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April 2016

TONGASS NATIONAL FOREST

Forest Service's Actions Related to Its Planned Timber Program Transition

GAO-16-456

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GAO Highlights

Highlights of GAO-16-456, a report to congressional requesters

Why GAO Did This Study

The Tongass National Forest, managed by the Forest Service within USDA, is located in southeast Alaska and is the nation's largest national forest. Since the early 20th century, the Tongass has had a timber program based on harvesting old-growth trees, which are generally more than 150 years old. In 2010, USDA announced its intent to transition the Tongass timber program to primarily harvest young growth, in part to help conserve remaining old-growth forest while maintaining a viable timber industry. As part of the planned transition, the Forest Service and other federal agencies identified actions they would take to support several economic sectors in southeast Alaska.

This report describes (1) steps the Forest Service has taken to assess whether its planned transition will meet the agency's goal regarding a viable timber industry in southeast Alaska, (2) the status of actions the Forest Service and other federal agencies stated they would take to support the timber industry and other economic sectors during the transition, and (3) options suggested by agency stakeholders for improving the Forest Service's management of the Tongass timber program. GAO reviewed laws and agency documents related to the Tongass and interviewed federal agency officials and representatives from a nongeneralizable sample of 30 stakeholder organizations—including tribal, state, and local governments and industry and conservation entities—selected to provide a range of perspectives.

The Forest Service generally agreed with GAO's findings.

View GAO-16-456. For more information, contact Anne-Marie Fennell at (202) 512-3841 or fennella@gao.gov.

What GAO Found

The Forest Service has initiated some steps to assess whether its planned transition to young-growth harvest on the Tongass National Forest will support a viable timber industry in southeast Alaska—a goal the Department of Agriculture (USDA) established as part of the transition. For example, the Forest Service reported refining the data it uses to estimate the amount of young-growth timber to be available for harvest over the next 100 years. Forest Service officials stated the agency also began a study in 2015, partly in response to a recommendation that year from a USDA-convened advisory committee, to compare potential market prices for young-growth timber or products to the cost to harvest and process the timber, information that may help the agency assess the economic viability of a young-growth industry in the region. The agency expects the initial results from the study to be available in 2017.

USDA and the Forest Service identified various actions they and other federal agencies would take to support four economic sectors—timber, fishing and aquaculture, tourism and recreation, and renewable energy—during the transition to young-growth harvest on the Tongass, and the agencies have taken steps to implement some of these actions. For example, USDA stated that the Forest Service would improve its planning processes to assist the owners of small timber mills in the Tongass. According to Forest Service officials and documents, the agency has lengthened the duration of some timber sales to provide small timber mills some flexibility on when to harvest in the Tongass. However, the agencies have not implemented other actions identified. For example, the Forest Service has not implemented proposed funding increases for improving fish habitat and tourism facilities in the Tongass because of other spending priorities, according to Forest Service officials.

Representative from the 30 stakeholder organizations GAO interviewed identified options they said would improve the agency's management of the Tongass timber program. These options include improving the predictability of timber available for sale and increasing the agency's focus on small timber mills and other timber-related businesses. Forest Service officials said they have taken some steps to address these options. For example, the majority of the timber industry stakeholders GAO interviewed emphasized the importance of the Forest Service offering a predictable amount of timber for sale from year to year for the timber industry to be able to make decisions about how to retool to accommodate smaller-diameter trees—which they said is important given potential changes to the industry with the planned transition to harvest young-growth trees. In an effort to improve predictability, the Forest Service has coordinated with the Alaska Division of Forestry on the timing of timber sales to try to ensure a more predictable and even flow of timber. However, stakeholders also expressed divergent opinions regarding the overall direction of the Tongass timber program, including the volume and location of timber to be harvested.

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Abbreviation List

CMAI	culmination of mean annual increment of growth
EIS	environmental impact statement
USDA	Department of Agriculture

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

April 25, 2016

The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Alan Lowenthal
Ranking Member
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

The Honorable Peter DeFazio
House of Representatives

The Tongass National Forest, located in southeast Alaska, covers approximately 17 million acres and is the nation's largest national forest. Managed by the Forest Service within the Department of Agriculture (USDA), the Tongass since the early 20th century has had a timber program based on harvesting old-growth trees—generally, trees more than 150 years old—that can be a source of high-quality lumber. Old-growth forests also can provide high-quality habitat for many wildlife species. In 2010, USDA announced its intent to transition the Tongass timber program to one based predominantly on the harvest of young growth—generally consisting of trees that have regrown after the harvest of old growth—in part to help conserve the remaining old-growth forest. A 2013 memorandum from the Secretary of Agriculture stated that within 10 to 15 years, the "vast majority" of timber harvested in the Tongass would be young growth.[1] The memorandum also stated that the transition must be done in a manner that "preserves a viable timber industry" in southeast Alaska. The Forest Service announced in May 2014 that it would amend

[1]USDA, *Secretary's Memorandum 1044-009: Addressing Sustainable Forestry in Southeast Alaska* (Washington, D.C.: July 2013).

the forest plan for the Tongass to accomplish the transition.[2] As part of the decision-making process for the amendment, in November 2015 the Forest Service released for public comment its proposed forest plan amendment and accompanying environmental analyses.[3] The agency estimates that it will complete the forest plan amendment describing the agency's final decision regarding how it will implement the planned transition in December 2016.

Some timber industry and conservation organization representatives have raised questions about the Forest Service's management of its timber program, including its planned transition to young-growth harvest. For example, some timber industry representatives—citing the cost of retooling the industry to accommodate young-growth trees and the generally lower value of young-growth timber—have questioned whether a timber industry based on young growth is economically viable.[4] In contrast, some conservation organizations have expressed concern that in its efforts to support the timber industry, the Forest Service will allow levels of old-growth harvest during and after the transition that are environmentally detrimental.

Because the Tongass comprises approximately 80 percent of the land base in southeast Alaska, its resources are important to the economic health of the region.[5] For example, in addition to providing timber, the

[2]79 Fed. Reg. 30,074 (May 27, 2014). The National Forest Management Act of 1976, Pub. L. No. 94-588, as amended, requires the Forest Service to develop a plan to manage the lands and resources of each national forest and revise each plan at least every 15 years. A forest management plan provides a framework for integrated resource management and for guiding project and activity decision making on the forest. Plans also include standards and guidelines that affect how, when, and where activities can occur and usually include provisions intended to protect specific resources such as cultural and historical resources and wilderness areas.

[3]USDA, Forest Service, *Proposed Land and Resource Management Plan*, R10-MB-769c (Washington, D.C.: November 2015), and *Tongass Land and Resource Management Plan Amendment: Draft Environmental Impact Statement*, R10-MB-769a (Washington, D.C.: November 2015).

[4]Old-growth timber generally has different wood characteristics than young-growth timber, such as more attractive grain patterns that make it suitable for use in higher-end finished products.

[5]The Forest Service has reported that the Tongass comprises 78 percent of the land base in southeast Alaska. See USDA, Forest Service, *Tongass Land and Resource Management Plan: Final Environmental Impact Statement*, R10-MB-603a (Washington, D.C.: January 2008).

Tongass's lands and surrounding waters help support fisheries and tourism—two economic sectors that together represent approximately 25 percent of employment in the region, according to Forest Service statistics. In announcing its planned young-growth transition, USDA recognized that the transition could reduce timber industry employment because it would shift the timber program away from its historical reliance on old-growth harvest. The department stated that four agencies—USDA's Forest Service, Farm Service Agency, and Rural Development and the Department of Commerce's Economic Development Administration—would take steps to assist the timber industry and other economic sectors in southeast Alaska as part of the transition. These other sectors include fishing and aquaculture, tourism and recreation, and renewable energy.

You asked us to review the Forest Service's management of the Tongass timber program. This report describes (1) steps the Forest Service has taken to assess whether its planned transition will meet the agency's goal regarding a viable timber industry in southeast Alaska, (2) the status of actions the Forest Service and other federal agencies stated they would take to support the timber industry and other economic sectors during the transition, and (3) options suggested by agency stakeholders for improving the Forest Service's management of the Tongass timber program.

To conduct our work, we reviewed relevant laws and agency policies, guidance, and other documentation related to the management of the Tongass in general and to the planned transition in particular. We also reviewed data on historical timber harvest from publicly available Forest Service reports and information on related agency expenditures and revenues for the Tongass. We interviewed officials and obtained information from the Forest Service's Alaska Region and the Tongass National Forest, USDA's Farm Service Agency and Rural Development, and the Department of Commerce's Economic Development Administration. We also interviewed representatives of a nonprobability stratified sample of 30 Forest Service stakeholder organizations, including tribal, state, and local government officials; representatives of the timber, fishing and aquaculture, and tourism and recreation industries; and representatives of conservation organizations. We selected stakeholders to provide a range of perspectives on the Forest Service's management of the Tongass timber program. Because this is a nonprobability sample, the views of the stakeholders interviewed are not generalizable to all potential stakeholders, but provide illustrative examples. Appendix I lists the stakeholders we interviewed. Interview questions were designed to

obtain officials' and stakeholders' views on the Forest Service's management of the Tongass timber program and the agency's planned transition to young-growth harvest.[6]

To describe steps the Forest Service has taken to assess whether its planned transition to young-growth harvest in the Tongass will meet the agency's goal of preserving a viable timber industry in southeast Alaska, we reviewed Forest Service and stakeholder documents related to the potential economic effects of the transition. Documents reviewed included the Forest Service's November 2015 draft forest plan amendment and accompanying environmental analyses, studies conducted by the Forest Service's Pacific Northwest Research Station, and documents from timber industry and conservation organizations. To obtain additional context on these issues, we interviewed agency officials and stakeholders as described above. We also visited locations in the Tongass in March and July 2015, including previously harvested areas and active harvesting sites, as well as sites on nearby lands owned by the Sealaska Corporation,[7] to observe timber management practices in the region.[8]

To describe the actions USDA and the Forest Service stated the agencies would take to support the timber industry and other economic sectors in and around the Tongass, we reviewed USDA and Forest Service documents and, in consultation with Forest Service officials, identified three key documents identifying agency steps intended to support the transition. The three documents were USDA's 2011 investment strategy

[6]In this report, we use the following qualifiers when summarizing stakeholders' views: "few," which we define as two or three stakeholders; "some," which we define as four or more stakeholders; "the majority," which we define as at least half of the stakeholders; and "most," which we define as at least three-quarters of the stakeholders.

[7]On December 18, 1971, the Alaska Native Claims Settlement Act was enacted to resolve long-standing aboriginal land claims and to foster economic development for Alaska Natives. This federal law directed that corporations be created under Alaska state law to be the vehicles for distributing the settlement's land and monetary benefits to Alaska Natives. Sealaska is one such corporation. It conducts substantial timber harvesting and other forest management activities. For more information on Alaska Native corporations, see GAO, *Regional Alaska Native Corporations: Status 40 Years after Establishment, and Future Considerations*, GAO-13-121 (Washington, D.C.: Dec. 13, 2012).

[8]We selected harvest sites to visit to observe the effects of different types of silvicultural treatments (e.g., thinning of previously harvested stands) on growth and the practices required to be taken to protect environmentally sensitive areas (e.g., not harvesting trees adjacent to streams).

for southeast Alaska, which the department developed to support the transition; a 2013 "leader's intent" statement from Forest Service leadership in Alaska; and a 2013 memorandum from the Secretary of Agriculture.[9] To determine the status of the actions identified, we reviewed documents, including meeting minutes from an interagency working group that included the four agencies involved, and interviewed officials from each of the four agencies. We also interviewed representatives of the 30 stakeholder organizations to obtain perspectives on the actions.

To identify options for improving the Forest Service's management of the Tongass timber program, we interviewed representatives of the 30 stakeholder organizations to identify their views on concerns and challenges associated with the Forest Service's management of the Tongass timber program and its planned transition and options for addressing the challenges identified. We also interviewed agency officials to obtain their insights on the options stakeholders identified.

We conducted this performance audit from November 2014 to April 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

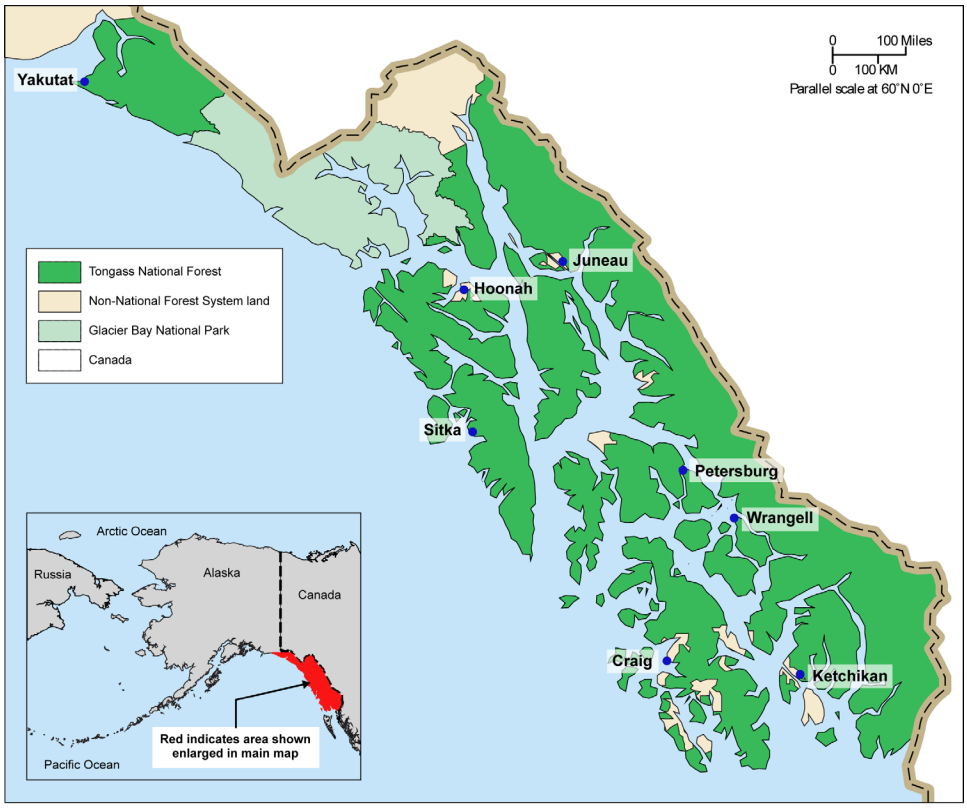
Background

The Tongass, one of 154 national forests managed by the Forest Service, is located in southeast Alaska and is the largest national forest in the country (see fig. 1). Given its size, the Tongass, within the Forest Service's Alaska Region, is divided into 10 ranger districts. The Tongass

[9]USDA, *USDA Investment Strategy in Support of Rural Communities in Southeast Alaska 2011-2013* (Washington, D.C.: November 2011); Forest Service, *Leader's Intent: Forest Stewardship and Young Growth Management on the Tongass National Forest* (Juneau: January 2013); and USDA, *Secretary's Memorandum 1044-009: Addressing Sustainable Forestry in Southeast Alaska* (Washington, D.C.: July 2013).

is approximately 16.7 million acres, about 10 million acres of which are forested.[10] Of the forested acres, the Forest Service classifies approximately 5.5 million acres as being "productive forest."[11]

Figure 1: Map of Southeast Alaska, Showing the Boundaries of the Tongass National Forest



Sources: Forest Service; MapResources (map). | GAO-16-456

Note: Non-national forest system land includes land owned by the State of Alaska, Alaska Native corporations, and individuals.

[10]Nonforested areas of the Tongass include areas covered by rock, ice or snow, or brush.

[11]The Forest Service defines productive forest as forested areas that contain or can produce a minimum volume of timber per acre—specifically, either a volume of 8,000 board feet of standing timber or an annual per-acre production of 20 cubic feet of timber. A board foot is a common measure for timber volume, equivalent to a board 12 inches long, 12 inches wide, and 1 inch thick.

Like other national forests, the Tongass is managed for multiple uses, of which timber harvest is one. Timber harvest on national forests is generally carried out under timber sales conducted by the Forest Service. To conduct a timber sale, the Forest Service identifies a sale area, conducts the required environmental analyses, appraises the timber, and solicits bids from buyers interested in purchasing the timber. The Forest Service then prepares the timber sale contract and marks the sale boundary and the trees to be cut or left. The purchaser is responsible for cutting and removing the timber, with the Forest Service monitoring the harvest operations.

The Forest Service expends funds to prepare, manage, and oversee timber sales and to conduct required environmental analyses. It also receives revenues for the timber it sells.[12] The Forest Service reported an average of $12.5 million annually in timber-related expenditures for the Tongass from fiscal years 2005 to 2014.[13] During that period, it reported receiving an average of $1.1 million in revenues associated with timber harvested from the Tongass.

The National Forest Management Act requires the Forest Service to develop forest plans to govern management activities such as timber harvesting. For timber harvest activities, forest plans typically identify areas where timber harvest is permitted to occur and set a limit on the amount of timber that may be harvested from the forest. The Forest Service is required by the act to update forest plans at least every 15 years and may amend a plan more frequently to adapt to new information or changing conditions. Under the current Tongass forest plan, as amended in 2008,[14] the Forest Service authorized up to 267 million board feet to be harvested annually from the Tongass. The 2008 plan generally prohibits timber harvest in roadless areas and in certain environmentally sensitive areas, such as near streams and beaches. Forest plans are

[12]Revenues from timber sales are generally deposited into the General Fund of the U.S. Treasury or directed to Forest Service funds and accounts established for specific purposes.

[13]These expenditures include funds related to the planning and administration of timber sales, information that was provided to us by Forest Service budget officials and reported in the agency's annual State of the Tongass report. They do not include agency expenditures related to road construction and maintenance.

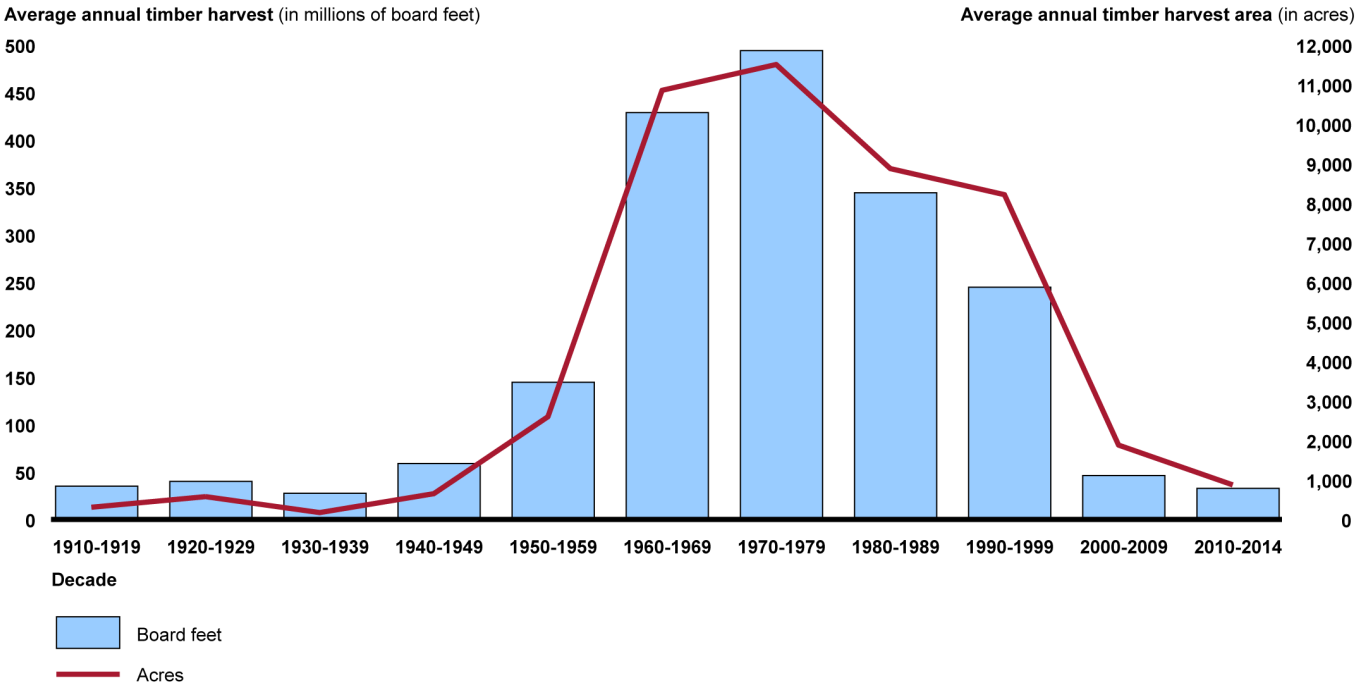
[14]USDA, Forest Service, *Tongass National Forest: Land and Resource Management Plan*, R10-MB-603b (Washington, D.C.: January 2008).

subject to the National Environmental Policy Act, under which the agency evaluates the likely environmental effects of its actions using an environmental assessment or, if the actions likely would significantly affect the environment, a more detailed environmental impact statement (EIS).[15]

The Forest Service began offering timber sales in the Tongass in the early 1900s. Timber harvest increased substantially in the 1950s, according to Forest Service statistics, as construction of pulp mills in Ketchikan and Sitka generated higher demand for Tongass timber (see fig. 2). Timber harvest peaked at an annual average of approximately 494 million board feet in the 1970s. Harvest has since declined, to an annual average of approximately 46 million board feet for 2000 through 2009 and to approximately 33 million board feet for 2010 through 2014. Timber industry employment has also declined, from approximately 2,500 in 1982 to 249 in 2014, according to Forest Service documents.

[15]Pub. L. No. 91-190 (1970), as amended. The National Environmental Policy Act has dual objectives: (1) requiring an agency to consider the significant environmental effects of a proposed action and (2) ensuring that the agency informs the public that it has considered environmental concerns in its decision-making process. While the act imposes these procedural requirements, it does not establish substantive standards.

Figure 2: Volume and Acreage of Tongass National Forest Timber Harvest by Decade, 1910 through 2014



Source: GAO analysis of Forest Service data. | GAO-16-456

Notes: Data come primarily from the Forest Service's Forest Products Cut and Sold reports, accessible at http://www.fs.fed.us/forestmanagement/products/sold-harvest/cut-sold.shtml.

A board foot is a measure of timber volume equivalent to a board 12 inches long, 12 inches wide, and 1 inch thick.

A number of laws and regulations have reduced the number of acres where timber harvest is allowed on national forests, both nationwide and in the Tongass. Specifically, according to statistics provided to us by Forest Service officials,[16] of the approximately 5.5 million acres of productive forest in the Tongass, approximately 2.4 million acres are not available for harvest because of statutory provisions, such as wilderness

[16]A Forest Service official told us in March 2016 that the agency expects the number of acres where timber harvest will not be allowed in the Tongass to increase for a variety of reasons, which the agency refers to as "falldown." We discuss this issue in greater detail later in this report.

designations, and another 1.8 million acres are not available for harvest because of other factors, such as USDA adopting the roadless rule.[17]

From the early 1900s through 2014, approximately 462,000 acres of timber were harvested in the Tongass, according to Forest Service officials, a figure representing approximately 8 percent of the productive forest originally found in the Tongass. Larger trees, which are important for wildlife habitat and biodiversity, have been harvested at a higher rate; the Forest Service has reported that 20 percent of Tongass acres containing the largest classes of trees have been harvested.[18] Many of the areas in southeast Alaska with the largest classes of trees, however, are located on lands not managed by the Forest Service, such as lands owned by Alaska Native corporations or the State of Alaska. Across all land ownerships, the Forest Service reported that 32 percent of the acres in southeast Alaska with the largest trees had been harvested.

In 2010, USDA announced its intent to transition the Tongass timber program to one predominantly based on young growth. The Secretary of Agriculture subsequently said that the transition would allow for more ecologically, socially, and economically sustainable forest management. In November 2015, the Forest Service released for public comment a draft EIS that analyzed five alternatives for undertaking the transition to young-growth harvest in the Tongass.[19] The Forest Service expects to

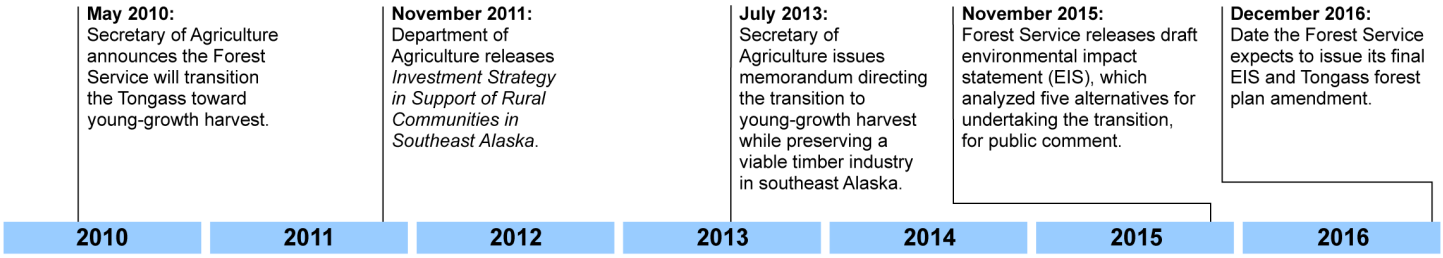
[17]The roadless rule, 66 Fed. Reg. 3244 (January 12, 2001), issued by USDA, generally prohibits timber harvesting in inventoried roadless areas within National Forest System lands nationwide, including the Tongass. The State of Alaska challenged the rule in court, arguing that USDA's decision to issue the rule violated, among other statutes, the National Environmental Policy Act, Alaska National Interest Lands Conservation Act, and the Tongass Timber Reform Act. USDA settled the suit by agreeing to propose an amendment to the rule that would exempt the Tongass and issued such an amendment in 2003. In 2009, in response to a challenge brought by the Native Alaskan village of Kake, among others, a federal district court struck down the exemption, holding that USDA had failed to provide a reasoned basis for issuing it. The State of Alaska's effort to have this decision reversed in federal appellate court was unsuccessful. The state sought Supreme Court review, which the Court denied in March 2016. A separate challenge by the State of Alaska to the roadless rule, filed in 2011, is pending in federal court as of April 2016.

[18]USDA, Forest Service, *Tongass Land and Resource Management Plan: Final Environmental Impact Statement*.

[19]USDA, Forest Service, *Tongass Land and Resource Management Plan Amendment: Draft Environmental Impact Statement*. We reviewed the draft EIS to identify the management alternatives the Forest Service identified and the outcomes the agency projected would result from each alternative, but we did not assess the economic or scientific information the Forest Service presented in the document.

issue a final EIS describing the agency's final decision regarding how it will implement the planned transition in December 2016. Figure 3 shows a timeline of events associated with the planned transition to young growth.

Figure 3: Timeline of Events Associated with the Forest Service's Transition to Young-Growth Timber Harvest in the Tongass National Forest



Source: GAO analysis of Forest Service information. | GAO-16-456

The draft EIS concluded that a substantial reduction in old-growth harvest relative to what the Forest Service allowed under the 2008 forest plan (e.g., by transitioning to young-growth harvest) would enhance the Forest Service's old-growth conservation strategy for the Tongass over the long term. In reaching this conclusion, the draft EIS noted that while many wildlife species in the Tongass are associated with more than one habitat type, most inhabit old-growth forests or prey on species that inhabit old-growth forests, and that certain areas of old-growth forest that are particularly important to many wildlife species had been heavily harvested.[20] It also recognized that recent legislation had removed from the Tongass certain old-growth reserves that had been designated as part of the agency's old-growth conservation strategy.[21]

The five alternatives described different time frames for making the transition (see app. II). In developing the alternatives, the Forest Service established 46 million board feet as the projected annual timber sale

[20]Specifically, the draft EIS reported that low-elevation old-growth forests hold the highest value for many wildlife species because they remain relatively accessible during winter and that these types of old-growth forests had been disproportionately harvested in the Tongass.

[21]In 2014, Pub. L. No. 113-291, § 3002, directed the conveyance of approximately 70,000 acres of the Tongass to the Sealaska Corporation, subject to certain conditions.

quantity—the estimated quantity of timber that the agency expects to sell each year during the first 15 years of the transition. The Forest Service considered different mixes of old- and young-growth harvest over a 100-year period, with the proportion of old-growth harvest decreasing over time until it reached the agency's target of 5 million board feet.[22] In the draft EIS, the Forest Service evaluated the five alternatives on a number of factors, including the time the agency projected it would take to reduce the annual old-growth harvest to 5 million board feet, and identified its "preferred alternative," which the agency projected would allow it to make the transition within 16 years after adopting the forest plan amendment (see table 1).[23]

Table 1: Estimated Annual Timber Harvest Levels for the Tongass National Forest under the Forest Service's Draft Environmental Impact Statement Preferred Alternative

	Million board feet			
Type of timber harvested	Years 1-5[a]	Years 6-10[a]	Years 11-15[a]	Years 16-20[a]
Young growth	9.0	9.4	25.0	66.0
Old growth	37.0	36.6	21.0	5.0
Total	**46.0**	**46.0**	**46.0**	**71.0**

Source: GAO presentation of information in Forest Service, *Tongass Land and Resource Management Plan Amendment: Draft Environmental Impact Statement.* | GAO-16-456

Notes: The Forest Service generally defines old-growth forests in southeast Alaska as those older than 150 years. Young growth generally consists of trees that have re-grown after the harvest of old growth.

A board foot is a measure of timber volume equivalent to a board 12 inches long, 12 inches wide, and 1 inch thick.

[a]Years are measured from the date the Forest Service adopts the forest plan revision for the Tongass National Forest.

To achieve the young-growth harvest levels projected in the preferred alternative, the Forest Service stated that it would allow some harvest in areas where it is not allowed under the 2008 forest plan, such as certain areas near streams and beaches. According to Forest Service officials, these areas were often among the first to undergo old-growth harvest in

[22]As noted, approximately 33 million board feet of timber was harvested annually from 2010 through 2014, nearly all of which was old growth.

[23]In preparing an EIS, an agency is to describe the action it is proposing as well as any alternatives it is considering. The EIS must also identify the agency's preferred alternative if one or more exists. 40 C.F.R. § 1502.14.

the 20th century and contain some of the most mature young-growth stands in the Tongass. Without access to these areas, Forest Service officials told us, it will be difficult for the agency to achieve the young-growth harvest levels associated with the preferred alternative. As a result, Forest Service officials said, allowing limited harvest in these areas is needed for the agency to increase its harvest of young-growth timber in the early years of the transition sufficiently to reduce the harvest of old-growth timber.

Timber harvest in the Tongass also affects other economic sectors in southeast Alaska that depend on natural resources—including fishing and tourism, which, as noted, represent approximately 25 percent of employment in the region. For example, salmon, which spawn in streams in the Tongass, are key species for the commercial fishing industry, and timber harvest can alter water flow and sediment runoff, both of which can affect salmon. Timber harvest may also diminish the scenic and natural values that attract some visitors to the region, potentially affecting the tourism industry. Conversely, roads that are constructed as part of timber sales may provide easier access to hunting and berry-picking sites in the Tongass. In addition, numerous small communities are located in or adjacent to the Tongass. The Forest Service, in its draft EIS, recognized that its management decisions affect those communities and also that some communities may be disproportionately affected by these decisions.[24]

The *USDA Investment Strategy in Support of Rural Communities in Southeast Alaska 2011-2013* identified four federal agencies with diverse missions—the Forest Service, Farm Service Agency, and Rural Development within USDA and the Economic Development Administration within the Department of Commerce—involved in actions

[24]The draft EIS noted that 22 of the 32 communities in southeast Alaska lost population from 2000 through 2014 and that declining population is often accompanied by declining local tax bases and school enrollments. The State of Alaska has a 10-student minimum for a school to receive state funding, and the Forest Service reported in the draft EIS that five schools in southeast Alaska had closed since 2000 and eight schools were close to dropping below the 10-student threshold.

to help support the timber industry and other economic sectors as part of the planned transition to young-growth harvest.[25]

- The **Forest Service** manages 154 national forests and 20 national grasslands for multiple uses, including timber, recreation, and watershed management and to sustain the health, diversity, and productivity of these lands to meet the needs of present and future generations.
- The **Farm Service Agency** administers a variety of programs benefitting farmers and ranchers, including farm commodity programs, farm loans, and conservation programs.
- **Rural Development** administers financial programs to support public facilities and services such as water and sewer systems, housing, health clinics, and emergency service facilities. It also provides grants, loans, and loan guarantees to farmers, ranchers, and rural small businesses to assist in developing renewable energy systems and improving energy efficiency.
- The **Economic Development Administration** fosters regional economic development efforts by, for example, offering grants to support development in economically distressed areas.

Forest Service Has Initiated Steps to Assess the Economic Viability of a Young-Growth Timber Industry in the Tongass

The Forest Service has initiated some steps to assess whether its planned transition to young-growth harvest in the Tongass is likely to support a viable timber industry in southeast Alaska—one of the key goals laid out in the Secretary of Agriculture's 2013 memorandum discussing the transition. The Forest Service has estimated the volume of young-growth timber available for harvest over the next 100 years and has also identified a number of factors that may affect the viability of a young-growth timber industry in southeast Alaska. Forest Service officials told us the agency has also begun an effort to compare the potential market prices for young-growth timber or products to the cost to harvest, transport, and process the timber.

[25]In addition to the four agencies identified in the *Investment Strategy*, Forest Service officials told us that another USDA agency, the Natural Resources Conservation Service, later joined the department's efforts to support southeast Alaska during the young-growth transition by, for example, providing technical and financial assistance to private landowners for conservation actions.

Forest Service Has Estimated the Volume of Young-Growth Timber Available for Harvest in the Tongass

One key factor in the viability of the timber industry in southeast Alaska is the volume of timber—both young growth and old growth—available to be harvested.[26] To support its planned transition to young-growth harvest, the Forest Service identified the number of acres of young-growth forest suitable for timber production in the Tongass—251,000 acres—and used a model that projects forest growth to estimate the volume of timber those acres will contain over the next 100 years. Using this information, the Forest Service in November 2015 published its draft EIS that evaluated five alternatives for amending the forest plan for the Tongass to facilitate the transition to young-growth harvest.

In its draft EIS, the Forest Service reported taking a number of steps to refine its data on the amount of young-growth timber available for harvest in the Tongass. For example, it reported updating its young-growth timber inventory, including removing from agency databases those lands previously managed by the Forest Service that have been conveyed to other parties.[27] It also reported contracting with a consultant to develop the model used to project future growth and timber yields from young-growth timber stands in the Tongass.

The Forest Service also recognized that a number of factors could reduce the harvest of young-growth timber below the volume the agency estimated to be available and took steps to account for this potential reduction—referred to as "falldown"—in its estimates of young growth availability. Agency data on young-growth volume used in the draft EIS include some timber that will not be economically feasible to harvest or that is located in areas where harvest will not be allowed. For example, a Forest Service official told us that some young-growth areas consist of small or isolated areas where the volume of timber is insufficient to warrant the cost of harvesting it. In addition, timber harvest is not allowed in proximity to fish-bearing streams, and some young-growth areas may contain fish-bearing streams that were not previously identified by the agency. The official explained that factors such as these are likely to reduce the volume of young-growth that will be harvested but are often

[26]An industry's dependence on the availability of inputs into its production is consistent with economic principles.

[27]As noted, in 2014, Pub. L. No. 113-291, § 3002, directed the conveyance of approximately 70,000 acres of the Tongass to the Sealaska Corporation, subject to certain conditions.

not discovered until the agency begins to prepare a timber sale in a particular area. In developing the alternatives for the draft EIS, the Forest Service reduced its estimate of the volume of young-growth timber available to be harvested to account for such falldown. The Forest Service also identified factors—such as the agency's cost of preparing timber sales and potential delays because of appeals and lawsuits—that could affect its ability to sell the volume of timber it projected in the draft EIS.

The Tongass Advisory Committee—a group convened by the Secretary of Agriculture under the Federal Advisory Committee Act—also recognized the uncertainty surrounding the volume of timber that will be able to be harvested, and recommended in December 2015 that the Forest Service support a stakeholder group that would monitor progress in achieving the timber harvest levels proposed in the draft EIS.[28] In January 2016, Forest Service officials told us they agreed that monitoring would be important to help the agency and its stakeholders understand the extent to which the agency was meeting its projected harvest levels, but had not decided on how they would do so. The officials said that they expected the final forest plan amendment to describe the agency's planned monitoring activities. Officials also told us that the Forest Service intends to continue refining its young-growth timber data, noting, for example, that in July 2015 the agency signed a cost-share agreement with the State of Alaska to survey additional young-growth areas.

Forest Service Has Identified Factors Affecting the Viability of a Young-Growth Timber Industry

In addition to the supply of timber available, the viability of a young-growth timber industry in southeast Alaska is affected by the demand for young-growth wood, which in turn is affected by the value (i.e., market price) of the wood products made from it; the value of these products depends in part on the cost of producing them. Young growth has

[28]The Secretary of Agriculture established the Tongass Advisory Committee in 2014 to provide advice and recommendations for "developing an ecologically, socially, and economically sustainable forest management strategy on the Tongass National Forest." The committee issued draft recommendations in May 2015 and final recommendations in December 2015. The committee has 15 members representing tribal organizations; conservation organizations; the timber industry; federal, state, and local governments; and other users of the Tongass. For more information, see http://www.fs.usda.gov/detail/tongass/home/?cid=stelprdb5444388. The committee was established under the Federal Advisory Committee Act, which articulates certain principles regarding advisory committees, including broad requirements for balance, independence, and transparency. Pub. L. No. 92-463, 86 Stat. 770 (1972), as amended.

different wood characteristics, such as appearance, than old growth, which can affect its value. According to the draft EIS, southeast Alaska is one of the few places in western North America that produces wood from slow-grown, large trees (i.e., old growth). Wood from such trees may have more attractive grain characteristics and be used for higher-value products—such as musical instruments or certain types of window frames and doors—where appearance is important. In contrast, the draft EIS reported that wood from young-growth trees from the Tongass is more likely to be used for lower-valued products, such as dimension lumber (i.e., lumber used for structural framing), where appearance is not as important. With regard to production costs, the Forest Service has identified several challenges facing the timber industry in southeast Alaska—including higher labor and energy costs and the industry's distance from markets in the contiguous United States—that raise its costs compared to other timber-producing areas of North America. On the other hand, southeast Alaska is closer to Asia—historically a significant market for timber from southeast Alaska—than these other timber-producing areas, which Forest Service officials told us could result in lower relative costs to ship timber from the Tongass to Asian markets. Forest Service officials told us they recognized these factors, and that both the agency and the industry are exploring the types of products that can be produced in an economically viable manner from Tongass young growth.

Young-growth timber harvested from the Tongass can be either shipped unprocessed out of the region or processed into lumber or other products in southeast Alaska. In either case, timber and products from the Tongass compete in broad economic markets and are likely to face challenges competing in those markets, according to the Forest Service's draft EIS. For example:

- **Young-growth logs for export**.[29] Exporting sawlogs (i.e., unprocessed logs) is likely to be a major component of the southeast Alaska timber industry during the transition, according to the draft EIS. The draft EIS reported that most timber harvested in southeast Alaska, including from the Tongass and from lands owned by Alaska Native corporations and the State of Alaska, is exported as sawlogs to

[29]The Forest Service and stakeholders use the term "exported" to refer to timber shipped outside of southeast Alaska, regardless of whether that wood is shipped to other countries or to other parts of the United States.

Asia. The transition to young-growth timber may affect this market (e.g., by increasing the proportion of lower-value timber harvested), but the draft EIS indicates that the agency expects that timber purchasers are likely to continue to rely heavily on exporting sawlogs overseas. However, the Forest Service also recognized that the ability of purchasers to export sawlogs harvested from the Tongass is limited under current Forest Service policy to 50 percent of timber volume sold.[30]

- **Young-growth lumber.** The Forest Service, in its draft EIS, concluded that demand for lumber (as opposed to unprocessed logs) produced in southeast Alaska was relatively low. The existing export market for lumber produced in southeast Alaska is primarily for higher-graded lumber made from old-growth trees, while the major use for young-growth lumber processed in southeast Alaska is likely to be for dimension lumber (i.e., lumber used for structural framing), for which demand may be lower, according to the Forest Service. In its draft EIS, the Forest Service assumed that Asian purchasers would not be willing to substitute dimension lumber produced from young-growth trees for the higher-graded lumber they had previously been purchasing. Dimension lumber produced in southeast Alaska could also be used within southeast Alaska or shipped to the contiguous United States.[31] However, Forest Service officials and stakeholders told us that these markets are already served by relatively large, efficient mills located in the Pacific Northwest and that because production costs are higher in southeast Alaska, it will be challenging for dimension lumber from the Tongass to compete with lumber from existing suppliers. In addition, the Forest Service has reported that existing southeast Alaskan mills have limited capacity to process young growth and will likely have to invest in new milling equipment if they are to significantly expand their production of lumber produced from young growth. Forest Service officials and industry representatives also told us the industry is unlikely to invest the needed funds without more certainty about the amount of timber that will be offered for sale and harvested.

[30]In 2007, the Alaska Regional Forester approved the Limited Interstate Shipment Policy, which generally allows purchasers to ship up to 50 percent of the total volume of a timber sale out of state, including to foreign markets, in whole log form.

[31]The Forest Service, citing an estimate by a forest products consulting group, reported that the market for dimension lumber in southeast Alaska could total approximately 100 million board feet annually.

- **Young-growth utility logs**. Another potential use for Tongass young-growth noted in the draft EIS is as "utility logs"—that is, logs of insufficient quality to use for dimension lumber but suitable to be made into chips or used as biofuel. Increasing the use of biofuels in southeast Alaska could increase demand for utility logs from the Tongass and contribute to the viability of the timber industry in the region, according to the draft EIS. Doing so, however, would require investment in new infrastructure to produce and use these products. Forest Service officials told us that such investment is likely to be difficult because of both the uncertainty of demand in the region and the availability of large quantities of biofuel produced by facilities in the Pacific Northwest. Consistent with these statements, the Forest Service reported in a document developed to support the draft EIS that it found no evidence of market demand for utility logs from the Tongass.[32]

Forest Service Has Begun an Effort to Compare the Potential Prices for Young-Growth Products to the Cost of Producing Them

The viability of the timber industry depends upon the relationship between the market price of the final product (whole logs, dimension lumber, biomass, or other products) and the cost of producing it, including the cost to harvest, transport, and process it. In preparing the draft EIS, the Forest Service analyzed information regarding the economics of the Tongass timber industry. In 2015, the Forest Service also initiated a separate study of the costs of producing products from young-growth wood and the resulting value. These officials told us they initiated the study partly in response to the May 2015 draft recommendations from the Tongass Advisory Committee and said they expect to finalize the scope and time frames for the study in spring 2016 and to receive initial results in 2017. The Forest Service scientists leading the study told us the agency plans to harvest young-growth timber from randomly selected sites within the Tongass and process the timber in several mills in southeast Alaska and the Pacific Northwest. They said the agency intends to evaluate both the mills' efficiency in processing the young-growth wood and the strength and appearance of the resulting products and to obtain information related to the processing costs and value of the

[32]J. M. Daniels, M. D. Paruszkiewicz, and S. J. Alexander, *Tongass National Forest Timber Demand, Projections for 2015 to 2030,* Gen. Tech. Rep. PNW-GTR-934 (forthcoming).

products.[33] Forest Service officials said the study's results may help the agency assess the economic viability of a Tongass young-growth timber industry. Even with these steps, however, in its November 2015 draft EIS the Forest Service stated that there is a high degree of uncertainty surrounding its goal of preserving a viable timber industry.

Federal Agencies Have Taken Steps to Implement Some Actions They Identified to Support the Timber Industry and Other Economic Sectors during the Transition

USDA and the Forest Service identified various actions they and other federal agencies would take to support the timber industry and other economic sectors during the transition to young-growth harvest in the Tongass, and the agencies have taken steps to implement some of these actions. These actions, which are identified in three documents issued by USDA and the Forest Service since 2010,[34] focus on four economic sectors in southeast Alaska: timber, fishing and aquaculture, tourism and recreation, and renewable energy.[35] However, the agencies have not implemented other actions they said they would take, because of other priorities or consideration of other approaches, according to agency officials.

Timber

USDA and the Forest Service have taken steps to implement some of the actions they stated they would take to support the timber industry in southeast Alaska during the young-growth transition. For example:

[33]The study will not examine the cost of harvesting and transporting young-growth timber because the size and location of harvest sites (which affect harvest and transport costs) in the study are not representative of typical timber sales, according to Forest Service officials. One of the officials told us that the agency already has estimates of these costs.

[34]Our review focused on actions the agencies identified in three documents: USDA, *USDA Investment Strategy in Support of Rural Communities in Southeast Alaska 2011-2013*; Forest Service, *Leader's Intent: Forest Stewardship and Young Growth Management on the Tongass National Forest*; and USDA, *Secretary's Memorandum 1044-009: Addressing Sustainable Forestry in Southeast Alaska*.

[35]Forest Service and Rural Development officials told us the agencies contracted with the Juneau Economic Development Council to work with regional interests related to these sectors. The Juneau Economic Development Council is a private nonprofit corporation that receives assistance from the City and Borough of Juneau and the Juneau Chamber of Commerce.

- *The USDA Investment Strategy in Support of Rural Communities in Southeast Alaska 2011-2013* stated the Forest Service would improve its Tongass timber planning processes by simplifying small timber sales to assist small-mill owners.[36] Forest Service officials told us the agency has met with small-mill owners to discuss ways to address the mill owners' needs. As a result of this outreach, the Forest Service lengthened the duration of some timber sale contracts for small sales; according to Forest Service officials, small sale contracts typically last from 1 to 3 years, but the agency lengthened the duration to 4 to 6 years for 8 of the approximately 60 small sales in the Tongass in fiscal years 2014 and 2015. This action provided small-mill owners with flexibility to harvest at more-advantageous times, according to Forest Service officials.

- The 2013 *Secretary's Memorandum 1044-009*: *Addressing Sustainable Forestry in Southeast Alaska* stated that USDA would continue to work with Congress to exempt a limited amount of young growth in the Tongass from the general prohibition on harvesting a stand until it reaches its maximum growth rate.[37] The memorandum said providing this flexibility is essential for developing economically viable young-growth projects within the timeframe of the transition. In 2014, Congress approved additional flexibility, which gave the Secretary of Agriculture authority to allow the harvest of these young-growth trees in areas that are available for commercial timber harvest.[38]

[36]According to the Forest Service, all but one mill in southeast Alaska have 12 or fewer employees, and a Forest Service official told us the agency considers these to be small mills. The remaining mill employs about 40 people and is considered medium-sized by the Forest Service.

[37]The National Forest Management Act generally prohibits harvesting of tree stands that have not reached their culmination of mean annual increment of growth (CMAI). 16 U.S.C. § 1604(m)(1). This is the age in the growth cycle of an even-aged stand of trees at which the average annual rate of increase of volume is at a maximum—meaning that once a stand of trees reach CMAI, its annual growth rate begins to slow. According to USDA documentation, CMAI may be thought of as the most efficient time to harvest with respect to tree growth.

[38]Specifically, the legislation authorizes the harvest of trees prior to reaching CMAI in areas that are available for commercial timber harvest under the Tongass forest plan to facilitate the transition from commercial timber harvest of old growth stands. Pub. L. No. 113-291 § 3002(e)(4)(A). This authority is subject to certain limitations, including that covered timber sales may not exceed 15,000 acres during the 10-year period beginning on the law's enactment date (December 19, 2014), with an annual maximum of 3,000 acres sold. Id. at § 3002(e)(4)(B)(i).

- *The 2013 Leader's Intent: Forest Stewardship and Young Growth Management on the Tongass National Forest* document, signed by officials from the Forest Service's Alaska Region and the Tongass, stated the Forest Service would expand collaborative projects and partnerships with local communities, businesses, and nonprofit groups to support job creation through sustainable forest management. In 2015 the Forest Service entered into a partnership with the Native and Rural Student Center, which provides leadership training and academic support to Native Alaskan college students on University of Alaska campuses, and the Hoonah Indian Association, a tribal government in southeast Alaska. Forest Service officials told us that under this partnership, a local work crew is being developed to gain forestry skills and complete projects such as tree thinning in the Tongass. The officials said the first projects under this partnership are expected to be completed in 2016 or 2017.

- Documents on the transition issued by USDA and the Forest Service stated that the Forest Service would support the transition by studying young-growth supply, the cost of harvesting, transporting, and processing young-growth timber, and the value of the resulting products. As discussed previously, the agency has taken steps to study these issues.

The agencies have not implemented other actions they said they would take because of other priorities or consideration of other approaches. For example:

- The *Investment Strategy* stated that the Forest Service would promote and facilitate the use of young-growth timber in southeast Alaska by using young-growth wood for cabins and other recreational structures, and that the Forest Service would request an additional $1 million in funding to construct cabins made from young-growth timber in high-visibility campgrounds. However, Forest Service officials told us that the agency did not request funding because of other spending priorities, and that no cabins have been built since the *Investment Strategy* was published in 2011.[39] A few conservation organization stakeholders we interviewed told us that the Forest Service's limited progress in using young-growth timber in its own facilities hinders the

[39]Forest Service officials identified two cabins that were built using young-growth timber before the *Investment Strategy* was published: one in the Sitka Ranger District in 2008 and one in the Wrangell Ranger District in 2010.

agency's ability to achieve its goal of demonstrating the economic viability of producing young-growth products in southeast Alaska. Forest Service officials told us that other approaches, such as demonstrating the demand for dimensional lumber, might be a better option than constructing cabins for showing the economic viability of young-growth products. Forest Service officials told us the agency is collaborating with the National Forest Foundation to work with a local conservation group to demonstrate uses for young-growth timber, including the construction in 2012 of a private home built primarily from young-growth timber.[40]

- The 2013 *Secretary's Memorandum* asked the Forest Service to work with Rural Development to develop a plan by December 31, 2013, for providing financial assistance to help the timber industry retool to handle young-growth timber. As of December 2015, the agencies had not developed such a plan because they had been focusing on other priorities related to the transition, such as completing the draft EIS, according to Forest Service officials. Forest Service officials told us in January 2016 that they were developing a request for proposal for an outside party to conduct an assessment of the industry's retooling needs and estimated that results from the assessment might be available in 9 to 12 months. They also said that the study the agency initiated in 2015 on the economic viability of the young-growth timber industry would provide information to inform retooling options. Rural Development officials told us the agency could provide loans to help the industry retool.

Fishing and Aquaculture

The agencies have taken steps to implement some of the actions they stated they would take to support fishing and aquaculture in southeast Alaska. For example:

- USDA's *Investment Strategy* stated the agencies would strengthen the aquaculture industry in southeast Alaska by providing support to entrepreneurs in the industry. Rural Development officials reported that in fiscal years 2012 and 2013 the agency guaranteed four loans, totaling about $1.4 million, that supported fishing and aquaculture development in the region. Similarly, the Economic Development

[40]The National Forest Foundation is a nongovernmental organization chartered by Congress that works with communities to restore and enhance national forests and grasslands.

Administration reported awarding approximately $1.4 million in grants in fiscal years 2013 and 2014 to support fishing and aquaculture in southeast Alaska, most of which was awarded to the Hydaburg Cooperative Association, a tribe in southeast Alaska, for the renovation of a cold-storage facility to develop a specialty seafood processing plant.

- The *Investment Strategy* also stated the agencies would identify and promote ways to include aquaculture development among traditional USDA agriculture programs. Farm Service Agency officials told us the agency used an existing farm loan program to provide five loans since 2011 to parties entering the shellfish industry. These loans totaled about $160,000 and were used to fund operational and capital expenses, according to these officials.

- The *Investment Strategy* also stated the agencies would take steps to restore degraded salmon streams in an effort to increase salmon productivity. Forest Service officials estimated, based on budget documents, that the agency's annual funding for watershed restoration in the Tongass averaged approximately $1.1 million for fiscal years 2011 through 2015. Restoration projects included replacing and resizing road culverts to improve fish passage and placing woody debris into streams to improve fish habitat.

In contrast, the Forest Service did not implement a proposed increase in funding for fishing and aquaculture because of other priorities. The *Investment Strategy* stated that the Forest Service proposed tripling the annual funding for watershed restoration (i.e., actions intended to improve fish habitat in streams and thereby support the health of fish populations) in the Tongass to $4.6 million annually. As noted, however, Forest Service officials estimated that agency funding for such activities averaged approximately $1.1 million for fiscal years 2011 through 2015. A Forest Service fisheries official told us that it has been difficult to increase funding for watershed restoration in Alaska because watershed conditions in Alaska are generally better than elsewhere and the region is therefore a lower priority for the agency.

Tourism and Recreation

The agencies have implemented some of the actions they stated they would take to support tourism and recreation in southeast Alaska. For example:

- The *Investment Strategy* stated that the Forest Service would increase guided access to public land. Since 2012, the Forest Service has increased the amount of commercial outfitting and guiding services it allowed in the Mendenhall Glacier Recreation Area, near Juneau, to meet increased demand for guided services and access to this site. This change has increased visitation to the Mendenhall Glacier by an estimated 15,000 visitors annually and, from 2012 through 2015, generated an additional $5 million in revenues for tour companies, according to a contractor hired by the Forest Service.[41]

- The *Investment Strategy* also stated that USDA agencies would take steps to develop recreation infrastructure. Forest Service officials told us the agency conducted trail improvement projects in 2015 on the Juneau, Petersburg, and Craig Ranger Districts.

In contrast, the Forest Service did not request an increase in funding for agency projects supporting tourism and recreation as proposed in USDA's *Investment Strategy*. Specifically, the strategy identified $1.9 million in planned expenditures for fiscal years 2012 and 2013 and recommended $8.4 million in additional funding for those 2 years. Forest Service officials told us, however, that they did not request additional funding for the Tongass and that the budget for the agency's Alaska Region declined during this time. They estimated that the region's budget for tourism and recreation decreased from $8.8 million in fiscal year 2010 to $6.7 million in fiscal year 2013—a decline of about 24 percent.[42] The officials estimated that the budget for fiscal year 2014 was $7.1 million, which was an increase of about 4 percent over the previous year's level but lower than the 2010 funding level of $8.8 million. The selected tourism and recreation industry representatives we interviewed expressed concern about reduced funding, as they did not think the Forest Service would be able to maintain the current inventory of cabins, trails, and other recreation facilities. Forest Service officials told us the agency has focused on maintaining existing facilities rather than constructing new

[41]From December 2011 through June 2015, the nonprofit Juneau Economic Development Council was contracted by the Forest Service to conduct economic development research. The council worked with the Forest Service and other federal and state agencies to support economic development in southeast Alaska.

[42]Officials provided estimates of these amounts because funds for tourism and recreation, which include funds from two larger "budget line items," are not separately identified in the Forest Service's accounting system.

ones but determined in 2014 that it would close up to 10 of the 143 cabins in the Tongass given budget reductions.[43]

Renewable Energy

The agencies have taken steps to implement some of the actions they identified to support renewable energy development in southeast Alaska during the transition.[44] For example:

- USDA's *Investment Strategy* stated that the Forest Service would provide technical assistance related to the planning and installation of biomass energy systems. The Forest Service reported providing such assistance from 2011 through 2015 to at least 19 localities, businesses, tribal entities, and individuals. Assistance included identifying potential biomass projects in communities, evaluating the design and economic viability of projects, answering questions about biomass technology use, and identifying funding sources for projects. Forest Service officials highlighted a project at the Ketchikan International Airport as an example of the agency's efforts. The Forest Service provided technical assistance and a $143,000 grant to convert the airport terminal to a biomass heating system. The project was scheduled to be completed in 2016, according to a Forest Service official. Similarly, the agency reported providing various types of assistance—including public presentations and education, fuel assessments, and design reviews of plans—to support the development of a biomass system for community facilities in Haines.

- The *Investment Strategy* also stated the USDA agencies would work to develop demand for biomass energy. Agencies have taken steps to do so. For example, Rural Development officials said that in fiscal years 2012 through 2014 the agency provided at least three grants,

[43]The Senate committee report accompanying the Department of the Interior, Environment, and Related Agencies Bill for fiscal year 2016 noted that funding for recreation, trails, and facilities in the Alaska Region had declined at a disproportionately higher rate compared to other regions. The report directed the Forest Service to prioritize such funding for the Tongass and to bring investments in the Alaska Region more in line with funding nationwide. S. Rep. No. 114-70 at 63 (2015).

[44]Renewable energy refers to the generation of electricity, fuels, or heat through the use of resources that are continually replenished. Sources of renewable energy include biomass fuel, hydropower, solar, and wind. For more information on the development of renewable energy on federal lands, see GAO, *Renewable Energy: Agencies Have Taken Steps Aimed at Improving the Permitting Process for Development on Federal Lands*, GAO-13-189 (Washington, D.C.: Jan. 18, 2013).

totaling about $1.2 million, to support renewable energy development in southeast Alaska.

- In the *Investment Strategy*, USDA said the Forest Service would approach the Southeast Conference organization about sponsoring the development of a biomass energy plan for the region.[45] The Forest Service has worked with the Southeast Conference to assess the potential for increasing the use of biomass energy in southeast Alaska and, in September 2015, published the Community Biomass Handbook, which offers instructions on designing and planning biomass projects as well as information on where biomass systems are being used in the region.[46] The agency's partnership with the Southeast Conference resulted in about 30 feasibility studies funded predominantly by the Forest Service and approximately 10 biomass systems in southeast Alaska, according to Forest Service officials.

- Also in the *Investment Strategy*, USDA said the Forest Service would, where feasible, substitute woody biomass for diesel fuel to meet the energy needs of southeast Alaska. The agency has taken some initial steps to do so. For example, officials told us that the agency was converting its facility in Sitka from diesel fuel to biomass energy, a project they expect the agency to complete in summer 2016. The Forest Service had previously converted a visitor center in Ketchikan to a wood-fueled heating system, although the building is no longer using this system, which the agency reported was too large for the facility and had high operating costs.[47]

The agencies, however, no longer plan to implement some actions they previously identified, according to agency officials. For example, the *Investment Strategy* stated that, to help "kick start" the biomass energy industry in southeast Alaska, the Farm Service Agency would encourage the use of a nationwide program that provides financial incentives to the

[45]The Southeast Conference, a nonprofit organization composed of 180 member organizations from 32 regional communities, advocates for resource management and economic development planning issues in southeast Alaska.

[46]Forest Service, *Community Biomass Handbook, Volume 2: Alaska, Where Woody Biomass Can Work*, PNW-GTR-920 (Portland, OR: 2015).

[47]Forest Service officials told us in January 2016 that the agency was working with the General Services Administration in an effort to connect the visitor center to an existing biomass heating system.

biomass industry. A Farm Service Agency official in southeast Alaska, however, told us the nationwide program is not being used in the region because funding is limited and national program officials had decided to target existing biomass industry businesses rather than new ones, and there were no such businesses in southeast Alaska.

Stakeholders Identified Options They Said Would Improve Management of the Tongass Timber Program While Expressing Divergent Opinions about the Program's Overall Direction

Representatives we interviewed from the 30 selected Forest Service stakeholder organizations identified a variety of options they said would improve the agency's management of the Tongass timber program. These stakeholders also expressed strong differences of opinion regarding the overall direction of the Tongass timber program.

Stakeholders Identified Various Options for Improving the Management of the Tongass Timber Program

Options stakeholders identified for improving the Forest Service's management of the Tongass timber program included:

- **Improving predictability of timber available for sale.** The majority of the seven timber industry stakeholders we interviewed told us the Forest Service does not offer a predictable amount of timber for sale from year to year. These stakeholders emphasized the importance of predictability for the timber industry to be able to make decisions about how to retool to accommodate young-growth trees—which they said is important given potential changes to the industry as a result of the planned transition. Options for improving predictability identified by these timber industry stakeholders ranged from offering timber sales under longer-term contracts—as a means of providing greater certainty over the quantity of timber they will be allowed to harvest in future years—to transferring significant acreage from the Tongass to the State of Alaska, an entity some timber industry stakeholders viewed as offering a more predictable timber supply than the Forest Service. On the other hand, one of the conservation organization stakeholders we interviewed said that the Forest Service could

improve the predictability of supply by reducing the volume of timber it offers for sale and offering timber for sale in locations where there will be less environmental impact, steps the stakeholder said could reduce opposition to proposed timber sales and increase the likelihood of sales being implemented in a timely manner.[48]

In an effort to improve the predictability of its timber supply, the Forest Service is participating in the collaborative "all lands, all hands" effort with other southeast Alaska landowners to explore ways of achieving greater economic efficiency by sharing infrastructure and jointly planning projects. As part of this effort, Forest Service officials told us they have coordinated with the Alaska Division of Forestry on the timing of timber sales to try to ensure a more predictable and even flow of timber offered to the timber industry. Alaska Division of Forestry officials told us that this effort has been helpful but that continued work will be needed to improve collaboration among landowners on issues such as sharing costs for maintaining roads and other infrastructure.

- **Increasing focus on small timber operators.**[49] Some of the 30 stakeholders we interviewed said that the Forest Service could do more to support the small operators that also play a role in local economies throughout the Tongass by harvesting small amounts of old-growth timber. These stakeholders suggested the Forest Service take steps such as offering smaller sales and making other changes—such as allowing small operators greater use of roads constructed in conjunction with larger sales—to make it easier for smaller operators to access timber. As previously discussed, Forest Service officials told us they had taken several steps to assist smaller operators, including

[48]In 2013, the Forest Service approved the Big Thorne timber sale, which was designed to provide the southeast Alaska timber industry with a steady supply of old-growth timber for several years and thus help sustain the industry until more young-growth timber was available for harvest. The Big Thorne timber sale is being challenged in court by conservation organizations. There are three cases challenging the sale: Southeast Alaska Conservation Council, et al. v. U.S. Forest Service, et al., No. 1:14-cv-00013-RRB; In re Big Thorne Project and 2008 Tongass Forest Plan, 1:14-cv-0014-RRB; Cascadia Wildlands et al. v. Cole, No. 1:14-cv-00015-RRB. The district court consolidated these cases and dismissed them. Plaintiffs' appeal is pending before the Ninth Circuit. Southeast Alaska Conservation Council, et al. v. U.S. Forest Service, et al., Nos. 15-35232, 15-35233, 15-35244.

[49]Timber operators include not only mills but also others involved in the timber sector, such as loggers and truck drivers.

lengthening the duration of some small timber sales. Officials told us that for two timber sales in 2012 and 2013, they kept several roads open for approximately 2 years after the sales were completed to allow access to remaining timber by smaller operators.

- **Improving Forest Service collaboration.** Some of the stakeholders we interviewed also said the Forest Service needed to collaborate more with the industries and communities affected by the transition—for example, by involving community leaders earlier in the decision-making process and better considering the effects of management decisions on specific locations—if the young-growth transition is to be successful. Similarly, the Tongass Advisory Committee emphasized the need for the Forest Service to become more flexible and responsive to timber industry and community interests for the transition to be successful. To help achieve that goal, the committee said Forest Service leadership needed to provide clear and consistent direction to agency staff, and the agency needed to increase the use of collaborative processes in its management decisions.

  Forest Service officials identified various approaches the agency uses to collaborate with the industries and communities affected by the transition. For example, they said that the agency has participated in the Tongass Collaborative Stewardship Group, a region-wide forum for communities and landowners to work together to align Forest Service projects with local and regional priorities. The Forest Service has also participated in a number of smaller collaborative groups relating to specific geographic areas in the Tongass, including the communities of Hoonah, Kake, and Sitka, and the Staney Creek watershed on Prince of Wales Island. One such group, the Hoonah Native Forest Partnership, includes the Forest Service, nonfederal landowners in the area, and other entities, such as the Hoonah Indian Association.[50] The partnership formed in 2015 and is still in the early stages of planning and identifying specific work, according to a Forest Service official. The partnership is taking a watershed planning approach intended to balance economic, social, and ecological outcomes and consider both timber harvest and other important resources, such as salmon and deer, that rely on forests.

[50]Seven entities are members of the partnership: the Sealaska Corporation, the Hoonah Indian Association, the Huna Totem Corporation, The Nature Conservancy, the City of Hoonah, the Alaska Department of Fish and Game, and the Forest Service.

Stakeholders Expressed Divergent Opinions regarding the Overall Direction of the Tongass Timber Program

In discussing their views on possible options for improving the Forest Service's management of the Tongass timber program, stakeholders we interviewed also expressed strong differences of opinion regarding the overall direction of the program. Stakeholders expressed differing opinions on such diverse topics as the volume of timber that should be harvested, the locations where harvest should be allowed, and the proportion of harvest that should be young growth. For example, regarding harvest locations, some of the stakeholders we interviewed were concerned that the Forest Service is considering harvesting timber in environmentally sensitive areas such as near streams and beaches, which provide important wildlife habitat. In contrast, the majority of timber industry stakeholders and a few local government stakeholders we interviewed told us that the Forest Service already placed too much emphasis on minimizing the environmental effects of timber harvest and that the agency did not need to take additional steps to consider the environmental effects of the transition. Regarding the proportion of harvest that should be young growth, the majority of the timber industry stakeholders we interviewed stated that the harvest should continue to consist of old-growth trees in order to be economically viable for the timber industry, while other stakeholders stated that old-growth harvest should end entirely or be reduced to a small amount.

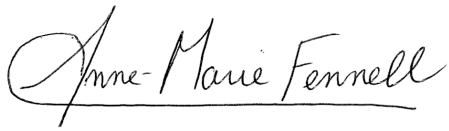
Agency Comments

We provided a draft of this report for review and comment to the Departments of Agriculture and Commerce. The Forest Service, responding on behalf of the Department of Agriculture, generally agreed with our findings and described actions it is taking in an effort to support various economic sectors in southeast Alaska (see app. III). The Economic Development Administration, responding on behalf of the Department of Commerce, stated in an email sent April 11, 2016, that it had no comments on our draft report.

We are sending copies of this report to the appropriate congressional committees, the Secretaries of Agriculture and Commerce, the Chief of the Forest Service, the Administrator of the Farm Service Agency, the Under Secretary for Rural Development, the Chief Operating Officer of the Economic Development Administration, and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or members of your staff have questions about this report, please contact me at (202) 512-3841 or fennella@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found

on the last page of this report. Major contributors to this report are listed in appendix IV.



Anne-Marie Fennell
Director, Natural Resources and Environment

Appendix I: Forest Service Stakeholder Organizations GAO Interviewed

In conducting our work, we interviewed representatives from a nonprobability stratified sample of Forest Service stakeholder organizations. Table 2 lists the 30 stakeholder organizations whose representatives we interviewed. We selected stakeholders to provide a range of perspectives on the Forest Service's management of the Tongass National Forest timber program. Because this is a nonprobability sample, the views of the stakeholders interviewed are not generalizable to all potential stakeholders, but they provide illustrative examples.

Table 2: Forest Service Stakeholder Organizations GAO Interviewed

Category of stakeholder	Name of stakeholder organization
Alaska Native corporation	Klawock Heenya Corporation
	Sealaska Corporation
	Shaan Seet Incorporated
Conservation organization	National Audubon Society
	Greater Southeast Alaska Conservation Community
	Natural Resources Defense Council
	The Nature Conservancy
	Sitka Conservation Society
	Southeast Alaska Conservation Council
Fishing and aquaculture industry	United Fishermen of Alaska
State and local government	City and Borough of Sitka
	City of Craig
	City of Hoonah
	City of Ketchikan
	City of Klawock
	State of Alaska, Division of Forestry
	State of Alaska, Mental Health Trust Land Office[a]
	State of Alaska, Office of the Lieutenant Governor
Timber industry	Alaska Forest Association
	Alaska Specialty Woods
	Alcan Forest Products
	Icy Straits Lumber and Milling, Incorporated
	Tongass Forest Enterprises
	Viking Lumber Company, Incorporated
	The Working Forest Group
Tourism and recreation industry	Alaska Travel Industry Association
Tribal government	Central Council of Tlingit and Haida Indian Tribes of Alaska

Category of stakeholder	Name of stakeholder organization
	Craig Tribal Association
	Hoonah Indian Association
	Klawock Cooperative Association

Source: GAO. | GAO-16-456

[a]The Mental Health Trust Land Office manages 130,000 acres of commercial forest land.

Appendix II: Selected Characteristics of the Forest Service's Alternatives for Transitioning the Tongass National Forest to Young-Growth Harvest

In November 2015, the Forest Service released for public comment a draft environmental impact statement that analyzed five alternatives for undertaking the transition from old-growth harvest to young-growth harvest in the Tongass National Forest.[1] Table 3 summarizes these alternatives, which described different time frames for making the transition and projected various numbers of acres from which timber would be harvested.

Table 3: Selected Characteristics of the Forest Service's Draft Environmental Impact Statement (EIS) Alternatives for Transitioning the Tongass National Forest to Young-Growth Harvest

Alternative described in the Forest Service's draft EIS	Years for full transition[a]	Projected acres harvested over 25 years		Projected acres harvested over 100 years	
		Old growth	Young growth	Old growth	Young growth
Alternative 1	32	40,140	7,271	62,413	201,003
Alternative 2	12	12,927	69,362	30,017	330,517
Alternative 3	13	13,856	52,094	31,198	304,792
Alternative 4	16	22,636	37,073	42,831	223,813
Alternative 5[b]	16	23,223	37,390	43,167	261,850

Source: GAO presentation of information in Forest Service, *Tongass Land and Resource Management Plan Amendment: Draft Environmental Impact Statement*. | GAO-16-456

Note: The Forest Service generally defines old-growth forests in southeast Alaska as those older than 150 years. Young growth generally consists of trees that have re-grown after the harvest of old growth.

[a]The Forest Service defined full transition as occurring when 41 million board feet of young-growth timber could be harvested annually on a sustained basis. All alternatives also envision a minimum annual harvest of 5 million board feet of old-growth timber. A board foot is a common measure for timber volume, equivalent to a board 12 inches long, 12 inches wide, and 1 inch thick.

[b]The Forest Service identified alternative 5 as the "preferred alternative" in the draft EIS.

[1]USDA, Forest Service, *Tongass Land and Resource Management Plan Amendment: Draft Environmental Impact Statement*, R10-MB-769a (Washington, D.C.: November 2015).

Appendix III: Comments from the Department of Agriculture

USDA United States Department of Agriculture | Forest Service | Washington Office | 1400 Independence Avenue, SW Washington, DC 20250

File Code: 1420
Date: APR - 7 2016

Ms. Anne Marie Fennell
Director, Natural Resources and Environment
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Fennell:

The U.S. Department of Agriculture appreciates the opportunity to respond to the U.S. Government Accountability Office (GAO) draft report "Tongass National Forest: Forest Service's Actions Related to Its Planned Timber Program Transition, (GAO-16-456)." The Forest Service generally agrees with the findings in the GAO draft report.

In July 2013, U.S. Department of Agriculture Secretary Vilsack issued a memo directing management of the Forest Service's Tongass National Forest to be more ecologically, socially and economically sustainable, while accelerating the transition to predominantly young-growth timber. The Forest Service and other federal agencies such as the Farm Service Agency, Rural Development, and the Economic Development Administration are taking action to support a number of economic sectors including timber, fishing and aquaculture, tourism and recreation, mining, and renewable energy during the transition.

The Forest Service continues to improve its planning process to assist mill owners and has lengthened the duration of timber sales to provide small timber mills greater flexibility on harvest timing. We have held numerous community meetings to gather public input on the Tongass National Forest Plan Amendment and its associated alternatives. We are working with new mariculture businesses to permit shellfish and seaweed farms; an industry ripe for growth and well suited to small communities located within the Tongass National Forest. We are moving forward with a master plan to update visitor services at the Mendenhall Glacier Visitor Center and surrounding recreational area, and have increased the number of visitor days awarded to recreational outfitter-guides. We are working with rural communities on renewable energy and hydro-electric projects to reduce the high cost of energy. We will continue to support these important economic sectors.

We will continue taking actions to address issues affecting economic sectors important to Alaskan communities. Thank you again for the opportunity to review the draft report. If you have any questions, please contact Thelma Strong, Chief Financial Officer, at 202-205-0429 or tstrong@fs.fed.us.

Sincerely,

Thomas L. Tidwell

THOMAS L. TIDWELL
Chief

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Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Anne-Marie Fennell, (202) 512-3841 or fennella@gao.gov

Staff Acknowledgments

In addition to the contact named above, Steve Gaty (Assistant Director), Greg Campbell, Jonathan Dent, Patricia Farrell Donahue, Holly Hobbs, Richard P. Johnson, Ben Nelson, Timothy M. Persons, and Anne Stevens made key contributions to this report.