NATURAL RESOURCES

Washington Mill Survey 2016

Series Report #24

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Acknowledgements

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Prepared by
Dorian Smith **Economic Analyst** (Survey lead, data collection and compiling, editing)
Kristoff Larson **Economist** (editing, database programming)

DNR Office of Finance, Budget, and Economics
Brule Burkhart **Deputy Supervisor of Administration**
David Chertudi **Lead Economist**

Additional Assistance
Patrick Caton **DNR Cartographer**
Bob Redling **DNR Editor, Communications**
Dave Richards **Chief Check Cruiser**
Tom Heller **Section Administrator**
H. Bryan Lu **Data Scientist / Economist**

Cover photograph
A log loader at a log yard in Snohomish County fills a freight container with logs from Formark Enterprises to be exported through the Port of Everett. Foresters estimate an 8x8x40-foot container can hold 4,000 board feet of timber. Some log exporting companies have taken advantage of the low container freight rates in recent years. While logships handle much larger volumes, shipping by containers allows customized orders and more direct contact with foreign customers. Formark, which buys timber from forest owners, also recently opened a log yard operation in Frederickson, near the Port of Tacoma.
Photo / Susan Misao/HeraldNet (Everett Herald)

Send requests regarding this report to:
Dorian Smith
Office of Finance, Budget, and Economics
WA Department of Natural Resources
PO Box 47041
Olympia, WA 98504-7041
Phone: 360-902-1026
E-mail: dorian.smith@dnr.wa.gov

Webpage:
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2016 Washington Mill Survey

Executive Summary

The 2016 Washington Mill Survey is a voluntary survey of all primary wood product mills (which use unprocessed timber) in Washington State for the production year of 2016. Conducted by the Washington Department of Natural Resources, the survey measures one of the state's oldest industries. It includes statistical data and analyses of several aspects of manufacturing wood products.

Updates. Washington's wood product statistics can present conflicting impressions. There are far fewer mills, but the industry appears to be largely maintaining production levels. The volume of lumber produced declined 17 percent between 2014 and 2016; however, compared to 2012, lumber production in 2016 was 9 percent higher. Compared to 10 years ago, lumber mills (the largest sector by timber consumption) produced a third fewer boards; on the other hand, log exports increased 63 percent and about 72 percent more utility poles were produced. Pulp mills are a good example of adapting to changing markets. Washington is home to a dozen pulp operations which generate more revenue than all other wood product sectors combined. Last year they produced 5 percent more bone dry tons of products than 10 years ago. Previously, these products were largely bleached and unbleached paper and newsprint, but now they are mostly packaging for Internet purchases.

Timber. More than 3.1 billion board feet of timber was processed in Washington's mills or exported through Washington's ports in 2016. Most (54 percent) came from private industrial forests. About 16 percent came from small landowners and about the same volume came from state-owned lands managed by the Department of Natural Resources.Tribal lands (5 percent), national forests (under 3 percent) and other public lands (1.2 percent) contributed the rest. Mills received logs from 30 of Washington's 39 counties with about 45 percent coming from the top five: Grays Harbor, Lewis, Clallam, Pacific and Snohomish. About 41 percent came from the other 25 counties. Oregon contributed 12 percent, of which 70 percent was exported through the Port of Longview. The remainder, less than 3 percent, came from other states and British Columbia. The major species were Douglas-fir (60 percent) and hemlock (25 percent). Other species include conifers (spruce, true firs, Ponderosa pine and lodgepole pine) and hardwoods (red alder).

10-year Trends. Ten-year analyses primarily shows that there are fewer mills every year. Between 2006 and 2016 the number of mills declined from 137 to 88, down 36 percent. Most of the decline was in the sawmill sector, which in recent years has seen numerous closures and ownership changes. However, several new mills have been constructed and recently purchased facilities have been upgraded according to new industry technology and productivity standards. It has been difficult to track ownership of the shake and shingle sector as domestic log inventory becomes scarce. The actual number of operations and production levels may be higher than reported. Even though log exports declined between 2014 and 2016, total volumes are far stronger than the decade before 2010. Log exports—shipped by bulk log ships and containers—make up 28 percent of the log use in this report.

Methodology. This is the 24th edition of the Washington Mill Survey, which began in 1968. It is a voluntary survey of primary log consuming operations: lumber, veneer and plywood, pulp, shake and shingle, log exports, post-pole-piling, and chip operations. Data are gathered over five months through questionnaires and contact with mill managers and owners. For the 2016 survey, response rates were 88 percent. In the past the response rate was above 95 percent. If research reveals that unresponsive mills are still active, their data are estimated from the 2010-2014 Mill Surveys and included in the aggregate totals.

Engineered Wood. Washington is home to a growing engineered wood product sector that does not use large volumes of wood and none of it in log form. Instead wood is glued or laminated to forms and sizes beyond traditional solid lumber, or shaped for a specific purpose based on market demands. Because this sector uses a pre-cut lumber form, not timber, as a production resource, its statistics are not measured by the Washington Mill Survey. Still, it is a significant part of the wood products industry and this edition of the Mill Survey recognizes it with descriptions, photos and histories.

Designated economic areas used by the Mill Survey

Throughout the Mill Survey these economic areas are used to indicate the locations of mill operations and forests where timber is harvested. An economic area is determined by the similarity of economic activity in the forest products industry. The boundaries of an economic area are not always drawn according to natural geographic features or county lines.

Mill Survey response rate reached 88%

The Mill Survey's accuracy is attributed to the response rate from industry sectors.

Usually only a few owners or managers opt out of participating. In the 2014 edition, data was not gathered for about 20 percent of the known mill operations. Much of this was due to the high number of operations that changed ownerships with several companies selling or purchasing multiple facilities. Tracking recent production records was challenging in the midst of the corporate shuffle.

For the 2016 edition, data were received from about 88 percent of known operations.

To maintain data continuity, estimates were made for known mills with no current data. These estimates were drawn from previous reports, responses and additional research.

Abbreviations and Conversions

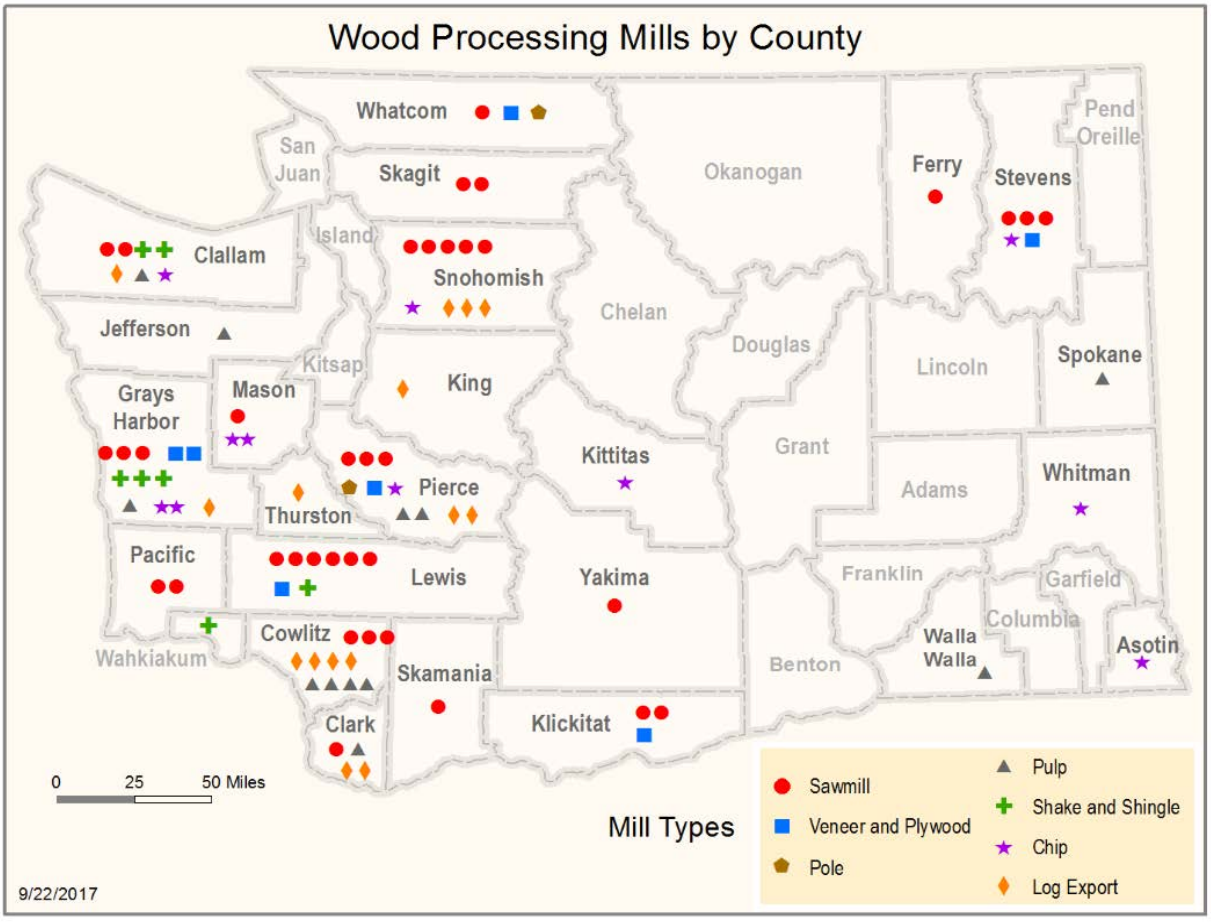
A log's volume is measured in **Scribner Scale** which accounts for the narrowing width of a tree.
board foot (bf) = 12 inches x 12 inches x 1 inch
mbf = 1 thousand board feet
mmbf = 1 million board feet
bbf = 1 billion board feet
1 mbf logs = 5 tons

Lumber volume is called **lumber tally**. A tree's Scribner Scale volume is usually less than its lumber tally. On average the conversion is 2:1 lumber tally for each board foot of Scribner logs.

Pulp (weight)
ton = 2,000 pounds
bone dry ton = 2,200 pounds (with 10% water or less)

Shake & Shingle (area)
1 square = 100 square feet
1 square = 4 bundles
10 squares = 1 mbf

Plywood and Veneer (area)
msf 3/8-inch basis = 1 thousand square feet 3/8-inch thick
mmsf 3/8-inch basis = 1 million square feet 3/8-inch thick



This map shows the counties where Washington's 88 primary wood product mills operated in 2016. The symbols only indicate in which county each mill was located, not the specific location.
DNR GIS map / Patrick Caton, Cartographer, 2017

Grays Harbor County contributed the largest volume of timber for Washington's mills in 2016

Washington private and public forests contributed more than 2.7 billion board feet of timber to Washington's wood product operations in 2016. The top five counties (Grays Harbor, Lewis, Clallam, Pacific and Cowlitz) produced 45 percent of the total. One out of every seven logs came out of Grays Harbor County alone.

At right is a list of 30 counties that contributed wood for the seven primary wood product sectors. Eighteen percent of the state's timber originated in eastern Washington.

County ranking for mill timber for 2016

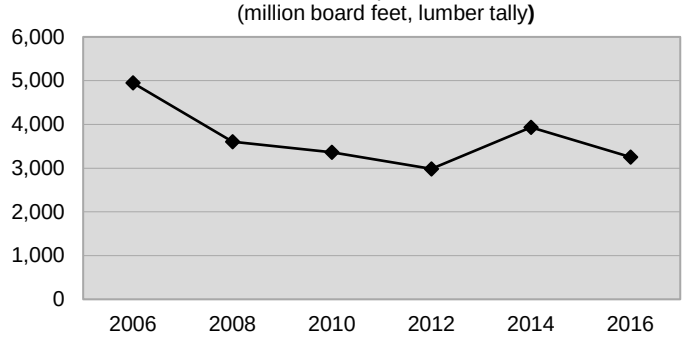
(thousand board feet)

1.	**Grays Harbor**	451,642
2.	**Lewis**	289,018
3.	**Clallam**	251,588
4.	**Pacific**	243,015
5.	**Cowlitz**	161,313
6.	**Snohomish**	138,705
7.	**Stevens**	118,369
8.	**Skagit**	109,895
9.	**Jefferson**	106,178
10.	**Ferry**	91,984
11.	**Whatcom**	81,158
12.	**Pierce**	68,429
13.	**Mason**	64,896
14.	**Thurston**	58,701
15.	**Skamania**	53,191
16.	**Clark**	52,810
17.	**Klickitat**	52,664
18.	**Yakima**	52,312
19.	**King**	40,732
20.	**Pend Oreille**	38,234
21.	**Okanogan**	33,993
22.	**Wahkiakum**	29,928
23.	**Kitsap**	25,915
24.	**Spokane**	17,311
25.	**Chelan**	16,215
26.	**Island**	5,619
27.	**Whitman**	5,231
28.	**Kittitas**	1,888
29.	**Lincoln**	1,577
30.	**Grant**	1,538

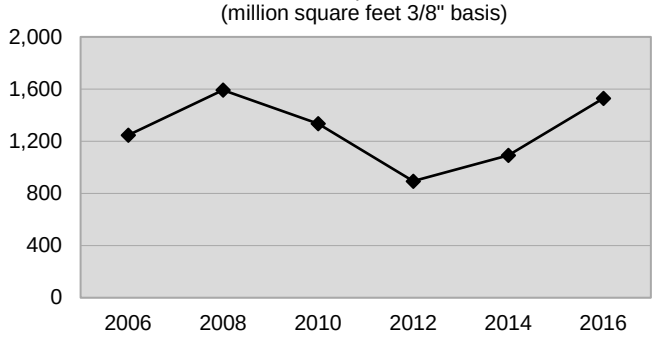
Graph 1: **Production**

Graphs 1a-f display total production by sectors. **Sawmill** (1a) Though total lumber tally in 2016 declined by almost a quarter after a 30% increase in 2014, sawmills have maintained a production level between 3 and 4 billion board feet since 2008. **Veneer & Plywood** (1b) After falling nearly 50% between 2008 and 2012, the sector rose nearly 71% between 2012 and 2016 to pre-recession levels. **Pulp mill** (1c) Production has trended upward since 2012 and is above pre-recession levels. **Shake and shingle** (1d) After declining more than any other sector during the recession, shake mills may have reached the bottom but stable level of production. **Log export** (1e) After a long decline from the 1990s, this sector is now up 60% from 2006 by adapting to a global market, especially China's new consumer economy. **Post, pole and piling mills** (1f) Poles were little affected by the recession and appear to have reached a higher plateau since 2010.

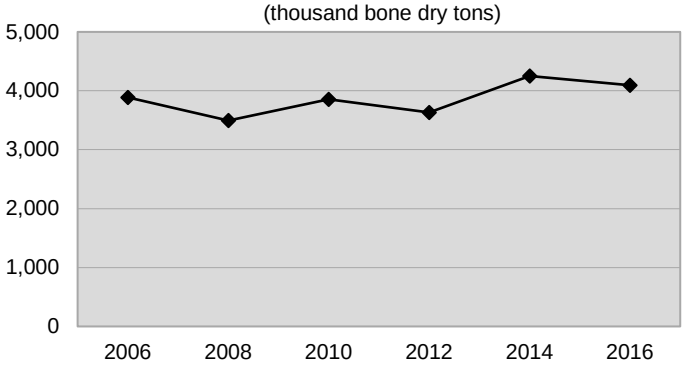
Sawmill
Graph 1a
(million board feet, lumber tally**)**



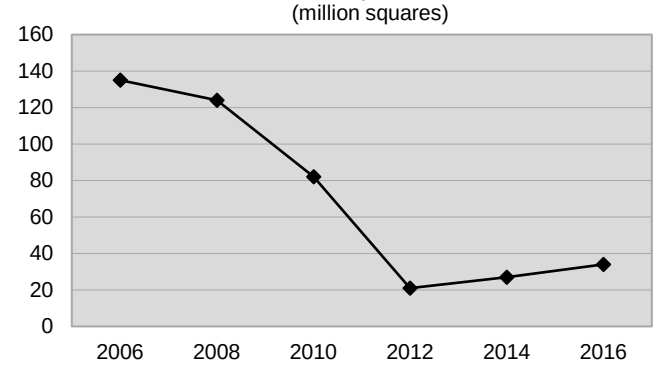
Veneer & Plywood
Graph 1b
(million square feet 3/8" basis)



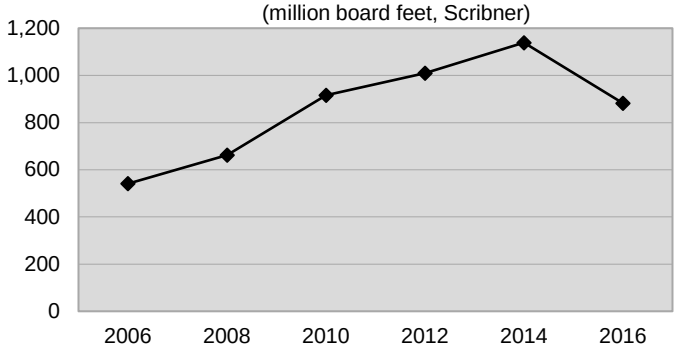
Pulp
Graph 1c
(thousand bone dry tons)



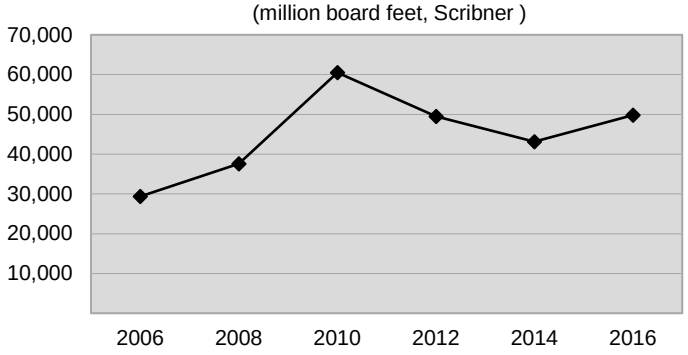
Shake & Shingle
Graph 1d
(million squares)



Log Export
Graph 1e
(million board feet, Scribner)

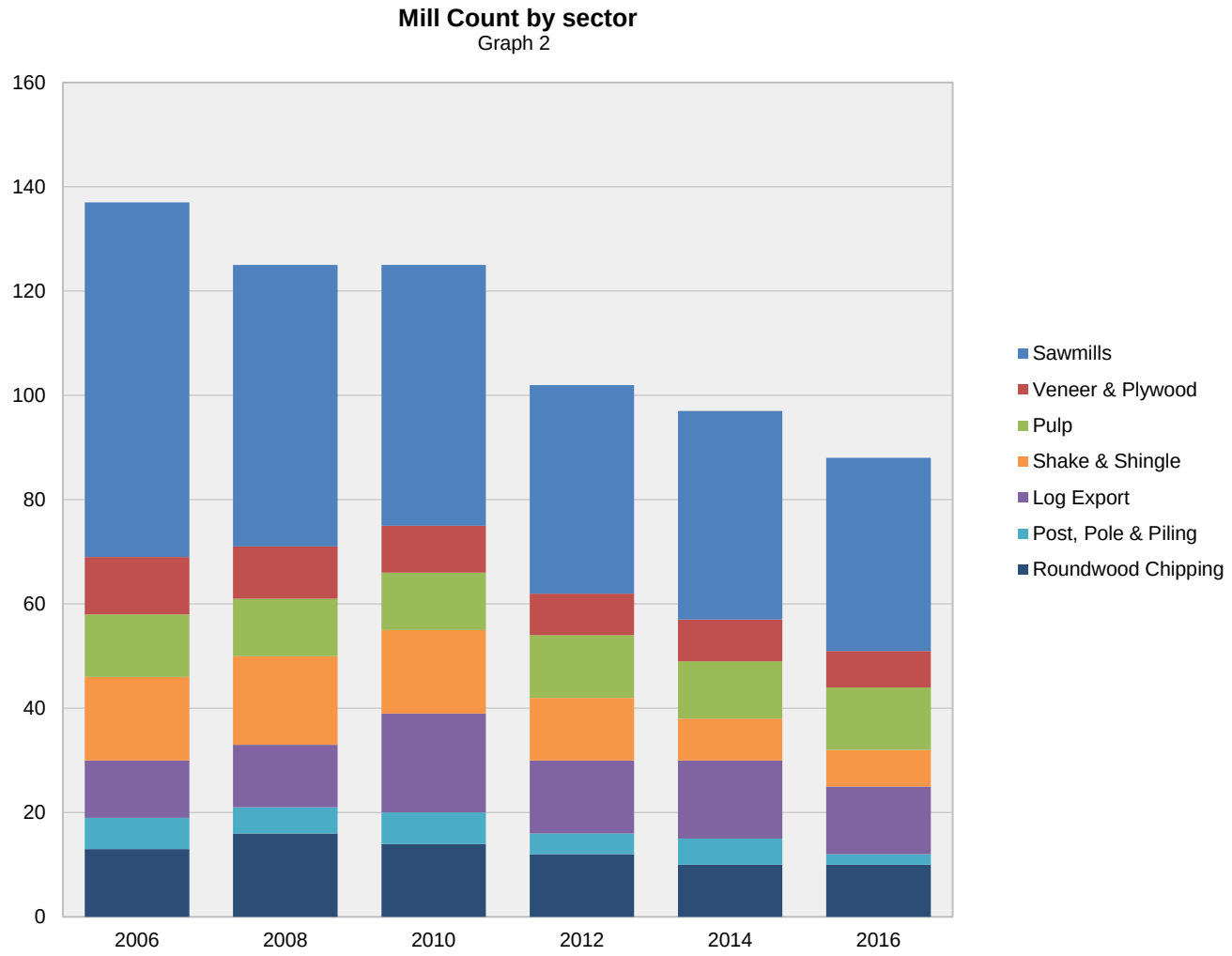


Post, Pole, Pilings
Graph 1f
(million board feet, Scribner)



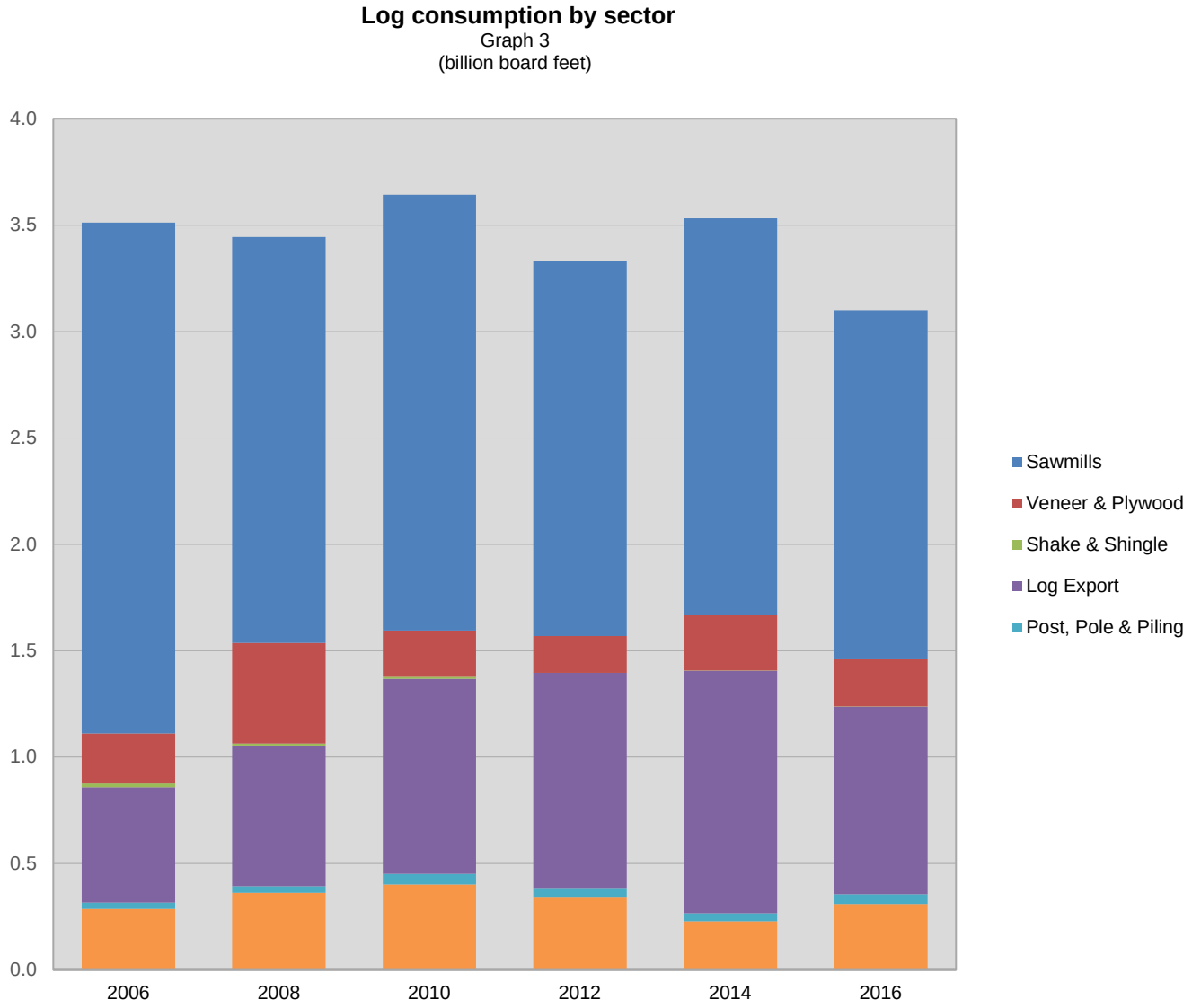
Graph 2: **Number of operations**

This graph shows the total number of businesses operating in the primary forest products industry in Washington by sector (mills and log export businesses). The number of operations has declined since the 1980s. Recently most of the decline has been in the lumber and shake and shingle sectors. Small lumber mills were often closed permanently while large lumber mills were replaced with even larger high-tech operations. Most shake and shingle mills remain small with just a few employees or solo operations. Cedar shakes and siding are always in demand, but securing a local cedar supply is a struggle.



Graph 3: **Log consumption by sector**

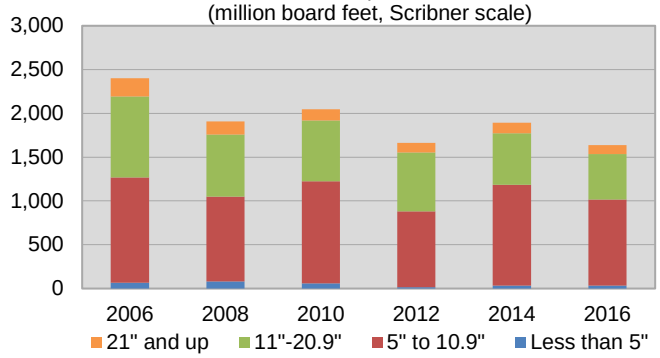
While Washington's primary wood product mills consume a declining level of logs, they have established a "new normal" level of lumber production. Up to the mid-to-late decades of the 20th century, Washington's mills buzzed through more than 6 billion board feet of timber annually. In the last 10 years the totals have been between 3 and 4 billion board feet. But productivity of lumber has not declined at the same rate. For instance, in 1978 the state's 182 sawmills consumed 3.1 billion board feet of timber to produce 4.2 billion board feet (lumber tally). In 2016 just 37 sawmills consumed only half that volume of logs (1.6 billion board feet) to produce 3.5 billion board feet of lumber (tally) within 85% of the level produced in 1978. Due to the demands for stricter sustainability and regulations to protect habitats, mills today slice smaller-diameter timber with the greater efficiency of computer-controlled saws.



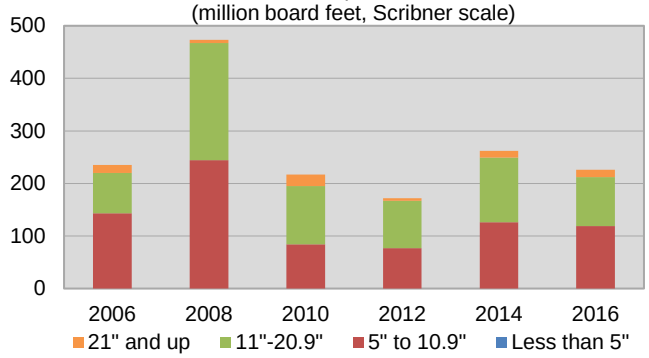
Graph 4: **Log consumption by sector and log size**

The total volume of logs consumed has edged downward over the past decade, but within sectors the movements are mixed. Sawmills and plywood producers respond acutely to the housing industry: down when housing construction weakens (2007) and up when it recovers (after 2012). Poles are in constant demand for local governments to maintain utility service. Log exports are subject to China's investments, forest-rich foreign competitors, currency fluctuations, and even container freight rates. Shake mills are always searching for western redcedar. As mills improve efficiency to conserve wood fiber, pulp mills look for new sources of residues and chips, leading to greater demand for chipping mills.

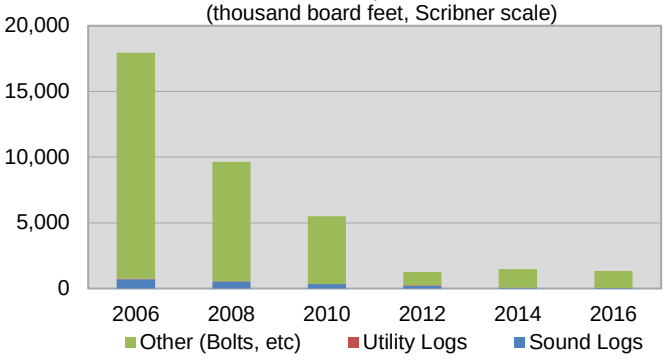
Sawmills
Graph 1
(million board feet, Scribner scale)



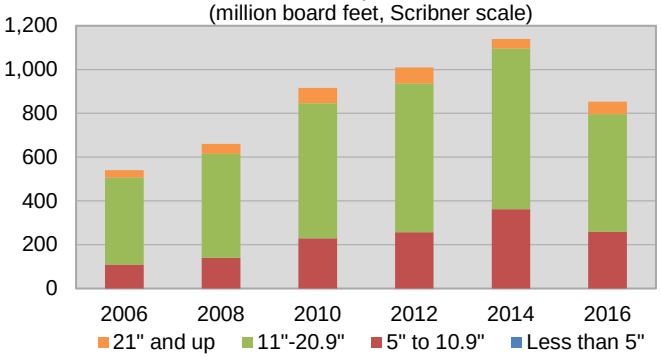
Veneer & Plywood
Graph 4b
(million board feet, Scribner scale)



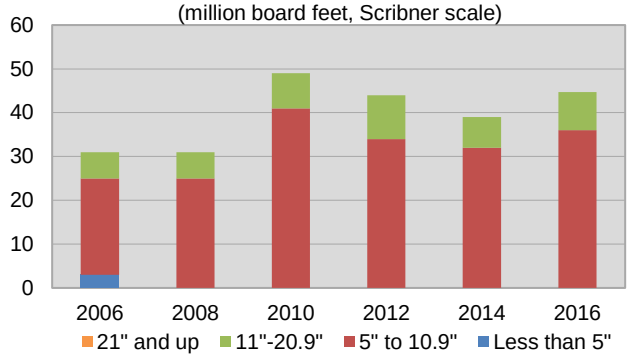
Shake & Shingle
Graph 4c
(thousand board feet, Scribner scale)



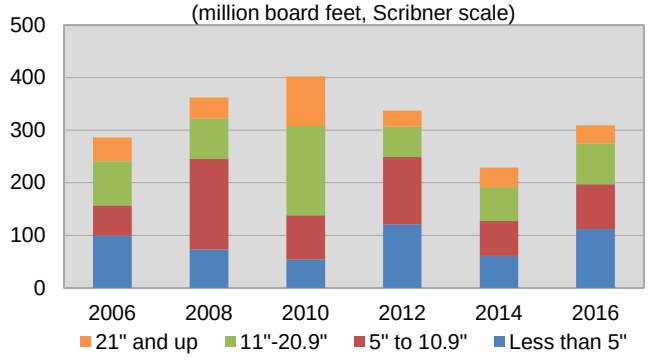
Log Exports
Graph 4d
(million board feet, Scribner scale)



Post, Pole & Piling
Graph 4e
(million board feet, Scribner scale)



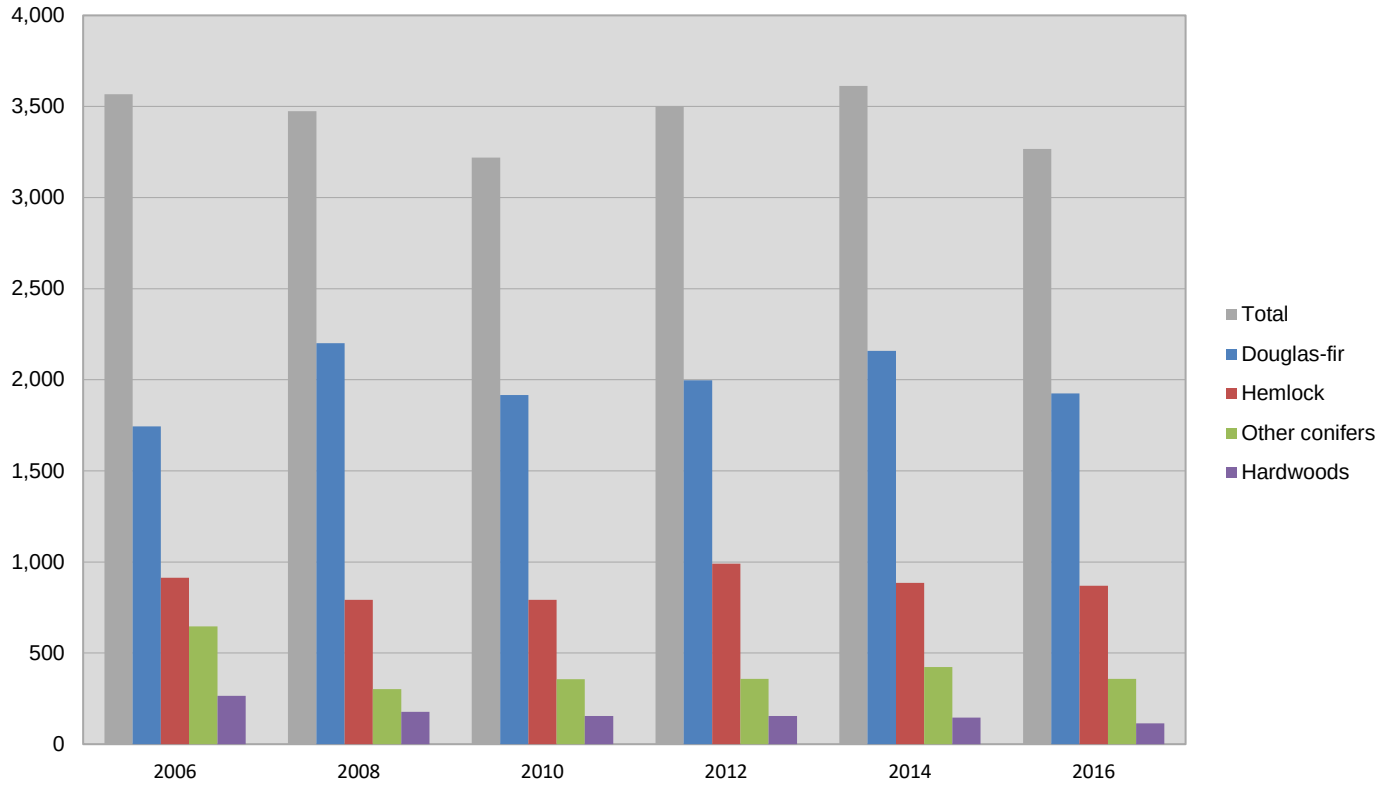
Roundwood Chipping
Graph 4f
(million board feet, Scribner scale)



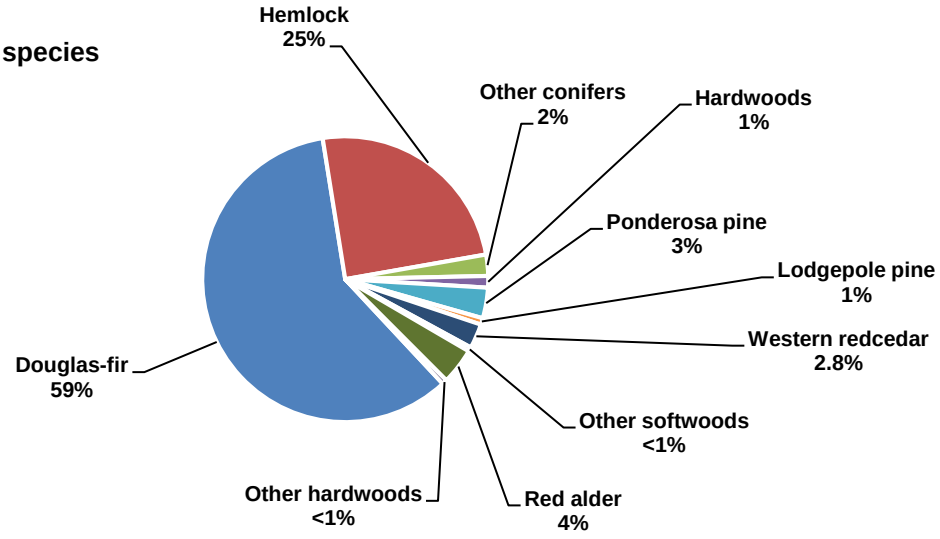
Graph 5: **Tree species**

These charts show two different views of the species composition of timber consumption. The greatest volumes came from Douglas-fir and hemlock trees, which totaled 85%. Other conifers made up 11% while hardwoods made up 4%.

Log consumption by species
Graph 5a
(thousand board feet, Scribner)

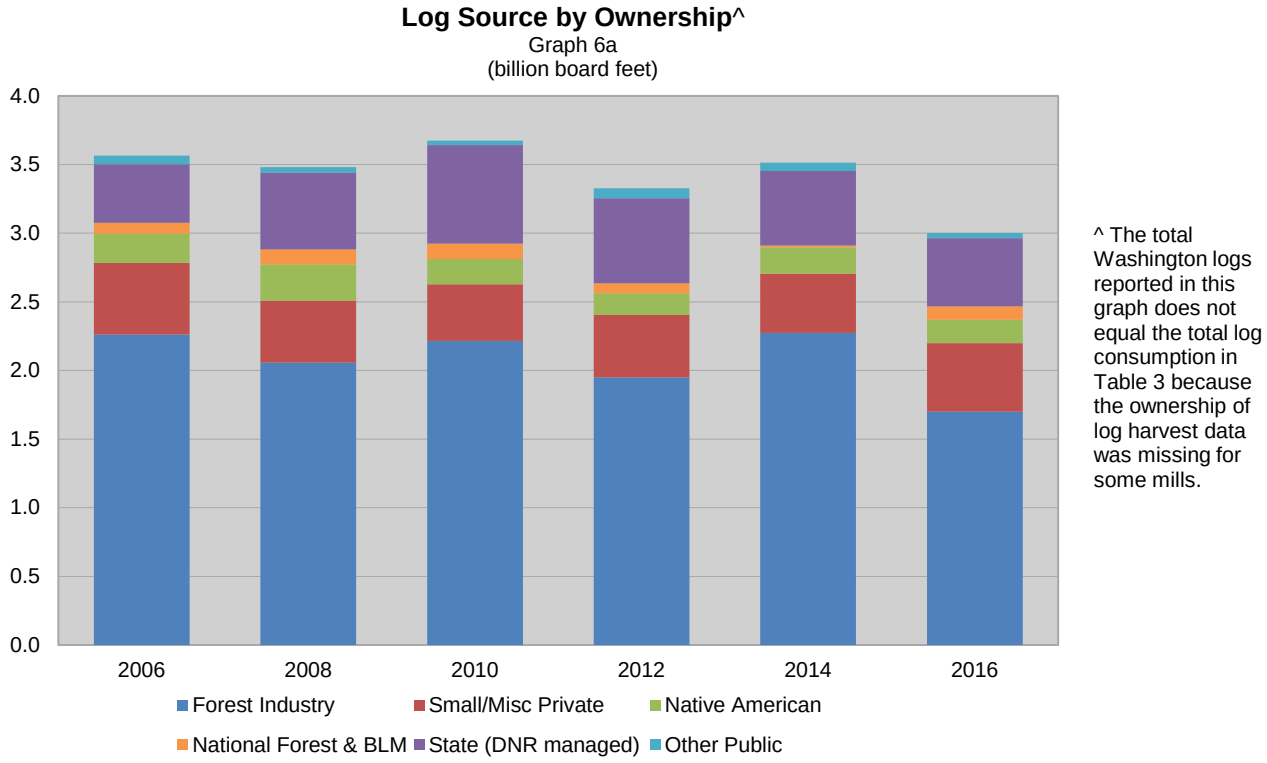


Log consumption by species
Graph 5b

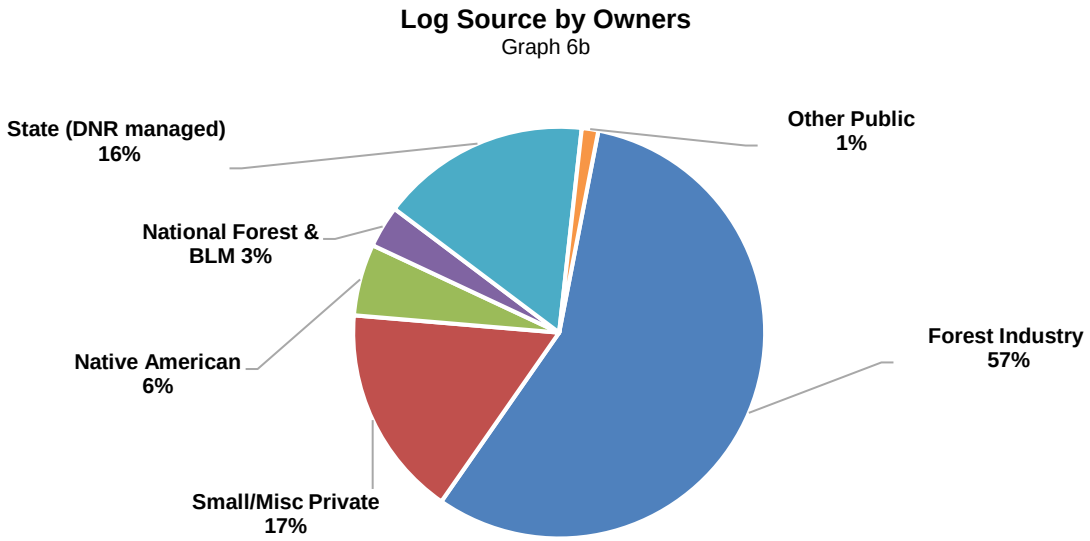


Graph 6: **Log sources**

This chart shows the level of timber supplied by various ownership categories. About 56% of the total came from private industrial forests, 12% from small forest landowners and 6% from tribal lands. Mills received 16% of their logs from state-owned forests and just over 4% from other public lands (national forests, counties, etc.). In 2010, when prices were much lower and private forests withheld timber from the markets, state-owned forests' share of the timber consumed in Washington's mills reached 20%.



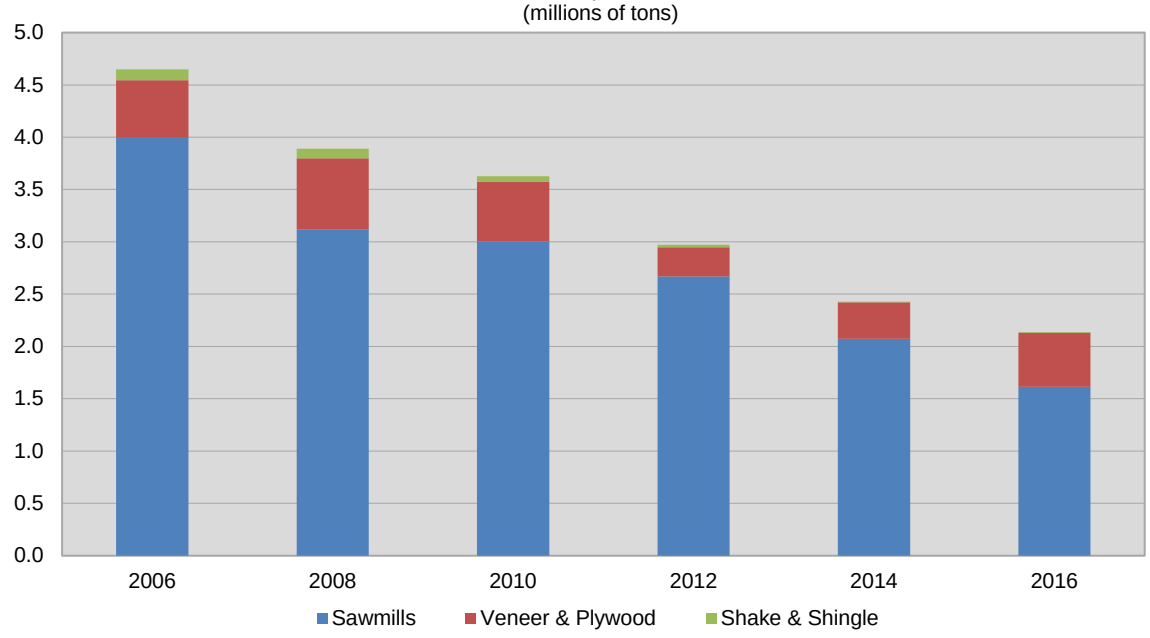
^ The total Washington logs reported in this graph does not equal the total log consumption in Table 3 because the ownership of log harvest data was missing for some mills.



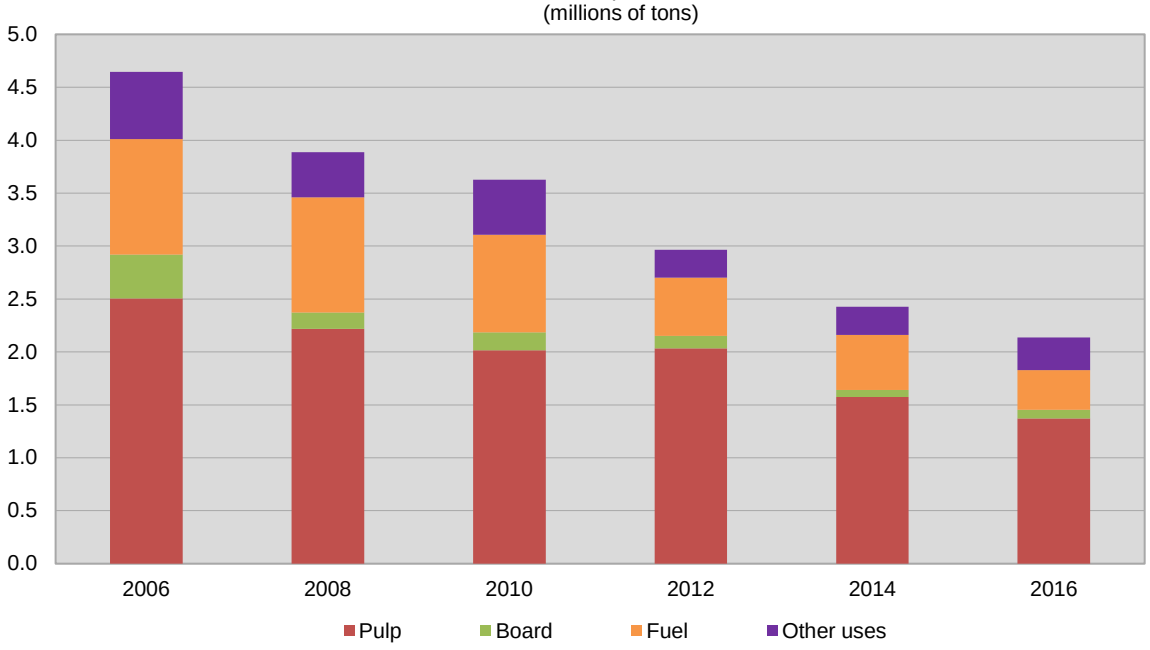
Graph 7: **Wood residues**

Mill residues were once a waste product to be discarded or given away. Today pulp mills use most of the mill residues to produce higher value paper and other products. In recent decades technology has produced new uses for crushed wood fiber, such as composite boards and pellets, which can add significant income streams for mill operators. However, in the past ten years mill residues declined by half due to improvements in saw technology. In Washington the total value of pulp mill products is greater than the products of all other types of mills combined.

Production of Wood Residue (not bark)
Graph 7a
(millions of tons)



Use of Wood Residue (not bark)
Graph 7b
(millions of tons)

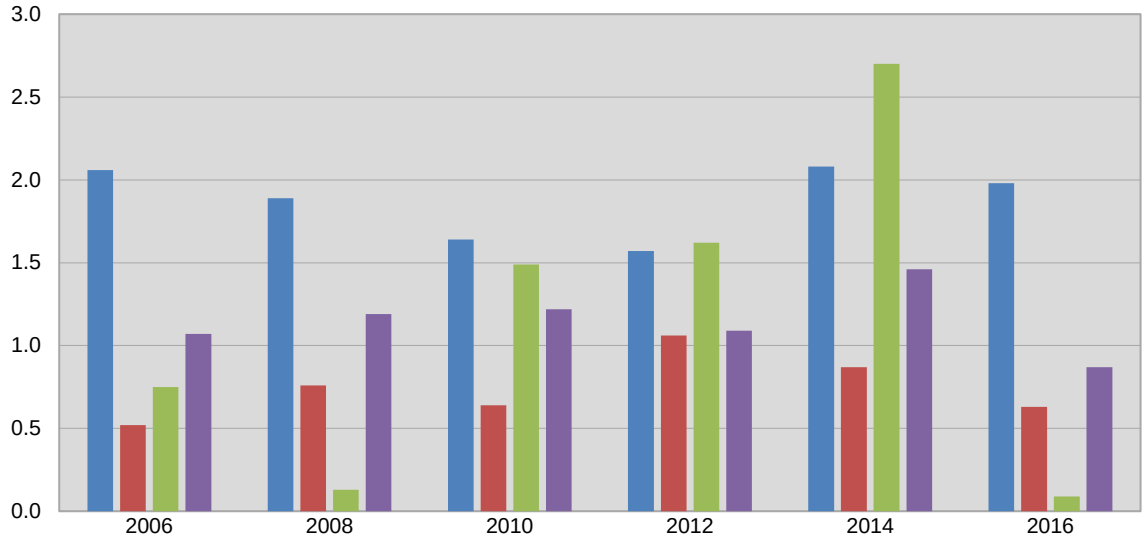


Graph 8: **Productivity ratios**

One measure of mill productivity is the volume of wood products divided by the volume of logs consumed. Since 2006, the sawmill sector has consumed lower volumes of logs (-14%), while lumber production trended down less (-10%). This indicates that older, less productive mills closed and mills that remained open improved efficiency through investments in re-tooling after the recession. Since each sector measures different units (thousand board feet, bone dry tons, etc.), they cannot be directly compared for efficiency improvements.

Productivity Ratios of Major Sectors

Graph 8

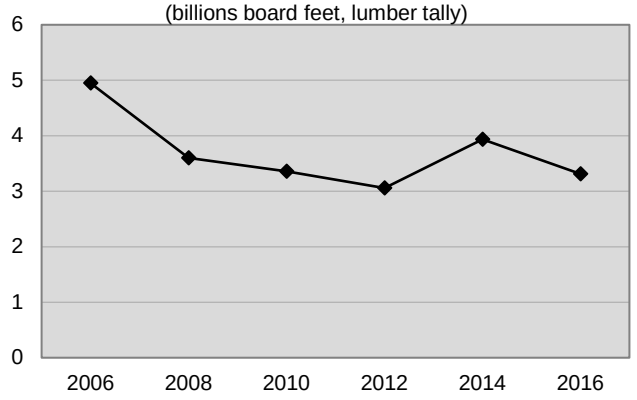


	2006	2008	2010	2012	2014	2016
Sawmills	2.06	1.89	1.64	1.57	2.08	1.98
Pulp	0.52	0.76	0.64	1.06	0.87	0.63
Shake and Shingle	0.75	0.13	1.49	1.62	2.70	0.09
Post, Pole & Piling	1.07	1.19	1.22	1.09	1.46	0.87

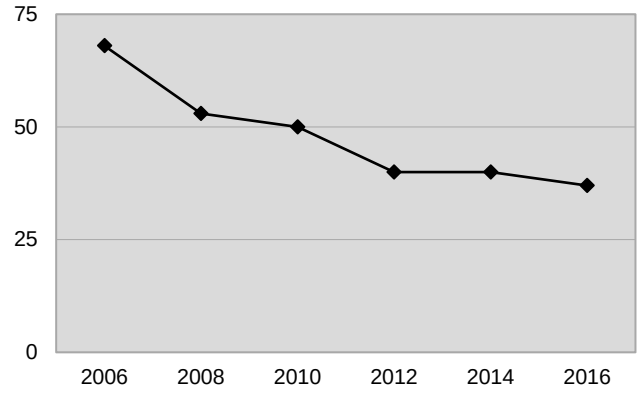
Graph 9: **Sawmills**

Due to the weak post-recession recovery of the U.S. housing and construction industries, Washington's total lumber production between 2006 and 2012 decreased about 40%— from 5 billion to 3 billion board feet lumber tally (9a). At the same time, the total number of mills declined by slightly less than half (9b). After 2012 the remaining operations consumed, on average, 30% more timber per mill (9d) and production improved by 26% in 2014 and 13% in 2016 (9c) from 2012 levels.

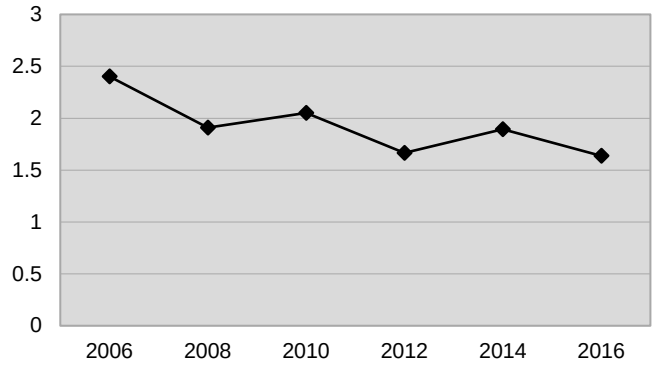
Total Annual Lumber Production
Graph 9a
(billions board feet, lumber tally)



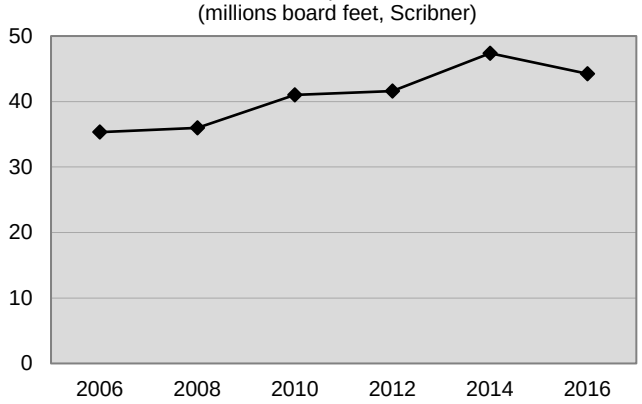
Number of sawmills
Graph 9b



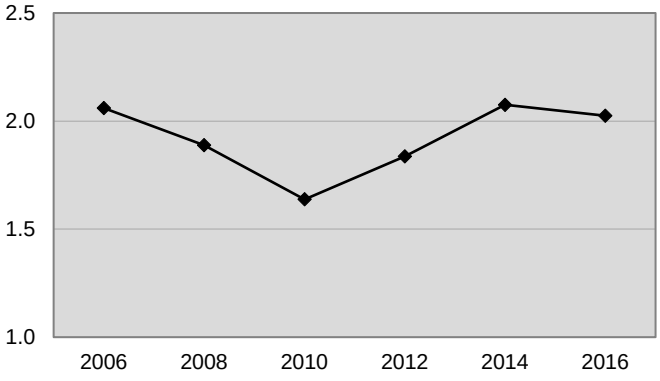
Total Log Consumption
Graph 9c
(billions board feet, Scribner)



Average Log Consumption per Mill
Graph 9d
(millions board feet, Scribner)



Productivity Ratio of Sawmills
Graph 9e
(lumber tally)

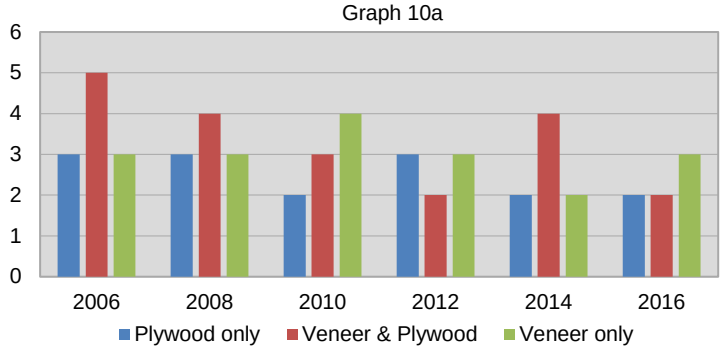


Graph 10: **Veneer and plywood mills**

The noticeable changes in this sector have been the decrease of veneer and plywood mills, starting 10 years ago, and the rising demand for plywood by the recovering housing industry. Before 2006, production was shifting from veneer and plywood mills (integrated) to those that specialized (veneer-only and plywood-only). But as the housing industry improved, the older veneer and plywood operations picked up the increased demand. Veneer-only and plywood-only mills remained at similar levels before, during, and after the recession. The mills that specialized also produced at higher levels per mill.

Numbers of Plywood and Veneer Mills

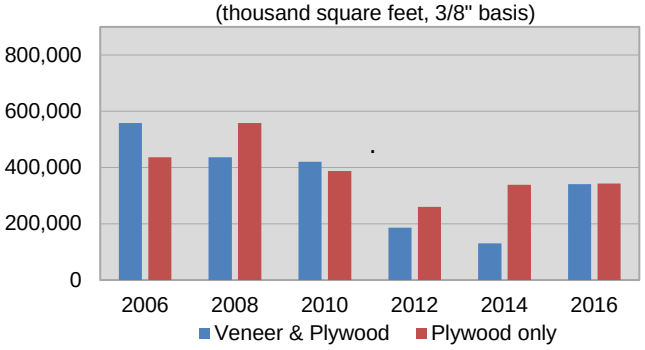
Graph 10a



Total Plywood Production

Graph 10b

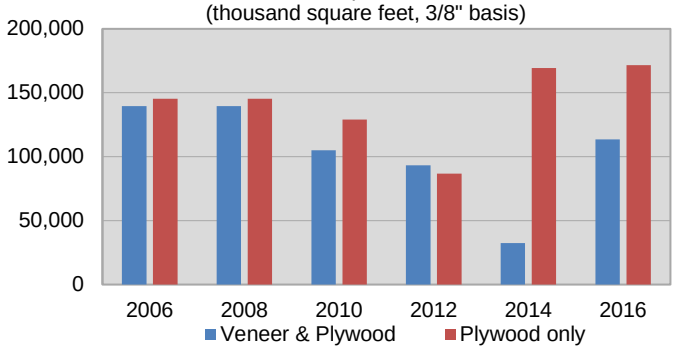
(thousand square feet, 3/8" basis)



Average Plywood Production per Mill

Graph 10c

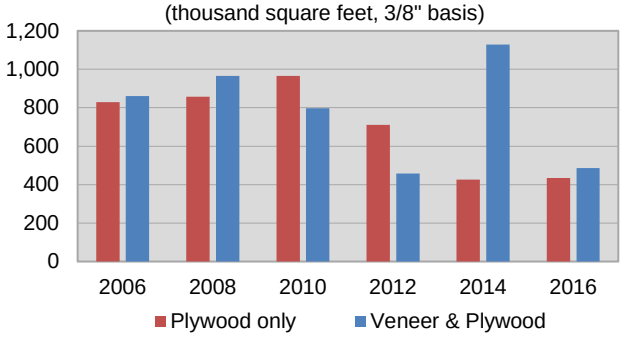
(thousand square feet, 3/8" basis)



Total Annual Plywood Capacity

Graph 10d

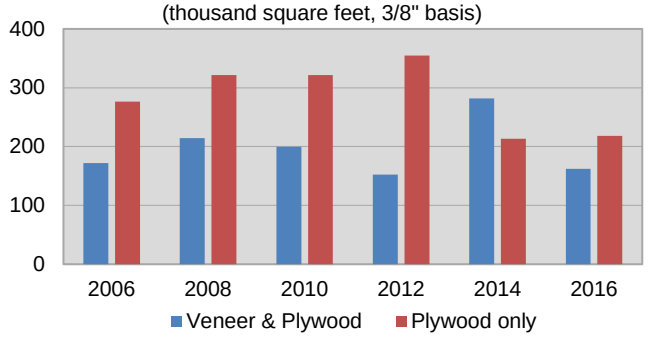
(thousand square feet, 3/8" basis)



Average Plywood Capacity per Mill

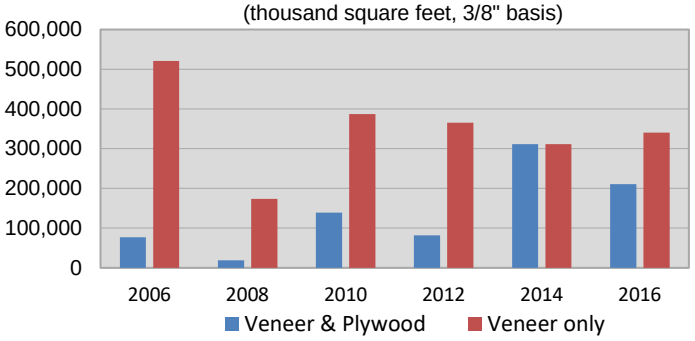
Graph 10e

(thousand square feet, 3/8" basis)

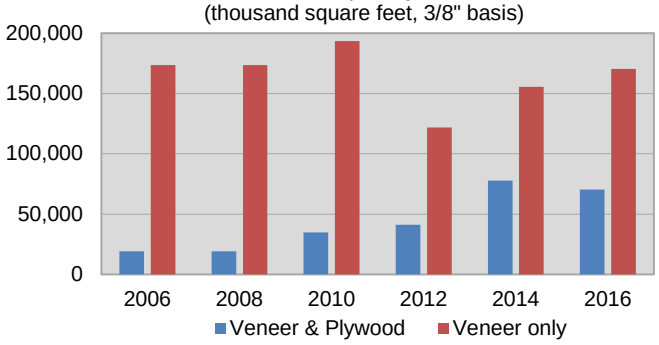


Veneer and plywood mills (continued)

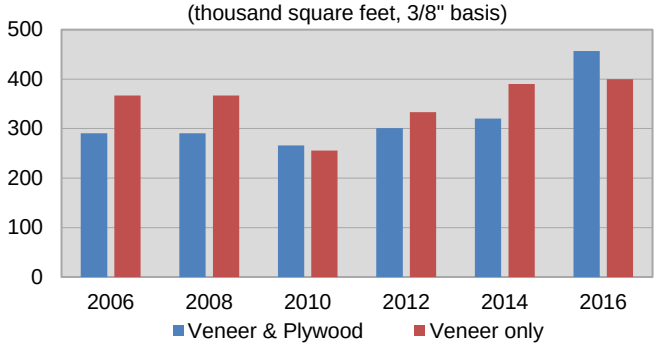
Total Veneer Production
Graph 10f
(thousand square feet, 3/8" basis)



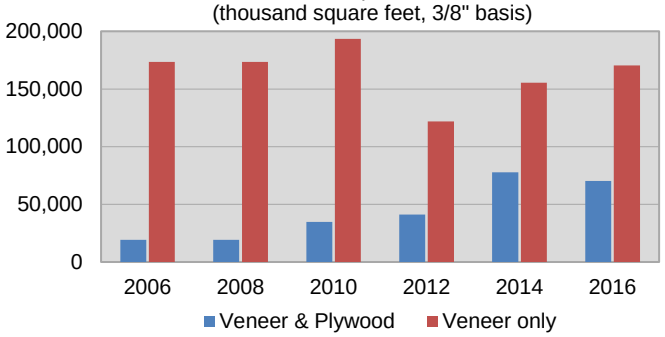
Average Veneer Production per Mill
Graph 10g
(thousand square feet, 3/8" basis)



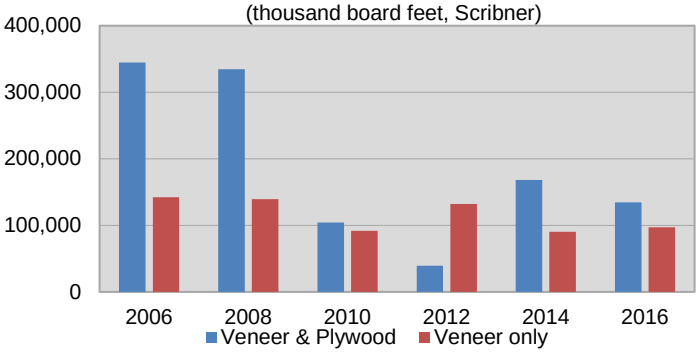
Average Daily Veneer Capacity per Mill
Graph 10h
(thousand square feet, 3/8" basis)



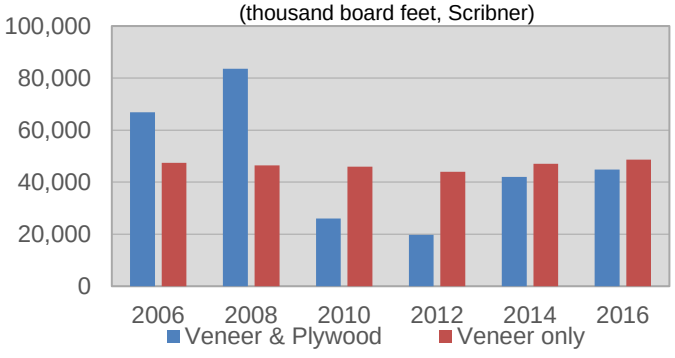
Total 8-hour Veneer Capacity
Graph 10i
(thousand square feet, 3/8" basis)



Total Annual Log Consumption
Graph 10j
(thousand board feet, Scribner)

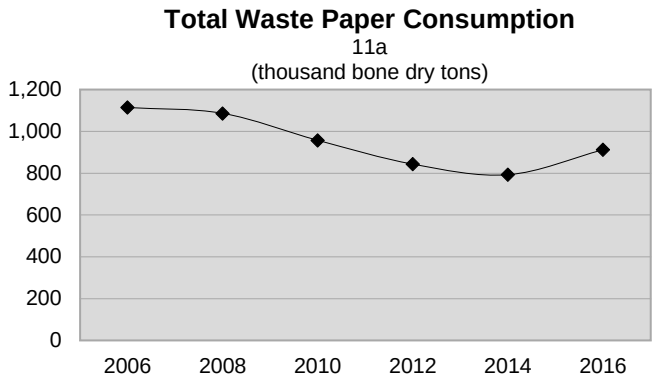


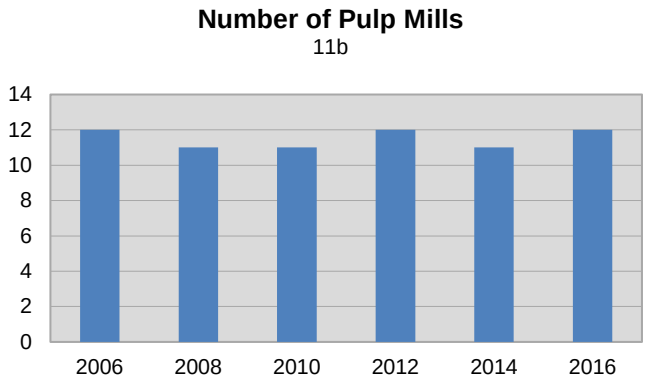
Average Log Consumption per Mill
Graph 10k
(thousand board feet, Scribner)

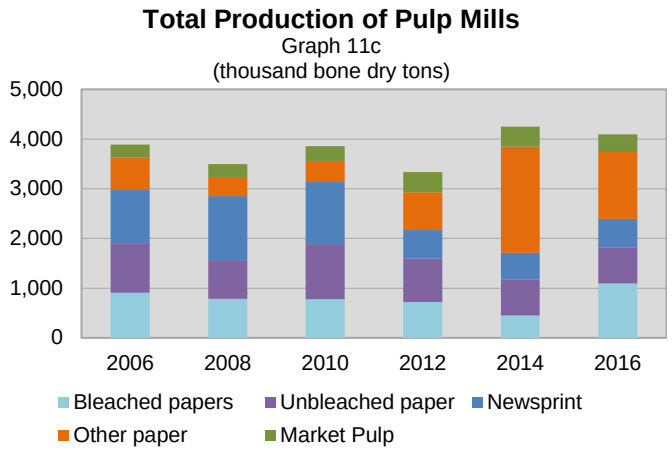


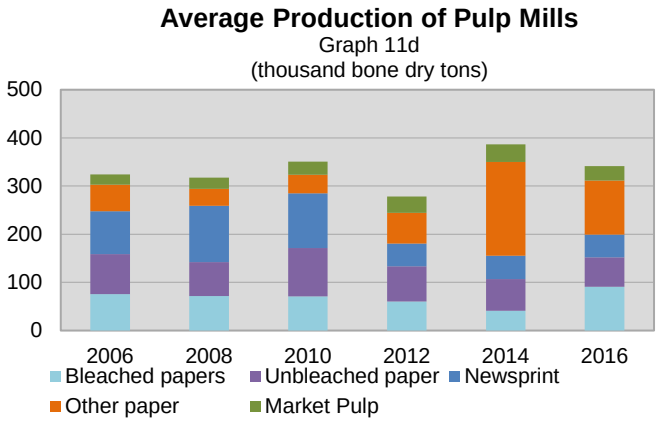
Graph 11: **Pulp mills**

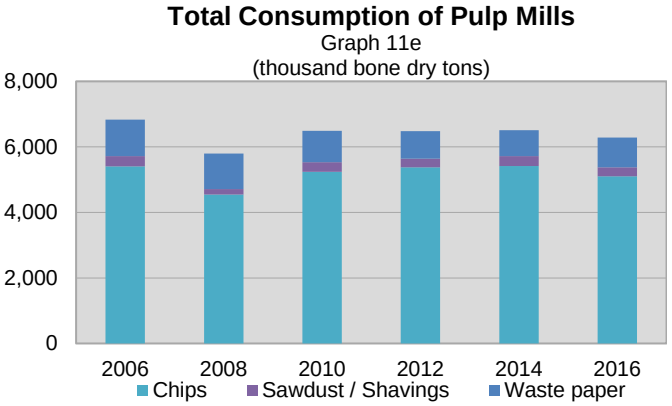
Unlike other wood product sectors, the number of pulp mills has held relatively steady over the past 10 years. But at the same time the most expensive and highest revenue-generating sector has undergone re-naming (Boise Cascade/Packaging Corporation of America), ownership changes (twice for the former Tacoma Simpson mill) and product switches (less newsprint, more packaging).

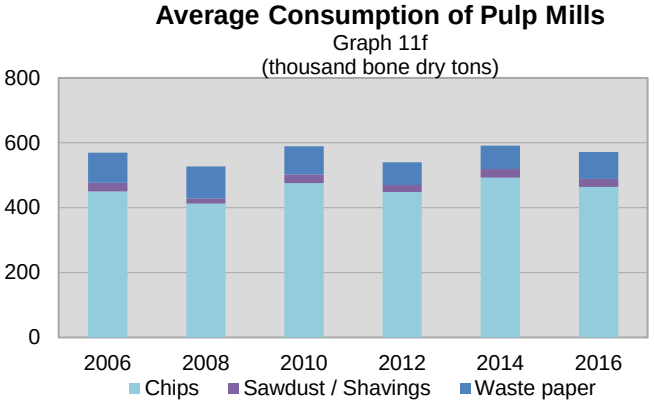








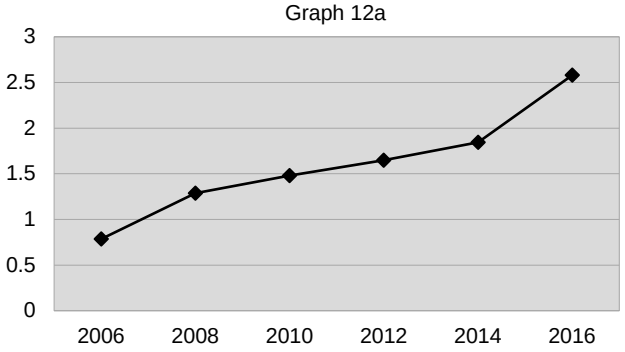




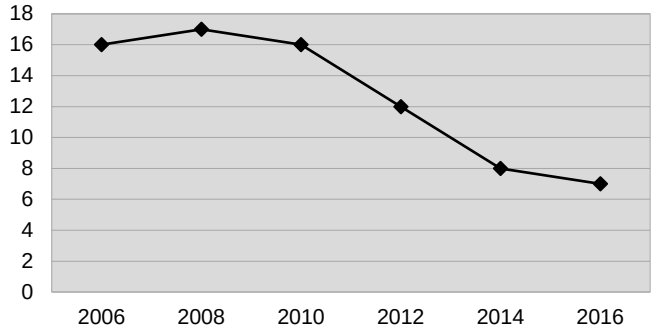
Graph 12: **Shake and shingle mills**

Due to the uncertainty of supplies of western redcedar, shake and shingle mills have been the most difficult sector to track. The statistics emphasize their ongoing decline. In the last 10 years more than half the mills have closed and production of shakes, shingles, and other cedar products have fallen. In 1990 about 205 million board feet of western redcedar was harvested in Washington. Since 2007 there have been only about 50 million board feet harvested annually. Second-growth western redcedar is available and used in other products, but large-diameter logs are needed for shakes and shingles.

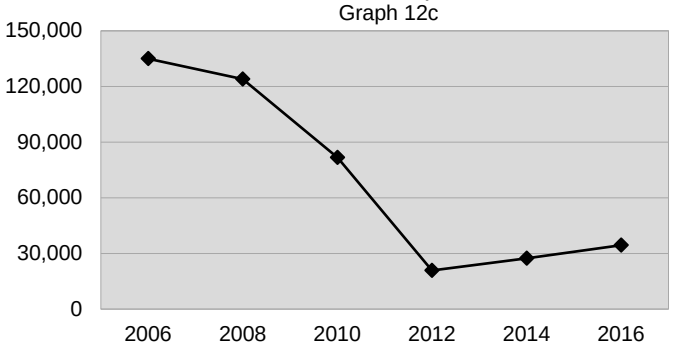
Productivity
(ratio of wood consumed to volume of production)
Graph 12a



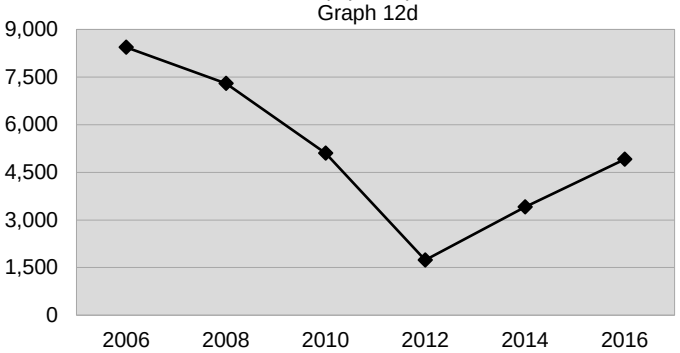
Number of Shake and Shingle Mills
Graph 12b



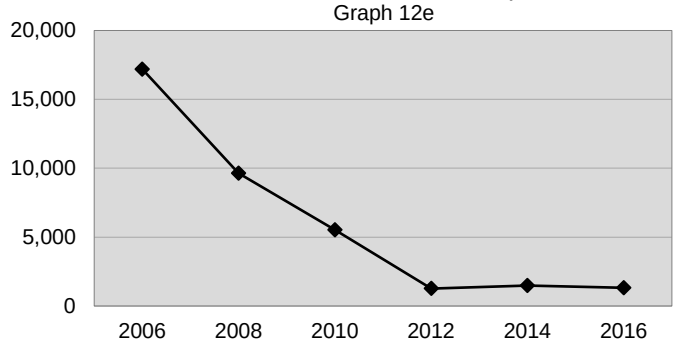
Total Production Shakes, Shingles, etc.
(squares)
Graph 12c



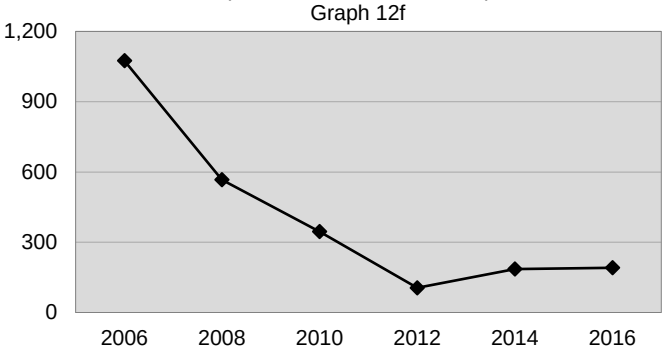
Average Production per Mill
(squares)
Graph 12d



Total Wood Consumed
(million board feet, Scribner)
Graph 12e

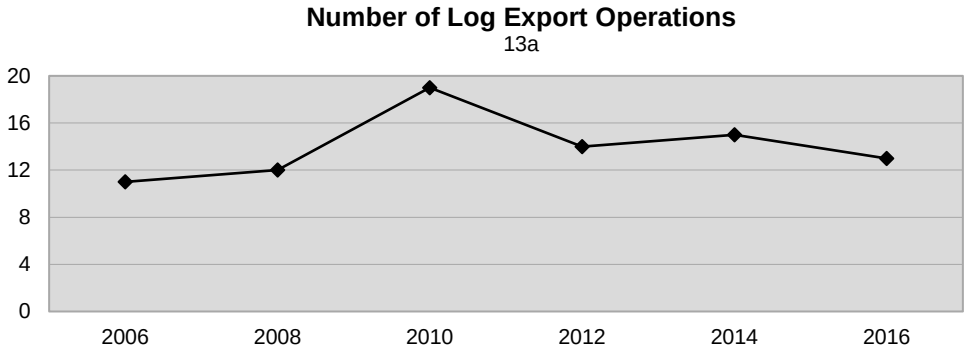


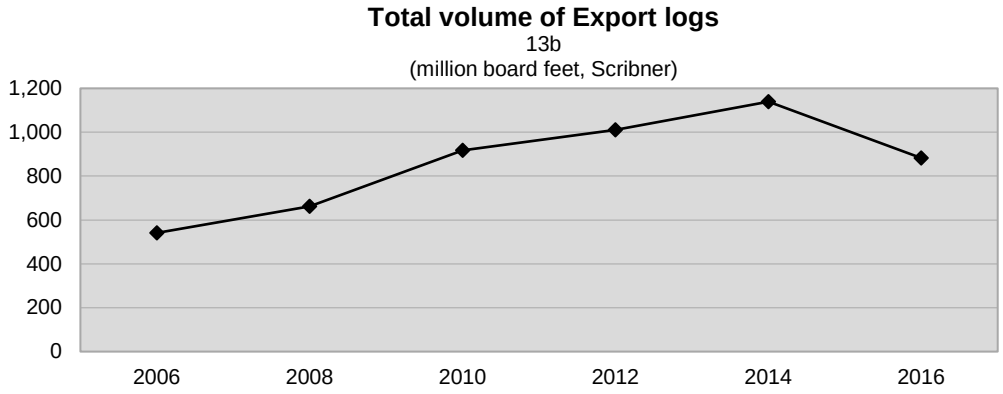
Average Wood Consumed per Mill
(million board feet, Scribner)
Graph 12f

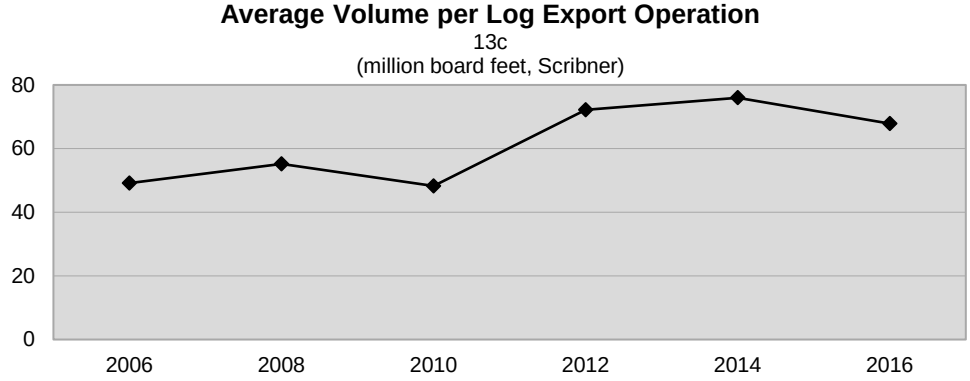


Graph 13: **Log export operations**

Despite the slowdown in log exports, China still led the increase of Washington log exports. Last year Washington's ports reported that 882 million board feet of logs were shipped, which was a decline from 2014, but much higher than before 2010 when only about half that was exported. Oregon logs made up about half of the logs shipped from the Port of Longview (about 270 million board feet). Also, probably dozens of forest owners (first-time exporters) benefited from the glut of freight containers on the global freight market. Instead of returning empty "cans," freight companies lowered the price and for several years whichprovided opportunities for small forest landowners to enter the export market with smallvolumes through ports which do not have the facilities to serve large logships.



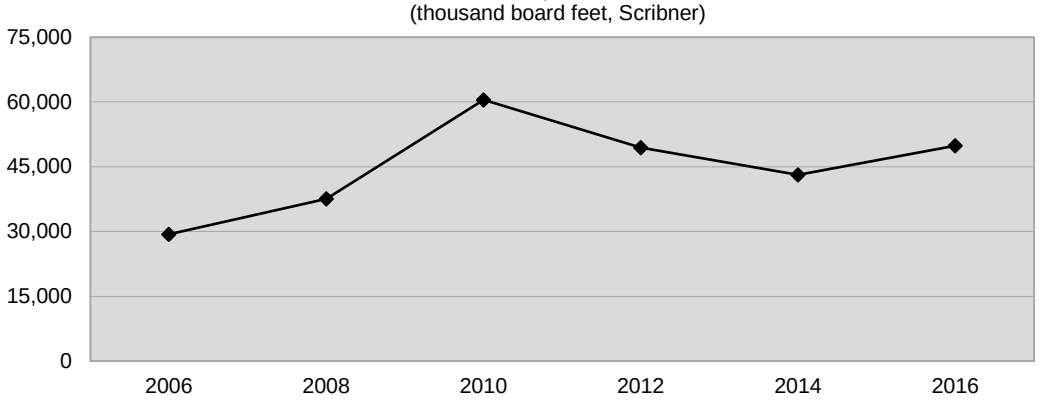




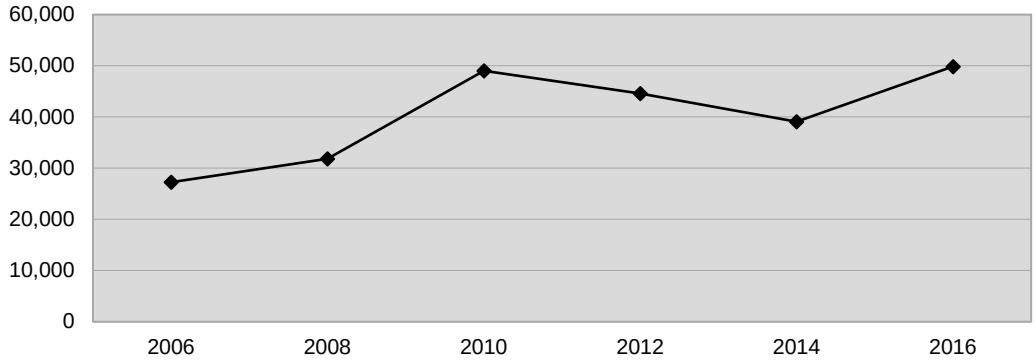
Graph 14: **Post, pole and piling**

Utility pole manufacturers receive a higher price for their finished wood products than other wood sectors. Even during uncertain economic periods, local governments give top priority toutility pole maintenance and replacement. Due to the reduction in pole companies, this edition of the Mill Survey relied heavily on estimates of log consumption and production.

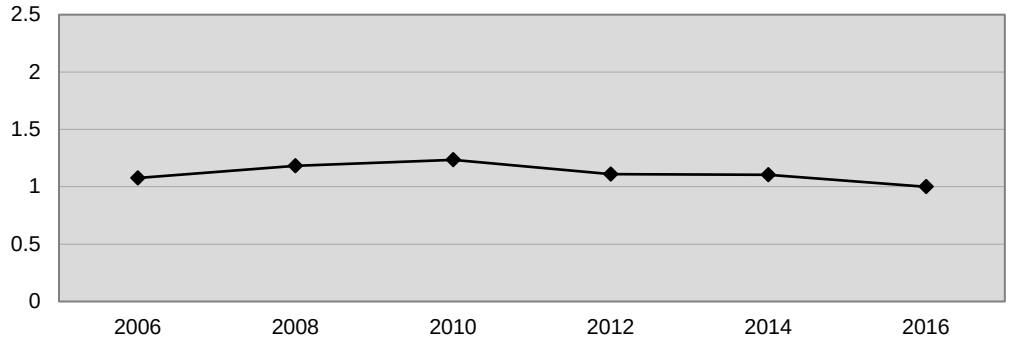
Total Production
Graph 14a
(thousand board feet, Scribner)



Total Log Consumption of Post Pole and Piling Mills
Graph 14b



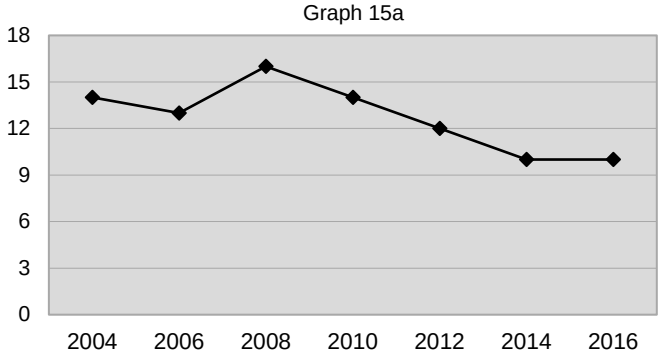
Post Pole, and Piling Productivity
Graph 14c
(volume ratios of logs and finished poles)



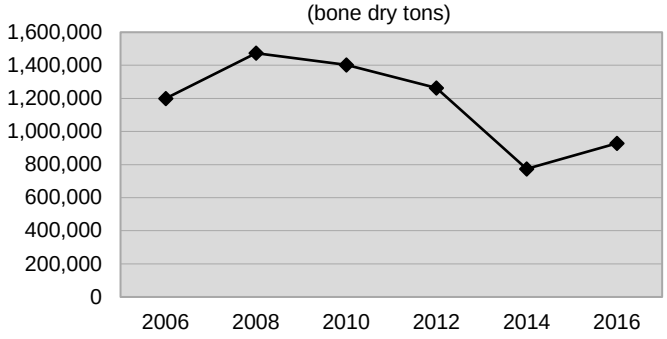
Graph 15: **Chip mills**

Chip mills grind up whole logs into chips for pulp and particle board. They are also a source of raw material for biofuels and other experimental uses of wood fiber. They have become more important to pulp mills, which were once heavily reliant on mill residues from sawmill operations. As sawmills became more efficient with equipment upgrades, the production of mill residue declined to about half. The number of chip mills declined by one third since 2008, but chip mills' log consumption and chip production increased in 2016 as they strive to fill the gap caused by lower volumes of sawmill residues.

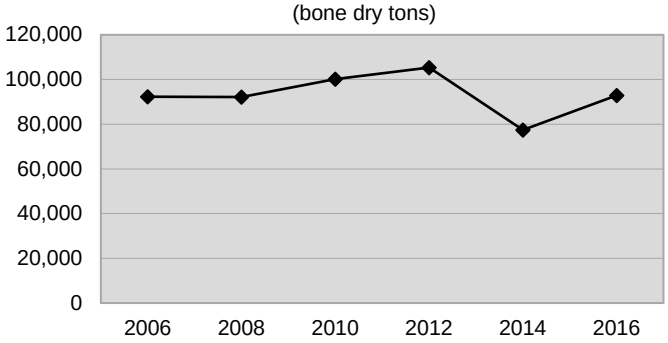
Number of Chipping Mills
Graph 15a



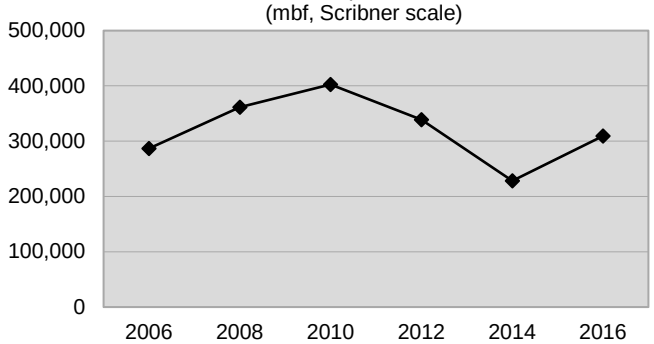
Total Production of chips
Graph 15b
(bone dry tons)



Average Production per Mill
Graph 15c
(bone dry tons)



Total Log Consumption
Graph 15d
(mbf, Scribner scale)



Average Log Consumption per Mill
Graph 15e
(mbf, Scribner scale)

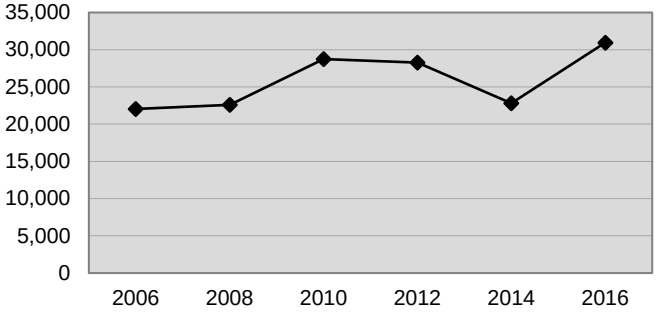


Table 1: **Number of operations—by county and industry**

(mills and export businesses)

Economic area and county	All industries	Lumber	Veneer and plywood	Pulp	Shake shingle	Log export	Post, pole, and piling	Roundwood chipping
Puget Sound								
King	1	0	0	0	0	1	0	0
Pierce	8	3	1	2	0	0	1	1
Skagit	2	2	0	0	0	0	0	0
Snohomish	9	5	0	0	0	3	0	1
Whatcom	3	1	1	0	0	0	1	0
Total	**23**	**11**	**2**	**2**	**0**	**4**	**2**	**2**
Olympic Peninsula								
Clallam	7	2	0	1	2	1	0	1
Grays Harbor	12	3	2	1	3	1	0	2
Jefferson	1	0	0	1	0	0	0	0
Lewis	8	6	1	0	1	0	0	0
Mason	3	1	0	0	0	0	0	2
Pacific	2	2	0	0	0	0	0	0
Thurston	1	0	0	0	0	1	0	0
Total	**34**	**14**	**3**	**3**	**6**	**3**	**0**	**5**
Lower Columbia								
Clark	4	1	0	1	0	2	0	0
Cowlitz	11	3	0	4	0	4	0	0
Klickitat	3	2	1	0	0	0	0	0
Skamania	1	1	0	0	0	0	0	0
Wahkiakum	1	0	0	0	1	0	0	0
Total	**20**	**7**	**1**	**5**	**1**	**6**	**0**	**0**
Central Washington								
Kittitas	1	0	0	0	0	0	0	1
Yakima	1	1	0	0	0	0	0	0
Total	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Inland Empire								
Ferry	1	1	0	0	0	0	0	0
Spokane	1	0	0	1	0	0	0	0
Stevens	5	3	1	0	0	0	0	1
Walla Walla	1	0	0	1	0	0	0	0
Whitman	1	0	0	0	0	0	0	1
Total	**9**	**4**	**1**	**2**	**0**	**0**	**0**	**2**
State total	**88**	**37**	**7**	**12**	**7**	**13**	**2**	**10**

Table 2: **Log (logs and residues) consumption—by industry**

(thousand board feet, Scribner)

Economic area	All roundwood	Sound logs	Utility logs	Other	Residue (bone dry tons)
Puget Sound					
Lumber	555,465	524,484	30,981	0	0
Log export	103,219	103,219	0	0	0
Others*	131,485	131,485	0	0	786,853
	790,169	**759,188**	**30,981**	**0**	**786,853**
Olympic Peninsula					
Lumber	568,163	535,853	32,310	0	0
Shake & shingle	39	39	0	1,095	0
Roundwood chipping	195,307	180,807	14,500	0	0
Others*	330,611	324,761	5,850	0	923,623
	1,094,120	**1,041,460**	**52,660**	**1,095**	**923,623**
Lower Columbia					
Lumber	290,165	287,045	3,120	0	0
Pulp & board	0	0	0	0	3,788,066
Log export	574,403	574,403	0	0	0
Others*	16,752	16,752	0	200	0
	881,320	**878,200**	**3,120**	**200**	**3,788,066**
Central Washington	**58,956**	**58,956**	**0**	**0**	0
Inland Empire					
Lumber	170,295	102,391	67,904	0	0
Others*	139,959	139,959	0	0	789,407
	310,254	**242,350**	**67,904**	**0**	**789,407**
State total					
Veneer & plywood	225,959	220,109	5,850	0	0
Log export	882,273	882,273	0	0	0
Lumber	1,636,891	1,502,576	134,315	0	0
Post, pole & piling	45,362	45,362		0	0
Pulp & board	34,753	34,753	0	0	6,287,949
Roundwood chipping	309,542	295,042	14,500	0	0
Shake & shingle	39	39	0	1,295	0
	3,134,819	**2,980,154**	**154,665**	**1,295**	**6,287,949**

* Some sectors were combined to avoid disclosure of individual corporate data.

Table 3: **Log consumption—by industry and state of origin**

(thousand board feet, Scribner)

Economic area	All sources	Washington	Oregon	Idaho	Montana	British Columbia	Other state
Puget Sound							
Lumber	555,465	538,972	0	0	0	16,493	0
Log export	103,219	103,219	0	0	0	0	0
Others*	131,485	131,485	0	0	0	0	0
	790,169	**773,676**	**0**	**0**	**0**	**16,493**	**0**
Olympic Peninsula							
Lumber	568,163	486,493	70,516	0	0	8,054	3,100
Shake & shingle	39	30	0	0	0	0	0
Roundwood chipping	195,307	195,307	0	0	0	0	0
Others*	330,611	327,134	0	0	0	1,739	1,738
	1,094,120	**1,008,964**	**70,516**	**0**	**0**	**9,793**	**4,838**
Lower Columbia							
Lumber	290,165	260,912	28,995	0	0	258	0
Pulp & board	0	0	0	0	0	0	0
Log export	574,403	303,721	270,683	0	0	0	0
Others*	16,752	16,752	0	0	0	0	0
	881,320	**581,385**	**299,678**	**0**	**0**	**258**	**0**
Central Washington	**58,956**	**58,956**	**0**	**0**	**0**	**0**	**0**
Inland Empire							
Lumber	170,295	155,749	10,140	4,407	0	0	0
Others*	139,959	92,103	7,846	40,010	0	0	0
	310,254	**247,852**	**17,986**	**44,417**	**0**	**0**	**0**
State total							
Veneer & plywood	225,959	224,135	0	780	0	1,044	0
Log export	882,273	611,591	270,683	0	0	0	0
Lumber	1,636,891	1,494,929	109,651	4,407	0	24,804	3,100
Post, pole & piling	45,362	45,362	0	0	0	0	0
Pulp & board	34,753	32,320	0	0	0	695	1,738
Roundwood chipping	309,542	262,466	7,846	39,230	0	0	0
Shake & shingle	39	30	0	0	0	0	0
	3,134,819	**2,670,833**	**388,180**	**44,417**	**0**	**26,543**	**4,838**

* Some sectors were combined to avoid disclosure of individual corporate data.

Table 4a: **Log consumption—by location of operation and county of harvest**

Logs harvested in Washington (thousand board feet, Scribner scale)

Economic area and county of operation	Total Washington logs ^	County of log harvest (Puget Sound Economic Area)						
		Island	King	Kitsap	Pierce	Skagit	Snohomish	Whatcom
Puget Sound								
Pierce	298,841	0	3,947	10,915	40,252	0	2,000	0
Snohomish	239,046	1,189	4,973	0	243	41,004	90,731	33,957
Others*	191,982	4,215	21,477	3,462	0	59,016	42,502	43,687
Total	**729,869**	**5,404**	**30,397**	**14,377**	**40,495**	**100,019**	**135,233**	**77,644**
Olympic Peninsula								
Clallam	178,550	215	696	2,065	0	858	429	644
Grays Harbor	341,689	0	3,433	0	1,750	0	0	0
Lewis	201,999	0	1,307	2,170	16,064	6,510	1,236	2,170
Others*	168,543	0	3,400	7,303	6,800	1,807	1,807	0
Total	**890,782**	**215**	**8,836**	**11,538**	**24,614**	**9,175**	**3,471**	**2,814**
Lower Columbia								
Clark	55	0	0	0	0	0	0	0
Cowlitz	456,897	0	0	0	1,821	0	0	0
Others*	75,670	0	0	0	0	0	0	0
Total	**532,622**	**0**	**0**	**0**	**1,821**	**0**	**0**	**0**
Central Washington	**58,956**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inland Empire								
Stevens	228,618	0	0	0	0	0	0	0
Others*	19,233	0	0	0	0	700	0	700
Total	**247,851**	**0**	**0**	**0**	**0**	**700**	**0**	**700**
State total	**2,460,080**	**5,619**	**39,233**	**25,915**	**66,930**	**109,895**	**138,705**	**81,158**

* Some counties were combined to avoid disclosure of individual corporate data.

^ The total Washington logs reported in this table does not equal the total log consumption in Table 3 because the county of log harvest data were missing for some mills.

Continued

Table 4b: **Log consumption—by mill location and county of harvest**

Logs harvested in Washington (thousand board feet, Scribner scale)

	County of log harvest (Olympic Peninsula Economic Area)						
Economic area and county of operation	**Clallam**	**Grays Harbor**	**Jefferson**	**Lewis**	**Mason**	**Pacific**	**Thurston**
Puget Sound							
Pierce	0	98,948	1,200	48,676	26,368	55,658	10,527
Snohomish	33,925	3,402	243	3,200	0	1,458	3,200
Others*	11,619	0	5,973	16	0	0	0
Total	**45,544**	**102,350**	**7,416**	**51,891**	**26,368**	**57,116**	**13,727**
Olympic Peninsula							
Clallam	128,667	3,429	41,547	0	0	0	0
Grays Harbor	41,400	181,368	26,008	16,590	14,741	28,184	23,031
Lewis	0	17,477	158	84,649	1,028	2,509	9,155
Others*	27,278	16,414	13,648	2,386	12,559	63,962	7,486
Total	**197,345**	**218,688**	**81,362**	**103,625**	**28,328**	**94,655**	**39,672**
Lower Columbia							
Clark	0	2	0	11	2	8	2
Cowlitz	0	42,104	0	120,178	0	41,442	1,821
Others*	0	0	0	0	0	0	0
Total	**0**	**42,106**	**0**	**120,189**	**2**	**41,450**	**1,823**
Central Washington	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inland Empire	**0**	**0**	**0**	**0**	**0**	**0**	**0**
State Total	**242,888**	**363,144**	**88,778**	**275,706**	**54,698**	**193,221**	**55,221**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 4c: **Log consumption—by mill location and county of harvest**

Logs harvested in Washington (thousand board feet, Scribner scale)

County of log harvest (Lower Columbia Economic Area)

Economic area and county of operation	Clark	Cowlitz	Klickitat	Skamania	Wahkiakum
Puget Sound					
Pierce	0	0	0	0	0
Snohomish	0	486	0	0	2,574
Others*	0	16	0	0	0
Total	**0**	**502**	**0**	**0**	**2,574**
Olympic Peninsula					
Clallam	0	0	0	0	0
Grays	0	3,797	0	512	875
Lewis	7,176	44,107	0	0	5,505
Others*	343	1,138	0	0	2,213
Total	**7,519**	**49,041**	**0**	**512**	**8,593**
Lower Columbia					
Clark	8	14	0	0	8
Cowlitz	41,853	103,664	147	30,148	17,254
Others*	3,430	0	47,237	22,532	0
Total	**45,292**	**103,678**	**47,384**	**52,680**	**17,263**
Central Washington	**0**	**0**	**5,280**	**0**	**0**
Inland Empire	**0**	**0**	**0**	**0**	**0**
State total	**52,810**	**153,221**	**52,664**	**53,191**	**28,430**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 4d: **Log consumption—by mill location and county of harvest**

Logs harvested in Washington (thousand board feet, Scribner scale)

Economic area and county of operation	**County of log harvest** (Central Washington Economic Area) Chelan	Douglas	Kittitas	Lincoln	Okanogan	Yakima
Puget Sound	**14,677**	**0**	**350**	**0**	**3,784**	**0**
Olympic Peninsula	**0**	**0**	**0**	**0**	**0**	**779**
Lower Columbia	**0**	**0**	**0**	**0**	**0**	**2,471**
Central Washington	**1,538**	**0**	**1,538**	**0**	**0**	**49,061**
Inland Empire	**0**	**0**	**0**	**1,577**	**30,209**	**0**
State total	**16,215**	**0**	**1,888**	**1,577**	**33,993**	**52,312**

Table 4e **Log consumption— by mill location and county of harvest**

Logs harvested in Washington (thousand board feet, Scribner scale)

Economic area and county of operation	**County of log harvest** (Inland Empire Economic Area) Asotin	Columbia	Ferry	Garfield	Pend Orielle	Spokane	Stevens	Whitman
Puget Sound	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Olympic Peninsula	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Lower Columbia	**0**	**0**	**56,464**	**0**	**0**	**0**	**0**	**0**
Central Washington	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inland Empire								
Stevens	0	0	34,820	0	0	15,911	113,468	0
Others*	0	0	700	0	0	1,400	4,901	5,231
Total	**0**	**0**	**35,521**	**0**	**0**	**17,311**	**118,369**	**5,231**
State total	**0**	**0**	**91,984**	**0**	**0**	**17,311**	**118,369**	**5,231**

Continued

Table 4f: **Log consumption by state or province of log harvest**

Logs not harvested in Washington (thousand board feet, Scribner)

Economic area and county of operation	State or province of log harvest: Oregon	Idaho	Montana	British Columbia	Other state
Puget Sound					
Pierce	0	0	0	3,024	0
Snohomish	0	0	0	2,700	0
Others*	0	0	0	10,769	0
Total	**0**	**0**	**0**	**16,493**	**0**
Olympic Peninsula					
Clallam	0	0	0	1,130	0
Grays Harbor	55,944	0	0	1,044	0
Lewis	11,100	0	0	5,861	3,100
Others*	3,471	0	0	1,758	1,738
Total	**70,516**	**0**	**0**	**9,793**	**4,838**
Lower Columbia					
Clark	2,892	0	0	0	0
Cowlitz	282,066	0	0	258	0
Others*	14,720	0	0	0	0
Total	**299,678**	**0**	**0**	**258**	**0**
Central Washington / Inland Empire					
Stevens	0	5,187	0	0	0
Others*	17,986	39,230	0	0	0
Total	**17,986**	**44,417**	**0**	**0**	**0**
State Total	**388,179**	**44,417**	**0**	**26,544**	**4,838**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 5: **Logs harvested from National Forests**

(thousand board feet, Scribner scale)

Economic area	All national forests	Olympic	Gifford Pinchot	Mount Baker/ Snoqualmie	Wenatchee	Okanogan	Colville	Umatilla	Other national forests
Puget Sound	12,939	60	7,600	2,427	68	2,784	0	0	0
Olympic Peninsula	14,027	11,403	2,330		16	0	0	0	279
Lower Columbia	17,239		12,952	4,288	0	0	0	0	0
Central Washington	615	0	0	0	615	0	0	0	0
Inland Empire	39,440	0	0	0	0	10,063	29,377	0	0
State total	**84,260**	**11,463**	**22,882**	**6,715**	**699**	**12,847**	**29,377**		**279**

Table 6a: **Operations—by percentage of logs from original owners**

Economic area and industry of operation	Percentage of log dependency											
	National forest				State				Bureau of Land Management			
	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Puget Sound												
Lumber	7	4	0	0	1	4	5	1	11	0	0	0
Log export	4	0	0	0	4	0	0	0	4	0	0	0
Others*	7	1	0	0	4	1	3	0	8	0	0	0
Total	**18**	**5**	**0**	**0**	**9**	**5**	**8**	**1**	**23**	**0**	**0**	**0**
Olympic Peninsula												
Lumber	8	6	0	0	1	10	2	1	13	1	0	0
Shake & shingle	5	1	0	0	6	0	0	0	6	0	0	0
Roundwood chipping	3	2	0	0	0	5	0	0	5	0	0	0
Others*	8	1	0	0	6	2	1	0	9	0	0	0
Total	**24**	**10**	**0**	**0**	**13**	**17**	**3**	**1**	**33**	**1**	**0**	**0**
Lower Columbia												
Lumber	3	3	1	0	2	4	0	1	5	2	0	0
Pulp & board	5	0	0	0	5	0	0	0	5	0	0	0
Log export	6	0	0	0	6	0	0	0	6	0	0	0
Others*	2	0	0	0	2	0	0	0	2	0	0	0
Total	**16**	**3**	**1**	**0**	**15**	**4**	**0**	**1**	**18**	**2**	**0**	**0**
Central Washington	**1**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**0**	**0**	**0**
Inland Empire												
Lumber	0	4	0	0	0	4	0	0	2	2	0	0
Others*	2	2	1	0	2	1	2	0	5	0	0	0
Total	**2**	**6**	**1**	**0**	**2**	**5**	**2**	**0**	**7**	**2**	**0**	**0**
State total												
Lumber	19	17	1	0	5	22	7	3	32	5	0	0
Veneer & plywood	4	3	0	0	3	1	3	0	7	0	0	0
Pulp & board	12	0	0	0	11	1	0	0	12	0	0	0
Shake & shingle	6	1	0	0	7	0	0	0	7	0	0	0
Log export	13	0	0	0	13	0	0	0	13	0	0	0
Post, pole & piling	2	0	0	0	1	0	1	0	2	0	0	0
Roundwood chipping	5	4	1	0	0	7	3	0	10	0	0	0
Total	**61**	**25**	**2**	**0**	**40**	**31**	**14**	**3**	**83**	**5**	**0**	**0**

* Some sectors were combined to avoid disclosure of individual corporate data.

Continued

Table 6b: **Operations—by percentage of logs from original owners**

Economic area and industry	Percentage of log dependency											
					Forest Industry							
	Other public				Other wood supply				Other wood supply			
	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Puget Sound												
Lumber	8	3	0	0	7	4	0	0	2	5	4	0
Log export	4	0	0	0	3	0	1	0	0	0	1	3
Others*	7	1	0	0	7	1	0	0	4	2	1	1
Total	**19**	**4**	**0**	**0**	**17**	**5**	**1**	**0**	**6**	**7**	**6**	**4**
Olympic Peninsula												
Lumber	10	4	0	0	10	3	1	0	1	6	7	0
Shake & shingle	6	0	0	0	5	1	0	0	4	2	0	0
Roundwood chipping	2	3	0	0	5	0	0	0	0	0	3	2
Others*	8	1	0	0	7	1	0	1	4	2	1	2
Total	**26**	**8**	**0**	**0**	**27**	**5**	**1**	**1**	**9**	**10**	**11**	**4**
Lower Columbia												
Lumber	4	3	0	0	4	0	3	0	1	4	2	0
Pulp & board	5	0	0	0	5	0	0	0	5	0	0	0
Log export	6	0	0	0	3	0	1	2	3	1	1	1
Others*	2	0	0	0	1	0	1	0	1	0	1	0
Total	**17**	**3**	**0**	**0**	**13**	**0**	**5**	**2**	**10**	**5**	**4**	**1**
Central Washington	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
Inland Empire												
Lumber	2	2	0	0	3	1	0	0	0	3	1	0
Others*	4	1	0	0	4	1	0	0	3	2	0	0
Total	**6**	**3**	**0**	**0**	**7**	**2**	**0**	**0**	**3**	**5**	**1**	**0**
State total												
Lumber	25	12	0	0	25	8	4	0	5	18	14	0
Veneer & plywood	5	2	0	0	6	0	1	0	3	2	2	0
Pulp & board	12	0	0	0	12	0	0	0	11	0	0	1
Shake & shingle	7	0	0	0	6	1	0	0	5	2	0	0
Log export	13	0	0	0	7	1	2	3	4	2	2	5
Post, pole & piling	2	0	0	0	2	0	0	0	1	1	0	0
Roundwood chipping	6	4	0	0	8	2	0	0	0	3	4	3
Total	**70**	**18**	**0**	**0**	**66**	**12**	**7**	**3**	**29**	**28**	**22**	**9**

* Some sectors were combined to avoid disclosure of individual corporate data.

Continued

Table 6c: **Operations—by percentage of logs from original owners**

Economic area and industry	Percentage of log dependency: Native American 0%	Native American 1-33%	Native American 34-66%	Native American 67-100%	Farmer, misc. private 0%	Farmer, misc. private 1-33%	Farmer, misc. private 34-66%	Farmer, misc. private 67-100%
Puget Sound								
Lumber	10	1	0	0	0	8	1	2
Veneer & plywood	1	1	0	0	1	1	0	0
Pulp & board	2	0	0	0	2	0	0	0
Log export	1	3	0	0	1	3	0	0
Post, pole & piling	2	0	0	0	1	1	0	0
Roundwood chipping	0	2	0	0	0	2	0	0
Total	**16**	**7**	**0**	**0**	**5**	**15**	**1**	**2**
Olympic Peninsula								
Lumber	8	6	0	0	2	9	3	0
Veneer & plywood	2	1	0	0	1	1	1	0
Pulp & board	2	1	0	0	2	1	0	0
Shake & shingle	4	1	0	1	4	1	1	0
Log export	2	1	0	0	0	2	0	1
Roundwood chipping	3	2	0	0	0	5	0	0
Total	**21**	**12**	**0**	**1**	**9**	**19**	**5**	**1**
Lower Columbia								
Lumber	6	1	0	0	1	3	3	0
Veneer & plywood	1	0	0	0	0	1	0	0
Pulp & board	5	0	0	0	4	0	0	1
Shake & shingle	1	0	0	0	1	0	0	0
Log export	3	3	0	0	3	3	0	0
Total	**16**	**4**	**0**	**0**	**9**	**7**	**3**	**1**
Central Washington	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
Inland Empire								
Lumber	0	3	1	0	0	2	2	0
Veneer & plywood	1	0	0	0	1	0	0	0
Pulp & board	2	0	0	0	2	0	0	0
Roundwood chipping	1	1	0	0	0	1	1	0
Total	**4**	**4**	**1**	**0**	**3**	**3**	**3**	**0**
State total								
Lumber	24	11	1	1	4	22	9	2
Veneer & plywood	5	2	0	0	3	3	1	0
Pulp & board	11	1	0	0	10	1	0	1
Shake & shingle	5	1	0	1	5	1	1	0
Log export	6	7	0	0	4	8	0	1
Post, pole & piling	2	0	0	0	1	1	0	0
Roundwood chipping	5	5	0	0	0	9	1	0
Total	**58**	**27**	**1**	**2**	**27**	**45**	**12**	**4**

Table 7a: **Operations—by industry and percentage of logs from original owners**

Industry and economic area	Percentage of Dependency											
	National forest				State				Bureau of Land Management			
	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Log export												
Puget Sound	4	0	0	0	4	0	0	0	4	0	0	0
Lower Columbia	6	0	0	0	6	0	0	0	6	0	0	0
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	**13**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**13**	**0**	**0**	**0**
Lumber												
Puget Sound	7	4	0	0	1	4	5	1	11	0	0	0
Olympic Peninsula	8	6	0	0	1	10	2	1	13	1	0	0
Lower Columbia	3	3	1	0	2	4	0	1	5	2	0	0
Inland Empire	0	4	0	0	0	4	0	0	2	2	0	0
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	**19**	**17**	**1**	**0**	**5**	**22**	**7**	**3**	**32**	**5**	**0**	**0**
Post, pole & piling	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**0**	**0**	**0**
Pulp & board												
Lower Columbia	5	0	0	0	5	0	0	0	5	0	0	0
Others*	7	0	0	0	6	1	0	0	7	0	0	0
Total	**12**	**0**	**0**	**0**	**11**	**1**	**0**	**0**	**12**	**0**	**0**	**0**
Roundwood												
Olympic Peninsula	3	2	0	0	0	5	0	0	5	0	0	0
Others*	2	2	1	0	0	2	3	0	5	0	0	0
Total	**5**	**4**	**1**	**0**	**0**	**7**	**3**	**0**	**10**	**0**	**0**	**0**
Shake & shingle												
Olympic Peninsula	5	1	0	0	6	0	0	0	6	0	0	0
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	**6**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**7**	**0**	**0**	**0**
Veneer & plywood	**4**	**3**	**0**	**0**	**3**	**1**	**3**	**0**	**7**	**0**	**0**	**0**
State total	**61**	**25**	**2**	**0**	**40**	**31**	**14**	**3**	**83**	**5**	**0**	**0**

* Some economic areas were combined to avoid disclosure of individual corporate data.

Continued

Table 7b: **Operations—by percentage of logs from original owners**

	Percent of Dependency											
	Forest Industry											
	Other Public				Own Wood Supply				Other wood supply			
	0	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Log export												
Puget Sound	4	0	0	0	3	0	1	0	0	0	1	3
Lower Columbia	6	0	0	0	3	0	1	2	3	1	1	1
Others*	3	0	0	0	1	1	0	1	1	1	0	1
Total	**13**	**0**	**0**	**0**	**7**	**1**	**2**	**3**	**4**	**2**	**2**	**5**
Lumber												
Puget Sound	8	3	0	0	7	4	0	0	2	5	4	0
Olympic Peninsula	10	4	0	0	10	3	1	0	1	6	7	0
Lower Columbia	4	3	0	0	4	0	3	0	1	4	2	0
Inland Empire	2	2	0	0	3	1	0	0	0	3	1	0
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	**25**	**12**	**0**	**0**	**25**	**8**	**4**	**0**	**5**	**18**	**14**	**0**
Post, pole & piling	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
Pulp & board												
Lower Columbia	5	0	0	0	5	0	0	0	5	0	0	0
Others*	7	0	0	0	7	0	0	0	6	0	0	1
Total	**12**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**11**	**0**	**0**	**1**
Roundwood												
Olympic Peninsula	2	3	0	0	5	0	0	0	0	0	3	2
Others*	4	1	0	0	3	2	0	0	0	3	1	1
Total	**6**	**4**	**0**	**0**	**8**	**2**	**0**	**0**	**0**	**3**	**4**	**3**
Shake & shingle												
Olympic Peninsula	6	0	0	0	5	1	0	0	4	2	0	0
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	**7**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**5**	**2**	**0**	**0**
Veneer & Plywood	**5**	**2**	**0**	**0**	**6**	**0**	**1**	**0**	**3**	**2**	**2**	**0**
State Total	**70**	**18**	**0**	**0**	**66**	**12**	**7**	**3**	**29**	**28**	**22**	**9**

* Some economic areas were combined to avoid disclosure of individual corporate data.

Continued

Table 7c: **Operations—by percentage of logs from original owners**

Industry and county	Native American				Farmer and misc. private			
	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Log export								
Puget Sound	1	3	0	0	1	3	0	0
Lower Columbia	3	3	0	0	3	3	0	0
Others*	2	1	0	0	0	2	0	1
Total	**6**	**7**	**0**	**0**	**4**	**8**	**0**	**1**
Lumber								
Puget Sound	10	1	0	0	0	8	1	2
Olympic Peninsula	8	6	0	0	2	9	3	0
Lower Columbia	6	1	0	0	1	3	3	0
Inland Empire	0	3	1	0	0	2	2	0
Others*	0	0	0	1	1	0	0	0
Total	**24**	**11**	**1**	**1**	**4**	**22**	**9**	**2**
Post, pole & piling	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
Pulp & board								
Lower Columbia	5	0	0	0	4	0	0	1
Others*	6	1	0	0	6	1	0	0
Total	**11**	**1**	**0**	**0**	**10**	**1**	**0**	**1**
Roundwood								
Olympic Peninsula	3	2	0	0	0	5	0	0
Others*	2	3	0	0	0	4	1	0
Total	**5**	**5**	**0**	**0**	**0**	**9**	**1**	**0**
Shake & shingle								
Olympic Peninsula	4	1	0	1	4	1	1	0
Others*	1	0	0	0	1	0	0	0
Total	**5**	**1**	**0**	**1**	**5**	**1**	**1**	**0**
Veneer & plywood	**5**	**2**	**0**	**0**	**3**	**3**	**1**	**0**
State total	**58**	**27**	**1**	**2**	**27**	**45**	**12**	4

* Some economic areas were combined to avoid disclosure of individual corporate data.

Table 8a: **Log consumption—by industry and original log owners**

(thousand board feet, Scribner scale)

Economic area and industry	All Owners	State	National Forest	Bureau of Land Management	Other Public
Puget Sound					
Lumber	555,465	176,119	4,939	0	9,718
Log export	103,219	0	0	0	0
Others*	131,485	26,339	8,000	0	2,000
	790,169	**202,458**	**12,939**	**0**	**11,718**
Olympic Peninsula					
Lumber	568,163	149,751	14,430	678	5,983
Shake & shingle	39	0	1	0	0
Roundwood chipping	195,307	17,523	2,415	0	13,861
Others*	330,611	36,999	522	0	3,900
	1,094,120	**204,273**	**17,368**	**678**	**23,744**
Lower Columbia					
Lumber	290,165	12,622	17,239	2,452	2,710
Pulp & board	0	0	0	0	0
Log export	574,403	0	0	0	0
Others*	16,752	0	0	0	0
	881,320	**12,622**	**17,239**	**2,452**	**2,710**
Central Washington	**58,956**	**2,461**	**615**	**0**	**0**
Inland Empire					
Lumber	170,295	16,937	25,366	5,521	513
Others*	139,959	55,703	16,689	0	97
	310,254	**72,640**	**42,055**	**5,521**	**610**
State total					
Lumber	1,636,891	355,430	61,974	8,651	18,924
Veneer & plywood	225,959	77,681	16,322	0	5,900
Pulp & board	34,753	4,518	0	0	0
Shake & shingle	39	0	1	0	0
Log export	882,273	0	0	0	0
Post, pole & piling	45,362	793	0	0	0
Roundwood chipping	309,542	56,034	11,920	0	13,958
Start	**3,134,819**	**494,456**	**90,217**	**8,651**	**38,782**

* Some sectors were combined to avoid disclosure of individual corporate data.

Continued

Table 8b: **Log consumption—by original log owners**

(thousand board feet, Scribner rule)

Economic area and industry	Forest Industry: Own Wood Supply	Forest Industry: Other Wood Supply	Native American	Farmer and misc. private
Puget Sound				
Lumber	52,761	156,082	946	154,899
Log export	17,234	79,110	3,438	3,438
Others*	177	31,740	1,853	17,569
	70,172	**266,932**	**6,237**	**175,906**
Olympic Peninsula				
Lumber	54,512	284,421	12,123	46,265
Shake & shingle	2	3	23	2
Roundwood chipping	0	127,561	11,865	22,081
Others*	86,432	113,548	10,372	78,837
	140,946	**525,533**	**34,383**	**147,185**
Lower Columbia				
Lumber	125,246	70,884	9,800	49,211
Pulp & board	0	0	0	0
Log export	337,493	103,311	15,539	66,451
Others*	8,376	6,031	0	2,345
	471,115	**180,226**	**25,339**	**118,007**
Central Washington	0	1846	52803	1231
Inland Empire				
Lumber	2,640	36,224	49,546	33,547
Others*	193	3581	193	24503
	2833	**39805**	**49739**	**58050**
State total				
Lumber	235160	547,612	125,218	283,922
Veneer & plywood	8376	32802	8200	37678
Pulp & board	0	27,802	1,390	1,043
Shake & shingle	2	3	23	2
Log export	441159	245,396	20,158	123,951
Post, pole & piling	0	435	0	327
Roundwood chipping	370	160,292	13512	53,457
Start	**685,067**	**1,014,342**	**168,501**	**500,380**

"Other Wood Supply" means timber is harvested and sold by non-owners.
"Own Wood Supply" means trees were harvested by the owners.

Table 9a: **Log consumption—by species**

(thousand board feet, Scribner rule)

Economic area and industry	All species**	Douglas-fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
Lumber	555,465	417,329	115,917	1,350	0	119
Log export	103,219	54,141	37,908	7,932	2,559	0
Others*	131,485	52,876	26,725	2,000	400	0
	790,169	**524,346**	**180,550**	**11,282**	**2,959**	**119**
Olympic Peninsula						
Lumber	568,163	247,078	211,148	1	5,464	0
Shake & shingle	39			0	0	0
Roundwood chipping	195,307	79,235	96,610	0	715	340
Others*	330,611	183,083	124,425	6,743	16,360	0
	1,094,120	**509,396**	**432,183**	**6,744**	**22,539**	**340**
Lower Columbia						
Lumber	290,165	225,665	4,905	20,327	0	2,520
Pulp & board	0	0	0	0	0	0
Log export	574,403	402,248	131,669	15,065	12,537	12,884
Others*	16,752	11,056	0	5,361	0	335
	881,320	**638,969**	**136,574**	**40,753**	**12,537**	**15,739**
Central Washington	**58,956**	**24,813**	**2,461**	**4,224**	**0**	**27,458**
Inland Empire						
Lumber	170,295	62,480	0	10,560	2,640	56,755
Others*	139,959	95,057	21,116	965	193	7,273
	310,254	**157,537**	**21,116**	**11,525**	**2,833**	**64,028**
State total						
Lumber	1,636,891	973,673	331,970	36,462	8,104	86,852
Veneer & plywood	225,959	166,180	36,549	8,405	2,350	1,895
Pulp & board	34,753	12,164	18,419	1,390	2,780	0
Shake & shingle	39	0	0	0	0	0
Log export	882,273	565,245	249,435	27,306	26,725	12,884
Post, pole & piling	45,362	715	0	0	0	0
Roundwood chipping	309,542	137,084	136,512	965	908	6,053
Start	**3,134,819**	**1,855,061**	**772,885**	**74,528**	**40,867**	**107,684**

* Some sectors were combined to avoid disclosure of individual corporate data.

** Species totals do not equal industry consumption totals because data were missing from a few mills.

Continued

Table 9b: **Log consumption by species**

(thousand board feet, Scribner rule)

Economic area and industry	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
Lumber	0	1,597	0	14,353	4,800
Log export	0	0	633	0	44
Others*	1,600	1,017	177	1,775	1,108
Total	**1,600**	**2,613**	**810**	**16,128**	**5,953**
Olympic Peninsula					
Lumber	0	50,344	0	77,197	6,902
Shake & shingle	0	30	0	0	0
Roundwood chipping	340	340	4,420	11,947	1,360
23	0	0	0	0	0
Total	**340**	**50,714**	**4,420**	**89,144**	**8,262**
Lower Columbia					
Lumber	2,450	8,508	2	23,207	2,581
Pulp & board	0	0	0	0	0
Log export	0	0	0	0	0
Others*	0	0	0	0	0
Total	**2,450**	**8,508**	**2**	**23,207**	**2,581**
Central Washington	**0**	**0**	**0**	**0**	**0**
Inland Empire					
Lumber	12,838	25,022	0	0	0
Others*	5,713	97	9,545	0	0
Total	**18,551**	**25,119**	**9,545**	**0**	**0**
State total					
Lumber	15,288	85,471	2	114,758	14,283
Veneer & plywood	1,600	0	8,580	0	400
Pulp & board	0	0	0	0	0
Shake & shingle	0	30	0	0	0
Log export	0	0	633	0	44
Post, pole & piling	0	840	0	0	0
Roundwood chipping	6,053	614	5,562	13,722	2,068
Total	**22,941**	**86,954**	**14,778**	**128,480**	**16,795**

* Some sectors were combined to avoid disclosure of individual corporate data.

Table 10a: **Wood and bark residues—by industry and use**

(dry weight tons)

Economic area and industry	All Bark	Bark Residue Used: Total	Pulp	Fuel	Other	Unused
Puget Sound						
Lumber	127,850	127,850	0	8,535	119,315	0
Log export	0	0	0	0	0	0
Others*	987	987	0	0	987	0
Total	**128,837**	**128,837**	**0**	**8,535**	**120,302**	**0**
Olympic Peninsula						
Lumber	253,463	252,009	2,110	175,343	74,556	1,454
Shake & shingle	5,600	5,600	0	0	5,600	0
Roundwood chipping	0	0	0	0	0	0
Others*	56,799	56,799	0	56,799	0	0
Total	**315,862**	**314,408**	**2,110**	**232,142**	**80,156**	**1,454**
Lower Columbia						
Lumber	119,029	119,029	9,304	24,599	85,126	0
Pulp & board	0	0	0	0	0	0
Log export	0	0	0	0	0	0
Others*	588	588	0	0	588	0
Total	**119,617**	**119,617**	**9,304**	**24,599**	**85,714**	**0**
Central Washington	**9,883**	**9,883**	**0**	**7,906**	**1,977**	**0**
Inland Empire						
Lumber	50,416	50,416	0	27,418	22,998	0
Others*	37,950	37,950	0	37,950	0	0
Total	**88,366**	**88,366**	**0**	**65,368**	**22,998**	**0**
State total						
Lumber	560,641	559,187	11,414	243,801	303,972	1,454
Veneer & plywood	95,736	95,736	0	94,749	987	0
Pulp & board	0	0	0	0	0	0
Shake & shingle	6,188	6,188	0	0	6,188	0
Log export	0	0	0	0	0	0
Post, pole & piling	0	0	0	0	0	0
Roundwood chipping	0	0	0	0	0	0
Total	**662,565**	**661,111**	**11,414**	**338,550**	**311,147**	**1,454**

* Some sectors were combined to avoid disclosure of individual corporate data.

Continued

Table 10b: **Wood and bark residues—production and use**
(dry weight tons)

Economic area and industry	All residues	All Wood	Used Total	Use: Pulp	Board	Fuel	Other	Unused
Puget Sound								
Lumber	546,432	418,582	418,582	144,777	880	136,339	136,586	0
Log export	0	0	0	0	0	0	0	0
Others*	87,213	86,226	86,226	38,305	0	25,500	22,421	0
Total	**633,645**	**504,808**	**504,808**	**183,082**	**880**	**161,839**	**159,007**	**0**
Olympic Peninsula								
Lumber	890,532	637,069	636,085	409,126	31,344	145,813	49,802	984
Shake & shingle	14,203	8,603	6,618	0	0	1,320	5,298	1,985
Roundwood chipping	0	0	0	0	0	0	0	0
Others*	224,564	167,765	167,765	108,316	0	29,475	29,974	0
Total	**1,129,299**	**813,437**	**810,468**	**517,442**	**31,344**	**176,608**	**85,074**	**2,969**
Lower Columbia								
Lumber	512,501	393,472	360,791	298,887	11,815	1,941	48,148	32,681
Pulp & board	0	0	0	0	0	0	0	0
Log export	0	0	0	0	0	0	0	0
Others*	56,857	56,269	56,269	45,084	4,280	5,330	1,575	0
Total	**569,358**	**449,741**	**417,060**	**343,971**	**16,095**	**7,271**	**49,723**	**32,681**
Central Washington	**43,854**	**33,971**	**33,971**	**28,129**	**3,854**	**0**	**1,988**	**0**
Inland Empire								
Lumber	214,624	164,208	164,208	117,430	21,735	10,445	14,598	0
Others*	245,440	207,490	207,490	182,850	4,928	19,712	0	0
Total	**460,064**	**371,698**	**371,698**	**300,280**	**26,663**	**30,157**	**14,598**	**0**
State total								
Lumber	2,207,943	1,647,302	1,613,637	998,349	69,628	294,538	251,122	33,665
Veneer & plywood	611,911	516,175	516,175	374,555	9,208	80,017	52,395	0
Pulp & board	0	0	0	0	0	0	0	0
Shake & shingle	16,366	10,178	8,193	0	0	1,320	6,873	1,985
Log export	0	0	0	0	0	0	0	0
Post, pole & piling	0	0	0	0	0	0	0	0
Roundwood chipping	0	0	0	0	0	0	0	0
Total	**2,836,220**	**2,173,655**	**2,138,005**	**1,372,904**	**78,836**	**375,875**	**310,390**	**35,650**

* Some sectors were combined to avoid disclosure of individual corporate data.

Table 11: **Hardwoods consumed**
(thousand board feet Scribner)

Industry	Number of mills	Red alder	Other hardwood
Chip	1	13,722	2,068
Sawmills	3	86,286	12,784
State Total	**4**	**100,008**	**14,852**

Table 12: **Log consumption—by diameter in inches**

(thousand board feet, Scribner)

Economic area and industry of operation	Total	Log diameter in inches: less than 5	5 to 10	10 to 20	21 or more
Puget Sound					
Lumber	555,465	527	326,343	183,558	45,038
Log export	103,219	0	26,721	54,676	21,822
Others*	131,485	24,832	73,117	26,924	6,612
Total	**790,169**	**25,358**	**426,181**	**265,157**	**73,472**
Olympic Peninsula					
Lumber	568,163	7,728	359,693	171,641	29,101
Shake & shingle	39	0	6	0	24
Roundwood chipping	195,307	76,354	61,992	33,731	23,231
Others*	330,611	27,455	115,644	174,763	12,750
Total	**1,094,120**	**111,536**	**537,335**	**380,134**	**65,106**
Lower Columbia					
Lumber	290,165	17,634	185,139	75,210	12,183
Pulp & board	0	0	0	0	0
Log export	574,403	0	164,691	353,066	28,177
Others*	16,752	0	2,513	13,402	838
Total	**881,320**	**17,634**	**352,343**	**441,677**	**41,197**
Central Washington	**58,956**	**3,605**	**9,766**	**37,577**	**8,008**
Inland Empire					
Lumber	170,295	6,401	106,163	50,817	6,914
Others*	139,959	8,687	55,418	62,727	13,127
Total	**310,254**	**15,088**	**161,581**	**113,543**	**20,041**
State total					
Lumber	1,636,891	32,818	985,259	518,187	100,628
Veneer & plywood	225,959	0	118,518	93,287	14,154
Pulp & board	34,753	27,455	3,823	1,390	2,085
Shake & shingle	39	0	6	0	24
Log export	882,273	0	258,428	538,228	57,147
Post, pole & piling	45,362	0	36,650	8,712	0
Roundwood chipping	309,542	112,948	84,523	78,285	33,786
Total	**3,134,819**	**173,221**	**1,487,206**	**1,238,090**	**207,824**

* Some sectors were combined to avoid disclosure of individual corporate data.

Table 13: **Number of sawmills—by mill size****

Economic area and county of operation	All Classes	D	C	B	A	AA	AAA
Puget Sound							
Pierce	3	1	0	0	2	0	0
Snohomish	5	3	0	0	2	0	0
Others*	3	0	0	1	1	0	1
Total	**11**	**4**	**0**	**1**	**5**	**0**	**1**
Olympic Peninsula							
Grays Harbor	3	0	1	0	1	0	1
Lewis	6	0	0	0	3	2	0
Others*	5	0	3	0	1	1	0
Total	**14**	**0**	**4**	**0**	**5**	**3**	**1**
Lower Columbia							
Cowlitz	3	0	0	0	1	1	1
Others*	4	1	0	0	0	3	0
Total	**7**	**1**	**0**	**0**	**1**	**4**	**1**
Central Washington/ Inland Empire	**5**	**0**	**0**	**1**	**3**	**1**	**0**
State total	**37**	**5**	**4**	**2**	**14**	**8**	**3**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Tables 13 and 14 use 6 mill class sizes. All other tables use 4 mill class sizes. Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

+ Class AAA: More than 500 mbf
Class AA: 250-500 mbf
Class A: 120-250 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 14: **Sawmills' capacity—by 8-hour single shift and mill size****

(thousand board feet, lumber tally)

Economic area and county of operation	Total Capacity	Mill Size					
		D	C	B	A	AA	AAA
Puget Sound							
Pierce	432	32	0	0	400	0	0
Snohomish	182	62	0	0	120	0	0
Others*	750	0	0	107	140	0	503
Total	**1,364**	**94**	**0**	**107**	**660**	**0**	**503**
Olympic Peninsula							
Grays Harbor	760	0	50	0	150	0	560
Lewis	1676	0	0	0	440	1,236	0
Others*	681	0	180	0	189	312	0
Total	**3,117**	**0**	**230**	**0**	**779**	**1,548**	**560**
Lower Columbia							
Cowlitz	1389	0	0	0	139	500	750
Others*	1078	3	0	0	0	1,075	0
Total	**2,467**	**3**	**0**	**0**	**139**	**1,575**	**750**
Central Washington/ Inland Empire	914	**0**	**0**	**88**	**526**	**300**	**0**
State total	**7,862**	**97**	**230**	**195**	**2,104**	**3,423**	**1,813**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Tables 13 and 14 use 6 mill class sizes. All other tables use 4 mill class sizes. Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class AAA: More than 500 mbf
Class AA: 250-500 mbf
Class A: 120-250 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 15: **Number of sawmills—by selected equipment and mill size****

Economic area and size of mill	Total Mills	Barker	Chipper	Planer	Burner	Kiln
Puget Sound						
A	6	6	6	5	0	3
D	4	4	4	3	1	3
Others*	1	1	1	1	1	1
Total	**6**	**11**	**11**	**9**	**2**	**7**
Olympic Peninsula						
A	10	10	9	6	2	6
C	4	4	3	3	0	4
Total	**10**	**14**	**12**	**9**	**2**	**10**
Lower Columbia						
A	6	6	6	5	1	5
Others*	1	0	0	0	0	0
Total	**6**	**6**	**6**	**5**	**1**	**5**
Central Washington / Inland Empire	**5**	**5**	**3**	**4**	**2**	**4**
State total						
A	0	26	23	19	4	17
B	0	2	2	2	2	2
C	0	4	3	3	0	4
D	0	4	4	3	1	3
Total	**0**	**36**	**32**	**27**	**7**	**26**
State Total	**37**	**72**	**64**	**54**	**14**	**52**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 16: **Number of sawmills—by selected equipment and county**

Economic area and county of mill	All mills	Barker	Chipper	Planer	Burner	Kiln
Puget Sound						
Pierce	3	3	3	2	0	1
Snohomish	5	5	5	4	1	3
Others*	3	3	3	3	1	3
Total	**11**	**11**	**11**	**9**	**2**	**7**
Olympic Peninsula						
Grays Harbor	3	3	1	1	0	1
Lewis	6	6	6	3	1	4
Others*	5	5	5	5	1	5
Total	**14**	**14**	**12**	**9**	**2**	**10**
Lower Columbia						
Cowlitz	3	3	3	2	1	2
Others*	4	3	3	3	0	3
Total	**7**	**6**	**6**	**5**	**1**	**5**
Central Washington/ Inland Empire	**5**	**5**	**3**	**4**	**2**	**4**
State total	**37**	**36**	**32**	**27**	**7**	**26**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 17: **Number of sawmills—by size** and headrig**

Economic area and mill size **	Circular Saw				Bandsaw			Gang Saw	Chipping Saw	Scragg Saw
	2ft	4ft	6ft	8ft	2ft	4ft	6ft	2ft	2ft	2ft
Puget Sound										
A	0	0	0	0	1	3	2	2	1	0
D	0	0	0	0	0	4	0	0	1	0
Others*	0	0	0	0	0	1	0	0	0	0
Total	**0**	**0**	**0**	**0**	**1**	**8**	**2**	**2**	**2**	**0**
Olympic Peninsula										
A	0	1	0	0	1	5	1	1	1	2
C	0	0	0	0	1	2	1	0	1	0
Total	**0**	**1**	**0**	**0**	**2**	**7**	**2**	**1**	**2**	**2**
Lower Columbia										
A	1	0	0	0	0	5	1	0	0	0
Others*	0	1	0	0	0	1	0	0	0	0
Total	**1**	**1**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**
Central Washington / Inland Empire	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**
State total										
A	1	1	0	0	2	16	4	3	2	4
B	0	0	0	0	0	2	0	0	0	0
C	0	0	0	0	1	2	1	0	1	0
D	0	1	0	0	0	5	0	0	1	0
Total	**1**	**2**	**0**	**0**	**3**	**25**	**5**	**3**	**4**	**4**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 18: **Sawmills' average operating days, capacities, consumption, production**

(thousand board feet Scribner or lumber tally)

Economic area and mill size**	Average annual operating days	Avg single shift capacity	Avg log consumption	Avg lumber tally production
Puget Sound				
A	213	194	80,102	138,511
D	230	24	14,492	17,894
Others*	239	107	16,886	25,102
Average	**227**	**108**	**37,160**	**60,503**
Olympic Peninsula				
A	222	266	49,235	129,283
C	241	58	10,758	20,885
Average	**232**	**162**	**29,996**	**75,084**
Lower Columbia				
A	250	411	48,328	116,314
Others*	244	3	200	200
Average	**247**	**207**	**24,264**	**58,257**
Central Washington / Inland Empire Average	**246**	**183**	**44,620**	**75,374**
State Average	**235**	**155**	**33,077**	**65,445**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 19: **Log consumption by sawmills—by log type**

(thousand board feet, Scribner scale)

Economic area and mill size	Roundwood: All roundwood	Roundwood: Sound logs	Roundwood: Utility logs	Peeler cores	Other
Puget Sound					
A	480,612	469,070	11,542	0	0
D	57,967	57,947	20	0	0
Others*	16,886	2,533	19,419	0	0
Total	**555,465**	**524,484**	**30,981**	**0**	**0**
Olympic Peninsula					
A	525,133	492,823	32,310	0	0
C	43,030	43,030	0	0	0
Total	**568,163**	**535,853**	**32,310**	**0**	**0**
Lower Columbia					
A	289,965	286,855	3,110	0	0
Others*	200	190	10	0	0
Total	**290,165**	**287,045**	**3,120**	**0**	**0**
Central Washington / Inland Empire	**223,098**	**155,194**	**67,904**	**0**	**0**
State total					
A	1,487,858	1,372,992	114,866	0	0
B	47,836	28,417	19,419	0	0
C	43,030	43,030	0	0	0
D	58,167	58,137	30	0	0
Total	**1,636,891**	**1,502,576**	**134,315**	**0**	**0**

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 20: **Log consumption by sawmills—by diameter**

(thousand board feet, Scribner)

Economic area and mill size**	Total	Log diameter in inches: less than 5	5 to 10	10 to 20	21 or more
Puget Sound					
A	480,612	0	302,034	146,202	32,377
D	57,967	20	11,645	33,979	12,323
Others*	16,886	507	12,665	3,377	338
Total	**555,465**	**527**	**326,343**	**183,558**	**45,038**
Olympic Peninsula					
A	525,133	7,276	326,278	162,583	28,995
C	43,030	452	33,415	9,058	106
Total	**568,163**	**7,728**	**359,693**	**171,641**	**29,101**
Lower Columbia					
A	289,965	17,632	185,099	75,090	12,145
Others*	200	2	40	120	38
Total	**290,165**	**17,634**	**185,139**	**75,210**	**12,183**
Central Washington / Inland Empire	**223,098**	**6,929**	**114,084**	**87,779**	**14,306**
State total					
A	1,487,858	31,837	925,947	447,203	82,871
B	47,836	507	14,212	27,828	5,290
C	43,030	452	33,415	9,058	106
D	58,167	22	11,685	34,099	12,361
Total	**1,636,891**	**32,818**	**985,259**	**518,187**	**100,628**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 21a: **Log consumption by sawmills—by original owners and mill size****

(thousand board feet, Scribner rule)

Economic area and mill size**	All Owners	State	National Forest	Bureau of Land Management	Other Public
Puget Sound					
A	480,612	140,504	4,879	0	9,718
D	57,967	25,484	60	0	0
Others*	16,886	10,132	0	0	0
Total	**555,465**	**176,119**	**4,939**	**0**	**9,718**
Olympic Peninsula					
A	525,133	138,726	14,204	0	5,000
C	43,030	11,025	226	678	983
Total	**568,163**	**149,751**	**14,430**	**678**	**5,983**
Lower Columbia					
A	289,965	12,622	17,237	2,452	2,710
Others*	200	0	2	0	0
Total	**290,165**	**12,622**	**17,239**	**2,452**	**2,710**
Central Washington / Inland Empire	**223,098**	**16,937**	**25,366**	**5,521**	**513**
State total					
A	1,487,858	306,004	61,067	7,973	17,941
B	47,836	12,917	619	0	0
C	43,030	11,025	226	678	983
D	58,167	25,484	62	0	0
Total	**1,636,891**	**355,430**	**61,974**	**8,651**	**18,924**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 21b: **Log consumption by sawmills—by original owners and mill size****
(thousand board feet, Scribner scale)

Economic area and mill-size class	Forest industry: Own Wood Supply	Forest industry: Other supply	Native American	Farmer and Farmer and misc. private
Puget Sound				
A	49,261	133,969	946	141,334
D	3,500	17,892	0	11,032
Others*	0	4,222	0	2,533
Total	**52,761**	**156,082**	**946**	**154,899**
Olympic Peninsula				
A	54,512	263,210	11,671	37,810
C	0	21,211	452	8,455
Total	**54,512**	**284,421**	**12,123**	**46,265**
Lower Columbia				
A	125,146	70,884	9,800	49,113
Others*	100	0	0	98
Total	**125,246**	**70,884**	**9,800**	**49,211**
Central Washington / Inland Empire	2,640	**36,224**	**102,349**	**33,547**
State total				
A	231,560	501,811	110,839	250,662
B	0	6,698	13,928	13,675
C	0	21,211	452	8,455
D	3,600	17,892	0	11,130
Total	**235,160**	**547,612**	**125,218**	**283,922**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 22a: **Logs consumed by sawmills—by counties and original owners**

(thousand board feet, Scribner scale)

Economic area and county of operation	All Owners	State	National Forest	Bureau of Land Management	Other Public
Puget Sound					
Pierce	244,165	35,827	0	0	6,048
Snohomish	144,571	62,675	2,222	0	2,970
Others*	166,729	77,618	2,717	0	700
Total	**555,465**	**176,119**	**4,939**	**0**	**9,718**
Olympic Peninsula					
Grays Harbor	157,116	52,395	7,172	0	4,307
Lewis	222,061	58,482	3,549	0	0
Others*	188,986	38,874	3,708	678	1,676
Total	**568,163**	**149,751**	**14,430**	**678**	**5,983**
Lower Columbia					
Cowlitz	216,427	7,647	85	0	258
Others*	73,738	4,975	17,154	2,452	2,452
Total	**290,165**	**12,622**	**17,239**	**2,452**	**2,710**
Central Washington/ Inland Empire	**223,098**	**16,937**	**25,366**	**5,521**	**513**
State Total	**1,636,891**	**355,430**	**61,974**	**8,651**	**18,924**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 22b: **Log consumption by sawmills—by counties and original owners**
(thousand board feet, Scribner scale)

Economic area and county	Forest Industry: Own Wood Supply	Forest Industry: Other Wood Supply	Native American	Farmer and misc. private
Economi Own Wood and coun Supply	**Other Wood Supply**	**Native American**	**miscellaneous private**	
Puget Sound				
Pierce	35,102	34,160	0	133,029
Snohomish	0	66,054	946	9,704
Others*	17,660	55,868	0	12,167
Total	**52,761**	**156,082**	**946**	**154,899**
Olympic Peninsula				
Grays Harbor	4,303	88,938	0	1
Lewis	10,518	117,185	8,189	24,138
Others*	39,691	78,299	3,934	22,127
Total	**54,512**	**284,421**	**12,123**	**46,265**
Lower Columbia				
Cowlitz	112,927	49,825	0	45,685
Others*	12,319	21,060	9,800	3,526
Total	**125,246**	**70,884**	**9,800**	**49,211**
Central Washington/ Inland Empire	**2,640**	**36,224**	**102,349**	**33,547**
State total	**235,160**	**547,612**	**125,218**	**283,922**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 23a: **Number of sawmills—by percentage of logs from various sources**

Economic area and mill size**	Percent of dependency: National Forest 0%	National Forest 1-33%	National Forest 34-66%	National Forest 67-100%	State 0%	State 1-33%	State 34-66%	State 67-100%	Bureau of Land Mgmt 0%	Bureau of Land Mgmt 1-33%	Bureau of Land Mgmt 34-66%	Bureau of Land Mgmt 67-100%
Puget Sound												
A	3	3	0	0	0	3	3	0	6	0	0	0
D	3	1	0	0	1	1	1	1	4	0	0	0
Others*	1	0	0	0	0	0	1	0	1	0	0	0
Total	**7**	**4**	**0**	**0**	**1**	**4**	**5**	**1**	**11**	**0**	**0**	**0**
Olympic Peninsula												
A	5	4	0	0	1	6	1	1	9	0	0	0
C	3	1	0	0	0	3	1	0	3	1	0	0
Total	**8**	**5**	**0**	**0**	**1**	**9**	**2**	**1**	**12**	**1**	**0**	**0**
Lower Columbia												
A	3	2	1	0	1	4	0	1	4	2	0	0
Others*	0	1	0	0	1	0	0	0	1	0	0	0
Total	**3**	**3**	**1**	**0**	**2**	**4**	**0**	**1**	**5**	**2**	**0**	**0**
Central Washington / Inland Empire	**1**	**4**	**0**	**0**	**1**	**4**	**0**	**0**	**3**	**2**	**0**	**0**
State total												
A	12	12	1	0	3	16	4	2	21	4	0	0
B	1	1	0	0	0	1	1	0	2	0	0	0
C	3	1	0	0	0	3	1	0	3	1	0	0
D	3	2	0	0	2	1	1	1	5	0	0	0
Total	**19**	**16**	**1**	**0**	**5**	**21**	**7**	**3**	**31**	**5**	**0**	**0**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 23b **Number of sawmills—by log percentage from various sources**

Economic area and mill size**	Percentage of log dependency											
					Forest Industry							
	Other Public				Own wood supply				Other wood supply			
	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%	0%	1-33%	34-66%	67-100%
Puget Sound												
A	3	3	0	0	3	3	0	0	1	2	3	0
D	4	0	0	0	3	1	0	0	1	2	1	0
Others*	1	0	0	0	1	0	0	0	0	1	0	0
Total	**8**	**3**	**0**	**0**	**7**	**4**	**0**	**0**	**2**	**5**	**4**	**0**
Olympic Peninsula												
A	8	2	0	0	6	3	1	0	1	4	5	0
C	2	2	0	0	4	0	0	0	0	2	2	0
Total	**10**	**4**	**0**	**0**	**10**	**3**	**1**	**0**	**1**	**6**	**7**	**0**
Lower Columbia												
A	3	3	0	0	4	0	2	0	0	4	2	0
Others*	1	0	0	0	0	0	1	0	1	0	0	0
Total	**4**	**3**	**0**	**0**	**4**	**0**	**3**	**0**	**1**	**4**	**2**	**0**
Central Washington / Inland Empire	**3**	**2**	**0**	**0**	**4**	**1**	**0**	**0**	**1**	**3**	**1**	**0**
State total												
A	16	10	0	0	16	7	3	0	3	12	11	0
B	2	0	0	0	2	0	0	0	0	2	0	0
C	2	2	0	0	4	0	0	0	0	2	2	0
D	**5**	**0**	**0**	**0**	**3**	**1**	**1**	**0**	**2**	**2**	**1**	**0**
Total	25	12	0	0	25	8	4	0	5	18	14	0

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 23c: **Number of sawmills—by log percentage from various sources**

Economic area and mill size	Percentage of log dependency: Native American 0%	Native American 1-33%	Native American 34-66%	Native American 67-100%	Farmer and misc. private 0%	Farmer and misc. private 1-33%	Farmer and misc. private 34-66%	Farmer and misc. private 67-100%
Puget Sound								
A	5	1	0	0	0	4	1	1
D	4	0	0	0	0	3	0	1
Others*	1	0	0	0	0	1	0	0
Total	**10**	**1**	**0**	**0**	**0**	**8**	**1**	**2**
Olympic Peninsula								
A	5	5	0	0	2	5	3	0
C	3	1	0	0	0	4	0	0
Total	**8**	**6**	**0**	**0**	**2**	**9**	**3**	**0**
Lower Columbia								
A	5	1	0	0	1	3	2	0
Others*	1	0	0	0	0	0	1	0
Total	**6**	**1**	**0**	**0**	**1**	**3**	**3**	**0**
Central Washington/ Inland Empire	**0**	**3**	**1**	**1**	**1**	**2**	**2**	**0**
State total								
A	15	10	0	1	4	14	7	1
B	1	0	1	0	0	1	1	0
C	3	1	0	0	0	4	0	0
D	5	0	0	0	0	3	1	1
Total	**24**	**11**	**1**	**1**	**4**	**22**	**9**	**2**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 24a: **Logs consumed by sawmills—by species and mill size ****

(thousand board feet, Scribner scale)

Economic area and mill size**	All species	Douglas-fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
A	480,612	363,882	115,380	1,350	0	0
D	57,967	53,446	537	0	0	119
Others*	16,886	0	0	0	0	0
Total	**555,465**	**417,329**	**115,917**	**1,350**	**0**	**119**
Olympic Peninsula						
A	555,103	247,070	211,146	0	5,463	0
C	43,030	7	2	1	1	0
Total	**598,133**	**247,078**	**211,148**	**1**	**5,464**	**0**
Lower Columbia						
A	289,965	225,547	4,905	20,327	0	2,450
Others*	200	118	0	0	0	70
Total	**290,165**	**225,665**	**4,905**	**20,327**	**0**	**2,520**
Central Washington / Inland Empire	**223,098**	**83,601**	**0**	**14,784**	**2,640**	**84,213**
State total						
A	1,487,857	920,101	331,430	36,461	8,103	56,022
B	47,836	0	0	0	0	30,641
C	43,030	7	2	1	1	0
D	58,167	53,564	537	0	0	189
Total	1,636,892	973,673	331,970	36,462	8,104	86,852

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 24b: **Log consumption by sawmills— by species and mill size****
(thousand board feet, Scribner scale)

Economic area and mill size	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
A	0	0	0	0	0
D	0	1,597	0	0	2,267
Others*	0	0	0	14,353	2,533
Total	**0**	**1,597**	**0**	**14,353**	**4,800**
Olympic Peninsula					
A	0	39,716	0	19,566	2,172
C	0	10,628	0	29,160	3,231
Total	**0**	**50,344**	**0**	**48,726**	**5,403**
Lower Columbia					
A	2,450	8,500	0	23,207	2,579
Others*	0	8	2	0	2
Total	**2,450**	**8,508**	**2**	**23,207**	**2,581**
Central Washington / Inland Empire	**12,838**	**25,022**	**0**	**0**	**0**
State total					
A	14,978	73,238	0	42,773	4,751
B	310	0	0	14,353	2,533
C	0	10,628	0	29,160	3,231
D	0	1,605	2	0	2,269
Total	**15,288**	**85,471**	**2**	**86,286**	**12,784**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 25a: **Log consumption by sawmills—by species and county**

(thousand board feet, Scribner)

Economic area and county	All species	Douglas-fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
Pierce	244,165	239,125	5,040	0	0	0
Snohomish	144,571	85,456	53,781	1,350	0	119
Others*	166,729	92,747	57,096	0	0	0
Total	**555,465**	**417,329**	**115,917**	**1,350**	**0**	**119**
Olympic Peninsula						
Grays Harbor	157,116	87,510	62,776	1	5,464	0
Lewis	222,061	86,517	75,456	0	0	0
Others*	188,986	73,050	72,917	0	0	0
Total	**568,163**	**247,078**	**211,148**	**1**	**5,464**	**0**
Lower Columbia						
Cowlitz	216,427	182,141	0	0	0	0
Others*	73,738	43,524	4,905	20,327	0	2,520
Total	**290,165**	**225,665**	**4,905**	**20,327**	**0**	**2,520**
Central Washington / Inland Empire	**223,098**	**83,601**	**0**	**14,784**	**2,640**	**84,213**
State Total	**1,636,891**	**973,673**	**331,970**	**36,462**	**8,104**	**86,852**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 25b: **Log consumed by sawmills—by species and county**
(thousand board feet, Scribner)

Economic area and county of operation	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
Pierce	0	0	0	0	0
Snohomish	0	1,597	0	0	2,267
Others*	0	0	0	14,353	2,533
Total	**0**	**1,597**	**0**	**14,353**	**4,800**
Olympic Peninsula					
Grays Harbor	0	1,366	0	0	0
Lewis	0	38,350	0	19,566	2,172
Others*	0	10,628	0	29,160	3,231
Total	**0**	**50,344**	**0**	**48,726**	**5,403**
Lower Columbia					
Cowlitz	0	8,500	0	23,207	2,579
Others*	2,450	8	2	0	2
Total	**2,450**	**8,508**	**2**	**23,207**	**2,581**
Central Washington / Inland Empire	**12,838**	**25,022**	**0**	**0**	**0**
State total	**15,288**	**85,471**	**2**	**86,286**	**12,784**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 26: **Wood and bark residues produced — by county**

(dry weight tons)

Economic area and county of operation	All residues	Wood Residues	Bark Residues
Puget Sound			
Pierce	92,992	70,290	22,702
Snohomish	205,603	158,222	47,381
Others*	247,837	190,070	57,767
Total	**546,432**	**418,582**	**127,850**
Olympic Peninsula			
Grays Harbor	86,401	34,924	51,477
Lewis	474,443	349,558	124,885
Others*	329,688	252,587	77,101
Total	**890,532**	**637,069**	**253,463**
Lower Columbia			
Cowlitz	352,934	269,842	83,092
Others*	159,567	123,630	35,937
Total	**512,501**	**393,472**	**119,029**
Central Washington / Inland Empire	**258,478**	**198,179**	**60,300**
State Total	**2,207,943**	**1,647,302**	**560,642**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 27a: **Wood residues (all types) from sawmills—mill size** and use**

(dry weight tons)

Economic area and mill size*	Total	Total used	All Types: Pulp	Board	Fuel	Other	Unused
Puget Sound							
A	360,901	360,901	106,876	0	129,874	124,151	0
D	36,846	36,846	22,840	880	5,310	7,816	0
Others*	20,835	20,835	15,061	0	1,155	4,619	0
Total	**418,582**	**418,582**	**144,777**	**880**	**136,339**	**136,586**	**0**
Olympic Peninsula							
A	577,504	577,504	365,556	31,344	130,802	49,802	0
C	59,565	58,581	43,570	0	15,011	0	984
Total	**637,069**	**636,085**	**409,126**	**31,344**	**145,813**	**49,802**	**984**
Lower Columbia							
A	393,378	360,711	298,887	11,815	1,883	48,126	32,667
Others*	94	80	0	0	58	22	14
Total	**393,472**	**360,791**	**298,887**	**11,815**	**1,941**	**48,148**	**32,681**
Central Washington / Inland Empire	**198,179**	**198,179**	**145,559**	**25,589**	**10,445**	**16,586**	**0**
State total							
A	1,507,765	1,475,098	898,717	65,721	273,004	237,656	32,667
B	43,032	43,032	33,222	3,027	1,155	5,628	0
C	59,565	58,581	43,570	0	15,011	0	984
D	36,940	36,926	22,840	880	5,368	7,838	14
Total	**1,647,302**	**1,613,637**	**998,349**	**69,628**	**294,538**	**251,122**	**33,665**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 27b: **Coarse residues from sawmills—mill size* and use**

(dry weight tons)

Economic area and mill-size class	Total	Total used	Coarse				
			Pulp	Board	Fuel	Other	Unused
Puget Sound							
A	206,418	206,418	80,166	0	125,144	1,108	0
D	22,464	22,464	21,960	0	0	504	0
Others*	15,061	15,061	15,061	0	0	0	0
Total	**243,943**	**243,943**	**117,187**	**0**	**125,144**	**1,612**	**0**
Olympic Peninsula							
A	357,416	357,416	278,067	8,640	67,829	2,880	0
C	40,605	40,605	40,605	0	0	0	0
Total	**398,021**	**398,021**	**318,672**	**8,640**	**67,829**	**2,880**	**0**
Lower Columbia							
A	261,063	261,063	252,423	0	0	8,640	0
Others*	72	58	0	0	58	0	14
Total	**261,135**	**261,121**	**252,423**	**0**	**58**	**8,640**	**14**
Central Washington / Inland Empire	**135,672**	**135,672**	**134,631**	**0**	**819**	**222**	**0**
State Total							
A	942,408	942,408	727,126	8,640	193,792	12,850	0
B	33,222	33,222	33,222	0	0	0	0
C	40,605	40,605	40,605	0	0	0	0
D	22,536	22,522	21,960	0	58	504	14
Total	**1,038,771**	**1,038,757**	**822,913**	**8,640**	**193,850**	**13,354**	**14**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 27c: **Medium wood residue from sawmills—by mill size** and use**
(dry weight tons)

Economic area and mill-size class	Total	Total used	Medium				
			Pulp	Board	Fuel	Other	Unused
Puget Sound							
A	66,486	66,486	3,440	0	0	63,046	0
D	6,096	6,096	0	0	360	5,736	0
Others*	0	0	0	0	0	0	0
Total	**72,582**	**72,582**	**3,440**	**0**	**360**	**68,782**	**0**
Olympic Peninsula							
A	90,758	90,758	14,973	22,704	28,425	24,656	0
C	4,506	4,506	0	0	4,506	0	0
Total	**95,264**	**95,264**	**14,973**	**22,704**	**32,931**	**24,656**	**0**
Lower Columbia							
A	50,636	17,969	8,919	4,597	0	4,453	32,667
Others*	0	0	0	0	0	0	0
Total	**50,636**	**17,969**	**8,919**	**4,597**	**0**	**4,453**	**32,667**
Central Washington / Inland Empire	**26,602**	**26,602**	**1,399**	**8,280**	**3,161**	**13,762**	**0**
State total							
A	230,446	197,779	28,731	32,554	31,586	104,908	32,667
B	4,036	4,036	0	3,027	0	1,009	0
C	4,506	4,506	0	0	4,506	0	0
D	6,096	6,096	0	0	360	5,736	0
Total	**245,084**	**212,417**	**28,731**	**35,581**	**36,452**	**111,653**	**32,667**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Continued

Table 27d: **Fine wood residues from sawmills—by mill size** and use**
(dry weight tons)

Economic area and mill-size class	Total	Total used	Fine				
			Pulp	Board	Fuel	Other	Unused
Puget Sound							
A	91,417	91,417	23,270	0	4,730	63,417	0
D	8,286	8,286	880	880	4,950	1,576	0
Others*	5,774	5,774	0	0	1,155	4,619	0
Total	**105,477**	**105,477**	**24,150**	**880**	**10,835**	**69,612**	**0**
Olympic Peninsula							
A	129,330	129,330	72,516	0	34,548	22,266	0
C	14,454	13,470	2,965	0	10,505	0	984
Total	**143,784**	**142,800**	**75,481**	**0**	**45,053**	**22,266**	**984**
Lower Columbia							
A	81,679	81,679	37,545	7,218	1,883	35,033	0
Others*	22	22	0	0	0	22	0
Total	**81,701**	**81,701**	**37,545**	**7,218**	**1,883**	**35,055**	**0**
Central Washington / Inland Empire	**35,905**	**35,905**	**9,529**	**17,309**	**6,465**	**2,602**	**0**
State total							
A	338,331	338,331	142,860	24,527	47,626	123,318	0
B	5,774	5,774	0	0	1,155	4,619	0
C	14,454	13,470	2,965	0	10,505	0	984
D	8,308	8,308	880	880	4,950	1,598	0
Total	**366,867**	**365,883**	**146,705**	**25,407**	**64,236**	**129,535**	**984**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 28: **Bark residues from sawmills—by mill size** and use**

(dry weight tons)

Economic area and mill size	Total	Total used	Use				
			Pulp	Board	Fuel	Other	Unused
Puget Sound							
A	107,243	107,243	0	0	0	107,243	0
D	12,072	12,072	0	0	0	12,072	0
Others*	8,535	8,535	0	0	8,535	0	0
Total	**127,850**	**127,850**	**0**	**0**	**8,535**	**119,315**	**0**
Olympic Peninsula							
A	232,199	232,199	2,110	0	155,533	74,556	0
C	21,264	19,810	0	0	19,810	0	1,454
Total	**253,463**	**252,009**	**2,110**	**0**	**175,343**	**74,556**	**1,454**
Lower Columbia	**119,029**	**119,029**	**9,304**	**0**	**24,599**	**85,126**	**0**
Central Washington/ Inland Empire	**60,299**	**60,299**	**0**	**0**	**35,324**	**24,975**	**0**
State total							
A	510,698	510,698	11,414	0	215,456	283,828	0
B	16,607	16,607	0	0	8,535	8,072	0
C	21,264	19,810	0	0	19,810	0	1,454
D	12,072	12,072	0	0	0	12,072	0
Total	**560,641**	**559,187**	**11,414**	**0**	**243,801**	**303,972**	**1,454**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill Size totals do not equal industry consumption totals because data was missing from a few mills.

Table 29a: **All types wood residue—by use and county**

(dry weight tons)

Economic area and county of operation	Total	Total used	Use: Pulp	Use: Board	Use: Fuel	Use: Other	Unused
Puget Sound							
Pierce	70,290	70,290	16,200	0	5,310	48,780	0
Snohomish	158,222	158,222	113,516	880	20,210	23,616	0
Others*	190,070	190,070	15,061	0	110,819	64,190	0
Total	**418,582**	**418,582**	**144,777**	**880**	**136,339**	**136,586**	**0**
Olympic Peninsula							
Grays Harbor	34,924	34,924	4,874	0	1,489	28,561	0
Lewis	349,558	349,558	275,348	17,416	37,085	19,709	0
Others*	252,587	251,603	128,904	13,928	107,239	1,532	984
Total	**637,069**	**636,085**	**409,126**	**31,344**	**145,813**	**49,802**	**984**
Lower Columbia							
Cowlitz	269,843	237,176	196,716	898	1,883	37,678	32,667
Others*	123,630	123,616	102,171	10,917	58	10,470	14
Total	**393,473**	**360,792**	**298,887**	**11,815**	**1,941**	**48,148**	**32,681**
Central Washington/ Inland Empire	**198,180**	**198,180**	**145,559**	**25,589**	**10,445**	**16,586**	**0**
State Total	**1,647,304**	**1,613,639**	**998,349**	**69,628**	**294,538**	**251,122**	**33,665**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued:

Table 29b: **Coarse wood residues—by use and county**
(dry weight tons)

Economic area and county of operation	Total	Total used	Coarse				
			Pulp	Board	Fuel	Other	Unused
Puget Sound							
Pierce	16,200	16,200	16,200	0	0	0	0
Snohomish	101,910	101,910	85,926	0	15,480	504	0
Others*	125,833	125,833	15,061	0	109,664	1,108	0
Total	**243,943**	**243,943**	**117,187**	**0**	**125,144**	**1,612**	**0**
Olympic Peninsula							
Grays Harbor	4,874	4,874	4,874	0	0	0	0
Lewis	226,909	226,909	215,389	8,640	0	2,880	0
Others*	166,238	166,238	98,409	0	67,829	0	0
Total	**398,021**	**398,021**	**318,672**	**8,640**	**67,829**	**2,880**	**0**
Lower Columbia							
Cowlitz	180,203	180,203	171,563	0	0	8,640	0
Others*	80,932	80,918	80,860	0	58	0	14
Total	**261,135**	**261,121**	**252,423**	**0**	**58**	**8,640**	**14**
Central Washington/ Inland Empire	**135,672**	**135,672**	**134,631**	**0**	**819**	**222**	**0**
State total	**1,038,771**	**1,038,757**	**822,913**	**8,640**	**193,850**	**13,354**	**14**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 29c: **Fine wood residue—by use and county**

(dry weight tons)

Economic area and county of operation	Total	Total used	Fine				Unused
			Pulp	Board	Fuel	Other	
Puget Sound							
Pierce	31,315	31,315	0	0	4,950	26,365	0
Snohomish	32,561	32,561	24,150	880	4,730	2,801	0
Others*	39,621	39,621	0	0	1,155	38,466	0
Total	**103,497**	**103,497**	**24,150**	**880**	**10,835**	**67,632**	**0**
Olympic Peninsula							
Grays Harbor	5,394	5,394	0	0	1,489	3,905	0
Lewis	85,548	85,548	57,195	0	11,524	16,829	0
Others*	52,842	51,858	18,286	0	32,040	1,532	984
Total	**143,784**	**142,800**	**75,481**	**0**	**45,053**	**22,266**	**984**
Lower Columbia							
Cowlitz	56,972	56,972	25,153	898	1,883	29,038	0
Others*	24,729	24,729	12,392	6,320	0	6,017	0
Total	**81,701**	**81,701**	**37,545**	**7,218**	**1,883**	**35,055**	**0**
Central Washington/ Inland Empire	**35,905**	**35,905**	**9,529**	**17,309**	**6,465**	**2,602**	**0**
State total	**364,887**	**363,903**	**146,705**	**25,407**	**64,236**	**127,555**	**984**

* Some counties were combined to avoid disclosure of individual corporate data.

Continued

Table 29d: **Medium wood residues —by use and county**
(dry weight tons)

Economic area and county of operation	Total	Total used	Medium				Unused
			Pulp	Board	Fuel	Other	
Puget Sound							
Pierce	22,775	22,775	0	0	360	22,415	0
Snohomish	23,751	23,751	3,440	0	0	20,311	0
Others*	24,616	24,616	0	0	0	24,616	0
Total	**71,142**	**71,142**	**3,440**	**0**	**360**	**67,342**	**0**
Olympic Peninsula							
Grays Harbor	24,656	24,656	0	0	0	24,656	0
Lewis	37,101	37,101	2,764	8,776	25,561	0	0
Others*	33,507	33,507	12,209	13,928	7,370	0	0
Total	**95,264**	**95,264**	**14,973**	**22,704**	**32,931**	**24,656**	**0**
Lower Columbia							
Cowlitz	32,667	0	0	0	0	0	32,667
Others*	17,969	17,969	8,919	4,597	0	4,453	0
Total	**50,636**	**17,969**	**8,919**	**4,597**	**0**	**4,453**	**32,667**
Central Washington/ Inland Empire	**26,602**	**26,602**	**1,399**	**8,280**	**3,161**	**13,762**	**0**
State Total	**243,644**	**210,977**	**28,731**	**35,581**	**36,452**	**110,213**	**32,667**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 30: **Lumber production—by headrig and county**

(thousand board feet, Scribner)

Economic area and county of operation	All types	Circular saw	Band saw	Gang saw	Chipping saw	Scragg double cut saw
Puget Sound						
Pierce	284,684	0	79,437	191,747	13,500	0
Snohomish	292,261	0	292,261	0	0	0
Others*	350,802	0	349,002	0	1,800	0
Total	**927,747**	**0**	**720,700**	**191,747**	**15,300**	**0**
Olympic Peninsula						
Grays Harbor	357,235	35,502	321,733	0	0	0
Lewis	687,684	0	358,080	52,828	219,956	56,820
Others*	432,520	0	257,317	174,105	1,098	0
Total	**1,477,439**	**35,502**	**937,130**	**226,933**	**221,054**	**56,820**
Lower Columbia						
Cowlitz	473,272	163,333	309,939	0	0	0
Others*	224,812	100	224,712	0	0	0
Total	**698,084**	**163,433**	**534,651**	**0**	**0**	**0**
Central Washington/ Inland Empire	**376,868**	**0**	**165,651**	**0**	**0**	**211,217**
State Total	**3,480,138**	**198,935**	**2,358,132**	**418,680**	**236,354**	**268,037**

* Some counties were combined to avoid disclosure of individual corporate data.

Table 31: **Lumber produced by sawmills—by softwood and hardwood**

(thousand board feet, lumber tally)

Economic area and mil size	Total	Softwood	Hardwood
Puget Sound			
A	831,068	831,068	0
D	71,577	68,137	3,440
Others*	25,102	0	25,102
Total	**927,747**	**899,205**	**28,542**
Olympic Peninsula			
A	1,393,900	1,311,375	82,525
C	83,539	39,663	43,876
Total	**1,477,439**	**1,351,038**	**126,401**
Lower Columbia			
A	697,884	656,945	40,939
Others*	200	200	0
Total	**698,084**	**657,145**	**40,939**
Central Washington / Inland Empire	**376,868**	**376,868**	**0**
State Total	**3,480,138**	**3,284,256**	**195,882**

* Some mill sizes were combined to avoid disclosure of individual corporate data.

** Mill size indicates the capacity to process logs (in thousand board feet)
Class A: More than 120 mbf
Class B: 80-120 mbf
Class C: 40-80 mbf
Class D: less than 40 mbf

Table 32: **Number of veneer and plywood mills—by lathe diameter**

(Lathe log diameter limit in inches)

Economic area		Total	Layup only	10-19	20-29	30-39
	Puget Sound	2	1	0	0	1
	Olympic Peninsula	3	1	0	0	2
	Lower Columbia	1	0	0	0	1
	Inland Empire	1	0	0	0	1
State Total	**State Total**	**7**	**2**	**0**	**0**	**5**

Table 33: **Veneer and plywood mills—by minimum core size (inches)**

Economic area		Total	Lathe diameter limit 3	4	No lathe
	Puget Sound	2	1	0	1
	Olympic Peninsula	3	0	2	1
	Lower Columbia	1	0	1	0
	Inland Empire	1	0	1	0
State total		**7**	**1**	**4**	**2**

Table 34: **Veneer and plywood mills—by 8-Hour single shift capacity**

(thousand square feet, 3/8-inch)

Economic area		Veneer only	Layup only	Veneer and Layup Veneer	Layup
	Puget Sound	0	135	700	0
	Olympic Peninsula	800	300	0	0
	Lower Columbia	0	0	322	206
	Inland Empire	0	0	350	280
State Total		**800**	**435**	**1,372**	**486**

Table 35: **Logs consumed by veneer and plywood mills—by diameter**

(thousand board feet, Scribner)

Minimum log diameter	Volume	Percent
Less than 5 inches	0	0
5.0 to 10.9 inches	118,518	52
11.0 to 20.9 inches	93,287	41
21 inches or more	14,154	6
State total	**225,959**	**100**

Table 36: **Veneer and plywood production**

(thousand square feet, 3/8-inch basis)

Veneer	**846,209**
Plywood	**683,517**

Table 37: **Number of veneer and plywood mills—by selected equipment**

Economic area	Total Mills	4-foot lathe	8-foot lathe	Slicer	Veneer chipper	Core chipper	Cold press	Hot press	Burner
State total	**7**	**1**	**5**	**0**	**6**	**5**	**1**	**4**	**3**

Table 38: **Average number of operating days —veneer and plywood mills**

Mill type	Average days statewide	Mills
State average	**286**	**7**

Table 39: **Wood residues only (not bark) from veneer and plywood mills—by use**

(bone dry tons)

		Total	Used				
Economic area	**Total**	**used**	**Pulp**	**Board**	**Fuel**	**Other**	**Unused**
Puget Sound							
Coarse	84,576	84,576	38,305	0	23,850	22,421	0
Medium	0	0	0	0	0	0	0
Fine	1,650	1,650	0	0	1,650	0	0
Total	**86,226**	**86,226**	**38,305**	**0**	**25,500**	**22,421**	**0**
Olympic Peninsula							
Coarse	161,870	161,870	108,316	0	23,580	29,974	0
Medium	0	0	0	0	0	0	0
Fine	5,895	5,895	0	0	5,895	0	0
Total	**167,765**	**167,765**	**108,316**	**0**	**29,475**	**29,974**	**0**
Lower Columbia							
Coarse	54,694	54,694	45,084	4,280	5,330	0	0
Medium	0	0	0	0	0	0	0
Fine	0	0	0	0	0	0	0
Total	**54,694**	**54,694**	**45,084**	**4,280**	**5,330**	**0**	**0**
Inland Empire							
Coarse	207,490	207,490	182,850	4,928	19,712	0	0
Medium	0	0	0	0	0	0	0
Fine	0	0	0	0	0	0	0
Total	**207,490**	**207,490**	**182,850**	**4,928**	**19,712**	**0**	**0**
State total							
Coarse	508,630	508,630	374,555	9,208	72,472	52,395	0
Medium	0	0	0	0	0	0	0
Fine	7,545	7,545	0	0	7,545	0	0
Total	**516,175**	**516,175**	**374,555**	**9,208**	**80,017**	**52,395**	**0**

Table 40 **Numbers of Pulp Mills by processing type**

Economic area	All mills	Semi-Sulfite	Sulfate	Groundwood	Chemical
Puget Sound	2	0	1	1	0
Olympic Peninsula	3	0	2	1	0
Lower Columbia	5	1	2	1	1
Inland Empire	2	0	1	1	0
State total	**12**	**1**	**6**	**4**	**1**

Table 41: **Pulp mill capacity (single 8-hour shift)—by type of mill**

(bone dry tons)

Pulp mill type	Capacity	Avg. days	Number
Sulfite	1,400	0	1
Sulfate	5,104	122	6
Groundwood and Semi-chemical	2,795	144.8	5
State total	**9,299**	89	**12**

Table 42: **Pulp mill production—by product, area and type of operation**

(bone dry tons)

		Products				
Economic area	All products	Newsprint	Bleached paper	Unbleached paper	Other paper	Market pulp
Puget Sound	484,283	0	20,500	18,000	388,483	57,300
Olympic Peninsula	778,474	335,000	0	298,474	0	145,000
Lower Columbia	2,607,128	376,000	885,629	413,155	826,070	106,274
Inland Empire	558,542	193,218	186,573	0	133,047	45,704
State total	**4,428,427**	**904,218**	**1,092,702**	**729,629**	**1,347,600**	**354,278**
Type of Operation						
Sulfite	379,039	0	282,006	0	97,033	0
Sulfate	2,912,850	335,000	449,696	603,974	1,207,184	316,996
Groundwood	1,086,788	569,218	361,000	75,905	43,383	37,282
Semi-chemical	49,750	0	0	49,750	0	0
State total	**4,428,427**	**904,218**	**1,092,702**	**729,629**	**1,347,600**	**354,278**

Table 43: **Wood fiber consumption by pulp mills—by fiber type**

(bone dry tons)

		Chips					
Economic area	**Total**	**Total Chips**	**From mill residues**	**From chip mill**	**From logs**	**Sawdust shavings**	**Waste paper**
Puget Sound	786,853	740,000	548,000	192,000	0	0	46,853
Olympic Peninsula	1,184,271	691,412	328,556	362,856	225,895	46,257	185,954
Lower Columbia	3,788,066	3,086,750	1,990,084	1,096,666	0	158,627	542,689
Inland Empire	789,407	588,837	477,909	110,928	0	63,905	136,665
State total	**6,548,597**	**5,106,999**	**3,344,549**	**1,762,450**	**225,895**	**268,789**	**912,161**

Table 44: **Roundwood chip consumption by pulp mills—by species**

(bone dry tons)

Economic area	**All species**	**Douglas-fir**	**Hemlock**	**True fir**	**Spruce**	**Ponderosa pine**	**Lodgepole pine**	**Western redcedar**	**Other conifer**	**Red alder**	**Other hardwood**
Puget Sound	0	0	0	0	0	0	0	0	0	0	0
Olympic Peninsula	76,896	31,527	36,141	4,614	3,076	769	769	0	0	0	0
Lower Columbia	835,000	549,598	148,688	0	0	26,602	26,602	0	66,504	8,688	8,319
Inland Empire	110,928	59,901	0	0	0	35,497	0	2,219	7,765	0	5,546
State total	**1,022,824**	**641,026**	**184,829**	**4,614**	**3,076**	**62,868**	**27,371**	**2,219**	**74,269**	**8,688**	**13,865**

Table 45: **Logs, sawdust and roundwood chip use by pulp mills—by state**

(bone dry tons)

Economic area	Total	Washington	Oregon	Idaho	Montana	British Columbia	Other States
Puget Sound							
Roundwood chips	192,000	192,000	0	0	0	0	0
Sawdust	0	0	0	0	0	0	0
Logs	0	0	0	0	0	0	0
Total	**192,000**	**192,000**	**0**	**0**	**0**	**0**	**0**
Olympic Peninsula							
Roundwood chips	362,856	350,611	8,400	0	0	3,845	0
Sawdust	46,257	46,257	0	0	0	0	0
Logs	260,648	242,402	0	0	0	5,213	13,032
Total	**669,761**	**639,270**	**8,400**	**0**	**0**	**9,058**	**13,032**
Lower Columbia							
Roundwood chips	1,096,666	723,586	373,080	0	0	0	0
Sawdust	95,200	47,600	47,600	0	0	0	0
Logs	0	0	0	0	0	0	0
Total	**1,191,866**	**771,186**	**420,680**	**0**	**0**	**0**	**0**
Inland Empire							
Roundwood chips	110,928	44,371	55,464	9,984	1,109	0	0
Sawdust	63,905	57,515	6,391	0	0	0	0
Logs	0	0	0	0	0	0	0
Total	**174,833**	**101,886**	**61,855**	**9,984**	**1,109**	**0**	**0**
State total							
Roundwood chips	1,762,450	1,310,569	436,944	9,984	1,109	3,845	0
Sawdust	205,362	151,372	53,991	0	0	0	0
Logs	260,648	242,402	0	0	0	5,213	13,032
Total	**2,228,460**	**1,704,342**	**490,934**	**9,984**	**1,109**	**9,058**	**13,032**

These totals do not include waste paper or chips from mill residues

Table 46: **Shake and shingle mill capacity and operating days**

Total single shift capacity (Squares)

	Number	Shake	Shingle	Other	Average number of operating days / year
State total	**7**	**113**	**153**	**10**	**153**

Table 47: **Wood consumption by shake and shingle mills—by type**

(thousand board feet, Scribner)

	All types	Sound logs	Utility logs	Other
State total	**1,334**	**39**	**0**	**1,295**

"Other" includes blocks, bolts, lumber, etc

Table 48: **Shake and shingle mill production**

(squares)

			Product	
Economic area	**Total**	**Shakes**	**Shingles**	**Other**
Olympic Peninsula	32,300	237	10,099	21,964
Lower Columbia	2,100	0	2,100	0
State total	**34,400**	**237**	**12,199**	**21,964**

Table 49: **Log consumption by shake and shingle mills—by original owners**

(thousand board feet, Scribner)

	All owners	State	Nat'l Forest	Bureau of Land Management	Other public	Forest industry: Own wood supply	Forest industry: Other wood supply	Native American	Farmer, misc. private
State total	**39**	**0**	**1**	**0**	**0**	**2**	**3**	**23**	**2**

Table 50 **Log consumption by shake and shingle mills—by diameter**

(thousand board feet, Scribner)

		Log diameter in inches			
	Total*	less than 5	5 to 10	10 to 20	21 or more
Total	**30**	**0**	**6**	**0**	**24**

* The total for Table 50 does not equal the All owners consumption in Table 50 because there is some data missing on log consumption by diameter.

Table 51a: **Wood and bark residues—production by shake and shingle mills**

(dry weight tons)

Economic area and county of operation	All residues			Wood Residues		
	Total	Used	Unused	Total	Used	Unused
Olympic Peninsula						
Clallam	1,985	0	1,985	1,985	0	1,985
Grays Harbor	2,218	2,218	0	2,218	2,218	0
Lewis	10,000	10,000	0	4,400	4,400	0
Total	**14,203**	**12,218**	**1,985**	**8,603**	**6,618**	**1,985**
Lower Columbia	**2,163**	**2,163**	**0**	**1,575**	**1,575**	**0**
State total	**16,366**	**14,381**	**1,985**	**10,178**	**8,193**	**1,985**

Table 51b: **Bark residues—production by shake and shingle mills**

(dry weight tons)

Economic area	Bark Residue		
	Total	Used	Unused
Olympic Peninsula	5,600	5,600	0
Lower Columbia	588	588	0
State total	**6,188**	**6,188**	**0**

Table 52a: **Wood residues—by use and economic area**

(dry weight tons)

			All Types			
Economic area	**Total**	**Total used**	**Pulp**	**Fuel**	**Other**	**Unused**
Olympic Peninsula	8,603	6,618	0	1,320	5,298	1,985
Lower Columbia	1,575	1,575	0	0	1,575	0
State Total	**10,178**	**8,193**	**0**	**1,320**	**6,873**	**1,985**

Table 52b: **Wood residues—by use and economic area**

(dry weight tons)

		Total	Coarse			
	Total	**used**	**Pulp**	**Fuel**	**Other**	**Unused**
State total	**7,080**	**6,618**	**0**	**1,320**	**5,298**	**462**

Table 52c: **Wood residues—by use and economic area**

(dry weight tons)

		Total	Fine			
Economic area	**Total**	**used**	**Pulp**	**Fuel**	**Other**	**Unused**
Olympic Peninsula	1,523	0	0	0	0	1,523
Lower Columbia	1,575	1,575	0	0	1,575	0
State total	**3,098**	**1,575**	**0**	**0**	**1,575**	**1,523**

Table 52d: **Bark residues—by use and economic area**

(dry weight tons)

		Total				
Economic area	**Total**	**used**	**Pulp**	**Fuel**	**Other**	**Unused**
Olympic Peninsula	5,600	5,600	0	0	5,600	0
Lower Columbia	588	588	0	0	588	0
State total	**6,188**	**6,188**	**0**	**0**	**6,188**	**0**

Table 53: **Export logs—by diameter in inches**

(thousand board feet, Scribner)

		Diameter in inches			
Port	**Total**	**Less than 5**	**5 to 11**	**11 to 21**	**21 or more**
Everett	18,700	0	7,293	9,163	2,244
Grays Harbor	26,544	0	21,235	5,309	0
Longview	524,719	0	129,572	338,733	27,945
Olympia	118,183	0	29,546	85,092	3,545
Port Angeles	86,468	0	37,470	45,395	3,603
Seattle	38,897	0	11,216	24,983	2,698
Tacoma	68,762	0	22,096	29,555	17,112
State total	**882,273**	**0**	**258,428**	**538,228**	**57,147**

Table 54: **Export logs—by species**

(thousand board feet, Scribner rule)

Port	**All species**	**Douglas-fir**	**Hemlock**	**True firs**	**Spruce**	**Ponderosa Pine**	**Other conifers**	**Hardwoods**
Everett	18,700	1,870	13,090	1,870	1,870	0	0	0
Grays	26,544	5,309	21,235	0	0	0	0	0
Longview	524,719	396,707	93,542	9,512	12,074	12884.24	0	0
Olympia	118,183	93,365	21,273	2,364	1,182	0	0	0
Port Angeles	86,468	15,491	58,584	1,945	10,448	0	0	0
Seattle	38,897	25,810	9,763	2,413	689	0	177.2	44.3
Tacoma	68,762	26,692	31,947	9,203	463	0	456.22	0
State total	**882,273**	**565,245**	**249,435**	**27,306**	**26,725**	**12884.24**	**633.42**	**44.3**

Table 55: **Export logs—by port and original owners**

(thousand board feet, Scribner rule)

		Forest industry			
Port	**Total**	**Own wood supply**	**Other wood supply**	**Native American**	**Farmer and misc. private**
Everett	18,700	0	16,830	935	935
Grays Harbor	26,544	0	23,890	2,654	0
Longview	524,719	337,493	79,421	12,884	66,451
Olympia	118,183	83,910	20,091	1,182	13,000
Port Angeles	86,468	2,523	42,883	0	41,062
Seattle	38,897	17,234	21,221	222	222
Tacoma	68,762	0	41,060	2,281	2,281
Total	**882,273**	**441,159**	**245,396**	**20,158**	**123,951**

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Table 56 **Post, pole and piling mills—by capacity and operating days**

Economic area	Mills	Daily capacity (thousand board feet, Scribner scale)		Average number of operating days in 2016	
		Peeling	Treatment	Peeling	Treatment
State total	2	12	20	231	288

Table 57: **Log consumption by post, pole and piling mills—by log diameter**

(thousand board feet, Scribner)

	Total	Diameter in inches			
		Less than 5	5 to 11	11 to 21	21 or more
State total	**45,362**	**0**	**36,650**	**8,712**	**0**

Table 58: **Post, pole, and piling mills production—by treatment**

(thousand board feet, Scribner scale)

	Total	Untreated	Treated
State total	**49,861**	**34,717**	**15,144**

Table 59: **Number of chip mills—by capacity and operating days**

Economic area	Mills	8-hour capacity bone dry tons	Avg. days operated
State Total	**10**	**4,205**	**241**

Table 60: **Log consumption by chipping mills—by diameter in inches**

(thousand board feet, Scribner)

		Diameter in inches			
Economic area	**Total**	**Less than 5**	**5 to 11**	**11 to 21**	**21 or more**
Puget Sound	46,123	24,832	12,067	4,612	4,612
Olympic Peninsula	195,307	76,354	61,992	33,731	23,231
Central Washington	6,153	3,077	1,846	615	615
Inland Empire	61,959	8,687	8,618	39,327	5,327
State total	**309,542**	**112,948**	**84,523**	**78,285**	**33,786**

Table 61: **Log consumption by chip mills—by original owners**

(thousand board feet, Scribner scale)

						Forest industry			Farmer,
Economic area	**All owners**	**National Forest**	**State**	**BLM**	**Other public**	**Own supply**	**Other supply**	**Tribes**	**misc. private**
Puget Sound	46,123	11,546	0	0	0	177	27,304	1,453	5,642
Olympic Peninsula	195,307	17,523	2,415	0	13,861	0	127,561	11,865	22,081
Central Washington	6,153	2,461	615	0	0	0	1,846	0	1,231
Inland Empire	61,959	24,503	8,889	0	97	193	3,581	193	24,503
State Total	**309,542**	**56,034**	**11,920**	**0**	**13,958**	**370**	**160,292**	**13,512**	**53,457**

Table 62: **Chip mills—production**

(bone dry tons)

Economic area	Chip production
Central Washington	12,175
Inland Empire	188,878
Olympic Peninsula	594,750
Puget Sound	133,330
State total	**929,133**

Engineered wood is a significant sector of the wood products marketplace

On the following pages, this edition features five Washington-made wood products that have never previously appeared in the Mill Survey.

Since 1968, the Mill Survey has presented data compiled only from mills and other operations that processed wood products from timber. Those products included lumber, plywood, paper, pulp, shakes and shingles, export logs, utility poles, and chips.

However, for decades there have been several companies with dozens of employees who produced structural wood commodities not from logs. For instance, plywood was originally produced by companies that also produced veneer. But the first Washington Mill Survey (1968) reported more than half the plywood mills purchased veneer produced by separate operations, consuming no logs.

Today many products known as "engineered" or "remanufactured" wood products fill niches or compete in traditional markets.

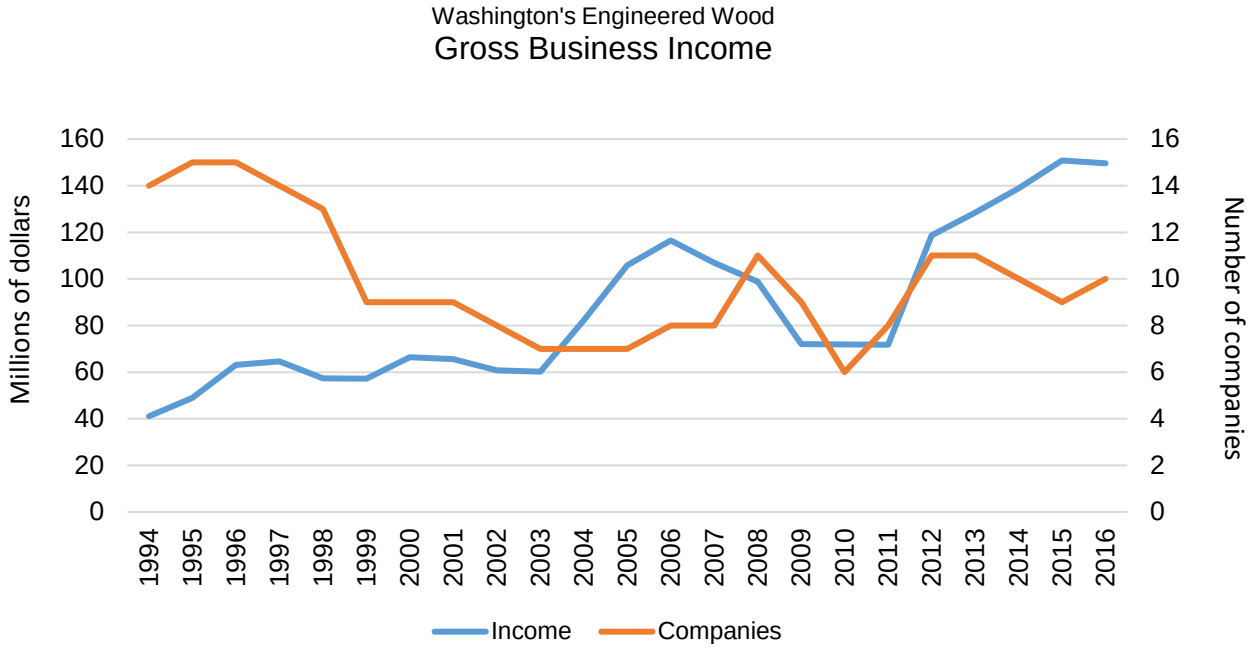
This report recognizes four wood commodities manufactured in Washington that contribute to Washington's overall wood products industry. They include: cross-laminated timber, laminated veneer lumber, remanufactured cedar siding, utility pole crossarms, and glulam lumber.

Washington's original engineered wood was plywood. Early versions of plywood appeared in the 19th century but were little used. Then a Grays Harbor chemist produced the first all-weather adhesive that allowed outdoor use of plywood.

After World War II a number of engineered wood products appeared, including glulam, laminated veneer lumber and the new European-invented cross-laminated timber (CLT). CLT has since gained notice for its strength, which some architects assert is sufficient to construct high-rise wooden skyscrapers. For a few months this year the University of British Columbia was noted for constructing the world's tallest wood building (18 stories, with two stories of concrete foundation).

Other engineered wood products examined in this report are utility pole crossarms and remanufactured cedar siding. These companies are known nationally, but they use relatively low volumes of wood. Their production does not use volume measurements that can be readily assessed against other wood products.

The aggregate total gross business revenue for all engineered wood operations in Washington was $70 million in 2011. It more than doubled by 2016. See chart below.



Gross Business Income from **Washington Department of Revenue**

Cross-laminated timber boosts wood's future through strength and new uses

This classroom module, made of CLT panels, was assembled March 7 in Mount Vernon, Wash.
Photo/Walsh Construction, Mahlum Architects

Invented in Austria in the 1990s, cross-laminated timber (CLT) is an "engineered wood," a cross between plywood panels and glulam beams. Instead of thin layers of veneer, it is layered panels of solid wood, such as 2x6s, up to several feet thick and 10 feet wide.

CLT has been extensively tested in Europe for durability and strength, and more recently in North America by architects, wood products manufacturers, environmental advocates, Washington State University, the University of Washington, and members of the Washington State Legislature. It's touted as the strongest wood construction material available—strong enough to support skyscrapers and elevator shafts, and for “safe rooms” for homes in hurricane regions. It has been declared fire-resistant because the compacted wood fibers only smolder briefly in the presence of an open flame. Additionally, in a test by the WoodWorks Wood Products Council several CLT structures within 75 feet of a 200-pound dynamite explosion remained intact, demonstrating CLT's suitability for blast-resistant construction.

Earlier this year the University of British Columbia completed the world's tallest wood structure, the 18-story Brock Commons student residential building. It was recognized for using CLT made of blue-stained bark beetle-infested wood from B.C.'s eastern forests. However, U.S. building codes do not allow the use of wood for anything more than light structures. If high-rise building codes are updated to include CLT, then it could compete with concrete and steel for larger construction. Currently, the most ambitious project for CLT in Washington is a 14-story tower in Tacoma that will use CLT for each floor within a steel superstructure.

In 2016, the Washington State Legislature approved $5.5 million for the construction of modular classroom buildings built with CLT panels. The 900-square-foot classrooms were assembled for school districts in Seattle, Sequim, Mount Vernon, Toppenish, and Wapato.

CLT is potentially a high value construction material manufactured with low value wood (such as forest thinnings, beetle kill and wildfire salvage). Currently, there are only five mills in North America that produce CLT panels: three in Canada and two in the U.S. In the Pacific Northwest, the Oregon company D.R. Johnson has produced CLT wood panels for a few years. There are plans for two CLT mills in Washington by the end of 2018—one in Colville by Vaagen Brothers near their lumber and chip mills and one by high-tech construction firm Katerra in Spokane.

CLT may also offer advantages in terms of carbon-equivalent emissions. Even after its own processing, CLT continues to hold a ton of carbon dioxide for each cubic yard of wood produced while the fuel consumption and chemical processes in manufacturing a ton of concrete releases a ton of carbon dioxide.

World's second largest laminated veneer lumber mill operates in Burlington

Laminated veneer lumber (LVL) is an engineered wood product, like plywood, made of multiple layers of thin veneer bonded with adhesive. LVL can replace solid wood beams and headers in sizes ranging from 1.75 x 10-inch to 3.5 x 12 inch dimensions. It has several advantages over single piece lumber: it is stronger and doesn't warp as it dries, remaining consistent in size, quality and strength.

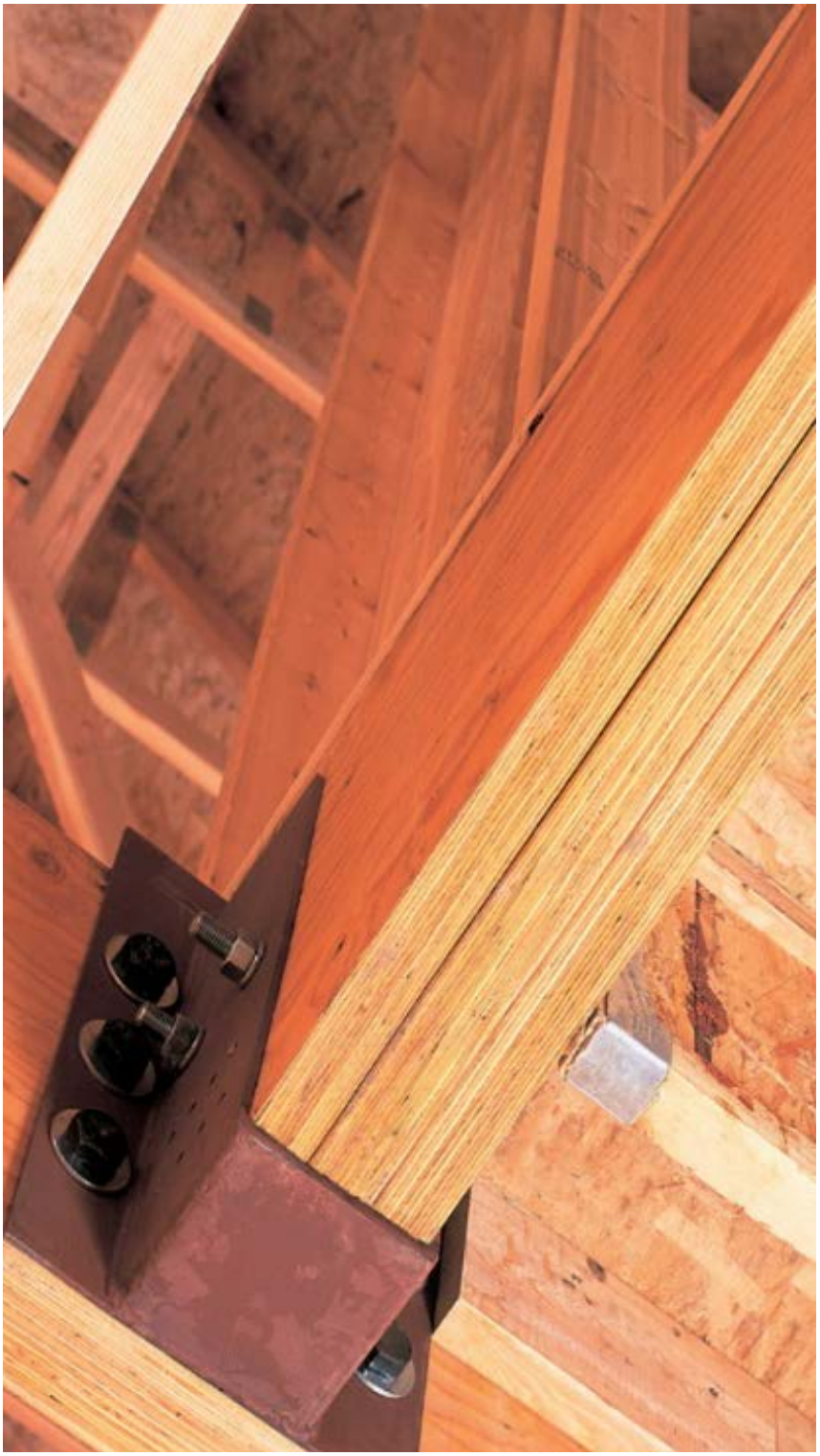
LVL lumber is used in 90 percent of the homes in the northern Rocky Mountain states, 50 percent in the West Coast and is popular in the Midwest and Northeast. LVL—and wood homes in general—is less prevalent in southern states where the hot and humid climate is susceptible to termites which feed on dampened wood.

LVL costs more than solid wood lumber, but total building project costs may be less, because fewer support columns are required. The extra strength of LVL opens up floor plan designs that allow more open interior spaces.

Washington's laminated veneer lumber production is a small sector of the state's entire wood products industry, with output of about 2 to 4 percent of the volume of solid lumber mills. The only LVL mill in the state, Pacific Woodtech, is located in Burlington on a 30-acre site with more than 150 employees. It is the second largest LVL operation in the world; Weyerhaeuser's LVL mill in Louisiana is the world's largest. There are fourteen LVL mills in North America, five in Europe, three in New Zealand, and others in Australia and China.

Pacific Woodtech was established in 1998 by Itochu Corporation, the third largest general trading company in Japan. It receives its veneer from another Itochu mill, Chiba Lumber in British Columbia.

Besides LVL lumber, Pacific Woodtech manufactures i-joists, another engineered wood invention from the 1960s. Traditional joists use numerous boards arranged on edge to support floors and ceilings. I-joists are made of particle boards with top and bottom flanges that bear greater weight with less wood.



This beam is actually three 1.75" x 11 7/8" laminated boards glued together. The layered pieces can withstand heavy loads.
Photo/Pacific Woodtech

High-tech remanufactured cedar siding lies flat, stays straight, looks higher quality than its price

Established in Sumas, north of Bellingham, and hugging the Canadian border is Cedarprime, a cedar wood facility in Washington. It's not a traditional mill, but a remanufacturing plant that produces solid and engineered cedar siding and other products.

The company's solid bevel siding is made of single pieces of sloping cedar while the finger-jointed bevel siding is engineered from several pieces. Clear sections of cedar are cut out of low-grade 2x6 cedar boards and connected by gluing together "fingers" cut into the ends. With finger-jointing, knots and other imperfections can be removed and create a high quality natural wood surface with little wood waste in a variety of lengths and a relatively low cost.

Cedar wood has several advantages. Its natural resins protect it from insects and decay. It readily accepts stain and paint. And like other engineered wood products, the cedar siding is straight, lays flat and has a higher quality appearance than man-made materials.

Cedarprime is owned by Canadian-based Interfor which designed the facility to process low-grade cedar into higher-grade wood products. The planners also took advantage of newly discovered purposes for old equipment. CedarPrime's siding is technically classified as "remanufactured wood" products. Trees grown in Canadian forests are pre-cut and delivered to the Sumas mill. Last year it produced about 15.8 million board feet of wood products.

The company's 50 employees sometimes work three shifts per day producing interior and exterior cedar wood products for domestic (much in Massachusetts) and export (Europe and Asia) markets eager for high quality cedar construction material.

Bevel cedar siding**. Photo/Cedarprime Company**

Brooks Manufacturing produces up to 70% of U.S. telephone pole crossarms

When neighbors in north Bellingham see large stacks of wood at Brooks Manufacturing, some may mistake it for a sawmill. Instead, Brooks buys pre-cut lumber from sawmills and turns it into specialized crossarms for utility poles sold in nearly every state.

Crossarms are customized wood beams that are mounted horizontally that carry heavy power wires and light coaxial TV, Internet and optical fiber cables. More than "a piece of wood with holes in it," crossarms are engineered wood products that last up to 75 years. Crossarm preparation, which hasn't changed for decades, begins by kiln-drying the wood 3-4 days or as long as 2-3 weeks, to sterilize the fiber, killing all bugs and fungi. The wood is finished by planing off about an eighth of an inch to a suitable size and drilling the correct pattern of holes.

Finally, the wood is scored with shallow cuts and placed in long tubes. A solution of bio-diesel and preservative is alternately squeezed into and vacuumed out of the wood. In the final step the bio-diesel–which is the carrier–is withdrawn and recycled. The preservative remains for the life of the crossarm, preventing wood diseases, fungus and decay.

Crossarms were invented for the electification of the U.S. Before the Civil War, thin telegraph lines spread communication cross country attached directly to poles. But electric power distribution by the 1880s required heavy cables that were carried by robust pole structures.

Electricity came to each city piecemeal and a standard pattern of crossarm holes was never established. To this day keeping track of the multitude of designs is one of the biggest tasks in making crossarms for a country-wide clientel. (By contrast nearly all rural areas were connected through cooperative farm associations, which used the same hole patterns.) Brooks maintains a library of 10,000 templates of drilling hole patterns. The library includes drilling patterns for crossarms sold to Canadian and overseas clients (about 10 percent of sales) which likely use metric measurements.

This H-frame transmission structure in California was built by Brooks Manufacturing. **Photo/Brooks Manufacturing**

Crossarms are essentially the same size: 8 to 10 feet for power lines and 4 to 5 feet for Internet and TV cables. Brooks consumes about 12.5 million board feet of wood each year, which is a low volume compared to average sawmills. But that volume makes about a million 8-foot crossarms, about 70 percent of the U.S. annual total.

For projects using higher voltage transmission poles, Brooks produces special dimensional framing beams (see photo). The company also manufactures a wide variety of hardware, such as adjustable spacer fittings, swinging angle brackets and guy plates.

Since 1935 the company has been owned by the Brooks family which originally made wood staves, pipes and water pipes. Today Brooks employs nearly 50 manufacturing and administration positions in its heavily automated operation.

Bellingham is an ideal location because of the abundance of Douglas-fir, the preferred wood species for crossarms. But to secure its supplies Brooks also buys 18 to 24-foot lengths from sawmills in California and Oregon. Southern yellow pine and other species don't have the same consistency of fiber, which contributes to longevity. Several crossarm beams can be cut from a large diameter Douglas-fir, while only a single crossarm can be cut from a smaller tree species.

Logs suitable for crossarms bring a higher price than trees cut for standard dimensional lumber. They require a near-straight growth line, minimal deviations (no large knots) and a slight grain slope. So crossarm manufacturers must compete with other wood product manufacturers who buy high or average quality wood at greater volumes.

Glulam

Washington State University Multicultural Building **Photo/Calvert Glulam**

Glulam mixes structural strength with attractive exposed wood beams

Photo/APA — The Engineered Wood Association

As an engineered wood product, only plywood has a longer history than glulam (glue laminated timber) in Washington State.

Glulam beams are made by binding dimensional lumber with moisture resistant adhesives. It can be compared to laminated veneer lumber, which is made of layers of thin glued veneer and cross-laminated timber (CLT), which is made of 2x6-inch boards. Glulam uses less wood, but is stronger than solid wood. It is more easily customized for special architectural needs, such as 90-foot beams. Additionally, glulam can be manufactured in a range of designs from straight and curved beams to peak, cambered and Tudor arches.

Calvert Glulam may have been the first operation to apply this post-WWII wood technology in the Pacific Northwest. It marketed early versions of glued structural beams that are stronger, straighter and nearly as photogenic as solid wood.

With two sites in Clark County, Calvert Glulam now produces and ships glulam beams across the U.S. and exports up to 20 percent of its inventory — depending on the strength of the dollar. Nearly all of the 75 employees are trained in custom fabrication. Some beams are hidden behind surface material. But Calvert's beams are meant for projects that openly display the distinctive beauty of wood, such as a dome in Taiwan, external buttresses in a private home, a creek bridge in an urban park, curved joists, and bold trusses.

The company uses wood from Washington, Oregon, Idaho and Montana and yellow pine from southern states. In recent years glulam has been boosted by the campaign to use more "green" materials for construction.