

# **Timber Supply and Demand: 2010**

Alaska National Interest Lands Conservation Act  
Section 706(a) Report to Congress  
USDA Forest Service, Alaska Region

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## **Preface**

This is the 26th report prepared 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. The report provides a summary of timber sale activity in the region and a review of the primary factors affecting timber markets in 2010. This report was prepared by Susan J. Alexander, PhD, Regional Economist for the Alaska Region.

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## Summary

The annual volume of timber sold on the Tongass National Forest in the years from 2006 to 2010 ranged from 5.4 to 85 million board feet (MMBF). The volume sold in 2010 was 45.6 MMBF. Harvested volumes in the same time period ranged from 18.7 to 43.2 MMBF; in 2010 35.4 MMBF were harvested from the Tongass National Forest. Private suppliers in Southeast Alaska, comprised of the Native corporations, harvested 66.4 MMBF in 2010, a slight increase from the 51.8 MMBF harvested in 2009. Harvests in Southeast Alaska from State of Alaska lands (DNR, University, and Mental Health lands) were 10.5 MMBF in 2010, a decrease from the 13.5 MMBF cut in 2009. Wood product employment (logging and sawmilling) in the region rose to approximately 247 full-time positions in 2010, an increase of about 30 jobs from 2009. Tongass National Forest-related employment in logging and sawmilling was 107 in 2010, a 23 percent increase from the 87 jobs in logging and manufacturing in 2009 associated with timber harvest on the Tongass.

Markets for Southeast Alaskan manufactured wood products appear to be primarily U.S. domestic destinations, but the final destination for manufactured products can be difficult to track using trade data. Sawmills in southeast Alaska reported lumber sales to US markets (73 percent) and to the Pacific Rim (27 percent) in 2010. In 2009, 59 percent of lumber sawn in southeast Alaska went to domestic markets, and 40 percent went to Pacific Rim markets. Producers will sell products into markets based on price. Alaskan wood products markets are closely tied to North American and Pacific Rim markets, and are being impacted by the global recession, tight credit markets, and a sharp and continuing downturn nationwide in housing starts.

## 1. Introduction

Section 706(a) of the Alaska National Interest Lands Conservation Act (ANILCA) (Public Law 96-487, December 2, 1980) directs the Secretary of Agriculture to monitor and report on timber supply and demand in Southeast Alaska. Accordingly, this report describes the status of the timber market in Southeast Alaska during the 2010 federal fiscal year (October 1 - September 30). Many of the statistics presented in this report, however, are based on calendar years. In the appendix tables, data are labeled as to whether they represent fiscal years or calendar years.

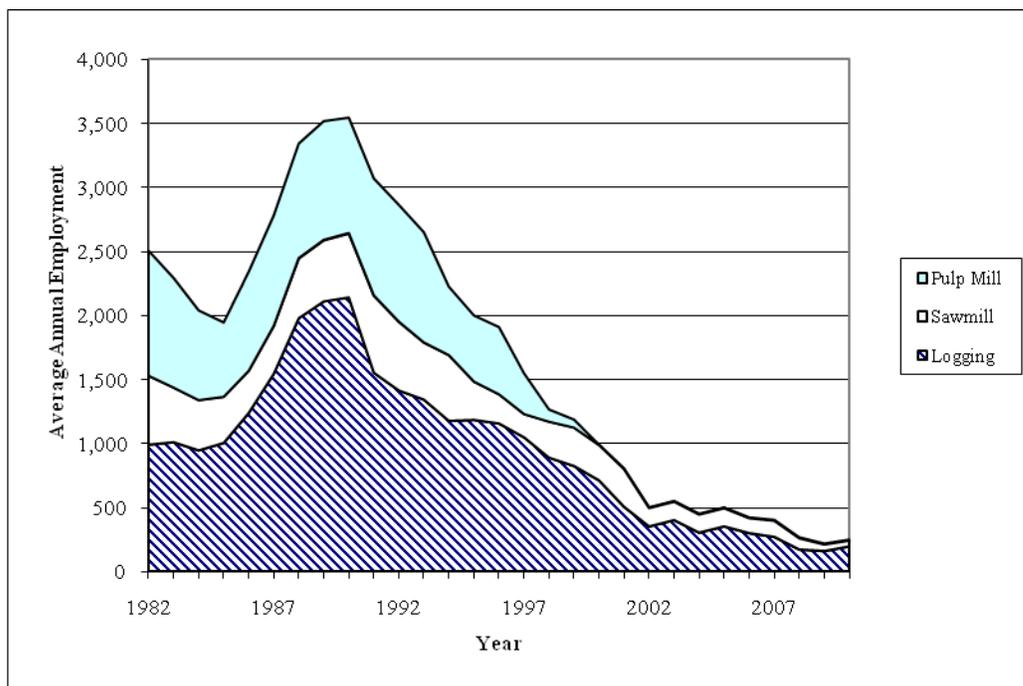
The report is divided into three main sections, the first providing a general overview of conditions within the region's timber economy, the second discussing timber supply, and the third addressing demand for regional timber. The general overview looks at current developments in the timber sector with particular emphasis on timber employment. The supply section focuses on the timber sale program of the Tongass National Forest. The demand section considers the various factors outside of the Tongass National Forest that help determine the willingness of local buyers to purchase Tongass National Forest timber. These factors include Asian and domestic U.S. markets, current processing capacity in Southeast Alaska, and other suppliers of timber in the region. Supporting data for the analysis are presented in the various tables included in the appendix.

## 2. Overview of the Region's Timber Economy

Abrahamson (2011) reported mild job recovery in 2010 in southeast Alaska after a decline in 2009. However, southeast Alaska is expected to lose jobs in 2011. The economy of Alaska has lost less ground than other states due to a large oil industry and federal government spending. The national construction industry has been hit hard by issues in mortgage and banking industries. Trends in construction directly impact demand for wood products. According to the World Economic Outlook (April 2009; IMF), this is the most severe and synchronized global recession in the past 50 years. The impacts are particularly severe for any industry tied to housing.

Southeast Alaska's economic well-being is closely tied to resource-dependent industries, including fishing, forestry, and mining, and many jobs also result from tourism. Declining population and depressed cruise ship visitation will continue to erode employment in transportation, trade, accommodation, and leisure. However, mining, government, and health care will keep overall losses small (Abrahamson 2011). Employment in the timber industry rose by 31 jobs, from 216 in 2009 to 247 in 2010 (Figure 1 and Appendix table A-2). U.S. Forest Service job losses in the region accounted for nearly all of the federal employment losses in the past five years (Wilkinson 2010).

Figure 1. Southeast Alaska Wood Products Employment, 1982-2010.



Total timber sector employment has dropped from about 560 to 247 in Southeast Alaska in the wood products industry (logging, pulp and paper, and sawmilling) from 2003 to 2010 (see Figure 1, and Table A-2 in appendix). Tongass National Forest-related

employment in logging and sawmilling (there is no employment in pulp and paper any longer in Southeast Alaska) has declined from 199 in 2003 to 107 in 2010, a drop of about 50 percent (see Table A-2 in the appendix for how the Tongass National Forest - related employment numbers were calculated). At the same time, non-Tongass employment dropped from 362 to 140, a decline of 61 percent. Several factors contribute to the difference in employment decline between manufacturing and logging. Logging employment is generated from all ownerships, including state sales, Native corporation harvests, and Forest Service timber sales. Sawmilling employment has historically been primarily the result of Forest Service timber sales, with a small contribution from state timber harvest. As the total volume of harvest declined regionally, state timber sales became a larger proportion of harvested volume (see appendix table A-6), and contributed proportionally more to both logging and sawmilling employment. Starting in 2008, however, harvest from state lands has dropped precipitously. Volume harvested from Alaska Department of Natural Resource (DNR) lands dropped after reaching decadal allowable cut volumes due to offering surplus volume in the early part of the decade (C. Clark, personal communication, 8-10-11). Alaska Native harvests have continued to contribute to logging employment, although harvested volume from Native lands in southeast Alaska has also declined in the past decade.

Until recently, southeast Alaska has produced most of the timber harvested in Alaska. Halbrook et al. (2009) conducted a statewide assessment of the timber industry in Alaska, and found that in 2005, the southeast region supplied 74 percent of Alaska's total timber harvest. Most harvest in Alaska in 2005 (60.7 percent) came from Native and private lands. State and other public lands supplied 21.7 percent, and the remaining 17.5 percent came from national forests. In contrast, most mill supply came from national forests (53 percent), followed by state and other public lands (38 percent), and then by private and Native lands (8 percent). Timber harvest in southwest Alaska, including Kodiak and Afognak Islands, has recently been increasing. Since 2007, timber harvests from private Native Corporation lands in southwest Alaska have steadily increased from 30 to 59 MMBF per year. Exports of these logs show up in the export data in appendix tables A-7 and A-9. Since 2007, timber harvests in the northern region from Alaska DNR lands has ranged from 3.5 to 5.8 MMBF. Much of this timber is being used to manufacture pellet fuel in Fairbanks.

The wood products industry in Southeast Alaska, and in fact the entire state, consists of individual- and family-owned sawmills, and independent logging businesses. Sales of Southeast Alaska manufactured products to domestic markets, including Alaska, have comprised about 80 percent of all sales from 2002 through 2010, on average. However, poor domestic markets for wood products prompted a shift in 2009. Sawmills in southeast Alaska reported selling about 60 percent of their lumber in US markets and 40 percent to Pacific Rim countries in 2009. In 2010, sawmills reported selling about 74 percent of their lumber in domestic markets and about 27 percent to Pacific Rim markets. Most lumber sales from Southeast Alaska are the result of the one remaining operating medium-sized sawmill, which has close ties to businesses in Washington state. The wood products industry in Southeast Alaska has changed considerably since the end of the long-term sales program, and seemed to stabilize somewhat between 2002 and 2006.

However, the industry has been declining further since 2007, as measured by employment (appendix table A-2) and total regional timber harvest (appendix table A-6). The industry is vulnerable both to supply and demand issues.

Wood used in sawmills in Southeast Alaska comes from the Tongass National Forest, State lands, and some private lands. Data from Kilborn et al. (2004), Brackley et al. (2006b), Brackley and Crone (2009), Alexander and Parrent (2010), Parrent (2010), and Parrent (2011) show that the Tongass National Forest contributed an average of about 67 percent of wood sawn in Southeast Alaska from 2002 to 2010 (see footnote 3, appendix table A-2).

For a few years, State of Alaska lands, including lands managed by the Alaska DNR, Mental Health Trust, and University of Alaska, became an important source of logs processed by local sawmills in Southeast. The Trust Office is a state agency but Trust lands are regulated more like private land ownerships, in terms of forest practices and access. There have not been any timber harvests on University of Alaska lands for several years. Timber harvests from mental health and State lands comprise a relatively small percentage of Southeast Alaska forest lands, and state lands could not indefinitely supply such a high proportion of the needs of remaining Southeast Alaska sawmills. Harvest on state lands in Southeast Alaska has fallen from 44.6 MMBF in 2006 to 10.5 in 2010. This could be a serious problem for the local industry if the Forest Service is unable to offer sufficient economic timber sales to meet estimates of demand. A small amount of sawlogs and chips are imported into Alaska ports from other countries (primarily Canada) (appendix table A-6).

While supply and demand are treated separately in the following sections, it is important to remember that the interaction of these two forces is what is important. Both supply and demand present challenges for the region's timber sector as it is currently configured.

### **3. Supply**

The supply of timber from the Tongass National Forest is determined by two main factors. The first is the volume of timber offered for sale by the Forest Service. Demand for National Forest timber is estimated annually, using procedures that were developed by the Alaska Region of the Forest Service with the aim of adjusting volume offered to meet projected demand (Morse 2000). Long-term demand estimates were re-calculated by the US Forest Service Pacific Northwest Research Station in 2006 (Brackley et al. 2006a; Brackley and Haynes 2008). The basic procedure of calculating needed annual offerings as outlined by Morse (2000) did not change, but was modified by Alexander (2008) to fit the most recent estimates of long-term demand. The second factor affecting timber supply is the cost of harvesting and delivering wood to its respective intermediate markets: mills in the case of locally processed material, and ports in the case of log exports.

This section of the report describes the Tongass National Forest timber sale program as it stood at the end of FY 2010. While timber harvests from sources other than the Forest

Service help determine regional log supply, their impact on the FS sale program is, if anything, on the demand side. This is because these other sources may act as substitutes for federal timber. Accordingly, private and Alaska state harvests will be discussed in the next section on timber demand.

### **3.1 The Timber Sale Preparation Process**

The Forest Service timber sale process involves a number of stages (or “gates”). The first stage (Gate 1) involves the completion of a “Position Statement,” which provides a brief analysis of the project area with the intent of determining the feasibility of the potential timber sale. Gate 2 entails gathering public comment and conducting environmental analysis in accordance with the National Environmental Policy Act (NEPA). The remaining gates involve, respectively, plan implementation and field layout (Gate 3), sale appraisal and advertising the sale (Gate 4), bid opening (Gate 5), and sale award (Gate 6).

The NEPA process entailed in Gate 2 often comprises the bulk of work devoted by the Forest Service to any given sale. This work formally begins with public scoping, describing the Forest Service’s proposed action and intent to conduct an environmental analysis. This stage concludes with the publication of an Environmental Assessment or (in the case of projects with potentially significant effects) an Environmental Impact Statement, and ultimately a Decision Notice or a Record of Decision in which the Forest Service authorizes the sale and documents the conditions for implementing it. Tongass timber sale NEPA decisions are frequently subject to administrative appeals and litigation. Having cleared these requirements, timber sales can then progress through the remaining four gates.

The volume cleared by the NEPA decision is often broken up into separate sales, which may or may not be prepared and offered in the same fiscal year as that in which the decision was made. During the period covered by this report, volume was officially reported as being offered at the time of advertisement. In 2005, as directed by Public Law No. 108-108 (Sec. 318, HR 2691; 2004), the Alaska Region began using a residual value approach in sale appraisals. Using forest cruise data, current market prices for products, mill processing information, and estimates of harvest, transportation, and processing costs, the Forest Service determines the value at which the sale will be advertised. Further details on timber valuation methods in the Alaska Region can be viewed by going to the US Forest Service Alaska Region website and selecting “Resource Management” under the “Land and Resource Management” heading. Private firms are invited to bid at or above the advertised rate. Sales are then awarded to the high bidder subject to certain additional considerations designed to ensure the bidder’s ability to comply with the conditions laid out in the sale contract.

For various reasons, within any given year, a portion of the timber volume planned for sale may not be sold. In some instances, sales or portions of sales that are planned are not offered. In other instances, a sale is offered and does not receive a valid bid. If there is no indication of competition from other purchasers, those sales may be available to purchasers at their original advertised rates and conditions for up to one year without

additional advertisement. The Forest Service may repackage the sale to enhance its economic attractiveness.

After a sale has been awarded, the purchaser usually has around three to five years in which to harvest the sale volume. The sum total of volume yet to be harvested is termed “volume under contract,” and this constitutes a pool of timber from which contract holders may draw depending on market conditions and their business plans. Details on volume under contract as of the end of FY 2010 are in Appendix Table A-10.

To evaluate the status of the timber flow, Morse (2000) established that it is important to assess the ratio of contract volume to harvest. This ratio can indicate how many years of supply (volume under contract) mills have compared to what they are sawing (i.e., harvest). During the 1981-1995 time period, historical ratios of volume under contract to harvest for the independent sale program (in other words, not including volume in the long-term contracts associated with the pulp mills in Ketchikan and Sitka) ranged from 1.0 to 3.4 with an average of 1.8 (Morse 2000). The ratio of contract volume to harvest peaked in 2002 at 6.8, but dropped closer to the three-year supply objective in 2003. In 2004 and 2005 the ratio dropped to 1.7, and increased to 2.6 in 2006. In 2007, the ratio rose to 6.1, reflecting poor wood market conditions in 2007. The ratio dropped back to about 3 from 2008 to 2010.

Table 1. Available Timber Volumes and Harvest (Fiscal Years, MMBF).

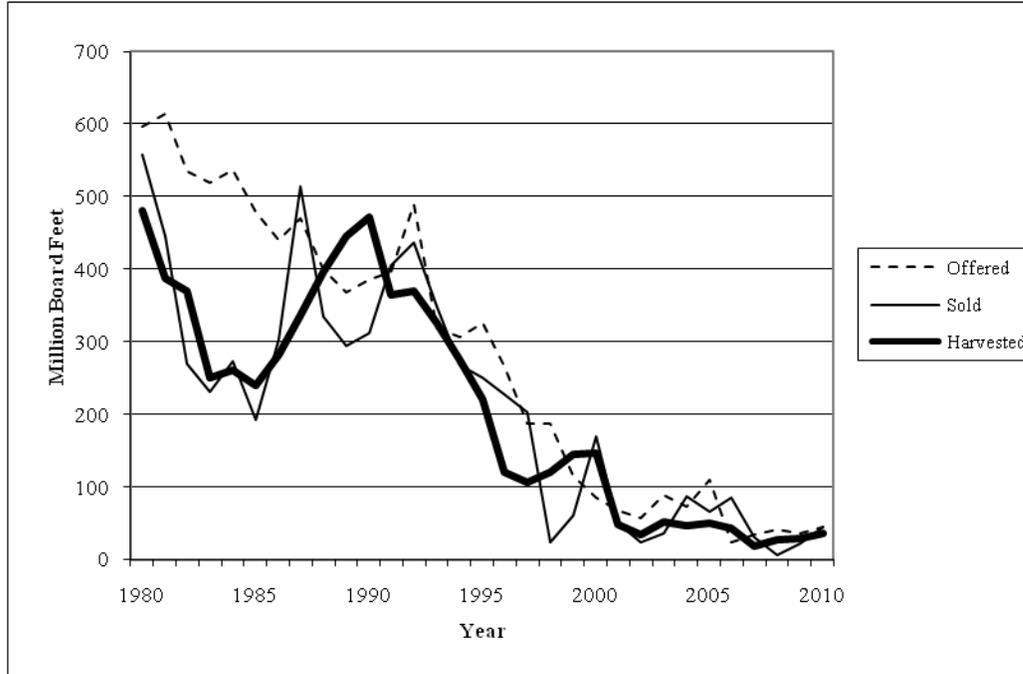
	2002	2003	2004	2005	2006	2007	2008	2009	2010
Volume Under Contract <sup>1</sup>	230	193	78	83	111	114	97	84	98
Harvest	34	51	46	50	43	18.7	28	28	35
Contract Volume / Harvest ratio	6.8	3.8	1.7	1.7	2.6	6.1	3.5	3.0	2.8

1. Volume in 2002 does not include volume under injunction. Volumes in 2004 and 2005 do not include cancelled sales. The decline in volume under contract in 2004 and 2005 was largely due to cancelled timber sales (Alexander 2010). See appendix tables A-3 and A-10.

The ratio of volume under contract to harvest is only one indication of whether there is sufficient timber volume under contract to ensure industry viability. There can be increasing contract volume to harvest ratios while there are declining contract volumes. Some volume under contract in 2002 and 2003 was in sales cancelled in 2004 and 2005. Timber flow volumes are far lower than the allowable harvest rates outlined in the 2008 Tongass Land Management Plan (TLMP). The allowable sale quantity (ASQ) is partitioned into two non-interchangeable components (NICs). About 238 MMBF would be available for harvest under most market conditions (NIC I), as this volume is located on the most operable, accessible ground. The maximum ASQ is 267 MMBF, of which about 29 MMBF is in areas that are difficult to harvest or are isolated (NIC II) (USDA 2008).

Figure 2 illustrates trends in timber offered, sold, and harvested since 1980.

Figure 2. Volumes of timber offered, sold and harvested from the Tongass National Forest, 1980-2010 (Fiscal Years, MMBF).



In 2008, sawmills in southeast Alaska were operating at about 8 percent of estimated capacity (Alexander and Parrent 2010). Capacity utilization dropped to 5.4 percent in 2009 (Parrent 2010) and increased to 10.1 percent in 2010. Much of the increase in capacity utilization was the result of loss of regional mill capacity due to one large mill being dismantled, sales of equipment from other mills, and losses due to fires. By comparison, sawmills in Idaho, Oregon, California, and Montana generally utilize more than 80 percent of their capacity, unless there is a severe economic downturn (Brandt et al. 2006, Keegan et al. 2001, Morgan et al 2004a, Morgan et al. 2004b). In 2009, sawmills in the western US were running at about 55 percent of capacity (Dietz 2010). The capacity utilization rate of the last operating medium-sized sawmill in southeast Alaska in 2010 was estimated at about 17 percent (Parrent 2011). At such low utilization rates it is extremely difficult for sawmill owners to cover their fixed costs, much less make a profit.

#### 4. Demand

Economists commonly define “demand” as the different amounts of a product buyers are willing to purchase at different prices. As such, demand cannot be characterized as a single number but should be viewed as a series of price-quantity relationships. The same is true for “supply,” and it is the combination of these two forces (supply and demand) that determine both the quantity and price of goods produced and consumed in the market place.

Softwood lumber exports from Alaska (Appendix Table A-7) dropped sharply in 2008 and 2009, and picked back up slightly in 2010. Mills report that they shipped lumber to foreign markets, but lumber shipped from other ports (e.g. Seattle) as recorded through the Harmonized Trade data cannot be traced back to its origin. Wood chip exports from the Anchorage customs district fluctuated widely from 2004 to 2010 (Appendix Table A-8). In 2007 and 2008, wood chip exports from the Alaska customs district fell to almost zero. Log exports from the Alaska customs district constitute the vast majority of wood product exports value (Appendix Table A-9). For the past two years, the top three markets in order of significance for log exports were China, Korea, and Japan. While Japanese and Korean Alaskan log imports have generally been declining, log exports to China from Alaska have been steadily climbing as China consumes an ever-increasing proportion of Alaska timber.

Exports of whole logs from Tongass National Forest timber sales occur because of several factors. The 2007 decision to appraise sales for limited log shipments allows small diameter Sitka spruce and western hemlock to be shipped out of state. Alaska yellow-cedar is appraised under the assumption that it will be exported to foreign markets, as allowed under Section 318 of the Consolidated Appropriations Resolution, 2003 (Public Law 108-7). Even if a given species or diameter is appraised for out of state shipment, the purchaser can still process the wood in local sawmills if they choose to do so. The purchaser might be required to pay additional fees if they ship whole logs to markets other than what the timber sale was appraised for. However, a purchaser can apply for an export permit after a timber sale is sold, under certain conditions. Volumes of log exports from the Tongass National Forest (Appendix Tables A-4 and A-5) have been too small to make specific inferences from one year to the next; in 2010, log exports from the Tongass to foreign ports constituted 4.5 percent of all softwood log exports from the Alaska customs district (Appendix table A-7). Most logs shipped from the Tongass to markets outside Alaska have gone to Asian markets, with some going to domestic markets. Canada was not a destination for logs from the Tongass from 2003 through 2006, or in 2008, 2009, or 2010, but in 2007 more logs were shipped to Canada from the Tongass than were shipped to domestic markets in the Lower 48. These shifts in the destination of wood products from Alaska illustrate that sellers are going to maximize profits by selling logs or lumber wherever they get the best price.

Table 2 compares timber volumes harvested to log volumes shipped out of state from the Tongass National Forest (see appendix tables A-3 and A-5 for more detail). Table 2 shows how log exports have fluctuated compared to total harvest since 2006. Since the export policy was implemented, about 32 percent of total volume harvested has been shipped out of state as whole logs.

Table 2. Volumes harvested and exported from the Tongass National Forest, 2006-2010, MMBF.

<i>Fiscal Year</i>	<i>Harvest</i>	<i>Exports</i>		
		<i>Foreign</i>	<i>Domestic</i>	<i>Total</i>
2006	43.2	1.8	2.5	4.3
2007	18.7	3.4	0.2	3.6

2008	28.0	4.4	1.4	5.8
2009	28.4	13.1	0.3	13.4
2010	35.4	12.8	0.1	12.9

According to Brackley et al. (2009, p. 7), “much of the growth in US softwood lumber consumption since the early 1990s was a result of a prolonged increase in residential construction”. US construction demand spurred increased imports of lumber from Canada, a resurgence of softwood lumber production in the Pacific Northwest, and shifts in the types of lumber produced as markets shifted and suppliers jockeyed for market share. In the past, lumber from Alaska was often shipped into foreign markets. However, shipments of finished products milled in Southeast Alaska to domestic markets have become more significant, as can be seen in Table 3. Table 3 summarizes data gathered from sawmill operators in Southeast Alaska in log scale.

Table 3. Destination of Products Manufactured by Southeast Alaska Sawmills (MBF log scale).

<i>Year</i>	<i>Alaska</i>	<i>Other US states</i>	<i>Canada</i>	<i>Other foreign exports</i>	<i>Total</i>
2000 <sup>a</sup>	8,135	54,287	3,774	20,920	87,116
Percent of total	9	62	4	24	
2002	1,842	30,847	480	6,532	39,701
Percent of total	5	78	1	16	
2003	1,758	24,591	382	5,274	32,005
Percent of total	5	77	1	16	
2004	1,468	19,553	5,951	4,056	31,027
Percent of total	5	63	19	13	
2005	2,342	26,177	724	5,423	34,665
Percent of total	7	75	2	16	
2006	3,408	23,250	296	5,186	32,141
Percent of total	11	72	1	16	
2007	3,600	22,113	708	5,296	31,717
Percent of total	11	70	2	17	
2008	2,295	15,663	0	5,707	23,666
Percent of total	10	66	0	24	
2009	1,410	6,606	0	5,416	13,422
Percent of total	10	49	0	40	
2010	1,475	10,026	0	4,307	15,807
Percent of total	9	64		27	

a. Data for 2001 are not available.

The conversion from log scale to lumber tally in Southeast Alaska at present is roughly 30 percent; i.e., lumber tally will be 1.3 times greater (approximately) than log scale. Appendix Table A-7 summarizes lumber export data from the Anchorage customs district in MBF lumber tally. There are several reasons the data in Appendix Table A-7 is different from the data in Table 3, although they are both about sawn product exports

from Alaska. One is that Table 3 is estimates by Southeast Alaska mill owners of how much material went to various markets. Some of this material may have been shipped from ports in other states. Appendix Table A-7 summarizes data from all Alaska foreign exports as reported in the International Trade Commission Harmonized Trade Code (ITC HTS) data. In addition, Table 3 and Appendix Table A-7 are in different scales (lumber tally versus log scale).

Table 4 compares the data in Table 3 and Appendix Table A-7 with the same scale (lumber tally). One would expect the foreign exports of sawn material from all of Alaska as reported by the Alaska Customs District to be equal to or greater than the amount reported by sawmills in Southeast Alaska if all products were shipped directly to their destination from Alaska producers. As can be seen in Table 4, export data from the Alaska customs district for at least the past decade has represented only about 15 percent, on average, of foreign exports of sawn products reported by Southeast Alaska mill owners alone. It is likely that mills in other regions of Alaska also export sawn products. This discrepancy could reflect where products were routed before being shipped out of the U.S. It is possible that Southeast Alaska sawn product exports are being shipped from the Seattle customs district, an issue called transshipments (products are shipped to other domestic ports and then re-routed to foreign destinations). This illustrates some of the difficulty in getting accurate data regarding wood product production and trade in Alaska. Estimating demand for Alaska wood depends on being able to determine where the markets are, so these discrepancies become important when trying to address the 1990 Tongass Timber Reform Act (P.L. 101-626, Sec. 101) requirement that the “Secretary shall...seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest, and (2) meets the market demand from such forest for the planning cycle.”.

Table 4. Sawn wood products exports from Alaska, different reporting sources, lumber tally (conversion of log scale mill reports to lumber tally using a factor of 1.3).

<i>Year<sup>a</sup></i>	<i>SE sawmills reported foreign exports, MBF</i>	<i>ITC HTS data on exports from the Alaska customs District, MBF</i>
2000	32,102	3,609
2002	9,116	85
2003	7,353	1,217
2004	13,009	1,825
2005	7,991	2,669
2006	7,127	2,166
2007	7,806	1,761
2008	7,419	118
2009	7,041	176
2010	5,598	400

a. Data for 2001 are not available

The volume of timber sold from the Tongass National Forest in the past five years ranged from a low of 5.4 MMBF in 2008 to a high of 85 MMBF in 2006 (Appendix Table A-3). In the same time period, the timber offered for sale ranged from 24 MMBF in 2006 to 110 MMBF in 2005. Harvested volumes ranged from 18.7 MMBF in 2007 to 43 MMBF in 2006. Harvested volume in 2007 reflects poor wood products markets in 2007 due to national home mortgage problems and their impacts on housing markets. Although harvested volume in 2008 and 2009 picked back up to 28 MMBF from the low of 18.7 in 2007, the small sold volume of 5.4 MMBF in 2008 reflected the continued global economic uncertainty and worsening wood products markets, in addition to issues purchasers may have had with how individual timber sales were configured. Sold volume in 2009 rose to 23 MMBF, but this included “opted”, and “contract” volumes. Opted is optional volume the purchaser can choose to harvest and pay for if market conditions are suitable. Local purchasers are wary about the risk of accumulating inventory in the uncertain markets facing all wood products industries in western North America. However, sold volume in 2010 was the second highest in five years at 45.6 MMBF and did not include “opted” volume. Sale design, purchaser preferences, uncertain global wood products markets, and a tight credit market beginning in 2008 all influenced the willingness and ability of Southeast Alaska wood purchasers to buy Forest Service timber sales. The export policy of 2007 may have reduced the perception of risk among timber purchasers enough to stimulate sales as the economy slowly recovers.

Profitability for Tongass National Forest Timber can be affected by the combination of valuable materials versus logging costs in a given timber sale, market options for lower grade material coming off the Forest, and prices for Southeast Alaskan premium species and grades. Although contracts allow the option of leaving utility logs in the woods, current market conditions still challenge profitability. Brackley et al. (2009) report that the combined costs of logging, manufacturing, and transportation of stumpage in Alaska are roughly \$149 per thousand board feet higher than in the Pacific Northwest, on average. These higher costs make it more difficult for Alaskan producers to compete in lower value commodity markets. During the current recession, wood manufacturers nationwide have been experiencing problems with tight margins, meaning the cost of producing wood products is only slightly less than or even greater than revenue. If this situation continues too long in any given manufacturing facility, they will go out of business. Details of prescriptions, bid prices, and species mixes for Tongass National Forest timber sales in 2010 are presented in Appendix Table A-1.

Minimum rates for forest products sold by the Forest Service are determined at the national level. The minimum rate is the lowest price that a product can be sold for. In many cases the national minimum rate equates to the national standard rate, which is the lowest rate at which a product can be sold without a supporting appraisal. Each Region, National Forest, or appraisal zone may establish and publish their own standard rates, so long as they are greater than or equal to the national rates. Those local standard rates are the minimum rates that the Forest Service can sell a product for without a supporting appraisal. The Tongass National Forest uses standard rates for timber on sales up to 500 MBF. The Region bases standard rates on either a large scale appraisal for a species or area, or on a set of transactions for a similar set of sales.

Appendix table A-1 lists sales sold in FY 2010 that were also offered in the same fiscal year; the total volume for the sales was 45.1 MMBF. The total volume of timber sold in FY 2010, as noted in appendix table A-3, was 45.6 MMBF. Some of the 45.6 MMBF sold was offered in the previous fiscal year.

A final consideration in relation to regional demand for Tongass National Forest timber is the supply of timber from other producers in Southeast Alaska. Both the Native Corporations and the State of Alaska also produce timber. Since the early 1980s, the Native Corporations have harvested over half of the total log volume produced in the region. In 2000, owing primarily to sales on Mental Health Trust and University of Alaska lands, the State emerged as a major producer, outstripping Forest Service production in 2001, 2002, 2006, and 2007. Harvest from state lands in southeast Alaska dropped sharply in 2008 and remains at about 10 MMBF (see Appendix Table A-6). Native Corporation harvests have declined from a high of 434 MMBF in 1990 to a range of 50 to 106 MMBF in each of the last seven years—a level close to earlier predictions of the long-term supply potential of Native Corporation lands (Knapp 1992). In 2007, Sealaska Timber Corporation announced that their projected harvest levels will be declining in the near future; volume harvested from Native Corporations lands in southeast Alaska dropped by almost half from 2005 to 2007. Harvests in 2008 and 2009 were about the same as 2007. Harvests in 2010 picked up somewhat, perhaps due to improving lag markets in China. In 2010, Sealaska Timber Co. provided over 210 jobs for employees and contractors.

According to Alaska State forestry specialists, Native Corporation, Mental Health Trust, and University timber, can be, and frequently is, exported in raw log form. Timber sold by the Alaska DNR can be processed locally or exported. Native Corporation and trust sales don't compete with National Forest timber in the local processing market. DNR sales may compete locally, but ultimately the volume available from the relatively small State timber base is far less than the volume from federal lands in Southeast Alaska. Although private and trust sales may compete with National Forest log exports (of yellow cedar, for example), the total market share of Alaska wood in the export market is too small for any one owner to influence demand for wood from other sources in Southeast Alaska (Brackley et al. 2006a). Small volumes of sawtimber and sometimes chips are imported to Alaska from other countries (appendix table A-6), but foreign imports are generally not utilized by Southeast Alaska sawmills.

## **Conclusion**

According to Balter (2009), a major reconfiguration is occurring in the forest products sector in the US. Nationwide, over-capacity in lumber and panel manufacturing points to an extended period of tight margins. Sawmills have been closing nationwide, and mill closures will probably continue. In the short run, depleted cash reserves and restricted access to capital will limit new investment. Balter (2009) sees emerging markets for timber in wood-biomass energy applications, such as pellets, electrical generation, and bio-fuels, and carbon markets. However, in Oregon, the largest timber producer in the country, timber harvest in 2009 was the lowest it has been since the middle of the Great

Depression (Dietz 2010). Western timber markets began to recover during the first half of 2010, fueled by optimism in domestic housing markets and strong Asian markets. However, when the home-buyer credit expired, new home starts fell, and remain lower than expected (Walker 2010). The lone stabilizing factor in western timber and log markets is export demand, primarily from China and Korea. However, exports are not likely to keep prices from falling; experts expect exports to moderate falling prices (Walker 2010). Domestic markets are not likely to recover soon, and timber prices are projected to continue to fall. When demand for logs does recover, the lean inventories being held throughout the domestic supply chain make it likely that there will be a temporary price spike until inventories can be rebuilt (Walker 2010). Alaskan wood products markets are closely tied to North America and the Pacific Rim, and are deeply affected by tight credit, low cost margin issues, and the continued depression in the domestic housing market.

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Table A-1. Tongass National Forest Timber Sales Newly Offered and Sold in FY 2010<sup>1</sup>

Sale Name <sup>2</sup>	Type Prescription		Bid Information		
	Clear Cut (% Vol.)	Partial Cut (% Vol.)	Advertised Rate (\$/MBF)	High Bid (\$/MBF)	Bidders (No.)
Microsale #156	0	100	32.86	32.86	1
Microsale # 31	0	100	6.00	6.25	1
Microsale # 158	0	100	32.86	32.86	1
Microsale # 157	0	100	86.15	91.43	1
Microsale # 29	0	100	32.86	37.62	1
Microsale #155	0	100	32.86	250.00	1
Microsale # 152	0	100	32.86	35.00	1
Microsale # 160	0	100	32.86	32.86	1
Microsale #153	0	100	32.86	273.86	3
Microsale #159	0	100	35.51	35.51	1
Little Cedar	0	100	89.69	448.85	3
Outback	0	100	27.99	31.03	1
Fish Ladder	0	100	61.08	125.99	2
Sand Pit Settlement	100	0	4.63	4.63	1
East Ridge Settlement	100	0	4.18	4.18	1
Salt	100	0	67.26	91.09	2
Tidal	100	0	26.62	107.90	1
Cove	100	0	17.43	17.59	1
Boundary II	100	0	56.92	68.75	1
Slake	0	100	68.66	69.20	1
Diesel	100	0	72.10	75.73	1
Weighted Average	57	43	68.88	72.42	1

Table A-1 continued

Sale Name	S. Spruce Hemlock AK Yellow W. Red SS/Hem					Total Sale MBF
	Sawlog (% Vol.)	Sawlog (% Vol.)	Cedar (% Vol.)	Cedar (% Vol.)	Utility (% Vol.)	
Microsale #156	100	0	0	0	0	3
Microsale # 31	100	0	0	0	0	4
Microsale # 158	100	0	0	0	0	5
Microsale # 157	14	0	86	0	0	7
Microsale # 29	100	0	0	0	0	8
Microsale #155	100	0	0	0	0	9
Microsale # 152	100	0	0	0	0	10
Microsale # 160	100	0	0	0	0	11
Microsale #153	100	0	0	0	0	11
Microsale #159	92	0	0	8	0	13
Little Cedar	4	4	93	0	0	28
Outback	83	6	0	0	11	130
Fish Ladder	34	9	52	0	6	137
Sand Pit Settlement	26	57	0	0	17	171
East Ridge Settlement	22	61	0	0	18	238
Salt	16	29	14	33	9	256
Tidal	27	41	5	14	13	288
Cove	16	60	8	0	17	313
Boundary II	12	35	15	27	10	755
Slake	13	33	10	35	10	18,839
Diesel	13	48	5	20	14	23,853
Weighted Average	13	42	7	26	12	45,089

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.

1. "Newly offered and sold" includes re-offered sales with substantial changes (referred to as "for credit"); otherwise does not include re-offered or re-sold sales.
2. Data includes all sales regardless of size.

Table A-2. Employment in the Wood Products Industry in Southeast Alaska, 1988-2010.

Year <sup>1</sup>	Tongass Logging <sup>2</sup>	Tongass Sawmill	Pulp Mill	Tongass- Related Employment <sup>3</sup>	Other sawmill	Other Logging	Total Industry Employment
1988	1,010	468	892	2,370	-	971	3,341
1989	1,166	478	925	2,569	-	947	3,516
1990	1,123	500	899	2,522	-	1,021	3,543
1991	872	604	911	2,387	-	682	3,069
1992	788	538	910	2,236	-	627	2,863
1993	754	447	859	2,060	-	590	2,650
1994	621	515	533	1,669	-	556	2,225
1995	702	301	516	1,519	-	483	2,002
1996	804	230	524	1,558	-	353	1,911
1997	823	184	318	1,325	-	226	1,551
1998	579	284	96	959	-	310	1,269
1999	305	303	63	671	-	519	1,190
2000	340	280	2	623	-	371	994
2001	109	300 <sup>4</sup>	2	409	-	391	800
2002	63	110	-	173	40	299	512
2003	108	91	-	199	64	298	561
2004	82	95	-	177	53	220	450
2005	88	96	-	184	52	263	499
2006	81	77	-	158	46	217	421
2007	44	70	-	114	63	225	402
2008	52	70	-	122	24	118	265
2009	48	39	-	87	19	110	216
2010	61	46	-	107	7	133	247

Source: Alaska Department of Labor, Kilborn et al. (2004), Brackley et al. (2006b), Brackley and Crone (2009), Alexander and Parrent (2010), and Parrent (2010). Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628

1. 2000 and after reported in calendar years. Prior to 2000, federal fiscal years were used.
2. Tongass National Forest logging estimated based on the ratio of Tongass timber harvest to total timber harvest in Southeast Alaska.
3. Through 2001, assumes all sawmill and pulp mill employment is dependent upon Tongass National Forest timber supply. Beginning in 2002, this assumption no longer held. Data from Kilborn et al. (2004), Brackley et al. (2006b), Brackley and Crone (2009), Alexander and Parrent (2010), Parrent (2010), and Parrent (2011) show that Federal timber supplied 73% of the wood sawn in Southeast Alaska mills in 2002, 59% in 2003, 64% in 2004, 65% in 2005, 62% in 2006, 53% in 2007, 75% in 2008,

66% in 2009, and 87% in 2010. Tongass National Forest sawmill employment from 2002 through 2010 is estimated based on sawmill employment numbers and the ratio of sources of wood (Federal versus the total) reported by Kilborn et al. (2004), Brackley et al. (2006b), Brackley and Crone (2009), Alexander and Parrent (2010), Parrent (2010), and Parrent (2011).

4. Beginning in 2001, employment estimates are being published under a new classification system. The Standard Industrial Classification (SIC) system has been replaced by the North American Industrial (NAI) Classification system. “Sawmill” in this table is reported by the Alaska Department of Labor as “wood manufacturing” which in the NAI system includes sawmills, wood preservation, veneer, plywood, engineered wood, and other wood products. In southeast Alaska, this category is assumed to represent only sawmill employment. Beginning in 2001, sawmill employment figures are adjusted based on regional mill studies, which take into account self employed mill owners.

Table A-3. Volume of National Forest Timber Offered, Sold, and Harvested in the Alaska Region, FY 2006-2010 (MMBF).<sup>1</sup>

<b><u>Offered – Million Board Feet (MMBF)</u></b>			
<b>Fiscal Year</b>	<b>Tongass NF</b>	<b>Chugach NF</b>	<b>Total</b>
2006	23.7	0.0*	23.7
2007	34.0	0.6	34.6
2008	42.0	0.0	42.0
2009	36.0	0.3	36.3
2010	45.6	0.3	45.9
5 yr. Average	36.3	0.2	36.5
<b><u>Sold/Released – Million Board Feet (MMBF)</u></b>			
<b>Fiscal Year</b>	<b>Tongass NF</b>	<b>Chugach NF</b>	<b>Total</b>
2006	85.0	0.0*	85.0
2007	30.4	0.6	31.0
2008	5.4	0.0*	5.4
2009	22.7 <sup>2</sup>	0.3	23.0
2010	45.6	0.3	45.9
5 yr. Average	37.8	0.2	38.0
<b><u>Harvested – Million Board Feet (MMBF)</u></b>			
<b>Fiscal Year</b>	<b>Tongass NF</b>	<b>Chugach NF</b>	<b>Total</b>
2006	43.2	0.0*	43.2
2007	18.7	0.2	18.9
2008	28.0	0.3	28.3
2009	28.4	0.0*	28.4
2010	35.4	0.2	35.6
5 yr. Average	30.7	0.1	30.9

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.

1. Volumes do not include re-offered sales, re-sold sales, or credit volumes.

2. Sold volumes in 2009 include “opted” and “contract” volume. “Opted” is optional volume the purchaser can choose to harvest and pay for if market conditions are suitable.

\* Trace amount of harvest

Table A-4. Tongass National Forest Log Export Permits Active in CY 2010 (MBF)

Sale	Purchaser	Permit				Total
		Number	SS <sup>1</sup>	Hem.	AYC WRC	MBF
Retail	Scott Arrington	2009-11	5	73		79
Sumner	Jerod Cook	2010-5	6	9		15
Porcupine	Mike Allen	2010-3	136	137		274
Upper Carroll II	Pacific Log & Lumber	2008-13	260	20		279
Shady	SE Alaska Wood	2008-16	89	186		276
Kosciusko Stewardship	Pat Richter	2008-7	196	24		220
Prince of Wales Commercial Thin Stewardship	Ron Sharp	2009-1	529			529
Drumlin Reoffer	R&R Conner	2009-6	133	195		327
Luck Lac II	Viking Lumber Co.	2005-17, 2008-8	2		16	19
Scratchings	Viking	2008-9, 2009-2	314	1,083	185	1,581
Diesel	Viking	2010-1, 2010-2	528	6,547	875	7,949
Wedge Resale II	Mike Allen	2110-8	12	45		57
Cove	Mike Allen	2010-6	12	97		108
Blind Slough	Mike Allen	2008-4	66	133		199
Skipping Cow	Alcan	2008-17	214	24	712	950
Brisket	Mel Cook	2010-7				6
<b>Total</b>			<b>2,501</b>	<b>8,573</b>	<b>1,788</b>	<b>6 12,867</b>

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628. Total sums do not always match due to rounding.

1. SS = Sitka spruce (*Picea sitchensis*); Hem. = western hemlock (*Tsuga heterophylla*); AYC = Alaska yellow-cedar (*Chamaecyparis nootkatensis*); WRC = western red cedar (*Thuja plicata*).

Table A-5. Tongass National Forest Log Exports CY 2006-2010 (MBF)

Year	Destination	SS <sup>1</sup>	Hem.	AYC	WRC	Other	Total
CY 2006	Canada	0	0	0	0	0	0
	Lower 48	0	0	37	2,480	0	2,517
	Pacific Rim	448	129	421	837	0	1,836
	Total	448	129	458	3,317	0	4,353
CY 2007	Canada	85	0	0	184	130	400
	Lower 48	0	0	4	210	0	214
	Pacific Rim	166	81	2,717	47	0	3,010
	Total	252	81	2,720	441	130	3,624
CY 2008	Canada	0	0	0	0	0	0
	Lower 48	40	4	254	1,091	0	1,390
	Pacific Rim	1,155	1,659	1,636	0	0	4,449
	Total	1,195	1,663	1,890	1,091	0	5,839
CY 2009	Canada	0	0	0	0	0	0
	Lower 48	0	0	1	278	0	279
	Pacific Rim	3,454	8,681	822	163	0	13,121
	Total	3,454	8,681	823	441	0	13,400
CY 2010	Canada	0	0	0	0	0	0
	Lower 48	31	0	4	6	0	41
	Pacific Rim	2,470	8,573	1,784	0	0	12,826
	Total	2,501	8,573	1,788	6	0	12,867
5 Yr. Avg.	Canada	17	0	0	37	26	80
	Lower 48	14	1	60	813	0	888
	Pacific Rim	1,539	3,825	1,476	209	0	7,049
	Total	1,570	3,826	1,536	1,059	26	8,017

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.  
1. SS = Sitka spruce (*Picea sitchensis*); Hem. = western hemlock (*Tsuga heterophylla*); AYC = Alaska yellow-cedar (*Chamaecyparis nootkatensis*); WRC = western red cedar (*Thuja plicata*).

Table A-6. Timber Harvest and Imports for Southeast and Southcentral Alaska, 1993-2010<sup>1</sup>

		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
<b>Southeast Alaska (MMBF)</b>																				
Tongass N. F.	Sawlogs	268.3	221.8	181.3	97.4	94.4	107.6	132.8	133.7	39.8	30.0	44.1	40.9	43.3	39.4	14.8	24.0	25.3	30.3	
	Utility Logs	56.7	54.0	39.8	22.8	12.2	12.2	12.9	13.0	7.9	3.8	6.7	5.4	6.2	3.7	3.9	4.0	3.1	5.1	
State of Alaska <sup>2</sup>	Sawlogs	5.0	18.1	3.6	4.5	5.2	5.6	7.3	47.8	48.0	48.0	32.7	21.9	40.7	43.6	38.8	10.3	11.8	9.0	
	Utility Logs	0.0	2.7	2.2	2.5	0.3	1.9	0.1	12.1	5.2	9.3	2.1	2.3	2.2	1.0	5.8	1.6	1.7	1.5	
BIA	Sawlogs and Utility	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Alaska Native Corporations <sup>3</sup>	Sawlogs	328.2	275.0	233.9	292.4	335.9	157.6	193.6	114.6	106.5	93.6	98.1	92.0	99.3	67.1	46.9	45.5	46.9	62.5	
	Utility Logs	82.2	12.3	81.1	37.7	47.6	59.0	45.4	46.0	13.3	8.1	7.6	6.9	4.6	4.1	3.1	6.8	4.9	3.9	
Southeast Alaska Total	Sawlogs	601.5	514.9	418.8	394.3	435.5	270.8	333.7	296.2	194.3	171.6	174.9	154.8	183.3	150.1	100.5	79.8	84.0	101.8	
	Utility Logs	138.9	69.0	123.1	63.0	60.1	73.1	58.4	71.1	26.3	21.2	15.4	14.6	13.2	8.8	12.8	12.4	9.7	10.5	
	Total	740.4	583.9	541.9	457.3	495.6	343.9	392.1	367.2	220.6	192.8	190.3	169.4	196.5	158.9	113.3	92.2	93.7	112.3	
<b>Southcentral Alaska (MMBF)</b>																				
Chugach N. F.	Sawlogs	1.7	0.0	1.1	1.3	0.8	0.8	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Utility Logs	0.0	6.5	0.8	2.0	1.4	0.7	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	
State of Alaska <sup>2</sup>	Sawlogs	0.0	0.0	2.6	8.1	8.6	5.0	5.4	0.0	2.1	0.4	0.8	1.3	2.8	0.1	0.0	0.0	0.5	0.3	
	Utility Logs	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.8	0.0	0	14.1	2.7	0.5	0.6	0.0	0.0	1.7	4.7	
BIA	Sawlogs and Utility	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Alaska Native Corporations <sup>3</sup>	Sawlogs and Utility	127.2	186.0	230.1	207.6	237.1	172.2	139.9	56.3	71.3	83.0	32.2	21.3	16.3	3.1	0.1	0.1	0.8	0.3	
Southcentral Alaska Total	Sawlogs and Utility	128.9	192.5	234.3	219.0	247.9	178.8	145.7	58.3	73.8	84.9	47.1	25.3	19.6	3.8	0.3	0.4	3.1	5.5	
Alaskan Imports (MMBF) <sup>4</sup>																				
	Logs and timber	1.9	4.4	11.1	3.9	0.0	0.0	0.0	0.1	3.2	1.7	0.1	2.6	1.7	7.7	7.8	1.1	0.0	0.0	
	Pulpwood	18.1	22.9	126.8	53.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Chips, sawdust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.

1. National Forest and Bureau of Indian Affairs harvests reported for fiscal years. All other ownerships reported in calendar years.
2. Harvests from Alaska Mental Health Trust and University of Alaska lands omitted prior to 2000. The Mental Health Trust Land Office is a state office, but the lands are regulated more like private lands, such as the application of forest practice regulations, and public access.
3. Estimated by telephone survey. Metric tons converted to log scale at a ratio of 2.7 tons per MBF.
4. Compiled from trade statistics available from the U.S. Department of Commerce (2011). Metric tons converted to log scale at a ratio of 2.7 tons per MBF.

Table A-7. Exports of Softwood Logs and Lumber from Alaska (Anchorage Customs District), CY 2001-2010.

**Softwood Logs (MBF Scribner, \$/MBF)**

	<b>All Species</b>		<b>Hemlock</b>		<b>Redcedar</b>		<b>Spruce</b>	
	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>
2001	320,615	424.03	108,563	355.95	11,389	694.51	119,288	547.01
2002	286,976	409.70	79,406	398.67	10,820	726.22	153,548	434.34
2003	305,588	456.62	85,094	438.80	12,936	763.28	190,003	430.18
2004	175,281	552.35	50,637	490.39	7,785	804.57	104,118	576.07
2005	216,021	561.74	52,048	495.90	9,962	778.22	141,508	557.69
2006	254,053	423.30	57,967	491.19	6,299	750.70	177,427	379.20
2007	206,456	394.43	30,547	543.05	8,442	940.23	151,925	332.09
2008	203,617	383.42	30,979	540.21	8,980	815.33	144,096	339.90
2009	204,866	412.82	44,181	490.94	4,593	721.14	147,659	364.23
2010	280,950	399.78	62,090	454.69	7,712	793.44	207,261	361.49

**Softwood Lumber (MBF lumber tally, \$/MBF)**

	<b>Total</b>		<b>Western hemlock</b>		<b>Sitka Spruce</b>		<b>Cedar</b>		<b>Other Softwoods</b>	
	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>	<b>Volume</b>	<b>Average Value</b>
2001	3,292	208.21	0	--	3,247	200.58	0	--	44	770.89
2002 <sup>1</sup>	85	49.56	0	--	0	--	0	--	85	49.56
2003	1,217	1,023.87	0	--	1,217	1,023.87	0	--	0	--
2004	1,825	1,087.76	0	--	1,825	1,087.76	0	--	0	--
2005	2,669	561.78	0	--	2,669	561.78	0	--	0	--
2006	2,166	1,005.35	0	--	2,166	1,005.35	0	--	0	--
2007	1,761	1,222.79	0	--	1,761	1,222.79	0	--	0	--
2008	118	732.33	0	--	0	--	0	--	118	732.33
2009	176	898.40	0	--	3	1,442.26	0	--	53	529.97
2010	400	1,002.67	35	139.73	116	2,267.76	0	--	250	536.45

Source: Warren 2011.

1. Inconsistencies may result in 2002, 2008 and 2009 due to low export volumes reported.

Table A-8. Woodchip Exports from U.S. West Coast customs districts, CY 2001-2010

<b>Wood Chips (In short tons, on a dry-weight basis; value in dollars per short ton)</b>								
	<b>Seattle</b>		<b>Columbia-Snake</b>		<b>San Francisco</b>		<b>Anchorage</b>	
	<b>Average</b>		<b>Average</b>		<b>Average</b>		<b>Average</b>	
	<b>Volume</b>	<b>Value</b>	<b>Volume</b>	<b>Value</b>	<b>Volume</b>	<b>Value</b>	<b>Volume</b>	<b>Value</b>
2001	353,074	86.00	856,164	96.58	166,558	90.59	154,880	61.28
2002	262,395	71.10	893,185	84.31	109,049	75.50	98,535	68.85
2003	252,050	82.58	760,965	82.39	63,037	69.10	109,621	49.66
2004	330,760	62.28	744,356	75.89	34,122	69.25	48,848	50.43
2005	421,042	61.44	918,475	83.71	26,470	76.78	113,922	62.82
2006	198,292	47.57	841,646	92.67	3,684	52.72	6,442	44.58
2007	410,625	48.48	863,947	119.43	4,553	39.08	20 <sup>1</sup>	214.43
2008	329,719	51.08	1,120,344	97.35	8,124	46.52	25	156.75
2009	160,849	58.16	1,013,598	55.78	8,971	40.43	6,539	43.55
2010	138,323	53.27	1,603,785	56.33	19,991	44.88	438	19.96

1. HTC 4401.30.0000, "sawdust and wood waste and scrap" is the only chip product shipped from the Anchorage CD in 2007. It went to Canada; the original data are 18,289 kg at a total value of \$4,323. In 2008, 25 tons of wood chips were exported to Vietnam from Alaska. In 2010, wood shavings were exported to Canada and Japan from Alaska.

Source: U.S. Department of Commerce 2011, at <http://dataweb.usitc.gov/> (last accessed June 2011) and Warren 2011. The valuation definition used in the export statistics is the value at the seaport or border port of exportation. It is based on the selling price (or cost if not sold) and includes inland freight, insurance, and other charges to the port of exportation. Seattle Customs District includes all ports in the State of Washington, except Longview and Vancouver. Columbia-Snake Customs District includes all Oregon ports and Longview and Vancouver, Washington. San Francisco Customs District includes all coastal and inland ports in the State of California from Monterey north. The Anchorage Customs District is the State of Alaska.

Table A-9. Value of Exports from Alaska (Anchorage Customs District) by Product and Country, CY 2001-2010, in \$1,000 US (unadjusted).

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<u>Logs</u>										
Canada	12,385	10,694	9,537	1,097	502	833	1,861	2,630	1,678	112
China	6,069	3,664	2,484	2,544	7,120	7,748	13,703	19,064	39,907	56,986
Japan	83,316	62,552	75,090	50,964	57,933	37,134	36,803	28,982	22,538	17,238
Korea	30,594	35,033	48,636	37,177	51,136	57,395	27,013	23,711	18,175	30,633
Taiwan	3,584	4,618	2,646	2,936	4,659	2,414	2,895	2,340	2,494	7,442
Other	0	1,028	1,189	0	0	2,015	51	1,975	4	14
<b>Total</b>	<b>135,948</b>	<b>117,589</b>	<b>139,582</b>	<b>94,520</b>	<b>121,351</b>	<b>107,539</b>	<b>82,327</b>	<b>78,701</b>	<b>84,796</b>	<b>112,424</b>
<u>Sawnwood</u>										
Canada	0	0	0	0	0	0	0	0	0	0
Japan	651	64	1,488	2,123	3,322	2,817	2,149	10	0	0
Other	0	4	33	0	27	23	4	76	158	401
<b>Total</b>	<b>651</b>	<b>69</b>	<b>1,521</b>	<b>2,123</b>	<b>3,349</b>	<b>2,839</b>	<b>2,153</b>	<b>86</b>	<b>158</b>	<b>401</b>
<u>Chips and Sawdust</u>										
Canada	3,954	1,915	909	1,097	1,136	287	4	0	0	3
Japan	5,615	4,974	4,661	1,537	2,442	3	0	0	0	5
Other	1,388	0	0	12	3,734	0	0	4	24	0
<b>Total</b>	<b>10,958</b>	<b>6,889</b>	<b>5,570</b>	<b>2,645</b>	<b>7,312</b>	<b>290</b>	<b>4</b>	<b>4</b>	<b>24</b>	<b>9</b>
<u>Other Wood Products</u>										
Canada	10	166	51	54	71	3	13	3	0	6
Hong Kong	226	389	341	351	206	237	112	82	350	339
Japan	929	574	1,932	762	269	600	598	487	427	772
Korea	304	131	1,403	623	28	335	188	102	50	179
Taiwan	179	98	140	125	35	126	20	71	153	265
Other	174	801	1,315	651	258	541	297	668	505	629
<b>Total</b>	<b>1,822</b>	<b>2,159</b>	<b>5,182</b>	<b>2,566</b>	<b>867</b>	<b>1,841</b>	<b>1,230</b>	<b>1,413</b>	<b>1,485</b>	<b>2,191</b>
<u>Grand Total</u>										
Canada	16,349	12,775	10,496	2,050	1,709	1,123	1,879	2,633	1,678	121
China	6,106	4,230	3,279	2,810	7,277	8,038	13,855	19,456	40,209	57,233
Hong Kong	340	393	1,527	363	211	237	112	82	355	339
Japan	90,568	68,164	83,171	55,387	63,966	40,554	39,551	29,469	22,965	18,016
Korea	30,949	35,164	50,039	37,800	54,894	57,730	27,201	23,812	18,225	30,812
Taiwan	3,763	4,716	2,786	3,061	4,694	2,546	2,915	2,414	2,647	7,706
Other	1,561	1,264	556	384	128	2,282	195	2,255	226	797
<b>Total</b>	<b>149,636</b>	<b>126,705</b>	<b>151,854</b>	<b>101,855</b>	<b>132,879</b>	<b>112,510</b>	<b>85,714</b>	<b>80,121</b>	<b>86,305</b>	<b>115,024</b>

Source: U.S. Department of Commerce 2011 (<http://dataweb.usitc.gov/>, last accessed June 2011), and Warren 2011.

Sums do not match due to round-off error and omission of minor categories.

Table A-10. Tongass National Forest current contracts and remaining volume under contract as of September 30, 2010; summary by purchaser<sup>1</sup>

<b>Purchaser Name</b>	<b>Original Volume Estimate (MBF)</b>	<b>Volume Cut (MBF)</b>	<b>Remaining Volume (MBF)</b>
Alcan Forest Products LLP	29,914	7,278	16,636
Brent Cole	100	80	20
CSL Farm and Supply	470	240	231
Commercial Firewood	17	0	17
Custom Cut LLC	744	602	142
DOT/PF State of Alaska	3,601	0	3,601
D&L Woodworks	398	62	336
Ernie Eads	1,434	468	966
Gordon Chew	172	0	172
H&L Salvage Inc	1,205	410	795
Hecla Greens Creek Mining	428	0	428
Icy Straits Lumber and Mill	9,828	98	9,730
James Harrison	695	217	478
Jerod Cook	72	41	31
Jerry Baker	4	0	4
Keith Dahl	899	0	899
Larry Clark	7	0	7
Larry Trumble	19	3	16
Luther Coby	39	39	0
Michael Allen	6,045	5,217	828
Michael Johnson	79	0	79
Pacific Log and Lumber Ltd	51,567	28,144	23,423
Porter Lumber	140	0	140
R&R Conner Inc	1,148	984	163
Scott Hill Skyline Logging	493	0	493
Sharp Lumber	1,355	1,077	278
St Nick Forest Products	474	0	474
Steve Little	160	0	160
TM Construction, Inc	131	7	124
Viking Lumber Co.	103,458	67,006	36,452
Vincent S. Schafer	90	16	74
William Kaufman	24	6	18
William Cheney	48	0	48
William Thomason	1,263	143	1,120
<b>Total</b>	<b>210,521</b>	<b>112,124</b>	<b>98,397</b>

1. All volumes rounded to nearest MBF. "Volume Cut" represents total volume cut from all open contracts held by the purchaser, regardless of the year any individual contract was awarded. "Volume Cut" can potentially include harvested volume over several years time for any given purchaser.