



Alaska's Forest Products Industry and Timber Harvest, 2015

Part 4: Alaska Data Tables

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Introduction

This resource bulletin is part of a series of reports presenting findings from a census of Alaska's primary forest products industry. Part 4 of the series presents data tables characterizing information on Alaska's forest products industry sectors that processed timber and mill residue into finished wood products during 2015. Part 4 of this series includes those tables contained in parts 1 through 3 as well as supplemental tables characterizing additional information on Alaska's forest products industry and timber harvest.

This survey effort is the third application of its kind in Alaska (Berg et al. 2014, Halbrook et al. 2009) and presents information collected from a census of primary manufacturers in the state that receive timber harvested in Alaska. Primary forest product manufacturers are businesses that process timber into products such as lumber, as well as facilities such as wood pellet plants that use the wood fiber directly from timber processors. Using a written questionnaire, or a telephone or in-person interview, timber-processing and residue-utilizing facilities provided information about their 2015 operations for the following:

- 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

For facilities that did not respond to the survey, data collected in previous surveys were updated using current data collected for facilities of a similar size with a similar 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, which accounted for 85 percent of primary manufacturers. While some collected facility data required estimation methods to finalize, 80 percent of the harvest volume in 2015 was captured through quantitative methods.

The University of Montana's Bureau of Business and Economic Research (BBER) and the U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station's Forest Inventory and Analysis (FIA) program 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 forest products industry operations. Because this study is based on a census, rather than a statistical sample of businesses, there is no statistical error associated with the estimates presented. Possibilities of reporting and measurement errors exist but are minimized by cross-checking data against other public and private information sources, and by checking the data for internal consistency. Summary data tables and figures

are reviewed by wood products researchers, state and federal agency personnel, and members of the state's forest products industry. However, company-level data are confidential and will not be released.

See also, "Part 1: Timber Harvest, Products, and Flow;" "Part 2: Industry Sectors, Capacity, and Outputs;" and "Part 3: Sales, Employment, and Contributions to the Statewide Economy."

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
<i>----- Thousand board feet Scribner -----</i>						
Private, including Alaska 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	127,761	1,321	5,718	1,572	136,371	175,267
<i>----- Percentage of harvest -----</i>						
Private, including Alaska Native corporations	69.9	21.2	14.4	31.9	66.6	73.0
National forest	22.7	14.7	1.0	68.1	22.2	16.4
State and other public	7.5	64.1	84.6	—	11.2	10.6
All owners	93.7	1.0	4.2	1.2	100.0	100.0

Note: Totals may not sum because of rounding, — = 0.

^aOther timber products include tonewood and cedar products.

^bBerg et al. (2014)

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

Species	Sawlogs	Other products ^{a,b}	All products	2011 products ^c
<i>----- Thousand board feet Scribner -----</i>				
Sitka spruce	96,115	279	96,393	111,364
Western hemlock	14,594	117	14,711	35,159
Western redcedar	12,188	1,294	13,483	18,362
White spruce	2,530	5,196	7,726	6,173
Birch species	734	1,280	2,014	1,660
Alaska yellow-cedar	1,425	247	1,671	1,786
Other ^d	174	198	373	762
All species	127,761	8,610	136,371	175,267
<i>----- Percentage of harvest -----</i>				
Sitka spruce	75.2	3.2	70.7	63.5
Western hemlock	11.4	1.4	10.8	20.1
Western redcedar	9.5	15.0	9.9	10.5
White spruce	2.0	60.3	5.7	3.5
Birch species	0.6	14.9	1.5	0.9
Alaska yellow-cedar	1.1	2.9	1.2	1.0
Other ^d	0.1	2.3	0.3	0.4
All species	93.7	6.3	100.0	100.0

Note: Totals may not sum because of rounding.

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

^bProducts by species were combined to prevent disclosure.

^cBerg et al. (2014)

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

Table 3—Alaska timber harvest by resource area, 2015

Resource area	Harvest Volume	Percentage of total
	<i>Thousand board feet Scribner</i>	
Interior	7,863	5.8
Southcentral and western ^a	52,547	38.5
Southeast	75,961	55.7
State total	136,371	100.0

Note: Totals may not sum because of rounding.

^aResource areas combined to avoid disclosure.

Alaska timber resource areas and associated boroughs and census areas

Interior:

Fairbanks North Star Borough
Denali Borough
Yukon-Koyukuk
Southeast Fairbanks Census Area

Southeast:

Haines Borough
Juneau Borough
Ketchikan Gateway Borough
Prince of Wales-Outer Ketchikan Census Area
Sitka Borough
Skagway-Hoonah-Angoon Census Area
Wrangell-Petersburg Census Area
Yakutat Borough

Southcentral:

Anchorage Borough
Kenai Peninsula Borough
Matanuska-Susitna Borough
Valdez-Cordova Census Area

Western:

Bethel Census Area
Kodiak Island Borough

Table 4—Timber volume received by Alaska facilities by ownership class and product, 2015

Ownership class	Sawlogs ^a	House logs	Fuelwood ^b	Other products ^c	All products, 2015	All products, 2011 ^d	All products, 2005 ^e
	<i>Thousand board feet Scribner</i>						
Private, including Alaska Native corporations	1,244	281	823	501	2,848	3,364	3,743
National forest	15,545	194	60	1,071	16,870	12,099	23,866
State and other public	5,880	846	4,835	—	11,561	7,796	17,252
All owners	22,669	1,321	5,718	1,572	31,280	23,259	44,861
	<i>Percentage of volume received</i>						
Private, including Alaska Native corporations	5.5	21.2	14.4	31.9	9.1	14.5	8.3
National forest	68.6	14.7	1.0	68.1	53.9	52.0	53.2
State and other public	25.9	64.1	84.6	—	37.0	33.5	38.5
All owners	72.5	4.2	18.3	5.0	100.0	100.0	100.0

Note: Totals may not sum because of rounding, — = 0.

^aTimber exports not included.

^bIncludes timber used for residential firewood, industrial fuelwood for pellet manufacturing, and chips for park/playground fill.

^cIncludes cedar product and tonewood logs.

^dFrom Berg et al. (2014).

^eFrom Halbrook et al. (2009).

Table 5—Timber volume received by Alaska facilities by species and product type, 2015

Species	Sawlogs ^a	House logs	Fuelwood ^b	Other products ^c	All products, 2015	All products, 2011 ^d	All products, 2005 ^e
<i>----- Thousand board feet Scribner -----</i>							
Western redcedar	9,597	28	12	1255	10,891	5,671	1,857
White spruce	2,530	942	4,254	—	7,726	6,174	6,154
Sitka spruce	7,443	180	28	71	7,722	5,114	10,877
Birch species	734	48	1,232	0	2,014	1,660	230
Western hemlock	1,579	44	23	50	1,696	3,114	23,539
Alaska yellow-cedar	612	57	7	183	858	373	1,099
Other ^f	174	22	162	15	373	1,153	1,105
All species	22,669	1,321	5,718	1,572	31,280	23,259	44,861
<i>----- Percentage of volume received -----</i>							
Western redcedar	42.3	2.1	0.2	79.8	34.8	24.4	4.1
White spruce	11.2	71.3	74.4	—	24.7	26.5	13.7
Sitka spruce	32.8	13.6	0.5	4.5	24.7	22.0	24.2
Birch species	3.2	3.6	21.5	0.0	6.4	7.1	0.5
Western hemlock	7.0	3.3	0.4	3.2	5.4	13.4	52.5
Alaska yellow-cedar	2.7	4.3	0.1	11.6	2.7	1.6	2.4
Other ^f	0.8	1.6	2.8	0.9	1.2	5.0	2.5
All species	72.5	4.2	18.3	5.0	100.0	100.0	100.0

Note: Totals may not sum because of rounding, — = 0.

^aTimber exports not included.

^bIncludes timber used for residential firewood, industrial fuelwood for pellet manufacturing, and chips for park/playground fill.

^cIncludes cedar products and tonewood logs.

^dFrom Berg et al. (2014).

^eFrom Halbrook et al. (2009).

^fSpecies combined to avoid disclosure. Other species include cottonwoods, balsam poplar, quaking aspen, red alder, and black spruce.

Table 6—Timber volume received by Alaska facilities by resource area and product type, 2015

Resource area	Sawlogs ^a	House logs	Fuelwood ^b	Other products ^c	All products, 2015	All products, 2011 ^d	All products, 2005 ^e
<i>----- Thousand board feet Scribner -----</i>							
Southeast	19,071	166	60	1,572	20,869	13,812	37,982
Southcentral and western ^f	1,061	634	853	0	2,547	3,022	2,900
Interior	2,538	520	4,805	0	7,863	6,425	3,729
All areas	22,669	1,321	5,718	1,572	31,280	23,259	44,861 ^g
<i>----- Percentage of volume received -----</i>							
Southeast	84.1	12.6	1.0	100.0	66.7	59.4	84.7
Southcentral and western ^f	4.7	48.0	14.9	0.0	8.1	13.0	6.5
Interior	11.2	39.4	84.0	0.0	25.1	27.6	8.3
All areas	72.5	4.2	18.3	5.0	100.0	100.0	100.0

Note: Totals may not sum because of rounding.

^aTimber exports not included.

^bIncludes timber used for residential firewood, industrial fuelwood for pellet manufacturing, and chips for park/playground fill.

^cIncludes cedar products and tonewood logs.

^dFrom Berg et al. (2014).

^eFrom Halbrook et al. (2009).

^fResource areas combined to avoid disclosure.

^gIncludes 250,000 board feet from outside the state of Alaska (Halbrook et al. 2009).

Table 7—House log, fuelwood, and other product production by resource area, 2015^a

Resource area	Lumber and other sawn products ^a	House logs	Fuelwood products ^b	Other products ^c
	<i>Thousand board feet lumber tally</i>	<i>Thousand lineal feet</i>	<i>Bone-dry units^d</i>	<i>Thousand board feet lumber tally</i>
Southeast	25,122	68	724	1,604
Southcentral and western ^e	1,315	137	1,854	—
Interior	4,752	113	12,390	—
All areas	31,189	318	14,969	1,604

Note: Totals may not sum because of rounding, — = 0.

^aDoes not include lumber and other sawn products.

^bIncludes firewood, wood pellets, and wood chips for recreational uses.

^cIncludes cedar products and tonewood.

^dBone-dry unit (BDU) = 2,400 pounds of oven-dry wood.

^eResource areas combined to avoid disclosure.

Table 8—Number of active timber processing facilities by borough/census area and product produced, 2015^a

Borough/census area	Lumber	House logs	Other ^b	Total
Anchorage Borough	1	3	—	4
Bethel Census Area	1	—	—	1
Fairbanks North Star Borough	5	—	2	7
Haines Borough	2	—	—	2
Juneau Borough	—	—	—	—
Kenai Peninsula Borough	5	2	—	7
Ketchikan Gateway Borough	2	—	—	2
Kodiak Island Borough	1	—	—	1
Matanuska-Susitna Borough	6	4	—	10
Prince of Wales-Outer Ketchikan Census Area	7	—	6	13
Skagway-Hoonah-Angoon Census Area	2	—	—	2
Southeast Fairbanks Census Area	2	1	1	4
Wrangell-Petersburg Census Area	5	—	1	6
Yukon-Koyukuk	—	1	—	1
2015 State total	39	11	10	60
2011 State total ^c	50	18	9	77
2005 State total ^d	50	20	8	78

^aDoes not include timber exporters.

^bOther facilities include producers of fuelwood, wood pellets, cedar products, and tonewood.

^cFrom Berg et al. (2014).

^dFrom Halbrook et al. (2009).

Table 9—Alaska annual lumber production and average overrun by sawmill size, 2015

Annual lumber production size class	Number of sawmills	2015 lumber production ^a	Percentage of total	Average overrun
		<i>MBF^b</i>		<i>MBF</i>
<150 MBF lumber tally	31	1,516	5	1.04
150 to 500 MBF lumber tally	3	1,013	3	1.17
>500 MBF lumber tally	5	28,190	92	1.36
2015 state total	39	30,719	100	1.33
2011 state total ^b	50	20,558		1.19
2005 state total ^c	50	54,861		1.27

Note: Totals may not sum because of rounding. MBF = thousand board feet. Average overruns are MBF lumber tallies per MBF Scribner of logs.

^aDoes not include sawn products from the house log sector.

^bFrom Berg et al. (2014).

^cFrom Halbrook et al. (2009).

Table 10—Alaska production capacity^a by resource area and sector, 2015

Resource area ^b	Lumber production capacity	House log production capacity
	<i>Thousand feet lumber tally</i>	<i>Thousand lineal feet</i>
Southeast	98,255	210
Southcentral and western ^c	6,787	417
Interior	19,298	200
All resource areas, 2015	124,340	827
All resource areas, 2011 ^d	137,331	1,740
All resource areas, 2005 ^e	240,159	2,603

^aIncludes only facilities active during survey year.^bSee part 4, table 3 for a list of borough/census areas located within resource areas.^cResource areas combined to avoid disclosure.^dFrom Berg et al. (2014).^eFrom Halbrook et al. (2009).**Table 11—Alaska annual timber-processing capacity^a and use by size class and sector, 2015**

Annual timber-processing capacity size class	Number of active facilities	Annual timber-processing capacity		2015 timber use	
		Timber-processing capacity	Sector capacity	Volume processed	Capacity utilization within size class
<i>MBF^b</i>		<i>MBF</i>	<i>Percent</i>	<i>MBF</i>	<i>Percent</i>
Sawmill sector					
<250 MBF	17	2,380	2.4	827	34.7
251 to 500 MBF	5	1,818	1.9	303	16.7
501 to 1,000 MBF	7	5,886	6.0	1,127	19.1
>1,000 MBF	10	87,602	89.7	20,780	23.7
Sawmill sector total	39	97,686	100.0	23,037	23.6
House log and other ^c sectors	18	23,708	100.0	1,652	7.0
Combined sector totals, 2015	57	121,394		24,689	20.3
Combined sector totals, 2011 ^d	77	132,794		20,741	15.6
Combined sector totals, 2005 ^e	77	202,156		46,131	21.4

^aIncludes facilities active during survey year. Does not include timber exporters.^bThousand board feet (MBF), Scribner^cOther sectors include cedar products, tonewood, and firewood (excluding pellet plants) manufacturers.^dFrom Berg et al. (2014).^eFrom Halbrook et al. (2009).

Table 12—Alaska sawmill^a residue factors, 2015

Type of residue	BDU ^b per MBF lumber tally
Coarse	0.60
Sawdust	0.17
Planer shavings	0.09 ^c
Bark	0.17
Total	0.95

^aIncludes sawmills producing only lumber and no other products.

^bBone-dry unit (BDU = 2,400 lb of oven-dry wood) of residue generated for every thousand board feet (MBF) of lumber manufactured.

^cThis factor represents only the few pristine Alaska sawmills that planed lumber. The combined planer shavings factor was <0.001 for all sawmills that only produced lumber, whether or not the mills reported planer shavings.

Table 13—Production and disposition of mill residue from Alaska's forest products industry, 2015

Type of residue	Residue disposition			Unused	Total
	Pulp chips	Fuelwood ^a	Other uses ^b		
	----- Bone-dry units ^c -----				
Coarse ^d	13,886	4,851	1,067	1,453	21,256
Sawdust	550	4,393	656	490	6,089
Shavings/peelings	—	171	1,126	192	1,490
Bark	—	3,615	1,346	1,127	6,088
All residues	14,436	13,029	4,196	3,262	34,923

^aFuelwood uses include fuel/firewood for heating and wood pellet production.

^bOther uses primarily include animal bedding, mulch, and landscape material.

^cBone-dry unit (BDU) = 2,400 lb of oven-dry wood.

^dCoarse residue includes chips, edgings, slabs, cull sections of logs and log ends.

Table 14—Destination and sales value of Alaska's primary wood products and sawmill residue, free on board (f.o.b.) the producing facility in 2015

Product	Alaska	West coast ^a	Other states	Pacific Rim	Canada	2015 total
	<i>Thousands of 2015 U.S. dollars</i>					
Lumber	5,897	4,708	633	891	38	12,167
Other ^b	9,531	723	454	250	190	11,147
Total primary product	15,427	5,431	1,087	1,141	228	23,314
Residues ^c						4,886 ^e
Sawlog and pulpwood exports ^d						86,207 ^e
Total sales value, 2015						114,407
Total sales value, 2011 ^f						141,158
Total sales value, 2005 ^g						177,278

^aWest coast states include California, Hawaii, Oregon, and Washington.

^bOther products include house logs, firewood, wood pellets, cedar products, and tonewood.

^cResidue products include firewood, garden mulch, animal bedding, and wood chips for park/playground fill and landscaping.

^dUnited States International Trade Commission (USITC) Dataweb tool.

^eData pooled across destinations to prevent disclosure of confidential information.

^fFrom Berg et al. (2014).

^gFrom Halbrook et al. (2009).

Glossary

board foot or board feet—A unit of measure applied to lumber that is 1 foot by 1 foot by 1 inch (30.48 centimeters by 3.48 centimeters by 2.54 centimeters) (or its equivalent) and also associated with roundwood as to its potential yield of such products.

bone-dry unit (BDU)—The amount of wood residue that weighs 2,400 pounds (1,088 kilograms) at 0 percent moisture content. One BDU equals approximately 9.49 cubic yards or 96 cubic feet (2.7 cubic meters) of solid wood.

fuelwood—Refers to wood used in the production of industrial heat and steam and residential firewood as well as wood pellet production. Pellets can be produced from mill residues (e.g., sawdust and shavings) as well as chipped roundwood.

house log—Roundwood timber used to construct log homes. Products manufactured from house logs can be sawn, scribed by hand, notched or milled by lathe to meet customer construction needs. House log timber is often dead (by choice, because “green” logs usually require drying before they can be used for construction) and of lower value than sawlogs

lumber tally—The volume of sawn products, usually expressed in board feet.

overrun—The volume of lumber actually obtained from a log in excess of the estimated volume of the log, based on log scale.

production capacity (owner reported)—Potential ability of a facility to produce output per shift or 240-day work year, assuming one 8-hour shift per day, firm market demand for products, and sufficient supply of raw materials. For sawmills, expressed as thousand board feet (MBF) lumber tally per shift or per year. Production

capacity included in University of Montana’s Bureau of Business and Economic Research reports is directly reported by facility owners or managers as MBF lumber tally output per work year for sawmills and thousand lineal feet of house log output per work year for log home manufacturers.

residue—The wood-fiber or bark byproduct remaining after timber processing of primary products such as lumber, plywood, posts and poles, house logs, etc. Three types of residue are generally generated: (1) coarse (chips, edgings, slabs, trim, mis-cuts, and log ends), (2) fine (sawdust and planer shavings), and (3) bark.

residue factors—For each industry sector, these factors express the average number of bone-dry units of various types of residue available per unit of product output.

sawlog—A log that meets minimum regional standards of diameter, length, and defect, intended for sawing.

Scribner—A diagram log rule originating in the 1800s that assumes 1-inch (2.54 centimeters) boards and 0.25-inch (0.64 centimeters) kerf, and is based on diameter at the small end of the log, disregards taper, and does not provide for overrun. Note: The Scribner rule underestimates lumber yield on small logs and long logs with taper.

timber-processing capacity—The volume of timber reported in thousand board feet (MBF) Scribner that could be processed given sufficient supplies of raw materials and firm market demand for products. Timber-processing capacity is estimated for each facility by applying the product recovery ratios to production capacity. This essentially gauges the volume of timber facilities could use if they operated at their self-reported production capacity, and is

expressed as MBF Scribner log scale of timber per shift or per work year. University of Montana's Bureau of Business and Economic Research computes a facility's timber-processing capacity by dividing its production capacity by its product recovery ratio. Timber-processing capacity is generally expressed in MBF Scribner log scale, regardless of wood products manufacturing sector, and is therefore useful in characterizing the timber consumption potential of an entire state's forest products industry.

tonewood—Roundwood specifically processed (typically from large-diameter timber) for the production of musical instruments.

Species List

Sitka spruce (*Picea sitchensis* (Bong.) Carrière)

Western hemlock (*Tsuga heterophylla* (Raf.) Sarg)

Western redcedar (*Thuja plicata* Donn ex D. Don)

Cottonwood (*Populus balsamifera* L. ssp. *Trichocarpa* (Torr. & A. Gray ex Hook.)

Quaking aspen (*Populus tremuloides* Michx.)

Black spruce (*Picea mariana* (Mill.) Britton, Sterns & Poggenb.)

Balsam poplar (*P. balsamifera* L. var. *angustifolia* (James) S. Watson)

Red alder (*Alnus rubra* Bong.)

Sitka spruce (*Picea sitchensis* (Bong.) Carrière)

Western hemlock (*Tsuga heterophylla* (Raf.) Sarg)

Western redcedar (*Thuja plicata* Donn ex D. Don)

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