



ALASKA'S FOREST PRODUCTS INDUSTRY AND TIMBER HARVEST

PART 1: TIMBER HARVEST, PRODUCTS AND FLOW

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INTRODUCTION

This Forest Industry Brief is part of a series of reports presenting findings from a Bureau of Business and Economic Research (BBER) census of Alaska's primary forest products industry. Part 1 of this series presents information on the volume of timber harvested in Alaska during 2015 by product, ownership, species and resource area. It also describes the flow of timber within the state, across state lines and exports to countries outside the United States.

ALASKA'S TIMBER RESOURCE

Coastal Alaska contains approximately 6.2 million acres of timberland, varying in ownership and species composition from north to south (Miles 2017). Nearly 79 percent of Alaska's timberland are publicly owned with the majority represented by USDA Forest Service holdings. The Tongass National Forest includes 3.4 million acres of coastal timberland while the Chugach National Forest encompasses approximately 400,000 acres of timberland. Additional federal ownership designations account for approximately 77,000 acres of Alaskan timberland. The State of Alaska's Division of Forestry manages approximately 951,000 acres of timberland (Miles 2017). Privately held timberland, including Native Corporations recognized under the Alaska Native Claims Settlement Act (ANCSA),

account for approximately 1.3 million acres of Alaska's inventoried timberlands. Alaska has the second lowest proportion of forest land area classified as timberland across all 50 states, with publicly held timberland spanning the largest amount of acreage and containing the majority of sawtimber volume (Figure 1) (Miles 2017).

Similarly, 77 percent – approximately 110,893 million board feet (MMBF) Scribner – of sawtimber volume is found on national forest system land (Christensen 2017). Sitka spruce accounts for roughly 25 percent (34,474 MMBF Scribner) of Alaska's sawtimber volume while western hemlock represents the largest proportion of statewide sawtimber volume at 55 percent (79,305 MMBF Scribner) (Christensen 2017). National forests accounted for 22 percent of the total timber harvest in 2015 while private lands contributed the majority (67 percent) of timber harvest volume. Timberland information for this report is based on the USDA Forest Inventory and Analysis (FIA) coastal Alaska permanent-plot-derived forest statistics. Historically, characterizing changes over time across the entire state of Alaska's timberlands has been challenged by a lack of an annualized permanent forest inventory for Interior Alaska. However, during 2016, the FIA Program initiated the collection of annual plot measurements in the Interior region, signaling the start of addressing the challenges associated with previously missing forest inventory data.

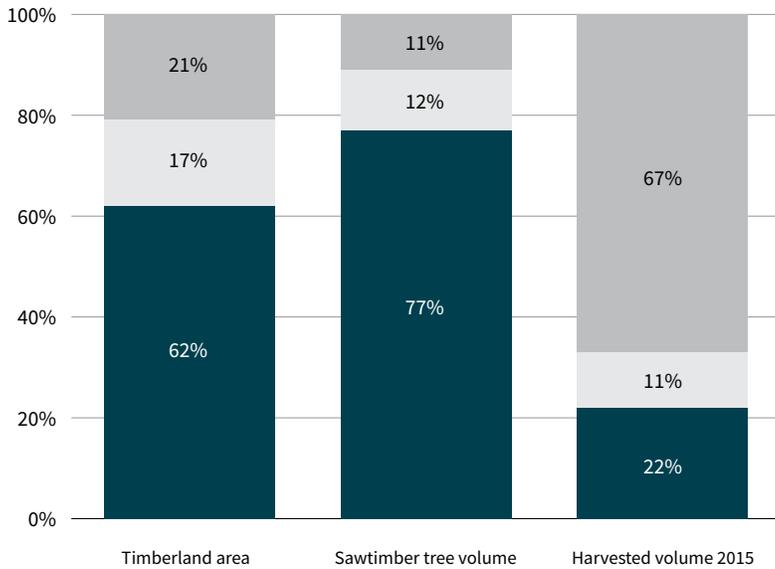


Figure 1. Characteristics of Alaska's timberland and timber harvest by ownership class, 2015. Sources: BBER 2016; Miles 2017.

ALASKA'S TIMBER HARVEST

Timber harvest volume in 2015 was estimated at 136.4 MMBF Scribner or approximately 25.3 million cubic feet (MMCF). Alaska's timber harvest volume has continued to decrease falling from 268.2 MMBF in 2005 (Halbrook et al. 2009) and 175.3 MMBF in 2011 (Berg et al. 2014). Over the course of a decade, timber harvest volume in Alaska has decreased nearly 50 percent (Figure 2). This decreasing trend has been observed across other western states in response to shifting forest policies, as well as dynamic wood product markets. The Great Recession and subsequent drop in U.S. home construction between 2007 and 2009 reduced the demand for lumber and other wood products through 2010 and 2011 (Keegan et al. 2012). Though domestic home construction and overseas demand have led to

improvements across wood products markets, harvest levels continued to decrease between 2011 and 2015 in Alaska.

Log exports continue to be a large driver of harvesting activity in Alaska, representing more than 75 percent of the total timber harvest in 2015. This represents a decrease in the proportion of timber harvest exported relative to 2011 levels, when approximately 87 percent of the total timber harvested was exported. Private individuals and Native Corporations are the predominant export entities in Alaska. However, as of 2007, the Limited Supply Shipping Policy of the USDA Forest Service allowed the Tongass National Forest to become the only national forest authorized to export roundwood logs from public lands (USDA FS 2017). Log exports across many other western states represent a small fraction of harvested volume and most timber volume harvest across the west is processed at

Figure 2. Alaska's timber harvest volume by ownership, selected years. Sources: Alexander 2012; Berg et al. 2014; Brackley et al. 2009; BBER 2016; USITC 2016; Zhou 2013; Zhou and Warren 2012.

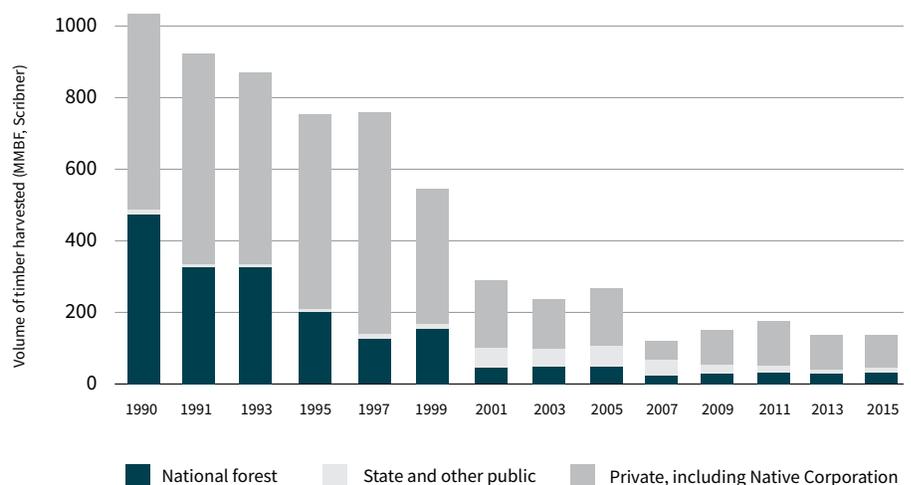


Table 1. Alaska timber harvest by ownership class and product type, 2015.

Ownership class	Sawlogs	House logs	Fuelwood	Other products ^a	All products	2011 all products ^b
----- Thousand board feet, Scribner -----						
Private -- including Native Corporations	89,244	281	823	501	90,848	127,990
National forest	28,961	194	60	1,071	30,286	28,688
State and other public	9,556	846	4,835	--	15,237	18,590
All owners^c	127,761	1,321	5,718	1,572	136,371	175,268

^a Other timber products include tonewood and cedar products.

^b Berg et al. 2014.

^c Totals may not sum due to rounding.

either in-state or neighboring state facilities (Berg et al. 2014; McIver et al. 2013; McIver et al. 2015; Simmons et al. 2016).

HARVEST OWNERSHIP AND PRODUCT TYPE

Though most of the timberland in Alaska is held under public ownership, privately held lands – including those managed by Native Corporations – accounted for the majority of the timber harvested in 2015 (Figure 1). Private lands supplied 67 percent (90.8 MMBF Scribner) of the harvest volume in 2015 (Table 1), representing both a decrease in volume harvested (128 MMBF) and overall proportion (73 percent) of total harvest from 2011 levels. Conversely, harvest across public ownerships represents an increasing proportion of the total harvest with national forest timber harvest accounting for approximately 30.3 MMBF (22 percent) of the volume in 2015, compared with approximately 28.7 MMBF (16 percent) in 2011.

Sawlogs, including export logs as well as logs used to produce lumber and other sawn products, have consistently been the

predominant timber product harvested in Alaska. In 2015, sawlogs accounted for nearly 94 percent (127.8 MMBF) of the total timber harvest (Table 1). Private lands provided the majority of sawlogs (70 percent) while national forests supplied approximately 23 percent of sawlog volume.

Fuelwood used in the production of industrial heat, residential firewood, as well as wood pellet production, was the second largest product type harvested in 2015. Fuelwood's proportion of Alaska's timber harvest nearly doubled between 2011 and 2015 accounting for about 4 percent (5.7 MMBF) of the 2015 harvest. State and other public lands provided nearly all of the fuelwood volume. House logs accounted for almost 1 percent of the harvest volume in 2015, similar to the proportion in 2011. Most of the house log volume came from state land (64 percent) followed by private lands (21 percent) and national forests (15 percent). Timber harvest volume used for other products exceeded house log harvest volume by more than 250 thousand board feet (MBF) in 2015, a notable increase from 2011. Predominantly sourced from national forests, other

Table 2. Alaska timber harvest by species and product type, 2015.

Species	Sawlogs	Other products ^{ab}	All products
-----Thousand board feet, Scribner-----			
Sitka spruce	96,115	279	96,393
Western hemlock	14,594	117	14,711
Western red cedar	12,188	1,294	13,483
White spruce	2,530	5,196	7,726
Birch species	734	1,280	2,014
Alaska yellow-cedar	1,425	247	1,671
Other ^c	174	198	373
All species^d	127,761	8,610	136,371

^a Other products include house logs, fuelwood logs, cedar product logs and tonewood.

^b Products by species were combined to prevent disclosure.

^c Other species include cottonwood, quaking aspen, black spruce, poplar and red alder.

^d Totals may not sum due to rounding.

timber products include cedar products (shakes, shingles and fencing), as well as tonewood used to craft musical instruments. While the combined category of these other wood products only accounted for 1 percent of the total harvest in 2015, the volume increased fourfold from 2011.

HARVEST BY SPECIES

At more than 96 MMBF Scribner, Sitka spruce was the leading species harvested in Alaska in 2015 (Table 2). Sitka spruce was also the predominant export species leaving Alaska. Historically, Sitka spruce has led Alaska's timber harvest accounting for 47 percent (126.8 MMBF) of the total harvest volume in 2005 (Halbrook et al. 2009), 64 percent (111 MMBF) in 2011 (Berg et al. 2014) and increasing to 70 percent in 2015. Western hemlock and western red cedar each accounted for roughly 10 percent of the overall harvest in 2015. Western hemlock, as a proportion of total harvest, has continued to decline from 28 percent (77.5 MMBF) in 2005, to 20 percent (35 MMBF) in 2011 and a notable decrease to nearly 11 percent (14.7 MMBF) in 2015. Though the proportion of the overall harvest represented by western hemlock has fallen over the past decade, it still comprises the majority of growing stock volume on timberland in Southeast Alaska (Miles 2017). White spruce and birch species both experienced increases in volume harvested from 2011 to 2015, with the majority of their harvest occurring across Interior Alaska.

HARVEST BY GEOGRAPHIC SOURCE AND TIMBER FLOW

The geographic sources of Alaska's timber harvest have been divided into five resource areas (Figure 3). Interior Alaska was the only resource area to experience an increase in harvest volume between 2011 and 2015. Harvest volume in Interior Alaska increased by about 1.4 million MMBF, accounting for approximately 6 percent (7.9 MMBF) of the total timber harvest in 2015. While combined harvest volume in Southcentral and Western Alaska fell to approximately 52.5 MMBF, the proportional contribution of timber harvest from these boroughs slightly increased in 2015. The Southcentral and Western regions of Alaska were combined in this report and in related data tables to avoid disclosure of individual mill information. Harvest volume from Southeast Alaska experienced the most dramatic shift, decreasing by 25 percent between 2011 and 2015 and accounting for 76 MMBF in 2015. Southeast boroughs and census areas contributed nearly 60 percent of all the sawlog volume harvested in 2015, compared to the more than 80 percent of sawlog harvest volume in 2011. Interior Alaska accounted for 84 percent of the fuelwood products harvested in 2015. Most of the harvest for house log and log home products originated

in Southcentral and Western Alaska (48 percent) followed by Interior Alaska (39 percent).

Overall, timber harvest in 2015 shifted away from Southeast Alaska towards the Southcentral, Western and Interior resource areas. However, Southeast Alaska still accounts for approximately 56 percent of the timber harvest volume and contains the majority of the state's manufacturing infrastructure and capacity.

Approximately 105 MMBF (77 percent) of the 2015 Alaska timber harvest left the state as log exports and 23 percent of statewide harvest was received by Alaskan processing facilities. Alaskan facilities did not report sending logs to out-of-state facilities for additional processing, nor did they report receiving timber from any other states or countries.

The majority of Alaska's sawmills and timber-processing capacity are located in the Southeast resource area. Across all of Alaska's regions, nearly 100 percent of the timber harvested in each region was also processed in the same geographic resource area, indicating limited timber flow between resource areas within Alaska. The small exception was the approximately 3 percent of harvest from Southcentral which flowed to Southeast Alaska for processing.

UTILIZATION OF ALASKA'S TIMBER HARVEST

Alaska's 2015 timber harvest was approximately 25,321 thousand cubic feet (MCF), excluding bark (Figure 4). This total harvest volume flowed to a variety of in-state timber processing facilities as well as to other countries as log exports. The majority, 78 percent (19,814 MCF), was exported as logs, 17 percent (4,274 MCF) went to sawmills, 3 percent (767 MCF) went to fuelwood manufacturers, 1 percent (264 MCF) went to producers of tonewood and cedar products, while the remaining 1 percent (202 MCF) went to house log and log home manufacturers.

Of the volume received and processed by Alaskan facilities (5,507 MCF), approximately 19 percent (1,037 MCF) became residue used for fuelwood while 6 percent (329 MCF) became residue utilized for a suite of miscellaneous products including landscape, mulch, and animal bedding. Of the nearly 4,300 MCF of volume received by sawmills, over 41 percent (1,759 MCF) became finished lumber or other sawn products. Approximately 321 MCF of wood fiber residue went unused during 2015. Log export sort yards are also a source of residue (TSS Consultants 2000), however BBER was unable to attain recent and accurate data on sort yard residue volumes or biomass numbers.

ABOUT THE DATA

This survey effort is the third application of its kind in Alaska (Halbrook et al. 2009; Berg et al. 2014) and presents information collected from a BBER census of primary manufacturers in the

Figure 3. Alaska's geographic resource areas.



state that receive timber harvested in Alaska. Primary forest product manufacturers are firms that process timber into products such as lumber, as well as facilities like wood pellet plants that use the wood fiber directly from timber processors. Through a written questionnaire, phone or in-person interview, timber-processing and residue-utilizing facilities provided information about their 2015 operations including:

- Plant location, production capacity and employment.
- Volume of raw material received, by county and ownership origin.

- Species of timber volume received and corresponding live/dead proportions.
- Finished product volumes, types, sales value and market locations.
- Volume, utilization and marketing of manufacturing residue.

In the event of nonresponse from a facility, data collected in previous surveys were updated using current data collected for facilities of a similar size, product type and location, as well as information on market trends and prices. For the 2015 Alaska mill census, data were received for 51 of the 60 active, in-state

facilities accounting for 85 percent of primary manufacturers. While some facility data was estimated, 80 percent of the 2015 harvest volume data was captured through direct census of manufacturers or published information. Unlike other western states (ODF 2015, WA-DNR 2015), no single state agency compiles and comprehensively reports statewide timber harvest statistics for Alaska. For this report, timber harvest estimates were based on several sources including: BBER mill census data collected from primary processors, USDA Forest Service Cut and Sold Reports, Timber Supply and Demand (706a) reports to Congress under The Alaska National Interest Lands Conservation Act (ANILCA) (Alexander 2012), State of Alaska Division of Forestry personal correspondence, as well as trade and export data compiled from the United States International Trade Commission (USITC).

The University of Montana's Bureau of Business and Economic Research (BBER) and the USDA Forest Service's Forest Inventory and Analysis (FIA) Program at the Pacific Northwest Research Station (Portland, Oregon) cooperated in the analysis and preparation of this report. With the FIA programs at the Pacific Northwest and Rocky Mountain Research Stations, BBER has developed the Forest Industries Data Collection System (FIDACS) to collect, compile and make available state and county information on the operations of the forest products industry. Information collected from manufacturers is stored at the BBER. Additional information not presented here, including the full set of data tables, is available on the BBER website at www.bber.umt.edu/FIR/S_AK.asp or upon request. However, individual firm-level data are confidential and will not be released.

See also, **Part 2: Industry Sectors, Capacity and Outputs** (BBER-FIB-8); **Part 3: Sales, Employment and Contribution to the State's Economy** (BBER-FIB-9); and **Alaska 2015 Data Tables and Figures**.

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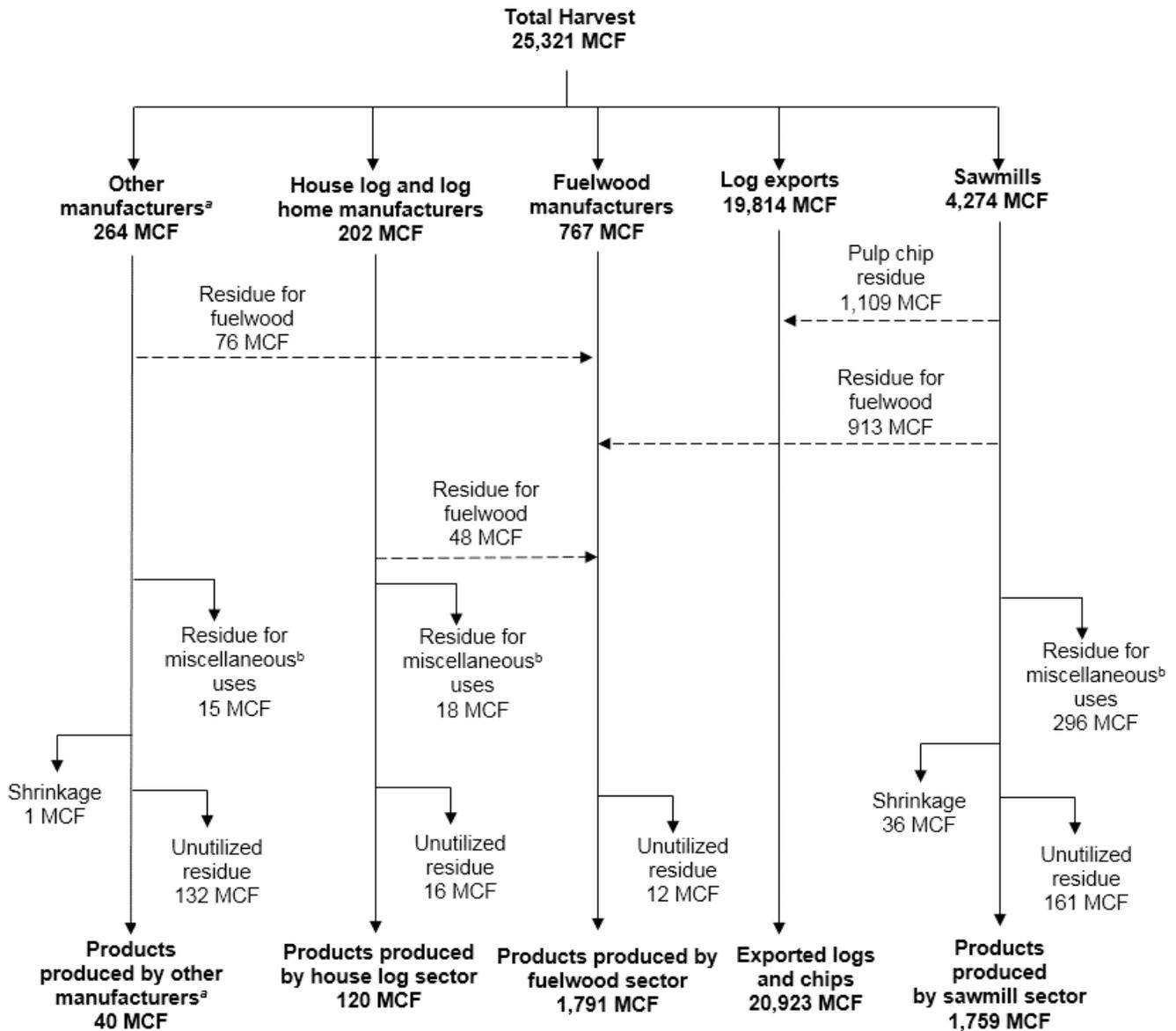
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Figure 4. Alaska's 2015 timber harvest by product type and final disposition.



^a Other manufacturers include manufacturers of tonewood and cedar products.
^b Miscellaneous uses include landscape, mulch, and animal bedding.

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A full set of data tables are also available at: <http://www.bber.umt.edu/pubs/forest/fidacs/AK2015Tables.pdf>



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