Social and Economic Monitoring of the Tongass National Forest and Southeast Alaska Communities

Monitoring Plan and Baseline Report

HEIDI HUBER-STEARNS, ANNA SANTO, AND ERIN STEINKRUGER

WINTER 2020

ECOSYSTEM WORKFORCE PROGRAM WORKING PAPER NUMBER 98

UNIVERSITY OF OREGON

Ecosystem Workforce Program

TATOOSH
TATOOSHSCHOOL.ORG

About the authors

Heidi Huber-Stearns is an Assistant Research Professor and Associate Director of the Ecosystem Workforce Program and Director of the Institute for a Sustainable Environment, University of Oregon. She is the Ecosystem Workforce Program Lead at University of Oregon.

Anna Santo is a Faculty Research Assistant in the Ecosystem Workforce Program, Institute for a Sustainable Environment, University of Oregon.

Erin Steinkruger is Programs Director at the Tatoosh School based on Prince of Wales Island, Alaska.

About the Ecosystem Workforce Program:

The Ecosystem Workforce Program is a bi-institutional program of University of Oregon's Institute for a Sustainable Environment and the College of Forestry at Oregon State University. We conduct applied social science research and extension services at the interface of people and natural resources. Our publications aim to inform policy makers and practitioners, and contribute to scholarly and practical discourse.

More information available at:
http://ewp.uoregon.edu/about/intro.

Acknowledgements

We thank the many stakeholders in Southeast Alaska who shared their valuable insights and time with us, all of which were critical to this report and understanding conditions in Southeast Alaska. We appreciate the data assistance provided by Meilani Schijvens at Rain Coast Data, and the publicly accessible data made possible by Southeast Conference through their Southeast by the Numbers reports and assistance from their staff. We thank Rob Morrissey, Amelia Rhodeland, and Alison Deak for assistance with data analysis. We thank the Tongass Transition Collaborative for initiating the need for this monitoring work, and the USDA Forest Service for the data requests they fulfilled. This work was funded through a Cooperative Agreement with the State of Alaska Division of Forestry as part of the Tongass Young Growth Challenge Cost Share Agreement with the USDA Forest Service.

All photos were taken from 2017-2019 by Heidi Huber-Stearns and Anna Santo. All maps were made by Michael Coughlan and all figures, final cartography, and document layout and design were completed by Autumn Ellison, both at University of Oregon Ecosystem Workforce Program.

For more information, contact:

Ecosystem Workforce Program
Institute for a Sustainable Environment
5247 University of Oregon
Eugene, OR 97403-5247
ewp@uoregon.edu
ewp.uoregon.edu

Executive summary

In 2016, the Tongass National Forest (NF) amended its Land and Resource Management Plan to transition timber harvest on the forest from old growth to predominantly young growth over the next 10 to 15 years. Following this decision, the US Department of Agriculture established the Tongass Advisory Committee (TAC) to advise Forest Service leadership on the Tongass NF's transition. One TAC recommendation was the development of a plan to track social and economic conditions in Southeast Alaska before, during, and after the transition to young growth. The purpose of this report is to provide the recommended social and economic reporting for the Tongass NF and Southeast Alaska communities, and provide a monitoring plan to be replicated in future years.

Monitoring plan development

This monitoring plan was developed with TAC and other stakeholder recommendations and contains four main questions:

1. What are the socioeconomic conditions and context in communities surrounding the Tongass NF?
2. How do timber sales, restoration projects, and other natural resources projects on the Tongass NF affect communities in Southeast Alaska?
3. What is the status of collaborative work on the Tongass NF and surrounding communities?
4. What are stakeholders' perceptions and concerns about changes occurring in Southeast Alaska communities and on the Tongass NF?

We collected and reported as many years of data as possible for each metric from 2011-2019. We used a combination of existing quantitative data and original qualitative data collection through interviews with stakeholders. The monitoring instructions and interview guides provided here are intended to guide future monitoring in the Tongass NF, serving as blueprints of the data to collect and how to collect it using standardized and consistent procedures over time.

Monitoring results

- **Overall, monitoring data presented in this report show that each of Southeast Alaska's 32 communities has developed its own unique characteristics, trajectory of change, and strategies to cope with challenges confronted since the region's pulp mills shut down.** People in natural-resource-dependent economies must continually adjust to the ebb and flow of available resources, including reinventing their livelihoods to fit the current state of the land. Many communities have diversified or completely shifted their economic bases and identities to new industries like fishing, tourism, or recreation; however, timber is still a culturally, socially, and economically important industry for some small communities in Southeast Alaska.

- **In the last 10 years, global, national, and state level forces have had significant impacts on Southeast Alaska and the Tongass NF.** Population has increased slightly in recent years, unemployment and SNAP benefits decreased, and wages increased. These incremental positive changes were tempered by residents reporting less stable, year-round jobs; a reduction in government jobs and services; older and fewer permanent residents; and increasing costs of living.

- **The Forest Service began a Tongass "Transition" to chart a path for maintaining economic opportunity in the timber industry for Southeast Alaska communities; however, the viability of a young growth market is still uncertain.** We found mixed opinions about and interest in developing infrastructure for young growth resources, given the limited economically viable options for young growth utilization and unsuccessful attempts to sell young growth products to date. Furthermore, recent tariffs highlighted the risk of investing in developing timber for export by making an already thin profit margin nonexistent. Interviewees noted that in some parts of Southeast Alaska, larger operators shutting down could have ripple effects on the overall viability of smaller operators and contractors (i.e., loggers, small mills, longshoremen), and emphasized that the maintenance of a trained timber workforce is important to meeting future opportunities in the industry.

- **The Tongass Transition is an opportunity for the Tongass NF to diversify and strengthen partnerships that support multiple uses of the forest; however, many of the forest's partners are frustrated as they have watched collaboratively-determined agreements not be fully upheld.** Southeast Alaska stakeholders are deeply and historically tied to the Tongass NF and the opportunities it provides for subsistence, tourism, recreation, habitat, timber, and other forest-dependent activities. Many stakeholders valued collaborative decision-making processes that seek to balance these multiple interests, such as the TAC and the Prince of Wales Landscape Assessment Team. However, stakeholders perceived that agreements reached in those forums have not been fully upheld in implementation. Processes like the development of a state-specific Roadless Rule have led some stakeholders to become increasingly distrustful of and dissatisfied with the agency and with other stakeholders. Environmental, tribal, timber, recreation, preservation, and other stakeholders all noted a lack of follow through from the agency on compromises that took years of painstaking collaboration and relationship building to achieve.

- **The Tongass NF may be unable to follow through on some planned work at its intended pace due to declining capacity.** The forest has been experiencing declining budgets and personnel, high turnover and vacancy among forest staff, and increasingly complex issues and stakeholder interests. Monitoring data showed that nearly all resource area budgets declined on the forest from 2011-2018, and nearly all Southeast Alaska communities lost Forest Service employees. The use of new authorities and tools such as Good Neighbor Authority and new partnership models could potentially augment work that the agency cannot accomplish on its own.

- **Although the Tongass NF may not be making changes as quickly as stakeholders want, many of the forest's investment trends do support diversification of uses on the forest.** For example, even as the Tongass NF's overall budget declined, the forest was actually investing more money in 2018 than in 2011 in road construction, subsistence management, and vegetation and watershed management.

- **The Tongass NF plays a key role in Southeast Alaska communities, both as a direct employer and by providing contracts, timber sales, and grants and agreements to businesses based in Southeast Alaska**. Although the number and value of contracts has decreased over time, the forest is increasingly entering into contracts, grants, and agreements with predominantly local businesses. Fluctuations in the agency's ability to continue to invest in these types of work have important implications for Southeast Alaska communities.

Introduction

In 2013, US Secretary of Agriculture Tom Vilsack issued a memorandum[1] directing the Forest Service to transition timber harvest on the Tongass National Forest (NF) from old growth to young growth over the next 10 to 15 years. This memorandum was in line with prior planning on the Tongass NF. By around 2030, the vast majority of timber sold by the Tongass NF is to be young growth. This transition from old growth to young growth timber offerings has become known as "the Transition" in Tongass NF management, and is described as such throughout this report. The Secretary's timeframe was intended to conserve old growth forests while allowing the forest industry time to adapt. The memorandum emphasized that the Transition was necessary to conserve the Tongass NF under the principles of the Multiple-Use Sustained-Yield Act of 1960 and the Tongass Timber Reform Act while maintaining a viable timber industry to provide jobs and opportunities for residents of Southeast Alaska.

In response to the Secretary's direction, the Forest Service initiated an Amendment to the Tongass Land Management Plan. The Amendment's purpose was to accommodate a strategy for transition that created opportunities for the utilization of young growth forest products in a manner that enhanced the economic vitality of the region and the resilience of local communities. The Forest Service also convened the Tongass Advisory Committee (TAC) in keeping with the Federal Advisory Committee Act to advise the agency during the Amendment process. The TAC was composed of fifteen stakeholder members and five alternates. The TAC's final recommendations, submitted in May 2015, listed key concepts and detailed recommendations for the Plan Amendment and the Transition more generally.[2] After the TAC's lifespan ended, TAC members and other stakeholders continued collaborative work as the Tongass Transition Collaborative (TTC). One objective of the TTC was to track impacts of the Transition, including to develop a long-term socioeconomic monitoring effort. A more detailed history of the Tongass Transition and timeline of key events is presented in Appendix A.

Socioeconomic monitoring of the Transition is important for several reasons. It is critical to practicing adaptive management required by the 2012 Forest Service Planning Rule, which guides land management planning for the National Forest System. It is also an important way to understand changes in local communities and regional socioeconomic systems, with insights that go beyond those captured by the monitoring in standard agency reporting. Qualitative approaches help answer questions of how land management decisions impact local communities and other stakeholders. Results of this monitoring can be used to foster shared learning and adaptation by the Tongass NF, other landowners, and surrounding communities.

Purpose

The purpose of this research was to help the TTC and other stakeholders develop a plan to track social and economic conditions in Southeast Alaska before, during, and after the Transition to young growth timber harvest. The TAC and TTC believed that monitoring should be led by a third-party organization with expertise in development of socio-economic monitoring methods, metrics, and reporting. The state of Alaska contracted the Ecosystem Workforce Program at the University of Oregon as part of the Tongass Transition Challenge Cost Share agreement between the Forest Service and the State of Alaska Department of Forestry to assist in developing and implementing the social and economic monitoring plan. Specifically, the objectives for this report were to:

1. Collect, analyze, and present a baseline analysis of social and economic conditions.
2. Develop and present a social and economic monitoring plan that can track social and economic change in affected communities and that reflects stakeholder interests.

The Ecosystem Workforce Program will share this report with interested stakeholders and transfer knowledge and skills to local entities to conduct continued monitoring.

Tongass NF context

The Tongass NF was established in 1907. It is the nation's largest national forest (nearly 17 million acres) and the largest remaining intact temperate rainforest in the world. The Tongass NF currently consists of ten ranger districts, including two Forest Supervisor's Offices in Ketchikan and Petersburg. Nearly 60 percent of the Tongass NF is forested and approximately one-third is wilderness (including 19 congressionally-designated wilderness areas). About 20 percent of the forest is in land allocations that allow development activities, and to date, less than eight percent of the Tongass NF is developed, mainly from past timber practices.[3] The Tongass NF makes up 78 percent of the land in Southeast Alaska. Other lands include: 16 percent other federal holdings (mainly Glacier Bay National Park), 3.4 percent by Alaska Native organizations, 2.5 percent by the State of Alaska, 0.25 percent municipal land holdings, and 0.05 percent private land owners.[4]

Currently, Southeast Alaska is home to approximately 72,000 people living in 32 communities who use the forest for a variety of cultural, social, economic, and spiritually significant purposes. The Tongass NF is located on the traditional homelands of the Tlingit, Haida, and Tsimshian peoples, whose customary and traditional practices, health, and wellbeing are deeply embedded in the forests of Southeast Alaska and the natural resources the forest provides.

Monitoring plan development and questions

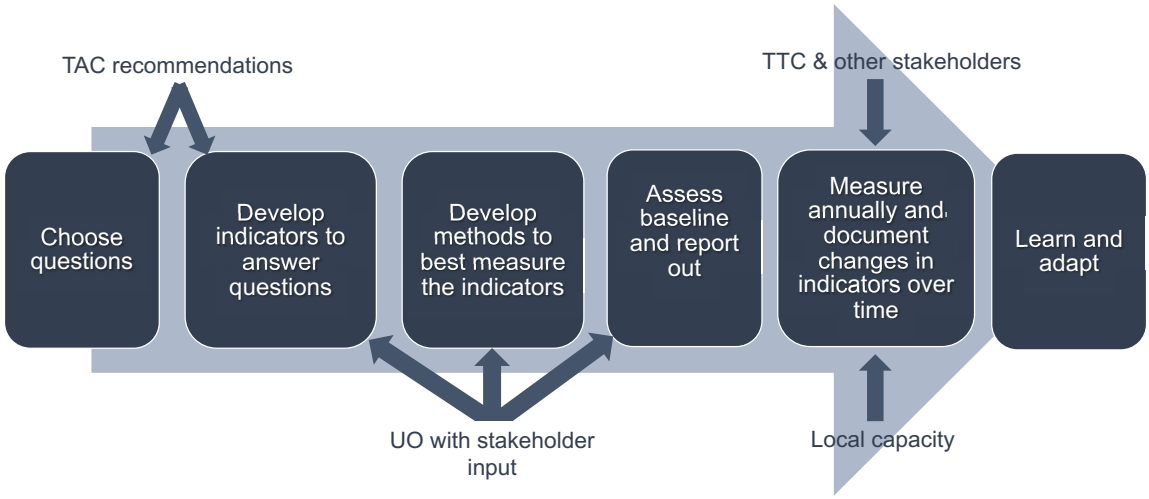
Monitoring plan development

The Tongass Transition monitoring plan was developed through an iterative process (see Figure 1, below) that included the following steps:

1. Consult with stakeholders.
2. Review existing socioeconomic monitoring plans and reports from Southeast Alaska and other contexts.
3. Develop a set of overarching research questions about social and economic change in the study region.
4. Develop a framework of indicators and metrics to track change related to the research questions.
5. Assess the feasibility of collecting data for each metric.
6. Consult with stakeholders for feedback on proposed questions and measures.
7. Adapt the plan based on stakeholder feedback.

We reviewed existing social and economic monitoring plans and reports from within and outside of Southeast Alaska (see Appendix B for list of helpful resources). In May 2017, we shared a draft monitoring plan with the TTC for feedback. We then revised the plan further through meetings with TTC members, Tongass NF staff, and other stakeholders in Southeast Alaska in September 2017. After compiling a list of monitoring questions, we assessed the availability of data and feasible analyses for a variety of data sources. Sources included in the monitoring plan are those determined to be: 1) relevant to informing the monitoring questions as prioritized by the TAC and other stakeholders; and 2) publicly available and/or otherwise accessible. Some metrics did not meet the criteria for inclusion, but we list them as potentially useful future metrics to consider in Appendix C.

Figure 1 Monitoring plan development process

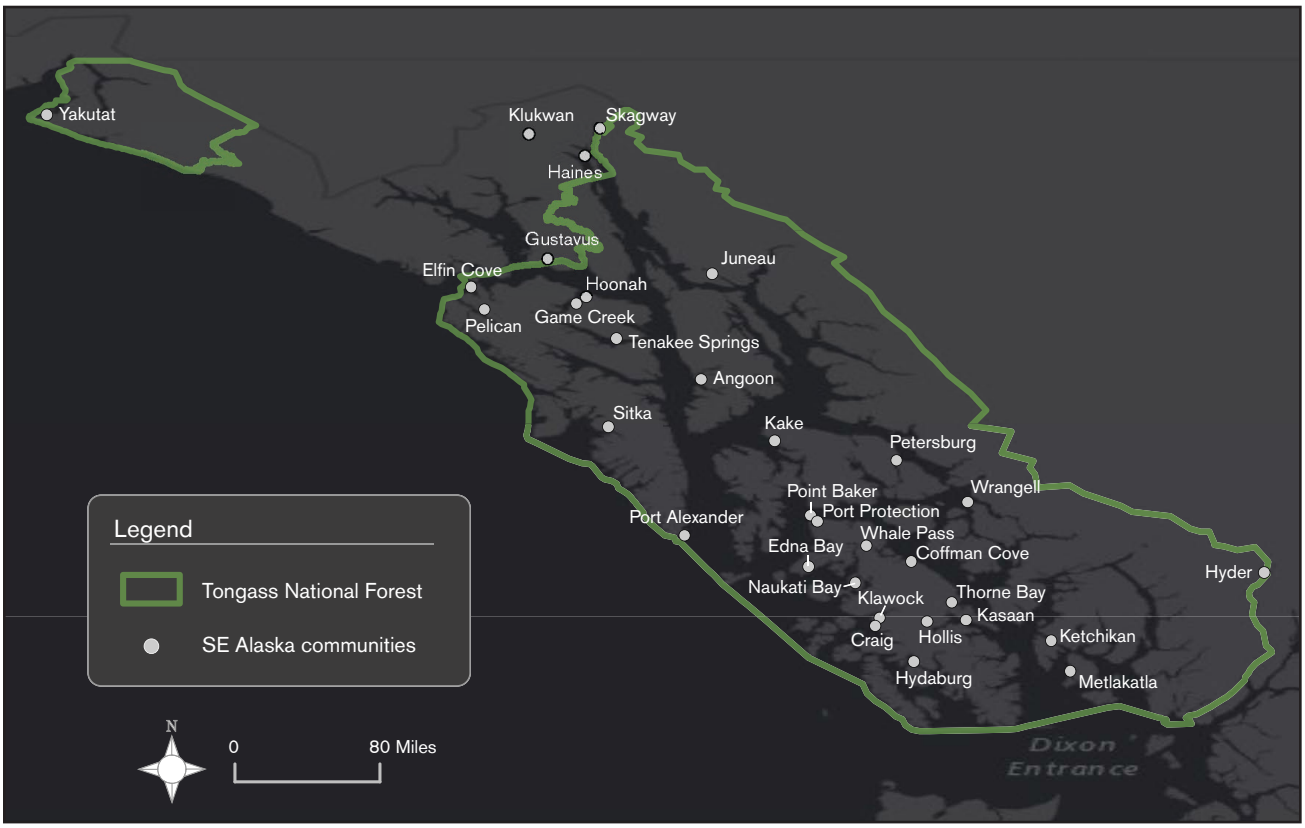


Monitoring plan considerations

Study area: Our study area consists of the State of Alaska's Southeast Economic Region, including all towns, cities, and unincorporated areas of the Yakutat, Haines, Skagway, Juneau, Sitka, Petersburg, Wrangell, and Ketchikan Gateway boroughs and the Prince of Wales-Hyder and Hoonah-Angoon census areas (see Figure 2, below). We chose this study area because (1) it closely aligns with the extent of the Tongass NF, (2) it includes all boroughs in which the Tongass NF is located, (3) it includes all communities that are located near the Tongass NF, and (4) as officially-designated boroughs and census areas, and as a state "Economic Region," we expected that most social and economic data would be reported using these boundaries and thus data could be consistently accessed long-term. Throughout the document we refer to "local" versus "nonlocal" communities. "Local" refers to any of the 32 communities within our study area. "Nonlocal" refers to any community outside of our study area, including communities in other parts of Alaska or outside of Alaska.

Given this study's focus on the Transition from harvest of old growth to predominantly young growth timber, much of the qualitative data collected focused on communities and community networks where timber remains a component of the economy. These communities are largely on Prince of Wales and surrounding islands, and to a lesser degree other parts of Southeast Alaska such as Ketchikan, Wrangell, Petersburg, Juneau, Sitka, and other smaller communities.

Figure 2 Map of study area



Assessment years and determining baseline: The task requested by the TTC was to conduct baseline monitoring for 2012-2016. These dates were selected because 2016 was the year the Transition was scheduled to start (with the signing of the Record of Decision on the Forest Plan Amendment). However, during interviews, we learned that stakeholders were interested in longer trends starting at earlier dates and monitoring results that were as up-to-date as possible. Given that this work was completed in 2019, we collected and reported as many years of data as possible for each metric from 2011-2019. Some years of the data reported here may be considered post-baseline in future monitoring work.

Future data collection is intended to be coordinated by local entities using the monitoring structure outlined in this report. Monitoring instructions and interview guides are intended to guide the entity conducting future monitoring in the Tongass NF. They serve as blueprints that outline the data to collect and how to collect it using standardized and consistent procedures over time. While this document is intended to inform future work, it is also intended to be adaptable to changing circumstances as stakeholders deem appropriate.

Monitoring questions, indicators, and data collection approach

Our monitoring approach focused on four main socioeconomic monitoring questions (see Table 1, pages 8-9). We identified measurable indicators that could be consistently tracked to understand changes related to each monitoring question. All metrics were summarized by calendar year unless otherwise specified.

Table 1 Social and economic monitoring questions and methods for the Tongass NF Transition and Southeast Alaska communities

1. What are the socioeconomic conditions and context in communities surrounding the Tongass NF?*	
Indicators	**Data source**
Demographic trends in Southeast Alaska communities: ▪ Population (by community and total) ▪ Average age of population ▪ K-12 school enrollment	Southeast Alaska by the Numbers, a Southeast Conference Publication by Rain Coast Data
Economic opportunity: ▪ # individuals receiving SNAP benefits ▪ Unemployment rate ▪ Total labor force ▪ Average annual wage ▪ Employment trends by sector (government, visitor industry, seafood, trade, private health care, construction, timber, all other)	# individuals receiving SNAP benefits: US Census. All others: Southeast Alaska by the Numbers, a Southeast Conference Publication by Rain Coast Data
Tongass National Forest capacity: ▪ Tongass NF annual budget ▪ Tongass NF annual # FTEs	Request from Forest Service Alaska Regional Office. Full dataset available in Appendix J.
2. How do timber sales, restoration projects, and other natural resources projects on the Tongass NF affect communities in Southeast Alaska?	
Indicators	**Data source**
# and value of service contracts awarded by the Tongass NF by: ▪ Business location ▪ Product Service Code (PSC) ▪ Type of work being contracted out	Federal Procurement Data System, through a request to the Forest Service Alaska Regional Office. Full dataset available in Appendix D.**
# and volume of timber sales awarded from the Tongass NF by:	Full dataset available in Appendix E.
▪ Operator location	Timber Information Manager (TIM) database , through a request to the Forest Service Alaska Regional Office; if unable to access TIM, look up using business websites, social media, or business licenses
▪ Operator size	Direct communication with Forest Service
▪ Timber volume under contract	Tongass NF Cut and Sold Reports (https://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785)
▪ Timber volume harvested from Southeast Alaska (by landownership)	Alaska Regional Office Forest Management Reports and Accomplishments Reports (https://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785)
▪ Timber volume processed in Southeast Alaska (by landownership)	Alaska Regional Office Forest Management Reports and Accomplishments (https://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785)
▪ Good Neighbor Authority Sales	Direct Communication with Forest Service; Forest Service Schedule of Proposed Actions
Timber processing facilities:	
▪ Southeast Alaska sawmill locations and status	Original list put together with information from Central Tongass Project DEIS, list of active sawmill business licenses, and Southeast Conference. Call facilities to determine if active or inactive. Full list available in Appendix F.
▪ Southeast Alaska biomass utilization facilities locations and status	Original list put together with information provided by Southeast Conference. Call facilities to determine if active or inactive. Full list available in Appendix G.

Table 1, continued

3. What is the status of collaborative work on the Tongass NF and surrounding communities?	
Indicators	**Data source**
Tongass NF Grants and Agreements by: ▪ Organization location ▪ Type of work awarded ▪ Type of organization	I-Web Grants and Agreements database, through a request to the Forest Service Alaska Regional Office. Full dataset available in Appendix H.
4. What are stakeholders' perceptions and concerns about changes occurring in Southeast Alaska communities and on the Tongass NF?	
Indicators	**Data source**
Stakeholder perspectives regarding: ▪ Changes in social and economic conditions/well-being in their communities ▪ Concerns voiced by members of their communities ▪ Reflections on the status of the Tongass Transition and what a "successful" Transition would entail ▪ Ideas about how and what to track to understand social and economic change in their community	Original qualitative data collected through semi-structured interviews with diverse stakeholders. Semi-structured interview protocols listed in Appendix I.
Small mill operator perspectives on future markets and challenges	Original qualitative data collected through document review and qualitative interviews.

* Recommended frequency of monitoring for each question is: once every 2 years for Questions 1, 2, and 3; once every 5 years for Question 4.

** Also available at USAspending.gov.

I. Socioeconomic conditions and context in communities surrounding the Tongass NF.

Rationale for metrics selected

Quantitative social and economic metrics provide insight into the overall wellbeing of communities in Southeast Alaska.

Demographic trends in Southeast Alaska communities

Population and age. Changes in population impact local economic conditions through purchasing goods and services and living in the area. Services may decline with population decline.

School enrollment. School enrollment can be an indication of whether or not families with children are moving into, staying, or moving out of the area. In Southeast Alaska, school enrollment in many communities is so low that the loss of students could cause the district or school to shut down. School closures represent a loss of community services and local employment.

Unemployment and SNAP recipients. A household's eligibility for SNAP (Supplemental Nutrition Assistance Program, formerly Food Stamps Program) benefits is determined by a standard associated with the poverty level.

Economic opportunity

Labor force and wages. Labor force and wages can provide an indication of the economic vitality of an area, and how that compares to state or other large scale trends. This also can show if the workforce composition or opportunities are changing, thus potentially changing who is interested in moving into or out of the area.

Employment by sector. Employment by sector indicates how employment opportunities are shifting in the area. This is particularly important in places like Southeast Alaska which have seen many sector changes over the years and which have volatile natural resource-based industries.

Tongass NF capacity

Tongass NF full-time equivalent (FTE) and budget. Tongass NF employment and budget demonstrate the fiscal condition and capacity of the agency. The number and locations of employees working on the forest directly impact local economic conditions as well as the fabric of communities in which these individuals live and raise families.

Approach

Demographic trends in Southeast Alaska communities

Population and age. Data were compiled from the "Southeast Alaska by the Numbers" annual reports produced by Rain Coast Data for the Southeast Conference.[5] These reports aggregate census- and state-level data in ways that are meaningful to Southeast Alaska. It would be costly, time-intensive, and require significant expertise to replicate these for a monitoring plan; these data were therefore an indispensable resource.

School enrollment. Data were compiled from the "Southeast Alaska by the Numbers" annual reports.

Unemployment and SNAP recipients. Unemployment data were compiled from the "Southeast Alaska by the Numbers" annual reports. SNAP recipients were compiled from US Census Bureau data accessed through the FRED online interface.[6]

Economic opportunity

Labor force and wages. Data were compiled from the "Southeast Alaska by the Numbers" annual reports.

Employment by sector. Data were compiled from the "Southeast Alaska by the Numbers" annual reports.

Tongass NF capacity

Tongass NF FTE and budget. Tongass NF budget and FTE data were provided by the Forest Service's Alaska Regional Office. Budget data were provided in October 2019; FTE data were provided in June 2019.

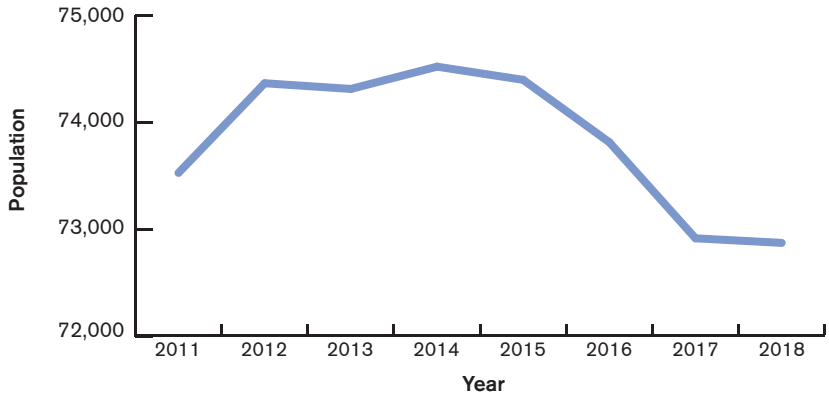
Results

Demographic trends in Southeast Alaska communities

Population and age. The population of Southeast Alaska declined from 2015 through 2018, but 2017 to 2018 had less dramatic population decline than 2015 and 2016 (see Figure 3, below). In 2018, populations declined in six of the eight boroughs, with only Skagway and Wrangell Boroughs increasing.[7] From 2012 to 2015, the population increased, continuing a growth trend that started after the population hit its lowest point in 2007.[8] Small and large communities in Southeast Alaska have experienced population changes of more than 10 percent between 2012 and 2018 (see Table 2, below).

The region experienced an increase in the average age of population during the study period. The average age was 39.9 in 2018 compared to 39.5 in 2012, and nearly a quarter of people in the region were 60 years of age or older in 2018. The trend of an aging population in the region is expected to continue.[9]

Figure 3 Total population of Southeast Alaska, 2011–2018



Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

Table 2 Southeast Alaska communities that have experienced population decreases or increases of 10% or more from 2012 to 2018

Name	% population change, 2012 to 2018*	2018 population
Communities that have had population decreases of 10% or more from 2012 to 2018		
Elfin Cove	-40%	12
Port Protection	-26%	31
Point Baker	-19%	13
Hyder	-18%	80
Pelican	-17%	68
Port Alexander	-17%	55
Yakutat City and Borough	-16%	523
Craig	-12%	1,095
Angoon	-10%	410

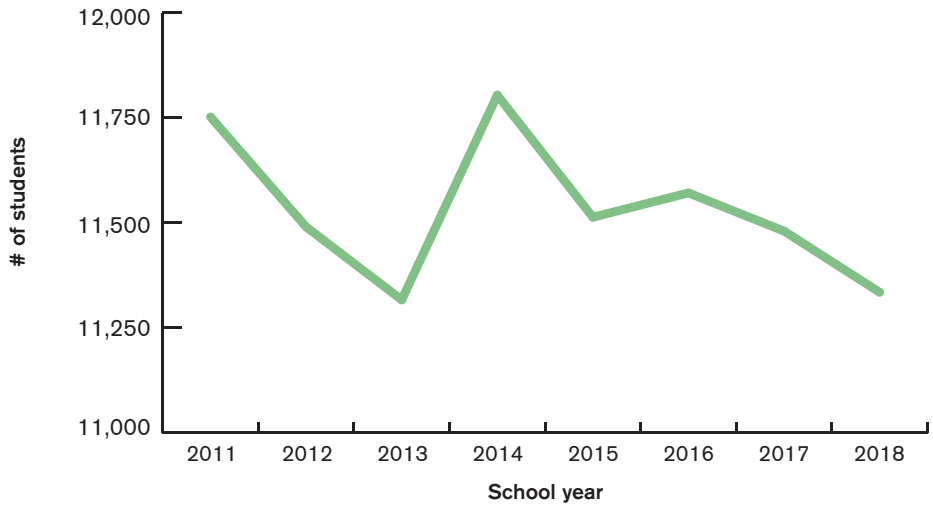
Name	% population change, 2012 to 2018*	2018 population
Communities that have had population increases of 10% or more from 2012 to 2018		
Edna Bay	10%	43
Skagway Municipality	13%	1,088
Gustavus	13%	554
Hollis	14%	124
Kasaan	17%	81
Whale Pass	46%	57

* % change calculated as 2018 population minus 2012 population, divided by 2012 population. Data were unavailable for the communities of Saxman and Kupreanof. Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

School enrollment. K-12 school enrollment in Southeast Alaska has declined since the 2011-2012 school year, with small increases in the 2014-2015 and 2016-2017 school years (see Figure 4, below). Declines in the student population mirrored overall population decline in respective communities for some districts (e.g., Pelican, Craig), while communities like Hydaburg and Skagway experienced both community and student population growth (see Table 3, page 13). Total school enrollment has declined for 21 of the past 23 years across Southeast Alaska.[10] Communities without schools in the 2019-2020 school year included: Edna Bay, Port Protection, Game Creek, Elfin Cove, and Point Baker. Overall K-12 enrollment decreased more than 10% between the 2011–2012 and 2018–2019 school years in Elfin Cove, Port Protection, and Point Baker, while Edna Bay's K-12 enrollment increased by 10 percent.

Unemployment and SNAP recipients. The unemployment rate in the study area declined from more than seven percent in 2011 to six percent in 2018 (see Table 4, page 13). The number of individuals receiving SNAP benefits declined from 2011 to 2016 (the last year for which data were available).

Figure 4 K-12 school enrollment in Southeast Alaska, 2011–2018



Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

Table 3 Changes in K-12 school enrollment from 2011 to 2018 for Southeast Alaska school districts

School district	% change in population from 2011 to 2018	2011 student population	2018 student population
Pelican	-33%	18	12
Craig	-22%	656	514
Wrangell	-21%	391	308
Haines	-15%	308	262
Klawock	-14%	132	114
Yakutat	-13%	108	94
Sitka	-8%	1,350	1,243
Juneau	-7%	4,895	4,567
Hoonah	-2%	116	114
Ketchikan Gateway	3%	2,167	2,233
Petersburg	9%	427	464
Annette Island	9%	274	299
Chatham	9%	152	166
Kake	10%	94	103
Southeast Island	17%	161	189
Hydaburg	100%	43	86
Skagway	100%	64	128

Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

Table 4 Unemployment rates and SNAP benefit recipients, 2011–2018

	2011	2012	2013	2014	2015	2016	2017	2018
Unemployment rate	7.3%	6.8%	6.40%	7.10%	6.50%	6.10%	6.30%	6.00%
# SNAP benefit recipients	7,675	7,980	7,618	7,366	7,132	7,232	--	--

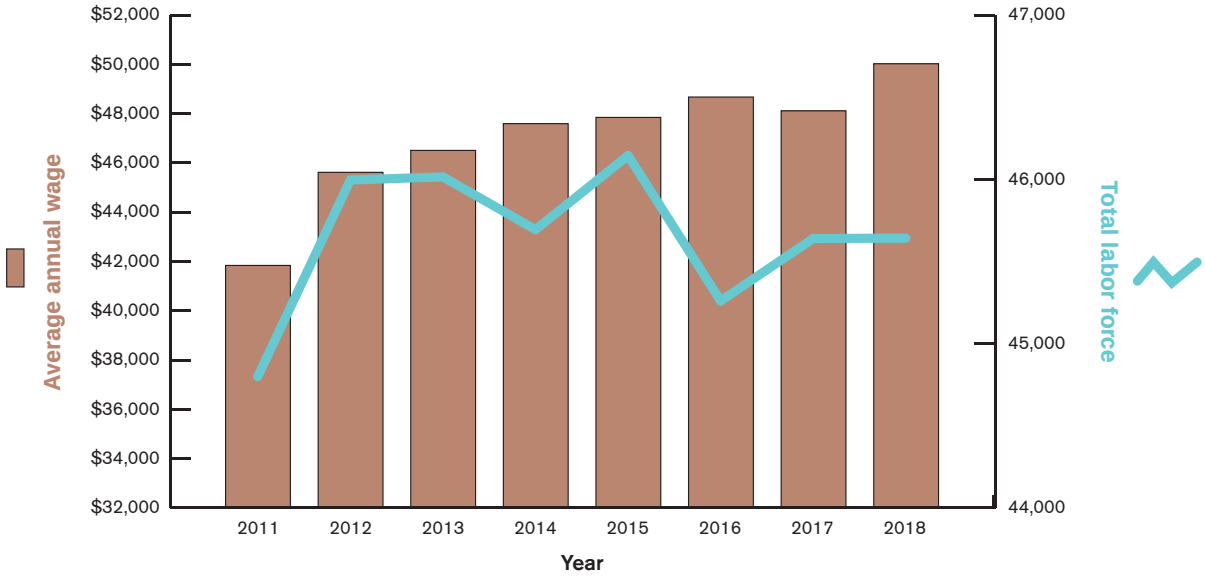
Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports (unemployment), US Census Bureau (SNAP benefits).

Economic opportunity

Labor force and wages. The annual average wage in Southeast Alaska increased between 2011 and 2018 to the 2018 rate of $50,023. The labor force in Southeast Alaska overall increased between 2011 and 2018, although it declined in 2014 and 2016 (see Figure 5, below). The labor force remained generally static from 2017 to 2018, increasing by just two jobs to 45,642.[11]

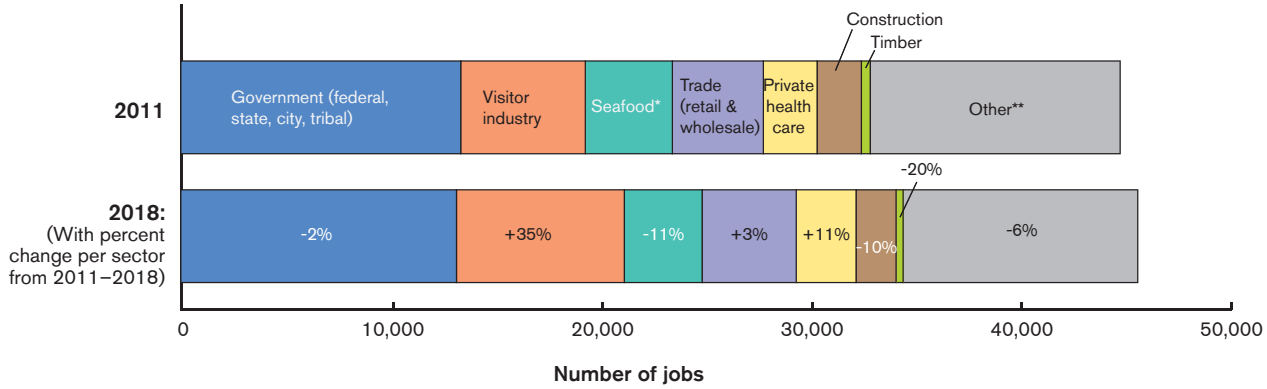
Employment by sector. We note key trends in employment by sector here but refer to *Southeast Alaska by the Numbers* for additional detail.[12] Overall employment in Southeast Alaska grew between 2011 and 2018, mainly driven by increases in the visitor industry and, to a lesser degree, private health care employment, mining, and professional services (see Figure 6, below). Increases in these industries masked employment declines in

Figure 5 Average annual wage and total labor force in Southeast Alaska, 2011–2018



Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

Figure 6 Employment by sector in Southeast Alaska, 2011 and 2018



* Boatbuilding is not included in the seafood category
**Other category includes: professional and business services, private maritime plus USCG employment, mining and exploration, transportation and warehousing, social services, information, and all other activities.
Data source: Southeast Conference, *Southeast Alaska by the Numbers* reports.

government, seafood, and smaller sectors such as construction and timber. Between 2011 and 2018, Southeast Alaska lost more than 400 seafood jobs and more than 200 jobs in each of the social services, construction, and government sectors.[13] Timber industry employment declined by more than 80 jobs. Conversely, the tourism sector added over 2,000 jobs between 2011 and 2018, and unprecedented growth is projected to continue.[14]

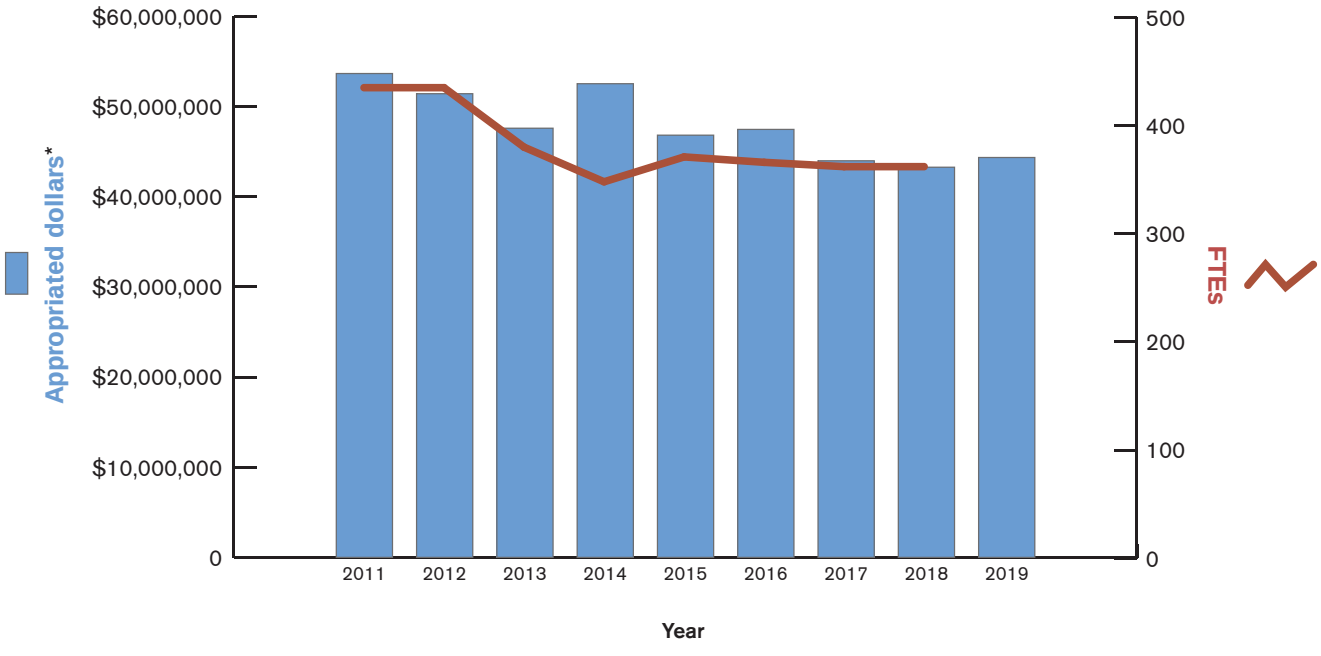
Southeast Alaska gained 380 year-round equivalent jobs and $17 million in workforce earnings from 2017 to 2018.[15] Approximately one-quarter (26.1 percent) of workers were nonresidents; this is important to note as nonresident workers often take most of their income back to their homes. Nonresident wages therefore do not have the same impact on local communities as resident wages.

Tongass NF capacity

Tongass NF FTEs and budget. Between federal fiscal year (FY) 2011 and FY 2018, the Tongass NF experienced a 17 percent decline in FTEs, with a 2018 staff of 362 FTE (see Figure 7, below). The Tongass NF's budget also declined by 17 percent over the same period, although a slight increase in budget occurred in FY 2019 from the prior two years. The 2019 budget for the Tongass NF was $44.3 million. The lowest point between FY 2011 and FY 2019 for the Tongass NF's budget was 2018 and for FTEs was 2014. Overall, at the end of the monitoring period, the Tongass NF employed less FTEs and had a reduced budget compared to most prior years.

Tongass NF staff are based in 13 communities within Southeast Alaska, primarily in Ketchikan,

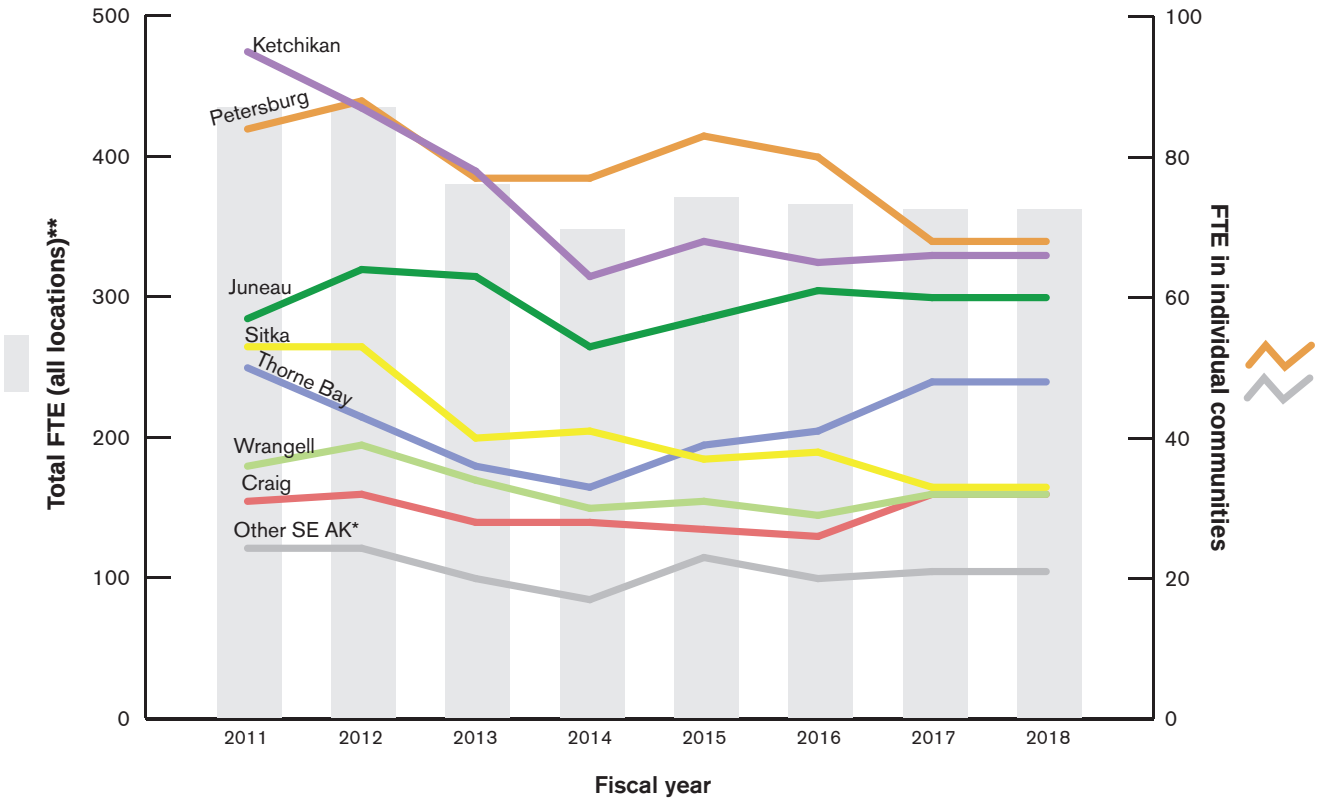
Figure 7 Tongass NF total annual budget allocations and FTEs, FY 2011-2019



* Budget allocations exclude permanent and trust funds. Data source: Forest Service.

Petersburg, and Juneau, where 54 percent of total FTEs resided in FY 2018 (See Figure 8, below). In addition, the Forest Service Alaska Regional Office, covering both the Tongass and Chugach National Forests, is headquartered in Juneau, creating additional FTEs in the capital city not captured in this report. The largest declines in Tongass NF employees between FY 2011 and FY 2018 occurred in Ketchikan, which declined from 95 to 66 employees; Sitka, which declined from 53 to 33 employees; and Petersburg, which declined from 84 to 68 employees. Juneau, Craig, and Hyder were the only communities to experienced small increases in Forest Service FTEs over the study period. The Tongass NF budget and FTE full dataset is available in Appendix J.

Figure 8 Number of full-time equivalent (FTE) Tongass NF employees by community, FY 2011–2018



* Other SE Alaska includes Yakutat, Hoonah, Hyder, and Angoon.
** Employees living out of state or in other parts of Alaska are included in total.
Data source: Forest Service. The Tongass NF budget and FTE full dataset is available in Appendix J.

II. Impacts of timber sales, restoration work, and other Tongass NF natural resources projects on Southeast Alaska communities

Rationale for metrics selected

Work on national forestlands can be completed by agency employees or by engaging non-Forest Service workforces. Both natural resource service contracts and timber sales provide economic impact to communities in Southeast Alaska through direct (e.g., jobs for contractors) and indirect (e.g., workers purchasing groceries, housing, or other services locally, and/or living locally) impacts. In addition, monitoring forest management activities can provide opportunities to understand what outcomes the agency may be focused on and if there are opportunities to adapt.

Tongass NF service contracts

Service contracts are work awarded to businesses to achieve specific tasks on behalf of the agency. The extent to which local communities can realize benefits from service contract work with the Tongass NF depends on the amount and type of work that is available, and the local business capacity to conduct that work.

Service contracts by business location. Although local economic impacts are greatest when the available work is awarded to local contractors, contracts awarded to businesses outside the local area still have economic impacts on local communities. For example, out-of-town businesses will often rent temporary lodging and purchase fuel and supplies locally while conducting their contracted work on the forest. These businesses also provide key capacity to the Tongass NF to accomplish work. Note that these contracts for service work by contractors are structurally different than grants and agreements (grants and agreemetns are reported in monitoring question #3, starting on page 29).

Service contracts by Product Service Code (PSC) and type of work completed can help identify the types of work being accomplished on a forest, and by what types of businesses. In some cases, certain types of work may be more suited to local business capacity than others. For example, small sized contracts or contracts for mechanical work (e.g., road brushing) requiring just a few operators may be more feasible for small local contractors than manual work for large crews (e.g., tree thinning) or specialized or expensive equipment (e.g., helicopter logging). This can provide information about what local contracting capacity might be, where capacity may be able to be developed, and what types of work have been historically conducted by nonlocal entities or a very few specialized businesses.

Tongass NF timber sales

Timber sales provide economic impact to communities in Southeast Alaska through direct (e.g., jobs for contractors) and indirect (e.g., workers purchasing supplies, groceries, housing, and other services locally) impacts.

Timber sales by purchaser location provide information about where the businesses that administer sales are based. This informs understanding of timber business capacity and economic benefits of timber sales, such as which businesses benefit from sales and where sales create direct and indirect jobs.

Timber sales by operator size provide information about the types of businesses purchasing sales and their capacities, namely who is buying large versus small sales and if there are differences in the number or timing of sales they purchase.

Timber volume under contract. The number of sales and timber volume sold but not yet harvested represents the timber supply that might be immediately available to operators to be able to utilize.

Timber harvested and processed from Southeast Alaska by source. The Tongass NF is not the only source of timber available to Southeast Alaska timber operators. Significant volume comes from Alaska Native Corporation and State of Alaska lands. Other landowners with timber programs are the Alaska Mental Health Land Trust and the University of Alaska, with significant new volume coming from Alaska Mental Health Trust lands on Prince of Wales Island in 2019 and 2020. However, the majority of non-Tongass timber is exported, providing jobs to fallers, equipment operators, truckers, and longshoremen, but not processors.

Good Neighbor Authority Sales provide information about how the Forest Service and state are partnering on timber sales, who is purchasing these types of sales, and further illuminates what different sources of timber constitute the region's supply.

Timber processing facilities

Tongass NF sawmill locations and status. The distribution of sawmills that process timber has social and economic impacts on Southeast Alaska communities. The Forest Service has observed decreasing sawmill capacity and utilization over time in a longitudinal survey of a subset of operators in the region.[16]

Tongass NF biomass utilitzation facilities locations and status. Biomass facilities provide a viable market and heating source for businesses, schools, and other centers while also providing employment and a use for byproducts of sawmill processing and timber sales. Industrial and nonindustrial biomass impact the social and economic well-being of communities in several ways. They can create paying, low-skill jobs (people must tend to the facilities 24 hours a day and load them multiple times a day), which offers economic opportunity to unskilled workers as well as job training skills. Cordwood facilities also create a local market for cordwood, which has in some cases allowed individuals to supplement their income by providing firewood (based on interview data). Importantly, money used to purchase cordwood stays in the local community whereas purchasing diesel results in money leaving Southeast Alaska. Finally, biomass facilities can create a market, or at least use, for byproducts of sawmilling.

Approach

Tongass NF service contracts

We obtained service contract data from the Forest Service's FPDS (Federal Procurement Data System) through a data request completed by the Forest Service's Alaska Regional Office in October 2019. FPDS associates Product and Service Codes (PSCs) with each service contract. We limited our analysis to only those work contracts completed under relevant PSCs (i.e., those related to natural resources such as timber sales, restoration work, fisheries management, recreation; special studies; design and engineering; research and development; and maintenance of roads and facilities). See Appendix D for a full list of the PSCs we included and our full cleaned FPDS dataset.

Service contracts by business location. FPDS provides the address for each "vendor" (the business

with which the Forest Service holds a service contract). We coded vendor addresses by city into "local" (i.e., Southeast Alaska-based), "other Alaska," and "nonlocal" (i.e., outside of Alaska) categories. It is important to note that "local" in Southeast Alaska has different implications than in the contiguous United States: a contractor in Haines is not functionally "local" to Prince of Wales Island (e.g. they could not drive there-it is hundreds of miles away and includes water travel), but they are categorized as such here. Some contractors hire hyper-locally, for example hiring on Prince of Wales for a job on the island, while others travel their employees, so the way that benefits accrue to individual communities and community networks varies significantly within our "local" code.

Service contracts by Product Service Code (PSC). PSCs indicate the general categories of work that the contractor completed. PSCs have two components: (1) the category (indicated by a letter) and (2) the code (indicated by the letter-number combination). We accessed detail about what each category and code represented using the federal government's Product and Service Code Manual (https://www.acquisition.gov/PSC_Manual) and qualitatively selected categories that were relevant to themes important to the Tongass Transition.

Service contracts by type of work completed. PSCs do not indicate the type of work to a high level of specificity. Stakeholders had expressed interest in understanding how much money had been invested in fisheries improvements, recreation management, and other more specific investment areas. We further analyzed the FPDS data at the individual contract level to better understand the types of work Tongass NF service contracts had supported (see Figure 12). We coded based on PSC description and key words in the project description field to identify categories of work that stakeholders described as important to the transition, including: recreational facilities and trails construction and maintenance; fisheries management; bridges, culverts, and fish passage; and pre-commercial thinning. These analyses are not exhaustive because some contracts' project descriptions were limited and could not be categorized.

Tongass NF timber sales

Our requests for timber sale data from the TIM (Timber Information Manager) were unsuccessful. Instead, we manually downloaded annual Timber Cut and Sold reports from the Tongass NF website[17] in December 2019 and compiled them for analysis. We aggregated annual Timber Cut and Sold Reports into a single spreadsheet. Many of the sales were redundant from year to year (i.e., they lasted multiple years), so we retained one case per sale by deleting all but the most recent entry for each sale. The Forest Service also prepares reports about timber supply and demand in accordance with Section 706(a) of the Alaska National Interest Lands Conservation Act (ANILCA), which directs the Secretary of Agriculture to monitor and report on timber supply and demand in Southeast Alaska. We recognize that discrepancies exist between our summaries and the ANILCA reports; however, we were unable to access the parent data sources to identify the source of these discrepancies. Future monitoring could be done using TIM or Periodic Timber Sale Accomplishment Report (PTSAR) data if it is available.

Timber sales by purchaser location. Purchaser locations are not included in the Timber Cut and Sold reports. We assigned locations to each sale by looking up business licenses and/or websites for listed purchasers. This is the most consistent way to assign locations but does mean that it cannot account for businesses that have multiple main locations, or parent locations off-island, out of state, or out of the country. In addition, there is no consistent way in which to capture timber purchasers with multiple business licenses, sometimes purchasing under their personal name and sometimes purchasing under a business name. We followed the same coding for "local," "other Alaska," and "nonlocal" as above in service contracts. We coded purchaser location as "unknown" when we were unable to confirm their location through online searching.

Timber sales by operator size. We categorized the timber sales into groups based on feedback we heard in interviews that not all timber sales were equal; they should be divided into those purchased by small operators, those purchased by larger operators, and settlement sales. We requested agency

assistance in deciding how to categorize each sale (a full list of operator names and how we categorized them is available in Appendix E).

Timber volume under contract. We compiled the total number of sales with remaining volume and the total remaining volume from each annual Timber Cut and Sold report.

Timber harvested and processed from Southeast Alaska by source. We report timber volume harvested and timber export and processing information from existing Forest Service reports.[18,19] Timber harvesting and processing and export data are available on the Forest Service's Alaska Regional Office website.

Good Neighbor Authority (GNA) sales. We obtained information about GNA sales on the Tongass NF directly from Tongass NF staff. GNA sales are also identifiable in the Timber Cut and Sold Reports by their sale names and as sales purchased by state agencies.

Timber processing facilities

Tongass NF sawmill locations and status. The Forest Service's Alaska Regional Office provided a list of businesses that were licensed as sawmills (North American Industrial Classification System [NAICS] Code 321113 – Sawmills) from a search done in 2018. We cross-referenced this list with the Forest Service's annual Sawmill Capacity reports and a verified list of active and inactive sawmills from Southeast Conference. We then used online searches and phone calls to confirm whether facilities were currently operating or not.

Tongass NF biomass utilitzation facilities locations and status. The Forest Service Alaska Regional Office provided a list of biomass facility locations which we verified with the Biomass Outreach Coordinator for the Southeast Conference. We then used online searches and phone calls to confirm whether facilities were currently operating or not.

Results

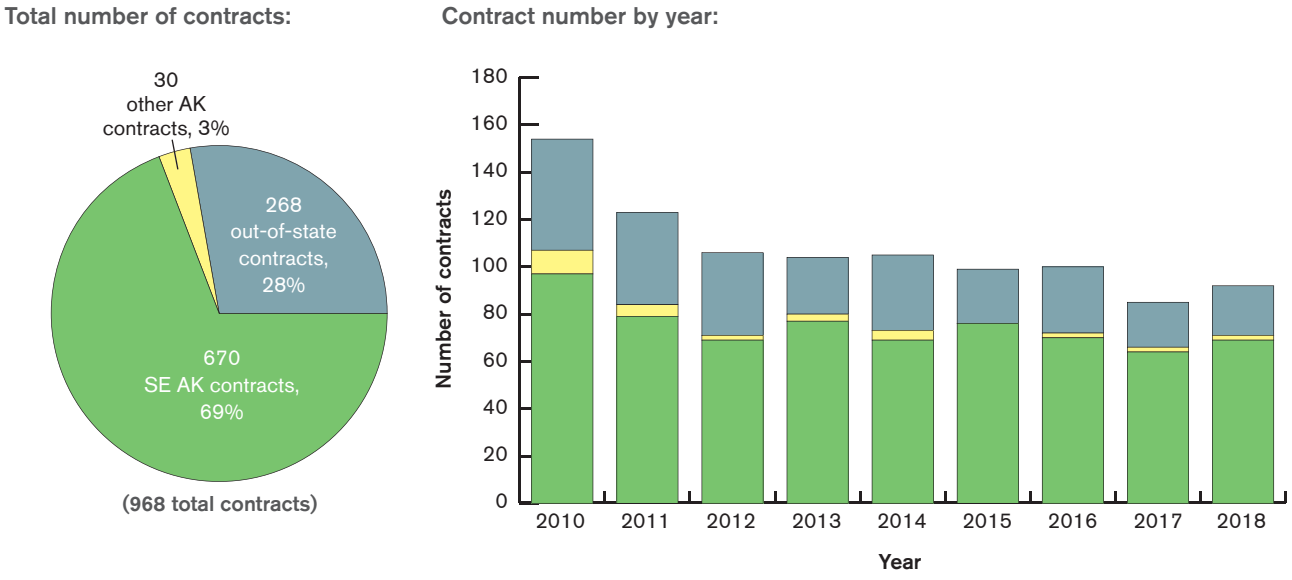
Tongass NF service contracts

From 2010 to 2018, the Tongass NF issued 968 contracts worth $136.6 million to 160 different businesses for restoration and other natural resources work. The annual number of contracts declined by 40 percent from 154 contracts in 2010 to 92 in 2018 (see Figure 9a, page 21). The total number of businesses receiving contracts also declined by 40 percent, with just 42 businesses receiving contracts in 2018 compared to 70 in 2010.

A small subset of businesses received large percentages of the total contract value. In particular, Southeast Road Builders in Haines, Alaska received contracts for $47.68 million, which was 35 percent of the total contract value issued during 2010 through 2018. Another 25 businesses received over one million dollars each in contract value during this timeframe. Collectively these businesses accounted for 45 percent of contract value for the timeframe (see Appendix D for the full FPDS dataset and a list of all businesses receiving more than $1 million in contracts during the time period). The remaining 20 percent of the issued contract value was shared among 134 businesses.

Service contracts by business location. Overall, most contract value was awarded to businesses based in the region. From 2010 to 2018, $104.1 million were awarded to local businesses, $28 million were awarded to nonlocal businesses outside of Alaska, and $4.3 million were awarded to businesses in Alaska but outside of the southeast region. Southeast Alaska entities received 69 percent of contracts and 76 percent of the value in those contracts (See Figure 9b, page 21). Businesses located outside of Alaska received 28 percent of contracts and 21 percent of the value in those contracts. The remaining three percent of contracts and contract value went to Alaska businesses located outside of the southeast region.

Figure 9a The number of restoration service contracts awarded by the Tongass NF by business location, total and by year, 2010–2018



Data source: Forest Service Federal Procurement Data System.

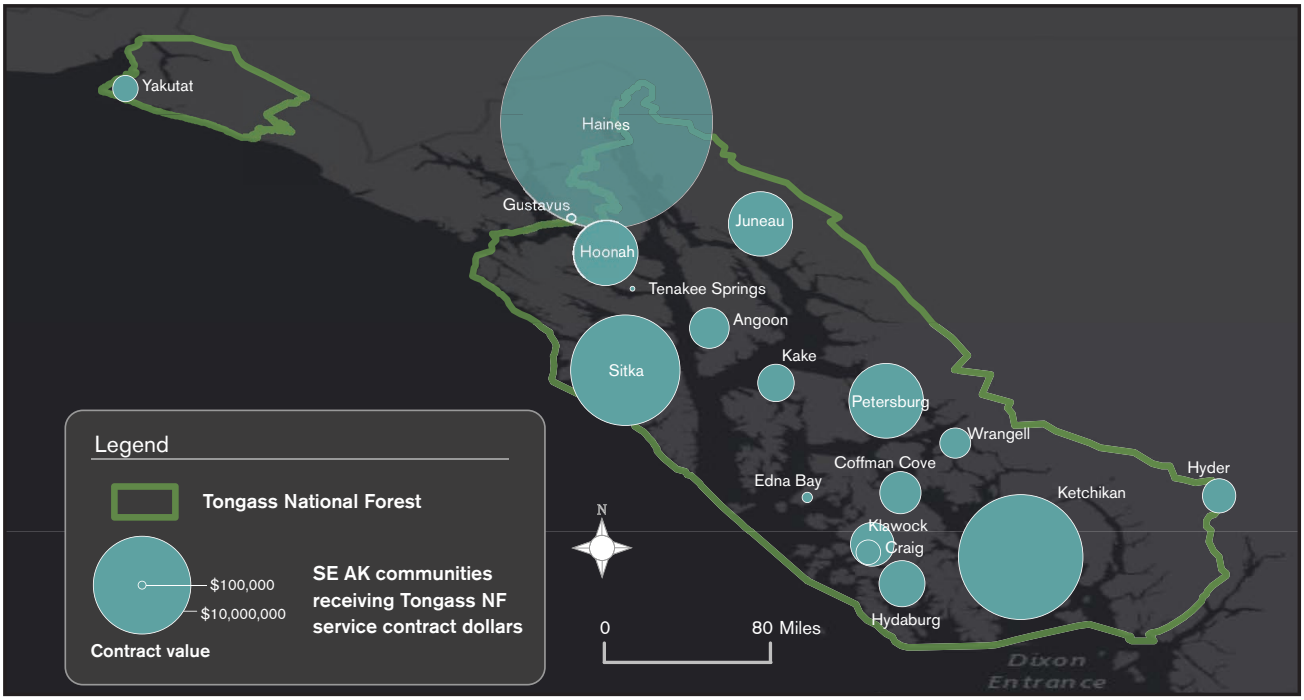
Figure 9b The number of businesses receiving restoration service contracts, and restoration service contract value awarded by the Tongass NF, 2010–2018

Data source: Forest Service Federal Procurement Data System.

Local businesses receiving contracts from the Tongass NF were located in 18 different communities across Southeast Alaska (see Figure 10, below). Businesses located in Haines, Ketchikan, Sitka, Petersburg, Hoonah, and Juneau received 67 percent of contract value awarded from 2010 to 2018.

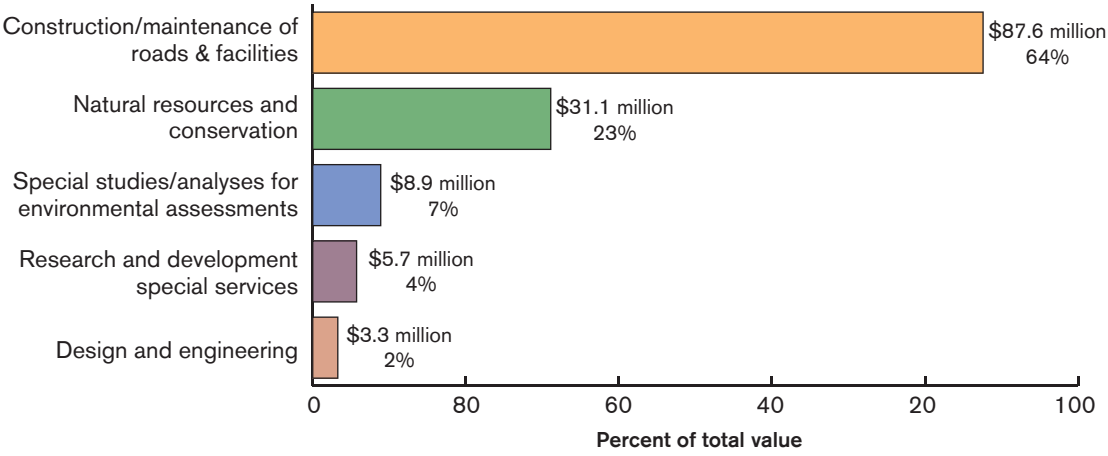
Service contracts by PSC. The Tongass NF spent the most contract dollars on construction and maintenance of roads and facilities, around $87.5 million from 2010 through 2018, followed by natural resources and conservation work at $31.09 million (see Figure 11, below).

Figure 10 Total value of contracts issued by Tongass NF to businesses located in communities across Southeast Alaska, 2010–2018



Data source: Forest Service Federal Procurement Data System.

Figure 11 Total value of contracts awarded by Tongass NF by Product Service Code (PSC), 2010–2018



Data source: Forest Service Grants and Agreements database.

Service contracts by type of work completed. Contract value for recreational facilities and trails and bridges, culverts, and fish passages generally increased across the study period (see Figure 12, below). Contract value for pre-commercial thinning decreased slightly, but fluctuated year-to-year. Contract value related to fisheries management generally represented less value than the other sectors, apart from several years in which very large investments were made.

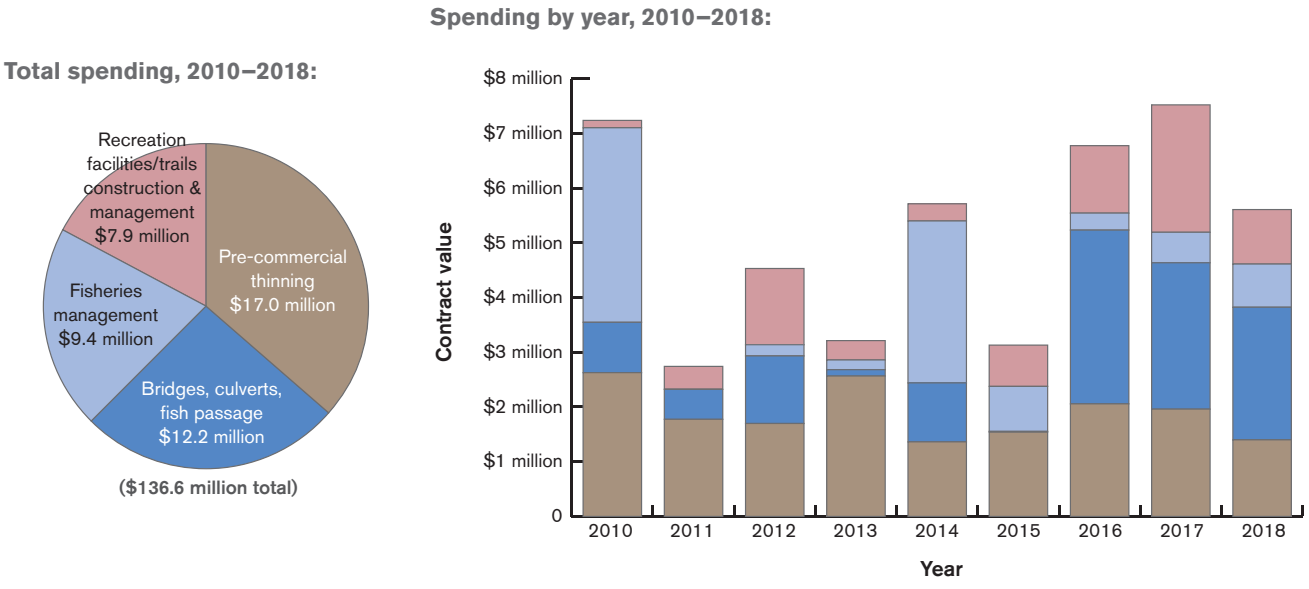
Tongass NF timber sales

Between 2010 and 2019, The Tongass NF administered around 731[20] timber sales to an estimated 76 unique purchasers,[21] representing around 302,771 thousand board feet (mbf) of sold timber volume.

Timber sales by purchaser location. Over 98 percent of the total volume sold went to local purchasers (see Figure 13, page 24), which included 62 unique local businesses that purchased timber sales ranging in volume from 0.1 mbf to 86,961 mbf. Around 5,247 mbf went to purchasers based outside of Alaska and 388 mbf went to purchasers with an unknown location.

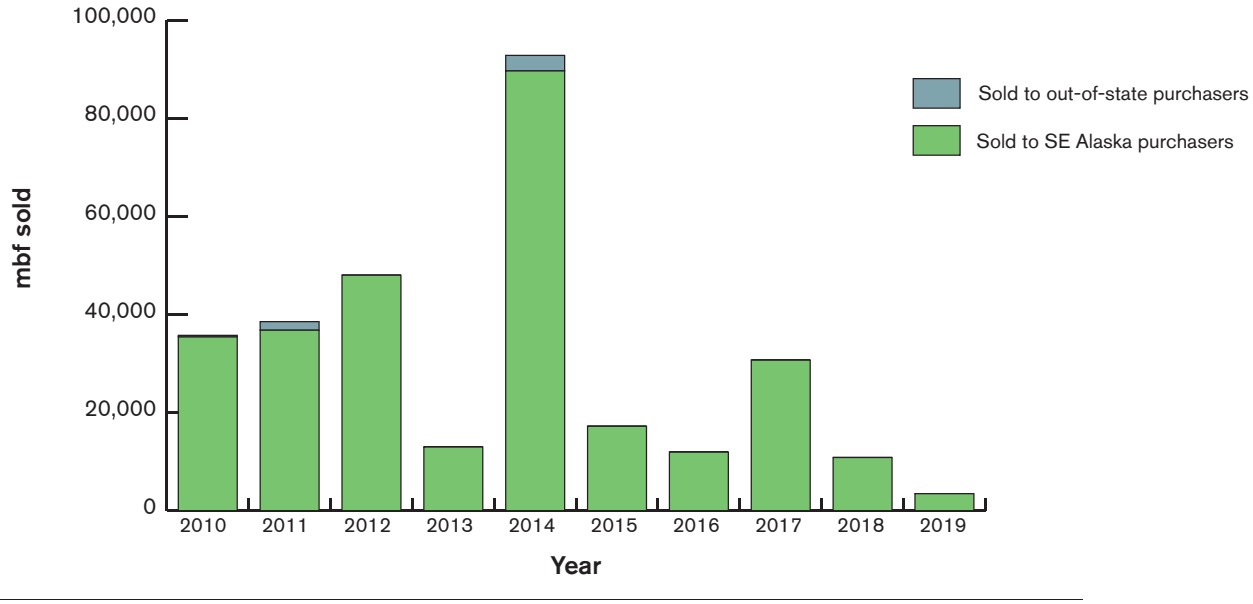
Timber sales by operator size. We found that small operators had purchased over 25,000 mbf in 204 timber sales ranging in size from 0.1 mbf to 2,274 mbf, with an average size of 124 mbf and median of 18 mbf. Small operators were located in at least 17 communities across Southeast Alaska (see Figure 14, page 24) and had purchased sales under 65 unique purchaser names. However, it is likely that the total number of small operators in the area was less than 65 because individual businesses may have made purchases under multiple business and individual names. Three large operators purchased over 268,000 mbf in 27 timber sales, with an average sale size of 9,936 mbf per sale and a median sale size of 693 mbf. Large operators were located in three communities across Southeast Alaska. Five purchasers from four communities (three in Southeast Alaska and one in the contiguous United States) bought eight settlement sales for a total volume of 9,129 mbf. The Blue Lake Hydro Settlement sale encompassed the majority of this volume (7,582 mbf). Location information was unavailable for 11 small operators.

Figure 12 Contract value spent on pre-commercial thinning; fisheries management; recreational facilities and trails; and bridges, culverts, and fish passage projects; total and by year, 2010–2018



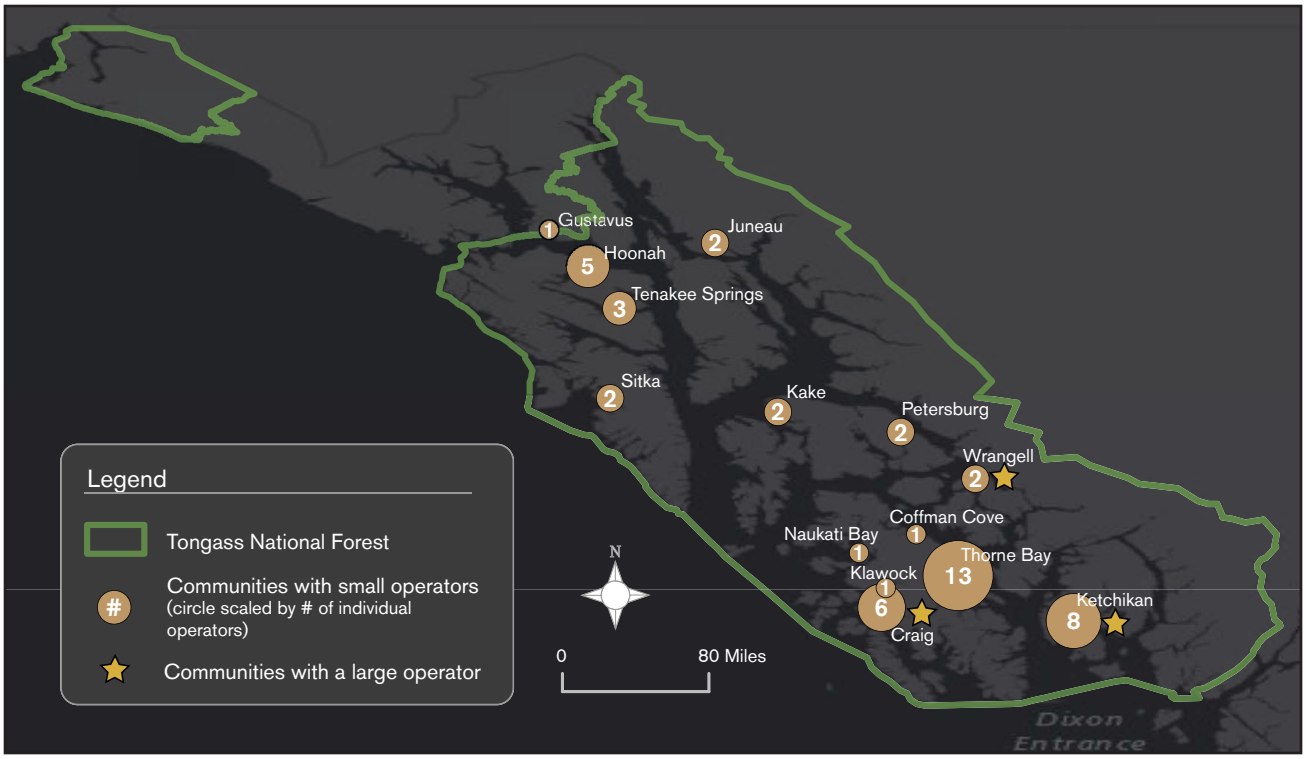
Data source: Forest Service Grants and Agreements database.

Figure 13 Timber volume sold by Tongass NF by bid year and purchaser location, 2010–2019



Data source: Tongass NF Timber Cut and Sold reports.

Figure 14 Timber sale operators in Southeast Alaska that purchased Tongass NF timber sales, 2010–2019*

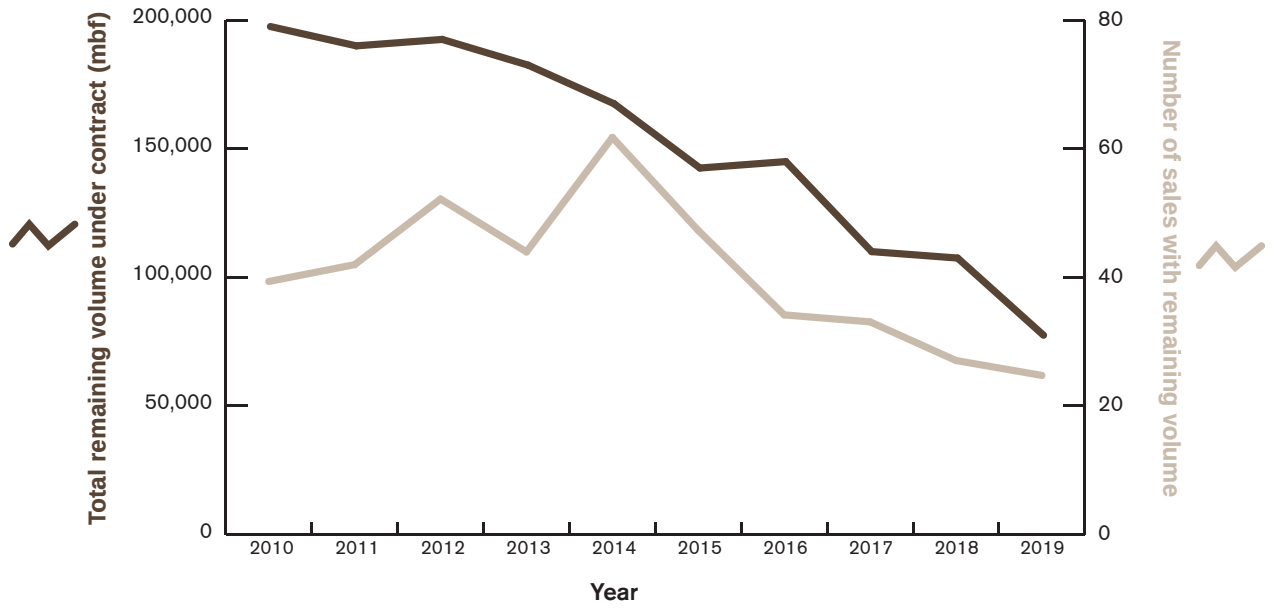


Data source: Tongass NF Timber Cut and Sold reports.
* Location information was unavailable for 11 small operators.

Timber sales and volume under contract. Around 47 percent of all timber sales under contract between 2011 and 2017 were on the Thorne Bay Ranger District. These were primarily small-volume sales, but the Thorne Bay District had much larger volume under contract than any other district. Ketchikan, Petersburg, and Wrangell Districts had fewer sales under contract than the Thorne Bay district, but much larger volumes under contract than the other ranger districts. Between 2010 and 2019 there was a steep decline in the number of sale contracts with remaining timber volume, and an overall declining trend in the total remaining volume under contract that was punctuated by increases in 2011, 2012, and 2014 (see Figure 15, below). This suggests an overall trend toward fewer, smaller sales.

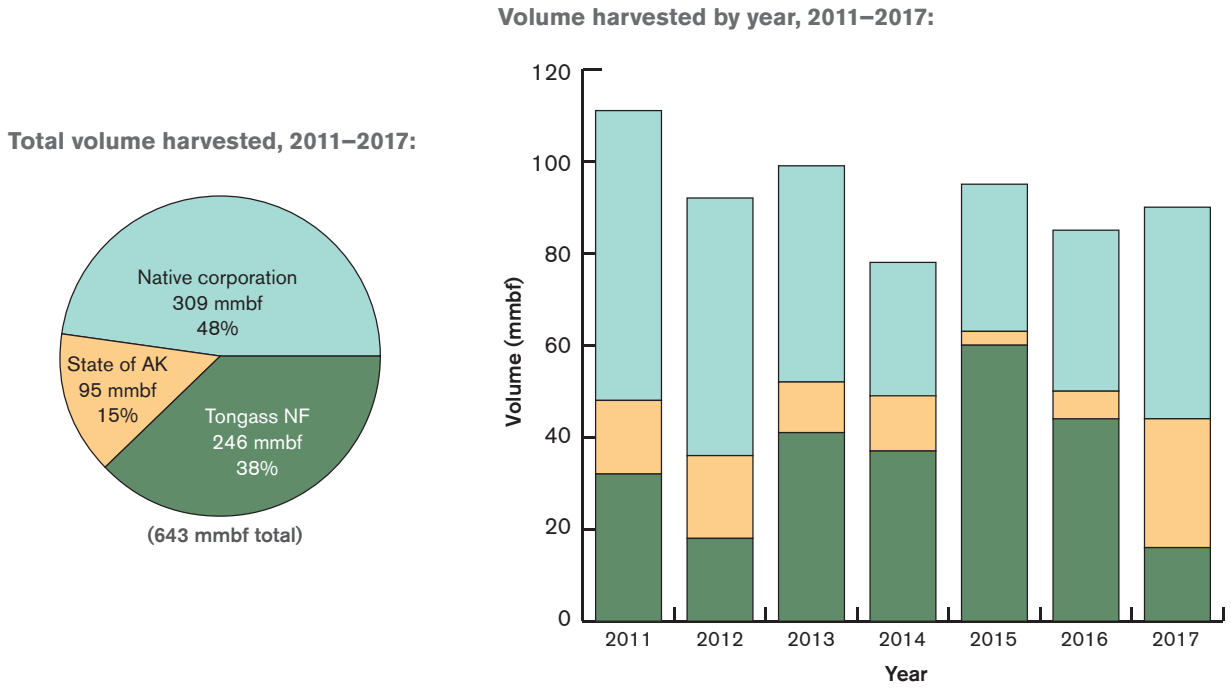
Timber volume harvested and processed from Southeast Alaska by source. In some years, the majority of timber harvested in Southeast Alaska came from Alaska Native Corporation harvests (see Figure 16a, page 26). The timber that is processed locally in Southeast Alaska is sourced primarily from the Tongass NF (see Figure 16b, page 26). The use of Good Neighbor Authority on two projects (see call out box, page 27) between the Tongass NF and the State of Alaska was recorded as state volume. Export of unprocessed timber is an important component of the Tongass timber economy. Timber harvested from state and private lands has no export restrictions, while timber harvested from the Tongass is bound by Forest Service Alaska Regional Office export policies. Additional information about Tongass log exports is summarized in the Tongass NF's ANILCA reports. These reports indicate that the log export market demand fluctuated considerably between 2011 and 2017, with export volumes ranging from around 6,600 mbf to 25,000 mbf per year. In general, they show a slow decline in the number of log export permits since 2012, with the exception of a large spike in 2016. The number of unique businesses holding export permits has declined over the same time period from a high of 13 exporters in 2013 to a low of five exporters in 2015 and 2017. Forest Service data indicate that export

Figure 15 Timber volume sold but not yet cut and timber sales with remaining volume on Tongass NF, 2010–2019



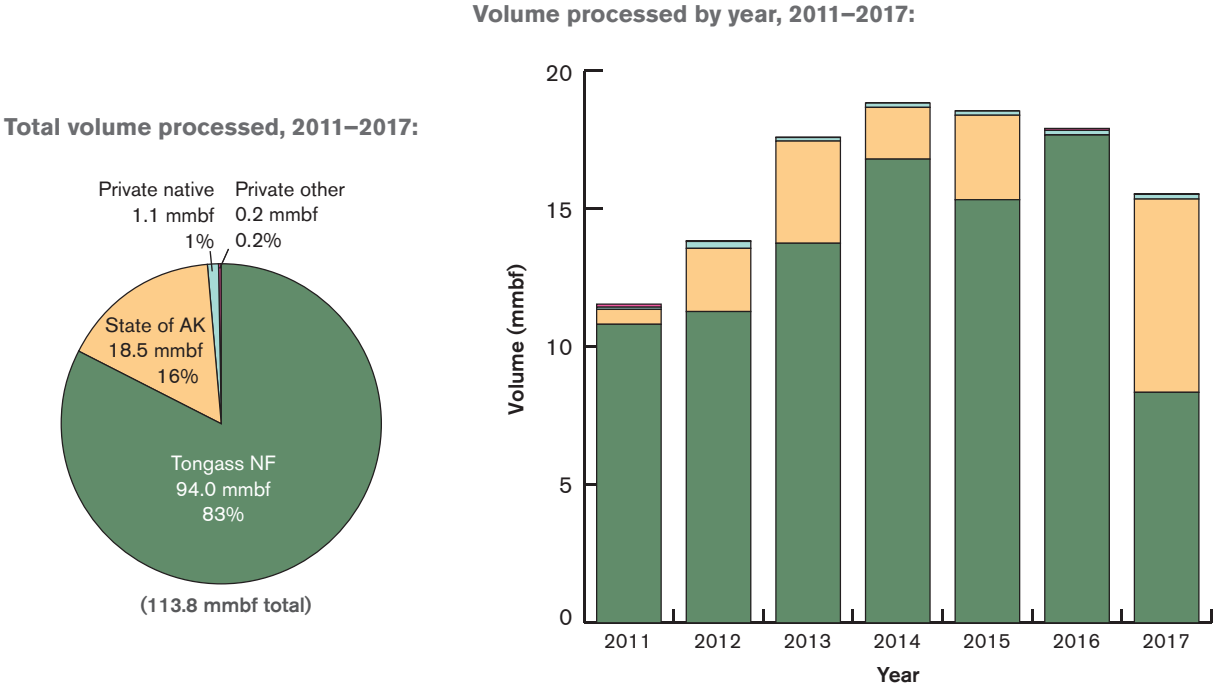
Data source: Tongass NF Timber Cut and Sold reports.

Figure 16a **Timber volume harvested in Southeast Alaska by source, 2011–2017, total and by year, million board feet (mmbf)**



Data source: Tongass NF Central Tongass Project Draft Environmental Impact Statement.

Figure 16b **Timber volume processed in Southeast Alaska by source, total and by year, 2011–2017 million board feet (mmbf)**



Data source: Tongass NF Parent Installed Capacity Report.

Good Neighbor Authority sales in Southeast Alaska

The State of Alaska and the Tongass NF have used the Good Neighbor Authority (GNA) to work across land ownership boundaries to complete two timber sales, both of which included young growth.

- **Kosciusko:** The first GNA sale in the state was the Kosciusko Young Growth Timber Sale in 2017. This sale, on Kosciusko Island (Thorne Bay Ranger District) included approximately 1,500 acres and 29 million board feet, all of young growth timber near recent sales on other land ownerships on the remote island. Alcan Timber Inc. purchased the sale for $2.6 million. This was the largest timber sale in Southeast Alaska that year.
- **Vallenar Bay:** Vallenar Bay timber sale in 2019 was the second GNA sale in Southeast Alaska. It included about 480 acres and a total of 16 million board feet from the State Forest and Tongass NF on the northwest end of Gravina Island near Ketchikan. The volume of the sale was comprised of approximately 59% young growth, 35% old growth and 6% of small log and utility wood. Alcan Timber Inc. purchased the sale for $2.1 million.

percentages have fluctuated year to year from 2007 through 2017, ranging from a low of around 19% in 2007 to a high of around 55%, with a slowly increasing trend. Year-to-year export percentages depend on global markets, transport logistics, and other factors. This trend is important to track throughout the Transition; given interviewees' reporting that the only market for small diameter and/or loose grain Tongass timber is export and the Forest Service's Alaska Regional Office's current export policies, we would expect to see export percentages increase unless processors establish new markets for young growth products.

Timber processing facilities

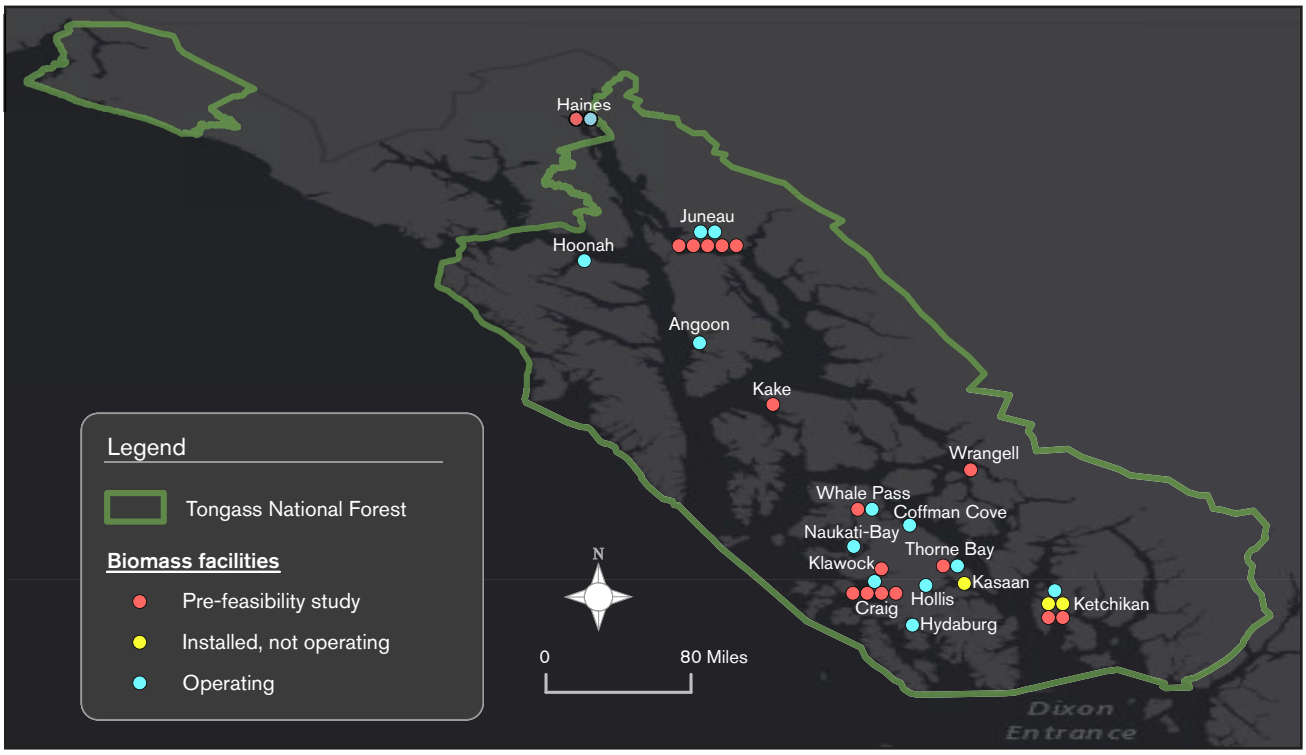
Tongass NF sawmill locations and status. As of November 2019, there were at least 23 active mills operating in Southeast Alaska in 11 communities (see Figure 17, page 28). Haines, Petersburg, and Thorne Bay each housed three active mills. Another 17 mills were inactive or uninstalled, and business licenses existed for another 17 sawmills in Southeast Alaska for which we were unable to find status information. There was some overlap between sawmill businesses and timber sale purchasers (shown in Figure 14, page 24), however there were registered sawmill businesses that had not purchased timber sales, and there were timber sale purchasers that were not registered sawmill businesses. A full list of active and inactive sawmills is included in Appendix F.

Tongass NF biomass utilitzation facilities locations and status. At least 16 biomass facilities have been installed across 13 communities in Southeast Alaska (see Figure 18, page 28). These facilities are primarily located in schools, but also heat other private and public facilities such as an airport, a senior center, two office buildings, a pool, and housing units. Another 18 projects have undergone a pre-feasibility study by the State of Alaska's Alaska Wood Energy Development Task Group and are in various stages of consideration or development. A full list of active, inactive, and prospective biomass facilities is included in Appendix G.

Figure 17 Locations of installed and operating mills in Southeast Alaska

Data source: Forest Service list of active sawmill business licenses; Tongass NF Sawmill Capacity Reports; Southeast Conference personal communication.

Figure 18 Biomass facilities in Southeast Alaska



Data source: Southeast Conference personal communication.

III. Collaborative work on the Tongass NF and surrounding communities

Rationale for metrics selected

Tongass NF Grants and Agreements

The Forest Service engages in many activities beyond contracting and timber sales, such as community engagement, education, research, and other program areas, which they conduct using Grants and Agreements. Grants and Agreements are allocated to federal, state, and local agencies and well as schools, tribes, community groups, and nongovernmental organizations. We explored Grants and Agreements issued by the Tongass NF from FY 2011 through FY 2019 to better understand where and how organizations were engaging with the forest.

Grants and Agreements by partner organization location, type of work awarded, and type of partner organization. Understanding what organizations the Forest Service is partnering with, for what type of work, and where they are located can explain local capacity for these types of work, and economic impacts in the local and nonlocal area. This also has implications for thinking about where and how capacity might be developed or bolstered for different types of work and/or to keep more work local, or what new partners the agency might be able to connect with.

Approach

Tongass NF Grants and Agreements

We obtained data from the Grants and Agreements database through a data request filled by the Forest Service Alaska Regional Office in October 2019. Some Grants and Agreements were awarded to more than one entity; in this case we split the award value evenly between all listed partners. We excluded any Grants and Agreements in which the total dollar value contribution of the Forest Service and partner organizations were zero. See Appendix H for a full cleaned Grants and Agreements dataset.

Grants and Agreements by partner organization location. We added a variable to the dataset for location of partner organization. We categorized location based on the headquarters of the organization. We found this information through organizational websites and businesses licenses.

Grants and Agreements type of work awarded. The Forest Service's Grants and Agreements database includes a variable that categorizes each grant or agreement by the category of work conducted. The Forest Service uses 24 categories, such as Road Management, Recreation Management, Watershed Management, Trails Management, Environment Education/Interpretation, Ecosystem Management, and more.

Grants and Agreements by type of partner organization. We added a variable to the dataset for type of organization that each partner represented (i.e., city/borough, nonprofit organization, university, tribal organization, federal partner, etc.). We found this information through organizational websites.

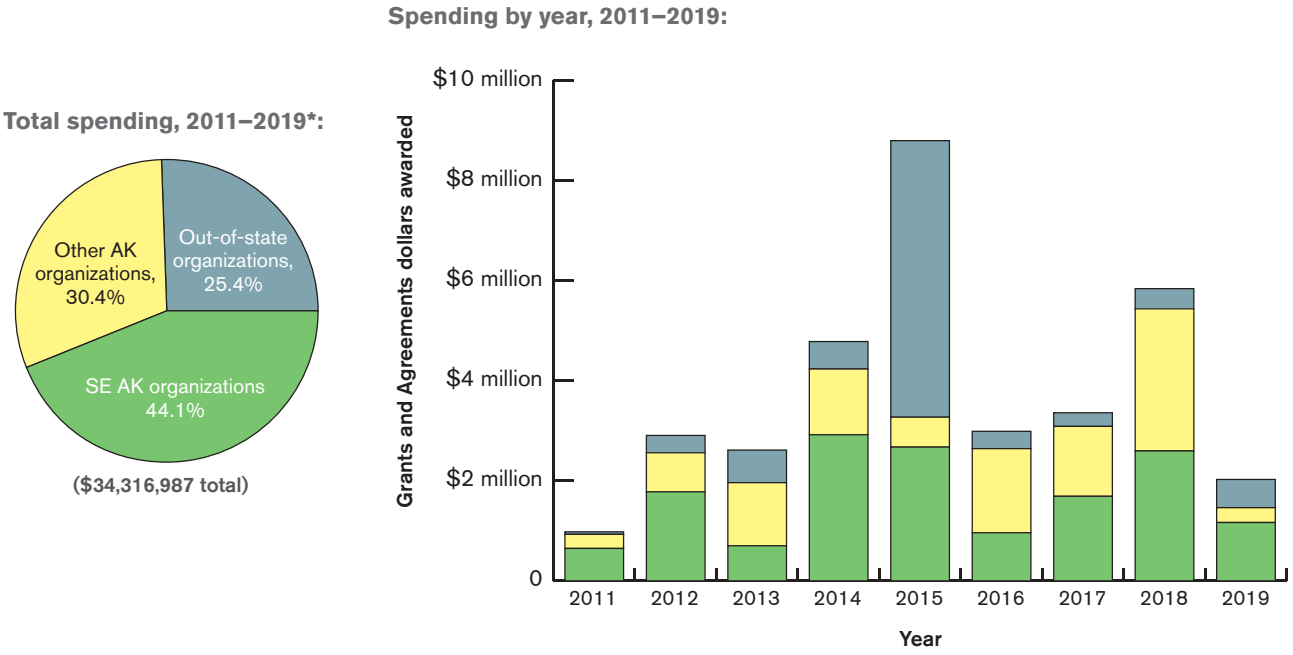
Results

Tongass NF Grants and Agreements

From FY 2011 to FY 2019, the Tongass NF contributed a total of $34.4 million in 1,002 individual Grants and Agreements with outside organizations. Organizations partnering with the Tongass NF through Grants and Agreements contributed $44.9 million in matching funds to these partnerships. The number of unique Grants and Agreements issued by the Tongass NF per year ranged from 45 to 219.

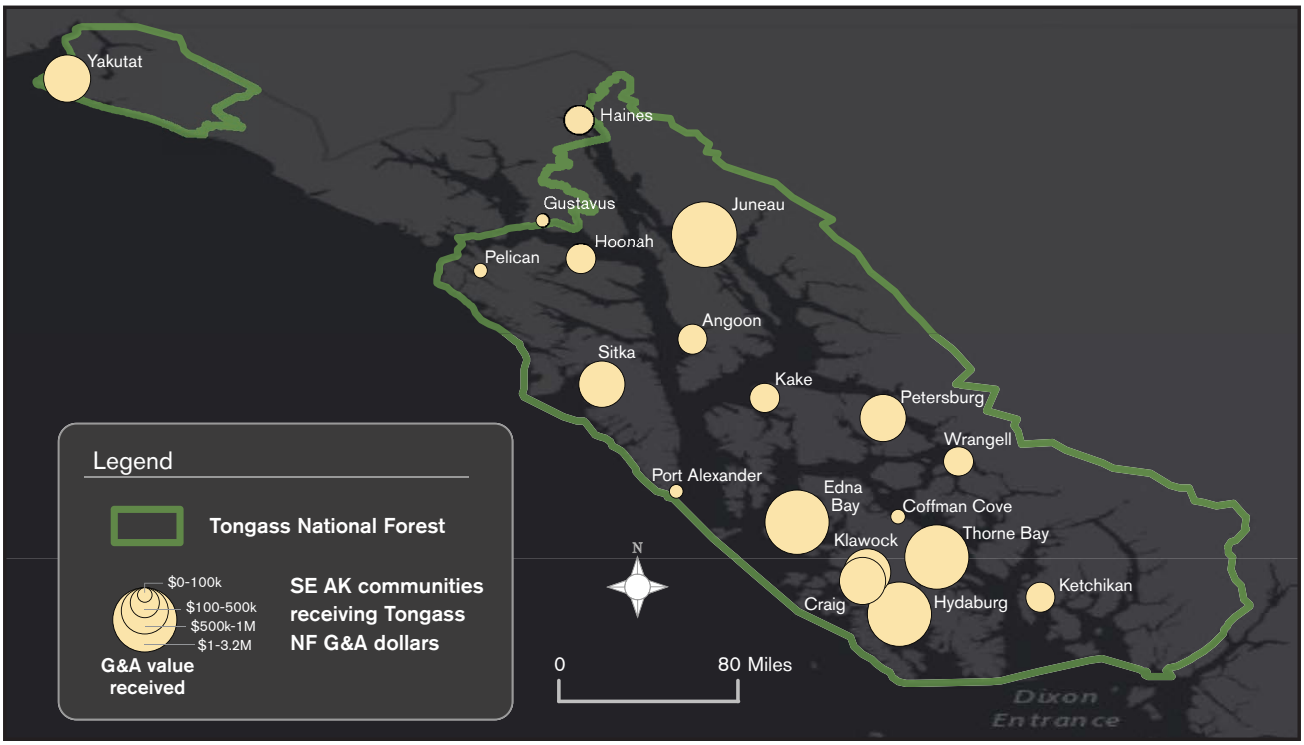
Grants and Agreements by partner organization location. One hundred and twelve unique partner organizations received Grants and Agreements funds from the Tongass NF, 64 percent of which were local to Southeast Alaska, nine percent of which were within Alaska but outside the Southeast area, 23 percent were out of state, and three percent for which we were unable to find location information. The total value of Grants and Agreements varied considerably. Around 44 percent of the total dollar value (more than $15.1 million) was granted to local organizations, while 30 percent ($10.4 million) went to organizations in other parts of Alaska (mainly state agencies) and 25 percent went to out-of-state organizations, including federal partners. The local Grants and Agreements recipients were based in 21 communities across Southeast Alaska, with the largest dollar values going to organizations based in Juneau ($3.1 million), Edna Bay ($2.5 million), and Thorne Bay ($2.13 million) (see figures 19 and 20, page 31).

Figure 19 Tongass NF Grants and Agreements spending by recipient location, total and by year, FY 2011–2019*



Data source: Forest Service Grants and Agreements database.
* Another $21,778 was issued to organizations for which we were unable to identify their location.

Figure 20 Tongass NF Grants and Agreements spending by Southeast Alaska community, FY 2011–2019*

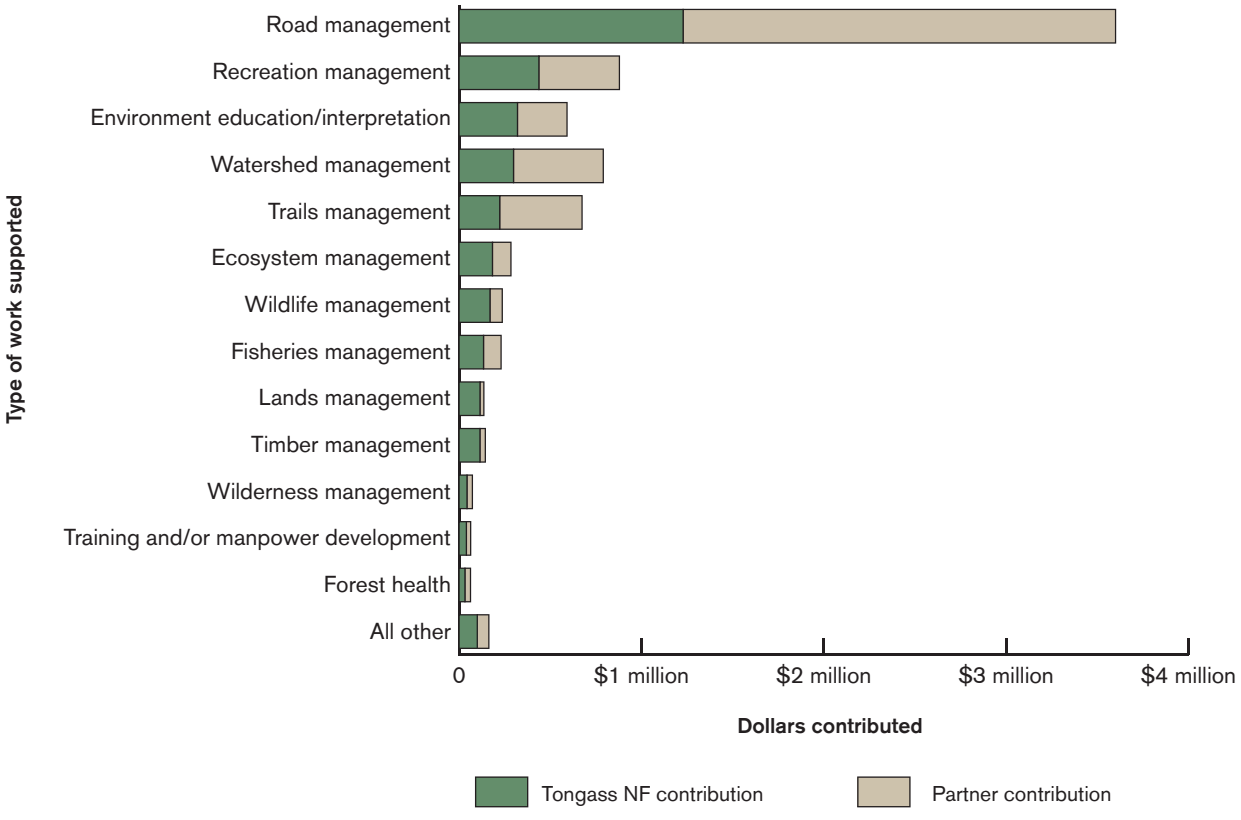


Data source: Forest Service Grants and Agreements database.
* Another $21,778 was issued to organizations for which we were unable to identify their location.

Grants and Agreements type of work awarded. Grants and Agreements supported many types of work, but the highest dollar value was invested in road management (45 percent of the total dollar value). Other principal investment areas included: recreation management, environmental education/interpretation, and watershed management (see Figure 21, below).

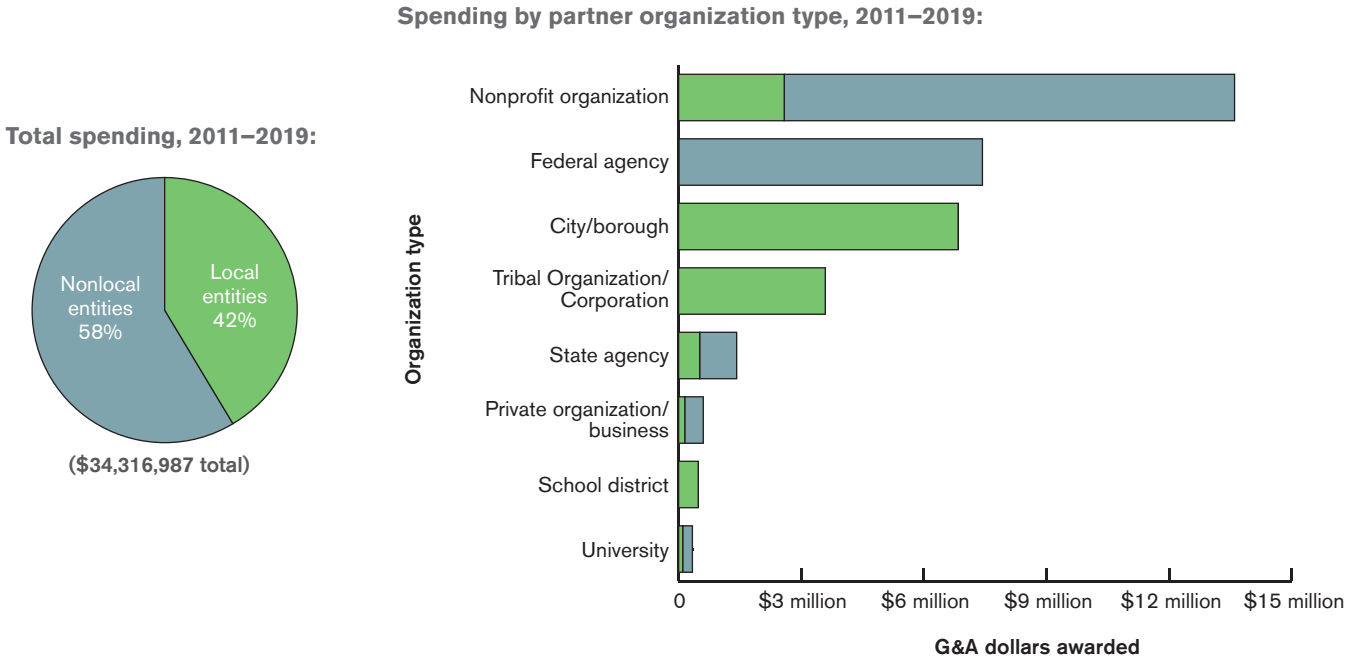
Grants and Agreements by type of partner organization. Organizations that entered into Grants and Agreements with the Tongass NF from FY 2011 through FY 2019 included: nonprofit organizations, state and federal governments, cities and boroughs, tribal organizations, private organizations, school districts, and universities (see Figure 22, page 33). USDOT and the Federal Highway Administration received the largest shares for road management. Other organizations that received notably high dollar values through Grants and Agreements included: the Student Conservation Association, the Nature Conservancy, Cities of Edna Bay and Thorne Bay, and the Alaska Department of Fish and Game (A full list of Grants and Agreements recipients and dollar values are reported in Appendix H).

Figure 21 Tongass NF and partner contributions to Grants and Agreements by spending category, FY 2011-2019



Data source: Forest Service Grants and Agreements database.

Figure 22 Tongass NF contributions to Grants and Agreements spending by partner organization type and location, FY 2011–2019



Data source: Forest Service Grants and Agreements database.

IV. Stakeholders' perceptions and concerns about changes occurring in Southeast Alaska communities and on the Tongass NF

Rationale for metrics selected

Available quantitative data does not adequately capture all important factors that impact the Tongass NF and neighboring communities. Interviews and document analysis can help to draw out additional information and diverse perspectives about the Tongass Transition. Qualitative methods are particularly useful for understanding how and why phenomena have occurred. Interviews allow for more detailed responses, the development of one-on-one rapport, and discussion of key themes that emerge. They allow interviewees to focus on what they think is most important or relevant to a particular research question, and allow them to explain experiences in their own words. Interviews and document analysis are particularly useful in this research given the variability of perspectives held by different stakeholders and between different communities in Southeast Alaska and our interest in capturing nuanced thoughts and opinions held by different stakeholders.

Approach

We conducted interviews with 38 stakeholders. Interviewees included representatives from federal and state agencies, timber industry and contractors, local government, tribes and tribal corporations, nongovernmental organizations (NGOs), recreation organizations, fishermen, and economic development organizations. Interviewees were primarily individuals living and working in Southeast Alaska. Interviews were conducted in-person or by phone in August and September of 2019. Interviewees were told that this research effort would be used to inform future plans to understand and track changes to their community and that their responses would be confidential. Interviews were semi-structured around seven main topics:

- Interviewees' role(s) in their community
- Changes in social and economic conditions/ wellbeing that interviewees have observed in their communities and causal factors for these changes

- Primary concerns voiced by members of their communities
- Interviewees' reflections on the status of the Tongass Transition and what a "successful" Transition would entail
- Interviewees' ideas about how and what to track to understand social and economic change in their community
- Anything else interviewees thought was important to share that had not yet been covered in the discussion.

Interviews were recorded with permission from participants (otherwise detailed notes were taken), transcribed, and analyzed for key themes. We report on key themes below, including: changes experienced in Southeast Alaska communities, concerns expressed by members of Southeast Alaska communities, concerns regarding management of the Tongass NF, perceptions of the status and impacts of the Tongass Transition, and the impact of the Tongass Transition on businesses in the region.

The scope and scale of our project did not allow us to conduct a full-scale small mill survey or a detailed workforce assessment. Given the amount of information already collected on this topic, we included four mill owner/operators in our interviews and supplemented perspectives from this group of stakeholders by using existing documents. We used a variety of existing resources, including: news articles related to the Tongass Advisory Committee and Tongass Transition (KTOO [Alaska Public Media]; KRBD [Alaska Public Media]; Alaska Journal of Commerce; Alaska Business; Anchorage Daily News); Tongass Advisory Committee meeting summaries prepared by Meridian Institute and archived by the Forest Service; notes from Tongass Advisory Committee meetings, workshops and field trips; written public comments to the Tongass Advisory Committee and the Tongass NF Land Management Plan Amendment process; and Tongass timber under contract (Forest Service). We also supplemented with data gathered during the course of this project through attending meetings, participant observation, meetings with key stakeholders, and other related settings.

In addition, for the small mill data, we note that given the flexible and often-changing nature of the small owner/operator facilities, it can be difficult to rely on older surveys of active and inactive mills, business license data, and employment data to describe who exactly is operating each year, the number of full or part-time jobs at each over time, and their precise direct and indirect economic impacts. Similarly, given the changes in timber supply, location on the forest from year-to-year, and a mobile workforce, it can be difficult to rely on employment data alone. Rather, Forest Service data (for example, the March 2012 Timber Task Force Report on Southeast Wood Products) coupled with data checking, follow-up calls, and surveys and/or interviews will better reflect the industry's contributions to community wellbeing.

Results

Community change

When asked about baseline conditions, most people considered "baseline" to be the pulp mill era and associated impacts across the region from the mill closures. Many interviewees were long-time residents with memories dating back to the closure of the region's pulp mills in the 1990s. They frequently cited this as the major trigger for community changes that rippled into the future. Interviewees explained that after the mills closed, many businesses that benefited from the mills and their workers were impacted.

In response to these changes, Southeast Alaska communities embarked on highly divergent pathways to cope with the loss. Some communities made large public investments in alternative industries, such as cruise ships (i.e., Ketchikan, Haines, Hoonah), cultural and other small-scale tourism (i.e., Kasaan) or fishing, fish processing infrastructure and marine services (i.e., Craig, Wrangell), while maintaining small but active timber industries. Some communities were described as being less economically resilient to the disturbance than others (i.e., Wrangell, Thorne Bay, Whale Pass) and have only recently stabilized with smaller popula-

tions and increasingly diversified economies. Interviewees described dramatic social transformations in some communities (i.e., Sitka and Petersburg), in which communities once economically dominated by the pulp mill are now populated predominantly with people who hold forest preservation-oriented worldviews and do not support maintaining a local timber industry. Interviewees from many different communities described individual residents' strategies to cope with lack of economic opportunities, such as running side businesses mostly related to tourism (i.e., charter fishing, bed and breakfasts) to generate extra income, although some businesses (i.e., commercial fishing) had high cost of entry.

Interviewees felt that economic conditions have generally declined. The economic conditions described by interviewees varied by community, but in general, interviewees noted that the loss of high-paying, stable jobs in year-round industries and the increase in seasonal, low-wage jobs had left residents with less disposable income, fewer medical benefits, and a general loss of economic vitality in communities. The loss of population also meant decreased public funding available to school districts and other public institutions, which in several communities led to the closing of small schools. In addition, Forest Service budget cuts in the 2000s had decreased the overall amount of non-timber work occurring in the Tongass NF. The cost of living (i.e., electricity, water, housing, fuel) has also been rising, in part due to increasing costs of transportation and decreasing state investments, but also because of the growing visitor industry and second homeowner population. In some cases, housing availability was limited, or becoming prohibitively expensive for local residents. These factors are exacerbating the difficulties of living in the region.

Different economic sectors have had varying levels of importance in Southeast Alaska communities, but increases in tourism and fishing have been the most prominent changes. In many communities, the cruise ship industry has vigorously increased in scale, as have commercial and charter fishing, despite decreasing fish abundance and catch limits. Interviewees noted that the overall frequency with which visitors were present in their communities was increasing, and so, too, were the sizes of tourist groups. On Prince of Wales Island, interviewees noted a growth in the mining sector. Interviewees described increasingly divisive politics and opinions in communities that were still trying to support a timber industry. They noted that most of the communities north of Frederick Sound had already "transitioned" in the sense that they supported little to no timber economy and the small timber industry operators functioning in those communities did not depend on large operators for wood supply, workforce, or to sell their products.

Improved road and flight access between communities has changed the social and economic landscape of once-isolated places. Interviewees thought that the rapid pace of road paving as well as increased airplane transportation was transforming communities. The option to commute faster on smooth roads allowed individuals from small communities on Prince of Wales Island to access economic opportunities in larger commercial hubs. Interviewees also noted that easier movement around Prince of Wales made it possible for entrepreneurs to start or expand recreational business ventures that take advantage of the island's public land, and that the roads better connected communities to each other. On the other hand, some interviewees noted that paved road access threatened traditional ways of life in remote communities, such as Point Baker and Port Protection, or thought that so many roads were not necessary.

Small and fairly recent population growth was attributed to demographic changes, namely an increase in older, part-time, or seasonal residents. Interviewees noted a significant lasting decrease in population in around year 2000 across many communities as a result of the closure of the pulp mills, but they also observed a demographic shift and a slow uptick in population growth in more recent years. Newcomers tended to include recently-retired, older couples who are often part-time or seasonal residents. They may not consider Southeast Alaska to be their primary home, and therefore this trend of increasing population may not be captured in census data. Interviewees observed many young people had left to pursue opportunities else-

where; however, a few individuals noted that some youth who had grown up in the area had returned as adults to open businesses, raise families, or return to a way of life they enjoyed. Interviewees explained that transient workers were common both during the pulp mill era and in more contemporary times; however, they noted that in the 1990s and 2000s the majority of workers came from the Pacific Northwest, whereas many transient workers today come from economically distressed countries in Latin America (i.e., Venezuela, El Salvador) to work primarily in the service industry and some on tree thinning crews.

Interviewees noted many ecological changes. They cited declining salmon runs and fish populations, decreasing populations of deer, more wildfire risk, hotter temperatures, and more drought. They thought there was less snow and altered plant and animal phenology as seasons shifted. They noted improved air quality in communities where pulp mills had shut down, but decreasing air quality in areas where many houses are using wood heat.

Community concerns

There are multiple social and economic challenges facing Southeast Alaska communities:

- **Social, cultural, and mental health concerns in communities.** In particular, interviewees described high rates of substance abuse, mental illnesses, and a loss of cultural traditions among youth. Interviewees also identified difficulties impacting working and aging populations, such as high workplace injuries and fatalities, limited access to medical care, difficulty recruiting and retaining employees in rural areas, and high suicide rates.
- **Ripple effects of economic decline in the state of Alaska.** Interviewees explained that the state government is a primary provider of stable, year-round jobs in Southeast Alaska and that the state's budget cuts had directly and indirectly contributed to economic decline in the region, especially in places like Juneau which is a government employment hub for the state. In addition, interviewees noted that access to adequate social services (i.e., education, health care) provided by the state was a challenge.
- **Vocational training and education are needed to support employment opportunities for future generations.** Interviewees described a vicious cycle where young people left the area seeking better educational or work opportunities, leading to a decrease in the number of families in the area, reduced school enrollment, and the decline in quality of education due to low school district budgets and statewide budget cuts. They wanted to see increased vocational training and other educational opportunities, especially training in support services for the fishing industry (i.e., training to help with refrigeration systems, boat repair, and electricians).
- **High cost of living and transportation.** Interviewees expressed concern about the lack of housing and rising cost of energy, water, and shipping. Many interviewees noted the Alaska Marine Highway System's decreasing services to many of Southeast Alaska's remote com-

munities. There was further concern that the loss of subsistence opportunities (i.e., hunting, gathering, fishing) would increase the cost of living in the region.

Depletion of natural resources and ecological change could negatively impact subsistence resources, economic opportunity, and lifestyles for future generations. Nearly all interviewees noted how subsistence lifestyles are essential to many Southeast Alaska residents. Nearly all interviewees also noted that the economies of many Southeast Alaska towns are natural resource-dependent in one way or another, which makes them all vulnerable to boom-and-bust cycles. Furthermore, they noted a systematic loss of access to natural resources for local people, salmon fishing in particular. They explained that residents were once able to supplement their income more easily by collecting and processing small amounts of special forest products and fish, but that accessing permits and licenses to engage in these activities had become increasingly difficult. Interviewees frequently cited the declining salmon runs and decreasing deer populations, and some cited a general concern that these resources were being overwhelmed by the cumulative impacts of all development activities, especially on Prince of Wales Island. A few interviewees expressed concern about the continued harvest of trees, especially in areas that had already experienced significant impacts from resource extraction or that had regenerated nearly-mature stands that were starting to exhibit old growth characteristics once again. They were also concerned about the uncertainty related to climate change, increasing wildfire risk, drought, and ocean acidification.

Some communities have discord stemming from differences in visions of the future character and economic drivers in Southeast Alaska communities. For example, some explained that communities were ramping up their tourism offerings while others were now grappling with the question, "How much tourism is too much?" based on their concern about the environmental and social costs of these industries. Interviewees noted similar attitudes about the continued increase in the charter fishing industry and hatcheries, especially given declines in commercial fish populations. They noted a particular tension between incompatible economic sectors that depended on the same natural resource or physical space in order to operate, such as conflicts over fish allocation between commercial and charter fleets, or conflicts between outfitter-guides hired to take people hunting versus tourist guides interested in taking visitors to view wildlife or those interested in harvesting timber in viewsheds that were important for tourism.

Interviewees also cited increases in collaborative natural resource management over time in some communities, and increasingly entrenched and polarized belief systems in others. They noted that relationships and cooperation had improved between organizations and interests that were once at odds with one another and that regional cooperatives, coalitions, and collaborative processes are succeeding throughout the region. They also described the collaboratively-defined recommendations produced by the Tongass Advisory Committee and Prince of Wales Landscape Assessment Team (POW LAT) as important formalizations and articulations of visions for their communities.

Concerns about management of the Tongass NF

Communities in Southeast Alaska want to contribute to national forest management, and they recognize the Tongass NF as integral to where they live, work, and recreate. Interviewees, their fellow community members, and other stakeholders have strong interest in, and in many cases dependency on, the management of the Tongass NF. Although their interests and values varied, interviewees overwhelmingly agreed that community involvement in contributing to national forest management was important.

The Forest Service's decision to exempt the Tongass NF from the 2001 Roadless Rule and instead issue an Alaska-specific Roadless Rule has eroded stakeholders' trust and backslid many years of collaborative efforts. The ongoing political debate around proposed changes to the Roadless Rule for Alaska was a prominent issue at the time these interviews were conducted. Stakeholders explained that the agency's preferred alternative (which would remove Roadless Rule provisions) was not in alignment with the agreements the Tongass Advisory Committee and POW LAT had made after years of collaboration and mutual compromise. Interviewees explained that the Roadless Rule process in 2019 had eroded their trust in the agency and other select stakeholders to follow through on agreements in good faith. They explained that it would reduce their willingness to work together in the future. People also noted a lack of communication with the agency about these changes.

Stakeholders from many differing perspectives were concerned about how they were being represented in public processes and decision-making on the Tongass NF. Interviewees noted that several collaboratively-developed consensus agreements, such as the Tongass Advisory Committee recommendations or the POW LAT recommendations, were not being upheld in good faith. They explained how certain elements of the agreements were being implemented while others were not; however, the agreement was only an acceptable compromise to all stakeholders provided that all elements were implemented. Some interviewees were also concerned about a lack of representation and consultation with key parties, such as tribes, litigious organizations, and some Southeast Alaska communities. Other interviewees were concerned about people without expertise having equal representation in the POW LAT, or that some stakeholders, especially the one remaining larger mill, having an outsized influence on public processes that overshadowed the many other stakeholders impacted by those decisions. At the same time, interviewees in the timber industry also noted how they had similar concerns around lack of trust in the agency's decisions and maintaining agreements around providing viable timber sales at a sustainable rate. Regarding representation, interviewees also perceived that:

- New conditions-based NEPA analysis processes and products were unfamiliar and lacked specificity; it was therefore difficult for stakeholders to engage in environmental review processes.
- The frequency of Forest Service "town hall" meetings had declined, which had decreased opportunities for stakeholders to engage with the agency as well as with each other.
- Conservation groups were "speaking on behalf" of communities without permission from those communities.
- The economic impact of the timber industry was often reported at the regional scale (i.e., percentage of wages/jobs the timber industry contributes to the entire Southeast Alaska economy); however, some interviewees felt this scale was too coarse to capture the important economic role timber still plays in some small communities (i.e., Thorne Bay, Whale Pass) where timber jobs account for a higher percentage of economic activity.

The multiple use mandate of the Forest Service was a difficult challenge for the Tongass NF, and some interviewees felt the forest was unable to make limited acres meet multiple differing needs. Interviewees explained how the need to manage lands for multiple uses was particularly challenging on the Tongass NF because of often-conflicting rec-

reation, tourism, timber, mining, and subsistence uses. They noted significant needs for watershed restoration and recreation maintenance, and that managing for multiple uses was sometimes not possible in areas where timber harvest had occurred. Some interviewees thought that large trees should be used to restore woody debris in creeks, while others wanted to utilize the same trees for timber or leave them standing for habitat or recreation. Interviewees described this as the Tongass NF trying to make every acre meet every need, or having "promised every acre of non-wilderness in the forest three times over," but all for differing uses.

Interviewees described tension around whether the Tongass NF should be managed for local, national, or global interests. Some interviewees believed the forest should be managed for those living locally in Southeast Alaska with direct ties to the land. Others explained that the Tongass NF was of national and global importance and therefore should be managed for those broader interests, namely preservation of the largest intact rainforest. Some interviewees thought timber, environmental, and other interest parties had an outsized influence on the state and future of the Tongass NF. Many described how changes in politics impacted the Tongass NF based on the interests of whichever political administration was in office.

Interviewees were concerned that road closures and decreases in precommercial thinning were negatively impacting community access to the forest for hunting, fishing, and other subsistence and recreational activities. Interviewees explained that the decline in timber activities meant that many roads were being decommissioned, blocked off, or otherwise closed for public use. They were concerned that decreased access to the forest would impact local communities' ability to maintain subsistence lifestyles. Some felt the Tongass NF was not adequately communicating about these closures. Interviewees were further concerned that declines in the timber industry might lead to a reduction in pre-commercial tree thinning and other forest management that is essential for creating habitat and access for berry picking, deer hunting, mushrooming, recreation, and other activities.

Staffing capacity on the Tongass NF was a key concern for community engagement, project continuity, and knowledge of the local area. Interviewees explained that the high staff vacancy rate (30-40 percent vacancy) and turnover rate on the forest had been an ongoing issue. They described a lack of agency presence and engagement in communities, loss of local knowledge and connections, and how this situation exacerbated challenges for existing forest staff. The absence of permanent leadership was also noted as a challenge for the forest in recent years.

Tongass Transition status and impacts

There is disagreement about the meaning and current status of the Tongass Transition. Opinions ranged from believing that the Transition began in the 1990's when the pulp mills closed to believing it will not begin until the 2030s when the region's trees have increased in size enough to be commercially viable. Interviewees discussed factors that were stalling or preventing the Transition from moving forward, such as:

- an overarching need for a stable supply of timber in order for businesses to invest in new ventures,
- the tariffs imposed in 2019 on timber exported to China raising the cost of young growth operations to a point of stalling operations and making the sales not economically viable,
- the threat of the Viking Mill ceasing operations and affecting smaller operators on Prince of Wales Island,
- young growth sales that ended up being non-merchantable (or sold as lesser value products than expected) causing other operators to be cautious with the purchase of young growth timber,
- concerns about the quality and utility of young growth wood,
- concerns about investments needed to be able to mill and dry young growth wood,
- the significant investment needed to identify and pursue markets for young growth wood products,
- the loss of the Forest Service's second growth stands with the highest commercial potential in a 2014 conveyance to Sealaska, and,
- the frequency of Forest Service "town hall" meetings had declined, which had decreased opportunities for stakeholders to engage with the agency as well as with each other.

Interviewees acknowledged that some pilot projects had successfully sold second growth timber and that some restoration and pre-commercial thinning work had been completed that was assumed to be part of the Transition; however, all interviewees felt that the Forest Service and other stakeholders had a long way to go to complete the Transition, regardless of what stage it was in currently.

Some conceptualized the Transition as something much broader than simply relating to managing timber harvests and thought it should focus on the forest partnering with communities to support economic viability more broadly. Specifically, interviewees thought the Transition could include investments to help diversify uses of the Tongass NF, such as more robust tourism and recreation infrastructure, supporting fish habitat through riparian restoration, or ensuring that subsistence opportunities were available. Others thought that the carbon sequestration market was an important element of the Transition. Still others thought the Transition could include a reimagination of economic possibilities, such as establishing satellite companies that provide support services for businesses in other parts of the country through online work.

There were varied opinions about what a Transition would entail. Some thought the "Transition" meant the cessation of most or all old growth timber harvest. Others thought it referred to the development of a market for second growth timber. Some individuals thought it referred to specific targets, such as 80 percent young growth timber harvest. Others considered the Transition to be something more conceptual related to maintaining the vitality of the timber industry in perpetuity, or a plan to get the timber industry through the next 10 years of economic change without crashing. Some thought that the Transition should include local processing and manufacturing, or more selective tree cutting in smaller patches rather than clearcutting.

Many interviewees thought that an important milestone for the Transition would be to achieve predictability in the availability of timber regardless of volume. They explained that timber volume needs to be available in a regular, predictable manner in order for businesses to invest in wood products infrastructure. Some interviewees thought that a stable market that supports multiple large and small timber operators and a stable or growing population was the ultimate objective of the Transition.

Some places in Southeast Alaska identify as timber communities, which makes any shift away from timber a difficult cultural change. Interviewees described how several communities were seeking ways to maintain their timber community identity, through small mill production, music wood production, biomass utilization facilities, or other timber products. They noted that some communities did not currently have the infrastructure, experienced operators, or economically viable timber available to support these industries. In addition, interviewees expressed mixed perspectives about whether timber export was appropriate. Some noted that timber harvesting and transporting created jobs, others noted that exporting detracted from local job development opportunities in processing and manufacturing. Interviewees also noted that existing timber processers were diversifying their products for the benefit of the community and economic efficiency, namely Viking Lumber making increasingly popular "biobricks" for heating from their sawdust waste, and sawmill owners selling chunk wood to boilers.

Most interviewees thought that an "infinitely sustainable" level of old growth harvest through micro- and small sales to support small operators producing high-value, low volume products, such as musical instruments, airplane wings, or products that are locally used, such as lumber and firewood, would be acceptable. Interviewees frequently cited these operations as exemplary of the type of wood products industry that was both economically successful and noncontroversial in their communities. These operators tended to require a small number of trees, sometimes just a single tree at a time, and many were able to take advantage of salvage wood to run their businesses.

Small mills and the Tongass Transition to young growth

In Southeast Alaska, small mills represent an important component of the socioeconomic system and carry on the region's heritage of forest products manufacturing and independent entrepreneurship. In the area, the term "small mills" generally refers to facilities processing less than 3 million board feet (mmbf)/year, where most process less than 1 mmbf/year. They are typically owner/operator businesses, family-owned or owned and run by one, two, or three partners. They employ between one and twelve individuals, most often two or three. In general discussion of challenges and opportunities in the forest products sector, other owner/operator wood products manufacturers, processors who do their own falling, and other forest products businesses are often included as "small mills." Some of these operators also drive trucks, operate machinery, or provide other services in the forest products industry.

Small mills are part of an integrated timber industry in southern Southeast Alaska. When a larger sale warrants additional fallers, truckers, or other help, small mills hire from the region's skilled labor pool, which is maintained by the larger operators. In some cases, larger operators act as a "bank" of logs, where small mills sell round logs for export to even out their cash flow or purchase round logs to fulfill commitments for lumber and other products between timber sales of their own. Larger operators also induce benefits at the community level, helping keep transportation links, repair services, and businesses supplying fuel, machinery, parts, tires and other essentials in town or on the island. Interviewees expressed concern that any additional reduction in timber operators in the region would cause the region to lose essential trained labor force and equipment necessary to support the region's extensive restoration needs. They also speculated that it would be difficult to rebuild a local timber industry if and when the young growth trees became marketable if younger generations of workers are not equipped with the expertise or skills to launch these new business ventures.

There are small wood processing businesses in most communities in Southeast Alaska whose ability to operate is affected by financing, workforce, markets, technology, infrastructure, wood supply, and transportation. Variation in geography, markets, infrastructure, supply, and transportation across the region results in different challenges and opportunities for wood processing businesses on different islands and road systems. On Prince of Wales Island, small mills are concentrated in the Goose Creek Industrial Subdivision outside Thorne Bay, and also operate in Craig, Klawock, Coffman Cove, and in Edna Bay on Kosciusko Island. Across Southeast Alaska, there are small mills operating in Wrangell, Petersburg, Hoonah, Tenakee Springs, Gustavus and Haines (Figure 17, page 28). There are also many businesses that are in a holding pattern, constrained by workforce limitations, shifting markets, transportation costs, accessible wood supply, and other challenges. Some owner/operators can restart their facilities when one or more of these constraints is eased through creative business development, increase in supply, support from outside entities, changes in markets, and other incentives.

Owner/operator wood processing businesses navigate their particular challenges and opportunities in different ways. On the Prince of Wales Island road system, a handful of operators have developed high-value-add models, seeking out sales of just a few or even one tree with characteristics ideal for musical instruments. Other Prince of Wales mills specialize in cedar shakes. Old growth cedar trees with some defect were once considered waste wood during the pulp mill era, but now can be both milled for lumber and split for shakes, depending on their condition. Operators throughout the region fulfill contracts and custom orders, sell pick-and-pull lumber, and frequently develop new products and markets.

Small mills rely almost entirely on the Tongass NF when purchasing timber. This is unlike larger companies such as Sealaska Timber Corporation, Alcan Forest Products, and Viking Lumber Company, who also harvest from state lands and Sealaska Timber Corporation lands. From 2010 to 2019, 65 small operators purchased timber from the Tongass NF compared to just three large operators (Figure 14, page 24).

Many of the small mills' products are defined by old growth characteristics in their raw material, and owner/operators would need to transform their businesses to transition to young growth. This transformation would include purchasing new equipment, redesigning and rebuilding work spaces, creating new products, retraining employees, and developing new markets. This kind of transformation is largely out of reach for small mills. Recognizing this context, the 2016 Tongass Land Management Plan stipulates that up to 5 mmbf/year of old growth timber be offered for sale annually in perpetuity to continue to supply businesses with material that has potential for high-value-add processing. Small mill owner/operators are generally concerned about the transition to a supply of predominantly second growth timber despite the 5 mmbf/year stipulation in the forest plan. Owner/operators cite concerns about an eventual loss of any available old growth, requiring them to transform their businesses entirely to stay in the industry; competition for a shrunken "pie" of federal old growth timber; increasing competition between small mills, especially on the Prince of Wales Island road system; and increasing legal and regulatory constraints on the timber land base, resulting in less or no more old growth accessible for harvest on existing roads. Many owner/operators also emphasize their adaptability, independence, and commitment to their industry and their community through times of change.

Second growth or mixed second growth and old growth sales on the Tongass NF between 2010 and 2019 have resulted in heightened perceptions of risk around converting timber operations to young growth harvesting, and produced some lessons learned. Operators of all sizes are wary of taking on the additional risk of adapting to a new kind of raw material. A project in the early 2010s near Winter Harbor on Prince of Wales exacerbated perceptions of risk associated with old growth logs because it had poor results for a small mill in Thorne Bay. The mills's material was not marketable and eventually cut up with a firewood machine and sold under

contract to the Southeast Island School District for their biomass facility. However, some owner/operators on Prince of Wales Island where older second growth is more readily accessible are considering or have installed saws and other technology better suited to second growth and/or small diameter old growth logs. Also on Prince of Wales Island, an owner/operator was provided second growth spruce logs harvested as part of a restoration activity in the Staney Creek watershed for the cost of hauling the logs. The operator then milled the wood for construction, and sold the product locally at a profit. However, this may not be demonstrative of the actual potential for small operators to profit from second growth harvests because the small operator did not pay the full costs of harvesting the wood.

Challenges to small mills in the area range from intractable to navigable. Some challenges, such as transportation costs and shifting markets, are endemic to the forest products industry in the region. Others, such as workforce development, worker retention, business development and innovation, and timber supply are more amenable to regulatory, policy, programmatic and community-based solutions.

Select recommendations made by interviewees

Interviewees highlighted many opportunities for the Tongass NF to support communities in Southeast Alaska. We highlight key recommendations here:

- **Interviewees suggested a wide variety of potential metrics for tracking the status and impacts of the Tongass Transition.** We have compiled and categorized these suggested metrics in Appendix C.
- **Opportunities to support communities by helping them understand goals, objectives, and status of the Transition could improve some of the ongoing conflict on these topics.** An important starting point for overcoming conflict about the Tongass Transition is developing a shared understanding of the available resources. There were highly varied opinions about the merchantability and supply of old growth timber, and interviewees agreed that more data and information were needed. Stakeholders expressed an interest in having a better understanding of data findings, current conditions on the forest, and the decision-making processes of the agency.
- **Uphold collaborative agreements.** It has become increasingly important to uphold the collaborative solutions that communities and stakeholders have identified, as well as to include all interest groups in collaborative decision-making. Some interviewees expressed concerns that particular interests were overrepresented, underrepresented, or excluded from TAC and POW LAT negotiations and recommendations. Many interviewees called into question whether all stakeholders are pursuing the recommendations made by these groups in good faith after recent decisions, especially the Roadless Rule exemption. Increased skepticism and concern have transferred over into how stakeholders view the agency's next big decision-making process, the Central Tongass Project. Enacting agreements in good faith and with transparency throughout the process builds trust necessary to move forward.

- **Balance the forest's resource allocations and partnerships among all economic sectors in the region.** Focus on engaging with local organizations. The Tongass provides diverse work opportunities for local businesses and organizations (i.e., timber, restoration work, recreation, fishing, hunting, tourism, special products harvesting, and more) and all of these uses should be represented in the Tongass' resource allocations and partnerships.
- **Support communities in maintaining forestry expertise and access to key resources on the forest.** Regardless of the ultimate outcome of Southeast Alaska's timber industry, maintaining a workforce with forestry and timber management skills will be critical to the Tongass NF's ability to conduct much-needed restoration and other work on the forest. This is especially important as many previously clear-cut areas are in need of restoration treatments to maintain an understory that supports wildlife habitat, recreation, and subsistence uses. Most stakeholders seemed to support some kind of sustainable forest products industry in Southeast Alaska, including the music wood industry and small mills, furniture, shingles, and local saw timber. Road building and maintenance on the Tongass was controversial because roads raise ecological concerns about habitat quality and connectivity, but also support tourism, recreation, subsistence, and other industries.
- **Support workforce development programs.** Programs, such as the 2016 Forest Academy[22] or the Training Rural Alaska Youth Leaders and Students program[23] can provide youth in Southeast Alaska with vocational training and skills for jobs that would allow them to work locally in the forest without having to leave their communities.
- **Engage in opportunities to support small mills and biomass utilization.** Opportunities identified by interviewees for the agengy to support small mills during the Tongass Transition include:
  - **Maintain small sale and microsale programs.** Continued work to design, offer, and contract at a pace and scale suitable for the particular needs of the small mills over time can help these businesses navigate exogenous change. Bridging organizations including Southeast Conference, the Alaska Wood Energy Development Task Group, nonprofit organizations and chambers of commerce can serve as conveners and liaisons as the Forest Service does this work.
  - **Use resources to support innovation.** Infusions of cash or low-cost raw materials such as the Path to Prosperity competition[24] can ease the risk of innovation and give operators a chance to purchase new equipment or develop new products and/or markets.
  - **Invest in Forest Service projects that use young growth to help "prove" the quality and economic viability of second growth products.** This could include purchasing young growth timber products from Southeast Alaska operators for construction of Forest Service facilities.
  - **Include biomass collection in NEPA documents.** Biomass energy facilities seem to be an opportunity to generate employment, increase local purchases, and decrease the amount of money that is leaving communities. There is an opportunity to increase public and private use of biomass, and to source the materials locally.

Conclusion

The purpose of this monitoring effort was to help the Tongass Transition Collaborative and other stakeholders develop a plan to track social and economic conditions in Southeast Alaska before, during, and after the Tongass Transition to young growth. This report has collected, analyzed, and presented a baseline of current and recent past social and economic conditions. In addition, we presented a social and economic monitoring plan that reflects stakeholder interest and a plan to track future social and economic change in affected communities (see Table 1, page 8). Below we present overall findings about the relationship between the Transition and social and economic conditions in Southeast Alaska.

Overall, monitoring data presented in this report show that each of Southeast Alaska's 32 communities has developed its own unique characteristics, trajectory of change, and strategies to cope with challenges confronted since the region's pulp mills shut down. Southeast Alaska has always been an area rich in natural resources on which people are socially, economically, and culturally dependent. As in any natural-resource-dependent economy, people must continually adjust to the ebb and flow of available resources, including reinventing their livelihoods to fit the current state of the land. Decades have passed since the timber economy began its downward trajectory in Southeast Alaska, and many communities have adapted and rebounded. Many communities have diversified or completely shifted their economic bases and identities to new industries like fishing, tourism, or recreation; however, timber is still a culturally, socially, and economically important industry for some small communities in Southeast Alaska.

In the last 10 years, global, national, and state level forces have had significant impacts on Southeast Alaska and the Tongass NF. Monitoring data showed that population has increased slightly in recent years, unemployment and SNAP benefits have decreased, and wages have increased. Some of these changes are incremental after past years of economic decline. These positive changes were tempered by residents reporting fewer stable, year-round jobs; a reduction in government jobs and services; older and fewer permanent residents; and increasing costs of living. Tensions around forest management have risen as acres available and viable for utilization have become increasingly scarce and local, state, and national-level interests have developed different visions for the region. In addition, the Tongass NF is globally important to many stakeholders living outside of Southeast Alaska, who weigh in strongly on Tongass NF management objectives during public processes.

The Forest Service began a Tongass Transition to chart a path for maintaining economic opportunity in these Southeast Alaska communities; however, the viability of a young growth market is still uncertain. Our monitoring illuminated mixed opinions about and interest in developing young growth resources, particularly given that the only currently proven economically viable option at scale for utilizing small diameter or loose grain timber from the Tongass is to export it. Furthermore, recent tariffs highlighted the risk of investing in developing timber for export by making an already thin profit margin nonexistent. Exportation was also controversial among interviewees because the economic benefit of exportation is limited compared to domestic processing and manufacturing. Several unsuccessful attempts to sell young growth products further fostered

skepticism about investing in the infrastructure necessary for a young growth transition since the potential market demand is unclear. Stakeholders noted that the one remaining larger local mill in Southeast Alaska has stated that they will not pursue opportunities to process young growth. This could create ripple effects in some parts of Southeast Alaska where larger operators support smaller operators and contractors (i.e., loggers, small mills, longshoremen) and the maintenance of a trained timber workforce is important to meeting future opportunities in the industry.

The Tongass Transition is an opportunity for the Tongass NF to diversify and strengthen partnerships that support multiple uses of the forest; however, many of the forest's partners have become frustrated as they have watched collaboratively-determined agreements not be fully upheld. Southeast Alaska stakeholders are deeply and historically tied to the Tongass NF. They utilize the forest for subsistence, tourism, recreation, habitat, timber, and more, but these interests are often in conflict with each other. Many stakeholders have been willing to contribute to collaborative decision-making processes about how to balance these interests, such as the Tongass Advisory Committee and the Prince of Wales Landscape Assessment Team. Stakeholders valued those processes and felt committed to the final compromises they produced as outcomes. However, as stakeholders perceived that those agreements have not been fully implemented, they have become increasingly distrustful of and dissatisfied with the agency and other stakeholders. Environmental, tribal, timber, recreation, preservation and other stakeholders all noted they thought there was a lack of follow through from the agency on compromises that were collectively agreed to through years of painstaking collaborative work and relationship building. Stakeholders also noted that other agency priorities, such as the state specific Roadless Rule process, have stalled or otherwise impeded implementation of preexisting processes and projects.

The Tongass NF may be unable to follow through completely on some planned work at intended pace because of declining capacity. The forest's budgets are declining, there is high turnover and vacancy among forest staff, and the agency faces increasingly complex issues and stakeholder interests. Monitoring data showed that nearly all resource area budgets declined on the forest from 2011-2018, and nearly all Southeast Alaska communities lost Forest Service employees. The use of new authorities and tools such as Good Neighbor Authority and new partnership models can potentially augment work that the agency cannot accomplish on its own. For example, the state of Alaska and Tongass NF have a history or working together to stagger timber sales in a manner that is intended to provide a more stable volume supply to the industry than either entity could provide on their own. The Tongass NF is also relying on NGO partners to help implement restoration work and trails through Student Conservation Association crews and organizations like The Nature Conservancy.

Although the forest may not be making changes as quickly as stakeholders want, many of the forest's investment trends do support diversification of uses on the forest. For example, even as the forest's overall budget declined by nearly $10 million between 2011 and 2018, the forest was actually investing more money in 2018 than in 2011 in road construction, subsistence management, and vegetation and watershed management. Notable decreases were made in investments in facilities and capital improvements/maintenance, as well as their general management funds. Despite these shifts, the forest's highest investment values were still in forest products, road construction, and general management.

The Tongass NF plays a key role in Southeast Alaska communities, both through the employment of people living in local communities and through the majority of the forest's service contracts, timber sales and grants and agreements dollars going to businesses based in Southeast Alaska. Although the number and value of contracts has decreased over time, the forest is increasingly entering into contracts, grants, and agreements with predominantly local businesses. Fluctuations in the agency's ability to continue to invest in these types of work have important implications for Southeast Alaska communities.

Appendices

Appendices for this Working Paper are available online at the project page:
http://ewp.uoregon.edu/TongassTransition

Appendices include:

Appendix A: Tongass transition history

Appendix B: Resources

Appendix C: Other potential metrics

Appendix D: Federal Procurement Data System (FPDS) data

Appendix E: Cut and Sold timber data

Appendix F: Sawmill business licenses

Appendix G: Biomass facilities

Appendix H: Grants and Agreements data

Appendix I: Interview protocol

Endnotes

1 US Department of Agriculture. 2013. Secretary's memorandum 1044-009: Addressing Sustainable Forestry in Southeast Alaska. Available at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5445760.pdf.

2 Meridian Institute. 2015. Tongass Advisory Committee Final Recommendations. Available at: https://s31207.pcdn.co/wp-content/uploads/2019/06/Tongass-Advisory-Committee-Final-Recommendations_Dec-2015.pdf.

3 USDA Forest Service. n.d. Tongass National Forest website. Available at: https://www.fs.usda.gov/detail/r10/about-region/overview/?cid=fsbdev2_038671.

4 Southeast Conference. 2012-2019. Southeast Alaska by the Numbers Reports. Available at: http://www.seconference.org/southeast-alaska-numbers.

5 ibid, Southeast Conference 2012-2019.

6 U.S. Census Bureau. SNAP Benefits Recipients. Retrieved from FRED, Federal Reserve Bank of St. Louis, available at: https://fred.stlouisfed.org/categories/33514. Accessed January 2019.

7 ibid, Southeast Conference 2012-2019.

8 ibid, Southeast Conference 2012-2019.

9 ibid, Southeast Conference 2012-2019.

10 ibid, Southeast Conference 2012-2019.

11 ibid, Southeast Conference 2012-2019.

12 ibid, Southeast Conference 2012-2019.

13 ibid, Southeast Conference 2012-2019.

14 ibid, Southeast Conference 2012-2019.

15 ibid, Southeast Conference 2012-2019.

16 USDA Forest Service. 2007-2018. Sawmill Capacity and Production Reports. Available on the Tongass NF Forest Management Reports and Accomplishments website: https://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785.

17 USDA Forest Service. 2007-2018. Timber Cut and Sold Reports. Available on the Tongass NF Forest Management Reports and Accomplishments website: https://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785.

18 Tongass NF. 2019. Central Tongass Project Draft Environmental Impact Statement. Available at: https://www.fs.usda.gov/detail/tongass/landmanagement/projects/?cid=fseprd568085.

19 Tongass NF. n.d. Parent Installed Capacity document. Unpublished report retrieved directly from the Tongass NF.

20 Data for 2012 through 2019 were reported as Tongass NF timber sale counts in Cut and Sold reports. Data for 2010 and 2011 were not reported in the same way, so we used the "Tongass NF sale counts with remaining value" as proxies for these two years.

21 We report this as an estimated number because the same purchasers may be reported in multiple ways in the database. For example, purchaser Jane Doe might also be reported as XYZ Timber Company, Inc. (and therefore be counted multiple times). These numbers also include settlement sales reported in the Tongass NF's Cut and Sold reports.

22 Goodrich, Bethany. 2016. Building a Better Backyard: Locals Inventory Young Growth. Available at: http://sustainablesoutheast.net/storytelling/building-a-better-backyard-locals-inventory-young-growth/.

23 Goodrich, Bethany. 2017. TRAYSL Program Creates Job Experience for Rural Alaskan Youth. Available at: http://sustainablesoutheast.net/storytelling/4972/.

24 Spruce Root. n.d. Path to Prosperity: A Spruce Root program. Available at: https://www.spruceroot.org/path-to-prosperity.

UNIVERSITY OF OREGON

Ecosystem Workforce Program

TATOOSH
TATOOSHSCHOOL.ORG