis that you mention for Big Thorne and Saddle Lakes EISs were run using FASTR and used the volume for the entire alternative and much of this volume is of lower grades than is found in small sales and microsales which target larger, higher value trees destined for higher end value-added manufactured for products.

COMMENT

SPEC-20: Correction on open roads in non-NFS lands needed in Appendix C.

Page C-4, DEIS: Table C-1 breaks down past road construction and states that 3,379 miles out of 3,660 miles of roads constructed on non-national forest land remain open. Based upon the Division of Forestry's best estimate, instead of 92% remaining open, the total still open is more likely in the range of 1500-2000 miles, or about 50%.

RESPONSE

As suggested, the proportion of all roads in open vs. closed status is not readily available for non-NFS lands. The Forest Service based the DEIS estimate on available GIS information, and has decided to use the State's estimate of 50 percent for the FEIS. The numbers in Appendix C have been updated where information was available.

COMMENT

SPEC-21: Specific Wildlife-related Comments on DEIS.

Page 2-7, Wildlife, DEIS: Please consider managing habitat to provide for sustainable wildlife populations rather than viable populations.

RESPONSE

Forest Plan Chapter 2 includes the following forest-wide goal for wildlife:

"Maintain the abundance and distribution of habitats, especially old-growth forests, to sustain viable populations in the planning area."

See response to PLR-2.

COMMENT

Pages 2-14 through 2-20, Alternative 2, DEIS: Please provide a clearer description of how harvest in the beach buffer occurs. Include discussion of the anticipated effects on MIS when the 1,000 ft beach buffer is removed for harvest and road construction. Please expand the discussion of how leaving an adjacent inland stand of POG or young growth serves the purpose of the beach buffer. It would be helpful to focus this discussion on biogeographic provinces 13 and 14. See our similar comments for Appendix D on page 4.

RESPONSE

Chapter 2 of the FEIS describes the alternatives in detail, including tables and figures. The alternative description states whether young growth may be harvested in the beach and estuary fringe, how it can be harvested (e.g., clearcutting, commercial thinning), where it can be harvested, and how much young-growth volume the alternative yields. In terms of describing how harvest in the beach and estuary fringe would occur, the Forest Plan provides the actual management prescription; not the FEIS. Each Land Use Designation (LUD) has a management prescription. Each management prescription includes the following elements: 1) Land Use Designation Standards and Guidelines; 2) Forest-wide Standards and Guidelines (Chapter 4); and 3) Plan Content Developed Under the 2012 Planning Rule (Chapter 5). Chapter 5

includes plan components and management approaches for young-growth harvest in the beach and estuary fringe that provides direction for an IDT when designing and implementing a project.

The Forest Plan Amendment does not propose to remove the 1,000-foot beach buffer. Rather, as under Alternative 5, a minimum 200-foot-wide forested buffer along the shoreline adjacent to young-growth harvest units is required, which would continue to protect forest in the beach and estuary fringe for connectivity and habitat while the harvested stand matures. (See Chapter 5 young-growth standard S-YG-BEACH-03.) Thus, the functioning of the beach and estuary fringe may be reduced in places due to the reduced buffer, but effects would be short-term and more localized. (See FEIS Appendix D, Beach and Estuary Fringe section.)

The FEIS provides a programmatic analysis that addresses the Forest Plan. A programmatic analysis of a Forest Plan includes a set of policies and maps of possible future activities and uses, the specifics of which are not yet known. Any future development, if and when it does take place, would result in effects. It is reasonable, therefore, to foresee that on-the-ground impacts would occur if the Forest Service harvests young-growth in the beach and estuary fringe. An analysis of each alternative and discussion about the anticipated effects from harvesting young growth in the beach and associated road construction is included under each resource section in FEIS Chapter 3 including Biodiversity and Wildlife. Because the FEIS is analyzing an amendment to the 2008 Forest Plan developed under the 1982 Planning Rule, these species are analyzed even though the 2012 Planning Rule does not use MIS for evaluating effects. Most of these species are associated with POG forests of Southeast Alaska either directly or rely on prey species associated with these habitats.

The Forest Plan provides young-growth direction for the beach and estuary fringe. The FEIS in the Chapter 3 Biodiversity and Wildlife sections describe and analyze young-growth harvest in the beach and estuary fringe. FEIS Appendix D also provides a similar analysis, and also includes several tables that facilitate understanding the anticipated effects. Table 6 summarizes distribution of young-growth harvest acres (over 100 years) within the beach and estuary fringe by Biogeographic Province and Alternative.

Due to the localized nature of anticipated effects, under all of the alternatives the beach and estuary fringe would continue to act as a transition zone between interior forest and saltwater influences, maintain landscape connectivity, and provide benefits to the marine environment across the planning area. Therefore, it would be expected that there may be localized reductions in the ability of the beach and estuary fringe to function as intended under the Conservation Strategy under each of the alternatives but Forest-wide effects would not measurably reduce the functioning of this contributing element of the Conservation Strategy.

COMMENT

Page 3-223, DEIS: Please update this section to reflect the Fish and Wildlife Service decision announced on January 5, 2016 that the Alexander Archipelago wolf does not warrant protection as an endangered or threatened species under the Endangered Species Act.

RESPONSE

Chapter 3 of the FEIS, Wildlife Section (Alexander Archipelago Wolf) has been updated to include a discussion regarding the USFWS publishing a 12-Month Finding that listing of the subspecies was not warranted.

COMMENT

Page 4-100, DEIS: We recommend eliminating the distinction between peregrine falcon subspecies given recent studies about the subspecies status along parts of coastal Alaska.

RESPONSE

Changes to Chapters 3 and 4 of the Forest Plan were minimized during this amendment. Direction related to the purpose and need of this narrow amendment (young growth, renewable energy, transportation systems corridors) was modified as appropriate. The suggested change is not necessary to accomplish the narrow focus of this amendment.

COMMENT

SPEC-22: Specific Wildlife-related Comments on the Proposed Plan.

Page 2-8, Wildlife, Proposed Plan: Replace the term *sport* with *hunting*.

RESPONSE

The Forest Service restored some wording deleted in the Proposed Forest Plan. Public comments expressed concerns about the "breadth" or expansiveness of these changes, giving the appearance of a broad-based amendment. (See P&N-8, PLR-3) Although these changes are administrative, for clarity sake, the changes have been restored to the original language. Therefore, the suggestion to change terms in Chapter 2 was not included.

COMMENT

Page 3-10, Desired Condition, paragraph 1, Proposed Plan: Define appropriate research, how the determination is made, and what role the State plays in the process.

RESPONSE

In Chapter 3, LUD-specific standards and guidelines provide direction for implementation of projects. It is not the location to give specifics on operating procedures such as how special use requests for research are determined. Research may be proposed and conducted by a variety of partners and agencies, which may include the State of Alaska, universities, non-profits, and others. Forest Plan guidance is not intended to list the role of partners and cooperators for each activity that could be authorized.

COMMENT

Page 3-45, Proposed Plan: Consider adding a land use designation (LUD) standard and guideline under the wildlife habitat improvement heading that addresses non-native wildlife management following a natural disturbance or disease.

RESPONSE

Changes to Chapters 3 and 4 of the Forest Plan were minimized during this amendment. Direction related to the purpose and need of this narrow amendment (young growth, renewable energy, transportation systems corridors) was modified as appropriate. Therefore, the suggestion to add a new standard and guideline to the Research Natural Area LUD is not included as it is beyond the scope of the amendment.

COMMENT

Page 3-57, Desired Condition, Proposed Plan: Clarify how a population of a species is defined as a subspecies. Consider revising the definition on page 7-42 and consult the ADF&G draft Wildlife Action Plan for more information on subspecies (2015).

RESPONSE

LUD specific standards and guidelines is not an appropriate place to define / clarify terminology.

COMMENT

Page 3-138, Wildlife, Proposed Plan: Please clarify the author and standing of the Tongass Young Growth Management Strategy referenced here. The document could be strengthened by adding

more information regarding the effects of the strategy to wildlife. The version available through the references (Page 6-49, DEIS) does not contain Exhibit 3.

RESPONSE

The Tongass Young Growth Strategy is included in the Planning Record. The Forest Plan now indicates the Tongass Young Growth Management Strategy is an unpublished US Forest Service document.

COMMENT

Page 4-96, Proposed Plan: We recommend adding standards and guidelines for protection of the Pacific marten *Martes caurina*, which is endemic to Admiralty and Kuiu Islands. Macdonald and Cook (2007) and Dawson (2008) are good resources.

RESPONSE

The FEIS acknowledges both American and Pacific marten and discusses that the existing Forest Plan guidance on marten (WILD1. XVIII) is intended to apply to all marten across the Tongass National Forest. Accordingly, no additional standards and guidelines specific to Pacific marten were added to the Forest Plan.

COMMENT

Page 4-99, Proposed Plan: Please replace goshawk nest stand with nest site. The monitoring protocol could be strengthened by ensuring the assumptions of nest identification and the probability of detection is valid. ADF&G biologists are interested in helping USFS biologists develop the monitoring program. We are concerned about the efficacy and statistical validity of the current goshawk monitoring program.

RESPONSE

Most of the goshawk standard and guideline (WILD4.II) refers to nest site. The one instance where it says “nest stand” is intended to mean the minimum 100 acre nest buffer area, which is appropriately referred to as a “stand.”

COMMENT

Page 5-8, Management Approaches, Proposed Plan: This section would benefit from clear goals and objectives related to monitoring the effects of young-growth harvest on MIS. See our similar comments for Appendix D on page 4.

RESPONSE

Monitoring is outlined in the Tongass Plan Monitoring Program (USFS 2016). The monitoring plan is no longer included within the Forest Plan (was Chapter 6 in the 2008 Forest Plan), but is now a separate document. Management approaches in Chapter 5 of the Forest Plan, describe the intent or expectations of the responsible official in terms of the applicable plan components, such as a desired condition or standard for the affected resource.

COMMENT

SPEC-23: Specific Wildlife-related Comments on Appendix D of the DEIS.

Page D-3: This section summarizes the scope of analysis and acknowledges new science. As in the DEIS, the analysis does not adequately describe how young-growth harvest affects wildlife species. Similarly, the DEIS and the section on the contribution of matrix lands lacks adequate analysis and should be strengthened with references from land management focused research conducted on the Tongass.

RESPONSE

The purpose of this section was not to describe how young-growth harvest affects wildlife, but rather to highlight new science related to the contribution of young-growth stands to conservation. This section

specifically notes that transition to young-growth management under this Forest Plan amendment has the potential to both positively and negatively affect the condition and quality of matrix lands, and thus their contribution to the Conservation Strategy. The subsequent discussion in Appendix D describes the potential adverse effects to wildlife associated with young-growth harvest, including:

- Young-growth harvest within the Old-growth Habitat LUD and other non-development LUDs has the potential to increase habitat fragmentation and reduce the ecological contribution of young-growth stands to the reserve system by setting back the trajectory toward late seral forest condition by delaying the development of old-growth stand characteristics such as snags, downed logs, and diverse tree canopy layers required by some POG-associated species (e.g., marten, goshawks, flying squirrels);
- Young-growth harvest in the beach and estuary fringe has the potential to locally decrease buffer width and reduce its effectiveness in facilitating the movement of organisms across the landscape and providing habitat for wildlife species that are negatively affected by edge; and
- Young-growth harvest in the RMA has the potential to locally decrease buffer width and reduce its effectiveness in facilitating the movement of organisms across the landscape and reduce the function of riparian areas.

COMMENT

Page D-4, paragraph 2, DEIS: Stating young growth serves as dispersal corridors between old-growth stands is a generalization, as young-growth stands can be barriers rather than corridors for some old-growth associated species. Please revise.

RESPONSE

The purpose of this section was to note the growing recognition, which was acknowledged during the development of the 1997 Forest Plan, of the ecological function that young-growth stands and matrix lands in general play in conservation. A statement has been added to Appendix D noting that young-growth stands can act as barriers. Throughout Appendix D, the adverse effects of young-growth harvest are discussed (see response to SPEC-23).

COMMENT

Page D-5, paragraph 3: The USFS states that on a forest-wide basis, over 90% of the existing POG will be protected from harvest. Given the context, this statement implies that forest management will have little effect on old-growth associated species because 90% of their habitat will remain intact. However, populations of many old-growth associated species are confined to islands or biogeographic regions where a much higher proportion of POG has been or will be harvested. We recommend that relative to wildlife, such habitat summaries be presented at a scale that is meaningful to the species or populations being discussed.

RESPONSE

For all analyses related to old-growth retention and proposed young-growth harvest in non-development LUDs, RMAs, or the beach and estuary fringe results included in the Wildlife and Biodiversity sections of the EIS and in Appendix D, which addresses the Forest Plan Conservation Strategy specifically, results are presented Forest-wide and by biogeographic province. The breakdown by biogeographic province is intended to provide context for the spatial distribution across the Forest of potential effects given that some portions of the Tongass have been more affected by past timber harvest than others. Where appropriate, a discussion of particular areas of the Tongass where effects to wildlife species are more likely to occur is included in the species-specific discussions and in the cumulative effects discussion in the Wildlife section of the EIS.

COMMENT

Page D-5, paragraph 4: To help the reader get a better sense of the scale of changes resulting from GIS mapping updates, please add text and a table describing how the changes affected the wildlife habitat analysis. For example, provide the number of polygons/acres in a given bioregion found to be >150 years old and corrected to size class 4, resulting in increased POG acreage in a bioregion.

RESPONSE

Mapping updates occur on an ongoing basis for various reasons. Mapping updates that have happened periodically since 2008 have been incorporated consistently in the description of existing conditions and in the evaluation of each alternative. Additional updates were made between the DEIS and FEIS to provide the best available information. See Chapter 1 of the FEIS for a discussion of changes between the DEIS Updates. GIS data used in the FEIS is available in the project record.

COMMENT

Page D-12: Please provide a clearer description of how harvest in the beach buffer occurs under Alternative 2. Include discussion of the anticipated effects on MIS when the 1,000 ft beach buffer is removed for harvest and road construction. Please expand the discussion of how leaving an adjacent inland stand of POG or young growth serves the purpose of the beach buffer. It would be helpful to focus this discussion on biogeographic provinces 13 and 14, which have the highest level of this type of harvest under Alternative 2. See our similar comments for the DEIS on page 3.

RESPONSE

Page D-15 of Appendix D describes harvest proposed under Alternative 2 within the beach and estuary fringe. The most intensive young-growth harvest in the beach and estuary fringe would occur under Alternative 2 which would allow clearcutting to the shoreline during the first 15 years after plan approval and commercial thinning thereafter (see Table 2 in Appendix D which describes the harvest prescriptions proposed within the beach and estuary fringe by alternative). A statement has been added to the above referenced paragraph that conveys that by shifting the beach and estuary fringe inland, the level of connectivity between watersheds would be maintained but the ability of the beach and estuary fringe to serve as a transitional zone between interior forest and marine influence would be locally reduced.

COMMENT

Page D-17, paragraph 4: Please clarify the statement that individual islands function as metapopulations for some species.

RESPONSE

This statement has been clarified to state that this relates to species that do not typically disperse between islands.

COMMENT

Page D-18, paragraph 7: This section would benefit from clear goals and objectives related to monitoring the effects of young-growth harvest on MIS. See our similar comments for the DEIS on page 3. ADF&G is available to help develop the monitoring questions.

RESPONSE

Modifications to monitoring questions, and revision of the Monitoring and Evaluation program are outside of the scope of this EIS. In a separate process, the Tongass recently published a draft Plan Monitoring Plan on March 9, 2016 for a 30-day comment period. The new Plan Monitoring Plan was adopted on May 9, 2016. The final monitoring plan is posted at http://www.fs.usda.gov/goto/R10/Tongass/Monitoring.

Future administrative changes may be necessary after completion of the ongoing Forest Plan Amendment. In addition, the Tongass is deferring action on two requirements: focal species and species of conservation concern. The requirement to monitor the status of focal species to assess ecological conditions is in 36 CFR 219.12(a)(5)(iii) and the requirement to monitor the status of ecological conditions to maintain viable populations of species of conservation concern is location at 36 CFR 219.12(a)(5)(iv). Once these species and their associated ecological conditions have been identified, relevant monitoring questions will be added or modified as necessary. The public would be notified of any substantial administrative changes and would have the opportunity to comment at that time.

COMMENT

SPEC-24: Specific Fish-related Comments on the DEIS (SOA-016)

Page 3-31, DEIS: Include discussion and citation of literature regarding how increased harvest in the riparian management area (RMA) in moderate vulnerability karst landscapes could impact diffuse recharge and stream water quality.

RESPONSE

The 2008 Amended Forest Plan, Appendix H, V. Young-Growth Management on Karst, Page H-8 states that; "Commercial thinning is appropriate on low to moderate vulnerability karst lands when the karst management objectives can be met." Preliminary data (Prussian, 2011) does support the concept that by commercial thinning of the older young-growth stands on karst, returning the stand to closer-to-pre-harvest tree spacing, thus hastening the hydrologic recovery of the site. Reducing the canopy cover could restore the 'health' of young growth forests on karst lands by increasing the volume of throughfall, flushing sedimentation out of diffuse and discrete karst openings, and reconnecting surface to subsurface flow pathways. With increased recharge, karst springs should contribute more to the aquatic systems. Wissmar et al. 1997 and Bryant et al. 1998 documented a higher productivity in karst influenced streams than in other streams. The karst landscape influences productivity of its aquatic habitats in several ways. The geochemistry associated with karst development contributes to productivity of aquatic environments through its carbonate buffering capacity and carbon input dissolved from the limestone bedrock (Wissmar et al. 1997). This action has significant downstream effects on the aquatic food chain and biotic community. Preliminary studies suggest that aquatic habitats associated with karst landscapes may be 8 to 10 times more productive than adjacent, nonkarst-dominated aquatic habitats (Bryant et al, 1998). The karst-dominated aquatic habitats support a higher biodiversity than the noncarbonate-based systems, have higher growth rates for smolts and resident fish, reflect less variable water temperatures and flow regimes, and contain unique habitat affecting species distribution, abundance, and adaptations (Bryant et al, 1998, Baichtal and Swanston, 1996).

COMMENT

Page 3-103, DEIS: Include discussion and citation of literature regarding potential changes to windfirmness due to thinning in the RMA.

RESPONSE

Windthrow risk will be evaluated when prescribing thinning and openings treatments in RMA to minimize accelerated windthrow. In order to protect the RMA, a Reasonable Assurance of Windfirmness (RAW) zone adjacent to the RMA buffer will be established in situations where multiple high risk factors are present. The RAW buffer guidance document (Landwehr 2007) and Harris 1989 are used to provide guidance when establishing these buffers during planning and final layout. RAW buffers have and continue to be monitored to help determine stability of current practices. Although the monitoring does not yet include young growth, the overall information is relevant as conditions that influence stability are determined through the monitoring process. Monitoring information provided in this section of Chapter 3 is specific to old growth. We have not been monitoring windfirmness of young growth RMA buffers to date. Additional text, including the paragraph below, has been added to Fish section 3.6.

COMMENT

Page 3-103, DEIS: Include discussion and citation of literature regarding how a reduction of the RMA width could affect wood recruitment where average tree heights exceed 100 ft.

RESPONSE

See response for FISH-5. Wood recruitment should not be impacted from thinning as that would be counter to the objectives for RMA. A watershed analysis (as described in Forest Plan Appendix C) would be needed for implementing any alternative that proposed to enter the RMA. Additional information was added to the requested section discussing effect of tree height on LWD addition.

COMMENT

Page 3-118, paragraph 5, DEIS: Consider strengthening the discussion by citing recent research on rainbow trout and steelhead Onchorhynchus mykiss (Kendall et al. 2015, Pearse et al. 2009, Sloat and Reeves 2014a, Sloat and Reeves 2014b).

RESPONSE

The suggested references have been added to the FEIS in the Fish section in Chapter 3.

COMMENT

Page 3-123, DEIS: Please clarify the circumstances where substantially more RMA group selection could occur, and how many acres would be acceptable under this alternative given the standards and management approaches in the riparian section of Chapter 5.

RESPONSE

It would be a rare circumstance that 10-acre openings in RMA would meet the desired future condition for the RMA outside of the TTRA buffer. In most cases, we would envision less than that. The young growth standard for riparian S-YG-RIP-01 allows up to 10 acre openings and up to 35 percent of the acres of the original harvested stand. The management approach for riparian also states that the intent is that young-growth treatments in the RMA must meet the objectives of RMA process groups as defined in Appendix D. Young-growth treatments in the RMA must be consistent with the all of the applicable plan components. Some text changes were made to the Fish section 3.6 to clarify this.

COMMENT

Page 3-126, paragraph 2, DEIS: Consider removing the statement:

Some negative effects, or more appropriately, increased risk, to the natural range of variation in stream processes and fish habitat would likely occur by management activities over the long term for all alternatives. The extent of harvest activity and associated road development are likely to result in decreases of some fish populations in managed watersheds.

This is speculative and contradictory to the statement in the first two sentences of the third paragraph page 3-126. The presence of risk should not be confused or used interchangeably with negative effects, in the absence of supportive research. We recommend removing the association between risk and negative effects to fish habitat from the DEIS. The concept that risk is both normal and being fully mitigated in the Tongass should be added to the DEIS with discussion of Dr. Doug Martin's body of research, cited elsewhere in the DEIS.

RESPONSE

This statement has been removed from the FEIS.

COMMENT

Page D-19, Table 8 DEIS: Consider adding a row in the table showing projected young-growth acreage suitable for harvest in development LUDs following proposed changes to the scenic integrity standards and guidelines and the application of the rules surrounding harvest prior to the culmination of mean annual increment. This would provide perspective when evaluating the necessity to conduct harvest in environmentally sensitive areas by showing the relative gains in available timber from all components of each alternative.

RESPONSE

The relaxed SIOs do not affect the total amount of young-growth that is harvested. They only affect where it is harvested and may also result in larger harvest units in some areas. For example, a higher SIO might force unit openings to be less than 10 or 20 ac but relaxing the SIO may allow them to be 40 or more acres; however, the maximum total acres of young-growth harvested would not change. Therefore, no changes were made to DEIS Table 8 (Table 9 in the Final EIS).COMMENT

Page D-12, paragraph 3, DEIS: Improve clarity by beginning the first sentence with of the action alternatives.

RESPONSE

The statement has been revised.

COMMENT

Page D-12, paragraph 3, DEIS: Consider revising the statement in the last sentence about effects being short-term and localized, which contradicts the statement on page D-11, paragraph 4.

RESPONSE

The statement has been revised.

COMMENT

Page 3-98, Table 3.6-2, DEIS: Suggest changing the title to commonly targeted sport, subsistence, and commercial fish. The existing title is misleading since sport fishing for steelhead in the region is primarily catch-and-release.

RESPONSE

The title has been revised.

COMMENT

3-104, paragraph 1, DEIS: Specify the harvest type discussed in the second sentence.

RESPONSE

The harvest type has been revised. Text was added to clarify that cited evaluation was related to watershed level timber harvest rate.

COMMENT

Page 3-108, paragraph 2, DEIS: Angler days (Table 1), recorded in ADF&G's statewide harvest survey data, better represent fishing effort trends than license sales. The data is available at: http://www.adfg.alaska.gov/sf/sportfishingsurvey/index.cfm?ADFG=region.home.

Table 1.–Angler days by water type among Southeast Alaska communities, 1996–2014

Year	Freshwater	Saltwater	Total
1996	72,459	297,960	370,419
1997	93,478	346,320	439,798
1998	75,445	295,302	370,747
1999	99,054	435,610	534,664
2000	106,355	435,052	541,407
2001	98,093	409,148	507,241
2002	101,563	367,739	469,302
2003	107,755	369,437	477,192
2004	104,166	443,083	547,249
2005	102,200	465,584	567,784
2006	104,834	412,001	516,835
2007	104,431	435,859	540,290
2008	100,094	409,503	509,597
2009	96,343	403,738	500,081
2010	87,279	356,572	443,851
2011	95,332	352,276	447,608
2012	91,009	387,998	479,007
2013	83,871	462,179	546,050
2014	95,068	469,242	564,310

RESPONSE

Information from the total angler effort was added to the text

COMMENT

Page 3-328, Table 3.15-7, footnote 6, DEIS: Please include the data source for the ADF&G ratings.

RESPONSE

As discussed in the Draft EIS (p. 3-327), the data presented in Table 3.15-7 are from the 1997 Forest Plan EIS:

> The Forest Service developed this rating system in response to public comments received on the 1990 DEIS. Recreation places may be important for one, several, or none of the identified categories. Important recreation places by category are summarized in Table 3.15-7 and discussed

further in the *Recreation and Tourism* section of the 1997 Forest Plan Revision FEIS (USDA Forest Service 1997a, pp. 3-109, 3-111).

These same pages are the source of the information presented in Table 3.15-7, including the ADF&G ratings.

COMMENT

Page 3-343, Fishing, DEIS: Please provide a citation for the statement 13 percent of inventoried recreation places acres are currently important for fishing.

RESPONSE

This is a reference to the data in Table 3.15-7. The text has been revised in the Final EIS and now refers the reader back to that table. As noted in response to the above comment, the recreation place rating system was developed as part of the 1997 Forest Plan Revision EIS.

COMMENT

SPEC-25: Specific Fish-related Comments on the Proposed Plan.

Page 5-8, S-YG-BEACH-03, Proposed Plan: In some locations, such as estuaries, the forest edge could be greater than 200 feet from mean high tide and it is not clear whether or not this buffer includes non-forest acreage. If the standard is intended to include non-forested acreage, please include in the FEIS an evaluation of compatibility with the proposed desired conditions of the beach and estuary fringe in Chapter 5 and the forest side standards and guidelines in Chapter 4. If the standard is intended to include forested acreage only, we suggest modifying the first sentence of the standard to *Commercial harvest in the beach fringe is not allowed within a minimum 200-foot buffer beginning at the forested edge above the mean high tide line.*

RESPONSE

S-YG-BEACH-03 now reads: "Commercial harvest within the beach and estuary fringe is not allowed within a minimum 200-foot forested buffer beginning at mean high tide (that is, a no commercial harvest buffer). This does not preclude wildlife enhancement projects and providing access to timber harvest units as long as process group objectives can be met in the RMA.

The management approach for beach and estuary fringe explains that Forest Plan Appendix D provides guidance for delineating RMAs associated with estuarine stream process group. Estuarine RMAs extend 1,000 feet from the landward extent of salt tolerant vegetation, regardless of vegetation type.

COMMENT

Page 5-9, Proposed Plan: A 10-acre opening in the RMA outside of the Tongass Timber Reform Act buffer appears contradictory with desired condition DC-YG-RIP-01, the fish and riparian standards and guidelines of Chapter 4, and Appendix D. Given the desired condition in DC-YG-RIP-01 is to improve functions for soil, water, fish, wildlife, and other resources, while also providing a commercial byproduct, please explain where a 10-acre opening would improve conditions and be approved at the project level, especially if there is no requirement to thin the RMA following harvest. If the assumption in Alternative 5 is that timber can be harvested in such a matter from the RMA, the FEIS should describe instances when a 10-acre opening in the RMA could be implemented so that decision makers understand whether or not this wood source is a reliable element of the alternative.

RESPONSE

It would be a rare circumstance that 10 acre openings in a RMA would meet the desired future condition for the RMA outside of the TTRA buffer. The Alternative 5 standard S-YG-RIP-01 allows up to 10 acre openings and up to 35 percent of the acres of the original harvested stand, and the management approach for riparian states that it is expected that young-growth treatments in the RMA achieve stream

process group objectives as defined in Appendix D of the Forest Plan. Young-growth treatments in the RMA must be consistent with the all of the applicable plan components.

COMMENT

Page 5-9, Proposed Plan: Alternatives 2 and 5 allow removing up to 35% basal area of a stand in the RMA. Consider adding a standard in the Chapter 5 riparian section to clarify how the 35% removal can be distributed across the stand and if harvest can be focused in the RMA.

RESPONSE

Alternative 2 allows for commercial thinning of up to 33 percent of stand basal area. Alternative 5 allows up to 10 acre patch cuts and commercial thinning totaling no more than 35 percent of the total stand acres. A combination of the two treatments may be used, with no more than 35 percent of the total stand removed, as long as the treatment facilitates a more rapid recovery of the late successional forest characteristics.

COMMENT

Page 4-10, Section III, Proposed Plan: Add a reference for the 2015 *Fish Stream Identification and Stream Classification on the Tongass National Forest* document and its associated field guide, which include results of recent working groups and field verification studies.

RESPONSE

The suggested reference was added.

COMMENT

Page 5-7, paragraph 5, Proposed Plan: Consider including prioritization of stewardship fund use on the district where they were generated, a process made easier by Public Law 108-148-DEC.

RESPONSE

The young-growth management approach that discusses using the stewardship authority, where appropriate is based on final recommendations from the Tongass Advisory Committee, which did not address prioritizing the use of stewardship funds. Therefore, this suggestion is not included.

COMMENT

SPEC-26: Specific Subsistence-related Comments on the DEIS.

Pages 3-97 through 3-101, DEIS: This section includes a general characterization of the magnitude of sport and commercial fish harvests from Conrad and Gray (2014). The FEIS should include similar information for subsistence harvest presented in Conrad and Gray (2014).

RESPONSE

Additional information has been added to Chapter 3 of the FEIS in the Fish section.

COMMENT

Page 3-390, first paragraph under abundance and distribution, DEIS: The ADF&G (2014) citation is inaccurate. Please cite the 1987 Tongass resource use cooperative survey (TRUCS), which provides the only survey data for Tenakee Springs and Skagway.

RESPONSE

This has been re-worded in the FEIS.

COMMENT

Pages 3-533 through 3-635, DEIS: In the subsistence sections of the Elfin Cove, Gustavus, Meyer's Chuck, Metlakatla, Pelican, Port Alexander, Skagway, and Tenakee Springs individual community assessments, the 1987 ADF&G harvest data are referenced as distinct from the TRUCS data presented in Kruse and Frazier (1988), but the information in both references is from the same study. Citations in these sections presenting the data from both publications should be reconciled.

RESPONSE

The subsistence discussions for each community draw upon several sources of information including Kruse and Frazier (1988) and the latest information available in the ADF&G Community Subsistence Information System, cited in the EIS as ADF&G (2014). In some cases, as indicated in the comment, the most current information in the ADF&G database is from 1987 and was originally reported in Kruse and Frazier (1988). The references to ADF&G (2014) for the above communities have been deleted to avoid duplication.

COMMENT

Page 3-508, third paragraph, DEIS: Prince of Wales communities are listed as using a combination of hydroelectric and diesel-generated power while the individual community summaries indicate power is generated by diesel only. Please clarify.

RESPONSE

The FEIS has been updated to state that Coffman Cove is served by diesel generation. The other six POW communities identified (Craig, Hollis, Hydaburg, Kasaan, Klawock, and Thorne Bay) are served by hydroelectric generation, with diesel generation used as a back-up. The source of information for the clarification is Black & Veatch. 2012. Southeast Alaska Integrated Resource Plan. Volume 2 – Technical Report. Prepared for the Alaska Energy Authority.

COMMENT

Pages 3-513 through 3-654, DEIS: Please include a citation for the source of information presented in the community use area maps for all communities. If maps are based on the 1987 TRUCS harvest data, please include an analysis of how uses may have changed in the last 30 years.

RESPONSE

The community use areas used in the analysis were originally developed as part of the 1997 Forest Plan revision EIS. The community analysis and the use of these maps is discussed further at the beginning of the Communities section in the subsection entitled Community Assessments. Updated subsistence information is provided for each community based on the most current information available from ADF&G and potential effects to deer are assessed at the WAA level using detailed unpublished information provided by ADF&G. The WAAs analyzed for each community were identified based on the data provided by ADF&G for 2004 through 2013, the most recent available at the time of preparation.

COMMENT

Pages 3-542 through 3-43 and 3-560 through 3-561, DEIS: The Haines and Hyder individual community assessments focus on potential impacts to local resident deer harvests, however, moose are more important for these residents, unlike most other southeast communities. Please modify the assessments to include the importance of moose in these communities.

RESPONSE

Chapter 3 of the DEIS on page 3-509 (subregional overview), states that deer is the only subsistence resource that is potentially significantly affected by the alternatives and that the subsistence analysis therefore uses deer as a key indicator for potential community impacts.

The FEIS has been updated to acknowledge that moose are more important than deer for Haines residents and that moose are not expected to be adversely impacted by any alternative.

Chapter 3 of the DEIS on page 3-560, acknowledges that bear and moose make up most of the land mammal subsistence for Hyder residents. The FEIS has been updated to include goat as well. These species are not expected to be adversely impacted by any alternative.

COMMENT

Pages 3-568, 3-599, and 3-653, DEIS: The Kake, Pelican, and Yakutat individual community assessments specify several subsistence use areas as most important or very important. Please provide a definition for these subjective terms, or eliminate them.

RESPONSE

The cited text has been revised and the words “most” and “very” have been removed as suggested.

COMMENT

Page 3-550, DEIS: Update this section to include recent completion of the Gartina Falls Hydroelectric facility in Hoonah.

RESPONSE

This project has been updated in Chapter 3 of the FEIS in the Renewable Energy section. Gartina Falls Hydroelectric (P-14066) began operating on August 5, 2015 and the 425kw project provides about a third of Hoonah’s energy needs. This information was also updated in the Communities section.

COMMENT

Page 3-604, DEIS: In the Petersburg Subsistence section, replace land mammals (mostly deer) with deer, to be consistent with information for other communities regarding the TRUCS data.

RESPONSE

The words, “land mammals (mostly deer)” has been replaced with “deer.”

COMMENT

Page 3-612, first paragraph: Replace Pelican with Port Alexander.

RESPONSE

Change has been made in the FEIS.

COMMENT

SPEC-27: Specific Plan Comments for Chapters 1 and 2 of the Forest Plan.

Chapter 1 Introduction

Proposed Plan page 1-5 second to last paragraph states: “The communities of Southeast Alaska depend on the Tongass National Forest in various ways, including employment in wood products, commercial fishing and fish processing, recreation, tourism, and mining, and mineral development.” The paragraph also goes on to explain the importance of subsistence resources; however, overlooked is the importance of public access to the forest by all modes including maintenance of forest roads. We recommend

including in the introduction a sentence describing the importance and role of public access and transportation infrastructure.

RESPONSE

The following introductory sentence has been added:

National Forest System roads are a vital component of the State of Alaska's Southeast Transportation Plan to provide for mobility residents, goods and services that facilitates the economic development and sustainability of southeast Alaska. These roads provide access for sustainable resource management as well as recreation opportunities, subsistence use, and community connectivity throughout the islands of the Alexander Archipelago.

COMMENT

Chapter 2 Goals and Objectives

No mention is made under Forest Desired Conditions of transportation utility system goals and objectives.

Recommend the inclusion statements of desired conditions for development and maintenance of regional and area transportation - utility systems:

> Provision and maintenance of air and marine access points and associated infrastructure by the Forest Service, including a system of forest trails and road to facilitate access to forest areas managed for timber harvest and various multi-uses including recreation, subsistence and administration of the forest.
>
> A State of Alaska maintained multi-modal regional transportation system of airports, marine docks and floats, and road system supporting access to and through the National Forest providing efficient and essential transportation between communities within the forest and between the forest and the rest of the world in support of the area economy.

Under Forest-wide Multiple-use Goals and Objectives recommend the addition of the above as goals under a category referred to as "Access." Similar access objectives should be listed under and in support of the following categories:

> Local and Regional Economies
>
> Minerals and Geology
>
> Recreation and Tourism
>
> Renewable Energy
>
> Subsistence and
>
> Timber

Recommend redefining "Transportation" as a category supporting the following Goal:

> Development and operation of transportation and utility infrastructure within the "Transportation Utility System" corridors linking the communities of Southeast Alaska as provided by Section 4407 of P.L. 109-59, as amended by P.L. 114-94, and as allowable under ANILCA Title XI.

RESPONSE

Changes to Chapters 2, 3, and 4 of the Forest Plan were minimized during this amendment. Direction related to the purpose and need of the amendment (young growth, renewable energy, transportation systems corridors) was provided. Therefore, the suggestion to change terms in Chapter 2 was not included.

COMMENT

SPEC-28: Specific Comments for Chapter 3 Management Prescriptions.

Do not replace the overlay Transportation Utility System (TUS) overlay Land Use Designations (LUD) as described in the 2008 Forest Plan. Retention of the TUS LUD is needed to physically locate TUS corridors established by law, replete with goals and management prescriptions having precedence over the underlying LUDs.

RESPONSE

See response to TUS-1.

COMMENT

LUD Management Prescriptions:

ADD TUS LUD overlay LEVEL ONE precedence to other LUDs in the following categories:

SPECIAL INTEREST AREA LUD under TRANSPORTATION, Transportation Operations,

TRAN, add:

B. Coordinate interpretation of the unique values of the Special Interest Area with management of transportation infrastructure in TUS LUD corridors and the rights-of-way of other publicly- owned roadways.

REMOTE RECREATION LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (revise) New roads are not permitted, except within a TUS LUD and to access authorized mineral operations (or as excepted under Lands).

MUNICIPAL WATERSHED LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (revise last sentence) New road construction is generally inconsistent with Old-growth Habitat LUD objectives, but new roads may be constructed if within a TUS LUD. Forest roads may occur in this area with due consideration for protection of the watershed.

OLD-GROWTH HABITAT LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (revise) New road construction is generally inconsistent with Old-growth Habitat LUD objectives, but new roads may be constructed if within a TUS LUD, or if a forest road with no feasible alternative.

B. Add: 4. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

SEMI-REMOTE RECREATION LUD under TRANSPORTATION, Transportation

Operations, TRAN, add:

A. (revise) Where Semi-Primitive Motorized recreation opportunities are emphasized, existing low standard roads are generally managed for use by high clearance or OHVs, snowmobiles, or motorcycles subject to an approved Access and Travel Management Plan. Generally, new roads are not constructed in this area, except within a TUS LUD and to link existing roads or provide access to adjacent LUDs.

Add : 4. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

LUD II Page 3-68 under Objectives add bullet: Roads and utility lines are allowed within a TUS

LUD.

Page 3-72 under Transportation Operations: TRAN: add 3. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

WILD RIVER LUD page 3-74 add under Objectives: Permit road and utility lines allowed within a TUS LUD.

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-80 (add) D. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

SCENIC RIVER LUD page 3-87 TRANSPORTATION, Transportation Operations: TRAN Add: 5. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

RECREATIONAL RIVER LUD page 3-87 TRANSPORTATION, Transportation Operations: TRAN

Page 3-94 add: 3. Roads and utility lines allowed under a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

EXPERIMENTAL FOREST LUD page 3-100 TRANSPORTATION, Transportation

Operations: TRAN

Add: C. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

SCENIC VIEWSHED LUD

Add under Objectives page 3-101: Roads and utility lines are allowed under a TUS LUD.

TRANSPORTATION, Transportation operations: TRAN, page 3-108

Add: 6. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

MODIFIED LANDSCAPE LUD page 3-109 add under Objectives: Roads and utility lines allowed within a TUS LUD.

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-115 (add) 6. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

TIMBER PRODUCTION LUD page 3-116 add under Objectives: Roads and utility lines allowed within a TUS LUD.

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-122 (add) 5. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

MINERALS LUD page 3-123 add under Objectives: Roads and utility lines allowed within a TUS LUD.

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-128 (add) E. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

RESPONSE

See response to TUS-1 and TUS-2. All of the suggested changes assume the Transportation and Utilities System (TUS) overlay LUD is not removed. Under the Forest Plan, the TUS overlay LUD was removed, as well as all associated direction (i.e., "window" and "avoidance area") in the LUD Standards and Guidelines pertaining to application of this overlay LUD. The TUS LUD management prescription is replaced by plan components in Chapter 5 that provide management direction for renewable energy and transportation systems corridors and is applied to the 17 LUDs in Chapter 3 of the Forest Plan.

See also response to PLR-1.

COMMENT

SPEC-29: Specific comment for Chapter 4 Standards and Guidelines.

Reinstate standards and guidelines for the overlay Transportation Utility System (TUS) Land Use Designations (LUD) as described in the 2008 Forest Plan with corridor goals and management prescriptions having precedence over the underlying LUDs.

RESPONSE

See response to TUS-1 and TUS-2. The Transportation and Utilities System (TUS) overlay LUD was removed, as well as all associated direction (i.e., "window" and "avoidance area") in the LUD Standards and Guidelines pertaining to application of this overlay LUD. The TUS LUD management prescription is replaced by plan components in Chapter 5 that provide management direction for renewable energy and transportation systems corridors and are applied to the 17 LUDs.

COMMENT

SPEC-30: Specific comment for Chapter 5 Plan Content Developed Under the 2012 Planning rule.

Revise the Transportation System Corridor (TSC) to apply solely to development and maintenance of forest roads located outside of the TUS LUD corridors or under the jurisdiction of the U.S. Forest Service.

RESPONSE

See response to TUS-1 and TUS-3. The management direction for transportation systems corridors in Chapter 5 is to facilitate the availability of National Forest System land for the development of existing and future transportation systems such as those identified by the State of Alaska in the current version of the Southeast Alaska Transportation Plan (SATP) and applicable laws (for example, Section 4407 of P.L. 109-59, Title XI of the Alaska National Interest Lands Conservation Act, P.L. 96-487). (See DEIS Chapter 3, Transportation section.)

COMMENT

SPEC-31: Specific comment for Appendices A – K of the Forest Plan.

No appendix on transportation was developed or included. With a proposed major revision, such as the elimination of LUD, it would be helpful to review the analysis and decision-making that supports the major federal action.

RESPONSE

See response to TUS-1. Removal of the Transportation and Utilities System (TUS) overlay LUD was explained in the DEIS in Chapter 3, Transportation section. An analysis of Transportation System Corridor direction has been provided in the EIS.

See also response to PLR-1.

COMMENT

SPEC-32: Page-specific comment for Chapter 3 of the Forest Plan.

Page 3-10, Proposed Plan: We support the proposed decision to reference Title XI of the Alaska National Interest Lands Conservation Act (ANILCA) in the Wilderness LUD Standards and Guidelines. This change will ensure that the full context and process required in ANILCA is considered and followed when transportation and utility projects are proposed within conservation system units designated by ANILCA on the Tongass National Forest (i.e. designated Wilderness).

RESPONSE

Comment noted.

COMMENT

SPEC-33: Retain "adequate and feasible access for economic and other purposes" as it is the correct standard used for inholdings "effectively surrounded" by conservation system units (i.e. designated wilderness) in ANILCA section 1110(b). "Reasonable access" is the standard in ANILCA section 1323, which applies to general national forest lands; not designated wilderness.

RESPONSE

No change required. Adequate and feasible access for economic and other purposes in non-wilderness national monuments must be consistent with the Alaska National Interest Conservation Act of 1980 (ANILCA). The language included in the Forest Plan in TRAN (D) on p. 3-26 of the Proposed Forest Plan refers the reader to the wilderness LUD description. Management direction for Wilderness is included in Chapter 3 for Wilderness and National Monument Wilderness (Proposed Forest Plan, P. 3-19) and for Non-wilderness National Monument (Proposed Forest Plan, P. 3-29) where allowed by ANILCA.

COMMENT

SPEC-34: Plan direction in Chapter 3 should be changed related to rivers found eligible and suitable for inclusion in the Wild and Scenic River System in the 1997 Tongass Land Management Plan.

RESPONSE

See response to WSR-1.

COMMENT

SPEC-35: Page-specific comments for Chapter 4 of the Forest Plan.

Page 4-10, Chapter 4, Proposed Plan: Fish Habitat Planning, Fish Habitat and Channel Processes, part 3: ANILCA section 1326(b) expressly prohibits further studies for the single purpose of considering the establishment of a conservation system unit, which includes Wild and Scenic Rivers, unless authorized by ANILCA or a further act of Congress. Consideration of new wilderness or wild and scenic rivers in this context is inappropriate and we request the following revision:

> Consider topics such as erosion processes, watershed hydrology, vegetation, stream channel morphology, water quality, ~~wilderness designation, recommendations for inclusion into the Wild and Scenic River System~~, species and habitats, and human uses, during analyses.

RESPONSE

The requested change is outside of the scope of this amendment.

COMMENT

Page 4-31, Proposed Plan: III. Temporary Facilities. ANILCA section 1316 applies to all federal public lands where the taking of fish and wildlife is authorized but it does not differentiate between subsistence and non-subsistence use. We request the Service consider whether the distinction in this section is necessary or appropriate.

RESPONSE

The requested change is outside of the scope of this amendment.

COMMENT

Page 4-44, Proposed Plan: Chapter 4 Recreation Resource Planning: The following guideline appears to be relevant to ensuring safe access to communities and popular recreation areas. It is unclear why it is being removed. We request the Service re-consider and provide rationale if it is not retained in the final plan.

> *Support a system of anchorages suitable for recreation boats along small boat waterways that connect communities or provide access to popular recreation attractions.*

RESPONSE

This guideline will be retained in the 2016 Forest Plan in Chapter 4 under Recreation Resource Planning: REC2.

COMMENT

SPEC-36: Page-specific Comments for Chapter 3 of the DEIS.

Page 3-382, third paragraph, DEIS: We request the following edit for clarity and consistency with ANILCA sections 802 and 804:

> *It also states, in part, that "~~customary and traditional~~" subsistence uses of renewable resources "shall be the priority consumptive uses of all such resources on the public lands of Alaska when it is necessary to restrict take."*

RESPONSE

The requested change has been made in the Subsistence section.

COMMENT

Page 3-382, fourth paragraph, DEIS: We request the following edit for accuracy:

> This ruling took the state out of compliance with ANILCA and the federal government has managed harvest of subsistence resource s under federal subsistence regulations on federal lands in Alaska since 1990. As a result, federal subsistence harvests of fish and wildlife on the Tongass National Forest are presently managed by the Forest Service (Schroeder and Mazza 2005).

RESPONSE

This requested change was not made, but is very minor.

SPEC-37: Page-specific Comments for Climate and Air section of the DEIS from ADEC (SOA-034)

COMMENT

Page 3-16, paragraph three, sentence one, should read: "The State of Alaska Department of Environmental Conservation (ADEC) under the Clean Air Act (CAA), via Title I and Title 5 of the EPA approved State Implementation Plan (SIP) regulates air emissions from stationary sources."

RESPONSE

Comments from Alaska Department of Environmental Conservation provided clarifying language within the Climate and Air section of Chapter 3.1 found on pates 3-16, 3-18 and 3-19 of the DEIS. These clarifications have been incorporated into the FEIS.

COMMENT

Page 3-18, paragraph three, sentence seven, notes that " In an effort to better address the air quality concerns in the Wilderness, the Forest Service and ADEC enters into a Memorandum of Understanding each year to train Forest Service wilderness rangers to visually monitor cruise ship emissions with EPA-approved standards." This sentence should be updated to reflect that the MOU is static and does not get entered into each year.

RESPONSE

The sentence has been clarified as follows:
In an effort to better address the **visibility** concerns in the Wilderness **due to cruise ship smoke**, the Forest Service and ADEC **have developed** a Memorandum of Understanding to train Forest Service wilderness rangers to visually monitor cruise ship emissions with EPA-approved standards."

COMMENT

Page 3-19 paragraph one, sentence three, should read: "EPA and ADEC have limited regulatory responsibility, under the Clean Air Act, for air quality related to these kind of sources." This sentence was discussing indirect sources such as firewood burning and vehicle emissions.

RESPONSE

This sentence has been clarified as recommended.

COMMENT

Page 3-22, paragraph two, sentence five refers to "shrinking alpine habitats." This may need to be re-examined and perhaps changed to read "changing alpine habitats" to reflect the fact that glacier melting may expose new alpine habitat at a quicker rate than those of altitudinal forest shifts.

RESPONSE

Melting glaciers do not expose new alpine habitat but rather "new non-forested habitat" that quickly becomes vegetated. Some lateral edges of glaciers as they shrink may uncover "alpine" habitat as the ice may be of higher elevation, but the terminus of many glaciers is not alpine, but sea level. We clarified to read "**changing non-forested** habitats" Altitudinal forest shifts means the marching of shrubs and trees up in elevation. We do not have information as to which is faster, retreating glacier re-vegetation, or the shifting of the true alpine zonation.

COMMENT

SPEC-38: Page-specific Comments for Water section of the DEIS from ADEC.

Page 3-56, paragraph three, sentence two should read: "*Turbidity criteria indicate values will not exceed 5 nephelometric turbidity unites (NTUs) over natural conditions, when* ***natural*** *values are less than 50 NTUs.*" The original text used the word "nature".

Page 3-68, paragraph five, sentence two should read: “Landslide debris (e.g., sediment, large wood) that enters the stream may block or shift channels, fill pools, and **increase the presence of fine sediments** in the channel network.” The original text used the words “increases fines presences” which is grammatically cumbersome.

RESPONSE

Edits have been made.

COMMENT

SPEC-39: Page-specific comments on Appendix G of the DEIS from ADEC.

Appendix G, page G-11, M4(c) should be revised to read *“Measurements required by M4; a and b are from MHW (Mean High Water) to depths of **100** feet MLLW (Mean Lower Low Water).”*

RESPONSE

No justification was provided for making this change from 60 feet to 100 feet. The discussion on page G-11 under M4 reads, “Sixty feet below MLLW was selected because it is a depth at which repeated dives can safely be conducted.” No change was made.

COMMENT

SPEC-40: Typos for Appendixes of the DEIS from ADEC.

COMMENT

Draft EIS, Page A-1: An incorrect date of “June 23, 2016” is given for publishing the corrected Notice of Intent.

RESPONSE

Corrections have been made in FEIS.

COMMENT

Draft EIS, Page B-18: “Intermeidate” is misspelled.

RESPONSE

Corrections have been made in FEIS.

COMMENT

SPEC-41: Make Plan consistent with the TAC and the Roadless Rule.

To make the plan consistent with the Tongass Advisory Committee (TAC) recommendations and the Roadless Rule, the language regarding these areas should be clarified to ensure that there should be no old-growth sales planned in these areas at any point during the transition or after.

We recommend that the language on page A-4 of the Proposed Plan be changed to better reflect the recommendation of the Tongass Advisory Committee to ensure that all of these places are protected: "*Within Development LUDs, the following old-growth stands (as shown on maps in the planning record) are identified as NOT suitable for timber production: (1) Phases 2 and 3 of the 2008 Forest Plan Timber Sale Program Adaptive Management Strategy; (2) Trout Unlimited T77 watersheds; and (3) The Nature Conservancy/Audubon Priority Conservation Areas.”*

RESPONSE

Corrections have been made in the Forest Plan based on the Final Tongass Advisory Committee recommendations (see Appendix A and B of the Forest Plan).

COMMENT

SPEC-42: In chapter 5, there is a need for an addition of some specific language in the recommendations that should be included in management approaches for young growth.

In chapter 5, there is a need for an addition of some specific language in the recommendations that should be included in management approaches for young growth, as well as included in each section in chapter 5 where management approaches are outlined.

The language that should be included is the language that deals with doing post-project/after- action reviews. There is good language in this section on pre-project collaboration and planning and the TAC recognizes the way the Forest Service has integrated our comments on these concepts. However, the "after project review" was missed which specifically speaks to our intent that young growth projects (especially in the unsuitable lands) will need to go through a period of experimentation and innovation. In order for each project to increase the knowledge of how to do these projects better and learn from what was successful and unsuccessful, after- action reviews will all stakeholders need to be conducted.

Additions:

The following language from the TAC recommendations should be included:

- Working with project collaboratives, prepare pre- and post-project reports to the public about what was planned, what happened with the project or activity. Highlight positive results, such as collaborative planning, restoration, workforce development, jobs, and injection of capital into the economy and identify areas not meeting expected outcomes in order to address options through future efforts
- Design and implement a simple after-action review with project collaborators for the purpose of identifying opportunities to make the projects achieve better outcomes in terms of efficiency and effectiveness. Document and share.

See response to CONS-4.

RESPONSE

Collaborative approaches to engaging the public and assessing the impacts of federal actions under the National Environmental Policy Act (NEPA) can improve the quality of decision-making and increase public trust and confidence in agency decisions, and we believe that this plan provides opportunities to do that. One of the primary goals of NEPA is to encourage meaningful public input and involvement in the process of evaluating the environmental impacts of proposed federal actions. The NEPA process is a public process, and the Forest Service is required to "encourage and facilitate public involvement in decisions which affect the quality of the human environment" (40 CFR 1500.2(d)).

We appreciate these recommendations, but have not included them in the 2016 Forest Plan. The responsible official may identify the need for post-project collaboration as the Forest begins to implement the 2016 Forest Plan. If the responsible official believes that this is needed, management approaches may be addressed through an administrative change to the plan.

COMMENT

SPEC-43: Request for chapter 5 changes regarding high value watersheds.

Proposed Plan, Chapter 5, Plan Content Developed Under the 2012 Planning Rule, page 5-7 (High Value Watersheds)

Current language:

"It is expected that at the end of five years following the signing of the Record of Decision (ROD) for this proposed plan amendment, the Forest Service would conduct a trend analysis on the annual best

management practices (BMPs) monitoring of young-growth timber projects that intersect with the following watersheds…"

Replace with the following:

"It is expected that by the end of the five year period after the signing of the ROD, the Forest Service will conduct an internal scientific review together with the Tongass Transition Collaborative and other stakeholders to determine likely impact to fish and wildlife habitat from proposed young growth timber projects that intersect with the following high-value fish producing watersheds. If harvest is proposed in one of these watersheds, the USFS may apply additional standards or guidelines to mitigate risk to fish habitat, or may apply a "no net-loss" exchange for other areas for young growth harvest."

RESPONSE

Edits were made in the Young Growth Management Approaches in Chapter 5 of the Forest Plan that capture most of this recommendation. The Forest Service also added the following:

> "In addition, it is expected that at the end of five years and ten years following the signing of the ROD for this plan amendment, the Forest Service would conduct monitoring with stakeholders to determine if the young-growth goals are being achieved, and if not, adjust accordingly."

The need for additional standards or guidelines (plan components), other than the plan components that apply to the LUD where project takes place, would be determined through monitoring. A plan amendment is required to add plan components (36 CFR 219.13(a)). Applying a "no net-loss" exchange for other areas for young-growth harvest may be a project-specific mitigation measure.

COMMENT

SPEC-44: Proposed Plan Appendix A – Timber Production Land Suitability, Step 2 – Lands Suited and Not Suited for Timber Production Based on Compatibility with Desired Conditions and Objectives (FSH 1909.12, Section 61.2), Page A – 4, Item 3. B.

Current language:

"Within Development LUDs, old-growth stands in Phases 2 and 3 of the 2008 Forest Plan Timber Sale Program Adaptive Management Strategy, in the Trout Unlimited TU77 watersheds, and in The Nature Conservancy/Audubon Priority Conservation Areas (as shown on maps in the planning record) are identified as NOT suitable for timber production, except for small sales after the transition is complete. Young-growth stands in all of these areas are identified as suitable for timber production."

Replace with the following:

"Within Development LUDs, old-growth stands (as shown on maps in the planning record) in (1) Phases 2 and 3 of the 2008 Forest Plan Timber Sale Program Adaptive Management Strategy, (2) the Trout Unlimited TU77 watersheds, and (3) The Nature Conservancy/Audubon Priority Conservation Areas are identified as NOT suitable for timber production. Young-growth stands in all of these areas are identified as suitable for timber production."

RESPONSE

Edits were made in Appendix A of the Forest Plan.

COMMENT

SPEC-45: The draft TAC recommendations stated, "During the transition period, the annual timber volume target should be held constant. Subject to review of the DEIS, the TAC will recommend a volume target to hold consistent through the transition period." The TAC expected to see an analysis by the Forest Service of the effects of two different annual volume targets. The DEIS did not include an analysis of two volume targets, and the TAC was unable to reach consensus on an annual volume target. The range of annual volumes supported by individual TAC members for

analysis remains at 46MMBF – 70MMBF. We want to be clear that the TAC did not agree to a specific annual target.

RESPONSE

The PNW Research Station's most recent timber demand projections (Daniels et al., 2016) used to inform the EIS analysis include a baseline model and three different scenarios displaying alternative futures for Southeast Alaska. In the baseline model, 46 MMBF represents the annual average timber demand for Tongass timber over the next 15 years – with a range of 41 MMBF to 52 MMBF during the same time period. As the forest plan amendment interdisciplinary team began the amendment process and focused on timber market demand, 46 MMBF was used to inform timber objectives used during the planning process.

The Daniels et al. (2016) study of long-term timber demand projections is based on economic theory, peer-reviewed methodology, and scientific and objective analyses conducted by timber economists and forest researchers. Daniels et al. avoids recommending any one scenario as a "most likely" projection because of the relatively high degree of uncertainty surrounding developments in Southeast Alaska. The baseline model, however, utilizes historical datasets necessary to represent Southeast Alaska timber markets and assumes the timber industry in Southeast Alaska will remain at post-2008 recession levels for the next 15 years. As such, the baseline annual average of 46 MMBF timber demand from the Tongass is considered a conservative and rationale estimate. In addition, the 46 MMBF projection is not only represented in the baseline model, but it is also represented in all three scenarios at different points in time, and these scenarios represent alternative futures for timber harvest in Southeast Alaska.

COMMENT

SPEC-46: In forest-wide objective O-TIM-02 in Chapter 5 of the Forest Plan, clarify the difference between "annual market demand" and "projected timber sale quantity (PTSQ)". Based on the definition of PTSQ, the PTSQ timber volume is not a function of demand. Make two separate objectives to clarify this distinction.

RESPONSE

Forest-wide objective O-TIM-01 was written to be a "concise, measurable, and time-specific" statement to describe the timber outcomes expected. This forest-wide objective has been revised to avoid confusion.

Attachment A
Letters from Agencies, Elected Officials, and Tribal Governments

Date submitted (UTC): 1/31/2016 6:13:23 PM
First name: Rep.
Last name: Josephson
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email: Rep.Andy.Josephson@akleg.gov
Phone:
Comments:
Tongass National Forest Management Plan (due Feb 22, 2016)

Dear Ms. Howle:

I am not a scientist, a fisheries biologist, a timber man or an expert on forest ecology. I am an armchair observer of Tongass politics and the forest itself. I am a student of public policy and a citizen concerned with our future.

To the extent the following comments can be woven into others and into the USFS?s management plan update, I would appreciate it.

My own beliefs are that:

1) What we are doing as a people is not sustainable. The Earth wasn?t designed to hold $7 billion all vying for scarce resources. Pressures on those resources are being felt every day. Sometimes the wiser mover is the conservative one?conserving a resource. And more than Gifford Pinchot may have foreseen. To the extent possible, leave the Tongass Forest in tact, and alone.

2) Do not sell uncut timber, without value added, to overseas or domestic purchasers.

3) Do not clear cut old growth timber. Lesnoi on Afognak Island has done enough of that, as has SeaAlaska.

4) Tourists and cruise ship customers do not want to see denuded landscapes in SE Alaska. They just don?t.

5) Do not ever let heavy equipment be driven across a salmon stream.

6) Do not ever let trees be denuded right down to salmon banks.

7) Do not decimate the rest of SE the way that Prince of Wales Island has been. I personally told Secty. Vilsack when I met him in the Summer of 2014, that I hoped the USFS lost the litigation related to the Big Thorne harvest. He won, and I lost, apparently.

8) It?s ?o.k.? to say ?no?. It?s ?o.k.?

9) Alaska?s industry is already less than 10% of what it was. Don?t bring it back. The economy has adjusted. Just leave it alone.

10) Future generations will be unimpressed with the amount of wealth and comfort we?ve amassed since the Industrial Revolution. They?ll be more impressed with the natural beauty we protect.

Thanks for listening,

State Rep. Andy Josephson

Juneau, Alaska

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1689 C Street, Room 119
Anchorage, Alaska 99501-5126

VIA ELECTRONIC MAIL, NO HARD COPY TO FOLLOW

9043.1
ER 15/0644 February 17, 2016
PEP/ANC

Mr. Earl Stewart
Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Subject: Draft Environmental Impact Statement for the Tongass Land and Resources Management Plan Amendment, Alaska

Dear Mr. Stewart:

The U.S. Fish and Wildlife Service (FWS) has participated as a cooperating agency in developing alternatives and providing information for the U.S. Forest Service's (Forest Service) Proposed Land and Resources Management Plan (Forest Plan) amendment for the Tongass National Forest (Tongass) and the associated Draft Environmental Impact Statement (EIS) currently under review. The Department of the Interior (Department) appreciates the opportunity provided to the Department's FWS to serve as a cooperator. Our comments focus on areas of continuing concern and are based on our authorities under the Fish and Wildlife Coordination Act and the National Environmental Policy Act.

General Comments

The Forest Plan amendment is intended to help accelerate transition away from harvest of old-growth forest, in favor of greater reliance on second-growth or "young-growth" forests that have regenerated following timber harvest. The Department fully supports this goal, as it has excellent potential to reduce impacts of the Forest Service's timber program on fish and wildlife. We understand that a secondary purpose of the Forest Plan amendment is to facilitate development of renewable energy on the Tongass.

Old-growth logging on the Tongass has been controversial, in part due to direct and indirect impacts to fish and wildlife caused by clearcut logging and the roads associated with logging. In response to these concerns, the Forest Service developed the Tongass Old-Growth Conservation Strategy (conservation strategy) in partnership with the FWS, the State of Alaska, and others, as part of the 1997 Forest Plan. This conservation strategy features a network of old-growth

reserves (OGR) and other non-development land use designations to protect important habitat and corridors connecting the reserves. The conservation strategy also includes a suite of standards and guidelines that direct how timber harvest and other activities must be conducted to reduce impacts to vulnerable species. The conservation strategy remains an integral part of the current (2008) Forest Plan. The notice of intent (NOI) for the current Draft EIS states, "It is not expected that changes made to the Tongass Forest Plan will affect the overall integrity of the Plan's conservation strategy." We are concerned that some elements of the proposed action, (Draft EIS Alternative 2, p. 2-14) or the Forest Service's preferred alternative (Draft EIS Alternative 5, p. 2-31), could significantly weaken the conservation strategy, conflicting directly with the expectation stated in the NOI.

Below, we provide specific recommendations regarding clearcut logging and extensive commercial thinning without appropriate slash treatments in riparian management areas, beach and estuary fringe, and OGRs. We recommend development and selection of an alternative that avoids sensitive areas and important habitats for any renewable energy or transportation projects approved under the Forest Plan. We also recommend that specific elements of the conservation strategy be updated with the best available scientific data and strengthened by incorporating experience from the last 20 years of management, specifically where available information suggests the current conservation strategy is not adequate to sustain vulnerable species.

Specific Comments

<u>Riparian, Beach and Estuary Fringe, and OGR Logging</u>

Riparian areas have been protected from logging to maintain water quality, streambank stability, and habitat for fish and wildlife across the country for many decades. The Tongass Timber Reform Act (TTRA, H.R. 987) has mandated protection of riparian buffers along fish-bearing streams and many of their tributaries on the Tongass since 1990. The TTRA buffers have been expanded for many channel types where scientific information or management experience showed that additional protection was warranted to minimize impacts from logging. These standards should be relaxed only if reliable scientific evidence clearly demonstrates that the protection is not necessary. Such findings are not presented in the Draft EIS. Also, the Draft EIS contains little evaluation of the consequences of relaxing the existing standards. We recommend the Final EIS include scientific or data-based recommendations supporting proposed management changes and provide a more robust discussion of impacts of proposed changes.

Beach fringe is defined in the Forest Plan as, "the area inland from saltwater shorelines that is typically forested." The current Forest Plan forbids clearcut logging within 1,000 feet of saltwater shorelines to protect habitat for many species of wildlife, including deer, bears, bald eagles, otters, geese, and many others. Both the proposed action and preferred alternative would allow clearcutting and commercial thinning in beach fringe. Large forest openings and extensive timber thinning without appropriate slash treatments can interfere with animal movements and increase vulnerability of some species to predation, harvest by humans, and/or exposure to deep snow and severe weather. We recommend that the selected alternative limit young-growth treatments to actions that maintain or improve wildlife habitat in beach and estuary fringe forest. We also recommend openings be limited to two acres or less in order to maintain hunting habitat for goshawks and provide thermal cover for deer. Moreover, we recommend that slash be

treated to allow unconstrained movement of deer, bears, wolves, and other species. We also recommend against creating openings in beach fringe where a corridor of mature or old forest less than 660 feet wide would be left, in order to maintain effective thermal cover (Concannon 1995).

Similarly, OGRs have been designated specifically to support wildlife dependent on old-growth forest. To achieve maximum conservation benefit, treatments in OGRs should be designed primarily to accelerate development of old-growth characteristics without compromising landscape connectivity and animal movement. For instance, thinning with slash treatment, pruning of lower branches to improve light penetration, small patch cuts, and narrow strip cuts might all be used to treat second-growth in OGRs to accelerate development of old-growth characteristics. We strongly recommend against creating large clearcut openings in OGRs, given the importance of this productive old-growth forest for a variety of species.

Management actions that reduce long-term habitat values (by clearcutting in riparian areas, beach fringe, or OGRs) or disrupt movement of animals through logged landscapes (by cutting in designated corridors such as beach fringe and riparian zones) could undermine the intent and the functioning of the conservation strategy. We recommend against allowing such actions, which we believe seriously compromise the integrity of the conservation strategy.

If inadequate young-growth timber is available to meet demands outside of riparian, beach and estuary fringe, and OGRs, we recommend that additional alternatives be developed to offer only the volume of young-growth that can be produced without impacting these sensitive areas. If necessary, additional old-growth could potentially be offered from areas with lower environmental sensitivity, to offset reductions in young-growth availability. We also recommend that one or more alternatives be developed to evaluate longer timber harvest transition periods, if necessary, to avoid creating large openings in these sensitive habitats.

Renewable Energy and Transportation Systems Corridors

All action alternatives identified in the Draft EIS would remove the Transportation and Utility Systems Overlay land use designation, which identifies “windows” where road and utility corridors are deemed compatible and “avoidance areas” where roads and other human infrastructure would conflict with other resource values. Current guidance would be replaced by direction in the Transportation Systems Corridors section, which is intended to facilitate the availability of Tongass lands for development of transportation systems (Proposed Forest Plan, pp. 5-13 to 5-15). The proposed direction removes constraints on development of roads and utility corridors, while adjusting management of other resources to allow development of these corridors.

We recommend that sensitive habitats be avoided when renewable energy facilities or transportation and utility corridors are proposed, studied, and ultimately developed. We support inclusion of plan components that require siting roads and other infrastructure outside of OGRs, beach fringe, designated wildlife corridors, and other sensitive areas unless an analysis demonstrates that there are no practical alternatives. The action alternatives evaluated in the Draft EIS do not appear to require this analysis, which leads to the presumption that construction of roads and renewable energy facilities are allowed wherever they may be proposed,

irrespective of habitat values. This proposed approach could undermine the integrity of the conservation strategy, which was designed to protect important habitat in specific locations from human impacts.

Updating Plan Components for Wildlife

Alexander Archipelago Wolf

Concerns over documented, unsustainable mortality of wolves on Prince of Wales Island have triggered several reviews, recently resulting in a petition to list the endemic Alexander Archipelago wolf as threatened or endangered under the Endangered Species Act. The latest FWS status assessment (FWS 2015) reviewed the status of the wolf across its range and for several discrete populations. The greatest concern continues to be for wolves on Prince of Wales and surrounding islands. The wolf population there appears to have declined from about 350 wolves in the 1990s and early 2000s to approximately 89 wolves in 2014 (FWS 2015). This decline is believed to be due to the combined effects of both legal and unreported (illegal) harvest of wolves, facilitated by an extensive network of logging roads and declining deer numbers, which in turn are associated with the loss of winter habitat and regeneration of young-growth forests in intensively logged areas. Despite concerns that the wolf population on Prince of Wales has declined and will likely continue to decline, the FWS did not list the wolf as threatened or endangered because loss of the Prince of Wales population is not expected to affect survival or vulnerability of the subspecies across the rest of its range (Federal Register 81(3), pp. 435-458).

Under the Forest Service's 1982 planning rule (47 FR 43037, Sept. 30, 1982), which continues to apply to most of the wildlife standards and guidelines in the proposed Forest Plan, the Tongass must be managed to provide for viable, well-distributed populations of native wildlife. We believe that this includes maintaining the wolf population on Prince of Wales Island. Implementation of existing standards and guidelines intended to protect wolves from unsustainable harvest and habitat loss appears to be inadequate for the wolves on Prince of Wales, given the population's documented decline. For example:

- Management of road densities to limit hunter and trapper access is recommended, but not required by the current standards and guidelines, and most areas on Prince of Wales exceed the recommended 0.7 to 1.0 miles of road per square mile;
- Maintenance of deer habitat capability (as calculated by the interagency deer habitat model) to sustain wolf populations and human hunters appears to be required by the current Forest Plan, but many areas fall short of the specified 18 deer per square mile. Recent timber sales have reduced deer habitat capability further; and
- A wolf habitat management program is to be developed where wolf mortality concerns have been expressed, but no such program has been developed despite repeated expressions of concern by the FWS, the Department, and others, as well as the completion of various interagency studies of wolf mortality.

The Forest Plan amendment process offers an opportunity to strengthen the wolf standards and guidelines to help the Forest Service maintain or increase the amount of secure and high-value habitat required to maintain a viable wolf population on Prince of Wales. We recommend that a

wolf habitat management program be developed, as recommended by the Forest Plan. The FWS can provide assistance in development of this management program.

Additionally, we recommend that road density guidelines be strengthened to require reduction of road densities where wolf harvest mortality exceeds sustainable levels in areas where roads provide access for wolf trapping. We also recommend that no future timber sales be allowed that reduce deer habitat capability in areas where it is already below levels believed to be necessary to support human hunters and wolves.

Queen Charlotte Goshawk

Standards for management of northern goshawk nesting habitat should also be updated to reflect the best available science. Much of the current science on management of goshawk nesting habitat in the coastal rainforests of the North Pacific coast is reviewed in McClaren et al. (2015). We recommend modification of two elements of the Forest Plan to better protect goshawks, which are vulnerable to habitat loss and disturbance from forest management practices.

Goshawks are known to forego nesting in years with low prey abundance and/or inclement spring weather. Nest sites are routinely inactive for a few years, then become active again when conditions are favorable. The current Forest Plan allows nest protections to be dropped after two consecutive years of inactivity. We strongly recommend that this standard be modified to protect documented goshawk nesting stands indefinitely, unless an active nest is detected elsewhere in the same goshawk territory. The FWS has worked with the Forest Service directly to develop suggested language for an updated plan component to accomplish this goal. We recommend that the modified standard be included in the selected alternative.

Fledgling goshawks typically learn to fly and hunt in an area of about 500 acres adjacent to their nest stand. Forest management to maintain suitable hunting habitat in the area around the nest is thought to be important for maintaining productivity of goshawk nesting territories. We therefore recommend that post-fledging areas around known or suspected nest sites be managed to prevent creation of large forest openings, which are avoided by goshawks.

Legacy Forest Structure

The current Forest Plan requires retention of legacy forest structure in old-growth harvest units greater than 20 acres, in areas where logging has been most intensive. The intent of this standard is to ensure that sufficient residual trees, snags, and clumps of trees remain in timber harvest units in watersheds that have had concentrated past timber harvest activity and are at risk for not providing the full range of matrix functions (Proposed Forest Plan, track changes version, p. 4-90). Areas of extensive young-growth, which will support increasingly greater proportions of the Tongass's timber harvest into the future, often lack adequate residual structure.

We strongly recommend that the selected alternative include updated Forest Plan components that restore habitat-related functions provided by older forest structure, where past logging has left large areas of young-growth. Retention of residual old-growth, supplemented by second-growth where inadequate old-growth remains, will help move harvested stands toward a

condition that will support a broader variety of wildlife in the future as retained young-growth stands mature.

Alternatives 3 and 4 in the Draft EIS would apply the existing legacy forest structure standards (designed for old-growth logging) to young-growth harvest (Draft EIS, Appendix F, pp 3-4). The existing standard requires retention of 30 percent of each harvested stand, in watersheds where the standard applies. We believe that a legacy forest structure standard designed specifically for young-growth harvest may not necessarily match existing standards and guidelines designed for old-growth logging. Instead, we recommend that new Forest Plan components consider the amount and distribution of residual old-growth and require retention of additional young-growth as necessary to meet the intent of the standard. This could reduce impacts on young-growth timber volume availability, while providing adequate structure to improve habitat values into the future. We encourage development of guidance on treatments that would accelerate succession of retained young-growth toward old-growth conditions. If retention of structure in young-growth stands would delay the transition to primarily young-growth harvest, we recommend additional alternatives that use a longer transition period be developed and fully evaluated.

Thank you for the opportunity to collaborate as a partner in your effort to amend the Forest Plan. If you have any questions on our comments, please feel free to contact Steve Brockmann, Southeast Alaska Coordinator for the FWS, at 907-780-1181 or at steve_brockmann@fws.gov.

Sincerely,

Philip Johnson, PhD
Regional Environmental Officer

cc: Jackie Timothy, Alaska Department of Fish and Game

Literature Cited

Concannon, J.A. 1995. Characterizing structure, microclimate and decomposition of peatland, beachfront, and newly logged forest edges in southeastern Alaska. PhD Dissertation, Univ of Washington. 325 pp.

McClaren, E.L., T. Mahon, F.I. Doyle, and W.L. Harrower. 2015. Science-based guidelines for managing northern goshawk breeding areas in coastal British Columbia. Journal of Ecosystems and Management 15(2):1-91.

U.S. Fish and Wildlife Service. 2015. Species status assessment for the Alexander Archipelago wolf (*Canis lupus ligoni*). December 2015. Alaska Region, Anchorage, Alaska. 162 pp.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL
AND PUBLIC AFFAIRS

February 22, 2016

M. Earle Stewart, Supervisor, Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, Alaska 99901

Dear Mr. Stewart:

Thank you for the opportunity to review the Draft Environmental Impact Statement for the Tongass Land and Resource Management Plan Amendment, Tongass National Forest, in southeast Alaska (EPA Project #14-0026-AFS). We have reviewed the Draft EIS in accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act. Specifically Section 309 directs EPA to review and comment in writing on the environmental impacts of major federal agency actions. Our review considered the evaluation of the anticipated environmental impacts, as well as the adequacy of the EIS in meeting procedural and public disclosure requirements of NEPA.

Based on our review, we have assigned the Draft EIS a rating of EC-2 (Environmental Concerns-Insufficient Information). We believe that the most recent, southeast Alaska-specific data and information should be incorporated into the climate and greenhouse gas analyses and discussion in the final EIS. An explanation of our rating system is enclosed (Enclosure 1). In general, we support the selection of the Forest Service and Technical Advisory Committee's preferred alternative, Alternative 5. We believe Alternative 5 meets the direction of Secretarial Memorandum 1044-009 by accelerating the transition to young-growth, while also providing greater flexibility for alternative energy projects, and appropriate review of inventoried roadless areas.

We appreciate the inclusion of a "track changes" version of the 2008 Forest Plan and the scoping and comment summary report (Appendix A) in the Draft EIS. These resources greatly facilitated our review. An Executive Summary would also have been helpful, especially to stakeholders who might not be able to review the full document. We recommend that an Executive Summary be included in the Final EIS.

As we stated in our scoping comments, we support appropriate updates to standards and guidelines that reflect the most recent management science regarding ecological services, climate change and resiliency. We also recognized the need for adequate socioeconomic analysis to promote the sustainability of Southeast Alaska communities, particularly tribal, low income and minority communities, dependent on timber harvesting and other activities on the Tongass. We believe the Tongass Amendment EIS adequately accomplishes this through the thorough analyses and evaluation of management alternatives, resources and projected outcomes and goals. We also appreciate that a broad range of potential activity types, such as communication sites, renewable power projects, and mining, as well as timber harvest were considered in this programmatic document. We believe doing so allows for greater disclosure to and participation of stakeholders, potential permittees and forest users.

Finally, we have recommendations for your consideration in the area of climate change and greenhouse gas emissions in the Final EIS. We appreciate the thorough discussion in the Draft EIS of the various factors that affect and drive climate in southeast Alaska. We also recognize that, in addition to the USDA Secretarial Memorandum 1044-009, another primary driver for undertaking this Forest Plan amendment is to consider changes in forest management and health as a consequence of a changing climate.

We believe the Affected Environment section contains adequate discussion of climate inputs and possible anthropogenic effects on climate. We recommend, however, that the most recent sources of data for Alaska be used wherever possible. For example, our own Climate Impacts in Alaska website (http://www3.epa.gov/climatechange/impacts/alaska.html) references the 2014 National Climate Assessment (http://nca2014.globalchange.gov/report/regions/alaska#intro-section), which states Alaska temperatures have increased approximately 3 degrees F in the last 60 years. Also, current data from The Alaska Climate Research Center indicates that while total mean seasonal and annual temperatures in Alaska from 1959 to 2014 reflect an increase in temperature, temperatures from 1979 to 2014 generally show a decline in mean seasonal and annual temperatures (http://akclimate.org/ClimTrends/Change/TempChange.html) in most of Alaska, including southeast Alaska. This trend, along with increased ice extent in the Bering Sea, differs from trends identified in the Arctic, such as increased temperatures and decreased overall Arctic ice extent. We believe assessment of climate change for the Tongass should be as specific to southeast Alaska as practicable.

The Final EIS might also consider the following additional factors for incorporation into the relevant air quality and climate change sections of the main document, or as an appendix. These include quantification of GHG emissions from the proposed action and appropriate quantitative or qualitative analytical methods to ensure useful information is available to inform the public and the decision-making process in distinguishing between alternatives and mitigations.

Thank you again for the opportunity to review the Draft Environmental Impact Statement for the Tongass Land and Resource Management Plan Amendment. Please contact Jennifer Curtis of my staff in Anchorage at 907-271-6324 or curtis.jennifer@epa.gov with any questions you may have.

Sincerely,

Christine B. Littleton

Christine B. Littleton, Manager
Environmental Review and Sediments Management Unit

Enclosure:
1. U.S. Environmental Protection Agency Rating System For Draft Environmental Impact Statements

Date submitted (UTC): 2/22/2016 12:00:00 AM
First name: Christine B.
Last name: Littleton
Organization: United States Environmental Protection Agency, Region 10
Title: Office of Ecysystems, Tribal and Public Affairs
Official Representative/Member Indicator:
Address1: 1200 Sixth Avenue, Suite 900
Address2:
City: Seattle
State: WA
Province/Region:
Zip/Postal Code: 98101-3140
Country: United States
Email: curtis.jennifer@epa.gov
Phone: 907-271-6324
Comments:
February 22, 2016

M. Earle Stewart, Supervisor, Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, Alaska 99901

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Thank you again for the opportunity to review the Draft Environmental Impact Statement for the Tongass Land and Resource Management Plan Amendment. Please contact Jennifer Curtis of my staff in Anchorage at 907-271-6324 or curtis.jennifer@epa.gov with any questions you may have.

Christine B. Littleton, Manager
Environmental Review and Sediments Management Unit

Enclosure:
1. U.S. Environmental Protection Agency Rating System For Draft Environmental Impact Statements

U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

Alaska State Legislature

Juneau Delegation
Senator Dennis Egan
Representative Cathy Muñoz
Representative Sam Kito III

State Capitol
Juneau, Alaska
99801-1182

22 February 2016

M. Earl Stewart
Forest Supervisor, Tongass NF
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Dear Mr. Stewart:

We are writing in response to the release of the Proposed Amended Land and Resource Management Plan (Proposed Forest Plan) and Draft Environmental Impact Statement (DEIS) for the Tongass National Forest. As you note in your release, the Proposed Forest Plan and associated DEIS are the first developed under the 2012 Planning Rule. We applaud your efforts and recognize the significance of charting a sound course for management activities in Southeast for the next 10 to 15 years.

As a delegation, we support a plan that manages for sustainability and encourages a viable and long-term timber industry that will provide jobs and opportunities for generations to come. In particular, we look forward to a plan that encourages renewable energy resource development and value-added timber processing so that, in keeping with Article VIII of the Alaska Constitution, these resources are used for the maximum benefit of Alaskans. We support local processing—turning timber into musical instruments, furniture, flooring, and other wood products—so that more Alaskans are employed for each acre harvested.

Providing clear and strategic guidance for the Tongass National Forest is an important priority for Southeast residents and businesses alike. We thank you for your attention to the public comments made on this issue and appreciate your diligence in incorporating this feedback into your final plan.

Sincerely,

Senator Dennis Egan	Rep. Cathy Muñoz	Rep. Sam Kito III
Senate District Q	House District 34	House District 33

CITY AND BOROUGH OF WRANGELL

INCORPORATED MAY 30, 2008

P.O. BOX 531 (907)-874-2381
Wrangell, AK 99929 FAX (907)-874-3952
www.wrangell.com

February 22, 2015

Forest Supervisor
Tongass national Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Re: Comments on Proposed Tongass Nation Forest Land and Resource Management Plan
And the draft EIS

Thank you for allowing us this opportunity to comment on the Proposed Tongass National Forest Land and Resource Management Plan and the draft EIS.

Our understanding is that the primary changes in this plan is focusing on the transition from harvesting old growth to young growth. But as a community who has experienced the downside of the lack of a supply of old growth timber, we are concerned in the ability of the USFS to provide an economically viable supply of young growth timber, and to do it within the 15 year time frame as charged by the Secretary of Agriculture. We are concerned that the inventory data is generalized, and therefore we support and encourage development of an accurate inventory of young growth availability.

This inventory is critical for a complete and accurate economic analysis of the transition on communities and industry. Loss of harvesting volume is not a result in decline in demand, it is a result from the loss of economic sales available to industry and the slow process the USFS undertakes to develop sales due to an ongoing fear of lawsuits. No business can operate economically in such an environment and thus the loss in industry opportunity.

- The plan fails to consider social and economic metrics to measure outcomes of the transition from old growth to young growth. Metrics showing the impacts to industry and also to communities.

- Appendix C Watershed Analysis: There has been so much discussion of late regarding "watershed" analysis and impacts within the T77 watersheds. Based on our own personal experience with the Wrangell Island Sale, an actual stream "watershed" for a harvest unit or harvest area, may be smaller than the T77 defined watershed. Yet the USFS is trying to utilize the T77 watershed analysis. The Plan needs to clarify its definition and use of watershed analysis vs. the T77 watersheds.

- We support the relaxation of Standards and Guides for the harvest of Young Growth during the transition in land use designations that may normally minimize or prohibit some commercial harvesting if it will provide economic sales of young growth timber.

- Appendix F Visual Priority Routes and Scenic Integrity. According to our Wrangell District, for some reason it appears that all of Wrangell's Forest Roads are designated a Visual Priority Route. While we agree that the main roads do have a visual preference, not all of the roads need to be classified a visual priority route to limit timber or other use. (Originally, some of these designations were going to be dealt with in the upcoming Wrangell Island Sale, but now we understand that will not happen and we have to address it here. Only the road management plan – what stays open, what will be closed and level of use will now be addressed in the Wrangell Island Sale.) For example, the back side of the Nemo-Skip Loop Road (6267) (From Turn Island where the road turns northeast back to intersection of #6265 to Earl West) is heavily timbered and more out of site out of mind and a good area in which to continue to permit timber harvest. Yes it is on a loop so makes for a fun day trip, but there is nothing wrong with timber harvesting. Questions can be answered with educational materials about timber harvesting practices and economic values to communities.
  Every road on Wrangell Island will meet one of the primary criteria for a visual priority route – for example the water routes of small and midsize boats. We are on an island. Timber roads climb mountains that provide views, over looks are created for turn outs for logging trucks and once trees are harvested, you can see the water. It does not mean that each road should be a visual priority route. All roads should be analyzed as a whole, and key stretches of roads identified. Off shoots of some of the priority roads that receive minimal traffic could be reclassified as non visual priority.

- Tourism is the big growth industry since supply of timber to harvest and political affects have reduced the opportunity for the timber industry. The plan also fails in considering the social and economic metrics to measure outcomes of tourism growth for communities and businesses and the impacts to recreational sites

We understand that the USFS has selected as its preferred alternative, Alternative 5 that was proposed by the Tongass Advisory Committee. While the Borough is not agreeing or disagreeing with that alternative specifically, we do understand that their proposed amendment included additional recommendations that were not necessarily "plan" amendments. Yet their recommendation was to be presented as a package. If Alternative 5 is implemented, we believe the other components of their recommendation, including the monitoring, bringing stakeholder participation in earlier in planning processes, USFS internal culture change, inventory assessments and social economic impact analysis are critical components of any plan implementation strategy.

Sincerely,

Jeff Jabusch
Borough Manager

CC: Mayor David Jack
Borough Assembly
Carol Rushmore, Economic Director/Planner

ORGANIZED VILLAGE OF KASAAN

P. O. Box 26-Kasaan * Ketchikan, Alaska 99950-0340
(907) 542-2230 * (fax) 907-542-3006

Mr. Earl Stewart, Tongass Forest Supervisor
Tongass National Forest
648 Mission St.
Ketchikan, Alaska 99901

February 29, 2016

Dear Supervisor Stewart,

The Organized Village of Kasaan, a federally recognized Tribe, is utilizing our "Government-to-Government" relationship requesting the United States Forest Service end "Old Growth" logging as soon as possible. We feel that the current program of Old Growth logging for fifteen plus year is too long. We feel that the transition out of Old Growth Logging needs to be reduced to five years maximum.

We would like to work with the USFS to develop a Land and Resource Management Plan that protects the resources that sustain the people who live in Southeast Alaska.
Our Tribal Citizens survive off the land and sea, this is our Traditional and Cultural Way of Life. We need to protect our natural resources so they will continue to provide for our future citizens.

Our priorities are everything that contributes to our way of life and this includes; Fish habitat: Sockeye, Chum, Coho, steelhead and Trout, these fish need good streams so they can reproduce, they need good healthy Watersheds.
Even the USFS is saying that the most valuable product on the Tongass National Forest is now Salmon. According to Mr. Medel, who is the Fisheries Manager for the Tongass, has stated that the Tongass produces 25 per cent of all salmon harvested in the Northeastern Pacific Ocean.

The USFS must ensure that the Tongass' 77 watersheds, Audubon Society and the Nature Conservancy priority conservation areas, Phase 2 and 3 lands, and roadless areas are taken out of the old growth timber harvest areas. There should not be any logging in those areas, to protect our wildlife habitat.
The Organized Village of Kasaan Tribal Council would like to invite you to a "Government-to-Government" Consultation on this issue as well as Kendrick Bay Mining issues.

Please let us know what date and time would work for you to meet with us. We are going t o be requesting a "Government-to-Government" Consultation meeting also with Matt Anderson, and we'd like to have both of you at this meeting.

If you have any questions and/or need any further information, please feel free to contact me.

Thank You,

Ronald Leighton
President
Cc: Matt Anderson, POW District Ranger

KETCHIKAN GATEWAY BOROUGH

RESOLUTION NO. 2641

A Resolution of the Assembly of the Ketchikan Gateway Borough, Providing Comment on the Proposed Amendment to the 2008 Tongass Land and Resource Management Plan

RECITALS

A. **WHEREAS**, the U.S. Forest Service 2008 Tongass Land and Resource Management Plan (Forest Plan) was evaluated in 2013, five years after its issuance, to determine if the Forest Plan needs to be adjusted; and

B. **WHEREAS**, during the 2013 evaluation, the Assembly provided comments through Resolution 2471-Amended; and

C. **WHEREAS**, based on information from the 2013 review and a memorandum from the Secretary of Agriculture, the Forest Plan is proposed to be amended; and

D. **WHEREAS**, the Alaska Miners Association (AMA) and the Alaska Forest Association (AFA) have provided comments on the proposed amendment; and

E. **WHEREAS**, the Ketchikan Gateway Borough Assembly supports these associations and encourages careful consideration of their comments.

NOW, THEREFORE, IN CONSIDERATION OF THE ABOVE FACTS, IT IS RESOLVED BY THE ASSEMBLY OF THE KETCHIKAN GATEWAY BOROUGH as follows:

Section 1. The Ketchikan Gateway Borough Assembly requests that the Forest Service make changes to the proposed TLMP plan amendment as follows:

1) Modify the proposed amendment to include mining. Changes in federal policy have resulted in significant adverse impacts to mining activities. The 2008 Forest Plan should be amended to include enforceable mechanisms designed to promote mineral and strategic mineral exploration and development, and realistic access to mining claims and mining development.

2) Include mining in the Multiple Use Strategy for the Tongass. Mining is not adequately considered in the Transition Plan Draft. The Tongass Transition Plan Final Environmental Impact Statement, or a Supplemental Environmental Impact Statement, should include language that that makes mining part of the Multiple Use Strategy for the Tongass.

3) Modify the Roadless Rule. By precluding the construction of roads and harvesting of timber through the 2001 Roadless Rule, the ability to access existing mining claims, and explore for new mineral resources is severely compromised. The rule should be modified to allow for road construction and timber harvest necessary to accommodate the needs of the mining industry.

4) Include renewable energy as part of the Forest Transition Plan. The Forest Plan presents barriers to the development of hydropower and transmission facilities that could be used to provide clean, renewable energy to mining operations and local communities in lieu of non-renewable, greenhouse gas producing diesel generation.

5) Conduct a comprehensive biomass study. The principal purpose of the proposed amendment to the Forest Plan is to transition timber harvest away from old growth and toward younger growth stands. A study should be performed to accurately determine the amount of marketable young growth timber that could reasonably be expected to be made available to local mills and contribution to local economies; and

6) Conduct an economic analysis of the transition plan's impacts. Harvesting and processing smaller diameter young growth timber requires significantly different tooling and harvest techniques, as well as market structure development. The transition plan should be based on a comprehensive and detailed economic analysis of how the proposed change will impact the existing timber industry and its potential for growth. Such an analysis must include an accurate estimate of the amount of marketable timber that would be made available under the transition plan.

KB02-005

Section 2. Distribution. The Borough Clerk is requested to send copies of this resolution to the Secretary of Agriculture; the Tongass Forest Supervisor; Senator Murkowski; Senator Sullivan; Representative Don Young; the Alaska Miners Association and the Alaska Forest Association.

Section 3. Effective Date. This resolution shall be effective upon adoption.

ADOPTED this 16th day of February, 2016.

for David Landis, Borough Mayor, Vice Mayor,

ATTEST:

Kacie Paxton, Borough Clerk

APPROVED AS TO FORM:

Scott A. Brandt-Erichsen, Borough Attorney

Klawock Cooperative Association, Tribe
310 Bayview Blvd. - P.O. Box 430
Klawock, Alaska 99925
Phone: (907)-755-2265 - Fax: (907)-755-8800

February 25, 2016

Mr. Earl Stewart, Tongass Forest Supervisor
Tongass National Forest
648 Mission Street
Ketchikan, Alaska 99901

Dear Supervisor Earl Stewart:

Many Americans do not realize that Indians, the first inhabitants of the land, were not granted full citizenship until 1924. By that time, the lands and waterways of Southeastern Alaska had been claimed by prospectors, canneries, cities and towns, and, finally, by the creation of the Tongass National Forest. Since they were not considered citizens, the Indians had little or no voice in what was happening to them. Even after citizenship, court decisions such as that in the Tee-Hit-Ton case, ruled that their fishing rights were noncompensable under the Fifth Amendment because Congress had never recognized those rights. [1]

I am submitting this letter to you on behalf of the Klawock Cooperative Association, utilizing our government-to-government relationship to urge the Forest Service to end old growth logging sooner, rather than later. Going forward, we need a land and resource management plan that protects the resources that sustain the people who live in Southeast Alaska. Continuing the current program of old growth logging at current levels for fifteen-plus years is far too long. The transition out of old growth logging needs to be reduced to five years maximum.

The Tribe's highest priority is salmon habitat. This habitat is in rapid decline. The degradation of environmental quality caused by population growth, climate change, economic development, and the politics of public policy are to blame.

The largest natural resource available to Klawock Tribal members is the Klawock River watershed, once the largest producer of salmon in the commercial fisheries and major subsistence fisheries resources for Prince of Wales Island. Subsistence fish species important to our citizens, which have been traditionally, and are currently harvested from the Klawock River watershed, include sockeye salmon, coho salmon and steelhead trout. Sockeye salmon, the most important fish resource for numerous communities on Prince of Wales Island, show historical Klawock watershed escapement estimates as high as 80,000 fish. In 2014 and 2015 the escapement was 6,196 and 8,800 sockeye salmon respectively.

The US Forest Service says the most valuable product on the Tongass National Forest is now salmon. Ron Medel is the Fisheries Manager for the Tongass. According to Medel, the Tongass produces 25 percent of all salmon harvested in the Northeastern Pacific Ocean. He's been studying this question since 2010. [2]

We must begin treating the salmon like the economic powerhouse and lifeblood of the indigenous people that is. The Forest Service must ensure that Tongass 77 watersheds, Audubon and The Nature Conservancy priority conservation areas, phase 2 and 3 lands, and roadless areas are taken out of the old growth timber pool. There should be absolutely no logging in those areas if we are to protect wildlife habitat. The logging of original

The Klawock Cooperative Association, ("the Tribe"), is a duly constituted Indian Tribe organized pursuant to the authority of Section 16 of the Act of Congress of June 18, 1934 (48 Stat. 984), amended May, 1 1936 (49 Stat. 1250). The Klawock Cooperative Association Tribal Council is a duly elected governing body of the Tribe, authorized to act by and on the behalf of its members.

productive old growth, according to the Forest Service, is listed at only eight percent; however, perhaps half of the rare big-tree old growth has been targeted and cut. These are the most important stands for fish, wildlife and ecosystem integrity.

We are at a critical juncture, the plans and policies we are discussing right now will reshape our land. While the intentions here are not to destroy the salmon, this crisis is centuries in the making.

Humans have conducted at least three full-scale experiments on how well salmon adapt to a changing landscape. Salmon failed each time, first in Great Britain, then New England, and now the Pacific Northwest. The strikingly similar history of salmon in these three regions carries clear implications for modern salmon recovery efforts. [3]

It is no secret that hatcheries are no substitute for lost habitat. These warnings continue to fall on deaf ears as small Tribal Governments and countless non-profits spin their wheels funding study after study, trying to stand between a threatened cultural icon and the failing policies that will inevitably lead to its extinction, all the while being thwarted by political agendas and bureaucratic inertia.

This juncture provides us with the burden of perhaps the greatest opportunity in the nation, if not the world, for protecting the largest intact temperate rainforest on earth. How we handle this crisis may foretell the fate of many other regions and ecosystems.

What does it say for the long-term prospects of endangered species around the world if one of the most prosperous regions of the richest country on Earth cannot accommodate its own icon species? [3]

Very Respectfully,

Lawrence Armour
Tribal Administrator
Klawock Cooperative Association

1. **Robert E. Price. "The Great Father in Alaska" *The Case of the Tlingit and Haida Salmon Fishery.* 1990. PG xiii – ix. (Foreword by Wallace M. Olsen, UAS). First Street Press, Douglas, Alaska.**

2. **Robert Woolsey. (2015, May 7). USFS Fisheries: Salmon top Tongass product. Retrieved from http://www.kcaw.org/2015/05/07/usfs-fisheries-tongass-lands-produce-ocean-wealth/**

3. **David R. Montgomery. "King of Fish" *The Thousand-Year Run of Salmon.* 2003. PG 3, 5. Westview Press, a member of the Perseus Books Group.**

The Klawock Cooperative Association, ("the Tribe"), is a duly constituted Indian Tribe organized pursuant to the authority of Section 16 of the Act of Congress of June 18, 1934 (48 Stat. 984), amended May, 1, 1936 (49 Stat. 1250). The Klawock Cooperative Association Tribal Council is a duly elected governing body of the Tribe, authorized to act by and on the behalf of its members.

LAWRENCE ARMOUR
KLAWOCK COOPERATIVE ASSOCIATION, TRIBE
310 BAYVIEW BOULEVARD
KLAWOCK, AK 99925

ATTN: EARL STEWART
FOREST SUPERVISOR'S OFFICE
TONGASS NATIONAL FOREST
648 MISSION STREET
FEDERAL BUILDING
KETCHIKAN, AK 99901-6591

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Ketchikan Indian Community
Cultural Resources Department
429 Deermount Street.
Ketchikan, AK 99901
(907) 228-9445

February 22, 2016

Forest Supervisor, Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street, Ketchikan, AK 99901

Re: Tongass Land and Resources Management Plan (Forest Plan) Amendment

Ketchikan Indian Community (KIC) has benefited by having USFS staff attend Tribal Council meetings reporting on activities and projects of concern to the tribe. Continuing to support this level of communication will inevitably lead to increased cooperation and collaboration between USFS and KIC in the coming months and years.

KIC is appreciative in general of the USFS's attempt on behalf of the general public to protect and preserve our National Forests for suitable and sustainable multiple use goals and objectives. Some of those Uses found listed in Chapter 2 for the Forest Plan (i.e. Biodiversity, Fish, Wildlife, Plants, Soil and Water, Wetlands Heritage Resources, Sacred Sites and Subsistence) to name a few of the twenty (20) Uses specified are very key to tribal members. It is important for USFS to remember that though "Timber" Use predominates the planning effort and staff resources "Timber" still only 1 out of 20 Multiple Uses specified to be managed for in the Tongass Forest Plan.

Timber harvest should not negatively impact the other identified goals and objectives of the Forest Plan disproportionate to its value, especially when it is not supporting a significant number of private sector jobs. It is my understanding that approximately half the trees logged on the Tongass are exported as unprocessed logs. On the surface this business model requires little long-term investment in Alaska and employs comparatively few Alaskans and potentially squanders a valuable resource.

Southeast Alaska's culture and economy is based on a well-functioning ecosystem. Ecosystem Services and the secondary benefits provided by a healthy forest include both the subsistence resources: fish, deer and berries, that fill freezers of many KIC members; and to employment opportunities and dollars brought in by tourism and fishing. To this end it would be desirable to focus forest management resources at restoring watersheds impacted by logging and support job creation in fishing, hunting, general outdoor recreation, renewable energy, mariculture and tourism.

In regards to the Forest Plan Preferred Alternative 5: There is concern over impacts to Riparian Management Areas (RMAs), especially Beach and Estuary fringe areas where the likelihood of damaging subsistence and cultural heritage resources is greater than upland areas. Nevertheless, Beach and Estuary fringe areas become less protected with this new Forest Plan. Additional

oversight by USFS staff would be essential to minimize impacts and mitigate damages of any land disturbing activity in Beach and Estuary fringe areas permitted under this new Forest Plan.

Another concern is what will be required to be monitored before during and after timber harvest, in other words the quality and quantity of monitoring. It is our understanding that a separate Monitoring Plan tied to this Forest Plan will be developed in the near future. In a recent meeting of TAC it was stated and not disputed that due to limited USFS staff some logging sites have in the past received only a windshield surveys, rather than boots on the ground for through and frequent inspections. We strongly encourage a robust monitoring plan and enough staff to be present at logging sites before during and after harvest. Supported by a budget that is adequate to accomplish this task, funded if necessary by increased fees paid by companies harvesting timber to allow for this monitoring and subsequent restoration. And that this Monitoring Plan be developed sooner rather than later and applied retroactively to timber sales approved and ongoing before such a Monitoring Plan is complete and approved.

Tribal Members especially those actively engaged in carving and weaving are extremely concerned over status of Yellow Cedar. Tlingit, Haida and Tsimshian people use the rot-resistant wood for canoe paddles and totem poles. They can take a lengthwise strip of bark from a living tree for weaving baskets and hats, and as backing in blankets. The tree can compartmentalize the injury and continue growing. However, the yellow cedar's shallow roots make the tree vulnerable to changes brought on by climate warming. It is our understanding that the USFS has been studying yellow cedar decline in Southeast Alaska for many years. A 2014 USFS finding document states "substantial information indicating that listing this species may be warranted". If this is the case, and tribal members feel that it is, the Forest Plan should limit timber harvest of healthy Yellow Cedar until this issue of decline can be addressed. With the goal of maintaining healthy stands of Yellow Cedar wherever possible for as long as possible.

KIC does not outright oppose the Timber Industry but desires harvesting to be done in a sustainable way rather than driven by short-term economic gain for a relative few companies and individuals. We strongly encourage USFS to only implement forest management actions that protect and maintain, subsistence and cultural values. Southeast Native Alaskans, and other people groups derive significant value from a healthy Tongass National Forest and surrounding ecosystem. Keeping it that way is essential for what KIC Leadership considers "Our Way of Life".

I am appreciative of the opportunity for review documentation and to provide input.

Sincerely,

Tony R Gallegos, Cultural Resources Director
Work: (907) 228-9445
Email: tgallegos@kictribe.org

CITY OF KETCHIKAN, ALASKA

RESOLUTION NO. 16-2618

A RESOLUTION OF THE CITY OF KETCHIKAN, ALASKA PROVIDING COMMENT ON THE PROPOSED AMENDMENT TO THE 2008 TONGASS LAND AND RESOURCE MANAGEMENT PLAN; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the U.S. Forest Service 2008 Tongass Land and Resource Management Plan (Forest Plan) was evaluated in 2013, five years after its issuance, to determine if the Forest Plan needs to be adjusted;; and

WHEREAS, based on information from the 2013 review and a memorandum from the Secretary of Agriculture directing the transition to young growth, the Forest Plan is proposed to be amended; and

WHEREAS, the Alaska Miners Association and the Alaska Forest Association have provided comments on the proposed amendment; and

WHEREAS, the Council of the City of Ketchikan supports these associations and encourages careful consideration of their comments.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Ketchikan, Alaska as follows:

Section 1: The Council of the City of Ketchikan, Alaska, requests that the Forest Service make changes to the proposed TLMP plan amendment as follows:

1. Modify the proposed amendment to include mining. Changes in federal policy have resulted in significant adverse impacts to mining activities. The 2008 Forest Plan should be amended to include enforceable mechanisms designed to promote mineral and strategic mineral exploration and development, and realistic access to mining claims and mining development.

2. Include mining in the Multiple Use Strategy for the Tongass. Mining is not adequately considered in the Transition Plan Draft. The Tongass Transition Plan Final Environmental Impact Statement, or a Supplemental Environmental Impact Statement, should include language that makes mining part of the Multiple Use Strategy for the Tongass.

3. Modify the Roadless Rule. By precluding the construction of roads and harvesting of timber through the 2001 Roadless Rule, the ability to access existing mining claims and explore for new mineral resources is severely compromised. The rule should be modified to allow for road construction and timber harvest necessary to accommodate the needs of the mining industry.

4. Include renewable energy as part of the Forest Transition Plan. The Forest Plan presents barriers to the development of hydropower and transmission facilities that could be used to provide clean, renewable energy to mining operations and local communities in lieu of non-renewable, greenhouse gas producing diesel generation.

5. Complete a comprehensive biomass inventory. The principal purpose of the proposed amendment to the Forest Plan is to transition timber harvest away from old growth and toward younger growth stands. An inventory should be performed to accurately determine the

amount of marketable young growth timber that could reasonably be expected to be made available to local mills and contribute to local economies; and complete an accurate inventory of all merchantable and economically marketable old growth timber that can contribute to sustaining local communities.

6. Complete an economic analysis of the transition plan's impacts. Harvesting and processing smaller diameter young growth timber requires significantly different tooling and harvest techniques, as well as market structure development. The transition plan should be based on a comprehensive and detailed economic analysis of how the proposed change will impact the existing timber industry and its potential for growth. Such an analysis must include an accurate estimate of the amount of marketable timber that would be made available under the transition plan. Such analysis must include determination of the amount of federal funding required to meet the plan's goals and outputs annually over the planned period.

Section 2: The city clerk is requested to send copies of this resolution to the Secretary of Agriculture; the Tongass Forest Supervisor; Senator Murkowski; Senator Sullivan; Representative Don Young; the Alaska Miners Association and the Alaska Forest Association.

Section 3: This resolution shall become effective immediately upon passage.

PASSED AND APPROVED by a duly constituted quorum of the City Council for the City of Ketchikan on this 18th day of February, 2016.

Lew Williams III, Mayor

ATTEST:

Katherine M. Suiter, City Clerk

CITY of KUPREANOF
PO BOX 50
PETERSBURG, ALASKA 99833
PHONE : 907-340-2400

Earl Stewart, Forest Supervisor
Tongass National Forest
648 Mission St.
Ketchikan, AK 99901
Re: Tongass Land and Resource Management Plan

comments-alaska-tongass@fs.fed.us

February 22, 2016

Dear Mr. Stewart,

The City of Kupreanof respectfully submits the following comments in response to the Draft Environmental Impact Statement (DEIS) of the Proposed Tongass Land and Resource Management Plan (LRMP). Due to the past half century of politically-driven decisions of your predecessors to sign-off on unsustainable, large-scale industrial clearcutting of the Tongass National Forest, our island ecosystems have been tragically compromised on an island-wide, landscape level of impairment. Elsewhere whole watersheds have been rendered incapable of maintaining stable and productive populations of Sitka blacktail deer and are no longer capable of meeting basic local subsistence needs.

The entirety of nearby Mitkof Island has suffered the most restrictive season and bag limits in all of Southeast for the last 45 years. These restrictions to local hunters remain in place to this day even after a total hunting closure which lasted over 17 years. Previous to large-scale clearcutting which targeted low elevation, high volume old growth on Mitkof island, the area provided among the most abundant deer populations in all of Southeast Alaska.

In 1961, the Alaska Department of Fish and Game (ADFG) published a statistical summary of the season's deer hunter harvest in all Southeast communities. In terms of hunter success, Petersburg ranked the highest of all communities of Southeast with a hunter success rate of 97%.

In 1961 Petersburg ranked the highest of all communities of Southeast in terms of highest average number of deer per hunter, (3.5 deer per hunter), with a season total of over 1922 deer by 549 hunters.) However, in 2012, 147 hunters on Mitkof Island required 565 deer hunter days to harvest just 22 deer.[1]

To make matters worse, in 2013, even as the remaining high value old growth timber was being clearcut (Tonka Timber Sale) on nearby Lindenberg Peninsula, the same hunting restrictions were imposed by emergency order and remain in place for the foreseeable future.

Other old growth dependent species such as the Alexander Archipelago wolf (*Canis lupus ligoni*) of Prince of Wales Island (Unit 2), face such precipitous declines in the face of large scale timber extraction in the on-going Big Thorne Timber Sale, that according to ADFG wolf researcher, Dr. David Person,

> *"the Big Thorne timber sale, if implemented, represents the final straw that will break the back of a sustainable wolf-deer predator-prey ecological community on Prince of Wales Island…"*

Still other old growth dependent species such as marten, Queen Charlotte goshawk, and several other species demonstrate population declines consistent with biological research demonstrating the debilitating effects of habitat fragmentation resulting from even age (clearcutting) management and the associated logging road system.

Despite these documented failures of an agency whose byline is, "Caring for the Land, and Serving People", the United States Forest Service (USFS) remains committed to singling out the Tongass as the only public forest in the entire National Forest System in which large scale industrial old growth timber extraction continues apace, while being fully aware of long-standing negative, economic, environmental, and social consequences.

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[1] ADF&G, 2014. Deer hunter survey summary statistics. Alaska Dept. of Fish and Game. Division of Wildlife Conservation. Juneau. WINFONET database.

The problem of even age management was identified in the early 1960's and summarized in a technical report produced by ADFG back in 1985, titled, *"The impacts of Clearcut Logging on the Wildlife Resources of Southeast Alaska."*

The very first paragraph to the introduction of this report states,

> *"Logging, as currently practiced and planned in southeast Alaska, has the potential to significantly and permanently alter large amounts of wildlife habitat.Wildlife species which are adapted to use existing habitat may decline and associated recreational and subsistence uses may be substantially reduced."*

So it cannot be said, the large scale mismanagement which has occurred on the Tongass was not well known, nor its actions constituted unintended consequences. Rather, the agency has consistently operated and remains, in a state of regulatory capture[2].

"Addressing sustainable forestry in Southeast Alaska"

An industry-wide shift out of old growth logging to second growth was first pitched by the agency in 2010 at the Tongass Futures Roundtable (TFR.) Within 3 years, the TFR was disbanded, but barely two months later, Secretary Vilsack's Memorandum of 2013[3] was issued. In that memorandum, radical revisions of the timber industry were outlined, with the execution of the Big Thorne Timber Sale (the largest timber sale in well over a decade) pitched as the first step in "addressing sustainable forestry."

The Memorandum included an entreaty to Congress to legislatively eliminate the silvicultural standard known as CMAI, or Cumulative Mean Annual Increment, which represented the methodology for maximizing timber yield by ensuring that timber would not be cut prior to achieving its greatest rate of regrowth. The consequences of this revision means that all second growth (rebranded as "young growth") would no longer be managed to achieve the crucial structure, function, or compositional characteristics which old growth dependent wildlife of our coastal temperate rainforest have adapted to and require in order maintain, "viable, well distributed populations" as promulgated in the National Forest Management Act of 1976 (NFMA.)

The consequence of this Secretarial edict constitutes nothing less than a permanent conversion of the (formerly) highest value, most biological productive old growth habitat

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[2] https://en.wikipedia.org/wiki/Regulatory_capture

[3] Secretary's Memorandum 1044-009 "Addressing Sustainable Forestry in Southeast Alaska"

of the Tongass National Forest into corporate tree plantations which are incapable of functioning under the mandate of Multiple Use, and incapable of maintaining the sustainable yield of old growth dependent plants and animals central to subsistence needs of rural residents.

Ultimately, the "Transition" was re-pitched at the Tongass Advisory Committee (TAC), a full 6 years after its announcement at the TFR and is now found in the DEIS Proposed Amendment to the LRMP. The public has been reassured in this document with terms such as "Transition," "Stewardship," and "Restoration."

The terms seem to indicate an (albeit after-the-fact) agency acknowledgement that the decades of overwhelming public outcry over unsustainable old growth timber extraction has been heard, and an agency paradigm shift is afoot. Those familiar with corporate marketing tactics such as 'bait and switch,' 'rebranding,' and 'spin,' however, understand instead, that something else is *under*foot.

The TAC implementation, process, representation, and premises used to lend the patina of legitimacy and unbiased deliberation to the LRMP is a transparent demonstration of manufactured consensus for rubber stamping the predetermined outcome defined in Secretary Vilsack Memorandum.

These abuses of the Federal Advisory Committee Act (FACA) abetted by the agency's handpicked membership of the TAC demonstrate the agency intended from the outset to run roughshod over the intent of FACA. The LRMP DEIS itself, is fatally flawed in its Purpose and Need statement in that it excludes a full range of alternatives and with that, major disclosures of environmental impacts and the requisite "hard look" delineated in the National Environmental Policy Act. The National Forest Management Act, and other benchmark environmental and procedural laws in the pursuit of business as usual and it does not reflect well on the agency, nor the continued imposition of its failed business model on the regional economy, the environment, and the social wellbeing of Southeast Alaskans.

Economic Overview

A cursory overview of the LRMP, coupled with the documented historical record, demonstrates the Proposed Alternative reveals the actual shift away from industrial clearcutting of old growth will not occur for 15 years or more. This period of time will render moot what little remains of the existing old growth habitat, as it will be liquidated.

The agency allowance of up to 50% or more of raw log exports to China, Japan, South Korea and elsewhere continues. The net effect of these policies preclude the most viable options and opportunities for providing local small mill owners access to local old growth timber. The small mills cannot add sufficient value to young growth nor can they compete on the scales of volume necessary to remain competitive. The DEIS fails to provide the analysis necessary to examine these inevitable outcomes.

While the lion's share of the agency budget continues to increase the size of a burgeoning corporate tree plantation occurring within the most biologically critical, highest volume, easiest to access, low elevation watersheds, the industrial scale, even age management regime condemns present and future opportunities of local small mill owners from access to viable livelihoods.

Further, the DEIS fails to examine alternative economic scenarios in which forest dependent industries such as ecotourism, commercial fishing, recreation, sport hunting and fishing sectors are allowed to operate in an economic scenario free from the deleterious impacts of corporate tree plantations within the same landscapes.

Any objective analysis of the last fifty years of the timber industry in Southeast Alaska must conclude the wholesale felling and foreign export of the region's old growth rainforests allowed temporary profit taking for a few — while exerting a profoundly negative constellation of cultural, ecological, social, and economic consequences — for the many. On federal lands alone, a limited calculation of explicit economic consequences to U.S. taxpayers totaled over a billion dollars within a 30 year period [4] of federal timber sales. The implicit ecological and social subsidies remain unaccounted and largely ignored. The explicit economic subsidies to the timber industry are more aptly described as a corporate welfare system than an "industry" competing in the "free market."

For these reasons, the City of Kupreanof respectfully requests the USFS revisit its obligation to fulfilling the full intent of NEPA, NFMA, FACA, and the Administrative Procedures Act by abandoning the current DEIS and conducting a revised DEIS.

Sincerely,
David Beebe
Vice Mayor
City of Kupreanof

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[4] 1980-2010 Alaska Wilderness League akbriefing.wikispaces.com

Sitka Tribe of Alaska

Tribal Government for Sitka, Alaska

February 4, 2016

Earl Stewart, Forest Supervisor
Tongass National Forest
Attn: Forest Plan Amendment
648 Mission St.
Ketchikan AK, 99901

RE: Sitka Tribe's Comments on the DEIS for the Proposed Amendments to the TLMP

Dear Mr. Stewart,

I write on behalf of Sitka Tribe of Alaska (STA), tribal government for over 5,000 tribal citizens located in Sitka, Alaska. As a tribal government, STA is responsible for the health, welfare, safety and culture of its citizens. STA respectfully submits the following comments on the Draft Environmental Impact Statement (DEIS) for the proposed amendment to the Tongass Land Management Plan (TLMP).

The STA Tribal Council reviewed the DEIS for the proposed amendment to the TLMP with Sitka Ranger District staff at a February 2, 2016 government to government consultation. During the consultation the Council stated that they would be comfortable with alternative plan 4 or 5 as presented in the DIES. The Council also emphasized their support of any action that has the least impact on Sitka Blacktail Deer habitat.

If you have any questions regarding these comments contact STA's resource Protection Department Director Jeff Feldpausch at (907)747-7469 or email jeff.feldpausch@sitkatribe-nsn.gov.

Sincerely,

Michael A. Baines

Michael Baines
Council Chairman
Sitka Tribe of Alaska

Cc: Perry Edwards, Sitka District Ranger, Tongass National Forest

456 Katlian Street • Sitka, Alaska 99835 • (907) 747-3207 • Fax (907) 747-4915

Trust
Land Office

2600 Cordova Street, Suite 100
Anchorage, AK 99503
Tel 907.269.8658
www.mhtrustland.org

February 22, 2016

Re: Comments on Tongass Land and Management Plan, DEIS, November, 2015

Ladies and Gentlemen:

The Alaska Mental Health Trust Land Office (TLO) is submitting the following comments regarding the Tongass Land and Management Plan, Draft Environmental Impact Statement (DEIS), released November, 2015.

Significant Issues: **Timber Supply**

The proposed plan amendment is the implementation of a July, 2013 memo from the Secretary of Agriculture, Tom Vilsack (Secretary's Memorandum 1044-009) which directs the U. S. Forest Service (USFS) to transition its forest management program on the Tongass National Forest (Tongass) to a primarily young growth forest management program. The USFS has determined that this transition requires a forest plan amendment. The TLO manages lands for the Alaska Mental Health Trust and has been engaged in a proposed land exchange with the USFS for several years. This is referred to as the Alaska Mental Health Trust Land Exchange (Trust Land Exchange) within the DEIS. The USFS signed an Agreement to initiate a land exchange in June, 2015. The Trust Land Exchange is referenced throughout the DEIS and is considered a reasonably foreseeable action. Attached please find a letter dated November 19, 2013 from Secretary Vilsack to Senator Lisa Murkowski. In this letter Secretary Vilsack states:

> *"I appreciate your suggestions. As stated in my July 2, 2013 Memorandum 1044-099, Addressing Sustainable Forestry in Southeast Alaska, the transition of the Tongass timber program will be done in a way that preserves a viable timber industry so businesses can re-tool to process young growth timber efficiently.*
>
> *The proposed Trust Land Exchange, which was developed in collaboration with a variety of stakeholders and supported by the Tongass Futures Roundtable, would convey to the Department of Agriculture's Forest Service approximately 18,000 acres of Trust land adjacent to the communities of Juneau, Petersburg, Wrangell, Sitka, and Ketchikan, Alaska. Due to their proximity to communities, it would be difficult for most of these lands to be developed by the Trust in keeping with the Trust's mission. The 21,000 acres of national Forest Systems lands that*

would be conveyed to the Trust under the proposed exchange include approximately two-thirds old growth and one-third young growth timber, and are in areas more suitable for development.

I agree that the proposed land exchange could well serve the objectives outlined in my Memorandum:

1. *To seek opportunities to supply sufficient old growth "bridge timber" while the industry re-tools for processing young growth. The opportunity to use the exchange lands could help in providing part of the bridge to second growth.*
2. *Scenarios that effectuate a more rapid transition by prioritizing and developing additional young growth and restoration projects that could be completed over the next 5 years.*
3. *To intensify work with rural development to pursue opportunities to facilitate investments in re-tooling, and to develop by December 31, 2013, in collaboration with Rural Development and other stakeholders, a plan for providing financial assistance to re-tool timber processing equipment in Southeast Alaska to assist the industry to efficiently handle young growth timber.*
4. *To pursue partnerships with foundations, non-profits, corporations, and others to advance a second growth industry, undertake restoration projects, and otherwise speed the transition. This will include developing new markets for products developed by industry.*

Again, thank you for writing. An equal value land exchange between the Trust and the Forest Service will be properly and promptly considered. It will also help strengthen and diversify local economies throughout Southeast Alaska."

Thomas Vilsack
Secretary

The Secretary's letter states, "*I agree that the proposed land exchange could well serve the objectives outlined in my Memorandum.*" For this reason, the USFS needs to facilitate the Trust Land Exchange in the most expedient manner possible. The timber resources that will be made available through this exchange are critical to the preservation of the current Southeast Alaska forest products industry. Although the Sealaska Land legislation was passed by Congress, it only provides for the needs of one segment of the current industry. The current forest industry that is reliant upon public lands (including State and TLO) will have no timber that is NEPA cleared once the current contracts expire. Industry has stated that it will be out of wood in 2017.

"In choosing the timber sale offer level, it is important to anticipate the consequences of decisions. In terms of short-term economic consequences, over-supplying the market is less damaging than under-supplying it. If more timber is offered than purchased in a given year, the unsold volume is still available for purchasing off-the-shelf or re-offered at a minimal investment. However, a significant shortfall in timber supply available for harvest can be financially devastating to the industry." (Pg. G-8, DEIS Vol. II)

As stated in the DEIS above, *"a significant shortfall in timber supply available for harvest can be financially devastating to the industry."* Sufficient supply to industry is critical to achieving the objectives outlined in Secretary Vilsacks' memo. The DEIS, Table 3.12-12, uses a total estimated available volume of 136 MMBF from all landowners; it states 46 MMBF from the National Forest. Footnote 2 of the table says that 70 MMBF will be harvested on native corporation lands and 20 MMBF from State lands. Sealaska has announced on numerous occasions that it will harvest 45 MMBF annually from its lands to provide sustainable harvest levels. This leaves a shortfall of 25 MMBF per year. Village Corporation lands were harvested beginning in 1980; the earliest substantive volumes from that source will not be available until 2030 to 2040. The allowable harvest from all State lands controlled by the Division of Forestry in Southeast Alaska is about 20 MMBF, from all sources including the University of Alaska and the Alaska Mental Health Trust Lands (TLO). The University of Alaska has very limited resources to contribute to the annual harvest (traditionally less than 1 MMBF/year average), and the current AMHT timber is unavailable because of the on-going land exchange. For these reasons it appears a significant shortfall of timber supply will exist.

The Forest service has worked in good faith to comply with the Secretary's directive to preserve a viable timber industry. It is apparent, however, that the required timeline needed to complete NEPA projects and have second growth timber of sufficient size and age to supply timber to maintain the industry over time is rapidly dwindling. The USFS has historically been the sole supplier of timber to industry in SE Alaska. Although other landowners are diligently attempting to assist in this, the requirements of the Tongass Timber Reform Act (TTRA) Sec. 101 (Appendix E) and ANICA Section 705(a) (Appendix F) states that *"the secretary shall"* provide a supply of timber from the Tongass National Forest which meets annual demand and the market demand for each planning cycle. The USFS sharing this responsibility appears to be in conflict with this directive.

Significant Issue: **Young-Growth Transition**

The USFS is working collaboratively with the State of Alaska to do a comprehensive inventory of young-growth volumes available under the proposed plan amendment. There are currently no reliable growth models which accurately estimate the volume of timber per acre at a given age on the Tongass. The young growth timber volumes utilized in the DEIS use speculative estimates to determine the volume of wood which will be available at a given time.

The Secretary of Agriculture has directed the USFS to transition to young growth only timber harvest within 15 years. To aid in identifying a feasible transition strategy, the USFS formed the Tongass Advisory Committee (TAC). The TAC met in 2014 and 2015 and developed recommendations to facilitate the proposed transition. There was division within the diverse 15-member committee as to whether the proposed transition was possible within the specified timeline.

Several key issues were identified during the TAC meetings. The primary concern of the industry representatives on the TAC was the availability of young-growth timber of sufficient age to meet the required volumes to maintain the existing industry. Traditionally, silvicultural specialists on the Tongass recognized a rotation age (period of time between harvests) of 100 to 120 years. The vast majority of timber harvests on the Tongass occurred between 1955 and 1996. Simple math recognizes that the next rotation would then begin in 2055. This means that the large areas harvested starting in 1955 are only 61 years old. For this reason, the USFS worked with Congress to exempt limited areas of the Tongass from the Culmination of Mean Annual (CMAI) requirement. The relaxation of the CMAI requirements allows harvest of select areas at a younger age than federal requirements would normally allow. The TAC was concerned that early harvest of these stands would jeopardize later harvest volumes.

A review of the USFS supplied literature in the DEIS regarding young-growth volumes and availability is speculative. The TAC recognized that of the total 435,000 acres of potential young growth (YG) on the Tongass, only 273,000 acres are considered "suitable and available" (S&A) for timber harvest. Furthermore, out of the total 273,000 acres of S&A, only 186,000 are considered "Timber Management" Land Use Designation (LUD). This is only 43% of the lands previously harvested on the Tongass and does not account for the typical loss of acreage for various conservation issues that typically occur during timber sale preparation. To successfully implement the Plan Amendment, the recommendations of the TAC regarding "Old Growth Bridge Strategy" page 12, TAC Recommendations-May 2015 must be implemented. To maintain the required timber volumes, the TAC suggested that old growth volume be added during this transition period to supplement the available young growth volume.

Significant Issue: **Renewable Energy**

The development of renewable energy projects should continue on the Tongass. The development of bio-fuel/municipal waste power plants may provide a solution to the municipal waste being generated while utilizing wood which is not of sufficient size to meet saw log specifications. A facility such as this could be co-located with a forest product value-added facility. A proposed project of this nature is being considered in the Ketchikan Area. Facilities which can maximize utilization of all harvested fiber will be key in a successful transition (see economic discussion).

Significant Issue: **Economics**

The Economic and Social Environment section of the DEIS lacks substantive discussion of the cost to harvest, transport, and produce a manufactured product. The DEIS (Figure 3.22-5, page 3-451) shows significant reduction of timber harvest by all owners other than the State of Alaska. The discussion below this graph states that of the 22 active sawmills in 2007 only 10 remained active mills in 2014. Although the "Potential Lumber Markets" pg. 3-461 discussed potential markets for dimensional lumber, it did not include operational costs, cost of logs delivered to sawmills, or the cost of transporting product to markets. The difference in operational costs to an Alaskan facility conducting harvest operations and converting logs to lumber is considerably higher than its lower 48 counterpart. According to *Random Lengths*, a well-recognized sawmill trade journal, the average price for Composite Framing Lumber is $280 per thousand board feet (MBF). This average is over several decades. The USFS has failed to illustrate how an Alaskan sawmill with logging costs of $350 per MBF and $100 per MBF cost to convert logs to lumber and additional transportation costs can be economically viable producing composite lumber. If composite lumber is not the projected product, the DEIS fails to show an alternative product.

Note graphs on pages 3-482 and 3-483 (Net Revenue). Figure 3.22-17 is net revenue for Old Growth and Figure 3.2-18 is net revenue for Young Growth (YG). When you add the values together for a 5-year period, in most cases the total net revenue is negative in value. As an example, alternative 5 (preferred alternative) in years 16-20 (a period when the transition has been completed and YG makes up the majority of the volume being offered), the total net revenue sum is a negative $10 million. How can the USFS have a timber sale program that is negative value when Public Law 112-74, House Report 2055-257, Section 414 allows the USFS to offer only positive value timber sales?

Conclusion:

An analysis of the DEIS timber supply plan leaves serious concern of Forest Service's ability to obtain Secretary Vilsack's directive to transition its forest management program on the Tongass National Forest (Tongass) to a primarily young growth forest management program. The Tongass has arbitrarily chosen 10 to 15 years to achieve this objective. The DEIS has not demonstrated that it can achieve this objective and maintain the current SE Timber Industry.

To successfully implement the Plan Amendment the Forest Service should:

- Implement all recommendations of the TAC; especially regarding "OGR's, RMAs, Outside of TTRA, and Beach Buffers"; page 11 and "Old Growth Bridge Strategy" page 12; TAC Recommendations-May 2015.

- Finalize partnerships which collaboratively work with the other Landowners, State of Alaska, Sealaska Corporation, Alaska Mental Health Trust, and University of Alaska.
- Expedite the finalization of the Alaska Mental Health Trust Land Exchange, AMHT Land Exchange (5X-18).

Sincerely,

John Morrison
Executive Director
Trust Land Office

Attachments:
Alaska Board of Forestry Letter - 1/25/2016
USDA, Vilsack, Letter to Senator Murkowski - 11/19/2013

Date submitted (UTC): 1/31/2016 6:13:23 PM
First name: Rep.
Last name: Josephson
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email: Rep.Andy.Josephson@akleg.gov
Phone:
Comments:
Tongass National Forest Management Plan (due Feb 22, 2016)

Dear Ms. Howle:

I am not a scientist, a fisheries biologist, a timber man or an expert on forest ecology. I am an armchair observer of Tongass politics and the forest itself. I am a student of public policy and a citizen concerned with our future.

To the extent the following comments can be woven into others and into the USFS?s management plan update, I would appreciate it.

My own beliefs are that:

1) What we are doing as a people is not sustainable. The Earth wasn?t designed to hold $7 billion all vying for scarce resources. Pressures on those resources are being felt every day. Sometimes the wiser mover is the conservative one?conserving a resource. And more than Gifford Pinchot may have foreseen. To the extent possible, leave the Tongass Forest in tact, and alone.

2) Do not sell uncut timber, without value added, to overseas or domestic purchasers.

3) Do not clear cut old growth timber. Lesnoi on Afognak Island has done enough of that, as has SeaAlaska.

4) Tourists and cruise ship customers do not want to see denuded landscapes in SE Alaska. They just don?t.

5) Do not ever let heavy equipment be driven across a salmon stream.

6) Do not ever let trees be denuded right down to salmon banks.

7) Do not decimate the rest of SE the way that Prince of Wales Island has been. I personally told Secty. Vilsack when I met him in the Summer of 2014, that I hoped the USFS lost the litigation related to the Big Thorne harvest. He won, and I lost, apparently.

8) It?s ?o.k.? to say ?no?. It?s ?o.k.?

9) Alaska?s industry is already less than 10% of what it was. Don?t bring it back. The economy has adjusted. Just leave it alone.

10) Future generations will be unimpressed with the amount of wealth and comfort we?ve amassed since the Industrial Revolution. They?ll be more impressed with the natural beauty we protect.

Thanks for listening,

State Rep. Andy Josephson

Juneau, Alaska

VALUES IN ACTION
SEALASKA

February 22, 2016

Mr. Earl Stewart, Forest Supervisor
Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Comments-alaska-tongass@fs.fed.us

RE: Comments on November 2015 Proposed Tongass National Forest Land And Resource Management Plan Amendment and Draft Environmental Impact Statement

Dear Mr. Stewart:

This letter is in response to the November 20, 2015, Federal Register Notice of Availability of the November 2015 Draft Environmental Impact Statement ("EIS") for the proposed Tongass National Forest Land and Resource Management Plan ("Tongass Plan" or "Plan") Amendment ("Amendment"). Thank you for the opportunity to submit comments concerning the Draft EIS and proposed Amendment of the 2008 Tongass Plan regarding a transition to predominantly young growth timber harvest and management, renewable energy, and transportation and utility infrastructure.

A. Background on Sealaska Corporation's Interest in the Tongass Plan

Sealaska Corporation ("Sealaska") is the Alaska Native Regional Corporation for Southeast Alaska, representing more than 22,000 shareholders, predominantly of Tlingit, Haida and Tsimshian descent. The traditional homeland of the Tlingit, Haida and Tsimshian includes what is now the Tongass National Forest. Our people have been stewards of the lands and waters of Southeast Alaska for more than 10,000 years. Through the Alaska Native Claims Settlement Act ("ANCSA"), including the most recent amendments in Public Law 113-291 enacted in December 2014, we are completing the process of selecting and receiving title to roughly 365,000 acres of lands within the region. Thus, we are, at this point, the largest non-federal owner of forest lands in Southeast Alaska. Even as the largest non-federal land owner in the region Sealaska's ownership amounts to less than two percent (2%) of the traditional homeland of the Tlingit, Haida and Tsimshian peoples.

Sealaska is undertaking a transition to second growth timber management on our own lands and as such could offer perspective to public land managers. We have made a commitment to rural communities and to the timber industry to provide a predictable and

Sealaska • One Sealaska Plaza, Suite 400, Juneau, Alaska 99801-1276 • Tel: 907.586.1512 • Fax: 907.586.2304

sustainable level of harvest on an annual basis. To achieve this goal, Sealaska has committed to lowering its cut to forty percent (40%) of historic levels. Although this provides economic challenges, a lower harvest level will create a 20-25 year bridge that allows our business and industry partners to continue viable commerce until a large amount of second growth timber volume is available from both private and public lands. Sealaska cannot create this bridge without an equal or greater commitment from public lands.

Sealaska is a leader in forest products and forest land management as a result of development that we have pursued on our own lands, including young growth/second growth management and marketing. We have been engaged in scientific studies on our lands to determine the best practices for second growth management, habitat restoration, and healthy fish and wildlife populations. Sealaska is also a leader in development of biomass energy use. Together with the Sealaska Heritage Institute, we promote Alaska Native arts and ensure the protection of cultural and historical resources, including sacred sites. Sealaska has been an active participant in Tongass National Forest planning processes since the original Tongass Plan was issued in 1979, as well as additional consensus based efforts to address multiple uses in the Tongass such as the Tongass Futures Roundtable. Sealaska submitted comments and actively participated in the process for revising Forest Service land and resource management planning regulations associated with publication of final revised regulations that took effect in May 2012 (the "2012 Planning Rule").

Sealaska, on behalf of its shareholders, has important interests and concerns regarding federal management actions that can affect planning and management of the Tongass National Forest, Sealaska property, and other lands and waters in Southeast Alaska. Sealaska represents the unique and special relationship that the original human occupants and stewards of Southeast Alaska lands and waters have to these natural resources. We want to ensure that the Forest Service considers Sealaska's unique perspective based on our cultural, social, environmental and economic experience in the region, and our desire to provide due consideration to the needs of future generations in accordance with our core cultural value of *Haa Shuka*.

Sealaska's comments are based on our review, to date, of the Draft EIS and proposed Tongass Plan Amendment documents that have been made available for public review during this comment period, and reflect Sealaska's participation with the Forest Service and other stakeholders in meetings, discussions and through other communications since the issuance of the "Transition Framework" materials in 2010. They also reflect our long-standing, broad participation and interest in Tongass National Forest management. The comments in this letter are by no means exhaustive. At this stage, Sealaska would like to highlight some important points, but we look forward to further participation and collaboration during the EIS/Amendment process, including participation in the Tongass Advisory Committee ("TAC") and any offshoot of the TAC, and continued consultation with the Forest Service and Department of Agriculture officials.

In the comments below, references to the November 2015 Draft EIS for the proposed Amendment are denoted "Draft EIS." References to the November 2015

"Proposed Land and Resources Management Plan" document are to the "track changes" version provided for review, and are denoted "Proposed Plan."

B. General Comments

1. The Proposed Amendment and the Amendment Process

Sealaska has experience in young growth management transition and other components of the proposed Amendment. Subject to the Forest Service adequately addressing the concerns in our comments below, we may be able to generally support a Plan amendment along the lines of the proposed Amendment alternative and recommendations of the TAC, as set out in the TAC December 15, 2015 letter to Secretary Vilsack, Department of Agriculture, and the accompanying December 20-15 TAC Final Recommendations document. We want to express particular support for Forest Service's continued workforce development and training associated with the young growth transition and Plan amendment process, and also efforts towards improved stakeholder collaboration and community involvement in Tongass planning and management. These efforts are exemplified by the Hoonah Partnership co-management initiative, the 2015 Challenge Cost Share Agreement between the Alaska Division of Forestry and the Forest Service regarding further young growth inventory and related work, and by the TAC and the recently formed All Landowners Group.

Sealaska does have strong concerns and questions about the supporting analysis and practical viability of what is proposed for transition to predominant young growth harvest and other elements of the Plan Amendment proposed alternative and Draft EIS, as further described below in this letter. We question the assumptions and adequacy of the analysis in the Draft EIS regarding young growth timber inventory, the supply of timber from Native Corporation and other non-federal lands (which is overstated in the Draft EIS) and other assessments of demand, supply, economics, industry and community needs dependent upon Tongass timber harvest. We also have concerns regarding the need for broader active, realistic, and adaptive management of the Tongass. We also have a general concern that the proposed Amendment is in response to a directive from the Secretary of Agriculture, and is being pushed for completion according to a political timeline that may not yield a viable, sustainable transition amendment.

We also have concerns about use of the 2012 Planning Rule, in comparison with 1982 planning regulation provisions that remain in effect pending eventual revision of the Tongass Plan, in development of the proposed Amendment and in its implementation. These concerns include confusing descriptions in the Proposed Plan and Draft EIS documents regarding which standards and other requirements apply to various components of the Plan once the proposed Amendment would take effect, for purposes of project consistency determinations and other purposes.

Thus, as a general comment and as further explained in the more specific comments below, if the Amendment is going to be finalized in 2016, it should expressly incorporate completion of an updated field inventory of all young growth stands, updated yield/growth models, further review and analysis, and consideration of further subsequent Amendment based on those updated insights. This adaptive management component, which is entirely consistent with the 2012 Planning Rule and TAC recommendations, will

be needed to help assure that the transition timber base, schedule, and other components are economically and socially sustainable and do not result in the loss of the remaining Southeast Alaska forest industry and related community infrastructure over the next several years and beyond.

2. Providing for Alaska Native Interests through Consultation and the Tongass Plan

The final Amendment must provide a framework that accommodates and supports: 1) Tribal and ANCSA Corporation consultation; 2) conveyances of land entitlements pursuant to ANCSA; 3) access to and across national forest lands under Titles VIII and XI and Section 1323 of the Alaska National Interest Lands Conservation Act ("ANILCA") and other laws; 4) cultural and historic site protections; 5) rural resident subsistence hunting, fishing and gathering; and 6) other rights that are essential for Alaska Natives. The final Amendment should also provide for Tribal and Alaska Native Corporation partnership and collaboration with the Forest Service in national forest management. This includes, as part of young growth management transition and other components, providing a framework for entrusting stewardship of appropriate areas of the national forest and related programs to Native Corporations and Tribes, through co-management agreement, contracting and other mechanisms. This also includes Alaska Native Corporation and Tribal participation in management of sites of cultural and historic significance, including sacred sites.

Consultation, coordination and collaboration with Native Corporations and Tribes in planning and implementing national forest management is recognized and required in the 2012 Planning Rule as well as in Executive Order and statute. *See, e.g.*, 36 C.F.R. § 219.4. We are encouraged by Forest Service efforts in the Hoonah Partnership and other initiatives referenced above. Sealaska emphasizes the need for a final Amendment to clearly support continuation and building upon these efforts for successful implementation of young growth transition, renewable energy, transportation, and other components of the Amendment and broader Tongass Plan going forward.

3. Alaska Native Access to and Use of Forest Resources

Our people have lived and thrived here in this region for more than 10,000 years. Our cultural and social survival is dependent upon continued access to and use of the resources within the Tongass National Forest and throughout the region. Continued sustainable subsistence and commercial harvest of resources such as fish, game, berries, bark, monument and totem logs and other resources from the Tongass National Forest and waters by Sealaska's shareholders and other rural residents is important for individual health and community cultural and economic vitality. The Forest Service has recognized the importance of these resources in a video it produced in 2011, entitled "Living off the Land," and also generally in the proposed Amendment Draft EIS analysis of Southeast Alaska communities, subsistence, and other resources.

The final amended Plan must fully and clearly provide for continued subsistence and other sustainable harvest of national forest resources to meet Alaska Native and rural community needs and purposes, including those uses recognized under ANILCA. These uses must not be secondary or slighted in favor of "ecosystem diversity," "sustainable

recreation," or other non-consumptive use or preservation management concepts. Unlike most, if not all, national forests in the lower 48 states, communities throughout Southeast Alaska are largely surrounded by national forest lands, and depend predominantly on resources from the Tongass National Forest for actual survival, not to mention cultural, social and economic vitality. We strongly believe that the economic resiliency of Tongass communities needs to be addressed in appropriate balance with all of the other priorities, as the history of these communities provides significant value to the Tongass and many of these communities remain threatened by lack of economic opportunity.

C. Specific Comments

The following are Sealaska's more specific concerns and other comments at this point regarding the proposed Amendment and Draft EIS documents. These comments are by no means exhaustive and are not listed in any order of priority.

1. Amendment Process

The Proposed Plan and Draft EIS documents are, at minimum, a bit complex and confusing regarding: (1) what elements of the 2012 Planning Rule and which amended Plan components will apply to which areas and activities on the Forest; and (2) how 1982 planning regulations versus the 2012 Planning Rule Forest Plan consistency requirements will apply to implementing projects after the Amendment takes effect. Such confusion could generate substantial disputes, not to mention possible delay in successful implementation and effectiveness of Amendment components. A review of the text discussing these elements and some effort at simplification and clarification is needed at a minimum. *See, e.g.,* Proposed Plan, pp. 1-5 to 1-6 (Introduction), 6-2 (Implementation); Draft EIS, pp. 1-4; 2-3 to 2-4.

The Proposed Plan and Draft EIS documents reference that the Forest Service is engaged in updating the Tongass Monitoring Program to meet 2012 Planning Rule requirements concurrent with the Amendment effort, with a scheduled completion of May 9, 2016, to meet the target date for transition of forest plan monitoring programs under the 2012 Planning Rule ("Monitoring Program"). *See, e.g.,* Proposed Plan, p. 5-4. We understand that a public comment period is being provided for the proposed updated Monitoring Program prior to its finalization, which is essential, but are concerned that this update effort is not being more closely integrated with the Plan Amendment process and that it appears to be on a rushed schedule to meet the May 9, 2016 target date.

The Monitoring Program is an important and required component of adaptive management for the Tongass Plan. The TAC recommendations emphasize this component for a successful young growth transition, and Sealaska believes we can be an important collaborator in monitoring work. We understand that the 2012 Planning Rule establishes May 9, 2016 (four years after the effective date of the Rule) as a target date for updating the Monitoring Program. 36 C.F.R. § 219.12(c). However, some flexibility for exceeding this date is provided for based on practicability under the Rule and implementing Forest Service Handbook ("FSH") Directives. *Id.*; FSH 1909.12 (Chapter 30, Section 32.3, p. 31). Accordingly, we recommend that the Monitoring Program update not be finalized until a final Plan Amendment is issued, to help assure consistency and integration.

2. Young Growth Management Transition Issues

A final Tongass Plan Amendment should ensure that there is due consideration of best practices for the management of young growth forests through silviculture (thinning, pruning, planting) and habitat restoration. These management activities ensure a healthy forest and important habitat for the fish and wildlife resources that our Southeast communities rely upon. These activities also provide employment opportunities in our region.

Another important aspect of young growth management transition is the Forest Service understanding of the economic and market opportunities for young growth forests. A final Amendment should reflect sound review and analysis of available market data and the economic outlook for young growth forest products. This will assure that conclusions and resulting Amendment provisions are based on a realistic assessment of needs and criteria for a market for Southeast Alaska young growth in competition with other sources. It has been our experience that there needs to be a mix of activities in both old growth and young growth stands to ensure a viable timber program as well as to meet cultural and subsistence use needs and ecological management objectives.

In this context, the proposed Amendment alternative along with the TAC recommendations for implementation have the potential to provide a basis for an improved transition to a predominantly young growth timber base and sale program compared to the current Plan. Notable elements with merit, in addition to the overall collaborative stakeholder process and framework, are: 1) making portions of beach fringe, riparian, and old growth habitat and reserve "LUD" areas available for young growth timber supply and management; 2) requirements to offset further losses to the timber base due to increased set-aside or restriction of areas from harvest with addition of areas to be available for harvest (i.e. no net loss of young growth acres of timber base); 3) retaining at least some sustained old growth harvest going forward under a predominant rather than exclusively young growth harvest approach; and 4) provisions for monitoring and adaptive management. However, we have concerns about the supporting analysis, aggressive schedule, and other parameters of the proposed Amendment, as further described below.

The proposed Amendment and Draft EIS substantially overestimate the timber supply from non-federal lands, which makes their conclusions about adequacy of Tongass supply from the proposed amendment action alternatives erroneously low. Harvest from Sealaska lands, the primary source of private land timber in Southeast Alaska, will average less than a maximum of 45 million board feet ("mmbf") per year for at least the next 20-25 years, and Village Corporation lands harvest will be far less during that time period. Yet despite Sealaska representatives making recent and projected future harvest information available throughout the Amendment process to the Forest Service and TAC, the Draft EIS and supporting draft Tongass timber demand study assume a reliable Native Corporation land supply of up to 80 mmbf per year during the next 15 years. *See, e.g.* Draft EIS, p. 3-314 (Table 3.13-12); Jean Daniels, Michael Paruszkiewicz, Susan Alexander, Tongass National Forest Demand, Projections for 2015 to 2030, pp. 51, 54 (Tables 12 and 15) (manuscript in preparation-December 2, 2015) available at http://www.fs.fed.us/pnw/pubs/draft/Tongass-Timber-Demand-Draft.pdf

(hereinafter "Daniels"). This number is too high and it is not clear where this number came from.

Furthermore, for purposes of estimating demand for Tongass National Forest Timber, the proposed Amendment and Draft EIS treat the demand as a "residual" amount to make up any shortfall in meeting projected overall demand from State, Native Corporation and other non-federal timber sources. *See. e.g.*, Draft EIS, Appendix G, p. G-4; Daniels, p. 14. This "residual" approach also incorporates lower Tongass harvest trends from recent years, without apparently attributing the low figures to the existing Plan restrictions that limit Tongass harvest to a timber base area that is a very small portion of Tongass commercial forest lands and impose high costs on that harvest, not to mention the numerous appeals and litigation that have denied or delayed Tongass harvest over this time period. *See, e.g.*, Daniels, pp. 31-32. The demand/supply projections appear to have been reached without regard to whether, absent those restrictions and challenges, or the related loss of Southeast Alaska forest industry infrastructure, there would be a demand for more timber. This analysis strikes us as circular and inconsistent with basic national forest multiple-use sustained-yield purposes, Tongass Timber Reform Act direction to seek to meet market demand for Tongass timber, and also meeting Southeast Alaska community economic and social sustainability needs, which should be on an equal footing with ecosystem sustainability.

Sealaska itself has a publicly known interest in approximately 20 mmbf per year of Tongass timber that it can harvest and process or sell to complement and provide better economies of scale for timber operations on its own lands. This is a demand factor above and beyond what is needed to more fully and cost-effectively operate existing Southeast Alaska mills and for other operators. At the least, this 20 mmbf per year should be added to the projections of demand for Tongass timber.

With respect to old growth harvest, there will be a continued need for a reasonable amount of old growth harvest for various commercial as well as cultural (canoe and monument or totem logs; other Alaska Native arts, etc.) and subsistence uses. The proposed Amendment and other action alternatives in the Draft EIS provide no more than 5 mmbf per year of old growth harvest after the first 15-16 years of transition, limited to very small sales. But the Draft EIS confirms that young growth harvest sales will appraise negatively and require federal subsidies unless combined with sufficient old growth volume to generate a positive economic return, for at least the first couple of decades of transition. *See, e.g.*, Draft EIS, p. 3-481.

We believe more old growth harvest can and should be accommodated to meet market demand for higher-grade, higher value and in many cases unique commercial products, as well as Alaska Native art and culture and other uses, without compromising the preservation of old-growth ecosystems over the majority of the Tongass. Each of the alternatives regarding timber harvest evaluated in the Draft EIS would limit Tongass timber sale volume to a fraction of the "Sustained Yield Limit" that the Forest Service indicates the Tongass is capable of producing sustainably into perpetuity, leaving more than ample room for considering substantial additional timber sale and harvest volume for the transition period and beyond. *See, e.g.* Draft EIS, p. 3-311. As acknowledged in the Draft EIS, providing more timber sale supply than market demand year to year and providing a reliable "pipeline" of Tongass timber is preferable to under-supplying the

market, given the financially devastating effects of a significant shortfall in supply to the remnants of the Southeast Alaska forest industry and infrastructure. Draft EIS, Appendix G, p. G-8.

Simply put, the final Amendment regarding a transition to predominantly young growth harvest can and should focus on management of the small portion of the Tongass that has been previously harvested, but it should not dictate hard limits on or preclude old growth management and harvest on the larger area of the Tongass that can remain available for timber sales and active management. Contrary to what the Draft EIS indicates, old growth is a renewable resource and old growth areas can be managed for timber production as well as wildlife habitat and other benefits, using 150 year or longer rotations, thinning, and other best practices.

As indicated in the more general comments above, the Forest Service is basing its aggressive young growth transition proposal on incomplete and unreliable forest inventory data and other information, in an apparent rush to complete the Plan Amendment in response to political directives. Our review as well as those of others indicate that the agency's young timber growth/yield model significantly overstates timber yield and volumes, being based largely on field data from some older, lower elevation and relatively high site quality stands.

The proposed Amendment may also be relying too much on assumptions about increased future yields and returns from "commercial thinning". *See, e.g.,* Draft EIS, p. 3-303. Sealaska's experience with commercial thinning on its own lands to date indicate that wind-throw and other damage to the remaining trees and other factors render it very questionable as an economically and silviculturally sound practice on a substantial scale in Southeast Alaska forests.

The analysis in the Draft EIS of the feasibility of manufacturing products in Southeast Alaska or exporting logs from young growth is questionable in other ways; the factors that we believe need further analysis include:

- Costs of accessing and harvesting young growth stands;
- Low values of young growth lumber;
- Lack of economies of scale (small size of the remaining industry and the supply of timber projected);
- Related lack of assurances/incentives to support investment to grow and adapt to an infrastructure that can be sustained with predominant young growth harvest;
- Assumptions and overestimates regarding the amount of non-federal timber that will be available to local mills;
- Assumptions about the economics of and demand for utility logs for biomass energy or other uses and availability of such logs;

- Assumptions about the pace at which the Forest Service can make viable timber sales available and the economic volume that can be made available, given Plan restrictions as well as National Environmental Policy Act ("NEPA") process, appeals, litigation and other delays and costs.

Accordingly, the Amendment decision should not be finalized until updated and complete stand-level young growth field inventory information and young growth yield models are completed, and additional review and analysis covering at least the concerns described above is conducted. If the proposed Amendment is adopted before that time, affirmative provision for early review and consideration of further amendment once updated information and analysis is available should be expressly incorporated in the Amendment, as sound adaptive management and to help assure that the Southeast Alaska forest industry and our communities are not locked into a flawed transition strategy and pace that will end in failure.

The Forest Service should in any case expedite the needed field inventory and other work. This is also an opportunity to provide contracting and other employment for Native Corporations and their shareholders and other local businesses and citizens, as well as essential information for continued Tongass National Forest planning and management.

3. Coordinating Resource Management and Harvesting with Adjacent Landowners

The amended Plan should provide for the Forest Service to coordinate its resource harvest and other management activities with adjacent landowners - Sealaska, along with village corporations, the State of Alaska, the University of Alaska and the Mental Health Trust, in particular. This coordination of activities could result in significant savings related to resource and financial costs. For example, Sealaska and the Forest Service could pursue young growth harvest in the same vicinity, which could allow the two property owners to share road maintenance costs, contractors, log transfer facility ("LTF") costs, and so forth. The final Amendment should be clear, however, that Tongass National Forest management or control does not extend to Sealaska or other non-federal lands.

There does not appear to be much in the Proposed Plan or Draft EIS documents regarding such coordination. Pursuant to 36 C.F.R. § 219.4, please consider adding more express emphasis on landowner coordination as part of Plan direction for timber, transportation, renewable energy and in the implementation chapter of the Plan. The Hoonah Partnership, existing road cost-share agreements, and other particular examples are available as templates for further coordination agreements. The All Landowners Group and the Tongass Transition Collaborative ("TTC"), which have begun meeting as an outgrowth of TAC recommendations, may be useful mechanisms for facilitating coordination and collaboration going forward.

4. Roadless Rule and Road Access Issues

The varied treatment and application of the Roadless Rule in the Tongass National Forest since 2001 have resulted in uncertainty and barriers to development in

Southeast Alaska. The amended Plan should provide clarity and allow for removal of barriers to management and development that exist as a result of the Roadless Rule and that are not required by court decisions. The final Amendment should allow for further road access for not only timber, mineral and energy uses, but also access to resources important to the residents of the region for subsistence, recreation and other community economic, cultural, and social activities.

We are concerned that the proposed Amendment and Draft EIS alternatives treat all current inventoried roadless areas as generally unavailable for further road access or development. The final Amendment should at least affirmatively and clearly provide for further review and Plan amendment once current litigation is resolved or the current 2001 Roadless Rule application to the Tongass is otherwise changed through Congressional action or further rulemaking. Treating all inventoried roadless areas as off-limits to new roads other than the limited exceptions provided in the 2001 Roadless Rule is particularly and unnecessarily restrictive on the uniquely large and undeveloped Tongass.

As a particular comment, a minor edit of text in the Proposed Plan is warranted. On page 5-17 of the Proposed Plan, simply reword the roads objective (G-TRAN-01) to clarify and confirm that some new road construction and reconstruction will be allowed during the first 15 years after an amended Plan takes effect, by adding "construct, reconstruct" in front of "manage and maintain . . . ."

5. Renewable Energy Development

Sealaska supports the apparent increased flexibility for energy facilities and infrastructure included in the proposed Amendment. Developing and implementing alternatives to diesel generation and other measures to reduce the high costs of power in rural Southeast Alaska communities is imperative. That flexibility in the final Amendment should encompass additional hydroelectric energy development and interconnections for this proven, plentiful, reliable source of renewable power in Southeast Alaska, as well as geothermal, biomass and other alternative or renewable energy opportunities.

Road access to energy development and delivery sites, as addressed above, is an important aspect of realizing further cost-effective energy gains. Requiring helicopter rather than less costly access needs to be limited to where it is clearly legally mandated or otherwise the only practicable means. There should be additional flexibility in the final Amendment to help ensure consistency with federal energy policy that supports all forms of renewable energy development, and associated transmission lines.

Sealaska will continue to support and lead viable biomass energy development in Southeast Alaska, and looks forward to working with the Forest Service and other stakeholders in that effort. We are concerned, however that the proposed Amendment and Draft EIS analysis presumes under at least some scenarios a large increase in biomass energy production in Southeast Alaska within a timeframe that may not be feasible or realistic. Draft EIS, Appendix G, p. G-5; Daniels, p. 27-29. In particular, Tongass timber program young growth transition utility log supply/demand forecasts and other analysis should not rely on that presumption.

6. Fish and Wildlife Resource Research and Management

The amended Plan and associated updated Monitoring Program should provide for use of the best objective methods and processes for monitoring, researching and sustaining fish and wildlife resources in the forest. As the Forest Service is well aware, the communities in Southeast Alaska are dependent on these resources physically, culturally, socially and economically. Sealaska is particularly concerned about the monitoring, research and protective and sustainable management of our subsistence resources, including but not limited to salmon and deer.

Such management can be completely consistent and compatible with a working, multiple use national forest that sustains viable timber, fishing, mineral, energy, and other commercial uses and prosperous, stable communities and family-supporting local employment. Sealaska has been and plans to continue to be a source of sound scientific, technical and professional studies, reports and other insights regarding thinning, riparian best management practices, and other measures to benefit fish and wildlife populations, while also obtaining sustainable wood and other products from Southeast Alaska forests. We hope to continue to collaborate with the Forest Service, State, and other landowners, as well as other experts and professionals in this arena.

We note that the final Amendment and EIS documents should be updated to reflect the recently published U.S. Fish and Wildlife Service determinations that Prince of Wales Island and other Alexander Archipelago wolf populations are not a distinct population segment under the Endangered Species Act ("ESA"), and that listing these populations as endangered or threatened under the ESA is not warranted at this time. 81 Fed. Reg. 435-458 (Jan. 6, 2016).

7. Subsistence – Resources and Access

We note that the Proposed Plan and Draft EIS documents do recognize and address Southeast Alaska community and citizen subsistence resources, uses and needs at some length. Pursuant to ANCSA, ANILCA, 36 C.F.R. § 219.4 and other requirements, we ask that the Forest Service assure that there is clear emphasis on providing for Alaska Native access to and use of subsistence resources throughout the Tongass in all components of the amended Plan.

As a more particular comment, Section 3.2 of the Proposed Plan requires the Forest Service in project scoping to include contact with various agencies, tribal governments and other entities, but omits Native Corporations from the list. Proposed Plan, p. 4-68 (Subsistence Forest-Wide Standards and Guidelines). Please correct to read: ". . . include initial and ongoing contact with the appropriate federal and state agencies, local committees, recognized tribal governments <u>and Native Corporations</u>, and the Southeast Alaska Federal Subsistence Regional Advisory Council." Additionally, please review the Proposed Plan document for other instances where Native Corporations should be added to lists of entities to be consulted or coordinated with regarding subsistence as well as other issues and resources, pursuant to 36 C.F.R. § 219.4 and other requirements.

The Proposed Plan at page 4-68 also appears to contain some other wording and punctuation gaps in the text. We recommend that the agency review and correct any typographical or other errors in this section.

8. Sealaska Land Entitlement Legislation

We note that the Forest Service has referenced and recognized in the Draft EIS the enactment of the Sealaska land legislation in Public Law 113-291 and related ownership adjustments that impact Forest Service ownership of timber resources. Draft EIS, pp. 1-5 to 1-6, 2-9, 3-265 to 3-270, Appendix C (Cumulative Effects), Appendix E (Interagency Old-Growth Reserve review). However, the Draft EIS and proposed Amendment do not appear to also evaluate or reflect in any detail the approximate 150,000 acres of additional Congressional LUD II designations included in the statute and their attendant protective old growth and natural ecosystem benefits or other effects. The Draft EIS and proposed Amendment likewise do not appear to address or reflect the benefits of the release in the statute of approximately 300,000 acres of Tongass lands previously withdrawn for selection by Sealaska under ANCSA. Draft EIS, pp. 267, 269. Although some of these lands may remain subject to completion of Village Corporation conveyances, they are now free from the restrictions and uncertainty regarding potential selection by and conveyance to Sealaska. Pub. L. No. 113-291, § 3002(b)(3)(ii). Most or all of these previously withdrawn lands are now or soon will be unencumbered and available for timber and other national forest management and uses.

Please assure that these changes are adequately evaluated in the EIS and reflected in young growth transition and other components of the Amendment prior to finalizing and completing the Amendment process. The process should include appropriate opportunity for comments by other agencies, Sealaska and other stakeholders, and the general public.

9. Unfulfilled Native Land Entitlements

We appreciate that the Forest Service in the Draft EIS has included some recognition and consideration of other unfulfilled Native land entitlements, including the five unrecognized or "landless" communities that continue to seek inclusion in ANCSA and compensation through land allocations in Southeast Alaska; and Alaska Native veterans who have sought Native allotments in Southeast Alaska but who continue to be denied this opportunity because of the current land allocations and designations in the region. Draft EIS, p. 3-265. These continue to be important outstanding issues; the amended Plan should recognize and account for them as outstanding and allow for their resolution in the future.

10. Other

Proposed Plan, page 1-2 - The text on this page analogizing a forest plan to municipal zoning ordinances is inaccurate and misleading with respect to the National Forest Management Act ("NFMA") multiple-use legal framework for national forest planning and management. The proposed text appears to emphasize separating rather than reasonably mixing uses by area, and may suggest priority for protection of resources rather than a balance with economic and social sustainability of communities in the

region. The analogy appears to be to urban community zoning, which itself is evolving into much more mixed-use districts and flexibility, recognizing the diversity and other socioeconomic advantages of less rigid separation and uniformity of uses. The single use land allocation concept is even less apt for rural area zoning, which often allows a wide range of uses within a general rural zone via a special or conditional use permit individual application and review process. In any case, any analogy between multiple-use, working national forest land and resource management planning under federal law and local government zoning is rough at best. Please correct this text accordingly.

Proposed Plan, page 4-70 - References to "Allowable Sale Quantity" ("ASQ") are deleted on this page and otherwise in the Plan. We understand that ASQ is being replaced with "Sustained Yield Limit" ("SYL") as defined in the Proposed Plan Glossary at page 7-74 and further described in the Draft EIS in relation to the Projected Timber Sale Quantity" ("PTSQ"). *See, e.g.*, Draft EIS, p. 3-311. We understand that these changes are related to updated direction in the Forest Service Handbook for implementing the 2012 Planning Rule. *See, e.g.* FSH 1909.12 (Chapter 60, Section 64.3 , and Subsections 64-31-64.32). We note that the NFMA requires a limit on the sustained-yield quantity of timber that may be sold from each national forest, and the 2012 Planning Rule does not appear to require a different term than ASQ to be used for this purpose. *See* 16 U.S.C. § 1611; 36 C.F.R. § 219.11(d)(6), respectively. It would be helpful at the least for the final amended Plan and EIS to include further explanation and cross-referencing to the Handbook to clearly delineate any substantive, as well as terminology changes involved with respect to ASQ versus SYL and PTSQ as used in the Amendment documents.

Proposed Plan, page 4-74 - Utilization standards, wind-throw and other direction from the current Plan have been deleted here; the extent and location of any replacement or other updated direction is unclear. We understand that utilization standards need not be included as enforceable forest plan "standards" within the meaning of the 2012 Planning Rule. However, a forest plan is still required to identify or reference the utilization standards that saw timber, pulpwood, and other standard forest products must meet for purposes of inclusion in the PTSQ and other calculations of volume quantities in the plan. FSH 1909.12 (Chapter 60, Section 64.34). These utilization standards are otherwise important for ongoing Tongass planning and management as well as review of the proposed Amendment and Draft EIS documents. Additional, clear explanation and cross-reference regarding the deletion of utilization standards and similar content from the Plan document and identification of the current utilization standards and any other updated direction or criteria would be helpful.

Proposed Plan, page 6-1 - This page states that a Tongass Plan annual program of work is explained in Appendix J, but Appendix J is apparently deleted from the Proposed Plan document and no longer included. Please correct or clarify.

Proposed Plan, Chapter 7 (Glossary) (also referenced in the Draft EIS, Appendix A) - This section in particular could benefit from further careful review, proofreading, and editing to shorten, clarify and correct its content. There are some apparent clear errors, such as:

- The definition for "Administrative Use (timber)" appears to repeat the definition for the word "adjacent." Proposed Plan, p. 7-2.

- The definition for "Categorical Exclusion" appears to repeat the definition for "Environmental Document." Proposed Plan, p. 7-10.

- The definition for "Commercial Timber" appears to be missing the word "that" between "lands" and "may" in the first line. Proposed Plan, p. 7-12.

- The definition of "Significant Effect" appears to be comprised of text describing second growth forest. Proposed Plan, p. 7-85. Note also that since "significant effect" is a term of art under NEPA and its meaning may vary in other contexts, a definition for this term is probably best omitted from a forest plan glossary.

There are also many terms in the Glossary for which a second definition has been added that appears largely redundant to the first definition or which otherwise may be confusing. See for example the definition of "Smolt."

Also, there are terms in the Glossary that include an acronym that does not necessarily need a definition and which could be addressed in a much simpler acronym table or index. See for example the listing of "Code of Federal Regulations ("CFR") followed by a lengthy description of the CFR. Proposed Plan, p. 7-12.

D. Closing Comments

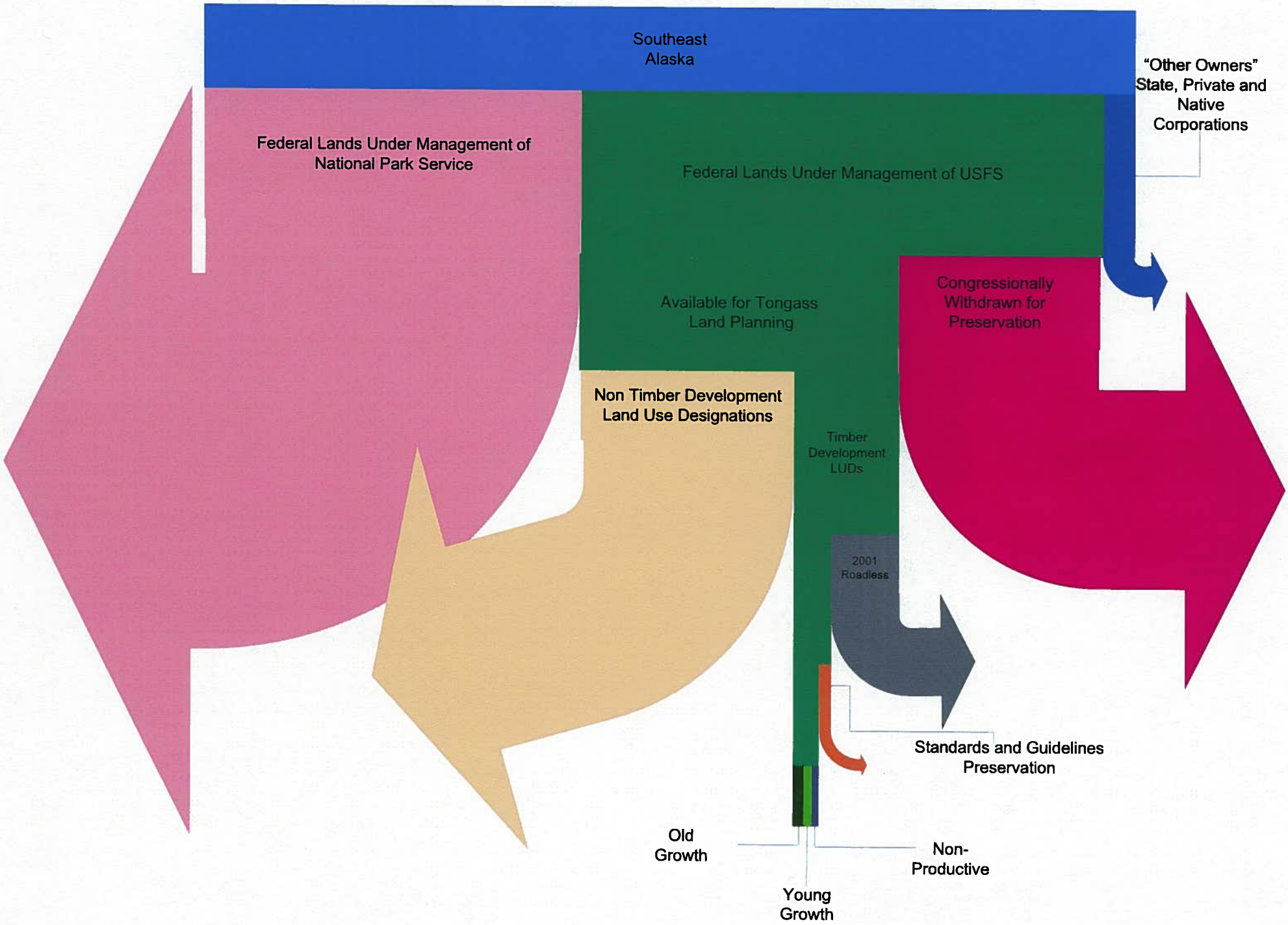
On behalf of our 22,000 shareholders and our impacted Southeast Alaska communities that are home to our shareholder base, thank you for the opportunity to submit comments concerning the Draft EIS and proposed Amendment to the 2008 Tongass National Forest Plan regarding young growth management transition and other issues. We hope that you will consider and be responsive to the comments incorporated in this letter, and we look forward to continued dialogue and collaboration as the Forest Service continues the Amendment process and beyond, through implementation.

Sincerely,
SEALASKA CORPORATION

Anthony Mallott
President & Chief Executive Officer

Attachment

Southeast Alaska Lands and Preservation Status



LISA MURKOWSKI
ALASKA

COMMITTEES:
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CHAIRMAN

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February 19, 2016

By Electronic Mail and U.S. Mail
Mr. Earl Stewart, Forest Supervisor
Tongass National Forest,
Attn: Forest Plan Amendment
648 Mission St.
Ketchikan, Alaska 99901
Comments-alaska-tongass@fs.fed.us

RE: Comments on Proposed Land Resource Management Plan for the Tongass National Forest, November 2015, R10-MB-769 a-c.

Dear Mr. Stewart:

Attached for inclusion in the referenced docket are my Comments on the *Proposed Land Resource Management Plan for the Tongass National Forest, November 2015* .

Sincerely,

Lisa Murkowski,
United States Senator

Cc: Robert Bonnie, U.S. Department of Agriculture
Beth Pendleton, Tongass Regional Forester

Formal Comments of
Senator Lisa Murkowski on the

Tongass National Forest:
Proposed Land and Resource Management Plan (2015)

R10-MB-769 a-c

Submitted February 19, 2016

Submitted to:
Mr. Earl Stewart, Forest Supervisor
Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Submitted by:
Senator Lisa Murkowski
709 Hart Senate Building
Washington, D.C. 20510
202-224-6665

INTRODUCTION:

I write to express my views on the *Tongass National Forest: Proposed Land and Resource Management Plan (2015)* (Proposed TLMP, Plan or Plan Amendment) and the U.S. Forest Service's (Forest Service) Proposed Preferred Alternative changing the 2008 *Tongass National Forest: Land and Resource Management Plan* (Final TLMP, or 2008 Plan)[1] released for comment on November 15, 2015.[2] The three-volume Plan prompts a host of conflicting reactions. The updated scientific research and data collected by Forest Supervisor Earl Stewart, Project Team Leader Susan Howle, and their 20 assistant "preparers" and 46 "contributors" is impressive. Unfortunately however, as detailed in these comments, the substance of the Plan is deeply concerning. The Forest Service should wait to make a final decision on whether and what kind of TLMP plan update is required until there is firm data to support the Administration's policy decision to accelerate a transition to a young-growth forest management program in the region.

As an Alaskan born in Southeast Alaska, some of the research was fascinating. For example, it is notable that El Capitan Cave on Prince of Wales Island is between 107,000 and 115,000 years old.[3] It is useful to know that there are 152,800 acres of Productive Old-Growth timber (POG, the largest of old-growth trees) on top of karst formations remaining in the Tongass;[4] that since Statehood Alaskans have harvested only 8 percent of the original POG in the Tongass Forest; and that, regardless of which proposed alternative is selected to govern future forest activities, 91 percent of all POG will remain after a century.[5]

The detailed accounting of land ownership is very useful especially because it documents conclusively that only 190,000 acres of the 17,906,000 acres of total land within the outer boundaries of the Tongass National Forest are privately owned. It is important to keep at the forefront the fact that the Forest Service controls 93.4 percent of the forest or 16,720,000 acres after passage of the *Southeast Alaska Native Land Entitlement Finalization Act* (Sealaska Lands Bill) in December 2014.[6] Only one-half of one percent of the forested lands in Southeast Alaska contain 2 miles of road per square mile, while 46 percent of the nearly 18 million acres have no roads at all, another fact contained in the Plan that bears emphasis.

Unfortunately, despite its positive attributes, overall the Plan is unjustified – a extremely premature attempt to implement a legally questionable, economically unsupported, environmentally unneeded, and extremely short-sighted change in the management of the nation's largest federally owned forest.

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[1] U.S. Department of Agriculture Forest Service, *Tongass National Forest: Land and Resource Management Plan* (2008), available at https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5367422.pdf.

[2] U.S. Department of Agriculture Forest Service, *Tongass National Forest: Proposed Land and Resource Management Plan* (2015), available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd480655.pdf.

[3] U.S. Department of Agriculture Forest Service, *Tongass Land and Resource Management Plan: Draft Environmental Impact Statement – Plan Amendment*, 3-27 (November 2015), available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd480660.pdf.

[4] *Id.* at 3-28.

[5] *Id.* at 2-40.

[6] *Id.* at 3-263.

THE DRIVER BEHIND A PLAN UPDATE – The Proposed Plan is not driven by actual data, but assumptions to support an agenda to end old-growth harvesting or to satisfy the desire of some to end most all timber production from the Tongass. This Plan Amendment is a rush to judgment that is ill considered and is likely to result in harm to the residents of Southeast Alaska.

The Obama Administration and Secretary Vilsack, soon after taking office in 2009, made it abundantly clear that they intended to dramatically alter the economic underpinnings of the timber industry in Southeast Alaska – an industry that the Forest Service was largely responsible for establishing in the 1950s and that the federal government has been partially responsible for seeing decline in recent decades. In the Secretary's July 1, 2013 memorandum *Addressing Sustainable Forestry in Southeast Alaska* (the Memorandum) he simply decreed that management of the forest would change notwithstanding Congressional direction in 1980, and clarifying direction in 1990 and again in 2014 that requires the Forest Service "to seek to meet" the existing demand for timber (once defined by average timber market conditions, not by Forest Service policy)[7].[8] He did so seemingly because he believed an industry that utilized a tiny percentage of the old-growth trees in the forest somehow violated the *Multiple-Use Sustained Yield Act of 1960* (the 1960 Act). As I see it, he also decided that it simply wasn't worth the cost and time for his agency to address litigation from environmental groups opposed to most any form and any significant quantity of Tongass timber harvesting.

The 1960 Act, even as revised in 1996, requires the Secretary to manage "all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions…."[9] Clearly under the Act, national forests are to be managed to support recreation, wildlife, economic activities, *and timber harvesting* – a specific designated use in national forests.[10]

The Memorandum, however, equated the desires of some for "changing needs" to timber preservation and a reduction of timber harvesting. Meanwhile, it ignores that "changing needs" in the minds of many Alaskans may well mean the need for greater economic benefits from Alaska's renewable national forest lands as income to offset declines from wealth devised from the production of oil and gas in other parts of the State. The Memorandum seemingly defines timber harvesting in Alaska as, after a transition period, largely equating only to the harvesting of small diameter, young-growth timber (Y-G). This was clearly never intended by Congress in passage of the 1960 Act, the *1980 Alaska National Interest Lands Conservation Act*, or the *1990 Tongass Timber Reform Act*.

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[7] Tongass Timber Reforms Act, Pub. L. No. 101-626 §101 (amending § 705(a) of the Alaska National Interest Lands Conservation Act of 1980 (Pub. L. No. 96-487)).

[8] U.S. Department of Agriculture, *Secretary's Memorandum 1044-009*, 1 (July 2015), available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5445760.pdf.

[9] Multiple-Use Sustained Yield Act of 1960, Pub. L. No. 86-517 § 4(a).

[10] *Id.* § 1.

The Memorandum calls for a transition to young-growth harvesting over a "10 to 15 year" period, with the possibility of a "small sale program" to harvest a small amount of old-growth timber for "niche markets" after transition.[11] A fatal flaw in this approach is that it sets in motion a transition to young-growth harvesting without any real evidence, but only speculation that such an industry could be economically viable in Southeast Alaska. There is little, if any, firm knowledge of the amount of young-growth that will be environmentally acceptable to harvest from the Tongass. Nevertheless, this information is a primary condition before any enterprise, let alone an industry, could attract the private financing necessary to fund the transition to Y-G. The Administration pressed the transition to Y-G without any clear indication of what end uses would constitute the economic market for Y-G – what products can be made and profitably shipped and sold from the wood in this forest. This transition mandate came before there was any evidence on the economic impacts on the region of the policy shift, an apparent violation of the *National Forest Management Act of 1976*.[12] That Act requires planning *before* policy changes were crafted, not afterwards to justify the actions already directed by the memorandum and the views of political appointees.

The Department and the Forest Service clearly placed the cart before the horse in 2013. It created a Tongass (Citizens) Advisory Committee (TAC) in fall 2013 to make recommendations on *how* the transition could be implemented, leaving out of its charter a discussion on whether such a shift *should* take place.[13] The Administration since then has proposed the Plan Amendment to accelerate the transition to a young-growth industry. The Proposed TLMP picks and chooses which of the advisory committee recommendations to implement, apparently supporting only the recommendations that will allow it to "lock in" a transition plan prior to January 20, 2017.

This Plan Amendment is a rush to judgment that is ill considered, and is likely to result in harm to the residents of Southeast Alaska.

Let me acknowledge that for more than five decades it has been the common wisdom in the region – an area the size of West Virginia – that eventually the timber industry in the Tongass National Forest will transition from dependence on old-growth timber to largely young-growth timber. That was the justification for the expenditure of federal funds to help pay for forest road building in Southeast Alaska. The roads were an investment that would be repaid with stumpage fees and tax revenues from future second- and third- rotation sales and the economic activity they would promote. It makes perfectly good environmental sense to protect a majority of the old-growth timber stands in the Tongass National Forest, to protect fishery habitat and to protect wildlife, both for their own sake and the sake of subsistence, recreational, and commercial hunting in the region.[14] It is wise to encourage an industry to transition and to develop new markets for young-growth timber – markets where Alaskan timber might have economic advantages in sales in the future because of geographical location, product characteristics, or innovations. By contrast, it is arbitrary to set an end date, or effectively arbitrarily limit the amount of old-growth by volume or acreage that may be harvested in the Tongass, without any

[11] USDA, *Secretary's Memorandum 1044-009*, 2.

[12] Pub. L. No. 94-588.

[13] If the latter had been under discussion there likely would have been no recommendations issued by the TAC given the requirements for issuance of a report under the Federal Advisory Committee Act.

[14] 80% of which will be protected even without a young-growth transition plan.

firm evidence that a transition to a young-growth timber supply is economically viable over an articulated time period – whether the transition is viable starting within a few years and fully completed within 16 years, compared to one starting in 25 years and fully underway three decades from now when the existing old-growth will have increased by 50 percent and the acreage to support a future industry 60 to 90 years later will have increased.[15]

It would be counterproductive effectively to place an arbitrary limit on old-growth timber sales of approximately 5 million board feet a year after a "transition," with no evidence that that is a sufficient harvest to meet high-value wood demand for musical instruments or other high-value uses. Such a limit appears to be based on environmental goals rather than a serious consideration of economic facts. It is also wrong to limit arbitrarily the amount of old-growth timber that can be harvested to about 2 percent of a 16.7-million-acre forest, when a harvest that would still leave about 96 percent of such trees standing can occur while enabling a viable, integrated timber industry in the region.[16]

The Memorandum paid lip-service to maintaining a viable timber industry in the Tongass:

> "(The) Department of Agriculture is committed to maintaining Southeast Alaska's exceptional natural resources in perpetuity. USDA is equally committed to doing its part to ensure that the communities within and adjacent to the Tongass National Forest are economically vibrant. These two goals must go hand in hand. ...We must speed the transition away from old-growth timber (but) we must do this in a way that preserves a viable timber industry that provides jobs and opportunities for residents of Southeast Alaska....To accomplish the transition to a timber program based primarily on young growth, it is important to retain the experience and infrastructure of the existing industry so businesses can quickly retool. These businesses are fundamental to both the young growth and restoration components of the future timber program, and to the economic vitality of the region. Such an approach requires a reliable supply of economically viable timber, with the old-growth component decreasing over time while the young growth component increases. ... Additional research will be necessary to develop effective ways to meet" the challenges of establishing an "economically viable young-growth program due to the relatively young age of the available stands, market conditions, and other factors." [17]

The Forest Service should actually fund and undertake that research to make sure that a transition is economically feasible and somewhat likely to succeed *before* amending the 2008 Plan and "locking in" reduced old-growth timber harvest offerings.

As noted above, there is a case to be made for a transition when the amount of second-growth and its volume of fiber make economic sense to support a viable timber industry. In 2014, I accepted a provision to allow a limited waiver of federal law to permit a limited amount of

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[15] Alaska Forest Association, *Comments on U.S. Forest Service Tongass National Forest Timber Demand, Projections for 2015 to 2030*, 7 (January 7, 2016).

[16] USDA, *Tongass National Forest: Land and Resource Management Plan.*

[17] citation

timber to be harvested before it reaches optimal size to allow a transition to begin more quickly.[18] In 2015, I supported the Forest Service's budget to help it gain funding to conduct needed research to prove that there will be sufficient second-growth wood to fuel a young-growth timber industry. I am willing to support additional funding if proposed by the Administration for objective economic studies to determine what products can be made from young-growth and at what costs, to prove the economic viability of a transition given Tongass wood volumes, and to allow private investment to help fund a transition to a young-growth industry. I will support the TAC recommendations for new management policies to allow a transition to young-growth. But the TAC carefully proposed in its recommendations that young-growth replace old-growth on a "one-to-one volumetric basis,"[19] with old-growth not being reduced until there is a market for young-growth to profitably replace it, i.e., until it is proven in an intellectually honest fashion that such a transition can actually take place without further harm to the economic underpinnings of Southeast Alaska's economy and not until there are markets for young-growth to replace the economic benefits of old-growth timber. If objective studies prove that a transition can occur more quickly and be financeable by the private sector it could well be worthy of support.

Until then, I must adamantly oppose unnatural transition, and worse an amendment to the 2008 Plan, that encourages Forest Service management policies that will result in a reduced timber harvest. The Proposed TLMP is not driven by actual data, but assumptions to support an agenda to end old-growth harvesting or to satisfy the desire of some to end most all timber production from the Tongass. This history of timber harvesting in Southeast Alaska provides an important foundation to understand my concerns.

TIMBER HARVESTING HISTORY: Timber sale levels have declined dramatically for more than a decade resulting in the loss of more than 5,000 timber and timber-related jobs.

The blueprint for a timber industry in Southeast Alaska has changed dramatically since the 1950s when the Forest Service offered timber sales to attract a pulp industry in the region. The Forest Service believed that the Tongass could supply up to 1.8 billion board feet of timber *yearly* in a biologically sustainable fashion. That timber was just a part of the then-estimated 95 billion board feet to lie in the 9.5 million acres of commercial forest lands in the Tongass.[20] The *Alaska National Interest Lands Conservation Act of 1980* (ANILCA) reduced that harvest target from federal lands to 450 million board feet (mmbf) a year, providing mandatory spending of $40 million a year for pre-commercial thinning and other work to allow that harvest level to be met while removing 5.7 million acres from the forest land base – land placed in conservation system units, protected habitat, and wilderness. ANILCA:

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[18] Southeast Alaska Native Land Entitlement Finalization Act (Sealaska Lands Bill), Pub. L. No. 113-291 § 3002.

[19] Tongass Advisory Committee (TAC), *Final Recommendations*, 2 (December 2015), available at http://www.merid.org/~/media/Files/Projects/tongass/December%202015%20Meeting/Tongass%20Advisory%20Committee%20Final%20Recommendations_Dec%202015.pdf.

[20] Sen. Frank Murkowski, *The Tongass, Fact versus* Fantasy, 4 (Chart on Timber Harvesting in Tongass Compared to Biological Capacity, U.S. Forest Service Data) (August 1996).

> "Represented a proper balance between the reservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition and thus Congress believes that the need for future legislation designating new conservation system units (CSUs) ... has been obviated thereby."[21]

It took Congress just ten years to repeal the 1980 silviculture subsidy, to reduce the allowable timber harvest target to between 220 to 267 mmbf, and to add another 722,000 acres into protected status/CSUs. By the Forest Service's own estimates at the time, in 1990 the Tongass produced 6,113 direct jobs, contributing $516 million to the state's economy from the harvest of 471 mmbf of timber from federal lands.

The TLMP finally approved in 1999 to implement the *Tongass Timber Reform Act* (TTRA),[22] passed nine years earlier, anticipated a harvest or Allowable Sale Quantity (ASQ) of between 153 and 187 mmbf.[23] The Forest Service was required to "seek to meet" the demand for then existing timber markets. The mills supplying those markets all were equipped to process larger diameter, old-growth timber. Mills whose customer base was (and largely continues to be) tailored toward processing of that type of wood assumed its availability. In 1999, the harvest still reached 146 mmbf.

For a host of factors, some market driven, but others driven by environmental group litigation and the inability of the Forest Service to provide a consistent quantity of timber to satisfy markets and prevent customer switching, sale levels declined dramatically for more than a decade. In 2005 harvests fell to 50 mmbf, and over the next 10 years they have averaged just 33.3 mmbf, generally far less than the "market demand" for the timber. During that period, while the Forest Service offered (or attempted to offer) 57.8 mmbf a year, the Service only successfully sold 35.4 mmbf a year – litigation and Forest Service sale policies significantly reduced the amount of timber being utilized in the forest.[24]

As a result, a host of mills in Southeast Alaska have closed. This has resulted in the loss of more than 5,000 timber and timber-related jobs. Ketchikan lost a 500-employee pulp mill, two 100-employee sawmills and later an 100-employee veneer plant, Sitka lost a 500-employee pulp mill, Prince of Wales Island, lost a 25-employee sort yard and 700 logging and road building jobs, Wrangell lost a 100-employee sawmill, and Metlakatka lost an 100-employee hemlock mill and 100 jobs in road building and logging. Other parts of the region faced and are facing steep indirect job losses. The industry, which once accounted for nearly 80 percent of all manufacturing jobs in Alaska and produced a payroll of more than $300 million a year in 1991, today has been reduced to an industry that accounts for only about 600 total jobs and a total

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[21] Alaska National Interest Lands Conservation Act of 1980, PL. 96-487 § 101(d).

[22] Tongass Timber Reform Act, Pub. L. No. 101-626.

[23] I do understand that the Forest Service since 2012 no longer uses the term Allowable Sale Quantity to characterize timber sale offerings having moved to Projected Timber Sale Quantity (PTSQ). ASQ is used here simply because it was in usage at the time of ANILCA and TTRA's passage and reflects the expected timber offerings by Alaskans, dependent, of course, on the level of congressional funding provided to the Forest Service for planning/execution of timber sales.

[24] U.S. Forest Service, *Alaska Region Timber Volume History* (January 2015).

payroll in the region of approximately $27 million.[25] Despite these losses, the timber industry is important locally in the "Panhandle" of Southeast Alaska. For example, from 1990 to 2000, following passage of the Tongass Timber Reform Act and the eventual closure of the Alaska Pulp Co. mill in Sitka and the Ketchikan Pulp Co. mill in Ketchikan and sawmill in Wrangell, Southeast's total population declined by 7 percent.

The decline continued from 2000 to 2010 because of the marked slowdown in timber harvesting. From 2000 to 2010 total population in the region declined to 69,849 from 73,082, a further decline of 5 percent; 24 of the region's 34 communities are facing declines: from 2 percent in Hydaburg, now a shipping port for log exports, to 57 percent in Point Baker on northern Prince of Wales Island.[26] Almost exclusively linked to the downturn in timber employment, state elementary schools in six communities closed following a region-wide enrollment decline of 15 percent – the schools in Edna Bay, Elfin Cove, Meyers Creek (Chuck), and Whale Pass remain closed. Ketchikan (both City and Ketchikan Gateway Borough), for example, saw its population peak in 1995 at 14,800. While it bottomed out in 2004 at 13,200, it still is only at about 13,900 – 900 fewer residents in the area than at logging's peak. Ketchikan's average wage in 2013, the most recent year for data, was $42,767, considerably below its pre logging era collapse and well below the statewide average of $51,033.[27]

On Prince of Wales Island, the downturn in the timber industry caused far worse economic impacts. The Island's population, according to the U.S. Census Bureau, fell 20 percent from 1996 to 2007. The Island, once fueled by timber, is now dominated by government agency spending. Some 52 percent ($38 million) of the total census area wages in 2011 were funded by government agencies and natural resources provided just 6 percent of wages.[28]

According to Southeast Conference, the umbrella organization for all communities in Southeast, timber jobs and payrolls fell by 24 percent from 2006 to 2011. Timber, which accounted for 4,500 direct jobs in the region in the late 1990s, by 2011 accounted for just 422 jobs and wages were down to $16.8 million.[29]

Even though the seafood industry increased 4 percent from 2006 to 2011, generating $391 million in ex-vessel value for Southeast residents, and even though tourism fell 6 percent from 2006 to 2011, generating 6,000 part-time and some year-round employment with a payroll of

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[25] Caroline Schultz, *Alaska's Timber Industry Fallen on Hard Times*, ALASKA ECONOMIC TRENDS, Alaska Department of Labor and Workforce Development, 14 (October 2010), available at http://laborstats.alaska.gov/trends/oct10art2.pdf.

[26] Alaska Department of Commerce, Division of Economic Development, *Report to the Alaska Timber Jobs Task Force*, 3 (March 2012).

[27] Conor Bell, *Ketchikan's Fluid Economy: Alaska's Gateway City, From Mining and Timber to Fishing and Tourism*, Stories in the News/Sit News (August 16, 2014), available at http://www.sitnews.us/0814News/081614/081614_ketchikan_economy.html (citing the Alaska Department of Labor and Workforce Development, Research and Analysis Section).

[28] *Prince of Wales Area Redefines its Economy after the Timber Decline*, Stories in the News/Sit News, 2-3 (August 1, 2012), available at http://www.sitnews.us/0812News/080112/080112_POW.html.

[29] Southeast Conference, *Southeast Alaska by the Numbers*, 8 (2012), available at http://www.seconference.org/sites/default/files/Southeast%20Alaska%20by%20the%20numbers%20small%20for%20emailing%20and%20web.pdf (citing the McDowell Group and the U.S. Forest Service).

$164 million, and even though mineral development has grown in Southeast, to 650 jobs and a $60 million payroll by 2011 (largely as a result of the opening of the Kensington gold mine in Juneau and the reopening of the Greens Creek silver mine outside of Juneau), timber could still play a vital role in a balanced economy in Southeast Alaska. That would be the case if timber production was allowed to return just to the allowable sale quantity levels permitted by the 2008 TLMP.[30]

This history provides the foundation for the following comments on the Plan.

CRITERIA FOR PLAN ALTERNATIVES – The Plan Amendment process was fundamentally flawed because the Plan, rather than looking objectively at the outcome of all reasonable forest alternatives, appears to have been predetermined in order to support a prior decision to exclude consideration of a more robust timber harvest scenario.

The Plan Amendment process was fundamentally flawed because the Plan, rather than looking objectively at the outcome of all reasonable forest alternatives, was gerrymandered as a result of the 2013 Memorandum and the decision to exclude consideration of a more robust timber harvest scenario. The Forest Service admits that early in the Plan:

> In the past Forest Plan revisions and amendments, varying demand scenarios were used to develop alternatives, including scenarios that allowed for growth and expansion of the current industry. In this amendment, the purpose and need demands the transition to a predominately young-growth-based industry and the reduction of old-growth harvest. Therefore, examination of alternatives at levels above projected demand is not warranted because these would require expansion of old-growth harvest levels, at least during the next 10 to 20 years."[31]

Worse, the forest "demand level" used as the base for sale forecasts in the document is not a real assessment of the market "demand" for timber, as required by Sec. 101 of the *Tongass Timber Reforms Act of 1990*.[32] The five alternatives in the Proposed TLMP are assessed against the baseline "demand estimate" used by the Forest Service in crafting the Plan Amendment. The *Tongass National Forest Timber Demand, Projections for 2015 to 2030* (the Demand Estimate), crafted by economists from the Pacific Northwest Research Station,[33] estimates that only 40.9 mmbf was sought by markets in 2015 and that only 41.6 mmbf will be sought in 2016 – a demand level that rises to a range of between 51.9 and 76.4 mmbf by 2030 as young-growth production increases.[34] Nowhere in the Plan does it justify why the demand level that effectively controls the consideration of the five alternatives is more than 100 mmbf less than the Forest Service's published demand levels for 2014, of between 110 and 151 mmbf in a "Limited

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[30] *Id.* at 6-10.

[31] USDA Forest Service, *Tongass Land and Resource Management Plan: Draft Environmental Impact Statement – Plan Amendment*, 2-9.

[32] Tongass Timber Reforms Act of 1990, Pub. L. No. 101-626 § 101 (amendment to Pub. L. No. 96-487 § 705(a).

[33] Jean M. Daniels, Michael D. Paruszkiewicz, and Susan J. Alexander, *Tongass National Forest Timber Demand, Projections for 2015 to 2030* (December 2, 2015).

[34] USDA Forest Service, *Tongass Land and Resource Management Plan: Draft Environmental Impact Statement – Plan Amendment*, at 2-8 (Table 2-1).

Lumber" scenario and between 110 and 163 mmbf in an "Expanded Lumber" market scenario.[35] The 2015 demand estimates varied from between 58 to 113.2 to 204 mmbf on a slightly revised demand report.[36]

A review of the Demand Estimate, however, does shed light on the marked differences. "Efforts to end harvesting of old-growth timber on the Tongass National Forest have spurred multiple initiatives focused on transitioning to a young-growth timber base. The young-growth transition is expected to affect timber supply for the remaining Southeast Alaska forest products industry," write the authors.[37] While noting that timber sale demand from Alaska may be impacted in the future by changes in domestic and export forest product markets, by foreign currency fluctuations, and by changes in the federal timber base because of lands legislation or congressional action, the report noted that this Demand Estimate was influenced by the Secretary's Memorandum. "Efforts were set into motion by evolving USDA policy limiting old-growth harvesting and encouraging the harvest of younger second-growth forest stands."[38] "Although this is an analysis of timber demand, it is important to remember that the interaction between demand and supply is what ultimately determines trends in markets," continues the demand report.[39] Thus the Demand Estimate, which is the basis for the Forest Service not seeking to offer more old-growth timber to meet "market demand" and for seeking an amendment to the 2008 TLMP, is being driven in significant ways not by markets, but by the limitation of timber supply available to markets – a process, in turn, that is solely being driven by the Secretary's policy directive mandating a rapid transition to a young-growth industry.

Alaska mill operators, even with the downturn in American timber export markets in 2015 spurred by the strengthening of the U.S. dollar, have repeatedly indicated that market demand for timber would have allowed them to harvest and process far more timber, if a larger multi-year, dependable supply of federal timber had been made available. The Viking Lumber Mill at Klawock, for example, has "repeatedly told the Forest Service that they would like to purchase more timber sales because their customers have additional capacity and Viking wants to more fully utilize (their) mill," according to comments by the Alaska Forest Association.[40] More timber availability would have improved the mill's efficiency, which the Forest Service's Demand Estimate seemingly places at about 18.75 percent in 2013.[41]

The Forest Service is arguing that it does not need to offer more timber because "demand" for timber was down because of lower sale levels. But without more economically appraised timber being put up for sale, the industry has nothing with which to attract market buyers. Except for 2014's Big Thorne timber sale, the Forest Service was only planning to offer sales of another 60 mmbf of old-growth saw and utility logs at Mitkof and Three Sisters Island and a 4.2 mmbf

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[35] U.S. Department of Agriculture, U.S. Forest Service Alaska Region Briefing Paper, 1 ("Predicting Likely Timber Purchases and Offer Levels on the Tongass National Forest. Fiscal Year 2014") (February 2014), available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5447816.pdf.

[36] *Id.* at 9 (Table 5 "Projected Tongass National Forest Timber Harvest (Model Item K)").

[37] Daniels, *Tongass National Forest Timber Demand*, at 5.

[38] *Id.* at 3.

[39] *Id.* at 4.

[40] Alaska Forest Association, *Comments on U.S. Forest Service Tongass National Forest Timber Demand*, at 6.

[41] Daniels, *Tongass National Forest Timber Demand*, at 8.

young-growth sale at Dargon Point in 2015 – none completed. Proposed sales in 2016, according to preliminary Forest Service sale documents, at Saddle Lakes, Kuiu Island, and from Koscuisko and Wrangell Islands, as of this writing, are just 51 mmbf, which is not enough to support higher timber production, artificially limiting the timber demand levels.

This makes the Plan Amendment process based on an obviously circular argument: the only alternative that can be accepted is one that does not exceed market demand estimates, while those estimates are clearly being limited so that they don't exceed the reduction in old-growth harvest levels being driven by the Secretary's policy decision to accelerate a transition to young-growth harvesting.

The Forest Service should be adopting a more rational "no-action" amendment, at least as it relates to the timber program. That would allow harvests at the levels anticipated by the 2008 TLMP of up to 167 mmbf a year, depending upon congressional appropriation, while not preventing the Forest Service from offering more young-growth sales to help begin a transition to a Y-G industry.

ENVIRONMENTAL IMPACTS – Concerns about the effects of a larger harvest on the environment, commercial fishing, and tourism are unsupported by the record.

The Forest Service leadership obviously is opposed to such a large harvest. Consider, however, what a larger harvest would mean to the forest, the environment, and its resources. Based on the 2008 TLMP, admittedly crafted on the 1982 planning rules and not the revised 2012 rules, logging would limit impacts in the land under Forest Service control to just another 655,000 acres of the remaining 5.6 million acres of commercially productive forest. That would mean that no more than 12 percent of the commercially productive forest will ever be affected and less than 4 percent of the total forest.

Already, 4.9 million acres of the productive forest – 88 percent – are in protected status and unavailable for logging or construction activity. Of the total Tongass, besides the 6.5 million acres in wilderness, parks, monuments and LUD II land status, another 9.5 million acres are currently classified by the Forest Service as Inventoried Roadless Areas (IRAs) – which prevents road construction and any activities that will dramatically reduce biological protections for wildlife. Even if the Forest Service's Alternative One from its Plan document would be selected, an alternative modified by the 2012 planning rules, just 40,140 acres of old-growth would be harvested over the next 25 years (generating up to 118.7 mmbf of harvest annually), and only 62,413 acres of old-growth would be harvested after 100 years. That means after 100 years only 1.2 percent of the productive old growth would be harvested in the Tongass, i.e., 90 percent of the original amount of productive old growth will remain, and just 1 percent less than under the other four alternatives being considered by the Plan Amendment.[42]

That also means 82 percent of all high volume, POG trees will remain in the Tongass untouched after 100 years, just one percent less than the other four alternatives. Some 80 percent of POG will remain in 100 years compared to the 82 percent that now exists in the forest, just one percent

[42] USDA Forest Service, *Tongass Land and Resource Management Plan: Draft Environmental Impact Statement – Plan Amendment*, at 2-43 (Table 2-18).

less than in the other four alternatives. According to the data developed in the Forest Service's *Tongass Land and Resource Management Plan: Draft Environmental Impact Statement – Plan Amendment* (the DEIS), deer habitat will be 87 percent of the levels of 1954 (before commercial timber harvesting began), just 1 percent less than under the other four alternatives, and just 2 percent less than today's level.[43]

The leading concern with timber harvesting is traditionally the effect of logging on commercial fishing, specifically salmon production. But the record of fisheries and timber is quite clear – it is fully possible to permit logging by means of modern-era logging practices without negative environmental impacts on fisheries. Exempting minor spruce harvesting during World War II, modern commercial logging began in the Tongass in 1954. In 1954 Alaska statewide produced 44.29 million salmon. While harvests declined to 25.12 million salmon at the time of Statehood in 1959, because the federal government allowed the use of fish traps, commercial salmon harvests rebounded to set a then record of 189.51 million in 1991 – the peak year for timber production from Southeast Alaska – proving that the fish harvests were not harmed in spite of timber harvesting. Despite the timber harvests, pink salmon production (Southeast being the leading source for pink salmon in the state) hit a then record of 128.33 million pink salmon in 1991. While pink returns biologically usually are higher in alternating years, pink returns to the state surpassed the 90 million mark 14 times from 1989 to 2011 – when logging on federal, state and Native corporations lands were at their peak – while pink production had only passed the 90 million mark once from 1878 to 1989. Clearly, that record of increasing salmon production is partially the result of state management, partially the result of the state's regional aquaculture program that began in the mid-1970s, and partially the result of moderating weather and stream conditions improving fry survival. But it also undercuts the argument that timber production in Southeast Alaska harms salmon production.[44] Timber harvest practices have improved in Alaska, especially since the late 1980s, further reducing the impacts of timber operations on fisheries.

It is equally unpersuasive to argue that timber production has harmed tourism in Southeast Alaska. In 1985, 497,300 visitors came to Alaska. By 1999, when timber harvesting was at 146 mmbf (one of the last years above 140 mmbf) tourism in Alaska reached 1.199 million visitors.[45] The impacts of the logging of 435,000 acres of the region certainly have not prevented tourists from visiting. According to the most recent extensive study of tourism, 1,064,000 visitors came to Southeast in 2011-12 out of a total visitor volume to the state that year of 1.82 million. Visitors spent $1.003 billion in Southeast in 2011-12. This is hardly an indication that timber development has destroyed Alaska's environment and reduced its attractiveness to tourists.[46]

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[43] *Id.* at 2-44, (Table 2-18 continued).

[44] Alaska Department of Fish and Game, *Alaska Salmon Catches 1878 to 2011* (2012).

[45] McDowell Group Inc., *Economic Impact of Alaska's Visitor's Industry 2011-2012*, 3 (February 2013), available at https://www.commerce.alaska.gov/web/portals/6/pub/Visitor_Industry_Impacts_2_13.pdf.

[46] *Id.*

ECONOMIC IMPACTS – An immediate transition to a young-growth forest management program is unreasonable and economically unjustified.

There is no basis for the Forest Service to limit old-growth logging to the levels that would be enshrined in the TLMP by approval of the proposed Plan Amendment, especially when it is not clear that an industry can afford to transition to Y-G timber.

Except for Federal Forest Service timber lands, there are few other lands available for timber production in the region. The total state forest lands in Southeast covers about 50,000 acres.[47] That equates to an allowable sale quantity of only about 11 mmbf a year over the next 100-year rotation. Information provided by the Alaska Division of Forestry shows that while it can consider about 70 mmbf in sales from Prince of Wales Island and perhaps 50 mmbf total in other sales (the Vallenar Bay sale at12 mmbf and the Edna Bay sale on Koscuisko Island at 24.5 mmbf are among the largest) after that state additions to the timber base will be relatively small.

Looking at Native owned tracts, all provided as a result of the Alaska Native Claims Settlement Act of 1971, Sealaska Native Regional Corporation has about 292,000 acres of timber lands out of its 365,000 total acres that it has and will receive under the act. While village corporations may have more second-growth acres, there is a real question whether many of those acres will be of sufficient size to make Y-G harvesting economic in future decades. One of the key problems with the DEIS is that it assumes, based on the Demand Estimate, that about 61 mmbf a year are currently available to support a Y-G transition – a figure that will rise to about 80 mmbf over the 15 year transition.[48] However, the fact that Sealaska is estimating that its sustainable harvest over the next 25 years is only about 45 mmbf annually casts doubt on the accuracy of that entire part of the supply forecast – the part upon which the DEIS transition policy is based.[49]

In the Lower 48 the average Y-G mill costs about $100 million to build and equip – more than the total capitalization of Alaska's existing timber industry. The Forest Service's own Demand Estimate questions whether a young-growth transition is feasible. "Whether Alaskan products will remain competitive during the young-growth transition will depend on a variety of factors," the market Demand Estimate concludes. It suggests that for a transition to be successful, given the limited volumes of young-growth available based on current land uses, a biomass and a wood pellet industry will need to be developed to better utilize wood waste from young-growth product production. It notes for that to happen wood pellets will need to replace 30 percent of the heating oil currently used in Southeast Alaska for home heating. "Producers, however, may find it difficult to compete with pellet producers in British Columbia in international markets. In addition, transportation challenges make it difficult for Southeast Alaska producers to ship material to other regions within Alaska itself. There is tremendous interest in developing markets for value-added niche products. Whether demand for these products would be sufficient to sustain a timber industry in southeast Alaska will likely be the subject of debate for many years to come," concludes the Demand Estimate.[50]

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[47] State of Alaska Division of Economic, *Development Report to the Alaska Timber Jobs Task Force*, 2 (March 2012).

[48] Daniels, *Tongass National Forest Timber Demand*, at Table 22.

[49] *See* comments by Sealaska and by the Alaska Forest Association for additional details.

[50] Daniels, *Tongass National Forest Timber Demand*, at 32.

That is hardly a firm foundation upon which to base a transition to a young-growth industry, or on which to base adoption of the Proposed TLMP to start implementation of that transition.

If the Forest Service is intent upon proceeding with one of the published alternatives, then Alternative 5, the preferred alternative, is best to ensure continuation of some timber industry in Southeast Alaska. It allows more old-growth to be harvested than any of the three reduced-harvest alternatives, and allows the transition to stretch over a longer period of time. It also comes closer to meeting the recommendations of the TAC than the other three reduced timber alternatives (Alternatives 2-3-4). But the alternative is still defective because it does not include any of the suggestions the State of Alaska offered in the state's harvest alternative, does not consider the impacts of the Alaska Mental Health Trust land exchange that is currently being considered by the Forest Service in the region, and does not follow the more reasonable 1982 planning rule procedures.

ROADLESS RULE REVISION – Harvesting should be permitted from existing roads that have already been built in the Tongass.

There are good reasons to include one part of Alternative 2 in a final new TLMP. Alternative 2 proposes to allow timber harvesting in areas where roads were built prior to the adoption of the federal Inventoried Roadless Area (IRA) Rule in 2001. There are nearly 33,000 acres of timber in the Tongass that are currently off limits to timber harvesting, but accessible by established roads. This is largely because the final IRA regulations were not updated to reflect as-built roads in the Tongass between when roadless designations were first proposed as part of the RARE II process in 1978 and when the IRA regulations were issued in 2001. The 2008 TLMP certainly does not consider the additional roads built in the forest between 2003 and 2009, when the rule was not in effect in the Tongass because of a court accepted consent decree, but then was reinstated early in the Obama Administration – a decision still being litigated. Harvesting should be permitted from existing roads that have already been built in the Tongass. It should not be prohibited simply because of planning inertia that was in effect prior to adoption of the IRA rule by the Clinton Administration.

TIMING ISSUES OF PLAN AMENDMENT – The Forest Service should ensure that a transition is economically feasible and likely to succeed *before* amending the 2008 Plan and "locking in" reduced old-growth timber harvest offerings.

As noted above, it seems clear that the final new TLMP will be crafted and reviewed before there is data that confirms the volume of young-growth timber currently available for harvest in the Tongass, and long before an economic study is finished that confirms that it will be financially viable for a Y-G industry to develop (and find profitable markets for its products) based on that level of wood volume.

In its final recommendations, the TAC acknowledged that there are still considerable uncertainties in the amount, volume, and timing of the availability of Y-G to support a transition. Among the panel's overarching principles is the statement that "due to uncertainties in young growth inventory data and often significant differences in on the ground operational outcomes,

independent monitoring is essential to achieve the dual objective of reducing old-growth sooner and providing for a viable timber industry."[51]

During its review of forest policy, the TAC noted that of the 16.7 million acres of the Tongass under Forest Service control, 13.3 million acres already are under wilderness (5.9 million acres) and Natural Setting classifications (7.4 million acres). That leaves just 3.4 million acres for any development.[52] The panel found that of the 435,000 acres of the Tongass that have already been harvested, most harvested since 1954, only 273,000 acres are areas currently considered as "suitable" for harvest – outside of beach fringe and stream buffers – and only 186,000 acres currently are in Forest Service areas open for Y-G harvesting. More than 120,000 acres of Y-G is currently classified as non-suitable for second-growth harvest.[53]

The Forest Service, acting on the TAC recommendations, proposed in July 2015 to fund up to $4 million of studies to update the inventory of young-growth by location and to develop better data on the growth rates of young-growth trees. While a privately funded study was in process in late summer and early fall of 2015, the separate Forest Service funded study of inventory, led by the Pacific Northwest Research Station with assistance from the State of Alaska's Division of Forestry personnel, was delayed from the start. Work presumably continues to progress on the methodology to guarantee that it will provide credible data from more age-classes of Y-G timber in more locations forest-wide and on all slopes, not just on southern facing slopes (southern slope trees due to ground warming in northern climates usually produce the biggest and fastest growing trees). Consequently, that study is unlikely to be started until spring 2016 and unlikely to be completed prior to the finalization of the final new TLMP planned for December 2016.

Even if the study will be completed in time, the study, as currently envisioned, will not produce the quality of data needed to accurately forecast future Y-G timber availability forest-wide. Again, the inventory study should sample young-growth from all land areas and all age classes. Harvests in the Tongass before 1976 tended to be at low elevations, below 500 feet, where harvesting costs were the lowest, but also where trees grow the fastest from warmer soil temperatures. Harvesting – and thus future tree growth after 1976 where about two-thirds of the future Y-G trees will come from – will produce markedly different growth rates and thus different harvest volumes. Appendix B-2 of the DEIS seems to imply that while new site class/site index data was estimated and fed into the computer models used to estimate wood availability, there were not any actual field surveys at the time of the DEIS to prove the accuracy of the site index information upon which the new land Plan Amendment is based. Until the site index data is confirmed as accurate across all age classes and all terrains and elevations in Alaska, not just the Pacific Northwest, it would appear to be impossible for either the Forest Service or private mill operators to have much faith in the accuracy of the DEIS. All of the assumptions on the economic feasibility of a transition flow from this basic data. How can, for example, logging costs for Y-G timber be accurately forecast without true faith in the volume estimates? How can the computer models be upgraded to depict Alaska Y-G timber output if the volumes and grades for that timber are in so much doubt, affecting saw and utility log forecasts?

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[51] TAC, *Final Recommendations*, 4.

[52] *Id.* at 1 (a slightly different number than the Forest Service projections).

[53] *Id.* at 8-10.

The Alaska Forest Association and individual timber operators in the region will likely express similar concerns with greater precision in their comments.

Equally important, the TAC urged that funding take place for studies into the economics of product formation from Y-G timber. "There is limited information available on growing, managing, harvesting, processing, manufacturing, and marketing of young-growth timber within Southeast Alaska. Additional research regarding young-growth silviculture and operability is necessary to support a viable transition."[54] The committee noted that for a Y-G industry to succeed businesses will have "to adapt their business models and develop new products and markets." It recommended that the Forest Service "provide assistance to communities and businesses, conduct market analysis and products demand analysis" to aid a transition.[55] An economic analysis should proceed and be funded and finished *before* a plan amendment to the 2008 Plan is proposed, much less adopted.

U.S. Department of Agriculture (USDA) officials have voiced support for providing additional funding to cover an economic study of products that may be produced in Alaska from Y-G timber, to estimate costs of production, transportation and sale. The environmental community has expressed support for such studies. Such studies need to be conducted. My concern is that the Secretary did not propose any money for such studies in the Administration's FY 17 budget released February 9, 2016, nor did the budget propose any additional funding for the inventory studies cited above. Without the Secretary and Forest Service committing significant funds to advance their transition, the transition will falter.

I suspect that even more funding will be required for economic and marketing studies before private financing will be available to support a Y-G transition. The financial analysis on Page 3-481 of the DEIS, for example, indicates that all of the plan alternatives, including the preferred Alternative 5, have a positive net present value. And Table 3.22-16 indicates that Alternative 5 will result in a $112.9 million net present value. But without any information on the cost of Y-G harvest, much less better estimates of the reduction in the value of POG when sale areas decrease and production costs rise, how can estimates that predict Forest Service costs will be about $105 per thousand board feet and the typical purchaser profit will be about $80 per thousand board feet possibly be accepted as potentially accurate? Until data on the volume of Y-G and data on the potential products that will be manufactured from Y-G, as well as their costs and profits, are generated, it is impossible to believe that forecast models, based on the Lower 48's experience, can possibly govern either Forest Service policy or private sector investment decisions. It is one thing to base policy on "informed estimates" when those estimates have a reasonable, proven basis in fact, but it is a totally different case to base public policy on forecasts that have such a tenuous relationship to proven facts in Alaska – given its different marketing costs, labor costs, transportation costs, operating costs, and likely volumes of future wood availability.

While it is fully appropriate for the Forest Service to continue to study and develop actual data that may prove that a transition to greater Y-G usage can happen sooner than the industry's expectation of 30 years, it is inappropriate for the Plan Amendment to be proposed, much less

[54] *Id.* at 24 (Research Investments).

[55] *Id.* at 25.

finalized, until that work is undertaken – something that is unlikely to happen prior to 2017 on a forest-wide basis at the current level of funding seemingly being proposed by the Forest Service.

TONGASS ADVISORY COMMITTEE RECOMMENDATIONS – The Forest Service should take closer account of the TAC's detailed recommendations.

While I will leave it to the TAC to file their own comments on the Proposed TLMP, it is noteworthy that the Forest Service has declined to follow a number of the TAC recommendations.

To encourage a transition to Y-G sooner than market conditions might allow, the TAC proposed a system of "co-intent" where Y-G acreage in "unsuitable" areas could be harvested within the first 15 years of a transition to provide greater volumes quickly to permit an economic transition to begin. But the Forest Service's Alternative 5 includes restrictions of harvesting in such areas that may make it far harder for such Y-G harvesting to take place economically.

More important, the TAC recommended that if any suitable young-growth acres are removed from the timber base as a result of future review processes, an equal number of acres should be added to the Y-G base. This effectively prevents the continual chipping away of a commercial timber base as has been the case under recent Forest Service TLMP revisions. There is nothing in Alternative 5 that seems to carry out that requirement – a key basis for the panel reaching consensus on its recommendations. There is also little in the Plan Amendment alternatives that will implement the TAC's detailed recommendations on additional federal aid, new policies for planning and overseeing sales, guarantees that timber sales will be conducted to provide a reliable supply of timber for mill amortization, or on its requests for new oversight panels governing and reviewing forest plan implementation and enforcement.

RENEWABLE ENERGY OVERLAY – The plan revisions should give greater assurance of speedy approval for roads or transmission facilities through roadless areas to developers of proposed renewable energy projects.

As part of its plan update, the Forest Service agreed to consider changes in regulations governing the construction of roads and electrical transmission lines to facilitate the economics of construction of renewable energy projects in or through the 9.5-million acres of Inventoried Roadless Areas (IRAs) in the Tongass. In my comments of June 26, 2014 on the harvest plan, I encouraged the Forest Service to modify the 2008 Plan to make it clearer and easier for roads and utility systems to be built to facilitate less expensive construction of renewable energy projects, and also to aid economic development of mineral deposits in the forest.

I welcome the decision of the Forest Service to include language in the plan update to make its intent known that it wants to facilitate construction of roads and electrical transmission lines for renewable energy developments. Unfortunately, it's far from clear that the actual plan revision will give any greater assurance of speedy approval for roads or transmission facilities through roadless areas to developers of proposed renewable energy projects.

Because the Forest Service prepared the post-World War II study that noted nearly 200 sites in Southeast Alaska that could potentially be tapped for hydroelectric power generation, there are innumerable sites that could permit lower-cost hydroelectric generation. Such cost savings are considerable in light of the roughly 60-cents per kilowatt hour cost of diesel-fueled generation in the region (a cost that admittedly has fallen recently due to falling world oil prices). Theoretically, transportation and utility access was guaranteed through most of the Tongass National Forest by Title 11 of ANILCA, which set up a process guaranteeing access through conservation system units after the agency ruled that IRAs are covered under that definition. A consent decree several years ago did permit about a dozen projects to proceed in roadless areas. But that ruling leaves out many dozens more. While the existing 2008 Plan does not preclude construction of roads and utilities in roadless areas, it does contain regulations that complicate approvals for roads and transmission facilities in some Land Unit Designation (LUD) areas. Although the existing alternatives propose to provide more "flexibility" on a "case-by-case" basis for roads and utilities, the language does not provide sufficient certainty of approval to encourage developers to advance costly reconnaissance studies of potential projects that could be impacted by roadless rule regulations. I strongly encourage the Forest Service to look again at how it is proposing to handle future requests for renewable energy developments in and impacted by roadless areas to prevent needless costs and development uncertainties.

MINERAL DEVELOPMENT ACCESS – The Forest Service should allow roads through roadless areas to guarantee more affordable access to mineral developments.

Concerning mineral development, the draft alternatives do nothing to allow development of roads or power transmission lines through IRAs to aid mineral developments in the region. The 2001 Roadless Rule allows for "reasonable access" to locatable minerals covered by the Mineral Leasing Act of 1920.[56] But agencies have defined "reasonable" access to not be determined by the economics of access.

Thus, if a mine site can be accessed by water, the Forest Service is unlikely to approve roads that likely would make access less expensive for both the mineral developers and for workers heading to the project, even though the January 2001 regulations permit roads to be built across inventoried roadless areas if needed "in conjunction with the continuation, extension or renewal of a mineral lease on lands that are under lease by the Secretary of the Interior."[57] The Forest Service, for example, in 2013 opposed legislative efforts to speed a permit for a road through an IRA to reach either the Niblack or Bokan Mountain mineral and rare earth element deposits on southeastern Prince of Wales Island. While access to the mines can come by water, workers living on the island will effectively have to reach Ketchikan in order to be transported back to the mines for work – a more dangerous and time consuming process than if they could simply drive to work by the road network on the Island. It would make great sense for the USDA, which two years ago classified Southeast Alaska as a high unemployment area, authorizing it to receive aid from its Operation Strikeforce initiative, to allow roads through roadless areas to provide more reasonably priced access for workers to mineral developments. Any plan update should be modified to guarantee more affordable access to mineral developments.

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[56] 36 C.F.R. Part 228.

[57] 36 C.F.R Ch. II § 294.12(b)(7).

GENERAL ADDITIONAL POINTS:

The Proposed TLMP and the Demand Estimate have a variety of other issues. There are serious weaknesses in both the Demand Estimate and in the DEIS. For example, in no particular order:

- The demand analysis does not make any estimates as to the cost of accessing, transporting, and harvesting of Y-G timber, undercutting the credibility of its cost estimates.
- The demand analysis contains no Alaska-specific estimates of the cost of producing products from Y-G timber, which undercuts the credibility of its estimates for the demand for Y-G in the first 10 years, and in years through 2030.
- The DEIS on Page 3-223 argues that an Alexander Archipelago wolf threatened or endangered listing decision under the Endangered Species Act would impact timber harvesting and seemingly require greater use of Y-G. Since the listing did not take place on January 6, 2016 and the USF&WS ruled that the Alexander Archipelago is not a unique subspecies of gray wolf, that assumption affecting the Plan is invalid.
- The demand report argued that biomass from Y-G timber could be economic because of the high price of diesel fuel for home heating. Given current world prices for crude oil of around $28 a barrel, the price for diesel fuel is falling rapidly which undercuts the methodology of the demand study. As of January 20, 2016, diesel prices nationwide on average were $2.13 a gallon, compared to $2.89 one year earlier – a fall of 35%.[58]

CONCLUSION:

Since the start of commercial logging in an area slightly larger than West Virginia, only about 435,000 acres of the nearly 10 million acres of total forested lands have been disturbed by humans, or just eight percent of the total productive forest. By allowing an alternative that might involve harvesting of just 17,000 more acres of old-growth timber over the next quarter century than the other four plan alternatives, the Forest Service could well restore hundreds of direct and indirect jobs in the region, without noticeable harm to the region's commercial fisheries, wildlife habitat, Native subsistence activities or the environment. By simply following the existing 2008 Plan, it could add even more jobs and payroll in an economically distressed region, without harm to the environment or wildlife or fisheries. The agency should wait to decide whether and what kind of TLMP plan update is required until there is firm data to support the Administration's policy decision to accelerate a transition to a young-growth forest management program in the region. A delay in this plan revision is the only action available to the Forest Service that is justified by the record.

Sincerely,

Lisa Murkowski
United States Senator

[58] AAA *Daily Fuel Gauge Report* (January 20, 2016), available at http://www.fuelgaugereport.com/.

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Governor Bill Walker
STATE OF ALASKA

February 22, 2016

Mr. Earl Stewart
Forest Supervisor
Tongass National Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Re: Tongass Land & Resource Management Plan Amendment and DEIS

Dear Mr. Stewart:

The State of Alaska (State) has reviewed the Draft Environmental Impact Statement (DEIS) for the U.S. Forest Service's (USFS) proposed Land and Resource Management Plan (Proposed Plan) for the Tongass National Forest and is pleased to provide its comments.

I appreciate the primary intent of the plan amendment to accelerate the transition from an old-growth to a predominantly young-growth forest management program in the National Forest, and to do so in a way that preserves and sustains a viable timber industry that provides jobs and opportunities for residents and communities in southeast Alaska. Through the Division of Forestry, the State actively participated in the Tongass Advisory Committee (TAC) that achieved consensus on a suite of recommendations to the USFS on its young-growth transition strategy. A key objective for the State is the triple bottom line, where social, economic, and environmental interests are balanced to produce an outcome with broad support. We must continue to work together to ensure that the Tongass National Forest provides maximum benefits to the communities of Southeast Alaska and all users of the forest.

I would also like to acknowledge the great work that has been done by the TAC. Rarely have I ever seen an effort like this, where stakeholders with such varied interests have come together to reach a consensus on a very complex resource management issue. I greatly appreciate the work of the TAC, and I hope that this committee, or one similar to it, will continue to help guide the USFS and the State as we continue to work toward a strong, vibrant economy for the residents of Southeast Alaska.

I am pleased that many key recommendations from the TAC were incorporated into Alternative 5 of the DEIS.

However, I am generally concerned about the underlying science and analysis that 1) supports the feasibility of young-growth forest management, and 2) demonstrates the effectiveness of such a strategy. The Forest Plan needs to include scientific information and sound analysis regarding both the silvicultural treatments necessary for timber production and a sustainable industry, and a concurrent analysis of how these treatments affect key wildlife species and their habitat. The plan must demonstrate, with accompanying science-based appendices, that young-growth management

can sustain timber outputs and useable and sustainable wildlife populations. This is particularly important in highly-modified landscapes.

While this is an amendment and not a full forest plan revision, the transition to predominantly young-growth harvest and management will be a ground-breaking event on the Tongass. Science is key to determining what is, or is not, feasible. For such a significant resource management policy change, the science and analysis must be rigorous. State resource managers believe more work is required in this area.

I would also like to highlight a significant concern that none of the alternatives will meet the requirement of the Tongass Timber Reform Act. The State encourages USFS to assess the legal consistency of the Forest Plan with the Act. The Act's clear directive to maintain a viable forest products industry supported by Tongass timber must not be lost in the evolution of Tongass National Forest policy. To do so only continues the crippling legacy of litigation and controversy that unfortunately is a historic legacy of Tongass forest management.

The State departments of Natural Resources, Fish and Game, Transportation and Public Facilities, and Environmental Conservation have carefully reviewed the Proposed Plan and DEIS. Their attached consolidated comments include more technical detail regarding the concerns listed above, as well as comments and suggested revisions on topics including timber demand calculations, transportation corridors, subsistence, fish and wildlife habitat, water quality, and consideration of wilderness and wild and scenic rivers. It must also be emphasized that mineral development and alternative energy values are of significant consideration.

Thank you for the opportunity to comment on the DEIS and draft Proposed Plan. Please contact the State of Alaska agency staff identified in the attached consolidated comment letter if you have any questions or you would like to discuss our comments in greater detail.

Sincerely,

Bill Walker

Bill Walker
Governor

Enclosure

cc: The Honorable Lisa Murkowski, United State Senate
The Honorable Dan Sullivan, United States Senate
The Honorable Don Young, United States House of Representatives
The Honorable Sam Cotten, Commissioner, Alaska Department of Fish and Game
The Honorable Larry Hartig, Commissioner, Alaska Department of Environmental Conservation
The Honorable Marc Luiken, Commissioner, Alaska Department of Transportation and Public Facilities
The Honorable Mark Myers, Commissioner, Alaska Department of Natural Resources

Tongass Land and Resource Management Plan Amendment
Draft Environmental Impact Statement (DEIS)
State of Alaska – Agency Comments
February 22, 2016

The State of Alaska (State) appreciates the opportunity to provide its comments on the Proposed Amended Land and Resource Management Plan (Proposed Plan) and Draft Environmental Impact Statement (DEIS) for the Tongass National Forest.

The State has participated in the development of the Proposed Plan since the U.S. Forest Service (USFS) issued a Notice of Intent (NOI) to prepare an environmental impact statement (Federal Register, Vol. 79, No. 101, May 27, 2014). The State submitted comments during the 30-day public scoping period and now requests your consideration of the following comments on the Proposed Plan and DEIS. These comments were prepared by the departments of Natural Resources (ADNR), Fish and Game (ADF&G), Transportation & Public Facilities (ADOT&PF), and Environmental Conservation (ADEC). They are presented in order of general priority.

FORESTRY[1]

The State, through ADNR's Division of Forestry, was an active participant in the Tongass Advisory Committee (TAC). The TAC was a formally recognized Federal Advisory Committee Act (FACA) process that achieved consensus on a suite of recommendations to the USFS on the Young Growth transition strategy. Many of the key recommendations from the TAC are incorporated into Alternative 5 of the DEIS, however there were many important recommendations concerning the transition that were not appropriate to include in the DEIS and Proposed Plan. These recommendations were focused on the forest plan implementation process and cultural change within the USFS that will be necessary to successfully navigate the agency, forest industry, communities and residents of the region through the transition.

The TAC charter was narrow and focused its effort primarily on the Young Growth transition and the timber management aspects of this challenge. There are other important economic sectors and interests at play in the Tongass National Forest and these interrelated interests should be addressed as the transition unfolds. Balancing these interests is no easy task but the TAC has taken the first steps in laying the foundation for this effort. The next steps of implementation and adaptation will be critical to the outcome of the transition. While the State fully supports the TAC process and recommendations, we have serious concerns with the Proposed Plan and DEIS.

[1] The State of Alaska point of contact for forestry-related comments on the Proposed Plan and DEIS is Jim Schwarber with DNR's Division of Forestry. He can be reached at james.schwarber@alaska.gov or 907-451-2704.

By providing the following comments, the State retains its right to file an objection after the public comment period closes on February 22 or consider other action.

Any national forest plan developed must meet all applicable laws including Section 101 of the Tongass Timber Reform Act (TTRA) of 1990 (Public Law 101-626) that states in part, "the Secretary shall to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle."

Currently the "existing industry" is an old-growth-dependent industry and the majority of the industry believes that old-growth harvest must continue until there is a sufficient quantity of young growth to supply the industry (greater than 100 MMBF); in addition for mills the young growth must reach sufficient size to produce clear cuttings for niche markets (150+ years of age) (See the attached Working Forest Group (TWFG) report, *Strategies to Maintain a Viable Timber Industry in Southeast Alaska, 2015*).

The annual market demand (seek to meet) in the past has been calculated by the Morse Methodology. The last information on the Region 10 website is for FY2014; for that year, the estimated volume the USFS should offer to meet the FY2014 sell objectives was 142 MMBF (line Q under the expanded lumber scenario). The annual projected timber sale quantity (PTSQ) under the amended Forest Plan should equal the annual market demand number. No alternative in the DEIS provides sufficient volume to meet this annual demand number. The proposed PTSQ in the DEIS, 46 MMBF, does not meet the requirements of TTRA sec. 101 to seek to meet the annual timber demand from the forest.

The Proposed Plan also does not meet the statutory requirements of TTRA because no alternative provides sufficient quantities of old growth during the planning cycle (life of the Plan, 15 years) to meet the demands of the existing industry which is old-growth dependent. Thus, regardless of which alternative is selected, the Proposed Plan will violate both prongs of the requirement of TTRA sec. 101 to "seek to meet" timber demand. This will be a fatal legal flaw in the amended plan. The language requiring the USFS to "seek to meet" timber demand is more than a mere suggestion from Congress that the Forest Service consider the timber industry in its planning process.

The TTRA includes caveats that recognize the USFS may not always actually meet the market demand for timber due to circumstances beyond its control, such as litigation that prevents a planned sale from actually being offered and sold. However, the intentional creation of a Forest Plan that on its face actually prevents the USFS from offering sufficient timber to meet demand cannot possibly be construed by the public or the federal courts as "seeking to meet market

demand." Based on the above, none of the action alternatives meet the Purpose and Need to preserve a "viable timber industry."

We find it problematic that the DEIS utilizes, as a foundational source, an unpublished draft report (Daniels, et al; in press) that is referenced 52 times. A final Timber Demand Study would be more appropriate considering its importance to informing the DEIS.

- Since the Tongass Timber Reform Act, sec. 101 requires the Forest Service to "seek to meet" timber demand, the use of an unpublished draft of timber demand projections is unacceptable in the DEIS. In addition, the Proposed Plan itself makes no direct mention of the Daniels et al. study.

- Daniel's draft Demand Study is flawed in part because of its incorrect assumptions of volume available from State and private lands, and by assuming this volume will be offered on an annual basis. Timber resources managed by the University of Alaska Lands Office and the Alaska Mental Health Trust will not contribute as much timber harvest in the near future as they have in the recent past. These two entities follow a different harvest strategy than the Alaska Division of Forestry does on the state lands it manages in Southeast Alaska.

- An unrealistic assessment of market demand may be considered a fatal flaw in a national forest plan EIS. The USFS' inflated assessment of market demand was successfully challenged in Natural Resource Defense Council v. USFS, 421 F.3d 797, 811-12 (9th Cir. 2005) We think the same flaw exists in this plan, wherein the market demand is deflated to the point that it is misleading. The PTSQ is what the USFS wants to offer over the long term, not what the industry needs to survive or maintain itself at the existing level.

- The DEIS refers to Daniels (2015) inconsistently throughout the document. Initially the "Daniels (2015)" format is used 22 times between pages 2-8 to 3-347, implying this is a final report. A variation that appears once is "(Daniels et al 2015)" on page 3-313. One must review the References on page 6-14 to see this actually refers to an "Unpublished Draft Methodology." Appendix G of the DEIS then refers 27 times to a "Daniels et al. (in press)" and includes a different title in the Citations on page G-9 of the DEIS. Are these actually two different references, or do they refer to the same unpublished manuscript?

- Please explain why the DEIS uses 25- and 100-year timeframes for comparison purposes. The use of those timeframes is misleading to the public. The lifespan of a Forest Plan is 15 years. A forest plan must show volumes for PWSQ (Projected Wood Sale Quantity) and PTSQ (Projected Timber Sale Quantity) for two decades per USFS Handbook direction. Based on this requirement, analysis and comparison of alternatives should be

based on a 20-year period. Projecting that a Forest Plan and PTSQ will not change over 25- and 100-year periods is misleading especially for the Tongass. Page 1-2 and 1-3 of the DEIS provide a planning history for the Tongass. The first forest plan for the Tongass was completed in 1979; since then there has been at least six different forest plans for the Tongass and the annual sales quantity has gone from over 400 MMBF to 46 MMBF under the current DEIS. Over a 36-year period, the forest plan has been changed every six years. To project and compare alternatives and suggest to the public that implementation of forest management activities will not change over 25- and 100-year periods misleads the public and prevents the public from being able to provide informed comments on the Proposed Plan. Please revise with appropriate timeframes for comparison.

- Analysis for the DEIS should be based on a 20-year period that coincides with the PWSQ and PTSQ calculations. Analysis over longer timeframes should provide the public information on the continued effects of actions taken during the life of the Forest Plan (15 years) or the PTSQ projects for the first two decades.

- Another issue is the timeframe used in Daniel's draft Demand Study, which only projects timber demand for a 15-year period (2015-2030). Any demand study associated with a forest plan should be for the first two decades so that the projected wood sale quantity (PWSQ) and PTSQ can be developed. Note that the proposed PTSQ under the DEIS is less than the derived Demand for the three scenarios that Daniels develops (Table G-1 page G-6 DEIS Vol II). The PTSQ should at least be equal to the largest derived demand volume for the first two decades of the plan.

- The PTSQ developed for the Proposed Plan should have taken into consideration the following statement from the Timber Demand section of the DEIS:

    - *"In choosing the timber sale offer level, it is important to anticipate the consequences of decisions. In terms of short-term economic consequences, over-supplying the market is less damaging than under-supplying it. If more timber is offered than purchased in a given year, the unsold volume is still available for purchasing off-the-shelf or re-offered at a minimal investment. However, a significant shortfall in timber supply available for harvest can be financially devastating to the industry." (Pg. G-8, DEIS Vol. II)*

- The DEIS on page 1-5 under Need states, "that the transition should be implemented in a manner that preserves a viable timber industry that provides jobs and opportunities for Southeast Alaska residents." The DEIS needs to define "viable timber industry" and "existing industry." These terms need to be defined for the Forest Service to be able to

develop a Forest Plan that “preserves” or “retains” the timber industry in southeast, and to be able assess positive or negative changes in the timber industry resulting from implementing the transition.

Analytical Needs

The analysis within the DEIS needs strengthening. For example:

- Table 3.9-10 Existing Young Growth in Reserves and in Matrix Lands by Alternative is misleading in that the percentage in each column is the percent of the total amount of young growth (YG) on the forest, not its percentage based on the subsection it is in (Reserve or Matrix).

- In Alternative 2 in Table 3.9-10, the reserves contain 110,339 acres of YG. This alternative will harvest 47,136 acres or 42.7% of the YG acres within the reserves; the table shows that amount of harvest as only 10% of the total acres of YG. What are the effects to the reserve system if 42.7% of the YG within the reserves is harvested? YG stands within beach buffers and less than 800 foot in elevation have greater value for wildlife that YG stands above 800 feet in elevation, and they may have more value than old-growth stands depending upon the location of the old growth (OG).

Nowhere in the Economic and Social Environment section on wood products is there any discussion on the cost to harvest and produce a manufactured product, either lumber or biomass (see lumber price graph). Please provide this missing information.

- Note graphs on pages 3-482 and 3-483 (Net Revenue) Figure 3.22-17 is net revenue for OG and Figure 3.22-18 is net revenue for YG. When you add the values together for a five year period in most cases the total net revenue is negative in value. As an example, Alternative 5 (preferred alt.) in Years 16-20 (a period when the transition has been completed and YG makes up the majority of the volume being offered) the total net revenue sum is a negative $10 million. How can the USFS have a timber sale program that is negative value when Public Law 112-74, House Report 2055-257, Section 414 allows it only to offer positive value timber sales?

- Note the information under Financial Analysis on pg. 3-481. The DEIS uses pond log value (PLV) to determine net revenue.

    - Pond log values are the price a buyer would pay for a log at the mill site (selling value minus manufacturing costs). Logging and transportation costs and an amount for normal profit and risk are also factored into this value. These pond log

values represent the value to the purchaser and are net of Forest Service costs that would be incurred for National Environmental Policy Act (NEPA) preparation, sale preparation and administration, and engineering support. (DEIS pg. 3-481)

- Table 2.22-16 shows discounted net revenue by alternative. How can the USFS show positive net revenue based on the statement above when the USFS has been subsidizing its timber sale program for years? The USFS cost for sale preparation and support is approximately $104/mbf (2014 Saddle Lakes DEIS pg. 3-67).

- Real life example – (2014 Saddle Lakes DEIS chapter 3 Issue 1 – Timber Economics section pg. 3-62) In Table 5,they have taken the end sales value minus the total cost to create the end product and the result is a negative value in all but one alternative under the export policy scenario. What is labeled the indicated advertised rate is the stumpage return to the USFS and is before the USFS subtracts their administrative cost of $104/mbf.

- Another real life example – (Big Thorne Project, ROD 2013) Table ROD-9 on page 36 shows an indicated bid value for the selected alternative as $23.77 positive; again this is before the FS admin fee of $104/mbf is subtracted. Big Thorne includes both OG and YG volume.

- Using the discounted net revenue number for Alternative 5 from Table 3.22-16, the USFS is saying it will average a positive return of ~$98/MBF ($112.9 million divided by (46MM(annual volume) *25years)) over a 25-year period after subtracting its administrative cost.

According to 40 CFR 1502.23, when economics are relevant and important to a decision, economic information must be included in an EIS.

- The DEIS documents do not detail the PLV used by the USFS. What is the PLV number for YG? What is the PLV for OG? Nothing in the documents tells the reviewer how the USFS determined the PLV and cost of future harvest 25 and 100 years out. Did the USFS use a set percentage increase over time? Please provide this missing information.

- In Appendix B (pg. B-13) when they performed the modeling exercise they used only the five southern districts on the Tongass for the first 15 years. By not considering/using the entire Tongass they misrepresent the actual cost of harvesting timber from the forest. See TWFG paper, *Analysis of Old Growth Inventory and Land Base Available for Operations within the Tongass National Forest, 2014*. In that document the cost of transportation

from the northern part of the Tongass to the Viking mill in Klawock drives most volume available for harvest into negative value territory.

- Based on the Woodstock model (see attached TWFG sheet) for Alternative 5 and the statement on pg. 2-32 of the DEIS, by year 16 the volume of OG harvest will be reduced to 5MMBF per year or a total of 25MMBF for the period years 16-20. The Woodstock model shows the 25MMBF of OG producing a net return of $360.99/mbf. Refer to the net returns for Saddle Lakes and Big Thorne; the USFS has not produced an OG timber sale that generates a net return after administrative cost of $360.99.

<u>Corrections or Revisions Needed</u>

Page 3-450, DEIS: Table 3.22-5 shows the average timber harvest for State lands is 25.7 MMBF for the last 13 years; the average for the last seven years is a much lower 12.3 MMBF. The last seven years is a better indication of future volume based on the fact that Alaska Mental Health Trust and the University are not bound to manage on a sustained-yield basis.

Page C-4, DEIS: Table C-1 breaks down past road construction and states that 3,379 miles out of 3,660 miles of roads constructed on non-national forest land remain open. Based upon the Division of Forestry's best estimate, instead of 92% remaining open, the total still open is more likely in the range of 1500-2000 miles, or about 50%.

<u>Additions</u>

Since this amendment process is driven by Memorandum 1044-009 – July 2, 2013, consider including the memorandum in the Appendix of the DEIS, or at least the two quotes below:

- *"To accomplish the transition to a timber program based primarily on young growth, it is important to retain the expertise and infrastructure of the existing industry so businesses can quickly re-tool. These businesses are fundamental to both the young growth and restoration components of the future timber program, and to the economic vitality of the region. Such an approach requires a reliable supply of economically viable timber, with the old growth component decreasing over time while the young growth component increases."*

- *"To ensure a smooth transition, the Forest Service will continue to offer a supply of old growth timber while increasing the supply of young growth to provide industry in Alaska the opportunity to develop new markets, learn new skills, and acquire new equipment. The continuation of limited sales of old growth timber is essential to maintain the existing industry until young growth can efficiently be processed."*

WILDLIFE[2]

The Alaska Department of Fish and Game (ADF&G) reviewed USFS alternatives accommodating the transition from old-growth to young-growth timber harvest and looks forward to participating in future interagency review of the young-growth monitoring plan. ADF&G recognizes the value to wildlife in transitioning to young-growth forest management while maintaining sufficient old-growth forest to support sustainable and harvestable populations of old-growth associated birds and mammals.

Wolves

ADF&G supports additional research and analyses concerning the effect of the Proposed Plan on Alexander Archipelago wolves. The State has primary trust authority for managing wolves and the USFS has land management authorities to provide habitat and access management for wolves in cooperation with the state. Conservation of wolves in this area warrants additional consideration in the Forest Plan.

Sealaska Land Exchange and the Old Growth Reserve System

The Old Growth Reserve (OGR) system was first established in the 1997 Forest Plan as the primary component of the wildlife conservation strategy with the intent of providing habitat sufficient to maintain sustainable, well-distributed populations of old-growth associated species. The OGR system is particularly important for maintaining populations of old-growth associated species in areas where much of the old-growth forest has been harvested. The Southeast Alaska Native Land Entitlement Finalization and Jobs Protection Act transferred land out of the Tongass National Forest to Sealaska Corporation including lands within existing OGRs. The USFS worked with ADF&G and others to create new or modified OGRs for affected areas of the Tongass National Forest from remaining productive old growth (POG). A report on that effort is included in Appendix D of the DEIS.

Although Appendix D of the DEIS states that a review of the scientific basis for the current conservation strategy is outside the scope of this amendment, ADF&G recommends the USFS use its science review process to assess the new and modified OGRs before issuing the Final Environmental Impact Statement (FEIS). If the review of the modified OGRs indicates they are unlikely to meet the OGR system intent, especially in heavily-logged areas, and more old-growth logging occurs on nearby USFS land, the opportunity to create a more effective system in those areas may be lost.

[2] The State of Alaska point of contact for fish, wildlife and subsistence-related comments on the Proposed Plan and DEIS is Greg Albrecht with ADF&G's Division of Habitat. He can be reached at greg.albrecht@alaska.gov or 907-465-6384.

Young-Growth Management

Page 3-215 through 3-217, DEIS: Please provide more information on benefits to wildlife from precommercial thinning. Explain the assumption that reestablishing old-growth characteristics will benefit wildlife by discussing benefits and losses to species groups, and describe how recurring thinning treatments will affect those groups prior to reaching old-growth characteristics or harvest. Please clarify the terms *maintain* and *improve* with regard to wildlife habitat by providing or referencing a standard of what it means to maintain or improve.

We recommend the USFS articulate how young-growth management will benefit wildlife. Depending on the species and phases of their natural history, some species may benefit from the young-growth management, while others may not. The Forest Plan should address the state of knowledge regarding the proposed management scheme for at least the management indicator species (MIS), provide a quantitative assessment of the most likely effects of second growth management for individual wildlife species, and provide a qualitative assessment of effects where no quantitative assessments are possible.

Page 3-215 through 3-217 and 3-245, DEIS: Please include outputs (e.g. deer/mi^2) from the habitat suitability index model at the wildlife analysis area level so that finer scale analyses can be made in areas where extensive old-growth harvest was conducted. We caution using the FRESH model, with which ADF&G is not familiar, prior to field verification. Please include more information in Chapter 3 about the FRESH model and its assumptions. Also, clarify how habitat quality is expected to improve after 25 years following thinning prescriptions (DEIS Table 3.10.11).

Specific Comments on the Proposed Plan and DEIS

Page 2-7, Wildlife, DEIS: Please consider managing habitat to provide for sustainable wildlife populations rather than viable populations.

Page 2-8, Wildlife, Proposed Plan: Replace the term *sport* with *hunting.*

Page 2-14 through 2-20, Alternative 2, DEIS: Please provide a clearer description of how harvest in the beach buffer occurs. Include discussion of the anticipated effects on MIS when the 1,000 ft beach buffer is removed for harvest and road construction. Please expand the discussion of how leaving an adjacent inland stand of POG or young growth serves the purpose of the beach buffer. It would be helpful to focus this discussion on biogeographic provinces 13 and 14. See our similar comments for Appendix D on page 4.

Page 3-10, Desired Condition, paragraph 1, Proposed Plan: Define appropriate research, how the determination is made, and what role the state plays in the process.

Page 3-45, Proposed Plan: Consider adding a land use designation (LUD) standard and guideline under the wildlife habitat improvement heading that addresses non-native wildlife management following a natural disturbance or disease.

Page 3-67, Desired Condition, Proposed Plan: Clarify how a population of a species is defined as a subspecies. Consider revising the definition on page 7-92 and consult the ADF&G draft Wildlife Action Plan for more information on subspecies (2015).

Page 3-138, Wildlife, Proposed Plan: Please clarify the author and standing of the Tongass Young Growth Management Strategy referenced here. The document could be strengthened by adding more information regarding the effects of the strategy to wildlife. The version available through the references (Page 6-49, DEIS) does not contain Exhibit 3.

Page 3-223, DEIS: Please update this section to reflect the Fish and Wildlife Service decision announced on January 5, 2016 that the Alexander Archipelago wolf does not warrant protection as an endangered or threatened species under the Endangered Species Act.

Page 4-96, Proposed Plan: We recommend adding standards and guidelines for protection of the Pacific marten *Martes caurina*, which is endemic to Admiralty and Kuiu Islands. Macdonald and Cook (2007) and Dawson (2008) are good resources.

Page 4-100, DEIS: We recommend eliminating the distinction between peregrine falcon subspecies given recent studies about the subspecies status along parts of coastal Alaska.

Page 4-99, Proposed Plan: Please replace goshawk nest stand with nest site. The monitoring protocol could be strengthened by ensuring the assumptions of nest identification and the probability of detection is valid. ADF&G biologists are interested in helping USFS biologists develop the monitoring program. We are concerned about the efficacy and statistical validity of the current goshawk monitoring program.

Page 5-8, Management Approaches, Proposed Plan: This section would benefit from clear goals and objectives related to monitoring the effects of young-growth harvest on MIS. See our similar comments for Appendix D on page 4.

<u>Appendix D of the DEIS</u>

Page D-3: This section summarizes the scope of analysis and acknowledges new science. As in the DEIS, the analysis does not adequately describe how young-growth harvest affects wildlife species. Similarly, the DEIS and the section on the contribution of matrix lands lacks adequate analysis and should be strengthened with references from land management focused research conducted on the Tongass.

Page D-4, paragraph 2, DEIS: Stating young growth serves as dispersal corridors between old-growth stands is a generalization, as young-growth stands can be barriers rather than corridors for some old-growth associated species. Please revise.

Page D-5, paragraph 3: The USFS states that on a forest-wide basis, over 90% of the existing POG will be protected from harvest. Given the context, this statement implies that forest management will have little effect on old-growth associated species because 90% of their habitat will remain intact. However, populations of many old-growth associated species are confined to islands or biogeographic regions where a much higher proportion of POG has been or will be harvested. We recommend that relative to wildlife, such habitat summaries be presented at a scale that is meaningful to the species or populations being discussed.

Page D-5, paragraph 4: To help the reader get a better sense of the scale of changes resulting from GIS mapping updates, please add text and a table describing how the changes affected the wildlife habitat analysis. For example, provide the number of polygons/acres in a given bioregion found to be >150 years old and corrected to size class 4, resulting in increased POG acreage in a bioregion.

Page D-12: Please provide a clearer description of how harvest in the beach buffer occurs under Alternative 2. Include discussion of the anticipated effects on MIS when the 1,000 ft beach buffer is removed for harvest and road construction. Please expand the discussion of how leaving an adjacent inland stand of POG or young growth serves the purpose of the beach buffer. It would be helpful to focus this discussion on biogeographic provinces 13 and 14, which have the highest level of this type of harvest under Alternative 2. See our similar comments for the DEIS on page 3.

Page D-17, paragraph 4: Please clarify the statement that individual islands function as metapopulations for some species.

Page D-18, paragraph 7: This section would benefit from clear goals and objectives related to monitoring the effects of young-growth harvest on MIS. See our similar comments for the DEIS on page 3. ADF&G is available to help develop the monitoring questions.

FISH

Ongoing USFS monitoring results show existing standards and guidelines protecting riparian areas and fish habitat are largely effective. ADF&G recognizes the need to provide bridge timber for the transition to young growth which may require short-term relaxations of conservation strategy elements. We encourage simple, measurable, replicable methods to ensure monitoring is

completed and results are useful. ADF&G biologists look forward to being involved with these monitoring efforts.

Page 3-31, DEIS: Include discussion and citation of literature regarding how increased harvest in the riparian management area (RMA) in moderate vulnerability karst landscapes could impact diffuse recharge and stream water quality.

Page 3-103, DEIS: Include discussion and citation of literature regarding potential changes to windfirmness due to thinning in the RMA.

Page 3-103, DEIS: Include discussion and citation of literature regarding how a reduction of the RMA width could affect wood recruitment where average tree heights exceed 100 ft.

Page 3-118, paragraph 5, DEIS: Consider strengthening the discussion by citing recent research on rainbow trout and steelhead *Onchorhynchus mykiss* (Kendall et al. 2015, Pearse et al. 2009, Sloat and Reeves 2014a, Sloat and Reeves 2014b).

Page 3-123, DEIS: Please clarify the circumstances where substantially more RMA group selection could occur, and how many acres would be acceptable under this alternative given the standards and management approaches in the riparian section of Chapter 5.

Page 3-126, paragraph 2, DEIS: Consider removing the statement:

Some negative effects, or more appropriately, increased risk, to the natural range of variation in stream processes and fish habitat would likely occur by management activities over the long term for all alternatives. The extent of harvest activity and associated road development are likely to result in decreases of some fish populations in managed watersheds.

This is speculative and contradictory to the statement in the first two sentences of the third paragraph page 3-126. The presence of *risk* should not be confused or used interchangeably with *negative effects,* in the absence of supportive research. We recommend removing the association between *risk* and *negative effects* to fish habitat from the DEIS. The concept that *risk* is both normal and being fully mitigated in the Tongass should be added to the DEIS with discussion of Dr. Doug Martin's body of research, cited elsewhere in the DEIS.

Page 5-8, S-YG-BEACH-03, Proposed Plan: In some locations, such as estuaries, the forest edge could be greater than 200 feet from mean high tide and it is not clear whether or not this buffer includes non-forest acreage. If the standard is intended to include non-forested acreage, please include in the FEIS an evaluation of compatibility with the proposed desired conditions of the beach and estuary fringe in Chapter 5 and the forest side standards and guidelines in Chapter 4. If the standard is intended to include forested acreage only, we suggest modifying the first sentence

of the standard to *Commercial harvest in the beach fringe is not allowed within a minimum 200-foot buffer beginning at the forested edge above the mean high tide line.*

Page 5-9, Proposed Plan: A 10-acre opening in the RMA outside of the Tongass Timber Reform Act buffer appears contradictory with desired condition DC-YG-RIP-01, the fish and riparian standards and guidelines of Chapter 4, and Appendix D. Given the desired condition in DC-YG-RIP-01 is to improve functions for soil, water, fish, wildlife, and other resources, while also providing a commercial byproduct, please explain where a 10-acre opening would improve conditions and be approved at the project level, especially if there is no requirement to thin the RMA following harvest. If the assumption in Alternative 5 is that timber can be harvested in such a matter from the RMA, the FEIS should describe instances when a 10-acre opening in the RMA could be implemented so that decision makers understand whether or not this wood source is a reliable element of the alternative.

Page 5-9, Proposed Plan: Alternatives 2 and 5 allow removing up to 35% basal area of a stand in the RMA. Consider adding a standard in the Chapter 5 riparian section to clarify how the 35% removal can be distributed across the stand and if harvest can be focused in the RMA.

Page D-19, Table 8 DEIS: Consider adding a row in the table showing projected young-growth acreage suitable for harvest in development LUDs following proposed changes to the scenic integrity standards and guidelines and the application of the rules surrounding harvest prior to the culmination of mean annual increment. This would provide perspective when evaluating the necessity to conduct harvest in environmentally sensitive areas by showing the relative gains in available timber from all components of each alternative.

Page 4-10, Section III, Proposed Plan: Add a reference for the 2015 *Fish Stream Identification and Stream Classification on the Tongass National Forest* document and its associated field guide, which include results of recent working groups and field verification studies.

Page 5-7, paragraph 5, Proposed Plan: Consider including prioritization of stewardship fund use on the district where they were generated, a process made easier by Public Law 108-148-DEC.

Page D-12, paragraph 3, DEIS: Improve clarity by beginning the first sentence with *Of the action alternatives.*

Page D-12, paragraph 3, DEIS: Consider revising the statement in the last sentence about effects being short-term and localized, which contradicts the statement on page D-11, paragraph 4.

Page 3-98, Table 3.6-2, DEIS: Suggest changing the title to *Commonly targeted sport, subsistence, and commercial fish.* The existing title is misleading since sport fishing for steelhead in the region is primarily catch-and-release.

Page 3-104, paragraph 1, DEIS: Specify the harvest type discussed in the second sentence.

Page 3-108, paragraph 2, DEIS: Angler days (Table 1), recorded in ADF&G's statewide harvest survey data, better represent fishing effort trends than license sales. The data is available at: http://www.adfg.alaska.gov/sf/sportfishingsurvey/index.cfm?ADFG=region.home.

Table 1.–Angler days by water type among Southeast Alaska communities, 1996–2014

Year	Freshwater	Saltwater	Total
1996	72,459	297,960	370,419
1997	93,478	346,320	439,798
1998	75,445	295,302	370,747
1999	99,054	435,610	534,664
2000	106,355	435,052	541,407
2001	98,093	409,148	507,241
2002	101,563	367,739	469,302
2003	107,755	369,437	477,192
2004	104,166	443,083	547,249
2005	102,200	465,584	567,784
2006	104,834	412,001	516,835
2007	104,431	435,859	540,290
2008	100,094	409,503	509,597
2009	96,343	403,738	500,081
2010	87,279	356,572	443,851
2011	95,332	352,276	447,608
2012	91,009	387,998	479,007
2013	83,871	462,179	546,050
2014	95,068	469,242	564,310

Page 3-328, Table 3.15-7, footnote 6, DEIS: Please include the data source for the ADF&G ratings.

Page 3-343, Fishing, DEIS: Please provide a citation for the statement *13 percent of inventoried recreation places acres are currently important for fishing*.

SUBSISTENCE

Pages 3-97 through 3-101, DEIS: This section includes a general characterization of the magnitude of sport and commercial fish harvests from Conrad and Gray (2014). The FEIS should include similar information for subsistence harvest presented in Conrad and Gray (2014). Page 3-390, first paragraph under abundance and distribution, DEIS: The ADF&G (2014) citation is inaccurate. Please cite the 1987 Tongass resource use cooperative survey (TRUCS), which provides the only survey data for Tenakee Springs and Skagway.

Pages 3-533 through 3-635, DEIS: In the subsistence sections of the Elfin Cove, Gustavus, Meyer's Chuck, Metlakatla, Pelican, Port Alexander, Skagway, and Tenakee Springs individual community assessments, the 1987 ADF&G harvest data are referenced as distinct from the TRUCS data presented in Kruse and Frazier (1988), but the information in both references is from the same study. Citations in these sections presenting the data from both publications should be reconciled.

Page 3-508, third paragraph, DEIS: Prince of Wales communities are listed as using a combination of hydroelectric and diesel-generated power while the individual community summaries indicate power is generated by diesel only. Please clarify.

Pages 3-513 through 3-654, DEIS: Please include a citation for the source of information presented in the community use area maps for all communities. If maps are based on the 1987 TRUCS harvest data, please include an analysis of how uses may have changed in the last 30 years.

Pages 3-542 through 3-43 and 3-560 through 3-561, DEIS: The Haines and Hyder individual community assessments focus on potential impacts to local resident deer harvests, however, moose are more important for these residents, unlike most other southeast communities. Please modify the assessments to include the importance of moose in these communities.

Pages 3-568, 3-599, and 3-653, DEIS: The Kake, Pelican, and Yakutat individual community assessments specify several subsistence use areas as most important or very important. Please provide a definition for these subjective terms, or eliminate them.

Page 3-550, DEIS: Update this section to include recent completion of the Gartina Falls Hydroelectric facility in Hoonah.

Page 3-604, DEIS: In the Petersburg Subsistence section, replace land mammals (mostly deer) with deer, to be consistent with information for other communities regarding the TRUCS data.

Page 3-612, first paragraph: Replace Pelican with Port Alexander.

TRANSPORTATION[3]

Elimination of the TUS LUD violates USFS planning regulations and NEPA.

The most significant proposed amendment to the 2008 Tongass Land and Resource Management Plan is the elimination of the Transportation and Utility Systems Land Use Designation (TUS LUD). Under the current plan, the TUS LUD depicts specific geographic corridors connecting the communities located within the boundaries of the Tongass National Forest. These corridors are intended to be developed and operated as transportation and utility systems in accordance with the State of Alaska's Southeast Alaska Transportation Plan (SATP). The State of Alaska holds transportation and utility easements to develop and operate the public infrastructure connecting these communities by way of a reciprocal exchange of easements with the United States, which was enacted by Congress in the Section 4407 of SAFETEA-LU (P.L. 109-59), the 2006 federal transportation bill. In December 2015, Congress passed the latest federal transportation bill (FAST Act, P.L. 114-94), which clarified a "perceived defect" in Section 4407 and expressly granted to the State the transportation and utility easements linking the communities of Southeast Alaska. Senate Report 114-80 (July 15, 2015) at pages 23-24. The elimination of the TUS LUD, as proposed in the amendments, would remove specific geographic management areas from the Forest Plan, which would violate USFS planning regulations and would violate the requirements of the National Environmental Policy Act (NEPA).
Elimination of the TUS LUD requires a plan revision, rather than a plan amendment.

Under USFS planning regulations, a plan may be amended "to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area." 36 CFR § 219.13. The plan components are guides for future project activities which include: (i) desired conditions; (ii) objectives; (iii) standards; (iv) guidelines; and (v) suitability of lands. 36 CFR § 219.7. Each plan component may apply "to the entire plan area, or to specific management or geographic areas." *Id.* Thus, a plan amendment may change

[3] The State of Alaska primary contact for Proposed Plan and DEIS comments related to transportation is Roger Healy of the Alaska Department of Transportation & Public Facilities. Roger can be reached at roger.healy@alaska.gov or 907-465-6958.

how a geographic area (i.e., a LUD) is managed in the National Forest, but it may not add or eliminate a management area or geographic area from the plan.

The designation or elimination of a management area or geographic area from an existing plan must be done through a plan revision. 36 CFR § 219.7(c) and (d). The administrative and public processes for a plan revision are separate and different from the processes required for a plan amendment. 36 CFR §§ 219.7(c) and 219.13(b). The USFS' attempt to eliminate the TUS LUD through a fast-track plan amendment violates the regulatory processes that are designed to ensure a reasoned and deliberative consideration of proposed modifications to planning areas or geographic areas in forest plans. 36 CFR §§ 219.7(c). As the USFS has not commenced or undertaken the required administrative and public processes for the elimination of the TUS LUD, the elimination of the LUD would violate the National Forest Management Act and the implementing regulations.

<u>Elimination of the TUS LUD requires public notice and compliance with NEPA.</u>

The stated purpose and need for the Proposed Plan amendments is to enable the transition to young-growth timber harvest management as directed by the Secretary's 1044-009 Memorandum. Elimination of the TUS LUD does not fulfill or further the stated purpose of the proposed plan amendments, and the proposed action was not disclosed as a secondary purpose for the plan amendment. During the scoping process, the USFS identified four significant issues that were to be analyzed in depth as there were "disagreements about the best way to use a resource." DEIS, page 1-9. Those significant issues are:

1. Young Growth Transition;
2. Renewable Energy;
3. Protection of Roadless Areas; and
4. Protection of Wildlife Habitat and the Old Growth forest.

Quite notably, neither the published notice of intent nor the DEIS purpose and need statement disclose the intent to eliminate the TUS LUD. The elimination of the existing management prescriptions for Southeast Alaska's transportation and utility corridors is unnecessary and counterproductive. If the USFS intends to consider and debate 'the best way to use' these transportation and utility corridors, the National Environmental Policy Act (NEPA) requires the significant federal action be disclosed and fully analyzed prior to implementation.

<u>The Proposed Plan and DEIS grossly underestimate development in the TUS LUD.</u>

The USFS draws an unsupported conclusion that "[t]here is considerable uncertainty concerning the future development of Southeast Alaska's road system." DEIS, p. 3-278. This statement is

particularly confusing, as an array of present and reasonably foreseeable transportation projects are identified in the cumulative effects analysis. DEIS Appendix C. Just in the category of highway development projects: construction of 32.3 miles of highway in the TUS LUD were recently completed; 140.6 miles of highway are funded for design and construction; and 15.7 miles of highway are funded for environmental permitting and design. These multiple highway projects are indicative of the State of Alaska's robust delivery of improved transportation infrastructure to Southeast Alaska—there is no uncertainty in these actions.

Development and delivery of transportation projects in the established transportation and utility corridors is accomplished, in part, by the stability and predictability of the geographically designated TUS LUD. The USFS' proposed objective to "Cooperate with other agencies in developing 35 miles of transportation corridors on NFS lands during the 15 years after plan approval [Proposed Plan, 5-14]" appears extremely limited and quite contradictory to the many upcoming and reasonably foreseeable highway projects. With nearly 200 miles of state highway construction recently completed and planned for the near future—and congressionally granted easements underlying hundreds of miles of the TUS LUD—the USFS's proposed objective does not reflect the planned development in the TUS LUD.

<u>The Proposed Plan could benefit by adding new components **in addition to** TUS LUD.</u>

The DEIS expresses a need to support development of renewable energy and perhaps to include power transmission corridors in the new Renewable Energy Direction (RE) component. It is easy to imagine that renewable energy projects, including support roads and power transmission lines, will need to branch from and be located outside the TUS LUD corridors. To ease the development of those discrete projects, the RE component and the Transportation Systems Corridor Direction (TSC) component may prove workable for the USFS. However, for the multiple-agency and multiple-year planning required to connect the communities of Southeast Alaska, the State requires that the forest plan recognize the Section 4407 easements and the SATP corridors in the existing TUS LUD. The Forest Plan must make the distinction that the new RE and TSC components are designed for, and apply to developments outside the TUS LUD.

The DEIS and proposed plan amendments explain that the geographically specific TUS LUD is being eliminated and replaced with area wide plan components for the new TSC. The purpose of the plan direction for TSC is to facilitate the availability of NFS land for the development of existing and future transportation systems. However, the rationale for this change is not clear nor was it developed as an issue that required addressing. It is unclear how eliminating the TUS LUD will better facilitate the availability of NFS land for the development of existing and future transportation systems, since the State currently holds easements over the vast majority of the TUS LUD. The depiction of the corridors on the TUS LUD maps in the 2008 plan was

informative and consistent with the management direction in the plan concerning the priority of TUS development in those corridors. The removal of the TUS LUD corridors from the Proposed Plan's maps is a significant change that does not seem either necessary or productive. Removal appears to be counterproductive particularly given that the corridors were incorporated into the 2008 Forest Plan, but now the same corridors identified in the SATP appear to be only referenced as examples of corridors that might be constructed in the national forest. The elimination of TUS LUDs eliminates any attempt to recognize and reserve corridors for this potential future land use. It removes any current effort to identify the need of specific corridor reservations and to inform other current and potential land use of corridor reservations. Removal of the TUS LUD will likely have the effect of making NSF land less available, create future use conflicts, and deter development of existing and future transportation systems.

The proposed revision to the plan is confusing in that it repeatedly states that transportation and utility systems are not precluded anywhere in the Tongass Nation Forest under the provisions of Public Law 109-59 and ANILCA Title XI. That statement masks a great deal of information. Section 4407 of Public Law 109-59 granted transportation and utility easements within specific corridors that are recognized by the TUS LUD; ANILCA Title XI provides a process wherein a transportation and utility easement may or may not be granted. Since the State currently holds property rights in the corridors identified in the TUS LUD, the LUD must be preserved. The State could pursue infrastructure development outside the TUS LUD, under ANILCA or other authorities, but that would be a somewhat unusual or rare occurrence. The new RE and TSC components may prove useful in that unusual circumstance; however, for development of infrastructure connecting the communities in the Tongass, the State, regulatory agencies, and the public require the disclosure and predictable management of the transportation and utility corridors in the TUS LUD.

<u>There is no management advantage by replacing TUS LUD with a new TSC component.</u>

Under the current plan, the TUS LUD guarantees precedence of transportation and utility development goals over the goals and management prescriptions of an underlying LUD crossed by the TUS LUD by stating "The Transportation Utility System (TUS) LUD takes precedence over any underlying LUD (subject to applicable laws) regardless of whether the underlying LUD is a TUS Avoidance LUD or not. As such, it represents "a 'window' through the underlying LUD through which roads and/or utilities can be built." This is an ideal LUD to manage a property interest and development interest that may not spring to life for years or decades to come. The express purpose of the TUS LUD was to minimize potential conflicts with underlying LUD goals and associated management prescriptions should transportation development occur. The LUD flags in advance specific areas of land use goals conflicting with those of future potential transportation and utility development, though the goals objectives and management standards and guidelines of the TUS LUD do not spring into existence until

commencement of construction of the transportation or utility facility. The TUS LUD provides predictability and transparency.

The proposed plan amendment is designed to eliminate the TUS LUD and the specific geographic corridors where the management prescriptions of the TUS LUD apply. The Proposed Plan and the DEIS explain that the TSC components will take precedence over LUD-specific standards and guidelines throughout the Tongass National Forest, but those statements give little comfort when the specific property and development rights granted by Congress and recognized in the TUS LUD are removed from the plan. While the State recognizes that the TSC component and the RE component may provide clarity for potential development outside the TUS LUD, all but the smallest fraction of infrastructure development in Southeast Alaska will occur within the TUS LUD. To provide the predictability and transparency necessary for the continued development of the infrastructure connecting the communities of Southeast Alaska, the TUS LUD must be preserved.

General Plan comments by section:

Chapter 1 Introduction

Proposed Plan page 1-5 second to last paragraph states: "The communities of Southeast Alaska depend on the Tongass National Forest in various ways, including employment in wood products, commercial fishing and fish processing, recreation, tourism, and mining, and mineral development." The paragraph also goes on to explain the importance of subsistence resources; however, overlooked is the importance of public access to the forest by all modes including maintenance of forest roads. We recommend including in the introduction a sentence describing the importance and role of public access and transportation infrastructure.

Chapter 2 Goals and Objectives

No mention is made under **Forest Desired Conditions** of transportation utility system goals and objectives.

Recommend the inclusion statements of desired conditions for development and maintenance of regional and area transportation - utility systems:

- Provision and maintenance of air and marine access points and associated infrastructure by the Forest Service, including a system of forest trails and road to facilitate access to forest areas managed for timber harvest and various multi-uses including recreation, subsistence and administration of the forest.

- A State of Alaska maintained multi-modal regional transportation system of airports, marine docks and floats, and road system supporting access to and through the National Forest providing efficient and essential transportation between communities within the forest and between the forest and the rest of the world in support of the area economy.

Under **Forest-wide Multiple-use Goals and Objectives** recommend the addition of the above as goals under a category referred to as "Access." Similar access objectives should be listed under and in support of the following categories:

- Local and Regional Economies
- Minerals and Geology
- Recreation and Tourism
- Renewable Energy
- Subsistence and
- Timber

Recommend redefining "Transportation" as a category supporting the following Goal:

- Development and operation of transportation and utility infrastructure within the "Transportation Utility System" corridors linking the communities of Southeast Alaska as provided by Section 4407 of P.L. 109-59, as amended by P.L. 114-94, and as allowable under ANILCA Title XI.

Chapter 3 Management Prescriptions

Do not replace the overlay Transportation Utility System (TUS) overlay Land Use Designations (LUD) as described in the 2008 Forest Plan. Retention of the TUS LUD is needed to physically locate TUS corridors established by law, replete with goals and management prescriptions having precedence over the underlying LUDs.

LUD Management Prescriptions:

ADD TUS LUD overlay LEVEL ONE precedence to other LUDs in the following categories:

SPECIAL INTEREST AREA LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

B. Coordinate interpretation of the unique values of the Special Interest Area with management of transportation infrastructure in TUS LUD corridors and the rights-of-way of other publicly-owned roadways.

REMOTE RECREATION LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (*revise*) New roads are not permitted, except *within a TUS LUD and* to access authorized mineral operations (or as excepted under Lands).

MUNICIPAL WATERSHED LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (*revise last sentence*) New road construction is generally inconsistent with Old-growth Habitat LUD objectives, but new roads may be constructed if *within a TUS LUD*. Forest roads may occur in this area with due consideration for protection of the watershed.

OLD-GROWTH HABITAT LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (*revise*) New road construction is generally inconsistent with Old-growth Habitat LUD objectives, but new roads may be constructed *if within a TUS LUD, or if a forest road with no feasible alternative.*

B. Add: 4. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

SEMI-REMOTE RECREATION LUD under TRANSPORTATION, Transportation Operations, TRAN, add:

A. (*revise***) Where Semi-Primitive Motorized recreation opportunities are emphasized, existing low standard roads are generally managed for use by high clearance or OHVs, snowmobiles, or motorcycles subject to an approved Access and Travel Management Plan. Generally, new roads are not constructed in this area, except *within a TUS LUD and* to link existing roads or provide access to adjacent LUDs.**

Add : *4. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

LUD II Page 3-68 under Objectives add bullet: *Roads and utility lines are allowed within a TUS LUD.*

Page 3-72 under Transportation Operations: TRAN: add *3. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

WILD RIVER LUD page 3-74 add under Objectives: *Permit road and utility lines allowed within a TUS LUD.*

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-80 (add) *D. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

SCENIC RIVER LUD page 3-87 TRANSPORTATION, Transportation Operations: TRAN
Add: *5. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

RECREATIONAL RIVER LUD page 3-87 TRANSPORTATION, Transportation Operations: TRAN

Page 3-94 add: 3. Roads and utility lines allowed under a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.

EXPERIMENTAL FOREST LUD page 3-100 TRANSPORTATION, Transportation Operations: TRAN

Add: *C. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

SCENIC VIEWSHED LUD

Add under Objectives page 3-101: Roads and utility lines are allowed under a TUS LUD.

TRANSPORTATION, Transportation operations: TRAN, page 3-108

Add: *6. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

MODIFIED LANDSCAPE LUD page 3-109 add under Objectives: *Roads and utility lines allowed within a TUS LUD.*
Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-115 (add) *6. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

TIMBER PRODUCTION LUD page 3-116 add under Objectives: *Roads and utility lines allowed within a TUS LUD.*

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-122 (add) *5. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

MINERALS LUD page 3-123 add under Objectives: *Roads and utility lines allowed within a TUS LUD.*

Under TRANSPORTATION, Transportation Operations, TRAN, add:

Page 3-128 (add*) E. Roads and utility lines allowed within a TUS LUD. Roads under the jurisdiction of the Alaska Department of Transportation and Public Facilities shall be managed in accordance with the State of Alaska's best management practices.*

Chapter 4 Standards and Guidelines

Reinstate standards and guidelines for the overlay Transportation Utility System (TUS) Land Use Designations (LUD) as described in the 2008 Forest Plan with corridor goals and management prescriptions having precedence over the underlying LUDs.

Chapter 5 Plan Content Developed Under the 2012 Planning rule

Revise the Transportation System Corridor (TSC) to apply solely to development and maintenance of forest roads located outside of the TUS LUD corridors or under the jurisdiction of the U.S. Forest Service.

Chapter 6 Implementation

No comments.

Appendices A – K

No appendix on transportation was developed or included. With a proposed major revision, such as the elimination of LUD, it would be helpful to review the analysis and decision-making that supports the major federal action.

ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT[4]

Wild and Scenic River Management

ANILCA amended the Wild and Scenic Rivers Act and designated 26 Wild and Scenic Rivers and an additional 12 rivers designated for study. There are currently no designated rivers on the Tongass National Forest, and pursuant to ANILCA Section 1326(b)[5], Congress has since provided no further direction to the Forest Service to conduct additional Wild and Scenic River studies in Alaska.

We appreciate the proposed plan does not include new wilderness and wild and scenic river reviews or recommendations. However, we remain concerned that, despite explicit direction in ANILCA Section 1326(b) to not conduct such studies, the USFS continues to manage the 32 rivers recommended in the 1997 Forest Plan Record of Decision to maintain their eligibility for designation at some distant future date as wild and scenic rivers.

The plan indicates such management will continue until Congress takes action; however, the plan does not disclose any details on how or when the recommendations were submitted to Congress and what occurred subsequent to the submittal. We do not support protective management for recommended rivers that resulted from a study conducted in violation of ANILCA, nor do we

[4] The State of Alaska point of contact for ANILCA comments on the Proposed Plan and DEIS is Sue Magee with DNR's Office of Project Coordination and Permitting. She can be reached at susan.magee@alaska.gov or 907-269-7529.

[5] ANILCA Section 1326(b) **No further studies** of Federal lands in the State of Alaska for the single purpose of considering the establishment of a **conservation system unit**, national recreation area, national conservation area, or for related or similar purposes shall be conducted **unless authorized by this Act or further Act of Congress**. (Emphasis added)

support applying management prescriptions on that basis indefinitely. We therefore request the corresponding Wild, Scenic and Recreational LUDs either be removed from the plan or only applied after a river is designated by Congress. Further, we request the plan include specific information about the recommendations' submittal to Congress and any subsequent actions taken by Congress in response.

ANILCA Section 810 Analysis

The DEIS states that an 810 evaluation and determination is not required because this is a programmatic amendment. However, the DEIS not only evaluates the impacts to subsistence, citing a "significant possibility of a significant restriction, resulting from a change in competition" (p. 3-394), the Service is also holding subsistence hearings. For clarity and compliance with ANILCA, we recommend the Service include a full 810 evaluation in the plan. We note the information is largely already contained in the DEIS.

Page-specific Comments

Page 3-10, Proposed Plan: We support the proposed decision to reference Title XI of the Alaska National Interest Lands Conservation Act (ANILCA) in the Wilderness LUD Standards and Guidelines. This change will ensure that the full context and process required in ANILCA is considered and followed when transportation and utility projects are proposed within conservation system units designated by ANILCA on the Tongass National Forest (i.e. designated Wilderness).

Page 3-26, Chapter 3, Proposed Plan, Transportation, Transportation Operations: TRAN (D). We request the plan retain "*adequate and feasible access for economic and other purposes*" as it is the correct standard used for inholdings "effectively surrounded" by conservation system units (i.e. designated wilderness) in ANILCA section 1110(b). "Reasonable access" is the standard in ANILCA section 1323, which applies to general national forest lands, not designated wilderness.

Page 3-107, Proposed Plan: We do not support this management prescription, which would recommend FERC not authorize hydroelectric facilities on rivers found eligible and suitable for inclusion in the Wild and Scenic River System in the 1997 Tongass Land Management Plan. This comment also applies to other management prescriptions found elsewhere in the plan that rely on the 1997 wild and scenic river recommendations as their basis. See above general comment on wild and scenic rivers.

Page 4-10, Chapter 4, Proposed Plan: Fish Habitat Planning, Fish Habitat and Channel Processes, part 3: ANILCA section 1326(b) expressly prohibits further studies for the single purpose of considering the establishment of a conservation system unit, which includes Wild and

Scenic Rivers, unless authorized by ANILCA or a further act of Congress. Consideration of new wilderness or wild and scenic rivers in this context is inappropriate and we request the following revision:

> *Consider topics such as erosion processes, watershed hydrology, vegetation, stream channel morphology, water quality, ~~wilderness designation, recommendations for inclusion into the Wild and Scenic River System~~, species and habitats, and human uses, during analyses.*

Page 4-31, Proposed Plan: III. Temporary Facilities. ANILCA section 1316 applies to all federal public lands where the taking of fish and wildlife is authorized but it does not differentiate between subsistence and non-subsistence use. We request the Service consider whether the distinction in this section is necessary or appropriate.

Page 4-44, Proposed Plan: Chapter 4 Recreation Resource Planning: The following guideline appears to be relevant to ensuring safe access to communities and popular recreation areas. It is unclear why it is being removed. We request the Service re-consider and provide rationale if it is not retained in the final plan.

> *Support a system of anchorages suitable for recreation boats along small boat waterways that connect communities or provide access to popular recreation attractions.*

Page 3-382, third paragraph, DEIS: We request the following edit for clarity and consistency with ANILCA sections 802 and 804:

> *It also states, in part, that ~~"customary and traditional"~~ subsistence uses of renewable resources "shall be the priority consumptive uses of all such resources on the public lands of Alaska <u>when it is necessary to restrict take</u>."*

Page 3-382, fourth paragraph, DEIS: We request the following edit for accuracy:

> *This ruling took the state out of compliance with ANILCA and the federal government has managed <u>harvest of</u> subsistence resource s <u>under federal subsistence regulations</u> on federal lands in Alaska since 1990. As a result, <u>federal</u> subsistence harvests of fish and wildlife on the Tongass National Forest are presently managed by the Forest Service (Schroeder and Mazza 2005).*

ENVIRONMENTAL CONSERVATION[6]

The Alaska Department of Environmental Conservation (ADEC) provided the following comments on the DEIS.

Page 3-16, paragraph three, sentence one, should read: "*The State of Alaska Department of Environmental Conservation (ADEC) under the Clean Air Act (CAA), via Title I and Title 5 of the EPA approved State Implementation Plan (SIP) regulates air emissions from stationary sources.*"

Page 3-18, paragraph three, sentence seven, notes that " *In an effort to better address the air quality concerns in the Wilderness, the Forest Service and ADEC enters into a Memorandum of Understanding each year to train Forest Service wilderness rangers to visually monitor cruise ship emissions with EPA-approved standards*." This sentence should be updated to reflect that the MOU is static and does not get entered into each year.

Page 3-19 paragraph one, sentence three, should read: "*EPA and ADEC have **limited** regulatory responsibility, under the Clean Air Act, for air quality related to these kind of sources*." This sentence was discussing indirect sources such as firewood burning and vehicle emissions.

Page 3-22, paragraph two, sentence five refers to "shrinking alpine habitats". This may need to be reexamined and perhaps changed to read "**changing** alpine habitats" to reflect the fact that glacier melting may expose new alpine habitat at a quicker rate than those of altitudinal forest shifts.

Page 3-56, paragraph three, sentence two should read: "*Turbidity criteria indicate values will not exceed 5 nephelometric turbidity unites (NTUs) over natural conditions, when **natural** values are less than 50 NTUs*." The original text used the word "nature".

Page 3-68, paragraph five, sentence two should read: "*Landslide debris (e.g., sediment, large wood) that enters the stream may block or shift channels, fill pools, and **increase the presence of fine sediments** in the channel network*." The original text used the words "*increases fines presences*" which is grammatically cumbersome.

Appendix G, page G-11, M4(c) should be revised to read "*Measurements required by M4; a and b are from MHW (Mean High Water) to depths of **100** feet MLLW (Mean Lower Low Water).*"

[6] The State of Alaska's primary contact for DEIS comments related to environmental conservation is Gary Mendivil of the Alaska Department of Environmental Conservation. He can be reached at gary.mendivil@alaska.gov or 907-465-5061.

MISCELLANEOUS EDITS

Typos

- Draft EIS, Page A-1: An incorrect date of "June 23, 2016" is given for publishing the corrected Notice of Intent.

- Draft EIS, Page B-18: "Intermeidate" is misspelled.

ATTACHMENT

The Working Forest Group (TWFG) report, *Strategies to Maintain a Viable Timber Industry in Southeast Alaska, 2015*.

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Strategies to Maintain a Viable Timber Industry in Southeast Alaska

January 2015

Prepared for:
USDA, Forest Service, Alaska Region
Under Challenge Cost-Share Agreement (14-CS-11100500-020)

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EXECUTIVE SUMMARY

The purpose of this Challenge Cost-Share Agreement was for The Working Forest Group (TWFG) to facilitate an analysis that defined where and what types of investments should be made in retooling the existing old growth timber industry into one that is dependent on young growth timber supply from Southeast Alaska considering all lands as sources.

Originally, the project scope called for facilitation of a 2-day work session to collect the information from 15 knowledgeable individuals from various Southeast Alaska timber industry segments (manufacturing/processing, harvesting, land owner/operator, logistics, road building, consulting, and other). After several attempts to reach a cross-section of the industry by telephone and email, several respondents emphasized a frustration with the process. The current industry has been involved in discussions for several years and have not seen their primary concern for timber supply being addressed. This non-participation led to a request that the project scope be adjusted from a two-day work session to on-site discussions with industry at their various mill sites. The U.S. Forest Service agreed to amend the scope and on-site interviews were conducted in November 2014.

The common message TWFG heard from those interviewed was that the timber industry in Southeast Alaska will cease to exist unless there is old growth timber made available while the young growth matures and/or a market for Alaska's young growth is developed.

Therefore, based on the information provided on the surveys and during the interview process along with The Working Forest Group's knowledge of the timber industry, TWFG would like to propose two potential future industry concepts:

- Future Industry Concept #1: The creation of a viable timber Industry in Southeast Alaska that is dependent on young growth fiber, can only be achieved by extending the rotation length until young growth trees develop old growth characteristics. Old growth harvest on the Tongass National Forest must continue for the foreseeable future.

- Future Industry Concept #2: The creation of a viable timber Industry in Southeast Alaska that is dependent on young growth fiber, which maintains the existing industry while ceasing the harvest of old growth timber stands on the Tongass National Forest within five (5) years.

With the cornerstones for future forest management in Southeast Alaska being based on:

- Active Forest Management by use of the abundant forest resources of the region,
- Making Southeast Alaska investment friendly to future timber industry investors,
- Developing an all Landowners (public and private) Management Strategy based on the Working Circle concept; and
- Using Timber Management to develop methods to resolve the regional issues of:

    - ✓ Transportation
    - ✓ Renewable Energy
    - ✓ Solid Waste
    - ✓ Employment – development and retention of tomorrow's workforce

INTRODUCTION

Background

At the request of the U.S. Department of Agriculture, Forest Service, Alaska Region (USFS), The Working Forest Group (TWFG) was granted funds under a Challenge Cost-Share Agreement (14-CS-11100500-020) to complete an analysis that defines where and what types of investments should be made in retooling the exiting old growth timber industry into one that is dependent on young growth supply from Southeast Alaska considering all lands as sources.

The United States Department of Agriculture, Office of the Secretary issued *Secretary's Memorandum 1044-009 – Addressing Sustainable Forestry in Southeast Alaska* on July 2, 2013 (Appendix A) stating that the USDA Forest Service must speed the transition away from old growth timber harvesting, towards a forest industry that utilizes young growth and calling for additional research to develop effective ways to meet the challenges of the transition over the next 10-15 years. Hence, the support for this report.

This analysis was to be conducted by facilitating a 2-day work session with 15 individuals, who were chosen from surveys created and distributed by The Working Forest Group (TWFG), based on the respondent's interest in attending the work session and their knowledge of the Southeast Alaska timber industry. However, the original project scope was modified from facilitating a 2-day work session to one-on-one meetings to better fit the industry's work season.

Report Objective

The objective of this report is to deliver the following timeframe information for a transition from old growth to young growth:

- ✓ Short-Term (Present Day to Five Years)
- ✓ Mid-Term (Six Year to Fifteen Years)
- ✓ Long-Term (Beyond Fifteen Years)

REPORT DATA COLLECTION / WORK SESSION / INTERVIEWS

Objective

In order to gain insight into where and what types of investments should made in retooling the existing old growth timber industry into one that is dependent on young-growth, the original project scope was to select and recruit 15 representatives from the forest industry and forest land owners within Southeast Alaska to attend a two-day work session in Ketchikan.

Survey Planning and Methodology

The process was to:

1. Build a list of potential participants
2. Construct a short survey (Appendix B) to compile preparatory information to schedule a two-day work session and assess participation level interest
3. Distribute survey and response through The Working Forest Group via web, email, and mail
4. Retrieve, compile, and summarize data
5. Select and invite participants to a two-day work session
6. Conduct work session
7. Compile information from all data received and build a report
8. Deliver the draft and review with client
9. Deliver final report and recommendations

The data collection of the project started in April 2014 with the development of The Working Forest Group website (www.akworkingforest.org) in order to distribute, collect and compile the survey information. Concurrently, a list of 100 potential participants was built with the help of the State of Alaska Department of Commerce and Economic Development, the Division of Forestry, other forest industry contacts, and by searching the State of Alaska business license database.

A short, but concise survey was developed (Appendix B) asking questions such as: contact information, the respondents industry, number of years involved in the business, number of employees, and their business plan for the next ten years. Additional questions asked their views on: 1) what would make a viable forest products industry in Southeast Alaska; 2) did they think the government (federal, state, local) should make investments to advance the transition to young growth and if so, what area (multiple choice); 3) volume of economically viable young growth manufacturing/processing opportunities they saw (multiple choice); 4) activities/components they considered essential for an integrated young growth forest products industry (multiple choice); 5) could their business operate exclusively from a young growth resource today (yes/no), and if not, what changes would need to be made to their business (multiple choice); and 6) landowners were asked if they were committed to keeping their entire managed forest land base in production for the next rotation or harvest (yes/no) and if not, why. The survey concluded with questions related to the proposed 2-day work session - if they were interested in participating, and if so what dates and would they need financial assistance to attend.

Initial contact was made with 47 businesses and individuals (Appendix C) with ties to the Southeast Alaska forest products industry via email on July 10, 2014. The email included an introduction to the project, the proposed 2-day work session, and The Working Forest Group (TWFG). The ten question survey was attached as a fillable PDF form, but a direct link was given to where the survey could be taken online and submitted as well as instructions on how to fill the survey out offline and then be able to mail, fax, or email. The email was then followed-up by phone calls the week of July 14, 2014 with the addition of another seven to ten contacts who did not have email addresses.

From this initial outreach only eight accepted the invitation to complete the survey. The method above was repeated on July 31, 2014 with three additional surveys completed. Survey responses can be found in the Results section below.

Survey Implementation Issues and Revised Project Scope

Out of the eleven responses received, only five showed interested in attending a 2-day work session. Feedback received outside the survey responses were: 1) it was the wrong time of year to try and hold a 2-day work session due to the industry's work season and 2) the current industry has been involved in discussions for several years and have not seen their primary concern for timber supply being addressed and did not see the value in participating in another work session.

In early September 2014 TWFG pulled together a list of 15 potential work session attendees based on their forest industry affiliation and industry knowledge, including those who showed interest from the survey. An invitation was sent to the work session invitees on September 17, 2014 with only one individual accepting the invitation.

Revised Project Implementation

Therefore, TWFG decided that the 2-day work session was not the most productive way to collect the information and revised the project scope by trying to schedule and meet people individually during the Alaska Forest Association's 57th Annual Convention in Anchorage (October 22-24, 2014), at the Forest Products Task Force meeting in Klawock (November 17, 2014), and by on-site visits (Prince of Wales Island and Ketchikan, November 16-19, 2014) instead of facilitating a formal 2-day meeting.

From October 22-November 19, 2014 TWFG spoke personally to 18 individuals tied to the Southeast Alaska timber industry (land owner-2; timber consulting-2; manufacturing/processing-9; harvesting-3; other-2.)

Results

The purpose of the one-on-one meetings was to collect each person's thoughts on how and what they saw was needed in order to transition from an old growth industry to a young growth industry. The common message that TWFG heard from respondents (17 out of 18) was:

- the current young growth timber is too young to be economically harvested and there is no current product/market for the timber; and
- if there is not some volume of old growth made available while the young growth matures, they will no longer be in business.

Only one manufacturer saw a potential for young growth and that potential was in a pellet/chip manufacturing facility.

Survey Responses

Survey Responses – Page 1 of 3

#	City	State	1. What segment of the Forest Products Industry are you currently active in? Select All That Apply	2. How many years have you been operating a business and/or been involved in the Forest Products Industry in Southeast Alaska?	How many employees ?	3. Which condition best describes your plan for 10+ years?	4. What do you think makes a viable forest products industry in Southeast Alaska?
1	Craig	AK	Harvesting	7	21+	Will operate until I retire and shut down	Keeping timber sales active
2	Petersburg	AK	Road Building	33	11-15	Already have a successor in place	Available timber
3	Ketchikan	AK	Manufacturing/Processing; Harvesting; Logistics; Land Owner/Operator	36	21+	Will or are seeking successor depth now	Adequate, affordable timber supply and reasonable regulatory requirements
4	Ketchikan	AK	Harvesting; Logistics; Land Owner/Operator; Marketing	24	21+	Unknown with current industry	An industry with stable customers and supply that is economically viable. To a scale that makes the industry cost competitive with world markets.
5	Wrangell	AK	Timber Consulting - Viking Lumber & others	49	1-5	Will operate until I retire and shut down	Only 1 medium and a few small sawmills left - need a couple more medium sawmills to keep infrastructure and to transition into a second growth industry. Old growth needed for another 10-15 years until second growth is viable - work during this time to get timber sales to attract timber industry - not enough acres right now
6	Ketchikan	AK	Manufacturing/Processing	12	1-5	Will operate until I retire and shut down	A stratisfied manufacturing industry will take substantial private investment and a marketing program to differentiate Tongass species and characterstics in the market place
7	Juneau	AK	forestry consulting	37	1-5	Already have a successor in place	A harvest volume exceeding 300 million bf of old growth and second growth until a volume of second growth can supply most all of this volume. This includes an industrial capacity that exceeds 230 bf of net log scale and does not include the addition of wood that could be converted into biofuels as demand ramps up. This means that just about all of the existing second growth, regardless of the land classification that it is located on, must be included as committed to management for harvest. Second growth that is denied such supply needs to be exchanged with additional old growth on an acre for acre basis because future rotations will need that amount of land to maintain such a volume into perpetuity. There should be mills of sufficient scale to efficiently use the wood so that the manufactured product can compete. These mills should be well located to benefit small and large communities including POW road system, Mitkof/Kupreanof, Hoonah
8	Thorne Bay	AK	Manufacturing/Processing; Harvesting	20		Will or are seeking successor depth now	Jobs with experienced personal, stable timber supply, so we can have efficient equipment
9	Ketchikan	AK	Land Owner/Operator	8	21+	Will or are seeking successor depth now	Sustainable and predictable timber volume into supply chain that attracts and promotes investment in technology and value add activities
10	Ketchikan	AK	Land Owner/Operator	36		Will operate until I retire and shut down	
11	Ketchikan	AK	Harvestng	32		Will operate until I retire and shut down	Timber supply that is economic

Continued

Survey Responses – Page 2 of 3

#	5. Do you think federal, state, or local government should make investments in Southeast Alaska to advance the transition to young growth in the Forest Products Industry?	If YES, what area would you prefer that investment take place? Select One	6. Do you think young growth manufacturing/processing opportunities would be economically viable in Southeast Alaska at ... Select One	7. Which of the following activities/components would you consider essential for an integrated young growth Forest Products Industry in Southeast Alaska? Select All That Apply	8. Would your current business be able to operate exclusively from a young growth resource today?	If NO, what changes would you need to make to your business? Select All That Apply
1	No		less than 50 MMBF	Log Exporting	No	Equipment; Products/Services
2	Yes	Harvesting Equipment Incentives	101-200 MMBF	Harvesting; Sawmill; Value Added Remanufacturing; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Engineered Wood Product LVL/PLGW	No	Equipment; Workforce Skill Set
3	No		101-200 MMBF	Harvesting; Sawmill; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Engineered Wood Product LVL/PLGW; Log Exporting	No	Equipment; Workforce Skill Set; Products/Services; Adequate, affordable timber supply
4	No		101-200 MMBF	Harvesting; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Log Exporting; Local niche products	Yes	
5	Yes	More of the TNF needs be in control under state or private ownership - instead of providing grants, which means the industry isn't viable - federal just can't sell timber - expanding state forest makes sense!	101-200 MMBF	Harvesting; Sawmill; Value Added Remanufacturing; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Engineered Wood Product LVL/PLGW; Log Exporting	Yes	
6	No		101-200 MMBF	all of the above	No	Old growth is our business
7	Yes	Make financing such as guaranteed loans re???	101-200 MMBF	Harvesting; Sawmill; Value Added Remanufacturing; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Engineered Wood Product LVL/PLGW; Log Exporting	Yes	
8	No		101-200 MMBF	Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Log Exporting	No	Markets/Customers
9	Yes	Forest Infrastructure (roads, ports, training, etc.)		Harvesting; Log Exporting	Yes	
10	Yes	Forest Infrastructure (roads, ports, training, etc.)		Harvesting; Residual Product Uses, i.e. Energy, Pulp, OSB, MDF; Log Exporting	Yes	
11	No, nothing cost effective the government can do. It's a matter of time - wait for the timber to grow		Depends on markets & location & economic layout	Harvesting, sawmill, log exporting	Have been doing it for 2 years. However, not enough larger 2nd growth stands to keep us busy. Too soon for 2nd growth in the Tongass	

Continued

Survey Responses – Page 3 of 3

#	9. LANDOWNERS ONLY: Are you committed to keeping your entire managed forest land base in production for the next rotation or harvest?	If NO, please explain:	10. If The Working Forest Group (TWFG) proceeds with a 2-day work session in Ketchikan, would you be interested in participating*?	Week Choice #1 Sept-Oct 2014?	Week Choice #2 Sept-Oct 2014?	Would you need financial assistance in order to attend?	Additional Comments (optional)
1			No				
2			No				No one is available to discuss attending a work session at this time. So, I cannot answer this last question. Everyone is out working on jobs, I would think if you have a work session, the later in the year the better, when our seasonal work is completed for the year.
3			Yes			No	I don't agree with question #6 because I believe that a viable manufacturing industry will require 300+ mmbf. An export only industry could survive at the lower volumes if the harvest costs were reasonable.
4			Yes			No	
5			Yes			Yes	
6			Yes			No	If the forest working group is just a group to rubber stamp a young growth agenda, you don't need us. I don't think it is a good idea, if you want to discuss how we can better process all wood in the region then I'm interested. Currently we have a round log export industry with very little manufacturing.
7			No				Notice dates are too short. Would not need financial assistance to attend. I am pretty much retired, but have participated in the industry in the lower 48 and here since 1954.
8			No				the second growth isnt' ready all the small log hemlock oldgrwth is being exported why becaus you can't compete with lower 48, shipping is a challange at $150 per m from pow to sea do the no's i would like to see them and what the profit would be. Pow biofuels has a plan with the 2nd growth and could use it all but we need pellet boilers put in SE and to build a pellet plant to feed the boilers POW biofuels has a plant designed and the busness plan is finished we have 20 acers for this plant.
9	Yes		Yes			No	
10	Yes		Yes			No	Old Growth timber volume should be considered as part of a future industry. There are several existing operators (shake and shingle mills, music wood producers) that will not be able to continue to operate w/o OG volume.
11							

Other comments heard from in-person interviews were:

- The current young growth needs 180+ years of growth to be viable.
- Still need 75-120 MMBF of old growth in order to stay in business while current young growth matures.
- Old growth products is Alaska's only viable timber market at this time because there is no other old growth supplier.
- Alaska's young growth cannot compete in the market because of high shipping costs to Seattle.
- Pulp mills could/would be the biggest consumer of Alaska's current young growth, however no more pulp mills in Alaska.
- There is potential for a whole log, young growth export to Asia, but not dimensional lumber. This does not help current small operators since most focus on dimensional lumber and old growth specialty products – this does not allow the industry to grow.
- Currently, there isn't enough infrastructure by the way of trucks to haul logs or cheap power to transition to a large enough young growth industry to be sustainable.
- Alaska's young growth cannot compete with Washington.
- A 10% profit will not bring investors to Alaska.
- Alaska has the best old growth hemlock, vertical grain wood in the world that is used for doors, windows, and molding. Young growth does not act the same, it's too crooked.
- Initially Alaska's old growth cedar did not fit in the market, but now it's in demand for high end garage doors, entry doors, decks, and stairs and goes for a premium price. Young growth cedar is for lower end commodities such as fencing because it's crooked and splits easily.
- The only other comparable cedar on the market as compared to Alaska's old growth cedar is British Columbia cedar.
- Alaska's old growth spruce is a wanted commodity in Japan, Indonesia, and China (70%) and the other 30% goes to Tacoma for Steinway pianos in New York and Germany.
- In order to keep a timber industry in Alaska there needs to be a mix of old growth timber (spruce, hemlock and cedar) made available as the young growth matures and/or a market for young growth is developed.

The straightforward message TWFG heard from those interviewed was that there will be no timber industry in Southeast Alaska unless the majority of the timber offered is old growth, while the young growth matures and/or a market for Alaska's young growth is developed.

Based on the information provided during the interview process and with The Working Forest Group's working knowledge of the timber industry TWFG would like to propose two potential future industry concepts, both with recommendations and the Future Industry Concept #2 broken into three (3) timeframe analyses: 1) Short-term defined as present day to five (5) years out; 2) Mid-term defined as year six (6) to fifteen (15) years out; and 3) Long-term as defined beyond fifteen (15) years out.

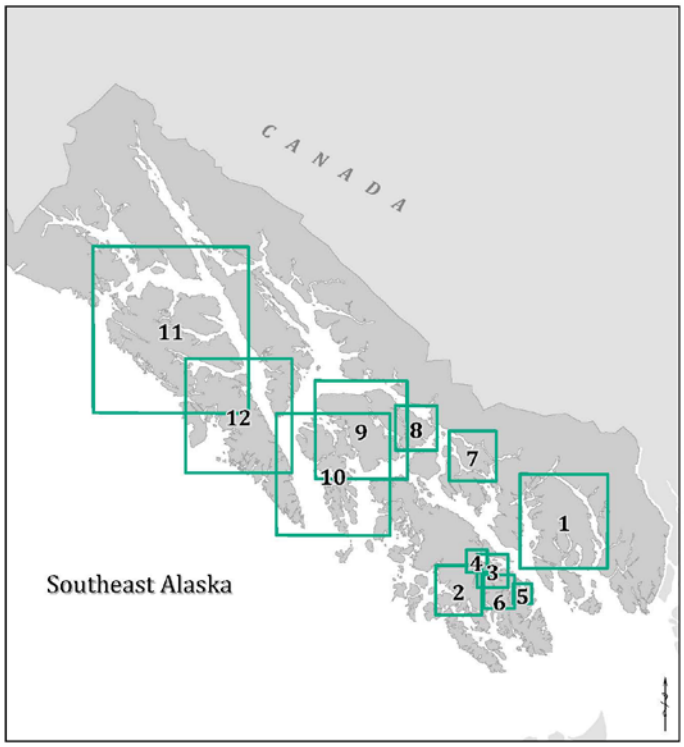
SOUTHEAST ALASKA'S FUTURE TIMBER INDUSTRY

The cornerstones for future forest management in Southeast Alaska will need to be based on:

- Active Forest Management by use of the abundant forest resources of the region,
- Making Southeast Alaska investment friendly to future timber industry investors,
- Developing an all Landowners (public and private) Management Strategy based on the Working Circle Concept; and
- Using Timber Management to develop methods to resolve the regional issues of:

  - ✓ Transportation
  - ✓ Renewable Energy
  - ✓ Solid Waste
  - ✓ Employment – development and retention of tomorrow's workforce

Infrastructure Needs maps have been created for 12 regions as seen below in the index of maps. Each map can be found in Appendix G and will be referenced in the Future Industry Concept #1 and #2 sections.



Infrastructure Needs
Map Index

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11 - Chichagof Island
12 - Baranof Island

Map Developed by Alaska Mental Health Trust Land Office

Future Industry Concept #1

Creation of a viable timber Industry in Southeast Alaska, dependent on young growth fiber, can only be achieved by extending the rotation length until young growth trees develop old growth characteristics. Old growth harvest on the Tongass National Forest must continue for the foreseeable future.

Basis for Concept #1

The existing timber industry in Southeast Alaska, both exporters and manufacturers, believe that the harvest of old growth timber must occur in order to maintain a viable industry into the future. The only Southeast Alaska landowner currently able to provide sufficient quantities of old growth to maintain a viable industry is the U.S. Forest Service.

Exporters and manufacturers differ regarding the management of young growth stands. Round log exporters maintain that young growth can and should be included in the current Tongass Timber Program and are considered that young growth trees may reach a diameter size that makes them undesirable on the international market.

Manufacturers believe that all young growth stands should be allowed to grow over an extended rotation period, usually estimated to be between 200-250 years until the trees develop sufficient fiber containing old growth characteristics that such fiber meets niche market requirements. For a current young growth stand to have enough time to grow shop grade or better wood requires the continued cutting of old growth for at least another 150 years.

There is limited demand for Sitka spruce as a species to be manufactured into dimensional lumber. Current dimensional lumber producers/marketers include small percentages of Sitka spruce into lumber orders as “other species” or incidental and limited to no more than 5% of the volume. Hemlock, pine and fir are the most common species used on the West Coast for dimensional lumber. Existing manufacturers are not optimistic about being able to integrate large volumes of Sitka spruce into current markets. Based on the Species Summary Report provided by the USFS (Appendix D) older stands (45-65 years of age) of young growth on the Tongass National Forest are predominately hemlock by the number of stems per acre, but volume per acre is dominated by Sitka spruce. It is not uncommon to have spruce make up two thirds of the volume in a stand.

Recommendations

1. To maintain an old growth industry for a minimum of 150 years from today, the U.S. Forest Service needs to develop a timber sale program that will provide on an annual basis, a minimum sufficient volume to meet the statutory requirements of Tongass Timber Reform Act (TTRA) Sec. 101 (Appendix E) and ANILCA Section 705(a) (Appendix F); that *“the Secretary shall”* provide a supply of timber from the Tongass National Forest which meets the annual market demand and the market demand for each planning cycle.

2. Current and future forest plans development land use designations must provide sufficient acres of forested lands to meet the supply demand of ANILCA and TTRA (Recommendation 1) while, *"providing for the multiple use and sustained yield of all renewable resources" (*TTRA Sec. 101).

3. The Tongass Exemption to the Roadless Rule must be re-instated.

4. Develop long term "Agreements" between Federal, State and Private Landowners addressing:

    a) Access and Road Use – This agreement should provide all landowners the ability to use each other's infrastructure at no cost to the non-landowner. Such an agreement should include a project specific use agreement that can be implemented quickly under the umbrella agreement.

    b) Infrastructure – Develop collaboratively with an emphasis on consolidating existing infrastructure and minimizing future development.

    c) Maintenance – Ensure that maintenance and upgrades of infrastructure is performed by or paid for by the "user" and includes activities needed to "maintain" permits as well.

5. Develop and implement an Infrastructure Improvement Plan for roads, sort yards, log transfer facilities, rafting grounds, long/short term storage areas and barge/ship loading facilities on all ownerships. Consolidate existing road systems to maximize volume at centralized sort yards, log transfer facilities and ship loading points. Road systems for resource management should be connected to existing community road systems when possible to reduce management costs and expand local workforce job opportunities.

    a) Consider at the minimum the following development needs:

        - **Revillagigedo Island:** Connect all isolated road systems; develop a centralized wood processing facility (Leask Cove) including a sort yard, log transfer facility and barge/ship loading facility. Consider development of an industrial park that includes a sawmill, and a wood-energy / municipal solid waste fueled electrical plant. (Map can be found in Appendix G – Map 1.)

        - **Prince of Wales Island – Trocadero Bay:** Connect the private road systems in Trocadero Bay to the Hydaburg Highway (Map can be found in Appendix G – Map 2.)

        - **Prince of Wales Island – Cabin Creek:** Provide access to the Prince of Wales road system by connecting the private road systems at Kina Cove, Cabin Creek, Paul's Bight and Smith Lagoon with the USFS roads at Polk Inlet and Little Coal Bay (Map can be found in Appendix G – Map 3.)

- **Prince of Wales Island – Sandy Point:** Connect the private roads at Sandy Point road to the Hollis Highway (Map can be found in Appendix G – Map 4.)

- **Prince of Wales Island – Dolomi Bay:** Connect the Dolomite, Lancaster Cove, Reid Cove and Dora Bay road systems together. Look at feasibility of a connection with the West Arm of Cholmondeley Sound road system (Map can be found in Appendix G – Map 5.)

- **Prince of Wales Island - West Arm of Cholmondeley Sound:** Connect the West Arm of Cholmondeley Sound with Sulzer Portage (Map can be found in Appendix G – Map 6.)

- **Wrangell Island:** Extend the existing Wrangell Island road system to Fool's Inlet. At Fool's Inlet construct a sort yard, log transfer facility and a barge/ship loading facility (Map can be found in Appendix G – Map 7.)

- **Mitkof Island:** Blind Slough development to include improvements to existing log transfer facility, construction of a sort yard and barge/ship loading facility (Map can be found in Appendix G – Map 8.)

- **Kupreanof Island:** Improve or construct sort yards, log transfer facilities, and barge/ship loading facilities at both Kake and Totem Bay. Connect the Portage Bay road system with Kake road system. Extend Kake road system south to Totem Bay (Map can be found in Appendix G – Map 9.)

- **Kuiu Island:** Connect the existing road system to No Name Bay, with development in No Name Bay to include a sort yard, log transfer facility, and a barge/ship loading facility. Saginaw Bay development to include a sort yard and log transfer facility. (Map can be found in Appendix G – Map 10.)

- **Chichagof Island:** Connect the road systems of False Island to Corner Bay, Hoonah to Salt Lake Bay, Hoonah to Freshwater Bay, Salt Lake Bay to Eight Fathom Bight (if possible), and Port Fredrick to Sealaska land (if possible). Hoonah development to include a sort yard, log transfer facility, and a barge/ship loading facility. (Map can be found in Appendix G – Map 11.)

- **Baranof Island:** Connect the road systems at Rodman Bay, Fish Bay and Katlian Bay to the community of Sitka. Develop a sort yard, log transfer facility and barge/ship loading facility at Sitka. Consider connecting, if possible, the Northern Baranof Island road systems at Appleton Cove, Saook Cove and Hanus Bay with the Rodman Bay Road system. (Map can be found in Appendix G – Map 12.)

Future Industry Concept #2

Creation of a viable timber Industry in Southeast Alaska, dependent on young growth fiber, which maintains the existing industry while ceasing the harvest of old growth timber stands on the Tongass National Forest within five (5) years.

Basis for Concept #2

The Working Forest Group proposes that the Tongass National Forest implement the following recommendations to meet the mandates listed below from the Secretary's Memorandum 1044-009, dated July 2, 2013 (Appendix A):

> *to speed the transition away from old growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests.*
>
> *to effectuate this transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth.*
>
> *to retain the expertise and infrastructure of the existing industry so businesses can quickly re-tool.*

Recommendations

✓ Short-Term (Present Day to Five Years)

1. USFS provide the existing industry old growth volume based on the Tongass Integrated Plan (TIP) (http://www.fs.usda.gov/detail/tongass/landmanagement/?cid=stelprd3812864 – USDA Forest Service) for the next five (5) years. The majority of the volume sold would be old growth, with only incidental volumes of young growth sold as a by-product of wildlife habitat development in non-development lands.

2. Develop long term "Agreements" between Federal, State and Private Landowners addressing:

    a) Access and Road Use – this agreement should provide all landowners the ability to use each other's infrastructure at no cost to the non-landowner. Such an agreement should include a project specific use agreement that can be implemented quickly under the umbrella agreement.

    b) Infrastructure – Develop collaboratively with an emphasis on consolidating existing infrastructure and minimizing future development.

    c) Maintenance – Ensure that maintenance and upgrades of infrastructure is performed by or pay for by the "user". Include activities needed to "maintain" permits as well.

3. Conduct Stand Surveys of all young growth stands on all land-ownerships and gather at a minimum the following data:

    - Acreage – available over multiple rotations for timber production
    - Stand Age at the time of the survey
    - Species Composition
    - Site Index including information on aspect, slope and elevation for each stand
    - Management intent of the owner – will the stand be intensely managed over a short rotation or will rotation be extended to accomplish landowners' management goals.

4. Develop an Infrastructure Improvement Plan for roads, sort yards, log transfer facilities, rafting grounds, long/short term storage areas and barge/ship loading facilities on all ownerships. Consolidate existing road systems to maximize volume at centralized sort yard, log transfer facilities and ship loading points. Road systems for resource management should be connected to existing community road systems when possible to reduce management cost and expand local workforce job opportunities.

    b) Consider at the minimum the following development needs:

    - **Revillagigedo Island:** Connect all isolated road systems; develop a centralized wood processing facility (Leask Cove) including a sort yard, log transfer facility and barge/ship loading facility. Consider development of an industrial park that includes a sawmill, and a wood-energy / municipal solid waste fueled electrical plant. (Map can be found in Appendix G – Map 1.)

    - **Prince of Wales Island – Trocadero Bay:** Connect the private road systems in Trocadero Bay to the Hydaburg Highway (Map can be found in Appendix G – Map 2.)

    - **Prince of Wales Island – Cabin Creek:** Provide access to the Prince of Wales road system by connecting the private road systems at Kina Cove, Cabin Creek, Paul's Bight and Smith Lagoon with the USFS roads at Polk Inlet and Little Coal Bay (Map can be found in Appendix G – Map 3.)

    - **Prince of Wales Island – Sandy Point:** Connect the private roads at Sandy Point road to the Hollis Highway (Map can be found in Appendix G – Map 4.)

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5. Land Exchange between the U.S. Forest Service and the State of Alaska - the National Forests within the State of Alaska are in the process of writing a new forest plan (Chugach) or amending an existing plan (Tongass). Both forests have State lands within or adjacent to their external boundaries. The Alaska Timber Jobs Task Force report of June 2012 (Appendix H) contains the recommendation to exchange 250,000 acres (recommendation #4 of Section 2, Task 5). This recommendation was driven in part by the Chugach National Forest's interest in obtaining state owned lands within or near the Chugach for recreational purposes.

Consideration should be given to a land exchange between the State and the U.S. Forest Service. Such an exchange would maintain the existing amount of land by ownership (no net loss of national forest lands or state lands) and would help align ownership with land use objectives. State land within or near the Chugach National Forest could be exchanged for lands within the Tongass National Forest. Federal lands transferred to the State should be included in the Southeast State Forest.

At the conclusion of the land exchange (5 years from now) the Tongass timber sale program would cease selling old growth timber except for volumes affected by large insect or disease outbreaks, catastrophic windthrow events, the salvage of dead or down material and incidental volumes sold through a micro-sale program (sales under 50 MBF). Lands transferred from the State to the USFS could be developed for non-timber purposes (recreation facilities), but would be excluded from availability for timber harvest.

✓ Mid-Term (Six Years to Fifteen Years)

1. Implement Land Exchange between USFS and State of at least 250,000 acres or per the recommendation of the Alaska Timber Jobs Task Force report.

2. Implement Infrastructure Plan

3. Continue collecting young growth stand data on all lands

4. USFS Timber Sale Program will only include of the harvest of old growth timber volumes affected by large scale insect and/or disease outbreaks, catastrophic windthrow events, the salvage of dead or down material and incidental volumes sold through a micro-sale program (sales under 50 MBF). Stewardship contracting should be used as the contracting method on all sales.

   Young growth volumes sold during this timeframe would be minimal and be a by-product of treating young growth acreage in non-development land use designations for purposes of wildlife habitat development.

5. Develop a young growth management/marketing strategy in association with the State and private landowners by coordinating the harvest between land ownerships based on young growth stand data gathered in the short and mid-term and future land management plans by land ownership should be consider when developing harvest plans.

   Also, consider the Working Circle concept that proposes the establishment of five (5), 50-mile radius Working Circles centered in the Southeast Alaska communities of Hoonah, Kake, Wrangell, Klawock, and Ketchikan. The total operating area of these Working Circle centers encompasses more than 95 percent of the production forest land use designations (LUDs) contained within

the Tongass National Forest (TWFG. pg. 15). The primary goal of the Working Circle concept, within the TWFG paper cited, was the creation of an appraisal point at each of the five (5) Working Circle centers to generate positive value USFS timber sales. When included as part of this report's Infrastructure Development Plan, the Working Circle concept maximizes future volume across all landownerships at centralized locations that will provide an economy of scale and manufacturing opportunities.

Research and/or consider potential young growth product development such as:

a) Pacific Rim needs and cutting methods/dimensions – Southeast Alaska has a competitive advantage over the Pacific Northwest in shipping cost to Pacific Rim countries; can that advantage be used by mills to provide manufactured products to Pacific Rim countries? What are those products?

b) Bio-diesel for marine use – Navy, Coast Guard, Cruise ships, commercial fishing fleet – can waste material and/or non-traditional commercial wood fiber associated with timber harvest be used to produce bio-diesel? Is there a competitive advantage to produce that fuel in Southeast Alaska in connection with the supposed "boom" that will occur in the Arctic? Can such a product be integrated into the marine support industry currently being envisioned for Southeast Alaska?

c) Stock for remanufacturing – veneer, timbers, and shop material – can primary manufacturing work to supply stock to the Pacific Rim or other international markets vs. domestic markets? Is supplying domestic markets economically feasible?

d) Wood energy – producing fuel products for export outside the region and/or producing heat and power within the region. Is it better to produce power at a small scale locally or at a larger "regional size" and transport via a region grid? Can waste material and/or non-traditional commercial wood fiber associated with timber harvest be combined with municipal solid waste to produce power and resolve communities' issues with handling solid waste?

6. Develop a mill infrastructure/transition plan in association w/ State and private landowners based on the developed young growth management and marketing strategy as proposed above. What is the infrastructure need based on the strategies developed? What is the infrastructure needs based on the annual available volume from the "all lands" management strategy? Is it one or two large capacity mills that consume the volume generated on an annual basis region wide? Or multiple high efficiency mills strategically located across the region (Working Circle concept)? What infrastructure is needed to produce primary manufactured products vs. finished products?

Are there different infrastructure needs when considering the production of domestic vs. international products?

✓ Long-Term (Beyond Fifteen Years)

1. Seek investors and entrepreneurs to implement plans and strategies developed during the mid-term.

2. USFS starts offering young growth volumes from National Forest lands when available volumes combined with volume from all other landowners are sufficient on an annual basis to provide for the future industry as envisioned and planned for during the mid-term.

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APPENDIX H: ALASKA TIMBER JOBS TASK FORCE (SHORT REPORT) – JULY 2012

APPENDIX A: SECRETARY'S TRANSITION MEMORANDUM JULY 2, 2013

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20250

July 2, 2013

SECRETARY'S MEMORANDUM 1044-009
Addressing Sustainable Forestry in Southeast Alaska

1. PURPOSE AND BACKGROUND

Alaska's Tongass National Forest is a national treasure. At 17 million acres, the Tongass includes vast old growth temperate rainforests that are increasingly rare globally. The Tongass is also a place that has sustained the people and communities of Southeast Alaska for generations. Whether through providing food and other subsistence uses to the rural communities in the region, supporting cultural practices and identity, drawing people to the region for world-class recreation and fishing, or supporting wood products and other forest-based industries, the Tongass is vital to the economic and cultural well-being of the region. The Forest is also important to the climate; while the Tongass comprises about 2 percent of the Nation's forests, according to one scientific study it contains the equivalent of 8 percent of the carbon sequestered in the forests of the conterminous United States. The Department of Agriculture is committed to maintaining Southeast Alaska's exceptional natural resources in perpetuity. USDA is equally committed to doing its part to ensure that the communities within and adjacent to the Tongass National Forest are economically vibrant. These two goals must go hand in hand.

To conserve the Tongass National Forest under the principles of the Multiple-Use Sustained-Yield Act of 1960, Tongass Timber Reform Act and other relevant statutes, we must speed the transition away from old-growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests. Moreover, we must do this in a way that preserves a viable timber industry that provides jobs and opportunities for residents of Southeast Alaska.

This Memorandum affirms that this transition to a more ecologically, socially, and economically sustainable forest management is a high priority for USDA, the Forest Service, and the Tongass National Forest. USDA's goal is to effectuate this transition over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth. This timeframe will conserve old growth forests while allowing the forest industry time to adapt. To achieve this goal, several steps must be taken as described in the Actions section of this Memorandum.

Over the past three years, USDA has increased investments in alternative economic development opportunities for communities across the region in the recreation, tourism, fishing and renewable energy sectors, while initiating a transition away from a historical reliance on old growth timber harvests. To accomplish the transition to a timber program based primarily on young growth, it is important to retain the expertise and infrastructure of the existing industry so businesses can quickly re-tool. These businesses are fundamental to both the young growth and restoration components of the future timber program, and to the economic vitality of the region. Such an approach requires a reliable supply of economically viable timber, with the old growth component decreasing over time while the young growth component increases.

Updated forest inventories have improved our understanding of the age, location, and amount of young growth across the Tongass, and helped clarify the challenges in establishing an economically viable young growth program due to the relatively young age of the available stands, market conditions, and other factors. Additional research will be necessary to develop effective ways to meet these challenges. Achieving the transition in 10 to 15 years also calls for enactment of a statutory provision, to exempt a limited amount of young growth on the Tongass from current requirements that generally restrict harvesting young growth timber until it reaches maximum growth rates. Administrative mechanisms to accomplish such an adjustment are time consuming and would divert scarce resources from achieving the goals of the transition. Compared to private lands, the Culmination of Mean Annual Increment (CMAI) requirements could delay development of an economically viable young growth program for decades. USDA will continue to work with Congress on such a provision.

To ensure a smooth transition, the Forest Service will continue to offer a supply of old growth timber while increasing the supply of young growth to provide industry in Alaska the opportunity to develop new markets, learn new skills, and acquire new equipment. The continuation of limited sales of old growth timber is essential to maintain the existing industry until young growth can efficiently be processed. The Forest Service will also continue the Tongass National Forest's micro-sale program and the old growth small sale program that targets niche markets, while developing a new integrated program of work focused on young growth, ecological restoration, and forest stewardship that protects and restores the Forest's extraordinary fish and wildlife habitat. This strategy will maintain and restore the Forest's clean water, abundant fish, healthy populations of wildlife, and scenic beauty while sustaining deep-rooted community and cultural ties to the land and providing jobs in the woods.

Through an all lands, all hands approach USDA will utilize all of its expertise, tools and resources such as economic assistance, workforce training, capacity building, and improved

delivery of services to help strengthen and diversify local economies. Working with Rural Development and the Farm Service Agency; other Federal agencies as appropriate; State, local, and Tribal entities; non-governmental organizations; and local communities will be essential to success. Collaborative development of a transition strategy increases collective ownership of the approach; collaborative implementation with our many partners offers opportunities to leverage funding available from the Forest Service.

2. ACTIONS

The objective of this Secretarial Memorandum is to ensure that USDA, the Chief of the Forest Service, the Alaska Region of the Forest Service, and the Tongass National Forest work together to catalyze a transition from a timber sale program based on old growth to one based on young growth. Pursuant to this Memorandum, the Secretary asks the Forest Service to:

a. Seek opportunities to supply sufficient old growth "bridge timber" while the industry re-tools for processing young growth. The first step is the Big Thorne timber sale. This project along with other planned timber sales would supply timber to existing mills for several years and allow the Forest Service to reallocate staff to young growth projects.

b. As soon as possible, allocate staff and financial resources to planning young growth projects, ramping down old growth sales and increasing investments in young growth.

c. Continue to work with Congress to exempt a limited amount of young growth on the Tongass from current requirements that generally restrict harvesting young growth timber until it has reached maximum growth rates, or CMAI. Providing flexibility with regard to CMAI is essential to permit the development of economically viable young growth projects within the timeframe set as a goal for the transition.

d. Develop by July 30, 2013, scenarios that effectuate a more rapid transition by prioritizing and developing additional young growth and restoration projects that could be completed over the next 5 years. Examine scenarios that assume adoption of the statutory provision noted above that provides Forest Service greater flexibility in harvesting young growth timber.

e. Strongly consider whether to pursue an amendment to the Tongass Forest Plan. Such an amendment would evaluate which lands will be available for timber harvest, especially young growth timber stands, which lands should be excluded, and additional opportunities to promote and speed transition to young growth management. A determination of whether to initiate an amendment should be completed by September 30, 2013. If an amendment in pursued, identify an efficient timeline for completion that supports the timeframe for transition outlined in this Memorandum.

f. Continue support for research on how best to manage young growth, develop markets for it, and help industry re-tool to process it. As results become available, apply them as

needed to improve young growth management.

g. Intensify work with Rural Development to pursue opportunities to facilitate investments in re-tooling. Develop by December 31, 2013, in collaboration with Rural Development and other stakeholders, a plan for providing financial assistance to re-tool timber processing equipment in Southeast Alaska to assist the industry to efficiently handle young growth timber.

h. Pursue partnerships with foundations, non-profits, corporations, and others to advance a second growth industry, undertake restoration projects, and otherwise speed the transition.

I will remain engaged in this effort to ensure the Tongass National Forest transitions effectively to a timber program based primarily on young growth. It is vital that the Forest Service continue to seek input from and work with stakeholders in the region towards this transition. In this regard, I will approve establishment of an advisory committee under the Federal Advisory Committee Act to provide advice to the Forest Service on how to expedite the transition to young growth management.

3. MISCELLANEOUS

a. Effective Date. July 1, 2013

b. This Memorandum does not create any right or benefit, substantive or procedural enforceable by law or equity. This Memorandum creates no private right of action.

APPENDIX B: SAMPLE SURVEY

The WORKING FOREST GROUP

Southeast Alaska Future Industry Questionnaire

First Name

Last Name

Mailing Address

City

State

Zip

Daytime Phone Number

E-Mail Address

1. What segment of the Forest Products Industry are you currently active in?
Select All That Apply

- ☐ Manufacturing/Processing
- ☐ Harvesting
- ☐ Logistics
- ☐ Land Owner/Operator
- ☐ Other

2. How many years have you been operating a business and/or been involved in the Forest Products Industry in Southeast Alaska?

How many employees ?

3. Which condition best describes your plan for 10+ years?

- ○ Will operate until I retire and shut down
- ○ Will look for a buyer for my business
- ○ Will or are seeking successor depth now
- ○ Already have a successor in place
- ○ Other

4. What do you think makes a viable forest products industry in Southeast Alaska?

5. Do you think federal, state, or local government should make investments in Southeast Alaska to advance the transition to young growth in the Forest Products Industry?

If **YES**, what area would you prefer that investment take place?
Select One

- ○ Forest Infrastructure (roads, ports, training, etc.)
- ○ Harvesting Equipment Incentives
- ○ Processing and Manufacturing Equipment Incentives
- ○ Other

6. Do you think young growth manufacturing/processing opportunities would be economically viable in Southeast Alaska at ...
Select One

- ○ less than 50 MMBF
- ○ 50-100 MMBF
- ○ 101-200 MMBF

7. Which of the following activities/components would you consider essential for an integrated young growth Forest Products Industry in Southeast Alaska?
Select All That Apply

- ☐ Harvesting
- ☐ Sawmill
- ☐ Value Added Remanufacturing
- ☐ Residual Product Uses, i.e. Energy, Pulp, OSB, MDF
- ☐ Engineered Wood Product LVL/PLGW
- ☐ Log Exporting
- ☐ Other

8. Would your current business be able to operate exclusively from a young growth resource today?

If **NO**, what changes would you need to make to your business?
Select All That Apply

- ☐ Equipment
- ☐ Markets/Customers
- ☐ Workforce Skill Set
- ☐ Products/Services
- ☐ Other

9. **LANDOWNERS ONLY:** (all others go to question #10) Are you committed to keeping your entire managed forest land base in production for the next rotation or harvest?

If **NO,** please explain:

10. If The Working Forest Group (TWFG) proceeds with a 2-day work session in Ketchikan, would you be interested in participating*?

If **YES**, which dates below would fit best into your schedule?
Select All That Apply

- ☐ July 24-25, 2014
- ☐ July 26-27, 2014
- ☐ July 28-29, 2014
- ☐ August 2-3, 2014
- ☐ August 5-6, 2014
- ☐ Other

11. Would you need some financial assistance in order to attend?

** The fifteen participants will be chosen from each of the Forest Products Industry's based on their interest, knowledge, availability, and funding available.*

Additional Comments (optional)

Printed forms can be e-mailed, faxed or mailed to:

E-Mail: info@akworkingforest.org / FAX: 1-866-207-7731/ Mail: TWFG, 2417 Tongass Ave., Suite 111-301, Ketchikan, AK 99901

APPENDIX C: INTIAL BUSINESS CONTACTS – JULY 2014

SE AK Future Industry Contact List
July 2014

#	Business Name	City	State
1	ALASKA FOREST ASSOCIATION INC	KETCHIKAN	AK
2	ALASKA LASER MAID	THORNE BAY	AK
3	ALASKA SPECIALTY WOODS	CRAIG	AK
4	ALCAN FOREST PRODUCTS	KETCHIKAN	AK
5	AMERIKANUAK, INC	JUNEAU	AK
6	BOATRB	PETERSBURG	AK
7	BOYER TOWING COMPANY	KETCHIKAN	AK
8	C. L. REFORESTATION LLC	KLAWOCK	AK
9	CAPITAL CABINETS & COUNTERS	JUNEAU	AK
10	COLUMBIA HELICOPTERS, INC.	KETCHIKAN	AK
11	CORNERSTONE EXCAVATION SERVICES	THORNE BAY	AK
12	CREW ENTERPRISES	SITKA	AK
13	CUTTING EDGE WOOD PRODUCTS	KETCHIKAN	AK
14	D. J. ENTERPRISES	WRANGELL	AK
15	DROSON COMPANY	KLAWOCK	AK
16	DURETTE CONSTRUCTION COMPANY, INC.	KETCHIKAN	AK
17	EIGHT STARS TREE SERVICE	KLAWOCK	AK
18	FALLS CREEK FOREST PRODUCTS	PETERSBURG	AK
19	FIREWEED CRAFTS OF JUNEAU	JUNEAU	AK
20	FOREST INDUSTRY CONSULTING	JUNEAU	AK
21	FRITZ LACOUR	THORNE BAY	AK
22	GILDERSLEEVE LOGGING	GASTON	OR
23	ICY STRAITS LUMBER AND MILLING, INC	HOONAH	AK
24	KLEHINI VALLEY LOG WORKS	HAINES	AK
25	MADISON LUMBER AND HARDWARE	KETCHIKAN	AK
26	MENTAL HEALTH TRUST LAND OFFICE	KETCHIKAN	AK
27	MITKOF TRUCKING	PETERSBURG	AK
28	MOOSE CREEK MILLWORKS	HAINES	AK
29	PAPAC ALASKA LOGGING, INC.	CRAIG	AK
30	PETER M HUBERTH	JUNEAU	AK
31	PHOENIX LOGGING COMPANY	KETCHIKAN	AK
32	PORTER LUMBER	THORNE BAY	AK
33	POW BIOFUELS COOP	THORNE BAY	AK
34	REID BROTHERS LOGGING AND CONSTRUCTION	PETERSBURG	AK
35	ROCK-N-ROAD CONSTRUCTION, INC.	PETERSBURG	AK
36	SAINT NICK FOREST PRODUCTS, INC.	CRAIG	AK
37	SEALASKA TIMBER CORPORATION	KETCHIKAN	AK
38	SOUTHEAST ALASKA RESOURCES	KETCHIKAN	AK
39	SOUTHEAST CEDAR HOMES	SITKA	AK
40	SOUTHEAST ROADBUILDERS	HAINES	AK
41	STATE OF ALASKA, DIVISION OF FORESTRY	KETCHIKAN	AK
42	THE MILL, INC.	PETERSBURG	AK
43	TONGASS FOREST ENTERPRISES	KETCHIKAN	AK
44	TONSGARD LOGGING/CHANNEL CONSTRUCTION	JUNEAU	AK
45	VIKING LUMBER COMPANY, INC.	CRAIG	AK
46	WOOD EYE WOODWORKING	JUNEAU	AK
47	WOODBURY ENTERPRISES	WRANGELL	AK

APPENDIX D: U.S. FOREST SERVICE SOUTHEAST ALASKA SPECIES SUMMARY REPORTS

Species Codes

AC= yellow-cedar

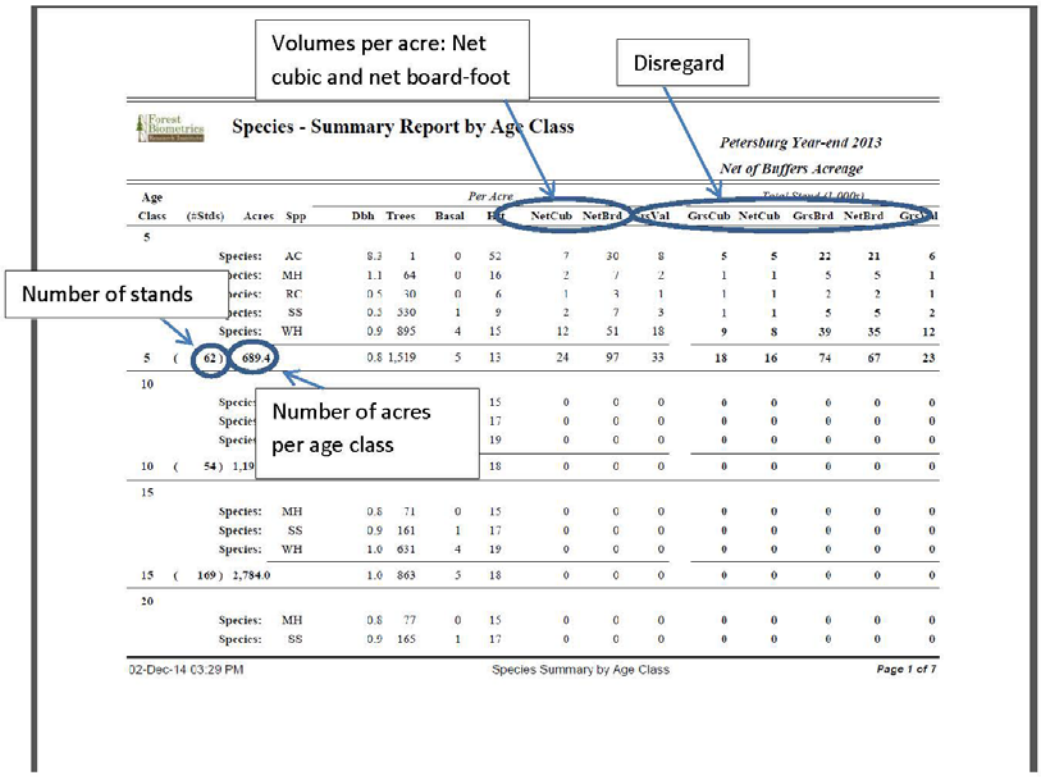
MH = mountain hemlock

RC = western redcedar

SS = Sitka spruce

WH = western hemlock

RA = red alder



Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Dbh	Trees	Basal	Per Acre Ht	NetCub	NetBrd	GrsVal	GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
5															
		Species:	AC	8.3	1	0	52	7	30	8	5	5	22	21	6
		Species:	MH	1.1	64	0	16	2	7	2	1	1	5	5	1
		Species:	RC	0.5	30	0	6	1	3	1	1	1	2	2	1
		Species:	SS	0.3	330	1	9	2	7	3	1	1	5	5	2
		Species:	WH	0.9	895	4	15	12	51	18	9	8	39	35	12
5	(62)	689.4		0.8	1,519	5	13	24	97	33	18	16	74	67	23
10															
		Species:					15	0	0	0	0	0	0	0	0
		Species:					17	0	0	0	0	0	0	0	0
		Species:					19	0	0	0	0	0	0	0	0
10	(54)	1,19					18	0	0	0	0	0	0	0	0
15															
		Species:	MH	0.8	71	0	15	0	0	0	0	0	0	0	0
		Species:	SS	0.9	161	1	17	0	0	0	0	0	0	0	0
		Species:	WH	1.0	631	4	19	0	0	0	0	0	0	0	0
15	(169)	2,784.0		1.0	863	5	18	0	0	0	0	0	0	0	0
20															
		Species:	MH	0.8	77	0	15	0	0	0	0	0	0	0	0
		Species:	SS	0.9	165	1	17	0	0	0	0	0	0	0	0

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Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
5															
		Species:	AC	1.6	18	0	19	1	3	0	1	1	2	2	0
		Species:	MH	1.1	20	0	16	0	2	0	0	0	1	1	0
		Species:	RC	0.2	162	0	2	0	0	0	0	0	0	0	0
		Species:	SS	0.1	2,194	0	3	0	2	0	0	0	1	1	0
		Species:	WH	0.3	2,105	1	5	1	2	0	0	0	1	1	0
5	(37)	758.6		0.2	4,499	1	4	2	8	2	2	2	6	6	1
10															
		Species:	AC	1.6	70	1	19	4	11	2	3	3	10	9	2
		Species:	MH	1.1	80	0	16	1	7	2	1	1	6	6	1
		Species:	RC	1.5	12	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	243	1	19	2	7	2	2	2	7	6	1
		Species:	WH	1.1	435	3	19	2	7	1	2	2	6	6	1
10	(46)	855.5		1.1	840	6	19	9	32	7	8	8	29	27	6
15															
		Species:	AC	1.6	72	1	20	4	11	2	14	13	40	38	7
		Species:	LP	0.0	0	0	3	0	0	0	0	0	0	0	0
		Species:	MH	1.1	81	1	17	1	8	2	5	5	27	26	6
		Species:	RC	1.5	12	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	242	1	19	2	7	2	6	6	26	25	6
		Species:	WH	1.1	434	3	19	2	7	1	8	7	26	25	5

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
15	(128)	3,427.3		1.1	842	6	19	9	33	7	33	32	119	113	24
20															
	Species:		AC	1.6	70	1	19	4	11	2	16	15	45	42	7
	Species:		MH	1.1	80	0	16	1	7	2	6	5	29	28	7
	Species:		RC	1.5	12	0	9	0	0	0	0	0	0	0	0
	Species:		SS	0.8	243	1	19	2	7	2	7	7	30	29	7
	Species:		WH	1.1	435	3	19	2	7	1	8	8	29	28	6
20	(143)	3,955.9		1.1	840	6	19	9	32	7	37	35	134	127	26
25															
	Species:		AC	2.3	51	1	20	29	119	32	129	123	530	503	137
	Species:		MH	1.1	56	0	16	1	5	1	4	4	22	21	5
	Species:		RA	9.6	0	0	57	2	7	1	10	8	34	30	3
	Species:		RC	2.7	12	0	17	8	28	12	35	34	125	118	51
	Species:		SS	1.8	212	4	25	50	190	62	221	210	845	802	264
	Species:		WH	1.8	426	8	23	25	92	27	112	106	409	389	114
25	(101)	4,231.4		1.8	759	14	23	114	440	136	511	484	1,965	1,863	574
30															
	Species:		AC	12.2	3	3	48	90	381	106	10	10	44	42	12
	Species:		RA	9.7	2	1	57	7	24	3	1	1	3	3	0
	Species:		RC	4.3	12	1	29	27	96	41	3	3	11	11	5

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	SS	3.8	139	11	42	165	631	209	19	18	73	70	23
		Species:	WH	2.9	406	19	29	81	297	89	9	9	35	33	10
30	(11)	110.5		3.4	562	35	33	370	1,428	448	43	41	166	158	50
35															
		Species:	AC	0.1	0	0	48	0	0	0	0	0	0	0	0
		Species:	RA	7.2	8	2	47	25	99	12	16	15	66	58	7
		Species:	RC	2.7	14	1	25	4	16	4	3	3	10	9	2
		Species:	SS	5.0	212	29	43	468	1,576	501	288	273	968	920	292
		Species:	WH	4.0	394	35	39	423	1,430	350	260	247	878	834	204
35	(11)	583.4		4.4	629	67	40	921	3,121	867	567	537	1,922	1,821	506
40															
		Species:	RA	7.2	11	3	47	32	128	16	26	22	102	90	11
		Species:	RC	2.7	18	1	25	6	20	5	4	4	15	14	4
		Species:	SS	5.1	234	34	44	561	1,901	602	412	391	1,395	1,326	420
		Species:	WH	3.9	458	38	39	459	1,547	377	337	320	1,136	1,079	263
40	(18)	697.5		4.4	721	75	41	1,058	3,596	1,001	778	738	2,648	2,509	698
45															
		Species:	AC	7.0	1	0	56	2	6	1	4	4	13	12	2
		Species:	RA	8.2	25	9	53	93	365	54	217	191	849	747	111
		Species:	RC	4.7	24	3	31	23	73	21	50	47	158	150	43

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	SS	7.3	198	57	48	1,213	4,382	1,441	2,614	2,484	9,447	8,974	2,952
		Species:	WH	5.5	361	59	43	1,031	3,993	1,015	2,222	2,111	8,609	8,178	2,079
45	(46)	2,048.1		6.2	608	128	45	2,361	8,819	2,533	5,107	4,836	19,075	18,062	5,187
50															
		Species:	AC	6.1	1	0	38	4	14	3	17	16	52	50	10
		Species:	MH	4.9	0	0	31	1	2	1	3	3	9	9	2
		Species:	RA	8.4	51	20	57	184	692	133	764	673	2,868	2,524	484
		Species:	RC	6.5	37	8	43	99	308	99	380	361	1,183	1,124	360
		Species:	SS	9.8	187	97	62	2,170	7,970	2,662	8,328	7,911	30,590	29,060	9,707
		Species:	WH	7.5	336	103	56	1,789	7,072	1,806	6,864	6,521	27,141	25,784	6,585
50	(74)	3,646.0		8.3	612	228	57	4,247	16,059	4,703	16,357	15,485	61,844	58,551	17,149
55															
		Species:	AC	7.9	0	0	45	3	12	3	13	12	53	50	14
		Species:	LP	8.1	0	0	57	0	1	0	2	2	6	5	1
		Species:	MH	10.4	0	0	51	1	5	1	7	6	22	20	5
		Species:	RA	8.2	64	24	56	229	887	139	1,116	982	4,319	3,800	595
		Species:	RC	5.4	44	7	33	63	198	66	282	268	891	847	283
		Species:	SS	9.5	188	92	59	2,097	7,756	2,559	9,457	8,984	34,969	33,221	10,962
		Species:	WH	7.6	336	105	53	1,962	7,934	2,087	8,848	8,406	35,772	33,984	8,939
55	(56)	4,283.3		8.1	632	228	54	4,356	16,792	4,856	19,724	18,660	76,031	71,927	20,799

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
60															
		Species:	AC	7.2	29	8	48	126	509	126	32	30	128	122	30
		Species:	RA	10.0	19	10	68	126	467	80	34	30	127	112	19
		Species:	RC	7.4	11	3	37	56	178	68	14	13	45	43	16
		Species:	SS	9.6	97	49	72	1,258	4,960	1,628	316	300	1,247	1,185	389
		Species:	WH	9.6	291	145	75	3,588	14,804	4,400	902	857	3,722	3,536	1,051
60	(10)	238.8		9.4	447	216	72	5,153	20,919	6,301	1,298	1,231	5,268	4,996	1,505
65															
		Species:	RA	0.3	0	0	72	0	0	0	0	0	0	0	0
		Species:	SS	6.3	369	79	70	1,960	8,625	3,475	45	43	200	190	77
		Species:	WH	7.4	309	91	76	2,406	10,753	3,637	56	53	249	237	80
65	(5)	22.0		6.8	678	170	73	4,366	19,378	7,112	101	96	449	427	157
70															
		Species:	AC	9.0	9	4	87	118	528	144	1	1	4	4	1
		Species:	MH	11.3	4	3	63	49	174	39	0	0	1	1	0
		Species:	RA	11.3	3	2	72	40	166	18	0	0	1	1	0
		Species:	RC	25.7	2	9	120	375	1,928	916	3	3	14	13	6
		Species:	SS	12.9	105	95	83	3,224	13,819	5,236	23	22	101	96	36
		Species:	WH	8.9	356	154	65	4,369	19,483	6,128	32	30	142	135	42
70	(8)	6.9		10.1	479	267	70	8,175	36,098	12,480	60	57	263	250	86

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
75															
		Species:	AC	9.0	43	19	87	549	2,462	673	12	12	56	53	15
		Species:	MH	11.3	17	12	63	229	812	180	5	5	18	18	4
		Species:	RC	25.7	12	42	120	1,748	8,989	4,269	40	38	204	194	92
		Species:	SS	16.3	45	66	112	2,596	11,945	4,963	59	56	271	258	107
		Species:	WH	12.8	203	183	102	6,878	33,675	12,514	156	148	765	727	270
75	(7)	21.6		13.5	321	322	101	11,999	57,884	22,598	273	259	1,315	1,249	488
80															
		Species:	AC	6.2	18	4	39	36	121	20	1	0	2	2	0
		Species:	RA	8.5	32	13	59	112	438	73	2	2	7	6	1
		Species:	RC	5.7	10	2	33	14	41	12	0	0	1	1	0
		Species:	SS	9.8	135	71	65	1,779	7,038	2,367	25	24	100	95	32
		Species:	WH	8.9	358	155	60	3,596	14,751	4,262	51	49	211	200	58
80	(2)	13.6		9.0	553	244	61	5,538	22,390	6,734	79	75	320	304	91
90															
		Species:	AC	9.0	43	19	87	549	2,462	673	0	0	0	0	0
		Species:	MH	11.3	17	12	63	229	813	180	0	0	0	0	0
		Species:	RC	25.7	12	42	120	1,748	8,989	4,269	0	0	0	0	0
		Species:	SS	16.3	45	66	112	2,596	11,946	4,963	0	0	0	0	0
		Species:	WH	12.8	203	183	102	6,878	33,675	12,514	0	0	0	0	0

Species - Summary Report by Age Class

Craig Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
90	(1)	0.0		13.5	321	322	101	12,000	57,885	22,599	0	0	0	0	0
Sum:	704	24,900.5									44,978	42,575	171,555	162,389	47,348

Species - Summary Report by Age Class

Hoonah Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
				Per Acre							*Total Stand (1,000s)*				
10															
		Species:	AC	1.4	5	0	11	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	MH	0.8	17	0	15	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RA	2.1	7	0	20	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RC	1.5	7	0	9	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	SS	1.4	192	2	20	6	25	6	**0**	**0**	**1**	**1**	**0**
		Species:	WH	1.0	300	2	18	0	0	0	**0**	**0**	**0**	**0**	**0**
10	**(5)**	**32.3**		1.2	528	4	19	6	25	6	**0**	**0**	**1**	**1**	**0**
15															
		Species:	AC	1.4	5	0	11	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	MH	0.8	17	0	15	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RA	2.1	7	0	20	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RC	1.5	7	0	9	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	SS	1.4	192	2	20	6	25	6	**2**	**2**	**9**	**9**	**2**
		Species:	WH	1.0	300	2	18	0	0	0	**0**	**0**	**0**	**0**	**0**
15	**(9)**	**344.9**		1.2	528	4	19	6	25	6	**2**	**2**	**9**	**9**	**2**
20															
		Species:	AC	1.4	5	0	11	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	MH	0.8	17	0	15	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RA	2.1	7	0	20	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RC	1.5	7	0	9	0	0	0	**0**	**0**	**0**	**0**	**0**

Species - Summary Report by Age Class

Hoonah Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	SS	1.4	192	2	20	6	25	6	31	29	127	121	28
		Species:	WH	1.0	300	2	18	0	0	0	0	0	0	0	0
20	(121)	4,808.5		1.2	528	4	19	6	25	6	31	29	127	121	28
25															
		Species:	AC	4.1	4	0	20	11	47	13	66	62	278	264	74
		Species:	MH	0.8	13	0	15	0	0	0	0	0	0	0	0
		Species:	RA	2.4	6	0	21	0	0	0	0	0	0	0	0
		Species:	RC	2.4	7	0	15	3	12	5	20	19	70	66	28
		Species:	SS	1.7	212	3	25	16	61	15	97	92	363	345	86
		Species:	WH	1.4	380	4	24	14	47	13	81	77	283	269	73
25	(165)	5,674.3		1.6	622	8	24	44	166	46	263	250	994	944	261
30															
		Species:	AC	13.1	2	2	57	51	216	60	145	138	614	583	163
		Species:	RA	8.3	1	0	54	0	0	0	0	0	0	0	0
		Species:	RC	4.3	7	1	29	15	54	23	44	42	154	147	63
		Species:	SS	2.1	301	7	33	53	189	49	150	143	538	511	131
		Species:	WH	1.9	700	13	30	64	224	61	182	173	635	604	164
30	(66)	2,698.3		2.0	1,010	23	31	184	683	193	521	495	1,941	1,844	520
35															
		Species:	AC	8.8	4	2	41	52	221	62	82	78	346	329	92

Species - Summary Report by Age Class

Hoonah Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RA	7.3	6	2	45	15	60	8	26	22	102	90	12
		Species:	RC	4.1	14	1	31	21	70	27	33	31	110	104	40
		Species:	SS	3.2	308	17	36	257	900	272	402	382	1,410	1,340	406
		Species:	WH	2.3	717	21	34	209	775	208	327	311	1,215	1,154	310
35	(42)	1,488.7		2.7	1,049	42	35	554	2,026	577	870	824	3,183	3,017	859
40															
		Species:	AC	4.8	2	0	28	9	39	11	0	0	1	1	0
		Species:	RA	9.5	67	33	54	302	1,171	184	10	9	40	36	6
		Species:	RC	3.8	8	1	33	8	25	8	0	0	1	1	0
		Species:	SS	7.0	299	81	53	1,817	6,279	2,071	58	55	201	191	63
		Species:	WH	3.8	451	36	48	702	2,521	627	22	21	81	77	19
40	(6)	30.4		5.8	828	151	50	2,838	10,035	2,901	92	86	324	305	88
45															
		Species:	AC	4.8	13	2	28	51	218	62	0	0	0	0	0
		Species:	RA	7.2	29	8	44	87	345	45	0	0	1	1	0
		Species:	RC	3.8	47	4	33	45	138	42	0	0	0	0	0
		Species:	SS	5.6	367	62	45	1,217	4,245	1,327	2	2	7	7	2
		Species:	WH	3.6	841	58	46	890	3,371	899	1	1	5	5	1
45	(1)	1.5		4.3	1,298	134	45	2,290	8,317	2,376	4	4	13	13	4
50															

Species - Summary Report by Age Class

Hoonah Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RA	7.7	36	12	48	132	515	81	88	77	343	302	48
		Species:	RC	4.5	56	6	34	46	138	40	28	27	85	81	24
		Species:	SS	8.1	269	96	51	2,310	8,478	2,863	1,427	1,355	5,236	4,974	1,680
		Species:	WH	5.1	569	82	46	1,513	5,801	1,441	935	888	3,583	3,403	845
50	(11)	586.7		6.2	929	196	47	4,001	14,932	4,425	2,478	2,347	9,247	8,760	2,596
55															
		Species:	RA	7.9	33	11	48	125	486	79	14	13	56	50	8
		Species:	RC	4.5	62	7	34	51	154	45	6	5	17	16	5
		Species:	SS	8.2	256	94	51	2,236	8,173	2,770	241	229	879	835	283
		Species:	WH	5.2	571	84	46	1,522	5,840	1,454	164	156	628	597	149
55	(3)	102.2		6.2	922	195	47	3,935	14,654	4,348	424	402	1,581	1,498	444
60															
		Species:	RA	11.3	4	3	72	56	231	25	0	0	0	0	0
		Species:	SS	12.6	130	112	80	3,689	15,553	5,781	0	0	1	1	0
		Species:	WH	8.0	395	137	58	3,420	14,512	4,054	0	0	1	1	0
60	(1)	0.1		9.4	529	252	64	7,165	30,296	9,860	1	1	2	2	1
75															
		Species:	RA	11.3	4	3	72	56	231	25	0	0	0	0	0
		Species:	SS	12.6	130	112	80	3,689	15,553	5,781	1	0	2	2	1
		Species:	WH	8.0	395	137	58	3,420	14,512	4,054	0	0	2	2	1

Species - Summary Report by Age Class

Hoonah Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
75	(1)	0.1		9.4	529	252	64	7,165	30,296	9,860	1	1	4	4	1
100															
	Species:		AC	9.0	43	19	87	549	2,462	673	1	1	5	4	1
	Species:		MH	11.3	17	12	63	229	813	180	0	0	1	1	0
	Species:		RC	25.7	12	42	120	1,748	8,989	4,269	3	3	16	16	7
	Species:		SS	16.3	45	66	112	2,596	11,946	4,963	5	5	22	21	9
	Species:		WH	12.8	203	183	102	6,878	33,675	12,514	13	12	62	59	22
100	(1)	1.7		13.5	321	322	101	12,000	57,885	22,599	22	21	106	101	39
Sum:	432	15,769.8									4,708	4,463	17,533	16,617	4,845

Species - Summary Report by Age Class

Juneau Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre: Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s): GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
20															
		Species:	AC	1.4	9	0	11	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	MH	0.8	34	0	15	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RC	1.5	14	0	9	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	SS	0.8	266	1	19	2	8	2	**2**	**2**	**7**	**7**	**2**
		Species:	WH	1.1	472	3	19	0	0	0	**0**	**0**	**0**	**0**	**0**
20	**(19)**	**796.8**		1.0	795	4	19	2	8	2	**2**	**2**	**7**	**7**	**2**
25															
		Species:	AC	1.4	9	0	11	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	MH	0.8	34	0	15	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	RC	1.5	14	0	9	0	0	0	**0**	**0**	**0**	**0**	**0**
		Species:	SS	0.8	266	1	19	2	8	2	**1**	**1**	**6**	**5**	**1**
		Species:	WH	1.1	472	3	19	0	0	0	**0**	**0**	**0**	**0**	**0**
25	**(14)**	**657.0**		1.0	795	4	19	2	8	2	**1**	**1**	**6**	**5**	**1**
30															
		Species:	AC	12.2	3	3	48	90	381	106	**41**	**39**	**172**	**163**	**46**
		Species:	RA	9.7	2	1	57	7	24	3	**3**	**3**	**12**	**10**	**1**
		Species:	RC	4.3	12	1	29	27	96	41	**12**	**12**	**43**	**41**	**18**
		Species:	SS	3.8	139	11	42	165	631	209	**75**	**71**	**285**	**271**	**90**
		Species:	WH	2.9	406	19	29	81	297	89	**36**	**35**	**134**	**128**	**38**

Species - Summary Report by Age Class

Juneau Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
30	(7)	429.5		3.4	562	35	33	370	1,428	448	167	159	647	613	192
35															
	Species:		AC	5.6	11	2	30	59	252	72	24	23	102	97	27
	Species:		RA	7.2	23	7	44	70	279	37	31	27	121	107	14
	Species:		RC	3.9	40	3	33	41	129	42	17	16	52	50	16
	Species:		SS	5.4	320	51	45	999	3,495	1,096	403	383	1,411	1,340	420
	Species:		WH	3.5	751	50	44	722	2,733	731	292	277	1,103	1,048	280
35	(4)	383.4		4.3	1,145	113	44	1,892	6,888	1,976	766	725	2,789	2,641	758
40															
	Species:		AC	4.8	13	2	28	51	218	62	26	25	113	107	31
	Species:		RA	7.2	29	8	44	87	345	45	48	42	192	169	22
	Species:		RC	3.8	47	4	33	45	138	42	23	22	71	68	20
	Species:		SS	5.6	367	62	45	1,217	4,245	1,327	627	596	2,188	2,078	650
	Species:		WH	3.6	841	58	46	890	3,371	899	459	436	1,738	1,650	440
40	(12)	489.6		4.3	1,298	134	45	2,290	8,317	2,376	1,184	1,121	4,301	4,072	1,163
45															
	Species:		AC	4.8	7	1	28	26	111	32	50	47	211	200	57
	Species:		RA	7.5	31	10	46	106	416	62	216	190	850	748	112
	Species:		RC	4.2	55	5	34	48	146	44	92	87	278	264	78
	Species:		SS	6.7	313	77	47	1,713	6,153	2,028	3,247	3,085	11,664	11,080	3,651

Species - Summary Report by Age Class

Juneau Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	4.3	709	70	46	1,196	4,564	1,165	2,268	2,154	8,652	8,218	2,099
45	(16)	1,800.8		5.2	1,115	164	46	3,089	11,390	3,330	5,872	5,563	21,654	20,511	5,997
60															
		Species:	SS	12.3	194	160	70	4,818	19,147	7,013	3	3	13	13	5
		Species:	WH	8.3	290	108	59	2,545	10,462	2,951	2	2	7	7	2
60	(2)	0.7		10.1	485	268	64	7,363	29,609	9,964	5	5	21	20	7
65															
		Species:	SS	12.3	194	160	70	4,818	19,147	7,013	72	69	288	273	100
		Species:	WH	8.3	290	108	59	2,545	10,462	2,951	38	36	157	149	42
65	(1)	14.3		10.1	485	268	64	7,363	29,609	9,964	111	105	445	423	142
Sum:	75	4,572.1									8,109	7,682	29,870	28,292	8,262

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
5															
		Species:	AC	5.4	2	0	26	10	43	12	14	14	61	58	16
		Species:	MH	0.8	3	0	15	0	0	0	0	0	0	0	0
		Species:	RA	8.0	19	7	52	82	296	46	125	110	453	398	62
		Species:	RC	2.6	50	2	18	17	52	16	23	22	74	70	21
		Species:	SS	4.1	671	60	30	1,495	5,673	2,008	2,120	2,014	8,045	7,643	2,705
		Species:	WH	3.5	851	56	34	1,163	4,681	1,369	1,654	1,567	6,662	6,307	1,845
		Species:	YC	0.0	4	0	1	0	0	0	0	0	0	0	0
5	(19)	1,347.3		3.8	1,600	125	32	2,767	10,745	3,451	3,938	3,728	15,295	14,476	4,649
10															
		Species:	AC	4.4	11	1	39	30	134	38	78	74	347	330	92
		Species:	MH	1.9	32	1	17	11	41	9	30	28	107	101	22
		Species:	RC	7.3	14	4	34	136	657	312	360	333	1,740	1,612	765
		Species:	SS	1.8	247	5	22	144	676	288	373	354	1,747	1,660	706
		Species:	WH	2.4	464	14	26	383	1,806	661	989	939	4,666	4,433	1,623
10	(118)	2,454.1		2.4	767	24	25	704	3,315	1,307	1,828	1,728	8,607	8,135	3,208
15															
		Species:	AC	1.4	9	0	11	0	0	0	0	0	0	0	0
		Species:	MH	0.8	34	0	15	0	0	0	0	0	0	0	0
		Species:	RC	1.5	14	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	266	1	19	2	6	1	9	9	27	25	6

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	1.1	472	3	19	0	0	0	0	0	0	0	0
15	(159)	4,573.8		1.0	795	4	19	2	6	1	9	9	27	25	6
20															
		Species:	AC	1.4	9	0	11	0	0	0	0	0	0	0	0
		Species:	MH	0.8	34	0	15	0	0	0	0	0	0	0	0
		Species:	RC	1.5	14	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	266	1	19	2	6	1	8	8	23	21	5
		Species:	WH	1.1	472	3	19	0	0	0	0	0	0	0	0
20	(127)	3,898.9		1.0	795	4	19	2	6	1	8	8	23	21	5
25															
		Species:	AC	4.4	8	1	19	23	98	28	87	83	375	356	100
		Species:	MH	0.8	25	0	15	0	0	0	0	0	0	0	0
		Species:	RA	9.6	0	0	57	2	6	1	8	7	26	23	3
		Species:	RC	2.5	13	0	16	7	23	10	25	24	89	84	38
		Species:	SS	1.7	232	4	24	43	160	52	166	157	611	580	188
		Species:	WH	1.7	455	7	22	21	78	23	78	74	298	283	84
25	(67)	3,623.1		1.8	734	12	22	96	366	114	365	346	1,398	1,326	412
30															
		Species:	AC	12.2	3	3	48	87	374	105	169	161	729	692	194
		Species:	RA	9.7	2	1	57	8	24	3	16	14	50	44	5

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RC	4.3	12	1	29	25	88	40	50	47	172	164	73
		Species:	SS	3.8	139	11	42	160	594	194	312	296	1,159	1,099	359
		Species:	WH	2.9	406	19	29	78	297	89	152	145	579	550	164
30	(33)	1,851.2		3.4	562	35	33	358	1,377	429	700	663	2,689	2,549	795
35															
		Species:	AC	7.5	7	2	34	67	288	81	197	187	839	797	224
		Species:	RA	8.0	16	6	48	65	237	33	204	180	745	656	91
		Species:	RC	4.0	25	2	32	31	99	37	90	85	287	273	101
		Species:	SS	5.2	237	35	45	656	2,190	690	1,914	1,818	6,386	6,066	1,912
		Species:	WH	3.3	576	35	40	419	1,573	418	1,223	1,161	4,588	4,358	1,158
35	(57)	2,769.8		4.1	861	80	42	1,239	4,386	1,259	3,628	3,431	12,845	12,149	3,486
40															
		Species:	AC	4.8	13	2	28	49	203	57	126	120	526	500	141
		Species:	RA	7.3	30	9	45	106	392	52	295	260	1,094	963	128
		Species:	RC	3.8	46	4	33	42	124	37	108	103	320	304	90
		Species:	SS	5.6	365	63	45	1,191	3,903	1,210	3,081	2,927	10,099	9,593	2,974
		Species:	WH	3.6	830	57	46	857	3,233	856	2,219	2,108	8,367	7,947	2,103
40	(38)	2,458.1		4.4	1,284	134	45	2,244	7,854	2,212	5,830	5,517	20,406	19,307	5,436
45															
		Species:	AC	4.8	8	1	28	31	129	36	39	37	161	153	43

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	MH	3.0	15	1	16	0	0	0	0	0	0	0	0
		Species:	RA	7.7	30	10	49	133	481	79	179	158	649	571	93
		Species:	RC	3.4	70	4	31	35	105	31	43	41	131	124	36
		Species:	SS	6.3	283	61	47	1,235	4,139	1,294	1,549	1,467	5,188	4,918	1,538
		Species:	WH	4.3	706	73	45	1,158	4,235	1,073	1,449	1,376	5,300	5,032	1,275
45	(23)	1,188.3		5.0	1,112	149	45	2,591	9,087	2,513	3,260	3,079	11,428	10,799	2,986
50															
		Species:	AC	11.5	0	0	47	2	5	1	5	5	13	13	2
		Species:	MH	3.1	40	2	16	0	0	0	0	0	0	0	0
		Species:	RA	8.2	34	13	57	193	684	132	502	442	1,783	1,569	302
		Species:	RC	3.1	104	5	28	21	66	19	50	48	160	152	43
		Species:	SS	8.4	158	60	53	1,367	4,776	1,526	3,319	3,134	11,567	10,947	3,498
		Species:	WH	5.9	495	93	45	1,590	5,650	1,392	3,840	3,646	13,642	12,951	3,191
50	(70)	2,292.4		6.2	832	173	45	3,173	11,182	3,070	7,717	7,275	27,165	25,632	7,038
55															
		Species:	AC	1.0	1	0	9	0	0	0	0	0	0	0	0
		Species:	MH	3.0	28	1	16	0	0	0	0	0	0	0	0
		Species:	RA	8.1	28	10	55	150	531	100	340	300	1,206	1,061	199
		Species:	RC	3.2	79	4	29	18	59	17	39	37	125	118	34
		Species:	SS	8.5	191	75	57	1,751	6,373	2,073	3,695	3,496	13,432	12,730	4,141
		Species:	WH	5.9	498	94	47	1,601	5,840	1,495	3,369	3,198	12,286	11,665	2,986

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
55	(60)	1,997.4		6.4	823	184	48	3,520	12,804	3,684	7,442	7,031	27,048	25,575	7,359
60															
		Species:	RA	10.5	4	2	59	26	92	10	38	34	133	117	13
		Species:	RC	12.6	2	2	51	49	226	108	67	63	305	290	138
		Species:	SS	9.7	192	98	67	2,596	10,220	3,521	3,505	3,330	13,798	13,108	4,515
		Species:	WH	6.5	427	97	59	1,911	7,729	2,371	2,580	2,451	10,434	9,913	3,041
60	(35)	1,282.5		7.6	625	199	62	4,582	18,267	6,009	6,189	5,877	24,670	23,428	7,707
65															
		Species:	AC	9.0	5	2	87	59	259	72	1	1	3	3	1
		Species:	MH	11.3	2	1	63	31	113	24	0	0	1	1	0
		Species:	RA	10.5	1	1	59	8	27	3	0	0	0	0	0
		Species:	RC	15.0	10	12	63	412	1,982	945	5	4	23	22	10
		Species:	SS	11.4	108	77	75	2,340	9,565	3,532	27	26	110	104	39
		Species:	WH	6.5	619	144	63	3,403	14,500	4,661	39	37	166	158	51
65	(4)	10.9		7.6	745	237	65	6,254	26,446	9,237	72	68	303	288	101
70															
		Species:	AC	8.9	1	0	87	8	36	10	0	0	1	1	0
		Species:	MH	11.1	0	0	63	4	15	3	0	0	0	0	0
		Species:	RC	12.8	14	12	51	391	1,808	867	8	8	39	37	18
		Species:	SS	13.0	71	65	81	2,122	8,751	3,306	45	43	187	178	67

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	6.1	790	162	61	3,638	15,081	4,654	78	74	323	307	95
70	(2)	20.3		7.1	876	240	63	6,163	25,691	8,841	132	125	550	523	180
75															
		Species:	RC	16.9	24	37	66	1,213	5,774	2,805	22	21	107	101	49
		Species:	SS	10.1	40	22	75	705	2,857	1,160	13	12	53	50	20
		Species:	WH	5.2	1,190	176	64	3,763	15,399	5,258	69	66	284	270	92
75	(2)	17.5		5.9	1,254	236	64	5,681	24,030	9,223	105	100	444	422	162
80															
		Species:	AC	9.0	43	19	87	534	2,330	647	70	67	306	290	81
		Species:	MH	11.3	17	12	63	280	1,014	215	37	35	133	126	27
		Species:	RC	25.7	12	42	120	1,655	8,395	3,972	217	206	1,101	1,046	495
		Species:	SS	16.3	45	66	112	2,497	11,162	4,591	328	311	1,464	1,391	572
		Species:	WH	12.8	203	183	102	6,650	32,158	11,866	872	829	4,218	4,007	1,479
80	(4)	124.6		13.5	321	322	101	11,617	55,059	21,292	1,524	1,448	7,222	6,861	2,653
90															
		Species:	AC	9.0	38	17	87	471	2,051	570	438	416	1,909	1,814	504
		Species:	MH	11.3	15	11	63	247	893	190	230	218	831	790	168
		Species:	RA	10.4	0	0	59	3	12	1	3	3	12	10	1
		Species:	RC	25.7	10	37	120	1,457	7,391	3,497	1,357	1,289	6,880	6,536	3,093
		Species:	SS	14.0	66	71	96	2,531	11,122	4,479	2,356	2,238	10,352	9,835	3,961

Species - Summary Report by Age Class

Ketchikan Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	11.8	225	172	95	6,054	29,106	10,687	5,635	5,353	27,092	25,737	9,450
90	(45)	884.3		12.6	355	307	94	10,763	50,575	19,424	10,018	9,517	47,076	44,722	17,176
100															
		Species:	AC	9.0	43	19	87	534	2,330	647	1	1	5	5	1
		Species:	MH	11.3	17	12	63	280	1,014	215	1	1	2	2	0
		Species:	RC	25.7	12	42	120	1,655	8,395	3,972	4	3	18	18	8
		Species:	SS	16.3	45	66	112	2,497	11,162	4,591	6	5	25	23	10
		Species:	WH	12.8	203	183	102	6,650	32,158	11,866	15	14	71	67	25
100	(2)	2.1		13.5	321	322	101	11,617	55,059	21,292	26	24	121	115	45
Sum:	865	30,796.8									52,790	49,974	207,318	196,353	63,403

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
5															
		Species:	AC	8.3	1	0	52	7	30	8	5	5	22	21	6
		Species:	MH	1.1	64	0	16	2	7	2	1	1	5	5	1
		Species:	RC	0.5	30	0	6	1	3	1	1	1	2	2	1
		Species:	SS	0.5	530	1	9	2	7	3	1	1	5	5	2
		Species:	WH	0.9	895	4	15	12	51	18	9	8	39	35	12
5	(62)	689.4		0.8	1,519	5	13	24	97	33	18	16	74	67	23
10															
		Species:	MH	0.8	74	0	15	0	0	0	0	0	0	0	0
		Species:	SS	0.9	165	1	17	0	0	0	0	0	0	0	0
		Species:	WH	1.0	618	4	19	0	0	0	0	0	0	0	0
10	(54)	1,195.2		1.0	857	5	18	0	0	0	0	0	0	0	0
15															
		Species:	MH	0.8	71	0	15	0	0	0	0	0	0	0	0
		Species:	SS	0.9	161	1	17	0	0	0	0	0	0	0	0
		Species:	WH	1.0	631	4	19	0	0	0	0	0	0	0	0
15	(169)	2,784.0		1.0	863	5	18	0	0	0	0	0	0	0	0
20															
		Species:	MH	0.8	77	0	15	0	0	0	0	0	0	0	0
		Species:	SS	0.9	165	1	17	0	0	0	0	0	0	0	0

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	1.0	616	4	19	0	0	0	0	0	0	0	0
20	(133)	4,962.9		1.0	857	5	18	0	0	0	0	0	0	0	0
25															
		Species:	AC	3.3	0	0	25	0	0	0	0	0	0	0	0
		Species:	MH	1.0	53	0	15	1	1	0	5	5	13	12	3
		Species:	RC	2.4	1	0	18	0	0	0	0	0	0	0	0
		Species:	SS	1.6	143	2	20	9	34	9	85	78	326	303	82
		Species:	WH	1.5	495	6	21	9	34	9	86	80	318	296	76
25	(202)	8,808.4		1.5	691	9	21	19	69	18	176	164	657	611	161
30															
		Species:	AC	3.4	0	0	25	0	0	0	0	0	0	0	0
		Species:	MH	8.7	1	0	50	2	5	1	11	11	27	26	6
		Species:	RC	2.5	2	0	18	0	0	0	0	0	0	0	0
		Species:	SS	3.2	87	5	31	32	126	34	176	163	679	630	172
		Species:	WH	3.5	196	13	33	33	123	32	179	167	663	617	159
30	(123)	5,017.0		3.4	287	19	33	68	254	67	367	341	1,369	1,274	337
35															
		Species:	AC	3.4	0	0	25	0	0	0	0	0	0	0	0
		Species:	MH	8.7	0	0	50	1	4	1	16	15	39	37	9
		Species:	RA	6.6	8	2	44	16	65	9	188	165	765	673	91

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age				Per Acre							Total Stand (1,000s)				
Class	(#Stds)	Acres	Spp	Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RC	2.5	1	0	18	0	0	0	0	0	0	0	0
		Species:	SS	4.6	255	30	45	549	1,923	599	6,013	5,706	21,054	19,979	6,218
		Species:	WH	3.2	458	26	39	279	1,021	247	3,056	2,899	11,183	10,605	2,565
35	(178)	########		3.8	723	58	41	846	3,013	855	9,274	8,785	33,041	31,294	8,883
40															
		Species:	AC	1.7	13	0	11	2	7	1	14	13	51	48	8
		Species:	LP	4.2	0	0	26	0	0	0	0	0	0	0	0
		Species:	MH	2.3	2	0	15	0	1	0	3	2	7	5	1
		Species:	RA	6.3	20	4	42	33	135	18	275	242	1,116	982	133
		Species:	RC	0.0	1	0	3	0	0	0	0	0	0	0	0
		Species:	SA	1.0	1	0	9	0	0	0	0	0	0	0	0
		Species:	SF	7.7	0	0	39	1	2	0	4	4	13	13	3
		Species:	SS	4.8	572	71	46	1,323	4,551	1,407	10,145	9,637	34,899	33,152	10,248
		Species:	WH	3.1	944	49	39	668	2,425	577	5,124	4,868	18,600	17,668	4,201
40	(103)	7,284.7		3.8	1,553	124	42	2,027	7,120	2,003	15,565	14,765	54,686	51,869	14,594
45															
		Species:	AC	1.9	30	1	16	2	7	1	13	13	48	45	6
		Species:	BC	11.5	0	0	72	4	15	3	30	26	116	102	19
		Species:	LP	2.0	2	0	20	0	0	0	0	0	0	0	0
		Species:	MH	1.3	6	0	10	0	1	0	3	3	7	6	1
		Species:	RA	6.4	30	7	50	46	178	23	346	304	1,353	1,191	157

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RC	6.9	0	0	37	0	0	0	0	0	0	0	0
		Species:	SA	1.6	3	0	17	0	0	0	0	0	0	0	0
		Species:	SS	5.3	569	86	52	1,693	5,872	1,862	11,906	11,310	41,287	39,222	12,435
		Species:	WH	3.2	916	52	41	806	2,929	748	5,664	5,381	20,596	19,566	4,996
45	(107)	6,679.3		4.1	1,556	145	45	2,551	9,003	2,637	17,962	17,037	63,406	60,132	17,614
50															
		Species:	AC	3.1	12	1	25	8	30	7	35	33	134	127	31
		Species:	BC	7.7	0	0	53	0	0	0	0	0	0	0	0
		Species:	MH	0.9	4	0	8	0	0	0	0	0	0	0	0
		Species:	RA	6.4	38	9	48	81	308	45	391	344	1,493	1,314	190
		Species:	RC	4.8	2	0	28	2	7	2	9	9	30	29	8
		Species:	SS	6.7	390	96	57	2,311	8,480	2,932	10,367	9,849	38,042	36,140	12,498
		Species:	WH	3.4	908	58	47	1,021	3,825	976	4,580	4,351	17,162	16,304	4,159
50	(119)	4,262.0		4.7	1,354	164	50	3,422	12,650	3,962	15,382	14,585	56,861	53,914	16,887
55															
		Species:	AC	2.4	11	0	22	2	7	1	2	2	6	6	1
		Species:	MH	0.6	2	0	9	0	0	0	0	0	0	0	0
		Species:	RA	6.0	16	3	48	24	95	12	21	19	86	75	9
		Species:	SS	7.7	353	114	59	2,814	10,931	3,665	2,360	2,242	9,167	8,709	2,920
		Species:	WH	4.6	617	71	45	1,373	5,483	1,491	1,151	1,094	4,598	4,368	1,188

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
55	(45)	796.7		5.9	998	188	50	4,212	16,516	5,169	3,534	3,356	13,857	13,158	4,118
60															
	Species:		SS	12.2	196	160	70	4,799	19,075	6,982	180	171	715	680	249
	Species:		WH	8.2	290	108	59	2,536	10,428	2,942	95	90	391	372	105
60	(6)	35.6		10.0	486	267	64	7,335	29,503	9,924	275	261	1,106	1,051	354
65															
	Species:		AC	9.0	8	4	87	103	463	127	26	24	115	110	30
	Species:		MH	11.3	3	2	63	43	153	34	11	10	38	36	8
	Species:		RC	25.7	2	8	120	329	1,691	803	82	78	421	400	190
	Species:		SS	11.1	193	129	78	3,938	16,077	5,894	981	932	4,006	3,805	1,395
	Species:		WH	8.7	273	114	67	3,156	14,034	4,528	786	747	3,497	3,322	1,072
65	(18)	236.7		9.9	480	257	72	7,569	32,418	11,385	1,886	1,792	8,077	7,673	2,695
70															
	Species:		AC	9.0	30	13	87	375	1,680	459	11	11	50	47	13
	Species:		MH	11.3	12	8	63	156	555	123	5	4	16	16	3
	Species:		RC	25.7	8	29	120	1,193	6,136	2,914	35	34	182	173	82
	Species:		SS	11.2	120	82	89	2,838	12,517	4,927	84	80	372	353	139
	Species:		WH	11.0	231	152	88	5,352	25,758	9,353	159	151	765	727	264
70	(5)	28.2		11.4	401	285	88	9,914	46,646	17,776	295	280	1,386	1,317	502

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
75															
		Species:	AC	9.0	43	19	87	549	2,462	673	1	1	6	6	2
		Species:	MH	11.3	17	12	63	229	813	180	1	1	2	2	0
		Species:	RC	25.7	12	42	120	1,748	8,989	4,269	4	4	22	21	10
		Species:	SS	16.3	45	66	112	2,596	11,946	4,963	6	6	29	28	11
		Species:	WH	12.8	203	183	102	6,878	33,675	12,514	17	16	82	78	29
75	(2)	2.3		13.5	321	322	101	12,000	57,885	22,599	29	28	141	134	52
80															
		Species:	AC	9.0	40	18	87	509	2,280	623	8	8	36	35	9
		Species:	MH	11.3	16	11	63	212	752	166	3	3	12	11	3
		Species:	RC	25.7	11	39	120	1,619	8,324	3,953	26	25	133	126	60
		Species:	SS	15.4	56	73	103	2,760	12,479	5,115	44	42	199	190	78
		Species:	WH	12.4	210	177	99	6,557	31,958	11,806	105	100	511	485	179
80	(7)	15.2		13.2	333	318	97	11,656	55,793	21,664	186	177	892	847	329
90															
		Species:	AC	9.0	43	19	87	546	2,448	669	99	94	446	423	116
		Species:	MH	11.3	17	12	63	227	808	179	41	39	147	140	31
		Species:	RC	25.7	12	42	120	1,738	8,938	4,244	316	301	1,627	1,546	734
		Species:	SS	16.2	46	66	111	2,608	11,987	4,975	475	451	2,183	2,074	861
		Species:	WH	12.8	204	182	102	6,853	33,542	12,459	1,248	1,186	6,108	5,802	2,155

Species - Summary Report by Age Class

Petersburg Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
90	(19)	173.0		13.5	322	321	101	11,973	57,722	22,526	2,180	2,071	10,511	9,985	3,897
100															
	Species:		AC	9.0	41	18	87	520	2,333	638	31	30	140	133	36
	Species:		MH	11.3	16	11	63	217	770	170	13	12	46	44	10
	Species:		RC	25.7	11	40	120	1,656	8,517	4,045	99	94	510	485	230
	Species:		SS	14.9	57	69	105	2,649	12,088	4,970	159	151	724	688	283
	Species:		WH	12.5	208	178	100	6,622	32,346	11,981	397	377	1,938	1,841	682
100	(6)	56.9		13.2	334	316	99	11,664	56,054	21,803	699	664	3,358	3,190	1,241
Sum:	1,358	53,415.2									67,827	64,322	249,422	236,516	71,685

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
				Per Acre							*Total Stand (1,000s)*				
5															
		Species:	MH	1.1	7	0	6	0	0	0	0	0	0	0	0
		Species:	RC	2.1	25	1	11	0	0	0	0	0	0	0	0
		Species:	SS	1.0	218	1	13	0	0	0	0	0	0	0	0
		Species:	WH	1.4	507	5	19	2	7	1	1	1	5	5	1
5	(97)	703.7		1.3	757	7	17	2	7	1	1	1	5	5	1
10															
		Species:	MH	1.1	7	0	6	0	0	0	0	0	0	0	0
		Species:	RC	2.1	26	1	11	0	0	0	0	0	0	0	0
		Species:	SS	0.9	235	1	12	0	0	0	0	0	0	0	0
		Species:	WH	1.3	547	5	20	2	8	1	4	4	15	14	2
10	(87)	1,661.6		1.2	814	7	18	2	8	1	4	4	15	14	2
15															
		Species:	MH	1.1	7	0	6	0	0	0	0	0	0	0	0
		Species:	RC	2.1	25	1	11	0	0	0	0	0	0	0	0
		Species:	SS	1.0	218	1	13	0	0	0	0	0	0	0	0
		Species:	WH	1.4	507	5	19	2	7	1	9	8	34	33	5
15	(198)	4,780.7		1.3	757	7	17	2	7	1	9	8	34	33	5
20															
		Species:	MH	1.1	7	0	7	0	0	0	0	0	1	1	0

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RC	2.1	25	1	11	0	0	0	0	0	0	0	0
		Species:	SS	1.0	217	1	13	0	0	0	2	2	7	7	1
		Species:	WH	1.4	509	5	19	2	7	1	29	28	117	111	17
20	(422)	########		1.3	758	7	17	2	7	1	32	30	126	119	18
25															
		Species:	AC	5.4	1	0	32	3	9	2	58	55	188	179	31
		Species:	LP	4.4	2	0	28	0	0	0	0	0	0	0	0
		Species:	MH	1.1	4	0	6	0	0	0	0	0	0	0	0
		Species:	RA	14.5	0	0	57	3	8	1	73	64	193	170	19
		Species:	RC	2.5	23	1	16	1	2	1	25	23	51	49	14
		Species:	SS	2.1	191	4	21	42	145	35	890	846	3,063	2,910	712
		Species:	WH	1.8	486	9	23	14	65	10	302	287	1,386	1,317	210
25	(467)	########		1.9	708	15	22	63	230	49	1,348	1,276	4,881	4,623	986
30															
		Species:	AC	5.5	4	1	33	8	27	5	116	110	376	357	63
		Species:	LP	4.5	6	1	28	0	0	0	0	0	0	0	0
		Species:	MH	0.0	0	0	4	0	0	0	0	0	0	0	0
		Species:	RA	14.8	0	1	57	9	25	3	140	123	369	325	36
		Species:	RC	3.3	20	1	24	4	7	2	49	47	102	97	28
		Species:	SS	3.8	138	11	37	125	429	105	1,719	1,633	5,910	5,615	1,372
		Species:	WH	2.5	459	15	30	39	181	29	541	514	2,501	2,376	381

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
30	(284)	########		2.9	628	30	31	185	669	143	2,567	2,428	9,258	8,770	1,879
35															
		Species:	AC	5.3	2	0	32	5	15	3	84	80	271	257	45
		Species:	LP	4.4	3	0	28	0	0	0	0	0	0	0	0
		Species:	RA	6.5	11	3	41	15	47	5	288	254	917	807	89
		Species:	RC	3.7	50	4	30	31	78	20	553	526	1,399	1,329	335
		Species:	SS	5.5	221	37	43	667	2,266	680	11,939	11,342	40,558	38,531	11,565
		Species:	WH	3.2	609	34	38	366	1,391	283	6,552	6,222	24,921	23,661	4,818
35	(331)	########		4.0	897	77	39	1,083	3,798	991	19,416	18,422	68,066	64,585	16,851
40															
		Species:	MH	5.3	0	0	30	1	1	0	15	14	34	32	8
		Species:	RA	6.0	25	5	40	20	71	8	519	457	1,829	1,609	177
		Species:	RC	3.8	88	7	32	67	171	43	1,585	1,506	4,072	3,868	979
		Species:	SS	6.2	321	68	46	1,331	4,510	1,383	31,717	30,131	107,447	102,075	31,302
		Species:	WH	3.6	779	57	42	783	2,930	613	18,647	17,715	69,817	66,325	13,866
40	(372)	########		4.5	1,214	136	43	2,201	7,684	2,047	52,483	49,822	183,199	173,910	46,332
45															
		Species:	AC	2.7	8	0	20	3	9	1	74	70	220	209	33
		Species:	BC	1.6	0	0	13	0	0	0	0	0	0	0	0
		Species:	LP	4.6	1	0	25	1	2	0	13	13	42	40	10

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	MH	3.0	6	0	18	3	8	2	71	68	203	193	52
		Species:	RA	6.5	23	5	45	39	133	19	1,042	917	3,525	3,102	436
		Species:	RC	4.2	113	11	34	115	327	97	2,822	2,681	8,040	7,638	2,273
		Species:	SA	0.9	4	0	9	0	0	0	0	0	0	0	0
		Species:	SS	6.9	335	87	53	1,848	6,402	2,045	45,494	43,219	157,567	149,689	47,803
		Species:	WH	4.0	803	71	43	1,024	3,838	831	25,209	23,949	94,471	89,747	19,424
45	(375)	########		5.0	1,293	175	45	3,033	10,719	2,995	74,726	70,916	264,068	250,617	70,031
50															
		Species:	AC	6.8	2	0	36	5	15	4	50	48	142	135	35
		Species:	LP	0.4	0	0	46	0	0	0	0	0	0	0	0
		Species:	MH	8.4	0	0	38	1	5	1	12	11	47	45	11
		Species:	RA	6.1	13	3	42	29	102	17	297	261	1,059	932	154
		Species:	RC	5.6	75	13	35	124	373	101	1,194	1,134	3,600	3,420	928
		Species:	SA	4.6	9	1	26	0	0	0	0	0	0	0	0
		Species:	SS	9.4	224	109	60	2,502	9,097	2,960	24,138	22,931	87,752	83,364	27,131
		Species:	WH	6.0	478	94	50	1,536	6,019	1,341	14,815	14,075	58,063	55,159	12,286
50	(136)	9,164.4		7.1	801	220	51	4,197	15,610	4,424	40,506	38,460	150,662	143,055	40,544
55															
		Species:	AC	8.5	0	0	43	2	6	1	13	13	36	34	4
		Species:	LP	9.4	1	1	70	10	31	7	56	54	178	169	37
		Species:	MH	11.7	0	0	58	4	12	3	24	22	68	65	14

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RA	7.0	13	4	49	40	137	28	248	218	844	743	150
		Species:	RC	6.4	21	5	39	49	165	48	282	268	945	898	263
		Species:	SS	13.1	195	181	78	5,059	19,184	7,058	28,936	27,489	109,732	104,245	38,354
		Species:	WH	7.6	248	77	57	1,456	5,751	1,413	8,328	7,912	32,898	31,253	7,678
55	(71)	5,434.0		10.1	479	268	65	6,621	25,286	8,557	37,888	35,976	144,701	137,407	46,500
60															
		Species:	RC	10.1	3	2	52	29	86	24	29	27	84	80	23
		Species:	SS	13.2	191	183	86	5,603	22,693	7,984	5,476	5,202	22,179	21,070	7,414
		Species:	WH	8.4	278	108	74	2,573	10,802	2,858	2,514	2,389	10,558	10,030	2,654
60	(20)	928.5		10.6	473	292	79	8,205	33,581	10,867	8,020	7,619	32,821	31,180	10,090
65															
		Species:	AC	8.1	2	1	63	7	28	4	7	6	28	27	4
		Species:	RC	14.4	9	10	83	299	1,298	566	298	283	1,294	1,230	537
		Species:	SS	13.7	131	134	96	4,503	19,319	7,282	4,489	4,265	19,262	18,299	6,897
		Species:	WH	9.4	270	130	79	3,088	13,625	3,890	3,079	2,925	13,585	12,906	3,685
65	(32)	947.2		11.0	412	274	84	7,896	34,270	11,743	7,873	7,479	34,169	32,461	11,123
70															
		Species:	AC	6.4	0	0	65	0	1	0	0	0	0	0	0
		Species:	RC	9.4	11	5	51	100	423	148	26	25	109	104	36
		Species:	SS	14.6	97	112	103	4,208	19,109	7,520	1,088	1,034	4,940	4,693	1,847

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	8.3	347	131	67	2,851	12,508	3,485	737	700	3,234	3,072	856
70	(22)	245.6		10.0	454	249	76	7,159	32,041	11,153	1,851	1,758	8,284	7,869	2,739
75															
		Species:	AC	1.1	0	0	65	0	0	0	0	0	0	0	0
		Species:	RC	9.7	3	1	58	26	96	26	1	1	4	4	1
		Species:	SS	14.7	78	92	95	3,186	13,782	5,389	129	123	559	532	208
		Species:	WH	8.8	307	130	77	3,231	14,190	3,961	131	125	576	547	153
75	(15)	38.6		10.3	388	223	81	6,442	28,068	9,376	262	248	1,139	1,082	362
80															
		Species:	AC	7.0	55	14	65	268	1,152	206	7	7	30	28	5
		Species:	RC	16.6	10	15	96	478	1,867	769	12	12	48	46	19
		Species:	SS	16.7	77	117	109	4,373	19,611	8,005	113	107	505	480	196
		Species:	WH	11.9	241	186	96	5,790	26,141	8,655	149	142	673	639	212
80	(1)	24.5		12.6	383	333	95	10,908	48,772	17,635	281	267	1,256	1,193	431
90															
		Species:	RC	6.9	5	1	48	12	39	10	0	0	1	1	0
		Species:	SS	14.6	121	141	85	4,729	19,966	7,775	66	63	280	266	104
		Species:	WH	10.9	191	125	83	3,838	17,327	5,733	54	51	243	231	76
90	(5)	13.3		12.4	316	267	83	8,579	37,331	13,518	120	114	524	498	180

Species - Summary Report by Age Class

Thorne Bay Year-end 2013

Net of Buffers Acreage

Age				*Per Acre*							*Total Stand (1,000s)*				
Class	(#Stds)	Acres	Spp	Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
Sum:	2,935	#########									247,385	234,830	903,208	857,421	248,075

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
5															
		Species:	AC	9.4	1	1	52	19	88	25	36	34	163	155	44
		Species:	MH	0.8	0	0	15	0	0	0	0	0	0	0	0
		Species:	RA	8.0	15	5	52	63	226	35	125	110	453	398	62
		Species:	RC	3.0	91	4	16	108	479	221	209	190	930	843	389
		Species:	SS	2.7	1,204	47	20	1,201	4,643	1,675	2,225	2,114	8,603	8,173	2,948
		Species:	WH	2.6	1,310	48	25	1,046	4,274	1,296	1,943	1,841	7,943	7,524	2,281
		Species:	YC	0.0	3	0	1	0	0	0	0	0	0	0	0
5	(41)	1,760.2		2.7	2,623	106	23	2,437	9,711	3,252	4,538	4,289	18,092	17,093	5,724
10															
		Species:	AC	5.9	14	3	57	73	316	88	56	53	245	233	65
		Species:	MH	3.2	31	2	22	38	138	29	30	28	107	101	22
		Species:	RC	8.7	14	6	41	225	1,139	539	174	166	884	840	397
		Species:	SS	2.7	242	10	26	341	1,519	624	264	251	1,179	1,120	460
		Species:	WH	3.4	441	27	32	902	4,363	1,610	700	665	3,385	3,216	1,187
10	(56)	737.0		3.4	742	47	30	1,578	7,476	2,890	1,224	1,163	5,799	5,509	2,130
15															
		Species:	AC	1.4	9	0	11	0	0	0	0	0	0	0	0
		Species:	MH	0.8	34	0	15	0	0	0	0	0	0	0	0
		Species:	RC	1.5	14	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	266	1	19	2	6	1	2	2	5	5	1

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	1.1	472	3	19	0	0	0	0	0	0	0	0
15	(41)	843.1		1.0	795	4	19	2	6	1	2	2	5	5	1
20															
		Species:	AC	1.4	9	0	11	0	0	0	0	0	0	0	0
		Species:	MH	0.8	34	0	15	0	0	0	0	0	0	0	0
		Species:	RC	1.5	14	0	9	0	0	0	0	0	0	0	0
		Species:	SS	0.8	266	1	19	2	6	1	11	10	31	30	7
		Species:	WH	1.1	472	3	19	0	0	0	0	0	0	0	0
20	(182)	5,382.2		1.0	795	4	19	2	6	1	11	10	31	30	7
25															
		Species:	AC	2.3	8	0	14	4	20	5	23	22	101	96	26
		Species:	MH	0.8	28	0	15	0	0	0	0	0	0	0	0
		Species:	RC	1.9	14	0	10	0	0	0	0	0	0	0	0
		Species:	SS	2.1	241	6	21	77	248	60	397	377	1,280	1,216	295
		Species:	WH	1.6	428	6	21	39	115	26	200	190	594	564	126
25	(127)	4,899.5		1.8	719	13	20	120	383	91	619	588	1,975	1,877	447
30															
		Species:	AC	11.4	1	1	48	25	110	30	109	103	479	456	123
		Species:	RC	3.1	15	1	15	0	0	0	0	0	0	0	0
		Species:	SS	6.6	125	29	33	422	1,367	331	1,837	1,745	5,945	5,648	1,369

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	4.2	228	22	32	217	646	145	945	898	2,810	2,669	597
30	(143)	4,131.4		5.1	370	53	32	665	2,123	506	2,891	2,746	9,234	8,773	2,089
35															
		Species:	AC	11.4	1	1	48	18	82	22	94	89	415	395	107
		Species:	MH	8.1	2	1	43	11	32	7	55	52	164	156	36
		Species:	RA	9.2	4	2	54	22	79	12	119	105	436	384	59
		Species:	RC	4.8	16	2	21	20	46	13	103	97	236	224	64
		Species:	SS	6.3	141	30	38	474	1,532	406	2,415	2,294	7,809	7,418	1,965
		Species:	WH	3.8	271	22	35	247	780	174	1,257	1,194	3,977	3,776	844
35	(121)	4,840.8		4.9	435	57	36	792	2,552	635	4,044	3,833	13,038	12,352	3,074
40															
		Species:	MH	7.7	7	2	42	36	107	24	254	242	752	714	163
		Species:	RA	8.9	12	5	53	56	205	30	424	373	1,554	1,368	200
		Species:	RC	7.9	20	7	33	108	247	71	755	717	1,738	1,650	470
		Species:	SS	4.9	188	25	45	471	1,504	463	3,309	3,141	10,574	10,038	3,088
		Species:	WH	2.9	453	21	40	287	1,029	231	2,019	1,915	7,237	6,863	1,542
40	(98)	6,672.2		4.0	682	60	41	957	3,092	819	6,762	6,388	21,856	20,633	5,464
45															
		Species:	AC	2.9	0	0	23	0	1	0	1	1	2	2	0
		Species:	MH	7.5	7	2	41	34	100	23	125	119	371	352	81

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	RA	7.5	12	4	49	45	166	24	182	160	666	586	85
		Species:	RC	6.9	27	7	32	101	237	67	375	356	879	834	238
		Species:	SS	5.4	207	33	45	671	2,294	731	2,490	2,364	8,513	8,083	2,576
		Species:	WH	3.3	503	31	40	465	1,722	407	1,725	1,637	6,393	6,067	1,434
45	(118)	3,524.0		4.3	757	76	42	1,316	4,519	1,252	4,898	4,637	16,823	15,924	4,414
50															
		Species:	RA	7.8	34	11	48	143	518	84	139	122	503	442	72
		Species:	RC	4.5	61	7	34	48	136	38	43	41	122	116	33
		Species:	SS	8.1	263	94	51	2,157	7,679	2,602	1,937	1,840	6,898	6,553	2,221
		Species:	WH	5.1	578	83	46	1,459	5,521	1,359	1,311	1,245	4,959	4,711	1,160
50	(32)	853.4		6.2	935	195	47	3,807	13,854	4,084	3,430	3,249	12,483	11,823	3,485
55															
		Species:	RA	7.4	28	8	50	104	380	61	56	50	206	181	29
		Species:	RC	4.5	21	2	34	17	46	13	8	8	23	22	6
		Species:	SS	9.4	262	127	58	3,315	12,552	4,409	1,666	1,583	6,310	5,994	2,105
		Species:	WH	6.0	457	90	50	1,848	7,234	1,930	929	882	3,636	3,454	922
55	(15)	477.5		7.4	768	227	53	5,283	20,213	6,413	2,660	2,523	10,175	9,652	3,062
60															
		Species:	RA	11.2	1	0	72	8	29	3	5	4	18	16	2
		Species:	SS	12.2	188	153	71	4,472	17,598	6,432	2,625	2,493	10,329	9,812	3,586

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	WH	8.2	304	111	59	2,555	10,389	2,956	1,500	1,425	6,097	5,792	1,648
60	(25)	557.6		9.9	492	265	64	7,035	28,016	9,391	4,129	3,922	16,444	15,621	5,236
65															
		Species:	AC	8.9	1	1	87	16	71	20	9	9	41	39	11
		Species:	MH	11.2	1	0	63	8	31	7	5	5	18	17	4
		Species:	RA	11.3	1	1	72	10	38	4	6	6	24	21	2
		Species:	RC	25.4	0	1	120	50	255	120	29	28	148	141	67
		Species:	SS	12.0	186	147	71	4,294	16,989	6,238	2,504	2,378	9,906	9,411	3,455
		Species:	WH	8.3	305	114	61	2,713	11,230	3,288	1,582	1,503	6,548	6,221	1,821
65	(18)	553.9		9.9	494	264	65	7,091	28,613	9,677	4,135	3,928	16,685	15,850	5,360
70															
		Species:	AC	9.0	8	3	87	93	407	113	4	3	16	15	4
		Species:	MH	11.3	3	2	63	49	177	38	2	2	7	7	1
		Species:	RA	11.3	4	3	72	52	191	21	2	2	8	7	1
		Species:	RC	25.7	2	7	120	289	1,466	694	11	11	57	55	26
		Species:	SS	12.9	115	104	82	3,370	14,015	5,291	132	125	549	521	197
		Species:	WH	8.6	362	145	64	3,895	17,214	5,287	152	145	674	640	197
70	(6)	37.2		9.9	493	264	69	7,748	33,470	11,444	303	288	1,311	1,245	426
75															
		Species:	AC	9.0	2	1	87	22	95	26	0	0	2	2	1

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s) GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
		Species:	MH	11.2	1	0	63	11	41	9	0	0	1	1	0
		Species:	RA	11.3	4	3	72	60	222	24	1	1	5	4	0
		Species:	RC	25.5	0	2	120	68	343	162	1	1	7	7	3
		Species:	SS	12.6	126	110	80	3,512	14,477	5,405	73	69	301	286	107
		Species:	WH	8.1	387	139	59	3,448	14,793	4,221	72	68	308	292	83
75	(3)	19.8		9.5	521	255	65	7,120	29,971	9,847	148	141	624	592	195
80															
		Species:	AC	9.0	43	19	87	534	2,330	647	27	25	116	110	31
		Species:	MH	11.3	17	12	63	280	1,014	215	14	13	50	48	10
		Species:	RC	25.7	12	42	120	1,655	8,395	3,972	82	78	417	396	187
		Species:	SS	16.3	45	66	112	2,497	11,162	4,591	124	118	554	526	216
		Species:	WH	12.8	203	183	102	6,650	32,158	11,866	330	313	1,596	1,516	559
80	(3)	47.1		13.5	321	322	101	11,617	55,059	21,292	576	548	2,732	2,595	1,004
90															
		Species:	AC	9.0	38	17	87	462	2,014	560	107	102	466	443	123
		Species:	MH	11.3	15	10	63	242	877	186	56	53	203	193	41
		Species:	RA	11.3	1	0	72	8	31	3	2	2	8	7	1
		Species:	RC	25.7	10	36	120	1,431	7,257	3,434	331	315	1,681	1,597	756
		Species:	SS	15.2	57	72	103	2,641	11,631	4,706	612	581	2,694	2,559	1,035
		Species:	WH	11.9	229	177	94	6,198	29,704	10,786	1,435	1,364	6,879	6,535	2,373

Species - Summary Report by Age Class

Wrangell Year-end 2013

Net of Buffers Acreage

Age Class	(#Stds)	Acres	Spp	Per Acre: Dbh	Trees	Basal	Htt	NetCub	NetBrd	GrsVal	Total Stand (1,000s): GrsCub	NetCub	GrsBrd	NetBrd	GrsVal
90	(17)	220.0		12.8	350	312	94	10,982	51,515	19,675	2,543	2,416	11,931	11,334	4,329
100															
	Species:		AC	9.0	40	18	87	492	2,146	596	8	7	33	31	9
	Species:		MH	11.3	16	11	63	258	934	198	4	4	14	14	3
	Species:		RA	11.2	0	0	72	5	18	2	0	0	0	0	0
	Species:		RC	25.7	11	39	120	1,525	7,732	3,659	23	22	118	112	53
	Species:		SS	15.6	52	69	106	2,581	11,435	4,658	40	38	175	166	68
	Species:		WH	12.3	219	179	97	6,386	30,728	11,236	98	93	471	447	163
100	(3)	14.5		13.1	338	316	97	11,247	52,993	20,350	172	164	811	771	296
Sum:	1,049	35,571.3									43,088	40,835	160,050	151,677	46,741

APPENDIX E: TONGASS TIMBER REFORM ACT (TTRA), SECTION 101

Public Law 101-626
101st Congress

An Act

Nov. 28, 1990
[H.R. 987]

To amend the Alaska National Interest Lands Conservation Act, to protect certain lands in the Tongass National Forest in perpetuity, to modify certain long-term timber contracts, to provide for protection of riparian habitat, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Tongass Timber Reform Act.
16 USC 539d note.

SECTION 1. SHORT TITLE AND DEFINITION.

(a) SHORT TITLE.—This Act may be cited as the "Tongass Timber Reform Act".

TITLE I—FOREST MANAGEMENT PROVISIONS

SEC. 101. TO REQUIRE ANNUAL APPROPRIATIONS FOR TIMBER MANAGEMENT ON THE TONGASS NATIONAL FOREST.

The Alaska National Interest Lands Conservation Act (Public Law 96-487, hereinafter referred to as "ANILCA") is hereby amended by deleting section 705(a) (16 U.S.C. 539d(a)) in its entirety and inserting in lieu thereof the following:

"SEC. 705. (a) Subject to appropriations, other applicable law, and the requirements of the National Forest Management Act of 1976 (Public Law 94-588), except as provided in subsection (d) of this section, the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle.".

SEC. 102. IDENTIFICATION OF LANDS UNSUITABLE FOR TIMBER PRODUCTION.

ANILCA is further amended by deleting section 705(d) (16 U.S.C. 539d(d)) in its entirety and inserting in lieu thereof:

"(d) All provisions of section 6(k) of the National Forest Management Act of 1976 (16 U.S.C. 1604(k)) shall apply to the Tongass National Forest except that the Secretary need not consider economic factors in the identification of lands not suited for timber production.".

SEC. 103. FISHERIES PROTECTION.

(a) Section 705 (16 U.S.C. 539d) of ANILCA is amended by adding at the end thereof the following new subsection:

"(e) In order to assure protection of riparian habitat, the Secretary shall maintain a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited, except where independent national forest timber sales

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APPENDIX F: ANILCA SECTION 705(a)

NATIONAL FOREST TIMBER UTILIZATION PROGRAM

16 USC 539d.

SEC. 705. (a) The Congress authorizes and directs that the Secretary of the Treasury shall make available to the Secretary of Agriculture the sum of at least $40,000,000 annually or as much as the Secretary of Agriculture finds is necessary to maintain the timber supply from the Tongass National Forest to dependent industry at a rate of four billion five hundred million foot board measure per decade. Such sums will be drawn from receipts from oil, gas, timber, coal, and other natural resources collected by the Secretary of Agriculture and the Secretary of the Interior notwithstanding any other law providing for the distribution of such receipts: *Provided*, That such funds shall not be subject to deferral or rescission under the Budget Impoundment and Control Act of 1974, and such funds shall not be subject to annual appropriation.

31 USC 1401 note.

Forest materials Purchasers, loan program.

(b)(1) The Secretary is authorized and directed to establish a special program of insured or guaranteed loans to purchasers of national forest materials in Alaska to assist such purchasers in the acquisition of equipment and the implementation of new technologies which lead to the utilization of wood products which might otherwise not be utilized. The Secretary is authorized to promulgate such regulations as he deems appropriate to define eligibility requirements for the participation in the loan program and the terms and conditions applicable to loans made under the program. Except as otherwise provided in this section or regulations promulgated specifically for this loan program, such program shall be carried out in a manner which is consistent with other authorities available to the Secretary.

Appropriation authorization.

(2) To carry out the special loan program established by this section, there are hereby authorized beginning after the fiscal year 1980 to be appropriated $5,000,000 from National Forest Fund receipts, to be deposited in a special fund in the Treasury of the United States to remain available until expended. Repayments of principal and interest and other recoveries on loans authorized by this section shall be credited to this fund and shall remain available until expended in order to carry out the purposes of this section.

Study, transmittal to Congress.

(c) Within three years after the date of enactment of this Act, the Secretary shall prepare and transmit to the Senate and House of Representatives a study of opportunities (consistent with the laws and regulations applicable to the management of the National Forest System) to increase timber yields on national forest lands in Alaska.

16 USC 1604.

(d) The provisions of this section shall apply notwithstanding the provisions of section 6(k) of the National Forest Management Act of 1976 (90 Stat. 2949).

Transmittal to congressional Committees. 16 USC 539e.

REPORTS

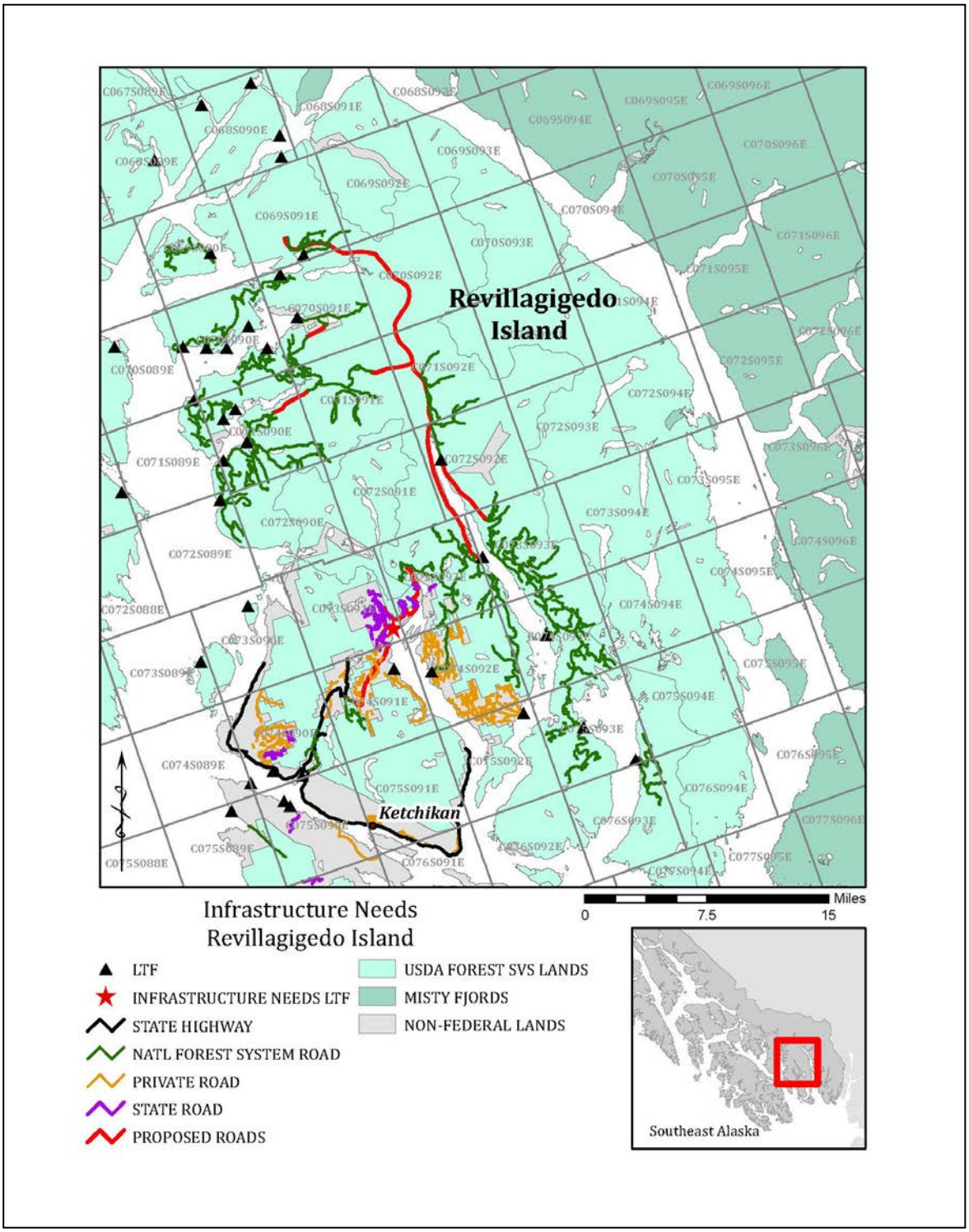
SEC. 706. (a) The Secretary is directed to monitor timber supply and demand in southeastern Alaska and report annually thereon to the Committee on Energy and Natural Resources of the Senate and the Committee on Interior and Insular Affairs of the House of Representatives. If, at any time after the date of enactment of this Act, the Secretary finds that the available land base in the Tongass National Forest is inadequate to maintain the timber supply from the Tongass National Forest to dependent industry at the rate of four billion five hundred million foot board measure per decade, he shall include such information in his report.

Review and report to Congress.

(b) Within five years from the date of enactment of this Act and every two years thereafter, the Secretary shall review and report to Congress on the status of the Tongass National Forest in southeast-

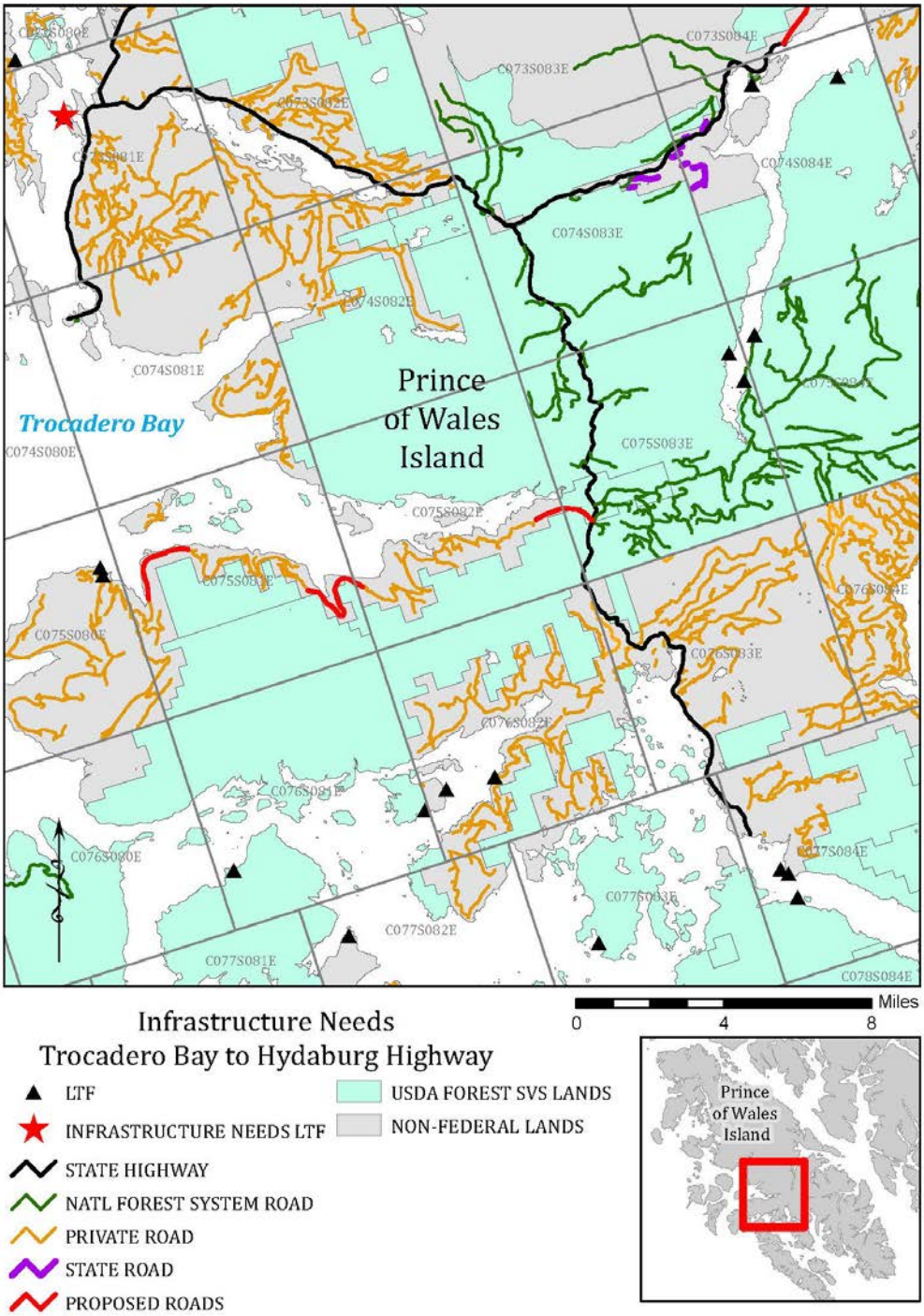
APPENDIX G: INFRASTRUCTURE NEEDS MAPS

Map 1. Revillagigedo Island



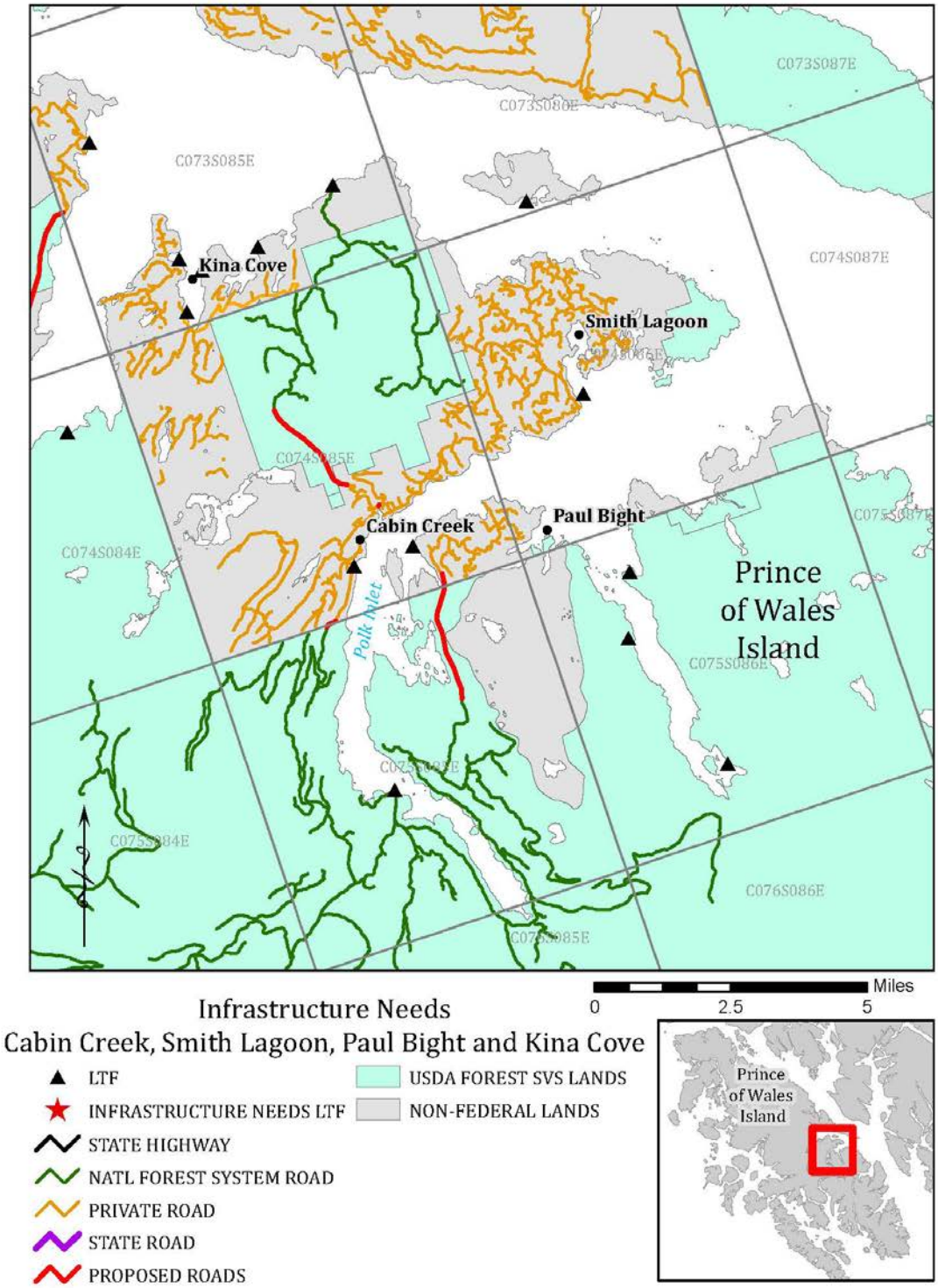
Map Developed by Alaska Mental Health Trust Land Office

Map 2. Prince of Wales Island - Trocadero Bay



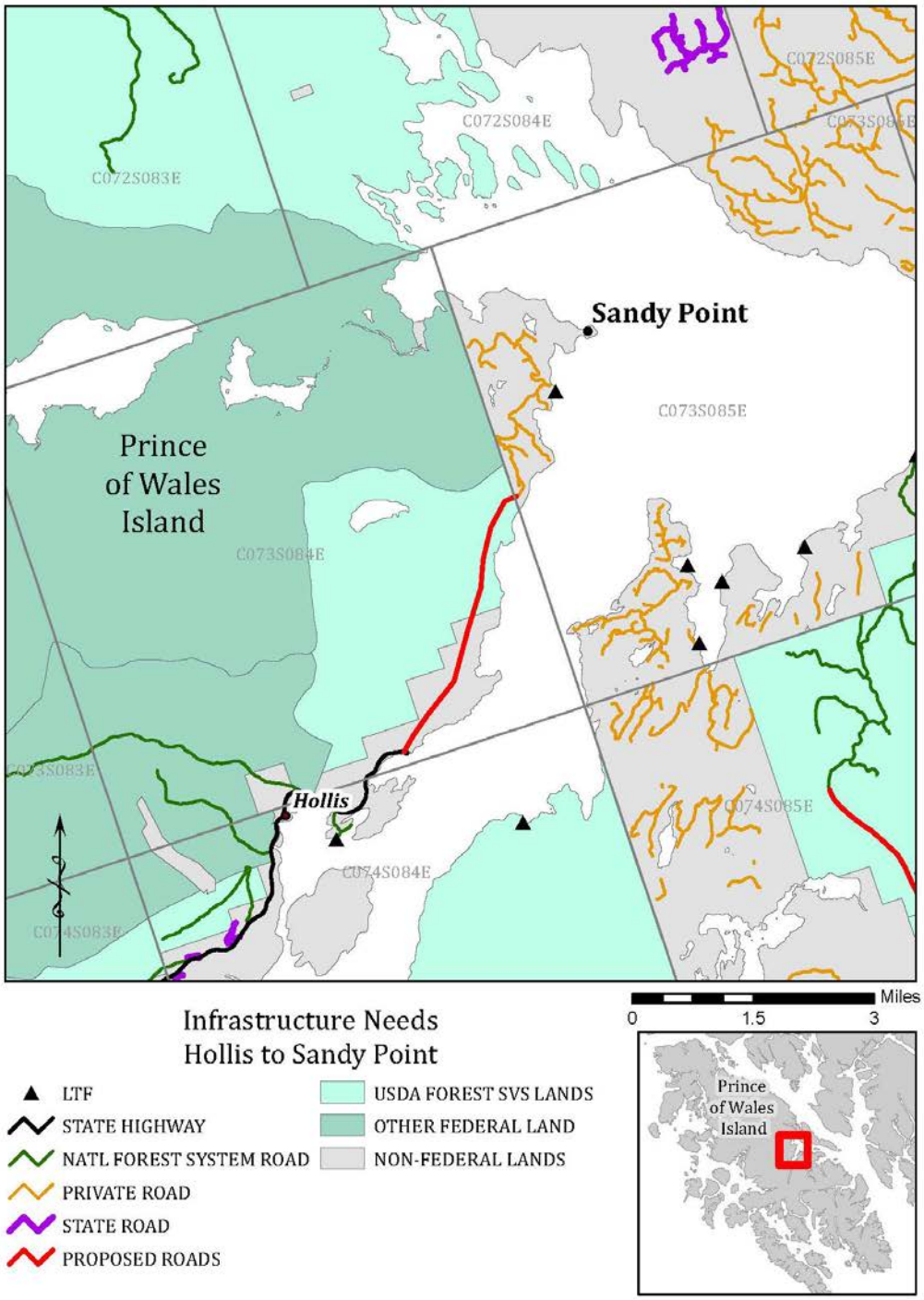
Map Developed by Alaska Mental Health Trust Land Office

Map 3. Prince of Wales of Island – Cabin Creek



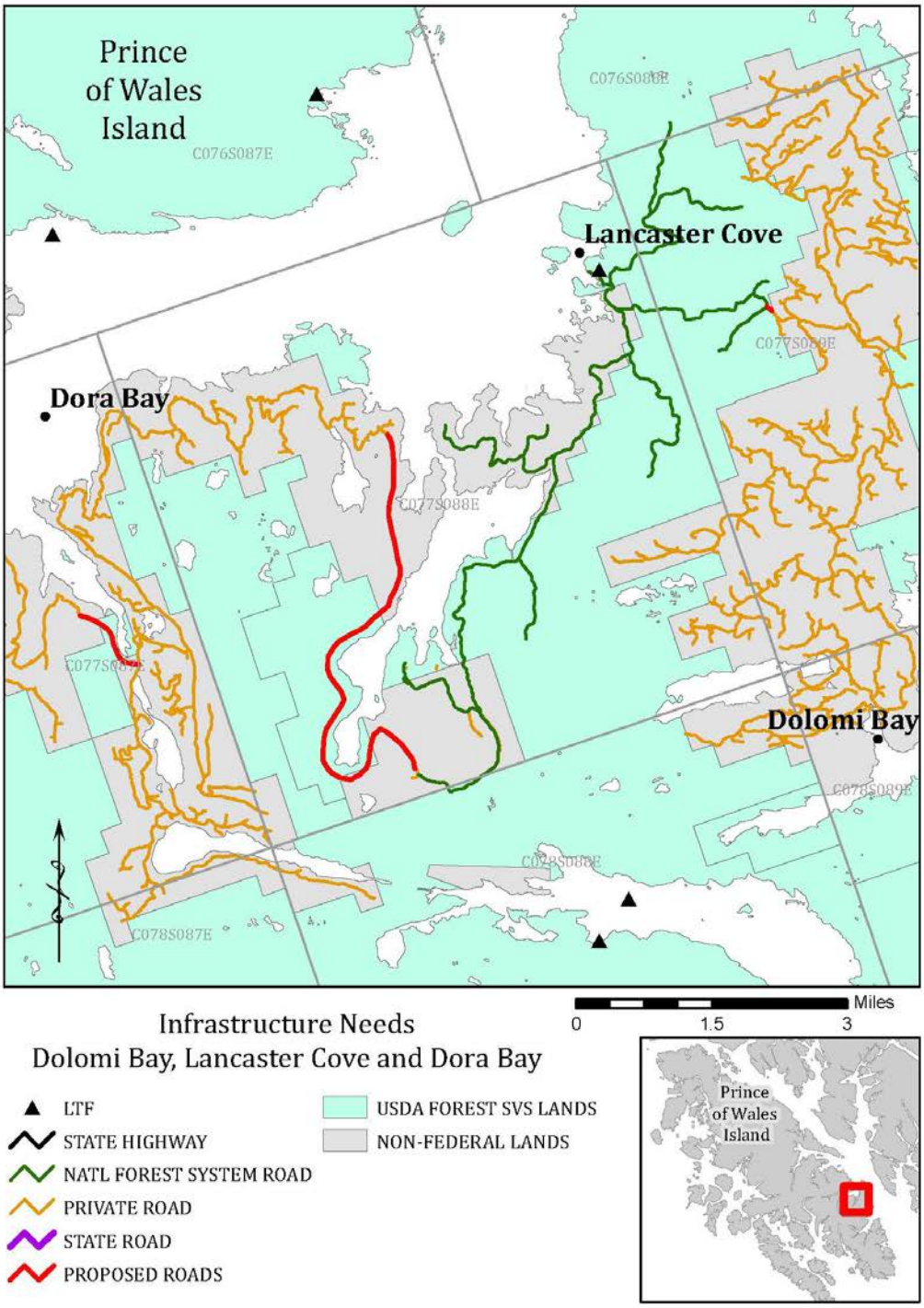
Map Developed by Alaska Mental Health Trust Land Office

Map 4. Prince of Wales of Island – Sandy Point



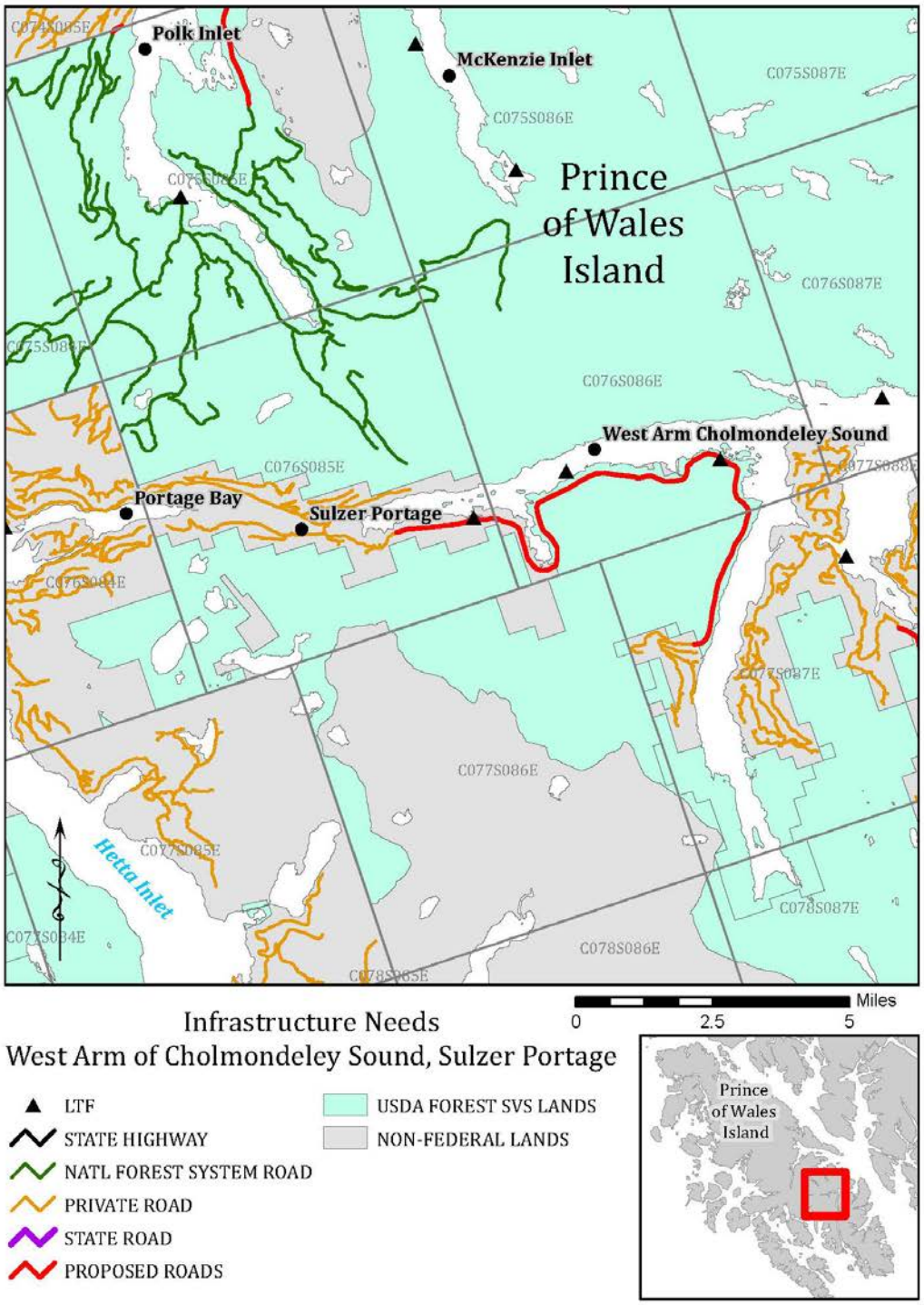
Map Developed by Alaska Mental Health Trust Land Office

Map 5. Prince of Wales of Island – Dolomi Bay



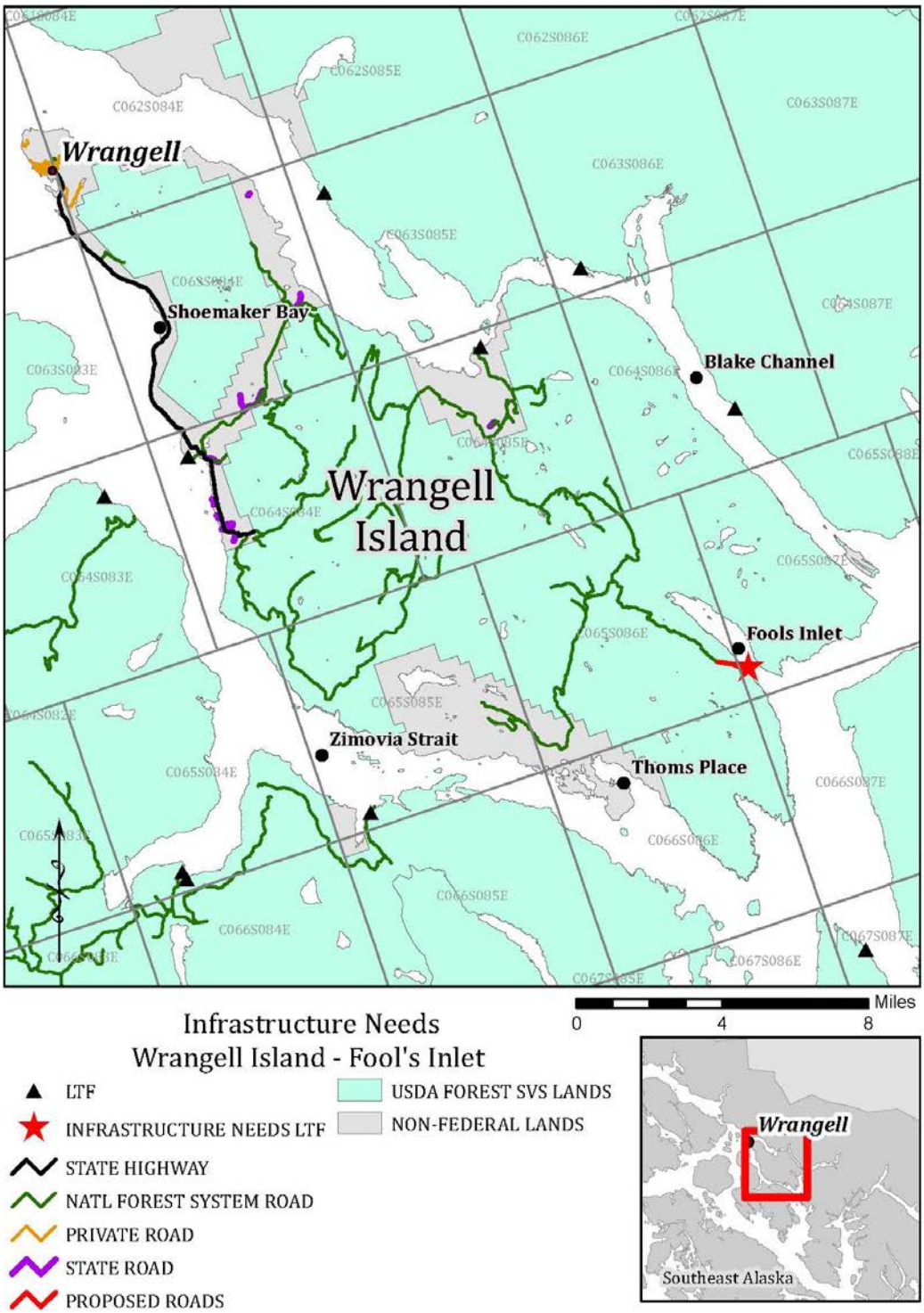
Map Developed by Alaska Mental Health Trust Land Office

Map 6. Prince of Wales of Island – West Arm of Cholmondeley Sound



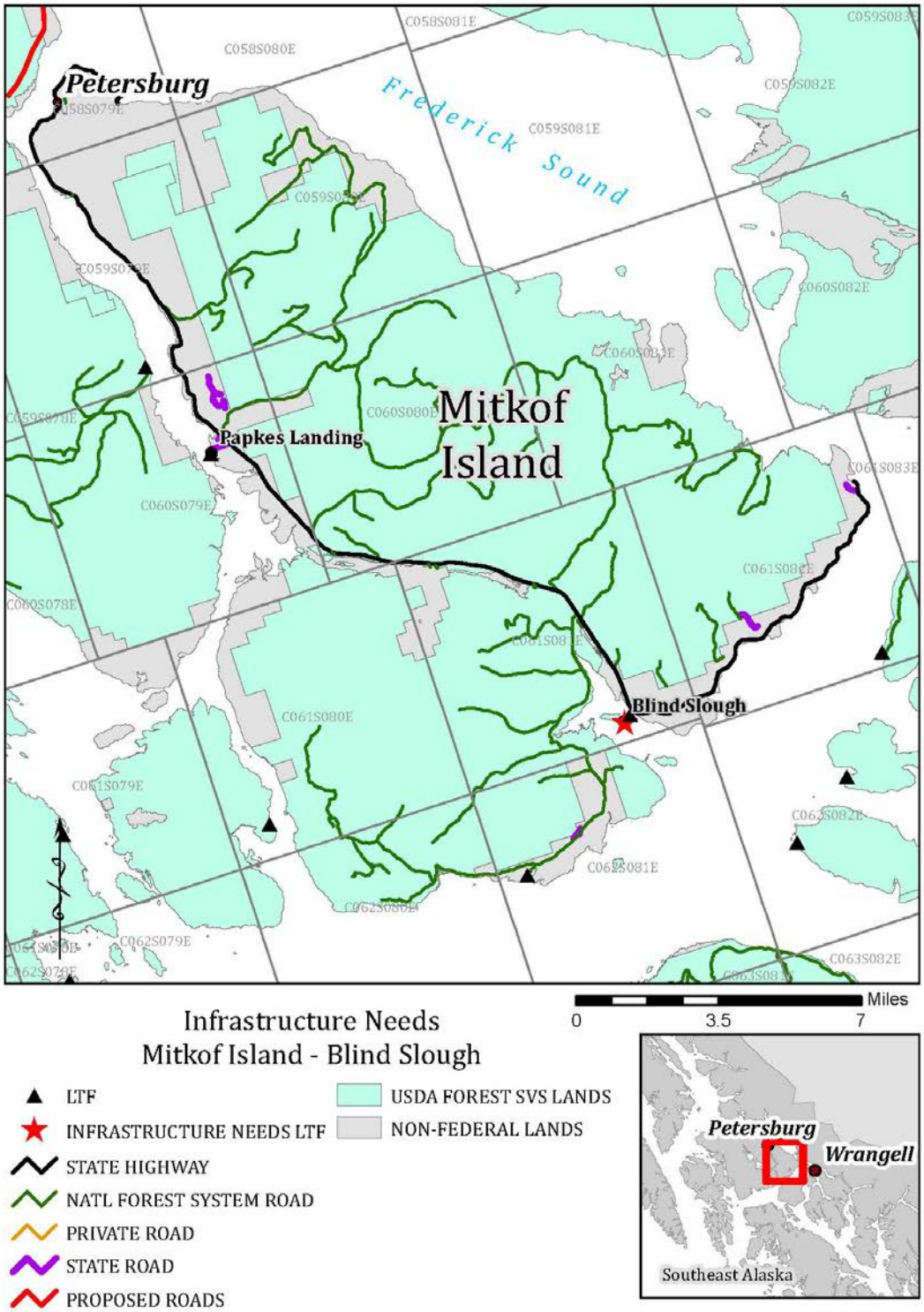
Map Developed by Alaska Mental Health Trust Land Office

Map 7. Wrangell Island



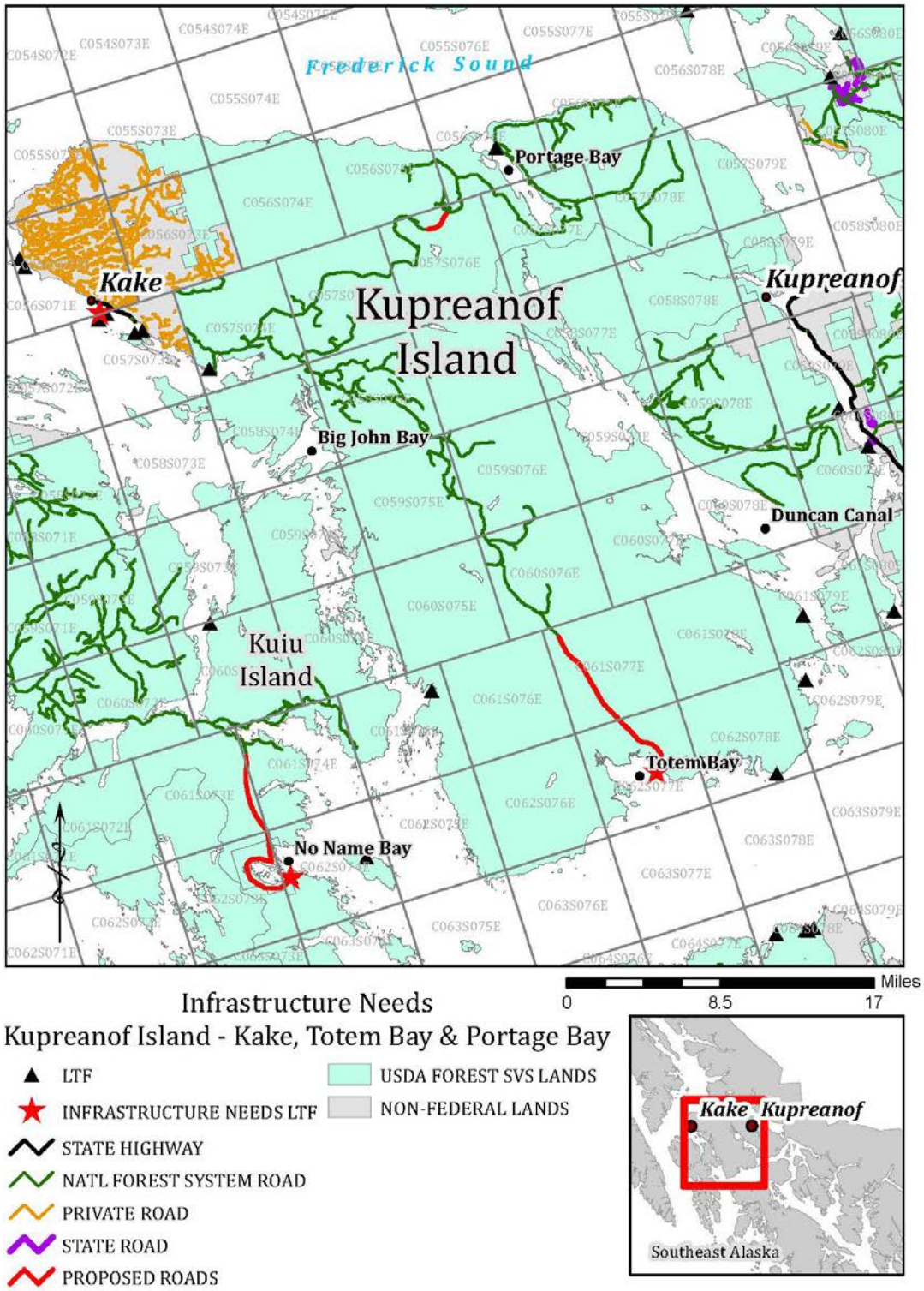
Map Developed by Alaska Mental Health Trust Land Office

Map 8. Mitkof Island



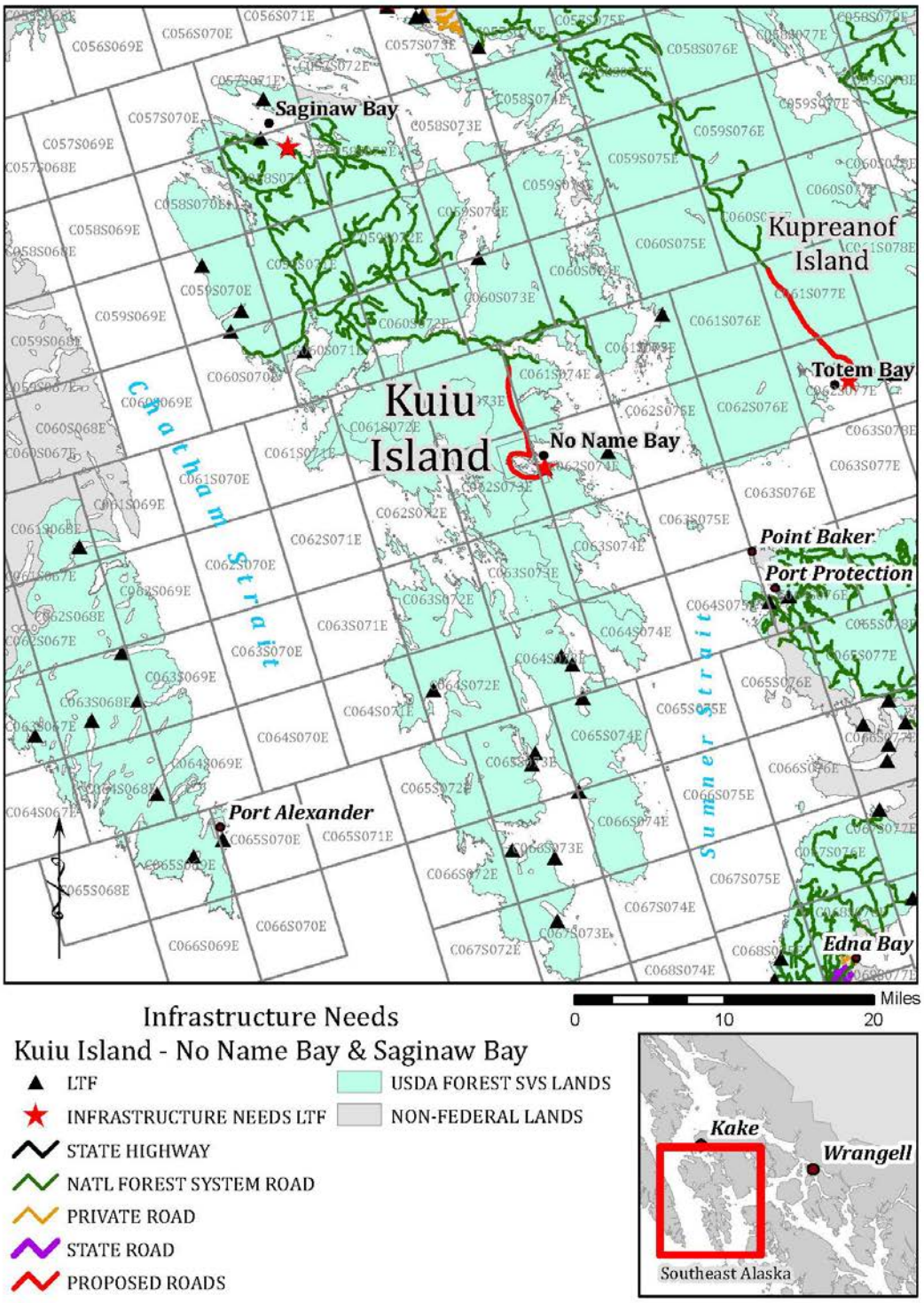
Map Developed by Alaska Mental Health Trust Land Office

Map 9. Kupreanof Island



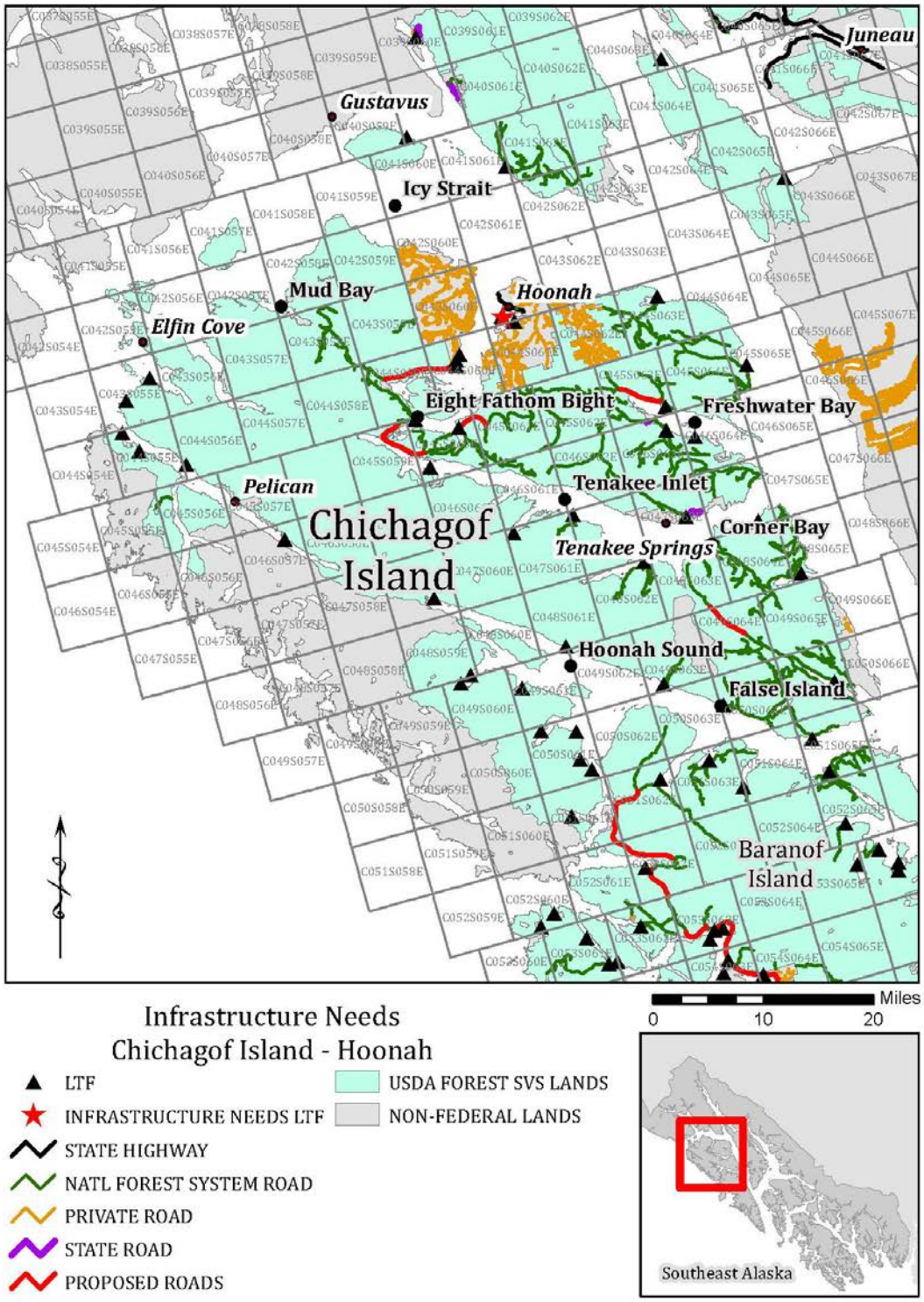
Map Developed by Alaska Mental Health Trust Land Office

Map 10. Kuiu Island



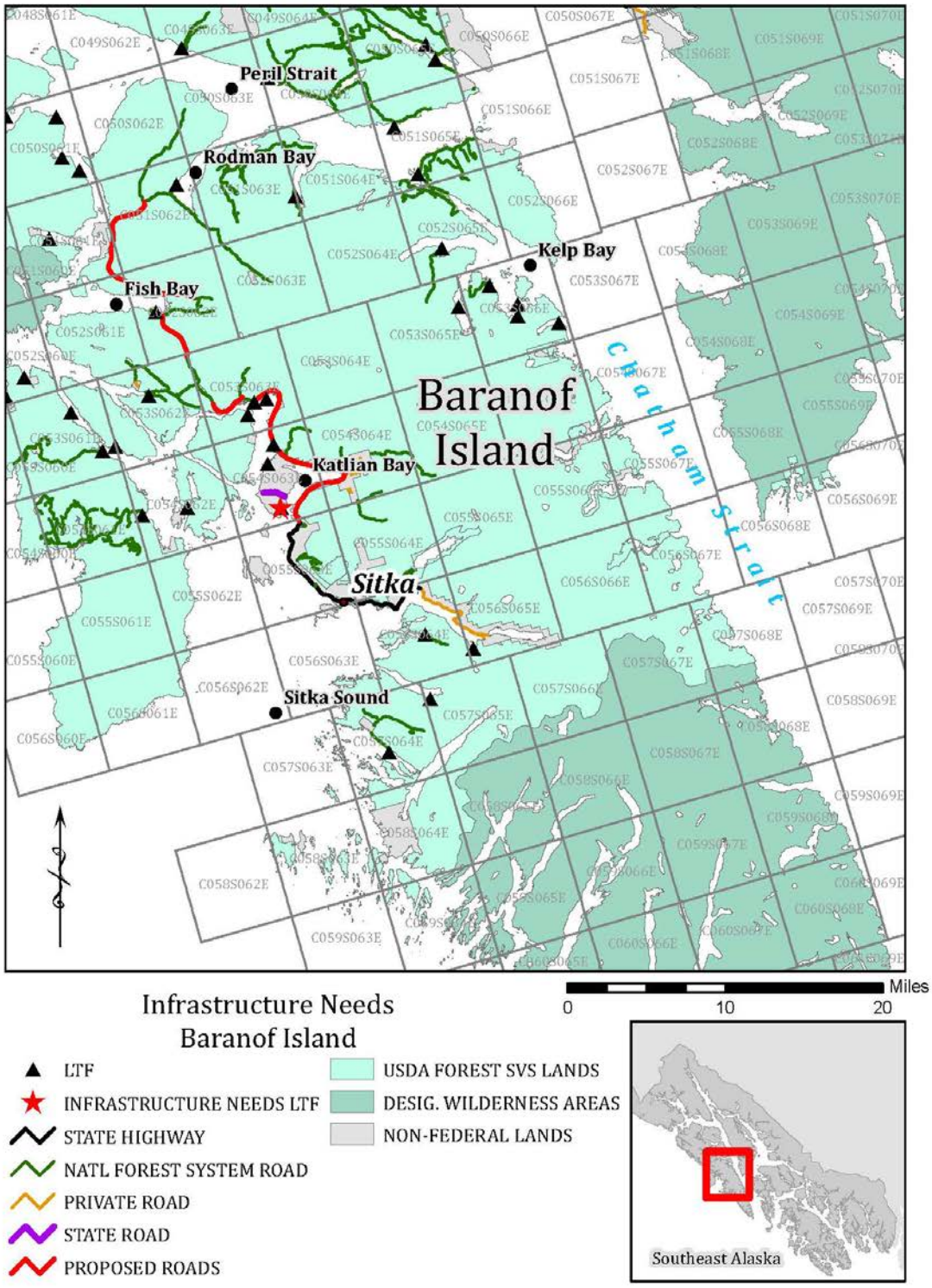
Map Developed by Alaska Mental Health Trust Land Office

Map 11. Chichagof Island



Map Developed by Alaska Mental Health Trust Land Office

Map 12. Baranof Island



Map Developed by Alaska Mental Health Trust Land Office

APPENDIX H: ALASKA TIMBER JOBS TASK FORCE (SHORT REPORT) – JULY 2012

REPORT TO GOVERNOR SEAN PARNELL
PREPARED BY ALASKA TIMBER JOBS TASK FORCE

ADMINISTRATIVE ORDER 258:

FINAL REPORT

ALASKA TIMBER JOBS TASK FORCE

The Alaska Timber Jobs Task Force is a combined federal, state, private industry, and community group appointed by Governor Parnell to review and recommend actions related to:

- management of state-owned forest land, establishment and expansion of legislatively-designated state forests, and state timber harvesting statutes and regulations, and
- Tongass National Forest management, southeast Alaska land ownership, southeast Alaska timber demand and supply, statewide current and potential wood products, and additional research needs.

Membership

Name	Title	Affiliation
Chris Maisch	State Forester (Task Force Chair)	Alaska Department of Natural Resources, Division of Forestry
Randy Bates	Director	Alaska Department of Fish and Game, Division of Habitat
Brad Cox	Logging and Milling Associates	Alaska Forest Products Industry
Bryce Dahlstrom	Viking Lumber Company	Alaska Forest Products Industry
Owen Graham	Alaska Forest Association	Alaska Forest Products Industry
Nicole Grewe	Economic Analyst	Alaska Department of Commerce, Community, and Economic Development, Division of Economic Development
Ruth Monahan[1]	Deputy Regional Forester	United States Department of Agriculture, Forest Service, Alaska Region
Elaine Price	Resident	Southeast Alaska communities
Randy Ruaro	Deputy Chief of Staff	Office of Governor Parnell

Contact information, meeting notes, reports, and additional information about the Alaska Timber Jobs Task Force may be found at: http://forestry.alaska.gov/aktimber_jobs_taskforce.htm

[1] Note: USFS liaison to Task Force, non-voting member. The USFS abstains from endorsing the findings and recommendations in this report. The USFS disagrees with several of the findings in Administrative Order No. 258. Many of those findings are at issue in ongoing litigation, including litigation the State of Alaska has initiated against the federal government. The USFS participation on the Task Force is limited to furthering the exchange of information and participation and should not be interpreted as agreement with findings or recommendations of the Task Force. The USFS is committed to continuing to manage the Tongass in accordance with applicable federal law and the Tongass forest plan, including the objectives of creating economic development opportunities and jobs for Alaska communities.

EXECUTIVE SUMMARY

Between July 2011 and June 2012, the Alaska Timber Jobs Task Force (hereafter Task Force) reviewed and discussed numerous issues affecting Alaska's timber industry. This report summarizes the Task Force's recommendations to address all objectives detailed in Section 2 (Purpose) of Administrative Order 258 (Appendix 1), with a particular focus on job creation and economic development.

In sum, the Task Force identified the following priority statewide issues that present the greatest impediment to job creation and economic development for Alaska's timber industry:

1. Timber supply;
2. Workforce development; and
3. Public education and outreach.

ALASKA'S WORKING FORESTS

Alaska's federal and state forests have the potential to be a model of sustainability, including environmental, social, and economic objectives. The "Working Forest" concept embraces diverse and broad objectives related to utilizing natural resources, providing jobs, stimulating local economies, and supporting communities. These broad objectives have the potential to unify diverse stakeholders and interest groups while framing many of the State of Alaska's short- and long-term goals.

Working Forests:

1. Support industries that use Alaska's natural resources on a sustained-yield principle based on multiple-use management, consistent with public interest;
2. Manage timber resource production on a rotational basis to provide for a fully-integrated timber industry capable of producing a variety of products; and
3. Attract private-sector investment that establishes businesses, creates jobs, and provides community stability.

FINDINGS

The timber industry is vitally important to Alaska's statewide and regional economies. Timber industry challenges and opportunities vary by region, including Southcentral, Interior, and Southeast Alaska.

SOUTHCENTRAL AND INTERIOR

The timber industry in Interior Alaska is experiencing slow, but steady growth as wood biomass projects are developed to meet community needs for economic space heating and electrical generation. Projects at both small and large scales are made possible by state forest management policies that provide a sustainable, long-term supply of wood from state forests and other state lands.

In Southcentral, the creation of the Susitna State Forest would aid in developing access to lands, which in turn will increase timber sales for small mills and commercial firewood businesses. Other multiple use activities, such as personal use firewood, hunting, and other recreational uses will also benefit.

SOUTHEAST

The principal barrier to job creation in southeast Alaska's (Southeast) timber industry is insufficient timber volume from the Tongass National Forest (NF). Over the past decade (2001 – 2011), the Tongass NF has offered approximately 43% of the volume needed to meet its volume under contract (VUC) sale objectives identified in USFS annual timber demand reports (Appendix 9). Since the 2008 Tongass Land and Resource Management Plan (TLMP) amendment, the Tongass NF has offered only 33% of the volume the agency deems necessary to comply with Section 101 of the Tongass Timber Reform Act (TTRA), which requires the United States Department of Agriculture (USDA) to "…seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from the forest and (2) meets the annual market demand from such forest for each planning cycle."[2]

Uncertainties and exorbitant costs associated with the National Environmental Policy Act (NEPA) and invalidation of the Tongass Exemption to the 2001 Roadless Area Conservation Rule exacerbate the challenge of supplying sufficient timber volume from the Tongass NF to maintain an integrated timber industry capable of contributing meaningfully to the region's economy. The Task Force finds that:

1. The downward spiral of the Southeast timber industry has adversely affected Southeast communities, schools, and local economies;
2. Federal policies and management practices fail to provide sufficient timber supply for Southeast's timber industry;
3. The current USDA "Transition Framework" and associated USDA "Investment Strategy" for economic development being implemented in Southeast proposes to limit and then accelerate transition away from the traditional timber sale program on the Tongass NF in favor of young growth harvest and restoration activities, which is an uncertain alternative for sustaining Southeast communities; and
4. Environmental groups have exerted undue influence over USFS policy and direction related to national forest management in Alaska.

RECOMMENDATIONS

Task Force work and recommendations spanned eight substantive areas of interest including: 1) management of state-owned forests; 2) expansion of legislatively-designated state forests; 3) establishment of legislatively-designated state forests; 4) State of Alaska timber harvesting statutes and regulations; 5) Tongass National Forest ownership and management; 6) timber demand and supply; 7) wood products development; and 8) additional research needs.

Recommendations for each substantive area include short-, mid-, or long-term designations that refer to the estimated timeframe for action on the item: (S) = one to two years; (M) = three to four years; and (L) = five or more. Highest priority recommendations (Appendix 12) are denoted by an asterisk (*). Purpose statements from Administrative Order 258 are included to provide context and background for each set of recommendations.

[2] To the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources

MANAGEMENT OF STATE-OWNED FOREST LAND

Administrative Order 258, Section 2, Task 1
Review, analyze, and prepare recommendations regarding management and care of the state forests that will lead to economical traditional timber harvests in the future.

1. (S) Establish a "Roads Office" in the Department of Natural Resources (DNR) to facilitate the planning and construction of resource development roads and access. As part of this recommendation, increase DNR's one time procurement level to $20 million. (See Appendix 2).
2. (S-M) Provide funding for basic and increased road maintenance and infrastructure development on the expanding statewide forest road system on state lands, especially on state forests. Current funding needed to implement this recommendation is estimated at $2.0 million.

EXPANSION OF LEGISLATIVELY-DESIGNATED STATE FORESTS

Administrative Order 258, Section 2, Task 2
Review, analyze, and prepare recommendations for future additions of state land to existing state forests.

1. (S) Tanana Valley State Forest: add remaining 1,124,613 acres of forest classified lands from the Tanana Basin Area Plan.
2. (M-L)* Southeast State Forest: add two million acres of National Forest System lands from the Tongass NF (also see recommendation 1 under Task 5).

ESTABLISHMENT OF LEGISLATIVELY-DESIGNATED STATE FORESTS

Administrative Order 258, Section 2, Task 3
Review, analyze, and prepare recommendations for the creation of new state forests where the primary emphasis on use will be for timber harvests and creation of economic development opportunity and jobs for Alaskans and their families

1. (S-M) Pursue creation of the following new State Forests:
   - Susitna State Forest – 763,200 acres[3]. (See Appendix 3).
   - Copper River Valley State Forest – 435,179 acres
   - Kenai State Forest – 154,726 acres (83,179 Kenai Peninsula and 71,547 Cook Inlet)
   - Icy Bay State Forest – 34,686 acres

STATE TIMBER HARVESTING STATUTES AND REGULATIONS

Administrative Order 258, Section 2, Task 4
Review, analyze, and prepare recommendations for amendments to state statutes or regulations governing timber harvesting that will lead to the creation of economic development and jobs for Alaskans and their families and communities

1. (S) 11 AAC 71.045. Negotiated Sales (e). This regulation currently limits the length of a contract negotiated under the conditions of AS 38.05.115 to one year, and prevents contract extensions. Amending 11 AAC 71.045 (e) to allow 2-year contracts for small negotiated sales would provide the

[3] Total acres from Susitna Area Plan (1985), Southeast Susitna Area Plan (2009), and Susitna Matanuska Area Plan (2011).

state a better tool for addressing the needs of small operators by providing them with longer windows of secure timber for their businesses (Appendix 4).

2. (S) AS 38.05.118. Negotiated Sales. Amending the following sections of this statute would allow the state increased flexibility using negotiated timber sales to meet local manufacturing needs (Appendix 4).
   - Amend statute AS 38.05.118(a) to require that the appraised value of the timber be re-determined every five years.
   - Amend statute AS 38.05.118(c) so only one of the three conditions has to exist within two years.
     - 11 AAC 71.055. Negotiated sales under AS 38.05.118. This regulation would require amendment to reflect changes to AS 38.05.118 recommended above.
3. (S) AS 38.05.945. Notice. Add the following language as Section (E) under AS 38.05.945(b)(3):
   - (E) Notice at least 30 days before the action by publication in newspapers of statewide circulation is not required for the sale of timber on less than 640 acres or the appraised value of the timber is less than $100,000 or the sale of timber is for a period less than five years.
4. (S) Archeological resources are important and need to be identified and protected; however, the cost of conducting required archeological surveys can often make an otherwise economical small timber sale uneconomical. Moreover, these surveys present significant costs for the DNR, Division of Forestry (DOF) when preparing larger state timber sales. Although the Task Force did not identify any statutory or regulatory amendments related to the State Historical Preservation Act (Appendix 5), the Task Force recommends the DOF and State Historical Preservation Office (SHPO) continue to work cooperatively to develop:
   - Programmatic work agreements;
   - Joint funding agreements/requests to fund survey work; and
   - Increased communications (formal and informal).

TONGASS NATIONAL FOREST LAND OWNERSHIP AND MANAGEMENT

Administrative Order 258, Section 2, Task 5
Review, analyze, and prepare recommendations related to state land selections in the Tongass National Forest and identification of lands already selected and conveyed or pending that have little or no economic use but may have other value and identification of federal lands for which an exchange could be offered to the federal government.

1. (M-L)* Pursue state ownership and/or management authority of two million acres of National Forest System lands in the Tongass NF to support an integrated timber industry in Southeast.
2. (S-L)* Work jointly with other states/entities seeking change in the management of federal lands. Possible changes include the concepts of "trust" or state management of federal lands, the transfer of federal lands into state ownership, adjustments to the Alaska Statehood Act by Congress and measures to force the federal agencies, primarily the USFS, to increase timber harvest.
3. (S) Support finalization of Sealaska's outstanding land entitlements, Alaska Mental Health Trust's administrative land exchange with the USFS, and settlement of land entitlements for the unrecognized Southeast Alaska Native Communities.

4. (M) Pursue an administrative land exchange with the federal government of approximately 250,000 acres of existing state-owned lands; dispersing the newly-acquired lands among Southeast communities and boroughs for community development and economic diversification.

TIMBER DEMAND AND SUPPLY

Administrative Order 258, Section 2, Task 6
Survey, study, and submit report to the state and federal government on current demand for timber in the Tongass National Forest and specific business and economic opportunities that could be supported by such demand, if timber were supplied.

1. (S) Support management, research, and legal efforts to assure access to adequate, consistent, and sustainable timber supply on federal and state forest lands. The development of new wood products and increased product diversity will lend strength to obtaining increased supply to support a diversified and sustainable forest products industry.
2. (S) Provide substantive state comments during the scheduled five-year TLMP review process advocating for community-based timber sales and timber supply appropriate to all types of business.
3. (S) Support additional research regarding local and regional socioeconomic impacts of declining timber supply, declining timber industry, and USFS forest management policy and practices in southeast Alaska.
4. (S) Support additional research regarding the timber supply needed to support a fully-integrated timber industry, including all direct and indirect forestry support enterprises.
5. (S-M) Support efforts to frame State and National Forests in Alaska as working forests for Alaska's communities and economies. This effort is largely one of providing resources for developing a public education and outreach strategy regarding Alaska and its communities, peoples, and forests. Where necessary, address misinformation about forest management in Alaska.

Administrative Order 258, Section 2, Task 7
Review, identify, and report quarterly to state and federal governments on possible timber sales in the Tongass National Forest that would meet demand with economical timber sales, including the identification of possible ten-year timber sales.

1. (S)* Utilize all political and policy avenues to ensure – in addition to all current timber sale projects on the Tongass NF – the USFS begins the planning process necessary to advertise four ten-year timber sales, each with an average timber volume of 15 – 20 million board feet (MMBF) per year.
2. (S) Under existing memorandums and agreements with the USFS, direct state agencies to actively participate in the scheduled five-year review of TLMP with a goal that includes promoting revisions to TLMP that would provide an economic timber volume capable of sustaining a fully-integrated timber industry. Revisions to the Wildlife Conservation Strategy, Land Use Designations, Scenic Integrity Objectives, and Visual Priority Routes of TLMP are critical for achieving this objective.
3. (S)* Pursue all opportunities for exempting Alaska national forests from the 2001 Roadless Area Conservation Rule.
4. (S) Maintain and expand the state-federal relationship and increase state participation in the internal design and review process for timber sales and Integrated Resource Management Projects (IRMP) on the Tongass NF.

5. (S) Review, revise, renew, and where appropriate, consolidate state-federal memorandums of understanding governing cooperative efforts.
    - State participation has the greatest benefit when it is consistently provided from the beginning (Gate 1) and throughout the timber sale planning process; especially participation on the Joint Review Team.
    - Formalize state cooperation and collaboration regarding implementation of TLMP through an updated Memorandum of Understanding. Clarify communication, roles, points of engagement in project planning processes, and frequency of coordination meetings.
6. (S) Continue the Gate 3 Committee, which includes state and federal staff and industry representatives. Include the committee in the annual monitoring and evaluation process of TLMP.
7. (S) Consider seeking Cooperating Agency status available under NEPA, when appropriate, to ensure greater participation by the state in federal decision-making.
8. (S) Support the State Tongass Team by clarifying its organization and responsibilities for engaging with the USFS.
9. (S) Develop cooperative agreements with the USFS to improve project and permit coordination and approval.

WOOD PRODUCTS DEVELOPMENT

Administrative Order 258, Section 2, Task 8
Review, identify, and report to the state and federal governments on current wood products and potential new products and uses, such as biofuel and cellulosic ethanol, that could be made from timber supplied by the Tongass National Forest.

1. (S) Increase focus and support for products that utilize all primary and secondary timber resource materials.
2. (S) Promote new wood products and increased wood product diversity.
3. (S-M) Support workforce development, through established public sector programs, to improve workforce skills, knowledge, and abilities.
4. (S-M) Support additional research regarding grading impacts, market feasibility of new wood products and value-added wood products, full resource utilization, and maximizing product manufacturing efficiencies.
5. (S) Provide additional marketing support for high-value wood products manufacturers. Greater access to local markets and greater marketing tools for small operators will improve this segment of the industry.
6. (S) Provide technical assistance for entrepreneurs and small businesses considering new wood products, expanding business operations, or considering other innovative business or product development ideas.

ADDITIONAL RESEARCH NEEDS

AO258, Section 2, Task 9:
Review and submit recommended areas of research related to use of the Tongass National Forest and impacts on wildlife.

1. (S-M) Provide sufficient funding to the Alaska Department of Fish and Game to conduct research necessary for (Appendix 11):
    - Estimating wolf populations in Game Management Units (GMU) 2 and 3;

- Completing development and evaluation of DNA-based methods for estimating deer population abundance in southeast Alaska; and
- Estimating deer numbers in GMU 3 using DNA-based methods, and assessing causes and rates of mortality.

APPENDICES

Appendix 1: Administrative Order 258
Appendix 2: Division of Forestry Engineering Needs for Large Construction Projects (Task 1)
Appendix 3: Susitna State Forest Public Briefing Paper and Map (Task 2)
Appendix 4: Review of Alaska Timber Sale Statutes (Task 4)
Appendix 5: SHPO Evaluation (Task 4)
Appendix 6: Task 5 Final Report
Appendix 7: State Lands and Future Exchange (Task 5)
Appendix 8: Task 6 Final Report
Appendix 9: Tongass Timber Sale Program 2001-2011 (Task 7)
Appendix 10: Task 8 Final Report
Appendix 11: ADF&G Research (Task 9)
Appendix 12: High Priority Recommendation Matrix
Appendix 13: Timber Jobs Task Force Preliminary Report to the Governor (9-15-11)

ACKNOWLEDGEMENTS

The Task Force appreciates the hard work demonstrated by countless DNR, DCCED, ADFG, DOTPF, and USFS staff. Information provided by the aforementioned agencies and respective staffs was instrumental in completing Task Force work and compiling the final report. The Task Force equally appreciates individuals of the public that attended meetings and provided public comment that contributed to our understanding of these important, complex issues. Finally, the Task Force thanks the community of Coffman Cove. Your hospitality laid the foundation for one of the most productive and memorable Task Force meetings.

WORKS CITED

The Working Forest Group (TWFG). *Analysis of Old Growth Inventory and Land Base Available for Operations within the Tongass National Forest.* June 2014. Print.

U.S. Department of Agriculture. *Tongass Integrated Plan.* USDA Forest Service. Web. 26 December 2014. http://www.fs.usda.gov/detail/tongass/landmanagement/?cid=stelprd3812864

CITY AND BOROUGH OF WRANGELL

INCORPORATED MAY 30, 2008

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February 22, 2015

Forest Supervisor
Tongass national Forest
Attn: Forest Plan Amendment
648 Mission Street
Ketchikan, AK 99901

Re: Comments on Proposed Tongass Nation Forest Land and Resource Management Plan
And the draft EIS

Thank you for allowing us this opportunity to comment on the Proposed Tongass National Forest Land and Resource Management Plan and the draft EIS.

Our understanding is that the primary changes in this plan is focusing on the transition from harvesting old growth to young growth. But as a community who has experienced the downside of the lack of a supply of old growth timber, we are concerned in the ability of the USFS to provide an economically viable supply of young growth timber, and to do it within the 15 year time frame as charged by the Secretary of Agriculture. We are concerned that the inventory data is generalized, and therefore we support and encourage development of an accurate inventory of young growth availability.

This inventory is critical for a complete and accurate economic analysis of the transition on communities and industry. Loss of harvesting volume is not a result in decline in demand, it is a result from the loss of economic sales available to industry and the slow process the USFS undertakes to develop sales due to an ongoing fear of lawsuits. No business can operate economically in such an environment and thus the loss in industry opportunity.

- The plan fails to consider social and economic metrics to measure outcomes of the transition from old growth to young growth. Metrics showing the impacts to industry and also to communities.

- Appendix C Watershed Analysis: There has been so much discussion of late regarding "watershed" analysis and impacts within the T77 watersheds. Based on our own personal experience with the Wrangell Island Sale, an actual stream "watershed" for a harvest unit or harvest area, may be smaller than the T77 defined watershed. Yet the USFS is trying to utilize the T77 watershed analysis. The Plan needs to clarify its definition and use of watershed analysis vs. the T77 watersheds.

- We support the relaxation of Standards and Guides for the harvest of Young Growth during the transition in land use designations that may normally minimize or prohibit some commercial harvesting if it will provide economic sales of young growth timber.

- Appendix F Visual Priority Routes and Scenic Integrity. According to our Wrangell District, for some reason it appears that all of Wrangell's Forest Roads are designated a Visual Priority Route. While we agree that the main roads do have a visual preference, not all of the roads need to be classified a visual priority route to limit timber or other use. (Originally, some of these designations were going to be dealt with in the upcoming Wrangell Island Sale, but now we understand that will not happen and we have to address it here. Only the road management plan – what stays open, what will be closed and level of use will now be addressed in the Wrangell Island Sale.) For example, the back side of the Nemo-Skip Loop Road (6267) (From Turn Island where the road turns northeast back to intersection of #6265 to Earl West) is heavily timbered and more out of site out of mind and a good area in which to continue to permit timber harvest. Yes it is on a loop so makes for a fun day trip, but there is nothing wrong with timber harvesting. Questions can be answered with educational materials about timber harvesting practices and economic values to communities.
  Every road on Wrangell Island will meet one of the primary criteria for a visual priority route – for example the water routes of small and midsize boats. We are on an island. Timber roads climb mountains that provide views, over looks are created for turn outs for logging trucks and once trees are harvested, you can see the water. It does not mean that each road should be a visual priority route. All roads should be analyzed as a whole, and key stretches of roads identified. Off shoots of some of the priority roads that receive minimal traffic could be reclassified as non visual priority.

- Tourism is the big growth industry since supply of timber to harvest and political affects have reduced the opportunity for the timber industry. The plan also fails in considering the social and economic metrics to measure outcomes of tourism growth for communities and businesses and the impacts to recreational sites

We understand that the USFS has selected as its preferred alternative, Alternative 5 that was proposed by the Tongass Advisory Committee. While the Borough is not agreeing or disagreeing with that alternative specifically, we do understand that their proposed amendment included additional recommendations that were not necessarily "plan" amendments. Yet their recommendation was to be presented as a package. If Alternative 5 is implemented, we believe the other components of their recommendation, including the monitoring, bringing stakeholder participation in earlier in planning processes, USFS internal culture change, inventory assessments and social economic impact analysis are critical components of any plan implementation strategy.

Sincerely,

Jeff Jabusch
Borough Manager

CC: Mayor David Jack
Borough Assembly
Carol Rushmore, Economic Director/Planner