



Washington Mill Survey 2010

Series Report #21

March 2012



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Acknowledgements

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Cover photo: In an image of good times for log exports, a 500-foot log ship loaded logs from the port of Port Angeles in March 2010, the first log ship in that port in ten years. Arranged by Olympia-based Merrill & Ring, the log bulk loader *Koombana Bay* arrived to pick up a load of logs bound for China.

Photo: Heather Buckmaster / Merrill & Ring, Inc.

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Table of Contents

Acknowledgements	ii
Table of Contents	iv-vi
Introduction	vii
2010 Washington Mill Summary	viii-xi
Exports to China throw a life line to log sales	xii-xv
Forest Certification	xvi-xvii
Map: Economic areas used in this report	xviii
Abbreviations and conversions	xviii
Mill Survey Analysis	1
Graph 1 Production	2
Graph 2 Number of operations	3
Graph 3 Log consumption by sector	4
Graph 4 Log consumption by log size and sector	5
Graph 5 Tree species	6
Graph 6 Log sources	7
Graph 7 Wood residues	8
Graph 8 Productivity	9
Graph 9 Sawmills	10
Graph 10 Veneer and plywood mills	11-12
Graph 11 Pulp mills	13
Graph 12 Shake & shingle mills	14
Graph 13 Log export operations	15
Graph 14 Post, pole, and piling mills	16
Graph 15 Chipping mills	17
Value estimates for Washington’s 2010 primary wood products	18
Statewide Mills Survey	19
Table 1 Number of operations—by county and sector	20
Table 2 Wood (logs and residues) consumption—by sector	21
Table 3 Log consumption—by sector and state of origin	22
Table 4 Log consumption—by county of operation and harvest	23
a County of log harvest (Puget Sound Economic Area)	23
b County of log harvest (Olympic Peninsula Economic Area)	24
c County of log harvest (Lower Columbia Economic Area)	25
d County of log harvest (Central Washington Economic Area)	26
e County of log harvest (Inland Empire Economic Area)	27
f Log consumption—by state or province of log harvest	28
Table 5 Logs harvested from National Forests	29
Table 6 Operations—by percentage of logs from original owners	30-32
Table 7 Operations—by sector and percentage of logs from original owners	33-35
Table 8 Log consumption—by sector and original log owners	36-37
Table 9 Log consumption—by species	38-39
Table 10 Wood and bark residues—production and use	40
Table 11 Hardwoods consumed—by volume	40
Table 12 Log consumption—by diameter	41
Graph 16 State or province origin of logs consumed in Washington	42
Graph 17 Volume of logs consumed—by wood products industries	42

Table of Contents, continued

Sawmills	43
Table 13 Number of sawmills—by mill size	44
Table 14 Sawmills’ capacity—by 8-hour single shift and mill size	45
Table 15 Number of sawmills—by selected equipment and mill size	46
Table 16 Number of sawmills—by selected equipment and counties	47
Table 17 Number of sawmills — by size and type of saw	48
Table 18 Sawmills’ average operating days, capacities, consumption and production ..	49
Table 19 Log consumption by sawmills—by log type	50
Table 20 Log consumption by sawmills—by diameter (in inches)	51
Table 21 Log consumption by sawmills—by original owners and mill size	52-53
Table 22 Log consumption by sawmills—by counties and original owners	54-55
Table 23 Number of sawmills—by percentage of logs from various sources	56-58
Graph 16 County rank by log volume	59
Table 24 Logs consumed by sawmills—by species and mill size	60-61
Table 25 Log consumption by sawmills—by species and county	62-63
Table 26 Wood and bark residues—by county	64
Table 27 Wood residues from sawmills—by mill size and use	66-69
Table 28 Bark residues from sawmills—by mill size and use	70
Table 29 Bark residues from sawmills—by county and use	71
Table 30 Sawmills production—by saw type and county	72
Table 31 Sawmills production —by softwood and hardwood	73
Graph 17 Tree species consumed by sawmills	74
Graph 18 Proportion of softwood and hardwood lumber produced by sawmills	74
Veneer and Plywood	75
Table 32 Veneer-producing mills—by lathe log diameter	76
Table 33 Veneer-producing mills—by minimum core size	76
Table 34 Veneer and plywood mills—by 8-Hour single shift production capacity	76
Table 35 Logs consumed by veneer and plywood mills—by diameter	77
Table 36 Veneer and plywood production	77
Table 37 Number of veneer and plywood mills—by selected equipment	77
Table 38 Wood residues from veneer and plywood mills	78
Table 39 Average number of operating days—veneer and plywood mills	78
Pulp	79
Table 40 Number of pulp mills—by processing type	80
Table 41 Pulp mills’ capacity (single 8-hour shift)—by mill type	80
Table 42 Average operating days of pulp mills	80
Table 43 Pulp mill production—by product, area and type of operation	81
Graph 19 Pulp mills’ production	81
Table 44 Wood fiber consumption by pulp mills—by fiber type	82
Table 45 Roundwood chip consumption by pulp mills—by species	82
Graph 21 Pulp mills’ raw material	82
Table 46 Logs, sawdust and roundwood chip use by pulp mills—by state	83
Chip mills provide more roundwood chips for pulp mills.	83
Lumber cut of Puget Sound 1890	84

Continued on next page

Table of Contents, continued

Shake & Shingle	85
Table 47 Shake & shingle mills' capacity and operating days	86
Table 48 Shake & shingle mills with selected equipment	86
Table 49 Log consumption by shake & shingle mills—by type	86
Table 50 Shake & shingle mills' production	86
Table 51 Log consumption by shake & shingle mills—by original owners	87
Table 52 Log consumption by shake & shingle mills—by diameter	87
Table 53 Wood and bark residues—produced by shake & shingle mills	87
Table 54 Wood residues—by use	88
Log Export	89
Table 55 Export logs—by port	90
Table 56 Export logs—by diameter in inches	90
Table 57 Export logs—by species	90
Table 58 Export logs—by port and original owners	91
Table 59 Export logs—county of original owners	91
Graph 22 Log Exports—by Washington ports	91
Graph 23 Origin of logs exported through Washington's ports	92
Graph 24 Original owners of exported logs	92
Post, Pole, and Piling	93
Table 60 Number of post, pole and piling mills—by operating days and capacity	94
Table 61 Number of post, pole, and piling mills—by selected equipment	94
Table 62 Log consumption by post, pole, and piling mills—by diameter	94
Table 63 Post, pole, and piling mills' production	94
Graph 25 Post, pole, and piling logs by diameter	95
Chipping	95
Table 64 Number of chipping operations—by capacity and operating days	98
Table 65 Log consumption by log chipping mills—by diameter in inches	98
Table 66 Log consumption by log chipping mills—by original owners	98
Table 67 Log consumption by log chipping mills—by species	99
Table 68 Chip production—by economic area	99
Graph 26 Tree species consumed by chipping mills	99
Graph 27 Chipping log diameters	100

Throughout this report the term “operations” refers to both mills (where logs are processed) and log export businesses.

Due to rounding, figures may not add to total shown.

Introduction

This report is a census of Washington's primary wood products industry. It covers mills and log exporting operations that traditionally use logs. While pulp and plywood mills have modified their manufacturing processes and now use few logs, they are kept in the Mill Survey to maintain statistical continuity.

Few places on earth grow timber—Douglas fir and related species—that produce prized structural lumber so efficiently as in Washington's productive coastal sites. In just 30 years Douglas-fir trees can reach a merchantable size with a diameter of 12 to 16 inches or larger and a height of 70 to 90 feet, depending on the site. A single acre of trees grown to a rotation age of 60 years can yield 30,000 to 60,000 board feet, enough to build two to three average-sized homes.

That compares favorably with Georgia, which is the second largest producer of logs in the U.S. South where forests and wood products is a major economic engine. Georgia's industrial loblolly pine forests annually yield only 3,000 to 10,000 board feet per acre. In 2007 Georgia's total harvest was 1 bbf. Washington produced three times as much.

The U.S. is the world's largest producer of softwood products. Among states, Washington is the second largest producer after Oregon. In Washington, 16.2 million acres (out of a total of 23 million forested acres) primarily produce softwood.

Computer software and aerospace industries are major drivers in Washington's economy. Wood products contribute nearly \$5 billion annually or 1.5 percent of the state's Gross Domestic Product. The economic impact of wood is compounded because it is ranked the state's third largest export commodity, according to the state's Department of Commerce.

Though the industry has been seriously affected by the prolonged recession with its fallout on housing construction, the log export sector saw a burst of business in 2010 primarily from China. Total exports were 916 mmbf,

Seven wood product sectors:

- Sawmills
- Veneer and Plywood
- Log Chipping
- Pulp
- Post, Pole, and Piling
- Shake and Shingle
- Log Export Operations

increasing 70 percent from 2006. Eastern Washington also deserves prominent mention since its mills consume 10.4 percent of the state's total log volume.

The agricultural side of managing forest lands (growing, logging) by itself is worth nearly \$2 billion in gross business income annually, according to the state's Department of Revenue.

Published biennially since the late 1960s, *Washington Mill Survey* covers product manufacturing and mill characteristics from data reported by mill managers and owners.

While other agencies and private wood industry associations publish general summaries, the Mill Survey provides unique details and statistics. The tables include data on log volumes, mill capacities, log species, days of operation, and the uses of wood residues. It is a resource for a wide audience of industry managers, economists, public officials and state residents.

Most log measurements are in thousand board feet Scribner rule—a mid-19th century scale that estimates a log's potential lumber volume. It factors in the taper, the low end diameter and height. Due to mill efficiencies in recent decades, sawmills' net output (measured in "lumber tally") usually exceeds log input in Scribner scale. This explains why in 2010 sawmills produced 28 percent less mill residue than in 2000.

Since the survey covers the entire industry, sampling errors are not a factor. However, some data were estimated based on statistics from previous years. Also some tables and categories (industries, counties or economic areas) were combined into "Other" categories to avoid disclosure of any company's proprietary data.

Report Summary: 2010 Washington Mill Survey

How are forest economists and business managers judging the 2010 primary wood products industry? Was it a bad year— because shake and shingle operations made **65 percent fewer** western redcedar products, compared to 2000? Or was it a good year— because Washington’s ports exported **70 percent more** logs than in 2006? Many of these wood economic questions are answered in the **2010 Washington Mill Survey**. Some saw signs of a declining industry. Others executed necessary changes to adapt to a new future.

The **Mill Survey** expresses the year’s outcome in measurements of volumes, percentages, values, averages and statistics. The following four pages highlight some of the changes that contributed to the outcome.

In 2010 the total volume of wood (logs) consumed by the primary wood products operations **increased by 5 percent** over 2008. The increase came after 10 years of declines. The biggest volume increase in 2010 was **log exports** which jumped 39 percent from 661 mmbf in 2008 to 916 mmbf in 2010. The largest percentage increase was in the **post-pole-piling** sector, which consumed 38 mmbf of logs in 2008 and 60.5 mmbf in 2010 — a 60 percent increase.

During 2010 all Washington mills and operations consumed 3.7 billion board feet (Scribner) of logs. Here is the breakdown by sector: (million board feet)

Lumber	2,000 mmbf
Veneer and plywood	196 mmbf
Pulp mills*	60 mmbf
Shakes and shingles	5 mmbf
Exports	916 mmbf
Posts-poles-pilings	49 mmbf
Chips	402 mmbf

*Pulp mills also consumed 6,486,487 tons of mill residues

Original owners of logs (in million board feet)

Owner category	2000	2010
Forest Industry	2,544	2,215
Small private landowners	775	413
Native American	274	183
Federal	68	112
State	477	718
Other Public	49	33

In 2010 the state's **plywood** mills produced 807.5 million square feet of plywood (3/8" basis). That is enough plywood to cover 14,000 NFL football fields, including endzones.

Between 2006 and 2010, the volume of lumber produced by Washington's **sawmills** dropped 32 percent to 3.36 billion board feet. But the 2010 volume of lumber produced was enough to build 180,000 homes.

The state's **pulp** industry produced a total of 3.9 million bone dry tons of products ranging from bleached and unbleached paper, newsprint (newspapers), other paper and market pulp. The total was 10 percent more than produced in 2008.

More than 99 percent of the western redcedar logs, used to manufacture cedar **shakes**, came from tribal forests.

In 2000 waste paper made up 5.19 percent of the total raw material for Washington's **pulp** mills. In 2010 wastepaper was 14.7 percent of the total raw material — an increase of nearly 1 million tons of recycled paper per year.

Between 2000 and 2010 cedar **shake and shingle** mills' production declined 70 percent.

The total volume of logs **exported** through Washington's ports increased 70 percent between 2006 and 2010.

In 2004 the state's **post-pole-piling** industry produced 23,177 mbf of poles and in 2010 produced 60,496 mbf — a 161 percent increase. In the same time period the number of post-pole-piling mills dropped from eight to six. The average production for the remaining fewer mills was up 248%.

Wood and bark **residues**, totalling 4.57 million bone dry tons, came from sawmills (83.7 percent), veneer and plywood mills (15 percent) and shake and shingle mills (1.3 percent).

Table of Contents

In 2010 more than 15 percent of all logs processed in Washington’s mills (or exported through Washington’s ports) came from **other states/province**. The source (by percentage of the logs) came from: Washington (84.43 percent), Oregon (10.91 percent), Idaho (2.11 percent), Montana (0.05 percent), British Columbia (2.07 percent) and others (0.42 percent).

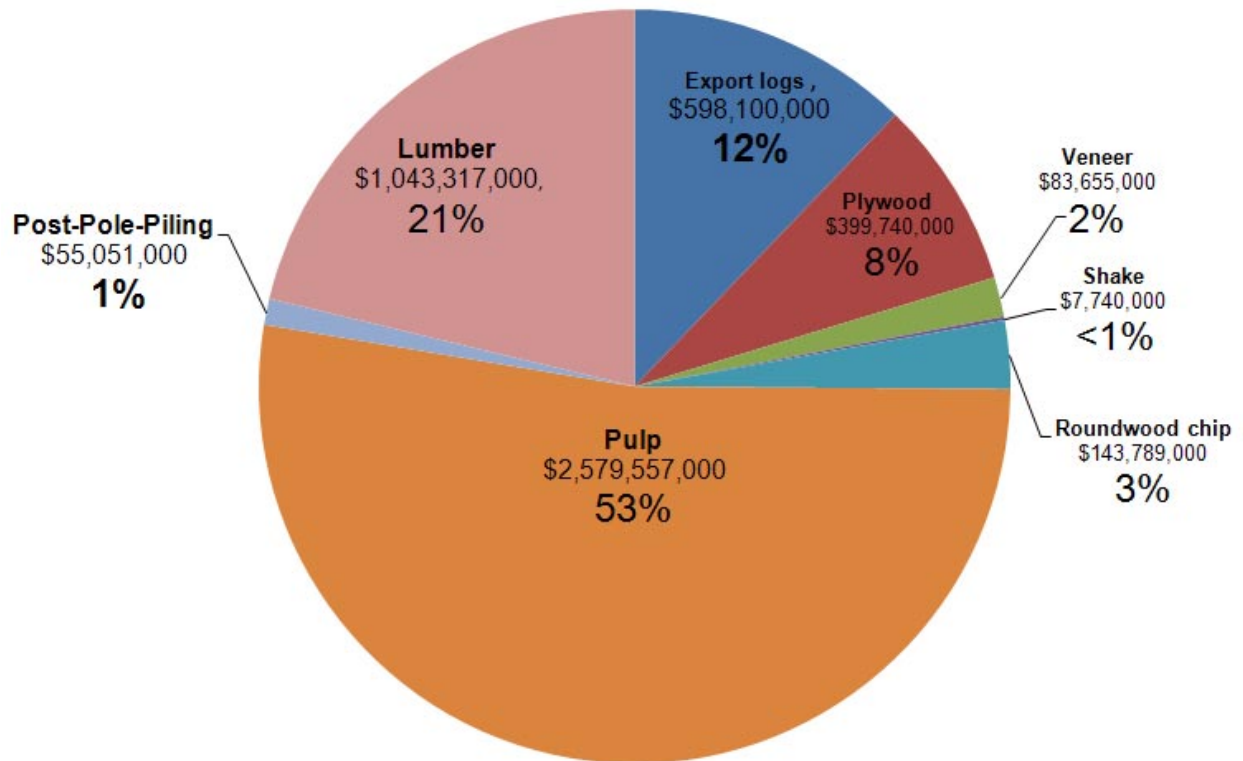
Between 2000 and 2002 the number of **chip mills** dropped from 25 to 13 and log consumption fell from 432,946 mbf to 191,229 mbf. Since 2002 chip mills’ log consumption has returned to 402 mmbf. **Post-pole-piling** production fell from 1.4 mmbf to 617,714 mbf during 2000-2002 and has returned to 1.4 mmbf. But the increase in volume occurred despite the fact that the number of mills has remained at the 13-14 level.

Top timber-consuming counties in 2010 (logs in thousand board feet Scribner)		Wood species used in 2010 by percentage (by percentage of total logs)	
Lewis	361,955	Douglas-fir:	60%
Clallam	302,821	Hemlock:	23%
Cowlitz	301,404	Ponderosa pine:	3%
Grays Harbor	225,379	Western redcedar:	3%
Snohomish	216,711	Red alder:	5%
Mason	148,587	True firs:	4%
Skagit	141,803	Spruce:	1%
Pacific	141,329	Lodgepole pine:	1%
Thurston	139,870	Other softwoods:	<1%
Stevens	130,205	Other hardwoods:	<1%

The wet and moderate temperatures of Washington’s west side and the dry and extreme temperatures of the east side contribute to the state’s diversity of commercial tree species. **Westside** mill operations processed all of the state’s red alder and other hardwoods, 92.3 percent of the Douglas-fir and 93.7 percent of the hemlock. Whereas, the **eastside** mills processed all of the lodgepole pine and 93.7 percent of the Ponderosa pine.

Log exports made the greatest impact on the primary wood products sector in 2010. Three ports re-opened facilities for handling break bulk log ships. Seattle, which has no facilities for handling bulk log ships, shipped more than 50 mmbf of logs in containers when more than 60 log exporters opted for Seattle’s port.

Revenue from 2010 primary wood products: nearly \$5 billion



Shake: shakes, shingles, other cedar products

Pulp: newsprint, bleached/unbleached paper, other paper, market pulp

Lumber: softwood: \$889,635,861; hardwood: \$153,631,620





Port of Olympia workers secure a load of logs on a log ship bound for China. **Jim Knight / Port of Olympia Photo**

Exports to China throw a life line to log sales

But local mills pay higher prices

At 4 a.m. March 8, 2010, the *Koombana Bay*, a large blue and red log ship, slipped into the Port of Port Angeles' newly re-opened log export facilities. Over the next three days longshoremen loaded approximately 2 mmbf of logs. The previous four weeks the logs had been stripped of bark and stacked on the dock by log exporter Merrill and Ring.

When the logs were loaded, the *Koombana Bay* steamed down Washington's Pacific coast and made another log cargo stop in Longview. Then it embarked on the final leg of its journey, crossing the Pacific Ocean to Korea.

It was the first log ship to visit the Port of Port Angeles in a decade.

It was more than just another log cargo stop. The ship's arrival signaled that a life line was tossed to Washington's declining wood products industry by the sudden global demand for Pacific Northwest logs. The new demand revitalized log shipping at several ports while keeping log and wood product producers afloat during a deep recession.

In 2010 Washington ports exported 916 mmbf of logs, the highest export log volume since 1997. In the previous four years log exports increased 70 percent. According to the Washington Mill Survey, in 2006 the state exported only 541 mmbf.

On a broader scale Washington exported \$1.3 billion worth of all forest products (logs, furniture, etc.) in 2010 with \$411 million going to China, according to wisertrade.org.

Washington is the largest exporter of wood products in the U.S. with an 18 percent market share in 2010, according to the Center for International Trade in Forest Products. The state exports more than twice as much volume as second-place Oregon. During the recession years (2007-2010) Washington increased its share over the other three major log export states (North Carolina, California and Pennsylvania).

Most of this is due to China's emergence as the top market for Washington's logs, reported the Washington Department of Commerce. The state's top five markets for logs are China (38.6 percent), Japan (18.9 percent), Canada (18.2 percent), Korea (9.5 percent) and United Kingdom (3 percent).

Forest Tax break

This booming export trade is a much needed boost for log sellers who winced when recession-stunted log prices were less than \$200 per thousand board feet (mbf). In 2010 the average export price for all softwoods was \$633 / mbf.

The log export bonanza is having such a large economic impact that timber owners who are legally prohibited from exporting logs may qualify for a tax break from the state's Department of Revenue (DOR), said John Walkowiak, DOR's Forest Tax program manager for the Washington Department of Revenue.

"The sheer volume of the log exports prompted the DOR to determine the numbers that qualify timber owners for a Domestic Market Adjustment for the first time since the first half of 1992.

"The Department of Revenue is providing qualifying taxpayers (whose private timber is legally restricted

from log export due to federal regulations) with an adjustment of \$5/MBF for the second half of 2011 timber excise tax reporting.”

Walkowiak added that the export log pricing impact will be bumped up to \$12/MBF for 2012.

Port expansions

Log sellers noted that China was buying logs regardless of quality or species. China even bought large volumes of British Columbia lodgepole pine that had been infested with mountain pine beetles.

To meet this demand Northwest ports quickly expanded by buying new equipment or bringing log ship facilities out of mothballs. The ports’ efforts escalated this year.

The Board of the Port of Tacoma last June approved a \$1.7 million investment to keep its log yard operating. This expenditure was unexpected because Weyerhaeuser moved its Tacoma-based log export business to the Port of Olympia in 2006. (Weyerhaeuser also operates its own facilities at the Port of Longview.)

In 2010 nearly 70 mmbf of logs that moved through Tacoma’s log yard and shipped in bulk was new business, emphasized Larry Kvidera, a marketing and trade specialist for the Port of Tacoma.

Ports that re-opened for log business included Everett (in April, after 4 years) and Astoria (in October 2010, after 14 years). Even Portland’s Columbia River port received its first log ship on July 29 after 24 years.

According to statistics from the US Forest Service, Washington is looking at an 83 percent increase in log exports -- from the first half of 2010 (200.6 mmbf) to the

first half of 2011 (366.2 mmbf). Through August 2011 the Port of Tacoma’s log exports were up 140.3 percent than the same period in 2010, the News Tribune reported.

Dockworkers load logs into large open-hulled log ships. Also known as “break bulk” ships these vessels hold millions of board feet of logs that are stacked and secured above the deck for the cross-Pacific journey.

Export log boom not good for all wood industry

The growing export business with China has been helpful to investors and workers in the wood industry. One hardwood mill official said two years ago the decline of the construction industry forced his company to lay off workers. Now the Chinese have taken a strong interest in alder wood, which is not native to China. Chinese representatives like the bright red alder wood’s color and the good results with stain, he said.

“Without the Chinese trade,” he said, “it would be very grim.”

But the benefits from log exports have not helped every sector in the wood products industry.

China’s eagerness for U.S. logs has pushed prices higher. Mills, already struggling because of the paralyzed domestic construction industry, now face the higher log prices.

“We’re not just competing with other mills,” one mill manager said. “Now we’re competing with China.”

Russian log tariffs and China

How did China’s big wallet end up in Washington? For years China was the biggest customer of Russian logs.

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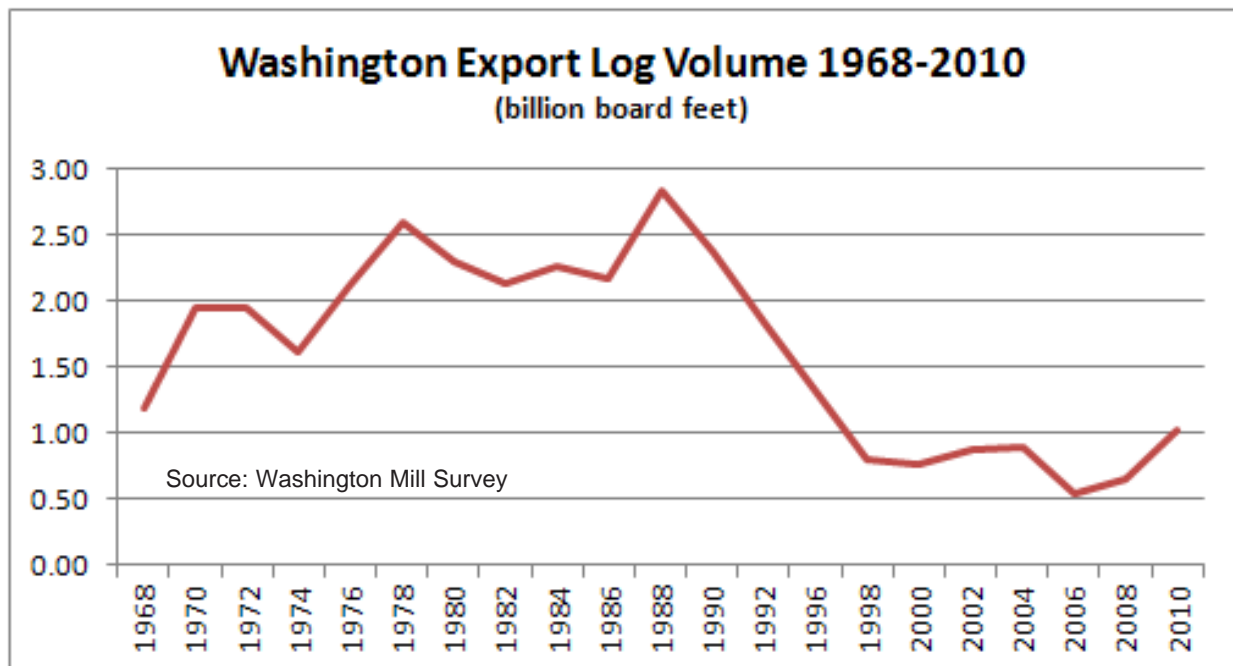


Table of Contents



Photo courtesy of **Port of Longview**

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After the fall of communism, Russia entered global markets and discovered it was far behind in efficient production. Like other developing countries, Russia was encouraged by economists to cultivate higher value industries. Selling only raw materials does not generate the level of gross domestic product to improve lifestyles.

So, in 2009 Russia attached a 25 percent export tax on raw logs to nurture its own wood products industry. China responded by sending representatives to the far corners of the Pacific Rim in search of other log sources.

Roger Redifer, an Aberdeen-based log export broker, has a slightly different view. He believes China's industrial growth by itself increased China's demand for wood – not the shift from Russia as a source for logs. He added that Russia will take years to construct an efficient infrastructure to compete with other log exporting countries. For instance, it now costs Russia more to harvest and transport Siberian logs from Lake Baikal to market than the logs' global value.

Regardless of the cause China needed logs for two primary parts of its economy. Not only did the nation need logs for its growing wood products industry but also did its "housing-led economy." Property construction accounted for 13 percent of China's GDP in 2010, twice the share of the 1990s. China needs logs to support a large part of her economy.

The Chinese search led to Australia, the U.S. West Coast, New Zealand, Africa, Vietnam and a few scattered Pacific archipelagos. By mid-2009 newspaper headlines in British Columbia, Washington and Oregon heralded the arrival of empty log ships bound for China.

Logs to Japan

This is the second time since the middle of the 20th century that Asia has become a major importer of Pacific Northwest logs. In the 1970s and 1980s Japan imported

1 billion to 3 billion board feet of logs annually. Japanese importers willingly paid a premium price, especially for the Pacific Northwest's Douglas fir which is used as much for its beauty as its strength and near perfect straightness. In Japanese homes and buildings, Douglas fir beams are exposed and treated with clear finish to enhance the majestic grain. Lower-priced species are used for structural support behind the walls.

Then Japan's economy settled into "The Lost Decade," an extended economic malaise. From the peak year of 1988 Washington's total log exports shrank from 2.8 billion board feet to 541 mmbf in 2006.

Later in 2012 Japan is expected to return to importing logs for its recovering economy and for construction materials to rebuild cities after the earthquake and tsunami last March.

Chip exports choppy

Washington is also rich in chips, sawdust and other wood wastes. In 2010 Washington produced 5 million bdt which were primarily sold to domestic pulp mills. China would be a willing customer, but none of Washington's ports can handle wood chip cargo barges.

Nonetheless the interest is strong. The Department of Natural Resources recently received a phone call from a Midwestern broker who was looking for sources of chips. He said the chips would be used to manufacture stove pellets. He said he needed 175,000 tons per month — about 2 million tons annually. (By comparison Washington chip mills produced only 1.4 million bdt of chips in 2010.)

Lately, this has been a common occurrence, said a chip mill manager. He receives "about a handful of phone calls" every month for similar requests.

But a major problem for Washington is that “there is no infrastructure” to handle wood chip barges.

Oregon’s Coos Bay is the only major West Coast port for servicing wood chip barges. But the recent trade with China prompted a shift from chips to logs, said Elise Hamner, Communications Director of the Port of Coos Bay. In 2009 the port handled 25 vessels hauling wood chips. In 2010 the port handled 39 vessels, but only six for chips. The 33 other vessels hauled logs. She said the port expects up to 60 ships in 2011.

To reach logs from farther inland, the Port of Coos Bay recently completed a rail line to Eugene. New shipping business is expected when a nearby company begins extracting heavy mineral deposits. Hamner said higher rates for transporting mineral cargo will bring in even more revenue.

Ironically this new business has given the Port of Coos Bay a rare problem: a shortage of longshoremen.

Containers for export logs

Some ports were concerned that limited log export infrastructure would limit opportunities for log export business. Enter the container. Used primarily for consumer products, containers have been used for logs in the past.

Several years ago Korean business officials noticed that cargo containers that delivered consumer prod-

ucts to the U.S., came back empty. At the same time Korea’s economic growth triggered a need for logs.

Japanese log purchasers didn’t use containers because containers were only 40-feet long and Japan favors logs that are at least 45 feet long. But the Koreans were happy with shorter logs and began hauling logs in containers.

In 2010 the use of containers mostly impacted the Port of Seattle. For many years log exporting was not available through Seattle’s port. Occasionally a few thousand board feet were exported by containers.

When the Chinese log buyers arrived, ready to pay for logs above the market price, several log exporters willingly embraced containers. And like the Koreans, Chinese log buyers were happy with under 40-foot logs. The word got out and many forest owners and managers suddenly became log exporters.

By the end of 2010, the port of Seattle exported 12,933 TEUs (20-foot equivalent units, a standard container measurement) for more than 60 shippers. Log sellers contracts ranged from 3,454 TEUs to a single container.

By using containers Seattle shipped more logs than traditional log ports Aberdeen, Everett and Port Angeles in 2010.

Selling logs to China has many economic advantages, but it can also be hectic. “You have to be able to turn on a dime,” an exporter said. “In my 36-37 years in forest products this is as challenging as I’ve ever seen it.”



Port of Astoria on the Columbia River

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‘safe and responsible
wood manufacturing’



Forest



“Forest certification is a system for identifying well-managed forestland . . . (including) maintenance of ecological, economic, and social components.”

-- Sustainable Forestry Partnership, a certification support group

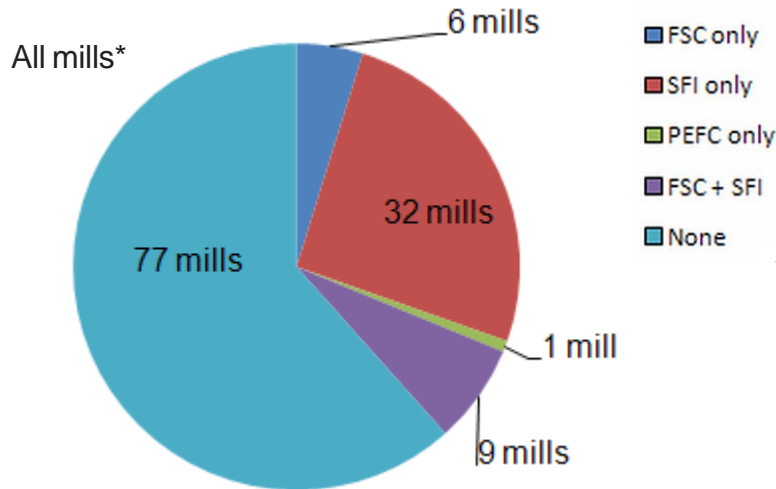
For the past decade, wood product manufacturers have been invited to qualify as forest certified operations. Accreditation recognizes safe mill practices to promote responsible management to protect the environmental viability of forests on a sustainable yield.

Some groups use “chain of custody” as a measure of compliance where standards are maintained throughout the production process, regardless of changing ownerships. Some retail lumber outlets have learned that a growing number of customers are willing to pay a premium price for certified wood.

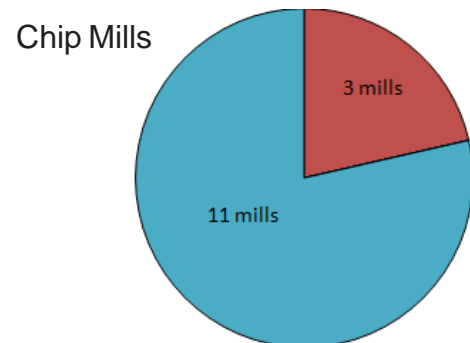
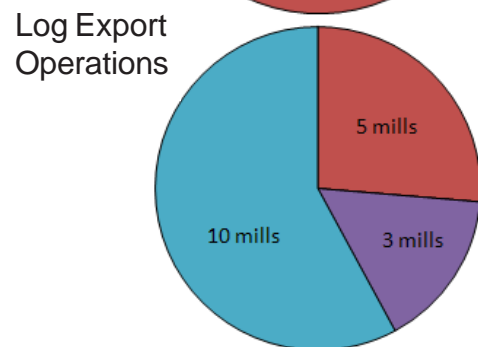
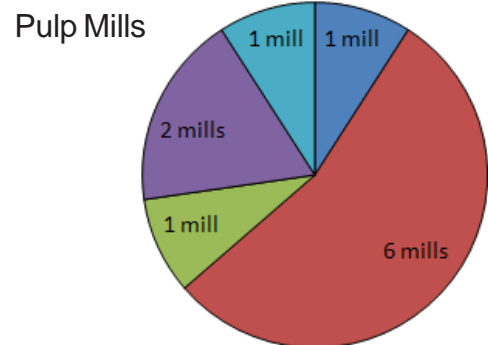
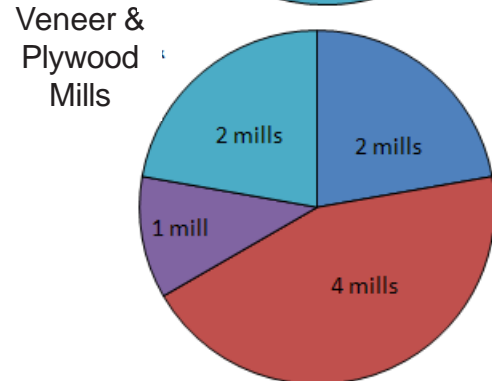
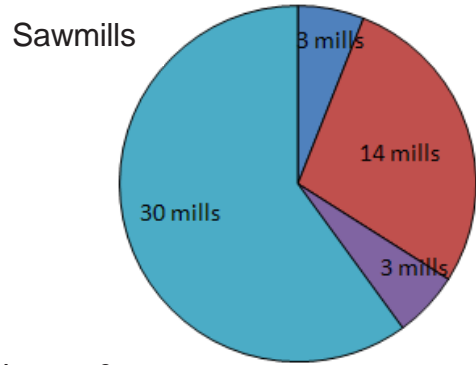
The questionnaire for the 2010 Mill Survey revealed that 49 out of 125 mills in Washington were qualified by one or more certification organizations. They include:


- **Forest Stewardship Council (FSC)**
- **Sustainable Forestry Initiative (SFI)**
- **Programme for the Endorsement of Forest Certification (PEFC)**

Certification



* This total includes all post-pole-piling and shake and shingle mills which are not certified.





Sustainability Statement

Port Townsend Paper Corporation is committed to protecting the environment, the health and safety of our employees and our communities. These are fundamental to sustaining a healthy business. We pursue continuous improvement in our safety, environmental, and operational performance.

PTPC understands the importance of sound environmental stewardship. We strive to fulfill our duties as a good corporate citizen to operate in compliance with environmental regulations under the jurisdiction of federal, state, provincial, and local governments.

We are committed to the stewardship of our natural resources today and in the future. PTPC supports the existence of multiple certification standards, acknowledging that responsible forest management can be achieved through a number of credible certification systems such as Forest Stewardship Council® (FSC®), Sustainable Forestry Initiative®(SFI®)Program, Programme for the Endorsement of Forest Certification™ (PEFC), American Tree Farm System® (ATFS) and Canadian Standards Association (CSA).

PTPC uses third-party certification of our chain of custody and fiber sourcing program in all of our facilities. We are certified to the following standards:

- FSC Chain of Custody Standard
- FSC Controlled Wood Standard
- SFI Fiber Procurement

We expect our suppliers to support sustainable forestry principles and adhere to Best Management Practices.

The Old Corrugated Containerboard recycling facility at our Port Townsend Mill makes us the largest single recycler in Jefferson County. Recycled paper makes up more than 25 percent of our fiber sourcing. Additionally a major component of our virgin fiber supply is made up of sawdust and chips, byproducts of lumber and panel manufacturing facilities who have committed to support our sustainability practices.

The exceptional qualities of the region where we all live are important to all of us. Our goal is to leave a healthy economy and preserve the forests and environment for future generations to enjoy.

http://www.ptpc.com/Sustainability_Statement_Rev_12-11.pdf

The economic areas used in this report



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.

Abbreviations and Conversions

Lumber

board foot (bf)	=	12-inches x 12-inches x 1-inch
mbf	=	1,000 board feet
mmbf	=	1 million board feet
Bbf	=	1 billion board feet

Log volume

A log's volume is measured in **Scribner scale** to account for the narrowing width of a tree.

Lumber is measured in **lumber tally**.

A tree's Scribner volume is usually less than its actual lumber tally volume. On average the conversion is 1.9 board feet of lumber tally for each board foot of Scribner logs.

Pulp (weight)

ton	=	2,000 pounds
bone dry tons (BDT)	=	2,200 pounds (10% water)
mbf of logs	=	7.5 tons of pulp

Shake & shingle (area)

square	=	100 square feet
1 cord	=	5 squares or 500 bf
mbf	=	10 squares

Plywood and Veneer

msf 3/8-inch basis	=	1,000 square feet 3/8-inch thick
mmsf 3/8-inch basis	=	1 million square feet 3/8-inch thick

Mill Survey Analysis

2000-2010

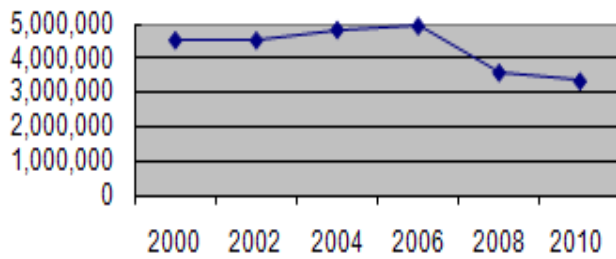
Graph 1	Production	2
Graph 2	Number of operations	3
Graph 3	Log consumption by sector	4
Graph 4	Log consumption by log size and sector	5
Graph 5	Tree species	6
Graph 6	Log sources	7
Graph 7	Wood residues	8
Graph 8	Productivity	9
Graph 9	Sawmills	10
Graph 10	Veneer and plywood mills	11-12
Graph 11	Pulp mills	13
Graph 12	Shake & shingle mills	14
Graph 13	Log export operations	15
Graph 14	Post, pole, and piling mills	16
Graph 15	Chipping mills	17
	Value estimates for Washington's 2010 primary wood products	18

Table of Contents

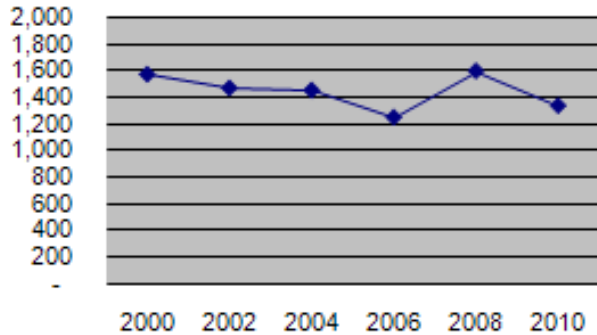
Graph 1 Production

Charts 1a through 1f display total production by sector. Lumber output from sawmills (1a) dropped between 2008 and 2010 tracing the continued effects of the troubled housing market and economy. Also declining dramatically was the shake and shingle sector (1d) which dropped 66 percent over the past decade. But the other sectors did not respond like victims of economic crisis. Pulp mills (1c) produced more pulp and paper products and post, pole and piling mills (1e) sold more utility poles, following a trend that started in 2004. But the log export sector was the star by increasing overseas sales of logs by 70 percent between 2006 and 2010.

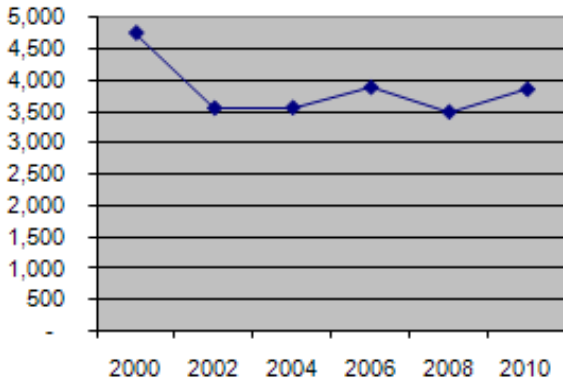
Sawmill
Graph 1a
(mmbf lumber tally)



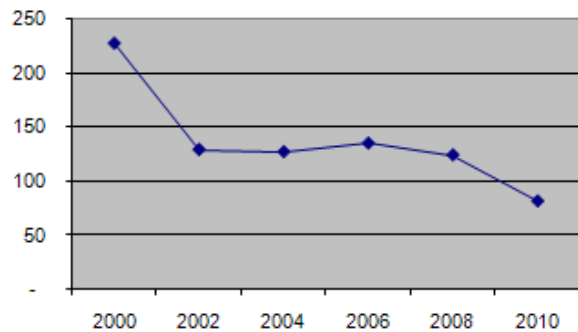
Veneer and Plywood
Graph 1b
(MMsf 3/8" basis)



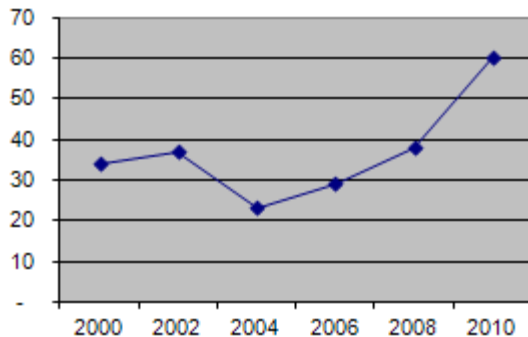
Pulp
Graph 1c
(thousand bone dry tons)



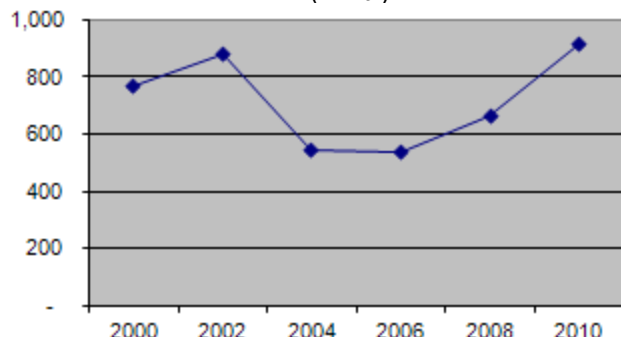
Shake & Shingle
Graph 1d
(million squares)



Post, Pole, and Piling
Graph 1e
(mmbf)

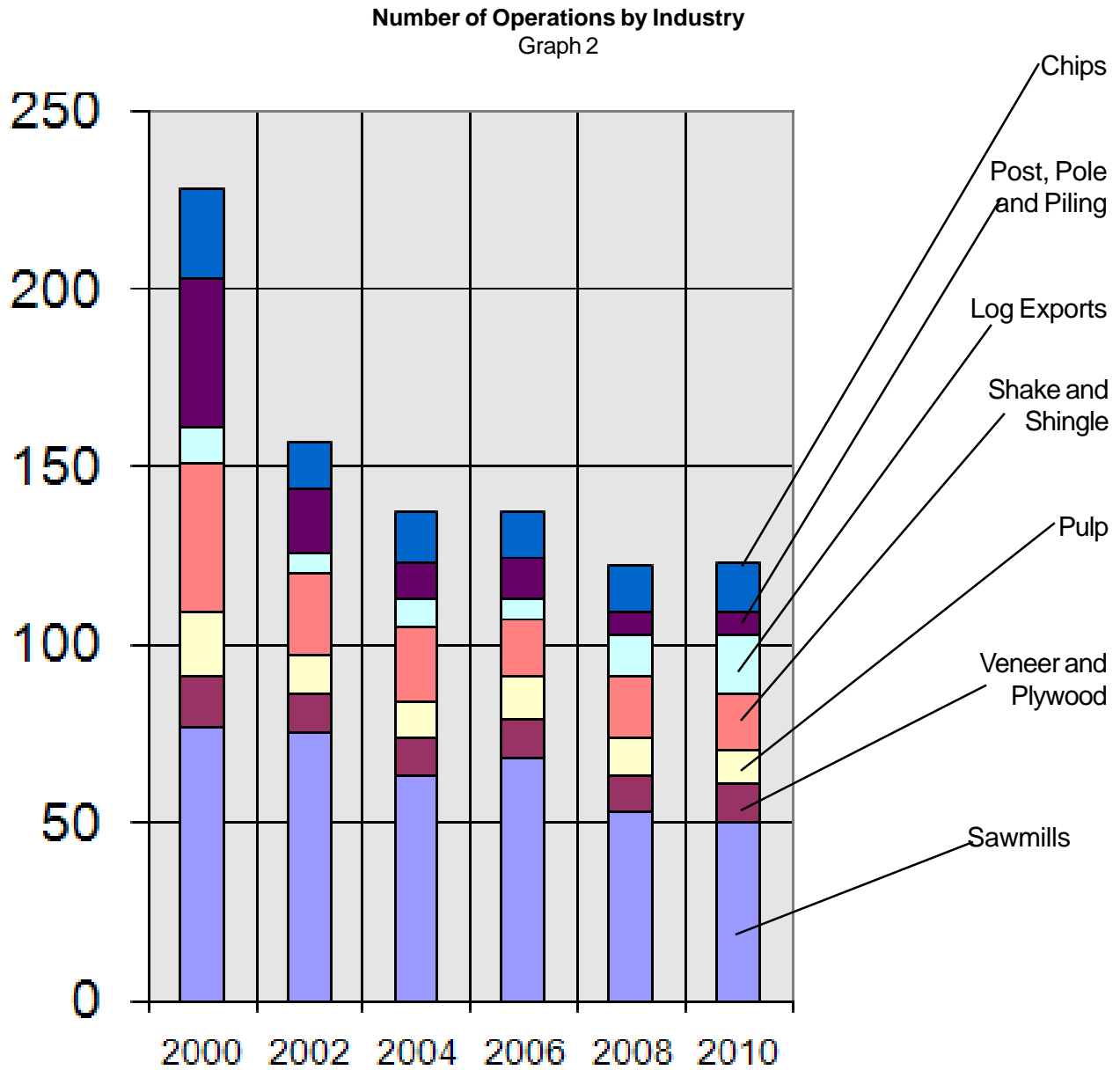


Log Export
Graph 1f
(mmbf)



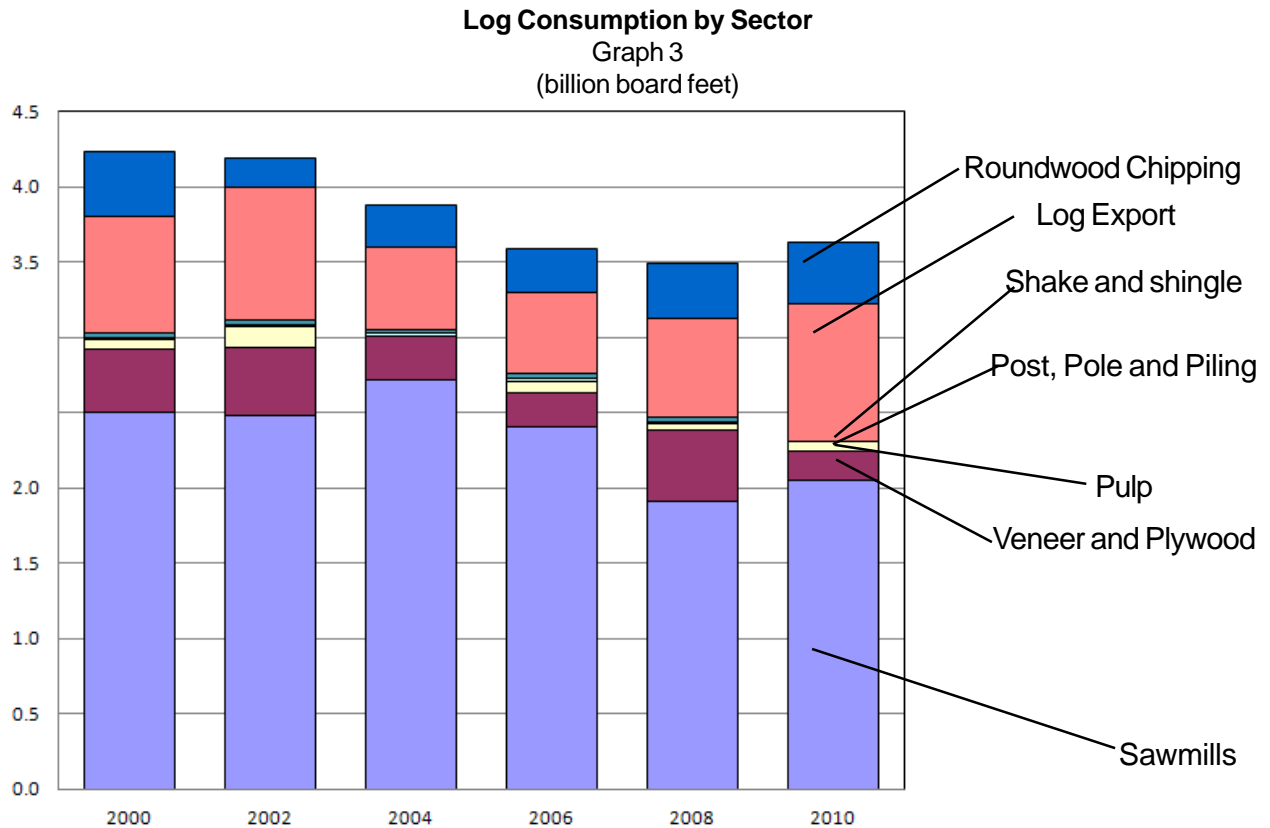
Graph 2 Number of operations

Graph 2 shows the total number of operations in the forest products industry in Washington, by sector (mills and log export businesses). The number of operations peaked in 2000, with a total of 228. In 2010 there were 125 operations. All sectors have experienced declines. The 2010 tally indicates that the declines have leveled off.



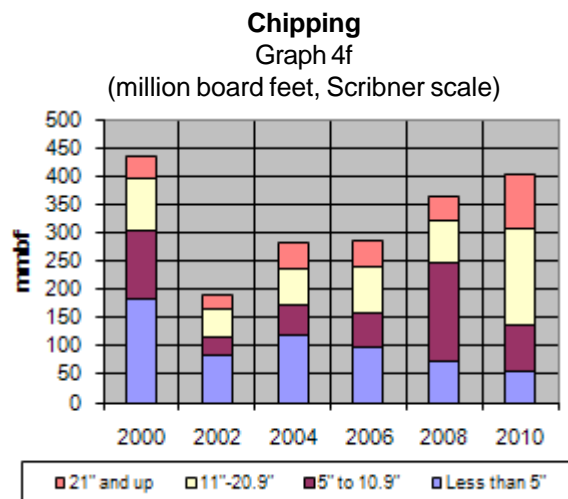
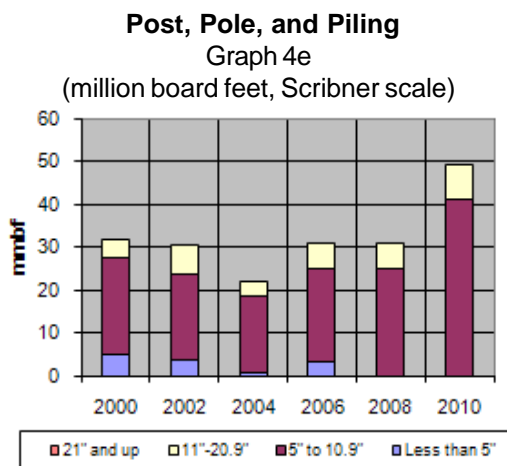
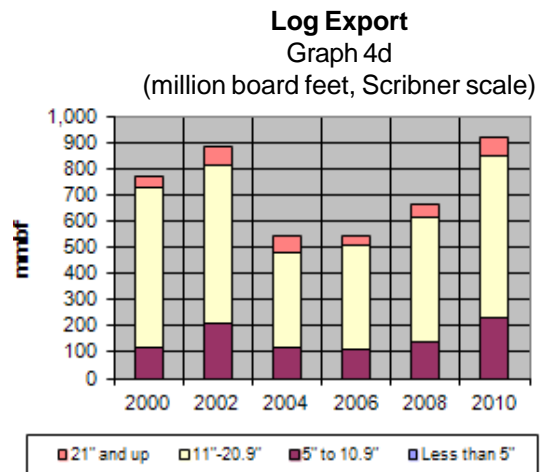
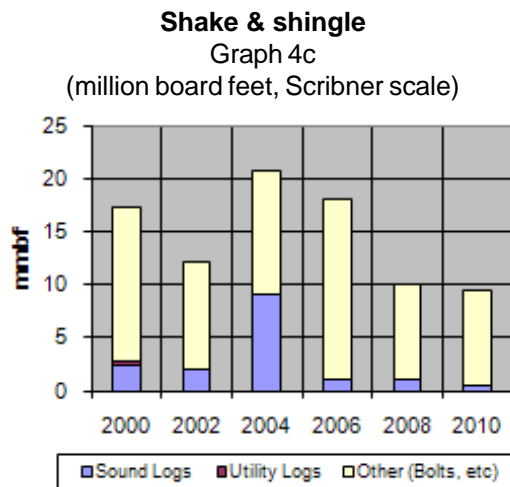
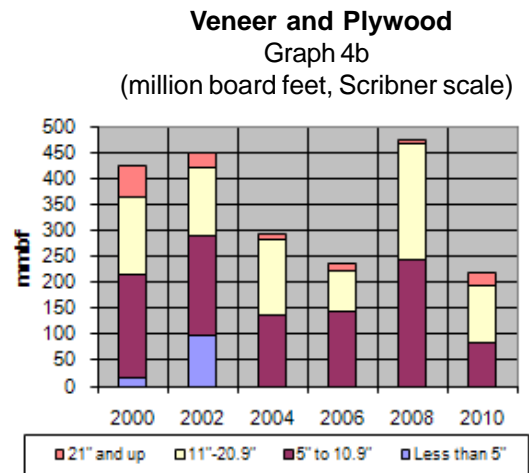
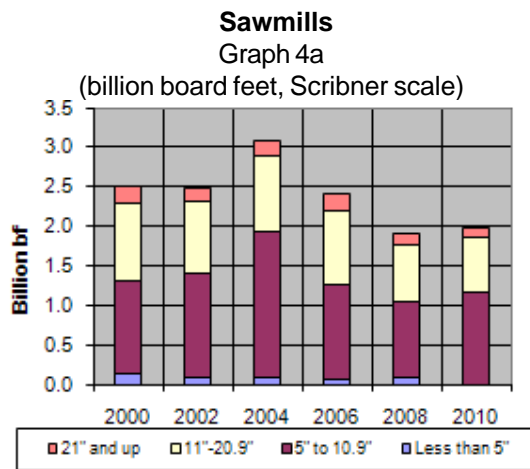
Graph 3 Log consumption by sector

After declining 16 percent between 1998 and 2008 total log consumption increased. Largely due to upticks by sawmills and chipping mills and a leap in log exports. Mills consumed 4.3 billion board feet (bbf) in 2000 and 3.8 bbf in 2010.



Graph 4 Log consumption by log size and sector

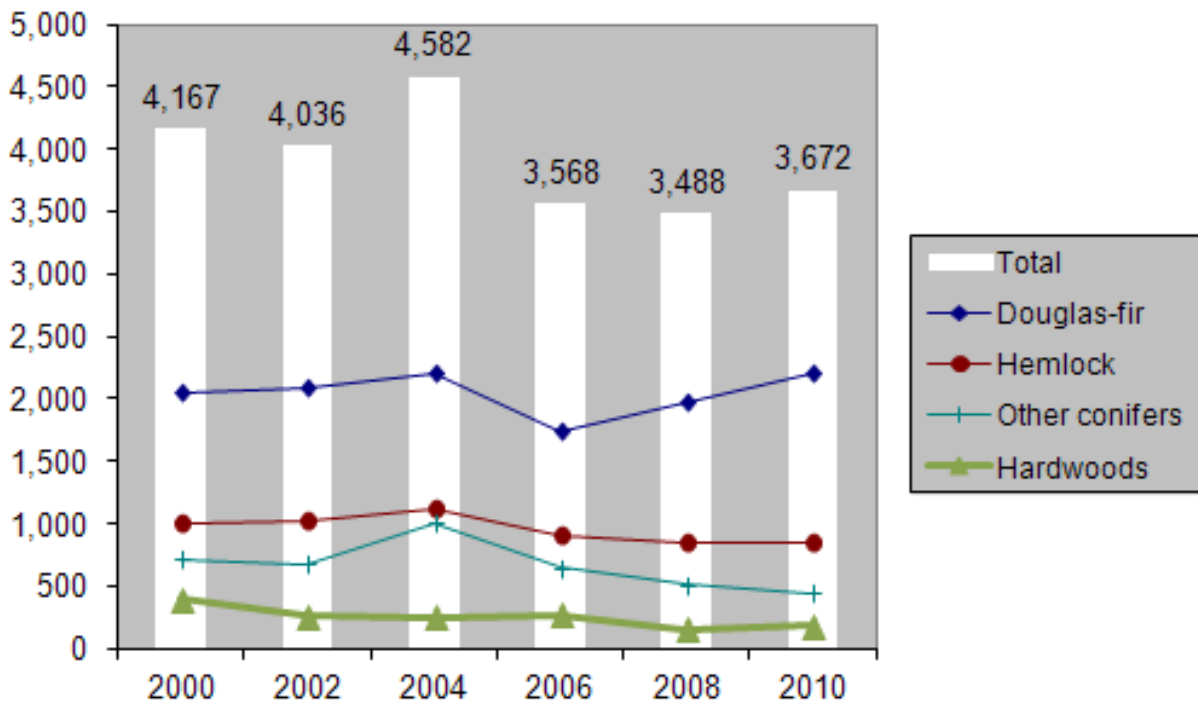
Tables 4a through 4f display log consumption by log size, except 4c (shake & shingle) which displays log consumption by type. (Nearly all material is delivered to shake mills as bolts -- sections of logs or the remains of salvaging operations). Sectors such as shake & shingle and post-pole-piling are very selective in their preference for log size. On the other hand, chipping mills are more willing to take any size log. In 2010 the log export market (primarily to China) was buying more logs of all sizes.



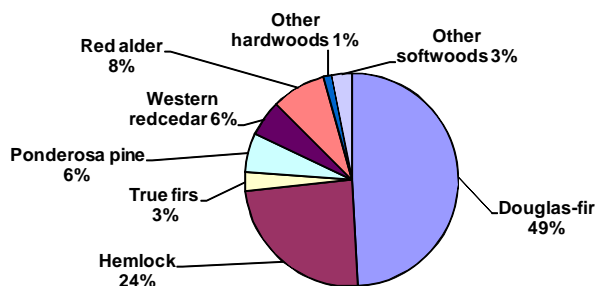
Graph 5 Tree species

Douglas fir has always been the dominant species in Washington's wood products industries. In 2010 it comprised more than half of consumed timber (Graph 5a). For much of the past 10 years the species' proportions were fairly consistent. However, in 2010 Douglas-fir gained 10 percent over 2000 and represented 60 percent of the state's total volume of processed logs. Hardwood consumption also increased significantly in 2010, but from a much lower level.

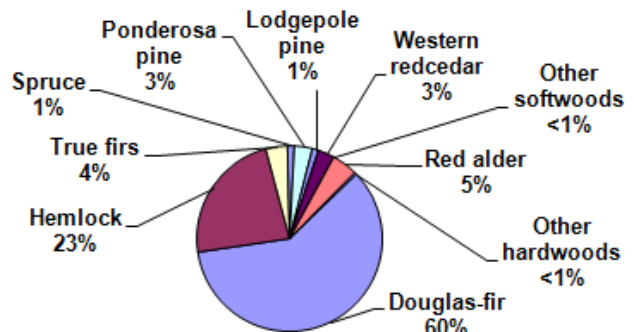
Log Consumption by Species
Graph 5a
(million board feet, Scribner scale)



Log Consumption by Species - 2000
Graph 5b



Log Consumption by Species - 2010
Graph 5c

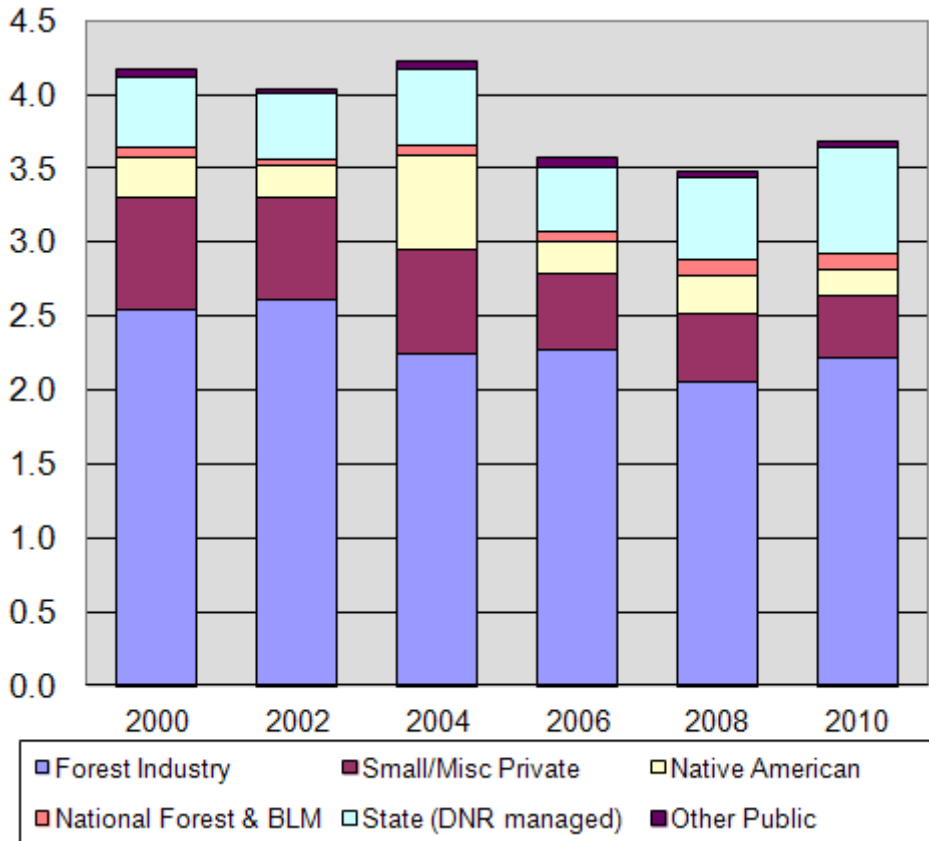


Graph 6 Log sources

Log source by ownership, in Graph 6, shows that private timberland (Forest Industry and Small Private Landowners) continue to provide the bulk of the logs for the forest products industry. However, graphs 6b and 6c show that the Department of Natural Resources (state) supplied about 19 percent of the total log volume for domestic mills, nearly double its share in 2000.

Log Source by Ownership

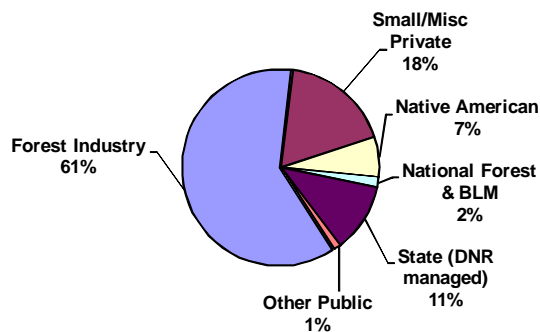
Graph 6a
(billion board feet)



Log Consumption by Ownership

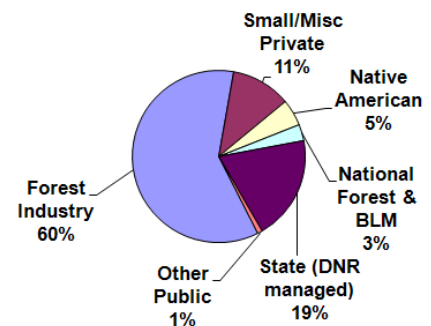
2000

Graph 6b



2010

Graph 6c

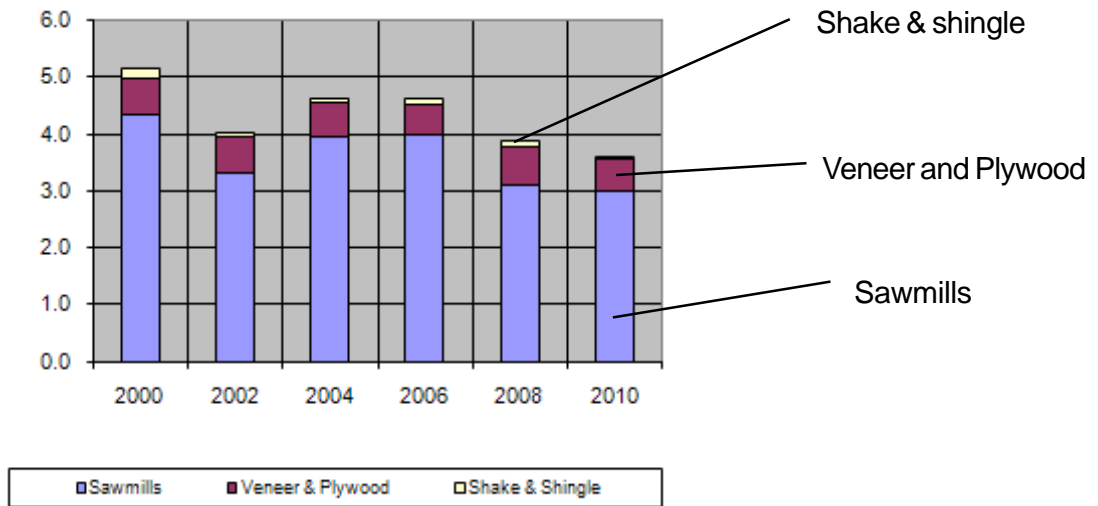


Graph 7 Wood residues

Graphs 7a and 7b display the production and use of wood residues by industry. Sawmills are the largest producer of residues, followed by veneer and plywood mills. (Production of chips from chip mills is listed in a separate category.) Shake and shingle mills' contribution to wood residues declined along with its proportional size. Residues are predominately used for pulp. Overall between 2000 and 2010 the production of wood residues has grown smaller because of lower volumes of wood products and more efficient mills.

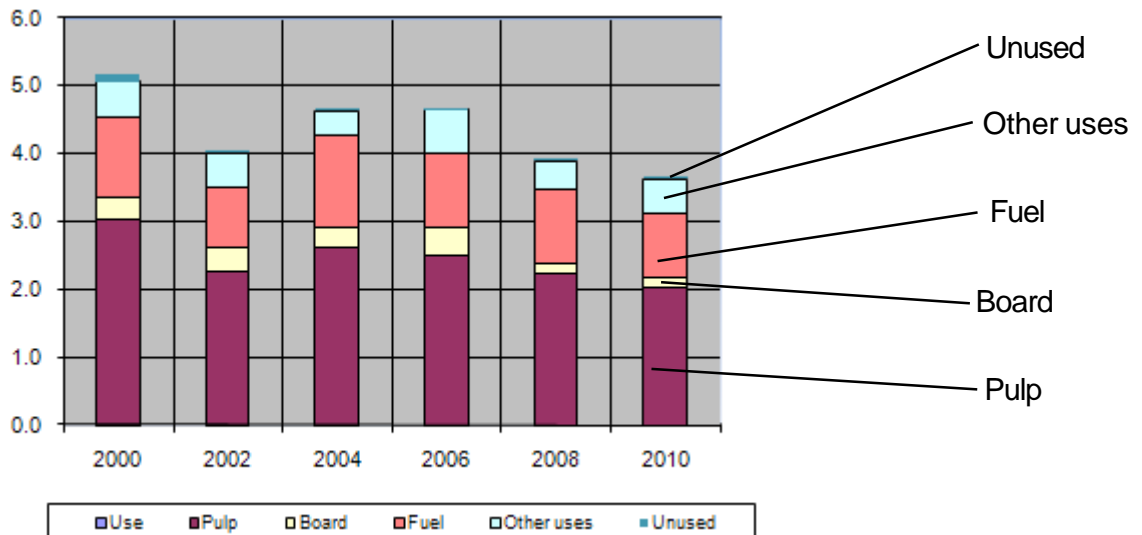
Production of Wood Residue (not bark)

Graph 7a
(millions of tons)



Use of Wood Residues (not bark)

Graph 7b
(millions of tons)



Graph 8 Productivity

Productivity (volume of wood products produced divided by consumption of logs) is displayed in Graph 8. All sectors remained at similar levels throughout the past 10 years, except shake and shingle mills. Between 2008 and 2010 shake and shingle mills doubled productivity, which is due to the closure of less efficient mills.

Productivity
 Graph 8
 (higher numbers indicate increased efficiency)

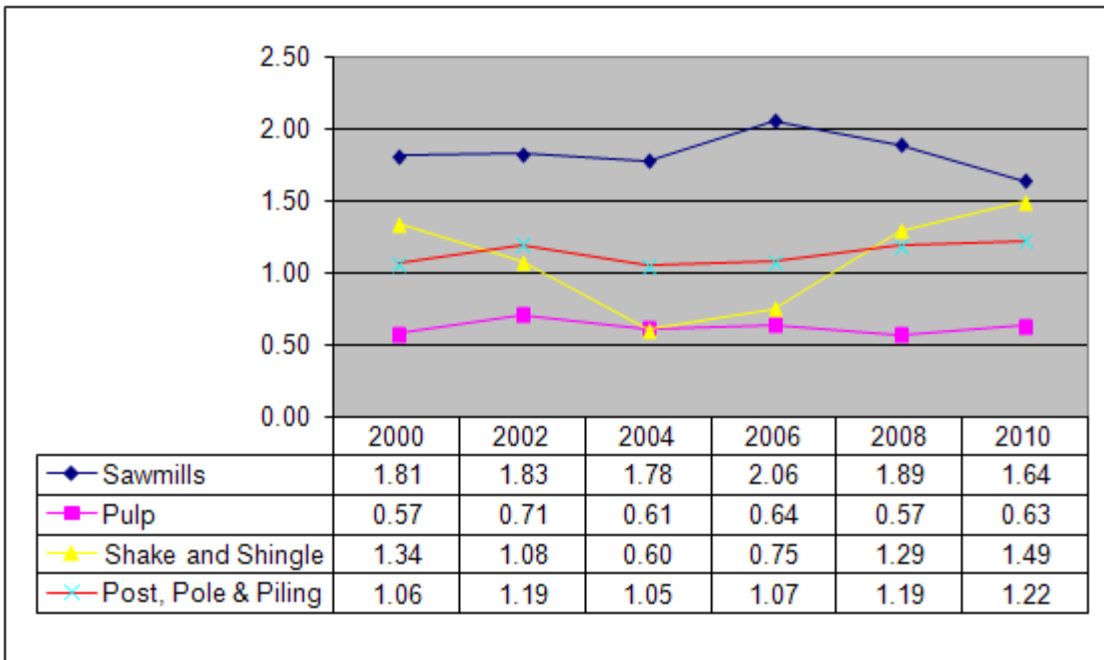


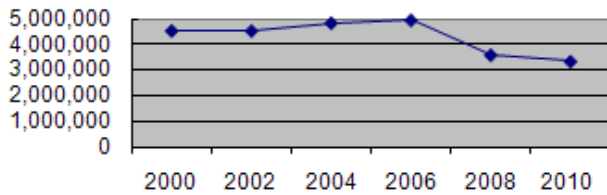
Table of Contents

Graph 9 Sawmills

Total sawmills' production (9a) decreased from nearly 5 billion board feet in 2006 to about 3.2 billion board feet in 2010. However, productivity improved per mill. These statistics underscore the fact that few new mills have replaced closed mills. The remaining mills are larger and more efficient (9e). Sawmills, the largest wood products sector, best represents the transition of a major industry. On one hand, the volume of lumber produced has dropped a third since 2006, proportionately the same decrease as the number of mills. But while total log consumption moved down by more than 20 percent (9c) and total productivity by a smaller degree, average log consumption and average lumber production per mill have inched upward.

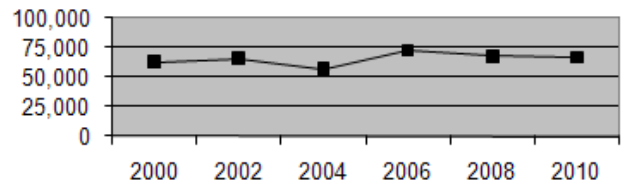
Total Annual Sawmills' Production

Graph 9a
(mbf lumber tally)



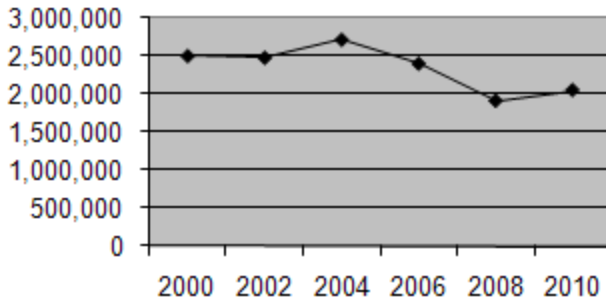
Avg Annual Lumber Production per Mill

Graph 9b
(mbf lumber tally)



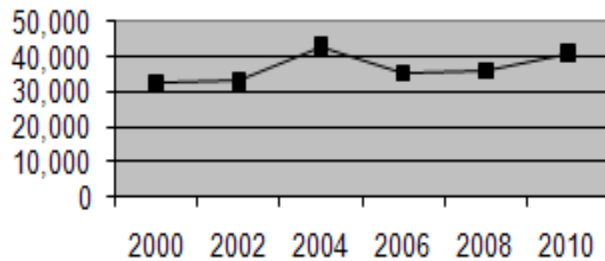
Total Annual Log Consumption

Graph 9c
(mbf Scribner scale)



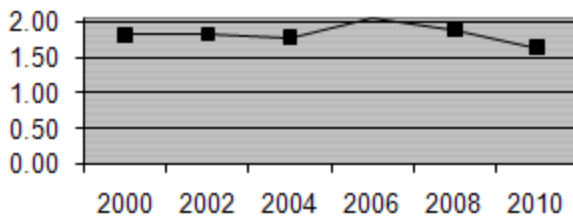
Avg Annual Log Consumption per Mill

Graph 9d
(mbf Scribner scale)



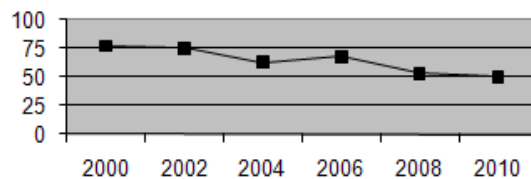
Productivity of Sawmills

Graph 9e
(lumber/logs ratio)



Number of Sawmills

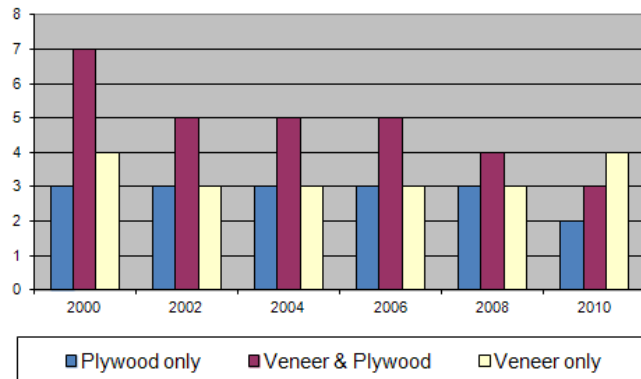
Graph 9f



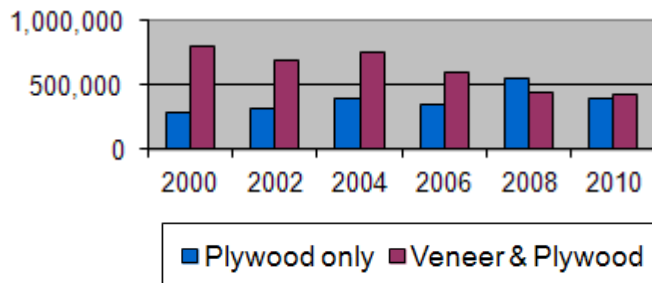
Graph 10 Veneer and plywood mills

The plywood sector has been among the hardest hit by the recession of the construction industry. Plywood is also undergoing its own intense shift to specialization. Nearly all charts reveal that integrated veneer and plywood mills are splitting. This is seen clearly in Graph 10a in the decline of integrated mills. More veneer production is shifting to specialized operations (Graph 10f and 10g). The simultaneous rise of veneer- only capacity, production and log consumption and the decline of veneer-and-plywood measurements is a textbook example of a business sector nearly complete in its transition.

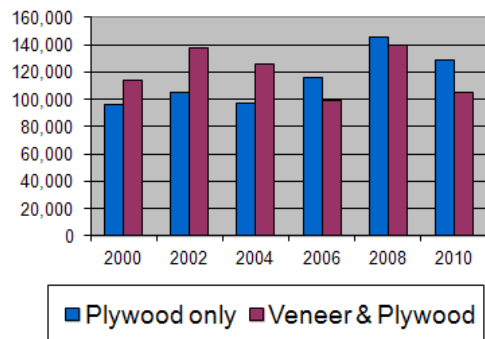
Number of Veneer and Plywood Mills
Graph 10a



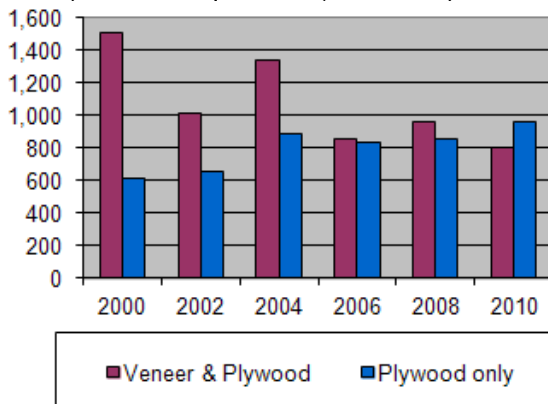
Total Plywood Production Statewide
Graph 10b
(thousand square feet, 3/8" basis)



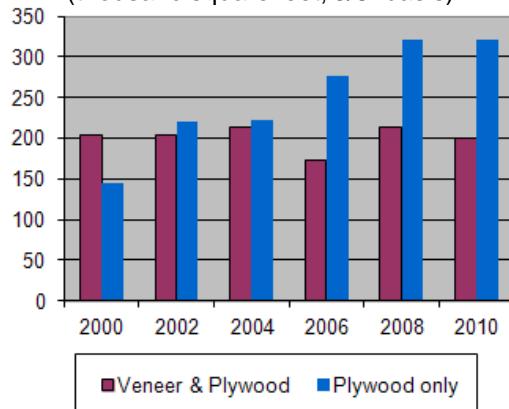
Avg Daily Plywood Production per Mill
Graph 10c
(thousand square feet, 3/8" basis)



Total Daily Plywood Capacity Statewide
Graph 10d
(thousand square feet, 3/8" basis)



Avg Daily Plywood Capacity per Mill
Graph 10e
(thousand square feet, 3/8" basis)



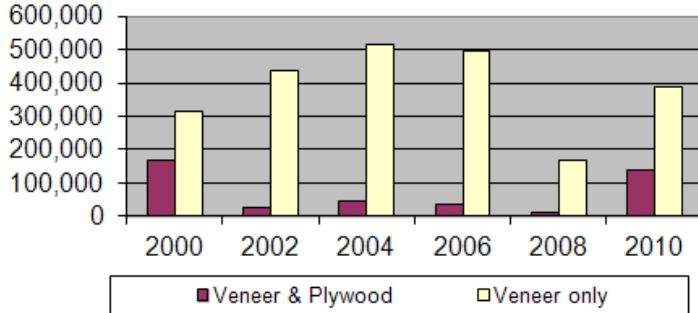
Veneer mill graphs on next page »

Veneer and plywood mills continued

Total Annual Veneer Production

Graph 10f

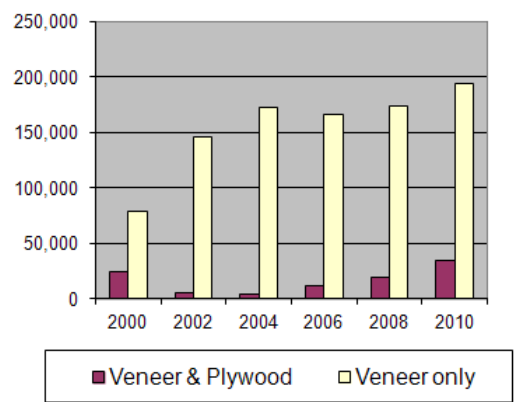
(thousand square feet, 3/8" basis)



Avg Annual Veneer Production per Mill

Graph 10g

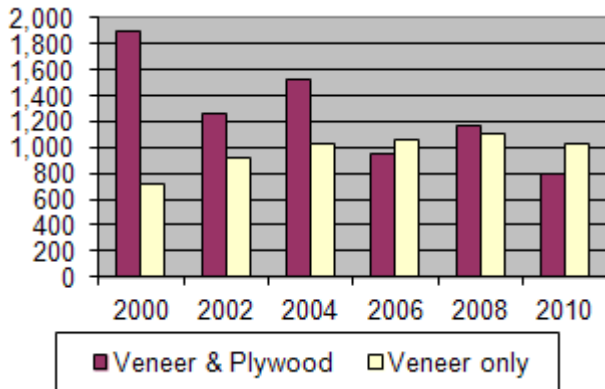
(thousand square feet, 3/8" basis)



Total Daily Veneer Capacity

Graph 10h

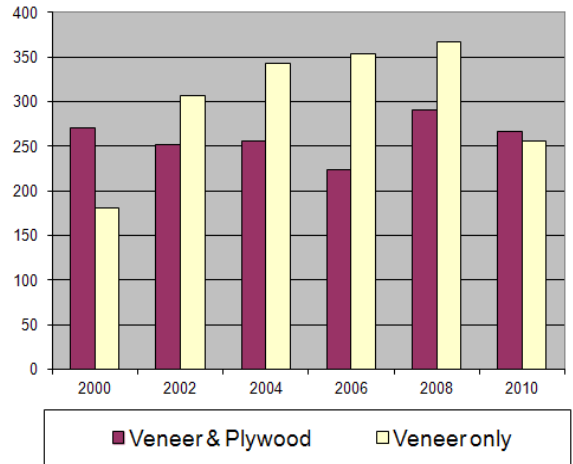
(thousand square feet, 3/8" basis)



Avg Daily Veneer Capacity per Mill

Graph 10i

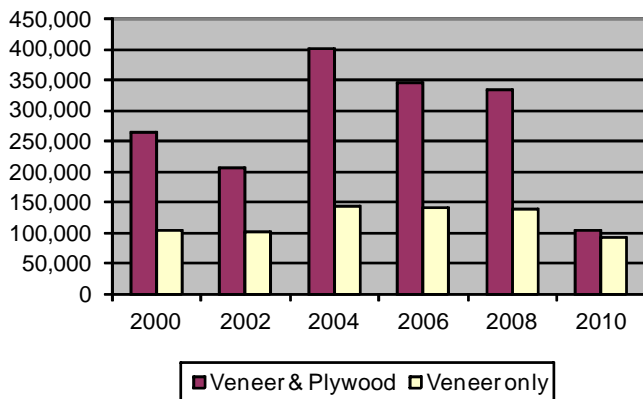
(thousand square feet, 3/8" basis)



Total Annual Log Consumption

Graph 10j

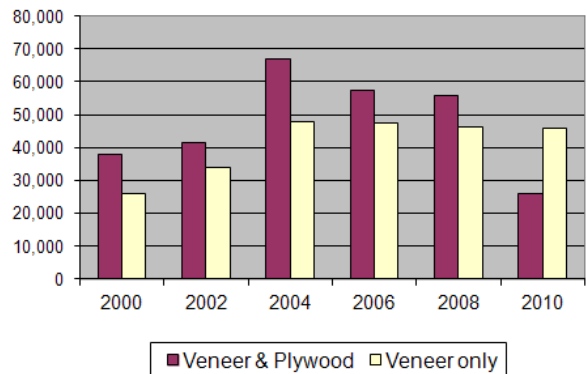
(thousand board feet, Scribner)



Avg Annual Log Consumption per Mill

Graph 10k

(thousand board feet, Scribner)

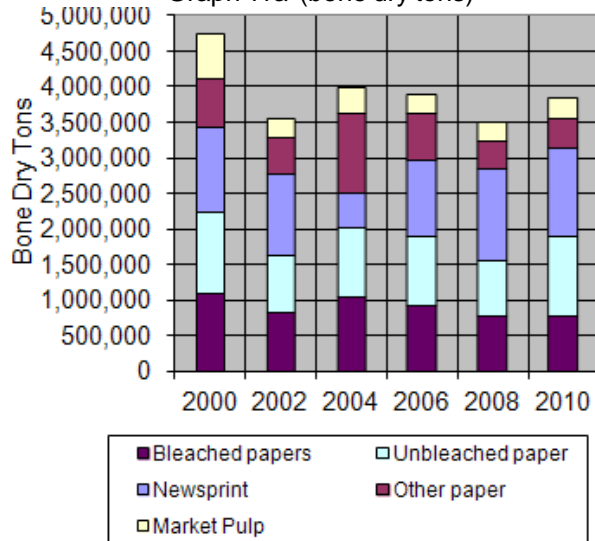


Graph 11 Pulp mills

Perhaps more than any other wood products sector, pulp mills have been constantly visited by change. Beginning a couple decades ago they were challenged by clean water and clean air legislation. Later the price of woody material rose when lumber mills were remodeled for efficiency (producing less residue). In recent years the investment in alternate fuels has added more competition for pulp raw material: wood waste and mill residue. But the industry succeeded by increasing its total and average production and consumption of wood in 2010. Another notable trend is the use of recycled paper which dropped off slightly in 2010, but since 2000 has increased from 20,000 bone dry tons to just over 80,000 bone dry tons of waste paper.

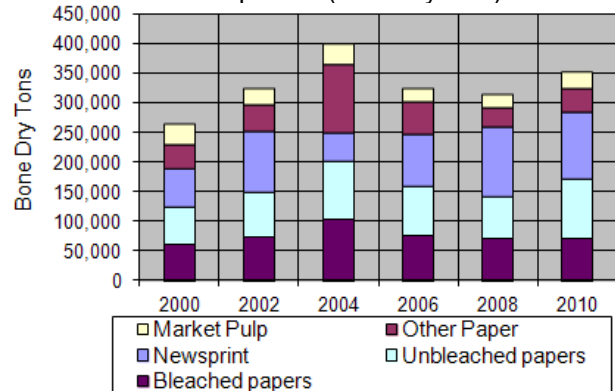
Total Annual Production Volume

Graph 11a (bone dry tons)



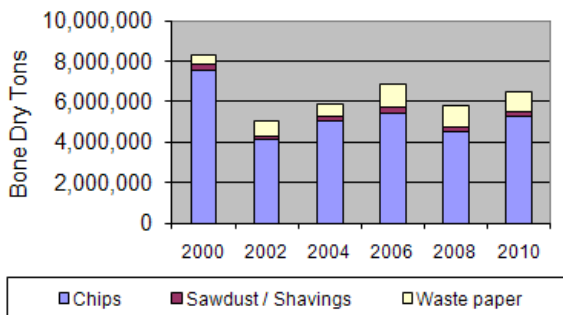
Avg Annual Production per Mill

Graph 11b (bone dry tons)



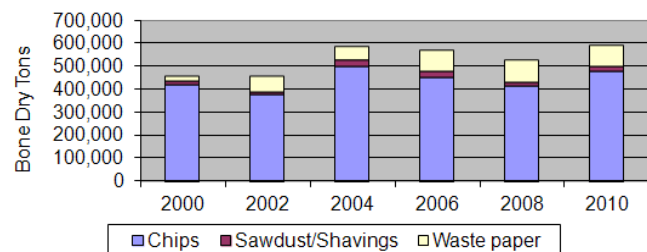
Total Annual Consumption

Graph 11c (bone dry tons)



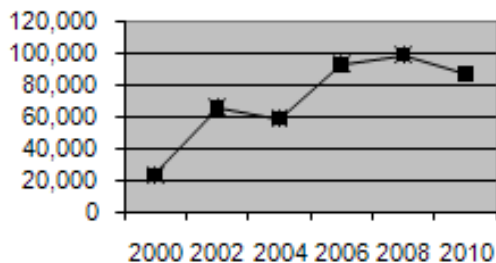
Avg Annual Consumption per Pulp Mill

Graph 11d (bone dry tons)



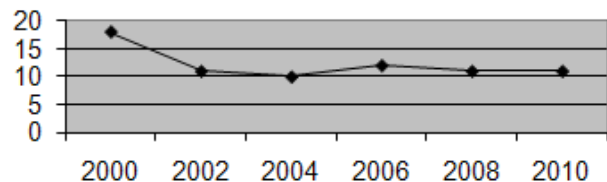
Avg. Annual Waste Paper Consumption per mill

Graph 11e (bone dry tons)



Number of Pulp Mills

Graph 11f

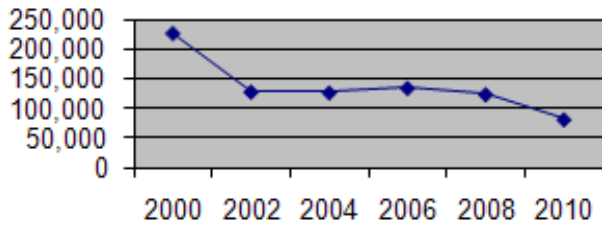


Graph 12 Shake & shingle mills

Nothing much new to tell about shake & shingle mills. As the number of mills (12f) dropped, other measurements declined also: Total Production (12a), Average Production (12b), Total Wood Consumed (12c) and Average Wood Consumed (12d). The only improvement (12e) appears to be productivity. But that mathematical improvement may only have been the result of the closure of smaller and older shake operations.

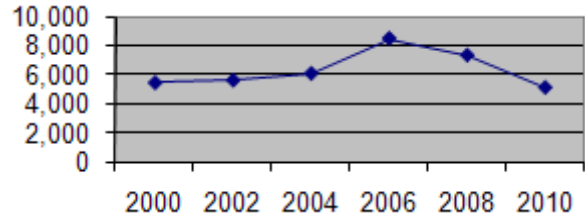
Total Annual Production

Graph 12a
(squares)



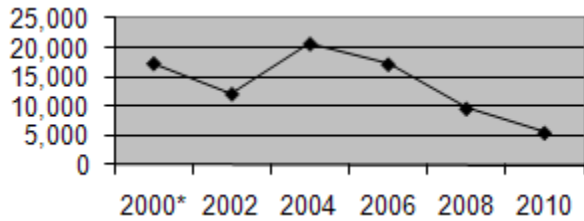
Avg Annual Production per Mill

Graph 12b
(squares)



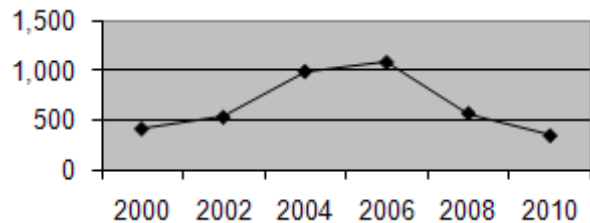
Total Annual Wood Consumed

Graph 12c
(mbf, Scribner scale)
logs and bolts



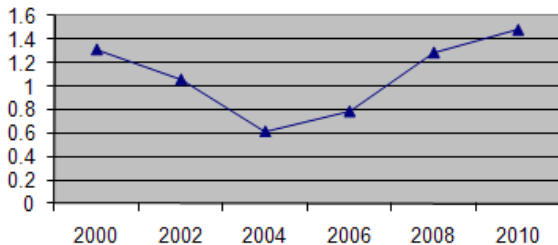
Avg Annual Wood Consumed per Mill

Graph 12d
(mbf, Scribner scale)
logs and bolts



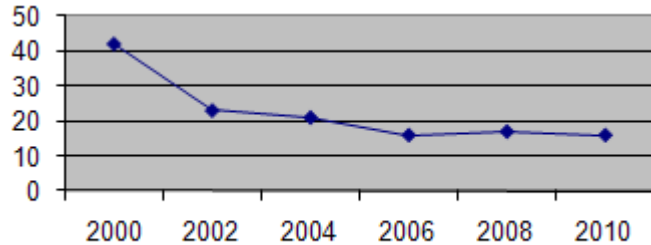
Productivity (efficiency)

Graph 12e
Production/Consumption



Number of Shake & Shingle Mills

Graph 12f

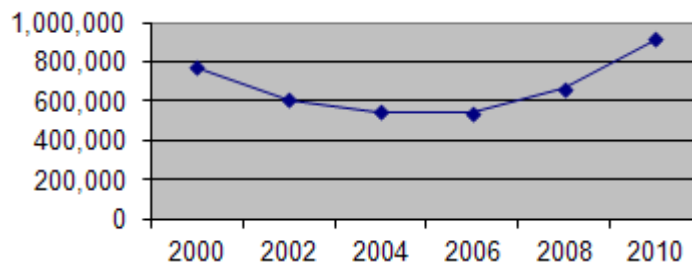


Graph 13 Log export operations

The year 2010 marked the re-emergence of log exports as a major player in Washington's wood products industry. Sales to foreign buyers rose from 541 mmbf in 2006 to just under 1 billion board feet in 2010. Analysts noted that in the first half of 2011 sales doubled when compared to 2010. The high increase was also due to a rise in shipping logs in containers as opposed to shipping only in an open bulk log ships. (Graph 13c) is a record of traditional shippers who used break bulk ships; it does not include the dozens of new exporters who sent logs overseas in containers -- with shipping contracts as low as a few TEUs (TEU=20-foot equivalent) to more than 3,400 containers.

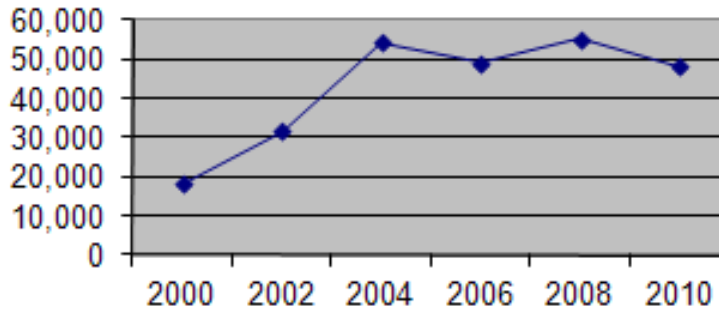
Total Annual Volume Logs Exported

Graph 13a
(mbf, Scribner scale)



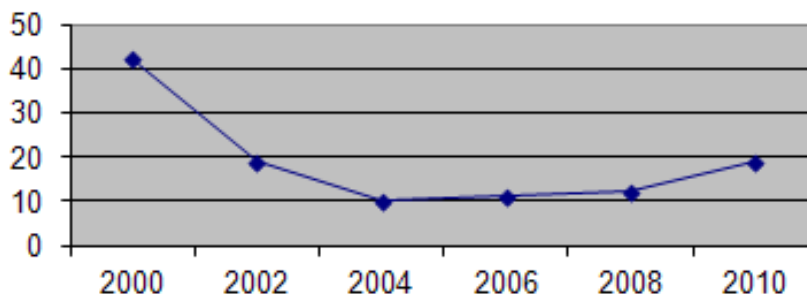
Avg Annual Log Volume Exported Per Operation

Graph 13b
(mbf, Scribner scale)



Number of Log Export Operations*

Graph 13c



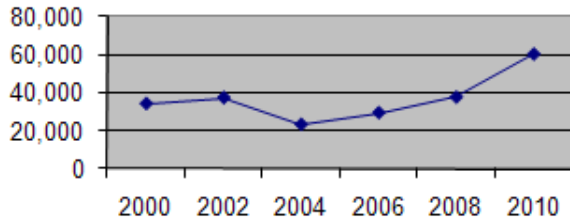
* This chart represents the number of traditional log exporters. In 2010, more than 60 additional log sellers, attracted by high Chinese rates, entered the log export market. **Due to technical requirements those extra exporters could not be included in this Mill Survey.**

Table of Contents

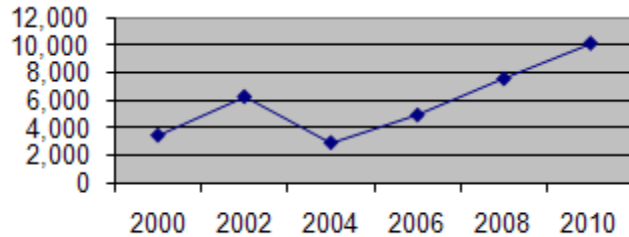
Graph 14 Post, pole, and piling mills

Poles, posts, and pilings are special forest products with unique characteristics that are more valuable than saw logs or lumber. Good telephone and utility poles are made from only Douglas-fir and cedar trees. They must be straight, free of defect and have a sufficient amount of taper for the size pole manufactured. The PPP sector was one of the few wood product sectors that experienced an upswing in 2010. Despite the economic doldrums, utility and telephone poles remain in demand. All production and consumption levels continued an expansion that started in 2004. Since then, total production has tripled. Only the number of mills has declined.

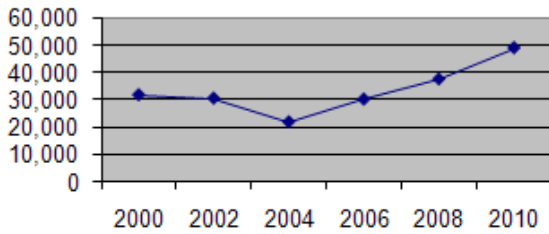
Total Production
Graph 14a
(mbf, Scribner scale)



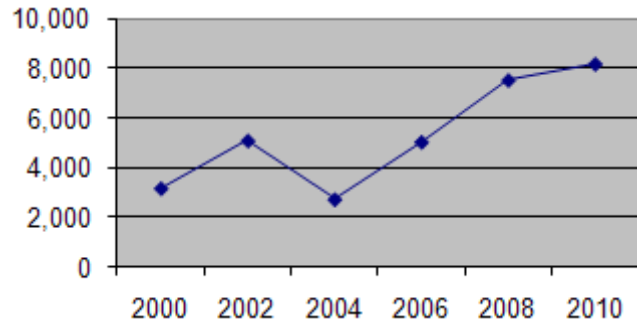
Avg Production per Mill
Graph 14b
(mbf, Scribner scale)



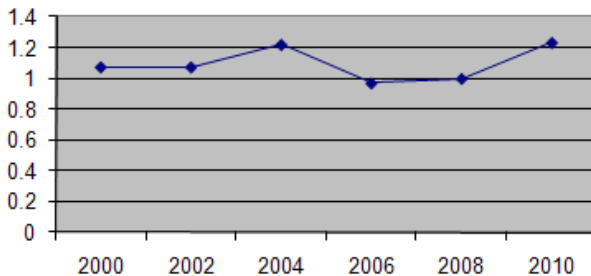
Total Log Consumption
Graph 14c
(mbf, Scribner scale)



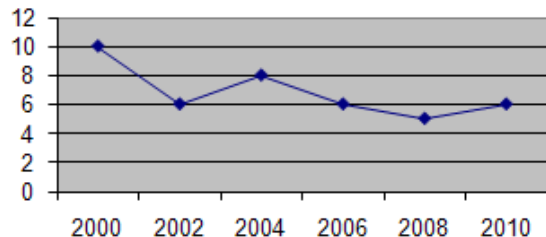
Avg Log Consumption per Mill
Graph 14d
(mbf, Scribner scale)



Productivity
Graph 14e



Number of Mills
Graph 14f



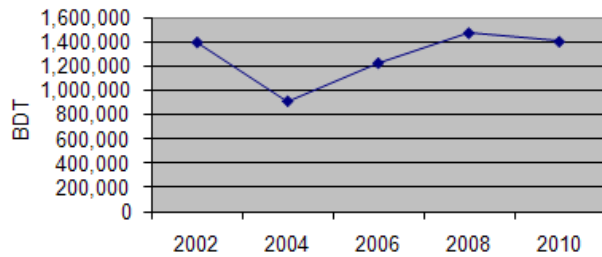
Graph 15 Chipping mills

The number of chipping mills has remained about the same since 2002. But all other measurements point to expansion. Chipping mills grind logs into chips which are most often sold to pulp mills. There are many reasons for the chipping sector to expect good times in the near term and the future. As sawmill production falls (during the housing crisis) and efficiency increases (from mill modernization), they produce less mill residue. Chipping mills have stepped forward and filled the gap. Between 2004 and 2010, chip mills increased production by more than half a million bone dry tons. Most of that volume was sold to pulp mills. It is not clear yet whether research for alternative fuels will result in greater demand for chips. Alternate fuels could be in the form of wood pellets (which are popular in Europe) and aviation fuel.

Total Production

Graph 15a

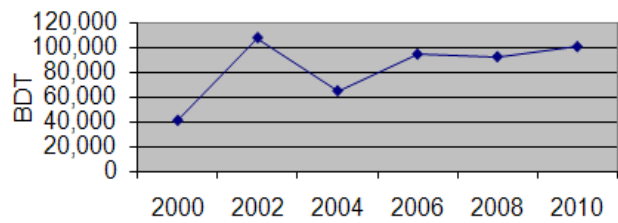
(bone dry tons)



Avg Production

Graph 15b

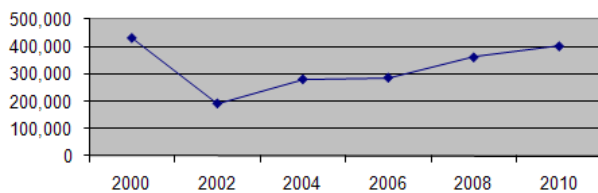
(bone dry tons)



Total Log Consumption

Graph 15c

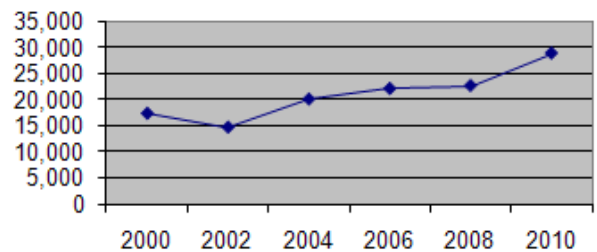
(mbf, Scribner scale)



Avg Log Consumption

Graph 15d

(mbf, Scribner scale)



Number of Log-chipping Mills

Graph 15e

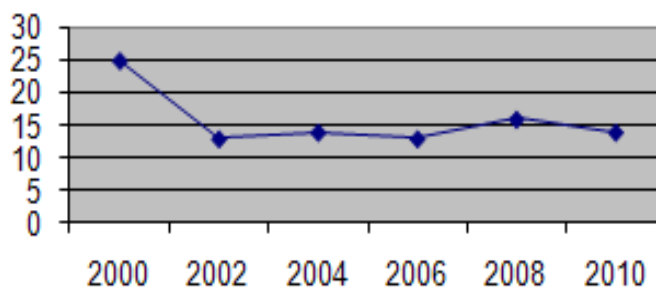


Table of Contents

Value estimates for Washington's 2010 primary wood products

Although the Mill Survey focuses on wood volumes, this table is included to provide an estimate of the total value of Washington's wood products. The price per unit estimates were provided by industry analysts, organizations and mill managers who also contributed data for the Mill Survey. In total all wood products sectors produced nearly \$5 billion in gross sales.

Wood Product	Units	Price	Total value
Export logs (mbf Scribner)	916,734	\$653	\$598,627,302
Plywood (m sq. ft.)	807,556	\$495	\$399,740,220
Veneer (m sq. ft.)	526,138	\$159	\$83,655,942
Shake Mills			
Shakes (squares)	1,069	\$97	\$103,693
Shingles (squares)	50,962	\$115	\$5,860,630
Other cedar (squares)	29,610	\$60	\$1,776,600
Roundwood chip (bone dry tons)	1,402,826	\$103	\$143,789,665
Pulp Mills			
Newsprint (metric tons)	1,248,907	\$596	\$744,348,572
Bleached paper (tons)	778,733	\$1,034	\$805,209,922
Unbleached paper (tons)	1,104,709	\$590	\$651,778,310
Other paper (tons)	425,150	\$570	\$242,335,500
Market Pulp (bone dry tons)	297,341	\$457	\$135,884,837
Post, Pole, and Pilings (mbf Scribner)	60,496	\$910	\$55,051,360
Lumber total (mbf lumber tally)			
Softwood	3,188,659	\$279	\$889,635,861
Hardwood	173,260	\$887	\$153,681,620
	Total		\$4,911,480,034

Statewide Mills Summary

Table 1	Number of operations—by county and sector	20
Table 2	Wood (logs and residues) consumption—by sector	21
Table 3	Log consumption—by sector and state of origin	22
Table 4	Log consumption—by sector and state of origin	23
	a County of log harvest (Puget Sound Economic Area)	23
	b County of log harvest (Olympic Peninsula Economic Area)	24
	c County of log harvest (Lower Columbia Economic Area)	25
	d County of log harvest (Central Washington Economic Area)	26
	e County of log harvest (Inland Empire Economic Area)	27
	f Log consumption—by other states or province of log harvest	28
Table 5	Logs harvested from national forests	29
Table 6	Number of operations—by economic region and original owners	30-32
Table 7	Operations—by sector and logs from original owners	33-35
Table 8	Log consumption—by sector and original log owners	36-37
Table 9	Log consumption—by species	38-39
Table 10	Wood and bark residues—production and use	40
Table 11	Hardwoods consumed—by volume	40
Table 12	Log consumption—by diameter	41
Graph 16	State or province origin of logs consumed in Washington	42
Graph 17	Volume of logs consumed by Washington’s wood products sectors	42

Table of Contents

Table 1 shows the number of operations (listed horizontally by sector) and which counties (listed vertically in the far left column) where mills operated in 2010. For instance, the Olympic Peninsula economic region had the most mills (54) in the state. And Grays Harbor County had the largest number of total mills (15), including 4 sawmills, 1 veneer and plywood mill, 1 pulp mill, 5 shake & shingle mills, 1 log export operation and 1 chipping mill.

Table 1 Number of operations—by county and sector
(mills and export businesses)

Economic area and county of operation	All sectors	Veneer and Plywood			Sector Shake and Shingle	Log Export	Post, Pole, & Piling	Roundwood Chipping
		Sawmills	Plywood	Pulp				
Puget Sound								
King	7	1	0	0	0	6	0	0
Pierce	9	3	1	1	0	2	1	1
Skagit	7	7	0	0	0	0	0	0
Snohomish	12	5	0	1	2	1	1	2
Whatcom	3	1	1	0	0	0	1	0
Total	38	17	2	2	2	9	3	3
Olympic Peninsula								
Clallam	14	5	1	1	5	1	0	1
Grays Harbor	15	4	2	0	6	2	0	1
Jefferson	1	0	0	1	0	0	0	0
Lewis	13	8	1	0	2	0	1	1
Mason	6	2	1	0	0	0	1	2
Pacific	2	2	0	0	0	0	0	0
Thurston	3	1	0	0	0	1	1	0
Total	54	22	5	2	13	4	3	5
Lower Columbia								
Clark	4	1	0	0	0	2	0	1
Cowlitz	12	2	0	4	0	4	0	2
Klickitat	1	0	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	19	4	1	4	1	6	0	3
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
Pend Orielle	1	0	0	1	0	0	0	0
Spokane	1	0	0	1	0	0	0	0
Stevens	7	5	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	12	6	1	3	0	0	0	2
State total	125	50	9	11	16	19	6	14

Table 2 shows the total volume of logs and lumber residues that were used by all wood product mills in each economic area and sector. For instance, the sawmills in the Olympic Peninsula economic area consumed 963,375 mbf (thousand board feet, Scribner scale) of logs. The pulp mills in the Lower Columbia economic area consumed about 2.9 million tons of mill residues.

Table 2 Wood (logs and residues) consumption—by sector

(logs in thousand board feet, Scribner scale; residues in bone dry tons)

Economic area and sector of operation	Logs				Residue (bone dry tons)
	All roundwood	Sound logs	Utility logs	Other	
Puget Sound					
Lumber	600,566	580,976	19,590	0	0
Log export	288,185	288,185	0	0	0
Post, pole & piling	25,080	25,080	0	0	0
Roundwood chipping	47,521	47,521	0	0	0
Others*	40,320	38,320	2,000	1,615	1,211,351
Total	1,001,672	980,082	21,590	1,615	1,211,351
Olympic Peninsula					
Lumber	963,375	958,974	4,401	100	0
Veneer & plywood	73,412	73,412	0	0	0
Shake & shingle	15	8	8	3,217	0
Post, pole & piling	23,927	23,927	0	0	0
Roundwood chipping	154,120	139,120	15,000	0	0
Others*	196,653	175,904	20,749	0	631,741
Total	1,411,502	1,371,345	40,158	3,317	631,741
Lower Columbia					
Lumber	259,156	256,821	2,334	0	0
Veneer & plywood	16,073	16,073	0	0	0
Shake & shingle	0	0	0	350	0
Roundwood chipping	110,785	5,987	104,798	0	0
Total	838,659	731,526	107,132	350	2,943,174
Central Washington	81,689	81,689	0	0	0
Inland Empire	341,113	212,886	128,227	0	1,700,221
State total					
Lumber	2,049,803	1,980,515	69,287	100	0
Veneer & plywood	196,101	194,101	2,000	0	0
Pulp & board	60,082	3,267	56,815	0	6,486,487
Shake & shingle	335	328	8	5,182	0
Log export	916,734	916,734	0	0	0
Post, pole & piling	49,007	49,007	0	0	0
Roundwood chipping	402,573	233,576	168,997	0	0
Total	3,674,635	3,377,528	297,107	5,282	6,486,487

* "Others" indicates industries were combined to avoid disclosing individual corporate data.

Table of Contents

Table 3 shows the total volume of logs used by each wood products sector in Washington and the states where they were harvested. For instance, Washington exported more than a billion board feet of logs (from Washington, Oregon and British Columbia), an export level not seen since 1996.

Table 3 Log consumption—by sector and state of origin

(thousand board feet, Scribner scale)

Economic area and sector of operation	All sources	Origin					Other states
		Washington	Oregon	Idaho	Montana	British Columbia	
Puget Sound							
Lumber	600,566	556,435	0	0	0	44,131	0
Log export	288,185	288,185	0	0	0	0	0
Post, pole & piling	25,080	19,163	280	3,736	0	1,901	0
Roundwood chipping	47,521	46,662	0	0	0	860	0
Others*	40,320	40,000	0	0	0	0	320
Total	1,001,672	950,444	280	3,736	0	46,892	320
Olympic Peninsula							
Lumber	963,375	906,800	21,553	0	0	19,750	15,271
Veneer & plywood	73,412	70,425	2,829	0	0	158	0
Shake & shingle	15	15	0	0	0	0	0
Post, pole & piling	23,927	23,319	608	0	0	0	0
Roundwood chipping	154,120	154,120	0	0	0	0	0
Others*	196,653	187,293	0	0	0	9,360	0
Total	1,411,502	1,341,973	24,990	0	0	29,268	15,271
Lower Columbia							
Lumber	259,156	201,670	57,486	0	0	0	0
Veneer & plywood	16,073	14,948	1,125	0	0	0	0
Shake & shingle	0	0	0	0	0	0	0
Roundwood chipping	110,785	74,106	36,679	0	0	0	0
Others*	905,290	394,068	511,222	0	0	0	0
Total	838,659	487,758	350,901	0	0	0	0
Central Washington	81,689	81,689	0	0	0	0	0
Inland Empire	341,113	240,703	24,700	73,743	1,967	0	0
State total							
Lumber	2,049,803	1,864,500	79,039	25,611	1,500	63,881	15,271
Veneer & plywood	196,101	191,323	3,954	666	0	158	0
Pulp & board	60,082	39,382	16,500	3,733	467	0	0
Shake & shingle	335	15	0	0	0	0	320
Log export	916,734	651,763	255,611	0	0	9,360	0
Post, pole & piling	49,007	42,482	888	3,736	0	1,901	0
Roundwood chipping	402,573	313,102	44,879	43,733	0	860	0
Total	3,674,635	3,102,567	400,871	77,479	1,967	76,160	15,591

* "Others" indicates industries were combined to avoid disclosing individual corporate data.

Table 4 (a through e) shows the volume of logs harvested from each county (listed in columns) for use by wood products operations in each county (listed by row in the far left column). This is a significant factor since transportation costs are a major cost in lumber production. For instance, no logs from the Inland Empire were sent to mills in Western Washington. Stevens County mills received 66 percent of all the logs harvested in eastern Washington.

Table 4a Log consumption—by county 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)						
		San Juan, Island	King	Kitsap	Pierce	Skagit	Snohomish	Whatcom
Puget Sound								
King	248,400	0	6,564	5,173	12,540	7,173	24,441	7,173
Pierce	310,373	0	18,477	42,078	93,676	1,100	14,116	0
Skagit	221,290	80	6,944	0	3,556	80,026	43,195	47,147
Snohomish	159,991	2,398	9,956	386	358	27,337	76,977	7,195
Whatcom	10,390	288	0	0	0	3,197	352	6,394
Total	950,444	2,765	41,940	47,638	110,129	118,833	159,081	67,909
Olympic Peninsula								
Clallam	174,643	0	0	5,214	119	356	0	119
Grays Harbor	360,488	0	0	4,924	0	3,456	3,240	3,240
Lewis	330,811	0	735	2,797	12,594	0	3,675	1,470
Mason	141,677	0	0	6,410	3,500	0	0	0
Thurston	112,093	0	0	0	946	0	0	0
Others*	222,261	0	0	0	0	0	0	0
Total	1,341,973	0	735	19,344	17,159	3,812	6,915	4,829
Lower Columbia								
Clark	96,916	0	9,668	0	10,290	4,481	8,927	7,795
Cowlitz	351,939	0	0	0	1,907	0	0	0
Otherrs*	38,903	0	0	0	0	0	0	0
Total	487,758	0	9,668	0	12,197	4,481	8,927	7,795
Central Washington	81,689	0	753	0	0	0	0	0
Inland Empire	240,703	0	0	0	0	0	0	0
State total	3,102,567	2,765	53,096	66,982	139,485	127,125	174,923	80,533

* "Others" indicates counties were combined to avoid disclosing individual corporate data.

Table of Contents

Continued

Table 4b Log consumption—by county of operation and county of harvest

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

Economic area and county of operation	County of log harvest (Olympic Peninsula Economic Area)						
	Clallam	Grays Harbor	Jefferson	Lewis	Mason	Pacific	Thurston
Puget Sound							
King	19,082	0	5,173	44,540	7,740	8,000	4,800
Pierce	25,084	25,515	0	21,204	27,080	13,859	27,708
Skagit	12,702	0	10,668	4,573	0	3,556	1,017
Snohomish	6,192	129	776	0	19,521	0	4,183
Whatcom	0	0	0	0	0	0	0
Total	63,060	25,644	16,617	70,317	54,341	25,415	37,708
Olympic Peninsula							
Clallam	119,546	3,467	40,932	0	4,892	0	0
Grays Harbor	59,267	143,602	17,933	10,441	15,126	42,872	13,631
Jefferson	16,599	0	4,150	0	0	0	0
Lewis	0	32,547	3,168	151,068	5,290	32,239	22,228
Mason	741	37,594	2,241	4,680	59,655	4,680	22,176
Pacific	0	40,000	0	30,000	0	111,512	0
Thurston	0	15,702	0	39,357	6,765	8,518	36,428
Others*	16,599	40,000	4,150	30,000	0	111,512	0
Total	196,154	272,912	68,424	235,546	91,727	199,821	94,463
Lower Columbia							
Clark	0	0	0	17,944	0	7,795	0
Cowlitz	0	2,195	0	68,149	4,720	33,457	9,899
Klickitat	0	0	0	0	0	0	0
Skamania	0	0	0	0	0	0	0
Others*	0	0	0	0	0	0	0
Total	0	2,195	0	86,093	4,720	41,252	9,899
Central Washington	0	0	0	0	0	0	0
Inland Empire	0	0	0	0	0	0	0
State Total	259,214	300,751	85,042	391,955	150,788	266,488	142,070

* "Others" indicates counties were combined to avoid disclosure of individual corporate data.

Continued

Table 4c **Log consumption—by county of operation and county of harvest**

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

Economic area and county of operation	County of log harvest (Lower Columbia Economic Area)				
	Clark	Cowlitz	Klickitat	Skamania	Wahkiakum
Puget Sound					
King	32,000	40,000	0	8,000	16,000
Pierce	238	238	0	0	0
Skagit	0	0	0	0	0
Snohomish	1,932	0	0	0	0
Whatcom	160	0	0	0	0
Total	34,330	40,238	0	8,000	16,000
Olympic Peninsula					
Clallam	0	0	0	0	0
Grays	0	39,997	0	0	2,758
Lewis	1,391	42,204	0	357	10,235
Mason	0	0	0	0	0
Thurston	1,646	1,785	0	0	946
Others*	0	0	0	0	0
Total	3,036	83,987	0	357	13,940
Lower Columbia					
Clark	7,795	11,110	0	6,629	4,481
Cowlitz	36,522	166,070	69	13,200	15,751
Others*	7,187	0	23,342	8,375	0
Total	51,504	177,179	23,410	28,203	20,233
Central Washington					
	0	0	6,916	0	0
Inland Empire					
Stevens	0	0	0	0	0
Others*	0	0	0	0	0
Total	0	0	0	0	0
State total	88,871	301,405	30,326	36,560	50,172

* "Others" indicates counties were combined to avoid disclosing individual corporate data.

Table of Contents

Continued

Table 4d Log consumption—by county of operation 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						
King	0	0	0	0	0	0
Pierce	0	0	0	0	0	0
Skagit	0	3,914	0	0	3,914	0
Snohomish	2,652	0	0	0	0	0
Whatcom	0	0	0	0	0	0
Total	2,652	3,914	0	0	3,914	0
Olympic Peninsula						
Clallam	0	0	0	0	0	0
Grays Harbor	0	0	0	0	0	0
Lewis	0	0	0	0	0	8,813
Mason	0	0	0	0	0	0
Thurston	0	0	0	0	0	0
Others*	0	0	0	0	0	0
Total	0	0	0	0	0	8,813
Lower Columbia						
Clark	0	0	0	0	0	0
Cowlitz	0	0	0	0	0	0
Others*	0	0	0	0	0	0
Total	0	0	0	0	0	0
Central Washington	6,773	0	9,408	0	0	57,839
Inland Empire						
Stevens	1,803	0	0	0	21,673	0
Others*	0	0	0	0	0	0
Total	1,803	0	0	0	21,673	0
State total	11,228	3,914	9,408	0	25,587	66,652

* "Others" indicates counties were combined to avoid disclosure of individual corporate data.

Continued

Table 4e Log consumption—by county of operation 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								
Pierce	0	0	0	0	0	0	0	0
Skagit	0	0	0	0	0	0	0	0
Snohomish	0	0	0	0	0	0	0	0
Others*	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Olympic Peninsula								
Clallam	0	0	0	0	0	0	0	0
Grays Harbor	0	0	0	0	0	0	0	0
Lewis	0	0	0	0	0	0	0	0
Mason	0	0	0	0	0	0	0	0
Thurston	0	0	0	0	0	0	0	0
Others*	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Lower Columbia								
Clark	0	0	0	0	0	0	0	0
Cowlitz	0	0	0	0	0	0	0	0
Others*	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Central Washington								
	0	0	0	0	0	0	0	0
Inland Empire								
Stevens	0	0	35,670	0	26,073	7,251	118,866	0
Others*	0	547	5,220	137	8,503	3,483	11,340	137
Total	0	547	40,890	137	34,576	10,735	130,206	137
State total	0	547	40,890	137	34,576	10,735	130,206	137

* "Others" indicates counties were combined to avoid disclosure of individual corporate data.

Table of Contents

Table 4f shows the volume of logs harvested in other states and processed in Washington mills or exported through Washington ports. For instance, Washington mills and operations received 70 percent of its out-of-state logs from Oregon, 14 percent from Idaho and 13 percent from British Columbia.

Table 4f Log consumption—from other states or province of log harvest
(thousand board feet, Scribner scale)

Economic area and county of operation	State or province of log harvest				
	Oregon	Idaho	Montana	British Columbia	Other state
Puget Sound					
King	0	0	0	0	0
Pierce	0	3,456	0	29,701	0
Skagit	0	0	0	2,834	0
Snohomish	280	280	0	10,048	320
Whatcom	0	0	0	4,309	0
Total	280	3,736	0	46,892	320
Olympic Peninsula					
Clallam	676	0	0	158	5,121
Grays Harbor	4,585	0	0	2,400	0
Lewis	18,953	0	0	250	10,150
Mason	0	0	0	17,100	0
Thurston	608	0	0	9,360	0
Others	168	0	0	0	0
Total	24,990	0	0	29,268	15,271
Lower Columbia					
Clark	12,713	0	0	0	0
Cowlitz	321,093	0	0	0	0
Klickitat	1,125	0	0	0	0
Others*	15,970	0	0	0	0
Total	350,901	0	0	0	0
Inland Empire	24,700	73,743	1,967	0	0
Central Washington	0	0	0	0	0
State Total	400,871	77,479	1,967	76,160	15,591

* "Others" indicates counties were combined to avoid disclosing individual corporate data.

Table of Contents

Table 5 offers two views (by mill sector and economic area) of the use of logs harvested from national forests. For instance, more logs were harvested from national forests in eastern Washington (50,517 mbf) than the combined volume of logs from the three national forests in western Washington (43,933 mbf).

Table 5 Logs harvested from national forests

(thousand board feet, Scribner scale)

Economic area	All		Westside NFs		Eastside NFs				
	National Forests	Olympic	Gifford Pinchot	Mt Baker/Snoqualmie	Wenatchee	Okanogan	Colville	Umatilla	Other
Puget Sound	15,288	3,687	900	7,105	104	3,493	0	0	0
Olympic Peninsula	20,931	14,440	6,224	0	0	0	0	0	266
Lower Columbia	7,715	0	2,924	0	0	0	0	0	4,791
Central Washington	3,199	0	0	0	3,199	0	0	0	0
Inland Empire	47,318	0	0	0	0	7,878	25,376	4,500	9,563
State total	94,450	18,127	10,048	7,105	3,302	11,371	25,376	4,500	14,620

Sector of operation	All		Westside NFs		Eastside NFs				
	National Forests	Olympic	Gifford Pinchot	Mt Baker/Snoqualmie	Wenatchee	Okanogan	Colville	Umatilla	Other
Lumber	45,436	4,568	6,430	4,329	104	9,133	14,605	0	6,267
Veneer & plywood	8,855	3,292	900	0	0	2,238	2,425	0	0
Pulp	12,007	207	0	0	0	0	1,680	4,500	5,620
Roundwood chipping	28,153	10,060	2,719	2,776	3,199	0	6,666	0	2,733
State total	94,450	18,127	10,048	7,105	3,302	11,371	25,376	4,500	14,620

Table of Contents

Table 6 (on three pages) shows the number of mills by economic area and sector and their percentages of log volume by economic area and landowner class. For instance, 70 of the 125 operations (57 percent of the total) received logs from state-owned forests.

Table 6a Number of operations—by economic region and original owners

Economic area and sector of operation	National forest				State				Bureau of Land Management			
	Percentage of log volume				Percentage of log volume				Percentage of log volume			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound												
Lumber	12	5	0	0	3	6	5	3	17	0	0	0
Log export	9	0	0	0	9	0	0	0	9	0	0	0
Post, pole & piling	3	0	0	0	0	0	1	2	3	0	0	0
Roundwood chipping	1	2	0	0	0	3	0	0	3	0	0	0
Others*	5	1	0	0	5	0	1	0	6	0	0	0
Total	30	8	0	0	17	9	7	5	38	0	0	0
Olympic Peninsula												
Lumber	14	8	0	0	2	12	4	4	20	2	0	0
Veneer & plywood	3	2	0	0	2	0	2	1	5	0	0	0
Shake & shingle	13	0	0	0	12	1	0	0	13	0	0	0
Log export	4	0	0	0	4	0	0	0	4	0	0	0
Roundwood chipping	0	5	0	0	0	5	0	0	5	0	0	0
Others*	4	1	0	0	1	1	2	1	5	0	0	0
Total	38	16	0	0	21	19	8	6	52	2	0	0
Lower Columbia												
Lumber	1	3	0	0	0	3	1	0	3	1	0	0
Pulp & board	4	0	0	0	4	0	0	0	4	0	0	0
Log export	6	0	0	0	6	0	0	0	6	0	0	0
Roundwood chipping	3	0	0	0	2	1	0	0	3	0	0	0
Others*	2	0	0	0	2	0	0	0	2	0	0	0
Total	16	3	0	0	14	4	1	0	18	1	0	0
Central Washington	1	1	0	0	1	1	0	0	2	0	0	0
Inland Empire												
Lumber	3	3	0	0	1	5	0	0	4	1	0	1
Pulp & board	1	2	0	0	1	2	0	0	3	0	0	0
Others*	0	2	1	0	0	3	0	0	1	2	0	0
Total	4	7	1	0	2	10	0	0	8	3	0	1
State total												
Lumber	31	19	0	0	7	26	10	7	45	4	0	1
Veneer & plywood	5	4	0	0	4	1	3	1	8	1	0	0
Pulp & board	8	3	0	0	8	3	0	0	11	0	0	0
Shake & shingle	16	0	0	0	15	1	0	0	16	0	0	0
Log export	19	0	0	0	19	0	0	0	19	0	0	0
Post, pole & piling	6	0	0	0	0	0	3	3	6	0	0	0
Roundwood chipping	4	9	1	0	2	12	0	0	13	1	0	0
Total	89	35	1	0	55	43	16	11	118	6	0	1

* "Others" indicates industries were combined to avoid disclosing individual corporate data.

56%
The percentage of Washington's mills that received logs from state-owned forests in 2010.

Continued

Table 6b Number of operations—by economic region and original owners

Economic area and sector of operation	Forest Sector											
	Other public				Own wood supply				Other wood supply			
	Percentage of log volume											
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound												
Lumber	12	5	0	0	13	4	0	0	6	5	4	2
Log export	9	0	0	0	5	3	1	0	0	0	1	8
Post, pole & piling	2	1	0	0	3	0	0	0	1	2	0	0
Roundwood chipping	1	2	0	0	3	0	0	0	0	1	2	0
Others*	5	1	0	0	6	0	0	0	5	0	1	0
Total	29	9	0	0	30	7	1	0	12	8	8	10
Olympic Peninsula												
Lumber	15	6	1	0	17	4	1	0	4	6	10	2
Veneer & plywood	4	1	0	0	5	0	0	0	4	0	1	0
Shake & shingle	13	0	0	0	12	1	0	0	12	0	0	1
Log export	4	0	0	0	2	1	1	0	0	1	2	1
Roundwood chipping	5	0	0	0	4	0	0	1	1	0	3	1
Others*	5	0	0	0	4	1	0	0	2	2	1	0
Total	46	7	1	0	44	7	2	1	23	9	17	5
Lower Columbia												
Lumber	3	1	0	0	3	0	1	0	0	0	4	0
Pulp & board	4	0	0	0	4	0	0	0	4	0	0	0
Log export	6	0	0	0	2	0	0	4	3	1	1	1
Others*	2	0	0	0	1	0	1	0	1	1	0	0
Roundwood chipping	3	0	0	0	3	0	0	0	0	0	0	3
Total	18	1	0	0	13	0	2	4	8	2	5	4
Central Washington												
	2	0	0	0	2	0	0	0	1	0	0	1
Inland Empire												
Lumber	5	1	0	0	3	2	1	0	1	3	1	1
Pulp & board	3	0	0	0	3	0	0	0	1	1	1	0
Others*	3	0	0	0	2	1	0	0	0	1	2	0
Total	11	1	0	0	8	3	1	0	2	5	4	1
State total												
Lumber	36	13	1	0	37	10	3	0	12	14	19	5
Veneer & plywood	7	2	0	0	8	0	1	0	5	1	3	0
Pulp & board	11	0	0	0	10	1	0	0	9	1	1	0
Shake & shingle	16	0	0	0	15	1	0	0	15	0	0	1
Log export	19	0	0	0	9	4	2	4	3	2	4	10
Post, pole & piling	5	1	0	0	6	0	0	0	1	4	1	0
Roundwood chipping	12	2	0	0	12	1	0	1	1	2	6	5
Total	106	18	1	0	97	17	6	5	46	24	34	21

*"Others" indicates industries were combined to avoid disclosing individual corporate data.

Table of Contents

Continued

Table 6c Number of operations—by economic region and original owners

Economic area and sector of operation	Native American				Farmer and miscellaneous private			
	Percentage of log volume							
	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound								
Lumber	16	1	0	0	1	9	4	3
Log export	5	4	0	0	0	9	0	0
Post, pole & piling	3	0	0	0	0	2	1	0
Roundwood chipping	1	2	0	0	0	2	1	0
Others*	5	0	0	1	5	1	0	0
Total	30	7	0	1	6	23	6	3
Olympic Peninsula								
Lumber	12	10	0	0	8	11	2	1
Veneer & plywood	5	0	0	0	3	1	1	0
Shake & shingle	11	1	0	1	13	0	0	0
Log export	1	3	0	0	0	3	1	0
Roundwood chipping	1	4	0	0	0	5	0	0
Others*	4	1	0	0	1	3	1	0
Total	34	19	0	1	25	23	5	1
Lower Columbia								
Lumber	4	0	0	0	1	3	0	0
Pulp & board	4	0	0	0	4	0	0	0
Log export	5	1	0	0	3	2	1	0
Roundwood chipping	3	0	0	0	0	3	0	0
Others*	1	1	0	0	1	1	0	0
Total	17	2	0	0	9	9	1	0
Central Washington								
	1	0	0	1	1	1	0	0
Inland Empire								
Veneer & plywood	0	1	0	0	0	1	0	0
Roundwood chipping	1	1	0	0	1	1	0	0
Others*	2	7	0	0	3	6	0	0
Total	3	9	0	0	4	8	0	0
State total								
Lumber	33	16	0	1	13	27	6	4
Veneer & plywood	7	2	0	0	4	4	1	0
Pulp & board	8	3	0	0	8	2	1	0
Shake & shingle	13	1	0	2	16	0	0	0
Log export	11	8	0	0	3	14	2	0
Post, pole & piling	6	0	0	0	0	5	1	0
Roundwood chipping	7	7	0	0	1	12	1	0
Total	85	37	0	3	45	64	12	4

* "Others" indicates industries were combined to avoid disclosure of individual corporate data.

Table 7 (on three pages) shows the number of operations (mills and log exporters) by sector and economic area and their percentage of log volume by landowner class. The percentage of categories are similar to Table 6, except the rows are sorted by wood product sector. For instance, 43 out of 50 sawmills purchased logs from state-owned forests.

Table 7a Number of operations—by sector and original log owners

Economic area and sector of operation	National forest				State				Bureau of Land Management			
	Percentage of log dependency											
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Log export												
Lower Columbia	6	0	0	0	6	0	0	0	6	0	0	0
Puget Sound	9	0	0	0	9	0	0	0	9	0	0	0
Others*	2	0	0	0	2	0	0	0	2	0	0	0
Total	19	0	0	0	19	0	0	0	19	0	0	0
Lumber												
Olympic Peninsula	14	8	0	0	2	12	4	4	20	2	0	0
Inland Empire	3	3	0	0	1	5	0	0	4	1	0	1
Puget Sound	12	5	0	0	3	6	5	3	17	0	0	0
Others*	2	3	0	0	1	3	1	0	4	1	0	0
Total	31	19	0	0	7	26	10	7	45	4	0	1
Post, pole & piling												
Olympic Peninsula	3	0	0	0	0	0	2	1	3	0	0	0
Puget Sound	3	0	0	0	0	0	1	2	3	0	0	0
Total	6	0	0	0	0	0	3	3	6	0	0	0
Pulp												
Inland Empire	1	2	0	0	1	2	0	0	3	0	0	0
Lower Columbia	4	0	0	0	4	0	0	0	4	0	0	0
Others*	3	1	0	0	3	1	0	0	4	0	0	0
Total	8	3	0	0	8	3	0	0	11	0	0	0
Roundwood chipping												
Puget Sound	1	2	0	0	0	3	0	0	3	0	0	0
Olympic Peninsula	0	5	0	0	0	5	0	0	5	0	0	0
Lower Columbia	3	0	0	0	2	1	0	0	3	0	0	0
Others*	0	2	1	0	0	3	0	0	2	1	0	0
Total	4	9	1	0	2	12	0	0	13	1	0	0
Shake & shingle												
Olympic Peninsula	13	0	0	0	12	1	0	0	13	0	0	0
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	16	0	0	0	15	1	0	0	16	0	0	0
Veneer & plywood												
Olympic Peninsula	3	2	0	0	2	0	2	1	5	0	0	0
Others*	2	2	0	0	2	1	1	0	3	1	0	0
Total	5	4	0	0	4	1	3	1	8	1	0	0
State total	87	35	1	0	53	43	16	11	116	6	0	1

* "Others" indicates economic areas were combined to avoid disclosure of individual corporate data.

Continued

Table 7b Number of operations—by sector and original log owners

Sector and economic area of operation	Other Public				Own wood supply Percentage of log dependency				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												
Lower Columbia	6	0	0	0	2	0	0	4	3	1	1	1
Puget Sound	9	0	0	0	5	3	1	0	0	0	1	8
Others*	2	0	0	0	0	1	1	0	0	1	0	1
Total	19	0	0	0	7	4	2	4	3	2	2	10
Lumber												
Olympic Peninsula	15	6	1	0	17	4	1	0	4	6	10	2
Lower Columbia	3	1	0	0	3	0	1	0	0	0	4	0
Inland Empire	5	1	0	0	3	2	1	0	1	3	1	1
Puget Sound	12	5	0	0	13	4	0	0	6	5	4	2
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	36	13	1	0	37	10	3	0	12	14	19	5
Post, pole & piling												
Olympic Peninsula	3	0	0	0	3	0	0	0	0	2	1	0
Puget Sound	2	1	0	0	3	0	0	0	1	2	0	0
Total	5	1	0	0	6	0	0	0	1	4	1	0
Pulp												
Inland Empire	3	0	0	0	3	0	0	0	1	1	1	0
Lower Columbia	4	0	0	0	4	0	0	0	4	0	0	0
Others*	4	0	0	0	3	1	0	0	4	0	0	0
Total	11	0	0	0	10	1	0	0	9	1	1	0
Roundwood chipping												
Puget Sound	1	2	0	0	3	0	0	0	0	1	2	0
Olympic Peninsula	5	0	0	0	4	0	0	1	1	0	3	1
Lower Columbia	3	0	0	0	3	0	0	0	0	0	0	3
Others*	3	0	0	0	2	1	0	0	0	1	1	1
Total	12	2	0	0	12	1	0	1	1	2	6	5
Shake & shingle												
Olympic Peninsula	13	0	0	0	12	1	0	0	12	0	0	1
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	16	0	0	0	15	1	0	0	15	0	0	1
Veneer & plywood												
Inland Empire	1	0	0	0	1	0	0	0	0	0	1	0
Olympic Peninsula	4	1	0	0	5	0	0	0	4	0	1	0
Others*	2	1	0	0	2	0	1	0	1	0	1	0
Total	7	2	0	0	8	0	1	0	5	1	3	0
State Total	104	18	1	0	95	17	6	5	46	24	32	21

* "Others" indicates economic areas were combined to avoid disclosing individual corporate data.

Continued

Table 7c Number of operations—sector and original log owners

Sector and economic area of operation	Percentage of log dependency							
	Native American				Farmer and miscellaneous private			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Log export								
Puget Sound	5	4	0	0	0	9	0	0
Lower Columbia	5	1	0	0	3	2	1	0
Others*	1	3	0	0	0	3	1	0
Total	11	8	0	0	3	14	2	0
Lumber								
Inland Empire	1	5	0	0	2	4	0	0
Olympic Peninsula	12	10	0	0	8	11	2	1
Puget Sound	16	1	0	0	1	9	4	3
Lower Columbia	4	0	0	0	1	3	0	0
Others*	0	0	0	1	1	0	0	0
Total	33	16	0	1	13	27	6	4
Post, pole & piling								
Puget Sound	3	0	0	0	0	2	1	0
Olympic Peninsula	3	0	0	0	0	3	0	0
Total	6	0	0	0	0	5	1	0
Pulp								
Lower Columbia	4	0	0	0	4	0	0	0
Inland Empire	1	2	0	0	1	2	0	0
Others*	3	1	0	0	3	0	1	0
Total	8	3	0	0	8	2	1	0
Roundwood chipping								
Olympic Peninsula	1	4	0	0	0	5	0	0
Puget Sound	1	2	0	0	0	2	1	0
Lower Columbia	3	0	0	0	0	3	0	0
Others*	2	1	0	0	1	2	0	0
Total	7	7	0	0	1	12	1	0
Shake & shingle								
Olympic Peninsula	11	1	0	1	13	0	0	0
Others*	2	0	0	1	3	0	0	0
Total	13	1	0	2	16	0	0	0
Veneer & plywood								
Olympic Peninsula	5	0	0	0	3	1	1	0
Others*	2	2	0	0	1	3	0	0
Total	7	2	0	0	4	4	1	0
State total	84	36	0	3	45	63	11	4

* "Others" indicates economic areas were combined to avoid disclosure of individual corporate data.

Percentage of
each mill sector
that received
some logs from
state-owned
lands in 2010

- 100% Pole
- 86% Sawmill
- 86% Chipping
- 56% Veneer
& Plywood
- 27% Pulp mills
- 6.7% Shake
& Shingle

Table of Contents

Table 8 (on two pages) shows the total volume of logs that were used by each wood products sector and from each ownership category. For instance, 17 percent of all the logs processed in eastern Washington mills (Central Washington and Inland Empire economic areas) came from state-owned lands.

Table 8a Log consumption—by sector and original log owners
(thousand board feet, Scribner scale)

Economic area and sector of operation	All Owners	State	National Forest	Bureau of Land Management	Other public
Puget Sound					
Lumber	600,566	192,821	11,637	0	6,700
Log export	288,185	0	0	0	0
Post, pole & piling	25,080	16,936	0	0	350
Roundwood chipping	47,521	4,124	2,776	0	469
Others*	40,320	15,600	1,200	0	1,600
Total	1,001,672	229,481	15,613	0	9,118
Olympic Peninsula					
Lumber	963,375	257,365	4,953	526	17,751
Veneer & plywood	73,412	61,030	2,992	0	600
Shake & shingle	15	0	0	0	0
Log export	175,904	0	0	0	0
Post, pole & piling	23,927	15,304	0	0	0
Others*	174,869	25,920	12,985	0	0
Total	1,411,502	359,620	20,931	526	18,351
Lower Columbia					
Lumber	259,156	51,083	7,715	9,981	4,971
Pulp & board	0	0	0	0	0
Log export	452,645	0	0	0	0
Roundwood chipping	110,785	5,240	0	0	0
Others	16,073	0	0	0	0
Total	838,659	56,323	7,715	9,981	4,971
Central Washington	81,689	564	3,199	0	0
Inland Empire	341,113	71,880	42,818	10,849	500
State total					
Lumber	2,049,803	528,965	45,761	19,190	29,922
Veneer & plywood	196,101	96,615	8,855	1,332	2,200
Pulp & board	60,082	13,876	7,507	0	0
Shake & shingle	335	0	0	0	0
Log export	916,734	0	0	0	0
Post, pole & piling	49,007	32,240	0	0	350
Roundwood chipping	402,573	46,173	28,153	833	469
Total	3,674,635	717,868	90,276	21,356	32,940

* "Others" indicates economic areas were combined to avoid disclosure of individual corporate data.

20%
The percentage of total wood processed by the state's wood product mills in 2010 harvested from state-owned forests.

Continued

Table 8b Log consumption—by sector and original log owners

(thousand board feet, Scribner scale)

Economic area and sector of operation	Forest Sector		Native American	Farmer and miscellaneous private
	Own wood supply	Other wood supply		
Puget Sound				
Lumber	31,519	240,254	278	117,356
Log export	46,923	197,174	7,193	36,895
Post, pole & piling	0	2,845	0	4,949
Roundwood chipping	0	26,144	3,385	10,624
Others*	0	17,600	320	4,000
Total	78,443	484,017	11,176	173,824
Olympic Peninsula				
Lumber	128,725	476,574	26,562	50,920
Veneer & plywood	0	7,000	0	1,790
Shake & shingle	2	0	14	0
Log export	69,526	63,139	17,400	25,839
Roundwood chipping	10,500	84,240	11,505	13,118
Others*	75,543	63,139	18,852	34,969
Total	214,769	637,451	56,932	102,922
Lower Columbia				
Lumber	43,759	120,379	0	21,267
Pulp & board	0	0	0	0
Log export	321,667	58,306	25,512	47,160
Roundwood chipping	0	83,987	0	21,558
Others*	10,287	3,375	482	1,929
Total	375,713	266,047	25,994	91,914
Central Washington	0	14,111	62,874	941
Inland Empire	20,720	124,350	26,590	43,406
State total				
Lumber	223,056	879,881	108,673	214,356
Veneer & plywood	10,287	57,953	3,813	15,047
Pulp & board	6,017	12,833	4,919	14,929
Shake & shingle	2	0	334	0
Log export	438,116	318,619	50,105	109,894
Post, pole & piling	0	9,343	0	7,074
Roundwood chipping	12,167	247,348	15,724	51,708
Total	689,645	1,525,976	183,566	413,008

* "Others" indicates sectors were combined to avoid disclosure of individual corporate data.

Table of Contents

Table 9 (on two pages) shows the volume of logs (sorted by species) that were used by each wood products sector. For, instance, Douglas fir was the dominant species harvested (60 percent) for Washington mills in 2010.

Table 9a Log consumption—by species
(thousand board feet, Scribner scale)

Economic area and sector of operation	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
Lumber	600,566	354,367	196,184	7,827	0	250
Log export	288,185	152,524	121,029	9,252	5,380	0
Post, pole & piling	25,080	16,873	0	0	0	0
Roundwood chipping	47,521	15,751	22,346	0	0	0
Others*	40,320	26,000	11,600	800	0	0
Total	1,001,672	565,515	351,158	17,879	5,380	250
Olympic Peninsula						
Lumber	963,375	527,397	265,413	14,404	17,874	918
Veneer & plywood	73,412	61,814	9,569	597	1,037	0
Pulp & board	20,749	6,225	14,524	0	0	0
Shake & shingle	15	0	0	0	0	0
Post, pole & piling	23,927	23,927	0	0	0	0
Others	330,024	173,212	117,511	3,114	9,447	0
Total	1,411,502	792,575	407,018	18,115	28,358	918
Lower Columbia						
Lumber	259,156	239,992	5,190	9,183	0	4,791
Veneer & plywood	16,073	9,322	0	3,858	0	2,893
Log export	452,645	386,374	49,423	14,473	1,927	0
Others*	110,785	45,467	33,465	0	0	0
Total	838,659	681,155	88,078	27,513	1,927	7,684
Central Washington						
	81,689	7,535	1,882	13,813	0	55,636
Inland Empire						
	341,113	154,322	3,767	61,857	7,333	50,720
State total						
Lumber	2,049,803	1,188,166	468,787	46,659	22,874	95,396
Veneer & plywood	196,101	161,087	21,169	5,255	1,037	5,558
Pulp & board	60,082	21,225	15,458	4,767	1,500	7,867
Shake & shingle	335	0	0	0	0	0
Log export	916,734	660,290	214,403	26,839	14,754	0
Post, pole & piling	49,007	40,800	0	0	0	0
Roundwood chipping	402,573	129,534	132,085	55,659	2,833	6,389
Total	3,674,635	2,201,102	851,901	139,178	42,998	115,209

* "Others" indicates industries were combined to avoid disclosure of individual corporate data.

Continued

Table 9b Log consumption—by species
(thousand board feet,, Scribner scale)

Economic area and sector of operation	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
Lumber	250	4,157	0	31,407	6,124
Log export	0	0	0	0	0
Post, pole & piling	0	8,207	0	0	0
Roundwood chipping	0	440	0	7,655	1,329
Others*	400	320	0	0	1,200
Total	650	13,124	0	39,063	8,653
Olympic Peninsula					
Lumber	918	65,216	17	68,839	2,379
Veneer & plywood	0	79	0	0	316
Shake & shingle	0	15	0	0	0
Post, pole & piling	0	0	0	0	0
Roundwood chipping	0	0	0	25,240	1,500
Others*	0	0	0	0	0
Total	918	65,310	17	94,079	4,195
Lower Columbia					
Lumber	0	0	0	0	0
Pulp & board	0	0	0	0	0
Log export	0	0	0	0	448
Roundwood chipping	0	0	0	31,854	0
Others*	0	0	0	0	0
Total	0	0	0	31,854	448
Central Washington	2,822	0	0	0	0
Inland Empire	35,266	27,015	833	0	0
State total					
Lumber	22,768	96,388	17	100,247	8,503
Veneer & plywood	400	79	0	0	1,516
Pulp & board	9,267	0	0	0	0
Shake & shingle	0	335	0	0	0
Log export	0	0	0	0	448
Post, pole & piling	0	8,207	0	0	0
Roundwood chipping	7,222	440	833	64,749	2,829
Total	39,656	105,449	850	164,995	13,296

* "Others" indicates industries were combined to avoid disclosure of individual corporate data.

Table of Contents

Table 10 shows the total volume of **wood and bark residues** that were produced (as leftover material) in the sawmill, veneer & plywood, and shake & shingle sectors. Pulp, log export and post-pole-piling sectors do not produce marketable volumes of residues. In the chipping sector chips are the end product, not a “residue.” The table also shows the volumes of residues used for each purpose. **Board:** Oriented strand board (sheathing panels), particle board. **Pulp:** paper products. **Fuel:** mill site boilers for the manufacturing process (pulp mills) or drying wood products. **Other:** garden mulch, barn shavings. For instance, lumber mills produced 3.8 million tons of residues and sold 1.7 million bone dry tons to pulp mills.

Table 10 Wood and bark residues—production and use
(tons, dry weight)

Economic area and sector	All residues	All wood	Total used	Wood Residue				
				Pulp	Board	Fuel	Other	Unused
Puget Sound	1,253,722	1,016,958	1,016,958	517,629	2,223	220,835	276,271	0
Olympic Peninsula	2,094,641	1,639,525	1,638,492	861,252	15,181	643,923	118,136	1,033
Lower Columbia	780,678	596,244	596,244	391,900	77,640	6,716	119,988	0
Central Washington	83,837	66,064	66,064	36,304	14,880	14,880	0	0
Inland Empire	360,019	308,469	308,469	210,382	58,554	34,889	4,644	0
Lumber	3,826,167	3,003,008	3,002,782	1,737,858	143,537	713,696	407,691	226
Veneer & plywood	685,206	571,898	571,898	279,609	24,941	184,888	82,460	0
Shake & shingle	61,524	52,354	51,547	0	0	22,659	28,888	807
Total	4,572,897	3,627,260	3,626,227	2,017,467	168,478	921,243	519,039	1,033

Economic area and sector	Bark Residue		Pulp	Board	Fuel	Other	Unused
	All Bark	Used Total					
Puget Sound	236,764	235,401	0	0	137,062	98,339	1,363
Olympic Peninsula	455,116	454,846	0	0	324,324	130,522	270
Lower Columbia	184,434	184,434	0	0	55,112	129,322	0
Central Washington	17,773	17,773	0	0	15,996	1,777	0
Inland Empire	51,550	51,550	0	0	48,777	2,773	0
Lumber	823,159	821,526	0	0	497,248	324,278	1,633
Veneer & plywood	113,308	113,308	0	0	82,427	30,881	0
Shake & shingle	9,170	9,170	0	0	1,596	7,574	0
Total	945,637	944,004	0	0	581,271	362,733	1,633

Table 11 tallies the total number of mills by sector and volume that use hardwoods (red alder, etc.).

Table 11 Hardwoods consumed—by volume
(thousand board feet Scribner)

	Number of mills	Hardwood
Sawmills	7	108,747
Veneer & Plywood	2	1,516
Export	1	448
Chip	14	67,578
State Total	24	178,289

4.6 million
bone dry tons of bark and wood residues created by Washington mills in 2010. Only 2,666 bone dry tons were unused.

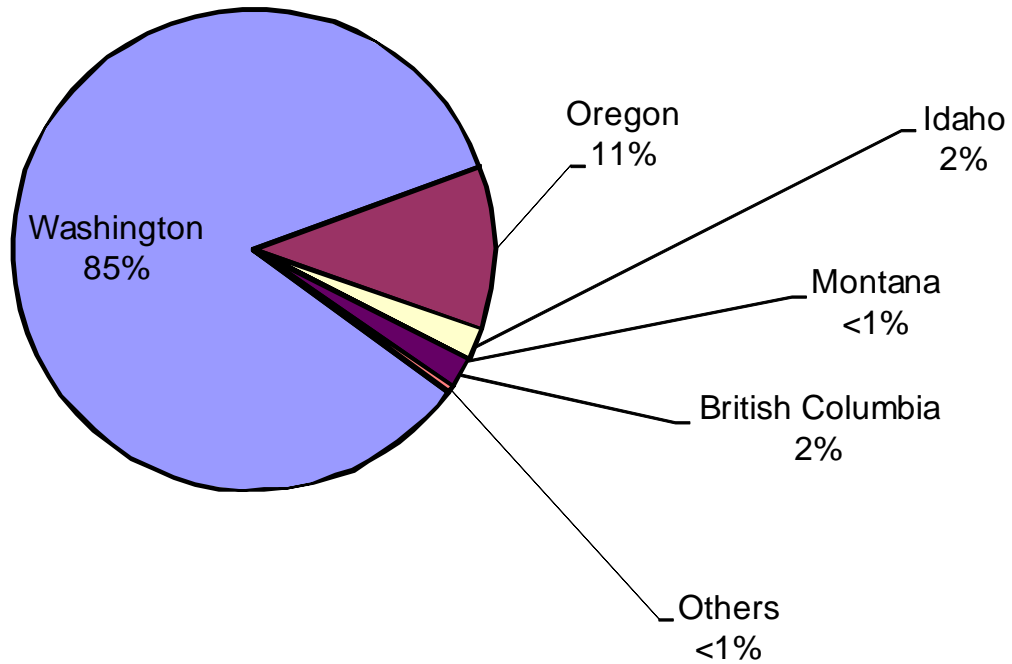
Table 12 shows the total volume by diameter of logs that were used by each wood products sector. This can indicate which log sizes are most economically viable. For instance, most logs used by the post-pole-piling sector (85 percent or 41,254 mbf) were between 5 and 10 inches in diameter.

Table 12 Log consumption—by diameter in inches
 (thousand board feet, Scribner)

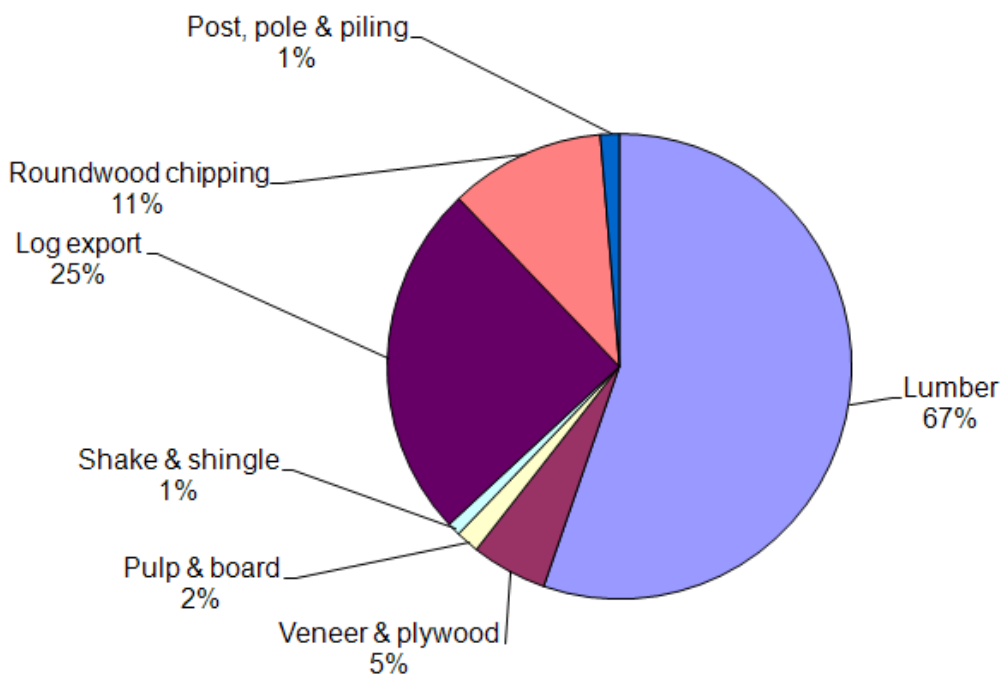
Economic area and sector of operation	Log diameter in inches				
	Total	less than 5	5 to 10	10 to 20	21 or more
Puget Sound					
Lumber	600,566	1,401	310,776	214,820	73,569
Log export	288,185	0	50,966	205,857	31,363
Post, pole & piling	25,080	0	19,506	5,574	0
Roundwood chipping	47,521	26,625	9,854	6,510	4,531
Others*	40,320	0	24,000	16,000	320
Total	1,001,672	28,026	415,101	448,761	109,783
Olympic Peninsula					
Lumber	963,375	7,186	619,132	295,508	41,549
Veneer & plywood	73,412	0	21,440	50,577	1,395
Shake & shingle	15	0	0	6	9
Log export	175,904	0	63,685	106,216	6,003
Roundwood chipping	154,120	33,736	69,736	28,824	21,824
Others*	44,676	10,375	32,123	2,179	0
Total	1,411,502	51,296	806,116	483,310	70,779
Lower Columbia					
Lumber	259,156	1,996	145,374	103,575	8,211
Pulp & board	0	0	0	0	0
Log export	452,645	0	114,666	305,073	32,906
Roundwood chipping	110,785	11,734	72,147	11,018	15,885
Others*	16,073	0	2,411	12,858	804
Total	838,659	13,730	334,598	432,525	57,805
Central Washington					
	81,689	5,645	25,135	41,487	9,422
Inland Empire					
	341,113	75,536	144,487	109,725	11,365
State total					
Lumber	2,049,803	60,620	1,164,553	693,078	131,552
Veneer & plywood	196,101	0	83,157	110,745	2,199
Pulp & board	60,082	18,974	37,174	3,333	600
Shake & shingle	335	0	0	6	329
Log export	916,734	0	229,317	617,146	70,271
Post, pole & piling	49,007	0	41,254	7,753	0
Roundwood chipping	402,573	94,639	169,982	83,748	54,203
Total	3,674,635	174,233	1,725,438	1,515,810	259,155

* "Others" indicates industries were combined to avoid disclosing individual corporate data.

Graph 16 State or province origin of logs consumed in Washington



Graph 17 Volume of logs consumed by Washington's wood products sectors
(Does not include non-log raw material, such as residues for pulp mills or cedar blocks for shake & shingle mills.)



Sawmills

Table 13	Number of sawmills—by mill size	44
Table 14	Sawmills’ capacity—by 8-hour single shift and mill size	45
Table 15	Number of sawmills—by selected equipment and mill size	46
Table 16	Number of sawmills—by selected equipment and counties	47
Table 17	Number of sawmills — by size and type of saw	48
Table 18	Sawmills’ average operating days, capacities, consumption and production ..	49
Table 19	Log consumption by sawmills—by log type	50
Table 20	Log consumption by sawmills—by diameter	51
Table 21	Log consumption by sawmills—by original owners and mill size	52-53
Table 22	Log consumption by sawmills—by counties and original owners	54-55
Table 23	Number of sawmills—by percentage of logs from various sources	56-58
Graph 16	County rank by log volume	59
Table 24	Logs consumed by sawmills—by species and mill size	60-61
Table 25	Log consumption by sawmills—by species and county	62-63
Table 26	Wood and bark residues—by county	64
Table 27	Wood residues from sawmills—by mill size and use	66-69
Table 28	Bark residues from sawmills—by mill size and use	70
Table 29	Bark residues from sawmills—by county and use	71
Table 30	Sawmills production—by saw type and county	72
Table 31	Sawmills production —by softwood and hardwood	73
Graph 17	Tree species consumed by sawmills	74
Graph 18	Proportion of softwood and hardwood produced by sawmills	74

Table of Contents

Table 13 shows the number of mills sorted by mill-size categories (AAA, AA, A, B, C, D) that operated in 2010 in each county and economic area. For example, 29 sawmills out of Washington's 50 are in the three largest categories—AAA=8, AA=13, A=8.

Table 13 Number of sawmills—by mill size*

Economic area and county of operation	All Classes	Mill-size class*					
		D	C	B	A	AA	AAA
Puget Sound							
King	1	1	0	0	0	0	0
Pierce	3	0	0	1	1	0	1
Skagit	7	2	2	1	0	0	2
Snohomish	5	0	1	2	1	1	0
Whatcom	1	0	0	0	1	0	0
Total	17	3	3	4	3	1	3
Olympic Peninsula							
Clallam	5	0	2	1	0	2	0
Grays Harbor	4	0	0	1	1	1	1
Lewis	8	0	1	1	2	2	2
Mason	2	0	0	0	0	1	1
Pacific	2	1	0	0	0	1	0
Thurston	1	1	0	0	0	0	0
Total	22	2	3	3	3	7	4
Lower Columbia	4	0	0	0	0	3	1
Central	1	0	0	0	1	0	0
Inland Empire	6	1	0	1	1	2	1
State total	50	6	6	7	8	13	8

* 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 of Contents

Table 14 shows the total 8-hour capacity (in lumber tally) of sawmills sorted by county and economic area. For instance, the total 8-hour capacity of all 50 sawmills in Washington is 14.5 mmbf, enough lumber to build more than 1,000 average homes.

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

(thousand board feet, Scribner scale)

(See note below)

Economic area and county of operation	Total Capacity	Mill-size class*					
		D	C	B	A	AA	AAA
Puget Sound							
Pierce	820	0	0	100	200	0	520
Skagit	1,512	12	110	85	0	0	1,305
Snohomish	951	0	60	191	200	500	0
Others*	176	1	0	0	175	0	0
Total	3,459	13	170	376	575	500	1,825
Olympic Peninsula							
Clallam	1,070	0	120	100	0	850	0
Grays Harbor	1,340	0	0	90	150	300	800
Lewis	2,546	0	55	100	321	620	1,450
Others*	1,412	12	0	0	0	730	670
Total	6,368	12	175	290	471	2,500	2,920
Lower Columbia	2,593	0	0	0	0	1,143	1,450
Central Washington	180	0	0	0	180	0	0
Inland Empire	1,931	35	0	85	171	840	800
State total	14,531	60	345	751	1,397	4,983	6,995

* These tables uses 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 of Contents

Table 15 shows the number of sawmills in four size categories (A, B, C, D) which have special equipment to add value to sawmills products. For instance, 34 of Washington’s total 50 sawmills are equipped with kilns. Kilns dry out the moisture that is present in green logs.

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

Economic area	Total Mills	Barker	Chipper	Planer	Burner	Kiln
Puget Sound	17	14	16	14	1	9
Olympic Peninsula	22	21	15	13	1	17
Lower Columbia	4	3	3	3	0	3
Central Washington	1	1	0	1	0	1
Inland Empire	6	3	5	5	1	4
State total	50	42	39	36	3	34

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

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

- Class A:** More than 120 mbf
- Class B:** 80-120 mbf
- Class C:** 40-80 mbf
- Class D:** less than 40 mbf

Table 16 is similar to Table 15 and totals the mills by county that possess special equipment to add value to sawmills' products. For instance, 17 of the total 22 sawmills in the Olympic Peninsula Economic Area are equipped with kilns which remove most of the moisture in green logs.

Table 16 Number of sawmills—by selected equipment and counties

Economic area and county of mill	All mills	Barker	Chipper	Planer	Burner	Kiln
Puget Sound						
Pierce	3	2	3	3	0	1
Skagit	7	6	6	5	1	3
Snohomish	5	5	5	5	0	4
Others*	2	1	2	1	0	1
Total	17	14	16	14	1	9
Olympic Peninsula						
Clallam	5	5	3	3	0	4
Grays Harbor	4	4	3	2	0	3
Lewis	8	8	5	6	1	7
Others*	5	4	4	2	0	3
Total	22	21	15	13	1	17
Lower Columbia	4	3	3	3	0	3
Central Washington	1	1	0	1	0	1
Inland Empire	6	3	5	5	1	4
State total	50	42	39	36	3	34

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

Table of Contents

Table 17 shows the number of mills by size and type of headrig (sawmills cutting equipment). For instance, about half of all sawmills use 4-foot bandsaws.

Table 17 Number of sawmills—by size* and type of saw

Economic area and mill-class size*	Circular Saw				Bandsaw		Gang Saw		Chipping Saw	Scragg Saw
	2ft	4ft	6ft	8ft	2ft	4ft	6ft	2ft	2ft	2ft
Puget Sound										
D	0	0	0	0	0	1	0	0	0	0
C	0	0	0	0	1	1	1	0	0	1
B	0	0	0	0	0	3	1	0	2	0
A	0	0	0	0	0	3	3	3	2	0
Total	0	0	0	0	1	8	5	3	4	1
Olympic Peninsula										
B	0	0	0	0	0	2	1	1	0	0
A	0	0	0	0	4	5	2	2	3	2
Others*	0	0	0	0	1	3	1		1	1
Total	0	0	0	0	5	10	4	3	4	3
Lower Columbia	0	0	0	0	1	2	0	0	0	0
Central Washington	0	0	0	0	0	1	0	0	0	0
Inland Empire	0	0	0	0	0	3	1	0	1	1
State total	0	0	0	0	7	24	10	6	9	5

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

- Class A:** More than 120 mbf
- Class B:** 80-120 mbf
- Class C:** 40-80 mbf
- Class D:** less than 40 mbf

Table of Contents

Table 18 lists the average number of operating days, average single shift capacity (lumber volume produced) per mill, average annual mbf log consumption and average lumber production per mill by mill size and economic area. For instance, on average, Washington's sawmills operated 198 days in 2010. In 2008 the average was 210 days.

Table 18 Sawmills' average operating days, capacities, consumption and production

Economic area	Avg. annual operating days	Avg. single shift mbf capacity	Avg. mbf log consumption	Avg. lumber tally production per mill
Puget Sound	196	203	35,327	58,694
Olympic Peninsula	190	289	43,790	68,243
Lower Columbia	221	648	64,789	147,109
Central Washington	210	180	62,874	68,888
Inland Empire	217	322	27,305	34,243
State Average	198	291	40,996	67,238

Table of Contents

Table 19 shows the total volume of logs that were processed by sawmills, according to mill size. The two right-most columns show that virtually all wood consumed by sawmills is in the form of logs (not blocks or peeler cores). For instance, about 3.4 percent of the total volume of logs milled by Washington's mills were in the low quality (utility) category. By comparison, in 2008 utility grade logs made up 5.7 percent of the logs used by sawmills.

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

(thousand board feet, Scribner scale)

Economic area and mill-class size*	Roundwood			Other	
	All roundwood	Sound logs	Utility logs	Peeler cores	Other
Puget Sound					
D	861	787	74	0	0
C	8,316	7,983	333	0	0
B	85,003	80,662	4,341	0	0
A	506,386	491,544	14,842	0	0
Total	600,566	580,976	19,590	0	0
Olympic Peninsula					
B	61,524	60,324	1,200	0	0
A	859,608	857,674	1,934	0	100
Others*	31243	40976	1267	0	0
Total	963,375	958,974	4,401	0	100
Lower Columbia	259,155	256,821	2,334	0	0
Central Washington	62,874	62,874	0	0	0
Inland Empire	163,832	120,870	42,962	0	0
State total					
D	16,685	12,803	3,882	0	0
C	38,418	37,864	554	0	0
B	156,527	150,786	5,741	0	0
A	1,838,172	1,779,062	59,110	0	100
Total	2,049,802	1,980,515	69,287	0	100

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table 20 shows the volume of logs that were processed by sawmills, according to the logs' diameters (inside bark small end). For instance, 6.4 percent of all logs processed by sawmills were more than 21 inches in diameter (131,552 mbf / 2,049,803 mbf). In 2008 logs more than 21 inches in diameter made up 7.4 percent (149,871 mbf / 1,913,037 mbf).

Table 20 Log consumption by sawmills—by diameter (in inches)

(thousand board feet, Scribner scale)

Economic area and mill-class size*	Log diameter in inches				
	Total	less than 5	5 to 10	10 to 20	21 or more
Puget Sound					
D	861	0	171	520	170
C	8,316	248	1,413	3,992	2,663
B	85,003	370	34,056	36,869	13,708
A	506,386	783	275,135	173,439	57,029
Total	600,566	1,401	310,776	214,820	73,569
Olympic Peninsula					
B	61,524	305	23,493	23,221	14,505
A	859,608	6,667	576,581	252,494	23,866
Others*	42,243	214	19,058	19,796	3,178
Total	963,375	7,186	619,132	295,508	41,549
Lower Columbia	259,156	1,996	145,374	103,575	8,211
Central Washington	62,874	0	19,491	37,724	5,659
Inland Empire	163,832	50,037	69,781	41,450	2,565
State total					
D	16,685	121	3,311	11,352	1,901
C	38,418	378	19,173	14,390	4,478
B	156,527	675	61,549	65,890	28,413
A	1,838,173	59,446	1,080,521	601,446	96,761
Total	2,049,803	60,620	1,164,553	693,078	131,552

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table of Contents

Tables 21a-21b show the total volume of logs that were processed by sawmills, according to mill sizes and ownership categories. For instance, the state's largest mills ('A' mill-class size) received more than 10 times more logs from state-owned trust lands (445,785) than from national forests (43,521).

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

Economic area and mill-class size*	All Owners	State	National Forest	Bureau of Land Management	Other public
Puget Sound					
D	861	30	0	0	0
C	8,316	2,828	0	0	500
B	85,003	31,585	325	0	162
A	506,386	158,379	11,312	0	6,037
Total	600,566	192,821	11,637	0	6,700
Olympic Peninsula					
B	61,524	27,028	305	0	6,305
A	859,608	209,127	3,538	266	11,445
Others*	42,243	21,210	1,109	260	0
Total	963,375	257,365	4,953	526	17,751
Lower Columbia	259,156	51,083	7,715	9,981	4,971
Central Washington	62,874	0	0	0	0
Inland Empire	163,832	27,696	21,456	8,683	500
State total					
D	16,685	12,003	168	3,683	0
C	38,418	12,065	941	260	500
B	156,527	59,113	1,130	0	6,968
A	1,838,173	445,785	43,521	15,247	22,454
Total	2,049,803	528,965	45,761	19,190	29,922

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

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-class size*	Forest Sector		Native American	Farmer and miscellaneous private
	Own wood supply	Other wood supply		
Puget Sound				
D	0	0	0	831
C	0	2,826	0	2,162
B	7,000	13,925	0	32,006
A	24,519	223,503	278	82,357
Total	31,519	240,254	278	117,356
Olympic Peninsula				
B	0	19,936	905	7,044
A	128,725	447,690	23,189	35,628
Others*	0	8,949	2,468	2,993
Total	128,725	476,574	26,562	50,920
Lower Columbia	43,759	120,379	0	21,267
Central Washington	0	0	62,874	0
Inland Empire	19,054	42,673	18,959	24,812
State total				
D	0	0	0	831
C	0	11,775	2,468	10,410
B	7,500	38,861	1,105	41,850
A	215,556	829,245	105,100	161,265
Total	223,056	879,881	108,673	214,356

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table of Contents

Tables 22a-22b show the total volume of logs that were processed by sawmills, according to county, economic area and the original ownership of logs. For instance, sawmills in the Inland Empire region of eastern Washington received the highest volume of logs from national forests (21,456 mbf), about 13 percent of its total.

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	225,330	32,006	0	0	0
Skagit	224,124	96,051	8,752	0	1,210
Snohomish	137,183	61,815	2,885	0	1,181
Others*	13,929	2,949	0	0	4,309
Total	600,566	192,821	11,637	0	6,700
Olympic Peninsula					
Clallam	122,968	35,706	941	260	0
Grays Harbor	188,972	69,466	240	0	12,579
Lewis	328,594	107,010	3,604	266	5,171
Others*	322,841	45,183	168	0	0
Total	963,375	257,365	4,953	526	17,751
Lower Columbia	259,156	51,083	7,715	9,981	4,971
Central Washington	62,874	0	0	0	0
Inland Empire	163,832	27,696	21,456	8,683	500
State Total	2,049,803	528,965	45,761	19,190	29,922

*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 of operation*	Forest Sector		Native American	Farmer and miscellaneous private
	Own wood supply	Other wood supply		
Puget Sound				
Pierce	9,053	118,150	0	66,120
Skagit	21,771	67,825	0	28,516
Snohomish	0	53,167	0	18,134
Others*	695	1,112	278	4,587
Total	31,519	240,254	278	117,356
Olympic Peninsula				
Clallam	0	66,612	12,001	7,447
Grays Harbor	6,966	96,121	600	3,000
Lewis	21,759	152,956	13,960	23,868
Others*	100,000	160,885	0	16,605
Total	128,725	476,574	26,562	50,920
Lower Columbia	43,759	120,379	0	21,267
Central Washington	0	0	62,874	0
Inland Empire	19,054	42,673	18,959	24,812
State total	223,056	879,881	108,673	214,356

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

Table of Contents

Tables 23a-23c show the percentage of log volume of mills (classified by size) from original owner categories. For instance, in 2010, 86 percent of the state’s sawmills, processed wood from state lands. Half of the smallest category of mills used wood from state-lands, but none used wood from private industrial forests.

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

Economic area and mill-size class *	National Forest				State				Bureau of Land Management			
	Percent of log volume				Percent of log volume				Percent of log volume			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound												
D	3	0	0	0	2	0	0	1	3	0	0	0
C	3	0	0	0	0	1	2	0	3	0	0	0
B	3	1	0	0	0	2	1	1	4	0	0	0
A	3	4	0	0	1	3	2	1	7	0	0	0
Total	12	5	0	0	3	6	5	3	17	0	0	0
Olympic Peninsula												
B	2	1	0	0	0	1	1	1	3	0	0	0
A	10	4	0	0	1	10	2	1	13	1	0	0
Others*	2	3	0	0	1	1	1	2	4	1	0	0
Total	14	8	0	0	2	12	4	4	20	2	0	0
Lower Columbia												
	1	3	0	0	0	3	1	0	3	1	0	0
Central Washington												
	1	0	0	0	1	0	0	0	1	0	0	0
Inland Empire												
	3	3	0	0	1	5	0	0	4	1	0	1
State total												
D	5	1	0	0	3	0	0	3	5	0	0	1
C	4	2	0	0	1	2	3	0	5	1	0	0
B	5	3	0	0	0	4	2	2	8	0	0	0
A	17	13	0	0	3	20	5	2	27	3	0	0
Total	31	19	0	0	7	26	10	7	45	4	0	1

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size-classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

- Class A:** More than 120 mbf
- Class B:** 80-120 mbf
- Class C:** 40-80 mbf
- Class D:** less than 40 mbf

54% of the largest mills got wood from state-managed forests.

50% of the smallest mills got wood from state-managed forests

Continued

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

Economic area and mill-class size*	Other public				Forest Sector				Other wood supply			
					Own wood supply							
	Percent of log volume				Percent of log volume							
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound												
D	3	0	0	0	3	0	0	0	3	0	0	0
C	2	1	0	0	3	0	0	0	0	1	2	0
B	3	1	0	0	3	1	0	0	2	1	1	0
A	4	3	0	0	4	3	0	0	1	3	1	2
Total	12	5	0	0	13	4	0	0	6	5	4	2
Olympic Peninsula												
B	1	1	1	0	3	0	0	0	0	2	1	0
A	9	5	0	0	9	4	1	0	2	2	8	2
Others*	5	0	0	0	5	0	0	0	2	2	1	0
Total	15	6	1	0	17	4	1	0	4	6	10	2
Lower Columbia	3	1	0	0	3	0	1	0	0	0	4	0
Central Washington	1	0	0	0	1	0	0	0	1	0	0	0
Inland Empire	5	1	0	0	3	2	1	0	1	3	1	1
State total												
D	6	0	0	0	6	0	0	0	6	0	0	0
C	5	1	0	0	6	0	0	0	0	3	3	0
B	4	3	1	0	6	2	0	0	2	3	3	0
A	21	9	0	0	19	8	3	0	4	8	13	5
Total	36	13	1	0	37	10	3	0	12	14	19	5

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table of Contents

Continued

Table 23c Number of sawmills—by percentage of logs from various sources

Economic area and mill size *	Percent of log volume							
	Native American				Farmer and miscellaneous private			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound								
D	3	0	0	0	1	0	0	2
C	3	0	0	0	0	2	1	0
B	4	0	0	0	0	1	3	0
A	6	1	0	0	0	6	0	1
Total	16	1	0	0	1	9	4	3
Olympic Peninsula								
B	1	2	0	0	0	3	0	0
A	8	6	0	0	6	7	1	0
Others*	3	2	0	0	2	1	1	1
Total	12	10	0	0	8	11	2	1
Lower Columbia								
	4	0	0	0	1	3	0	0
Central Washington								
	0	0	0	1	1	0	0	0
Inland Empire								
	1	5	0	0	2	4	0	0
State total								
D	6	0	0	0	4	0	0	2
C	4	2	0	0	0	3	2	1
B	5	3	0	0	0	5	3	0
A	18	11	0	1	9	19	1	1
Total	33	16	0	1	13	27	6	4

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

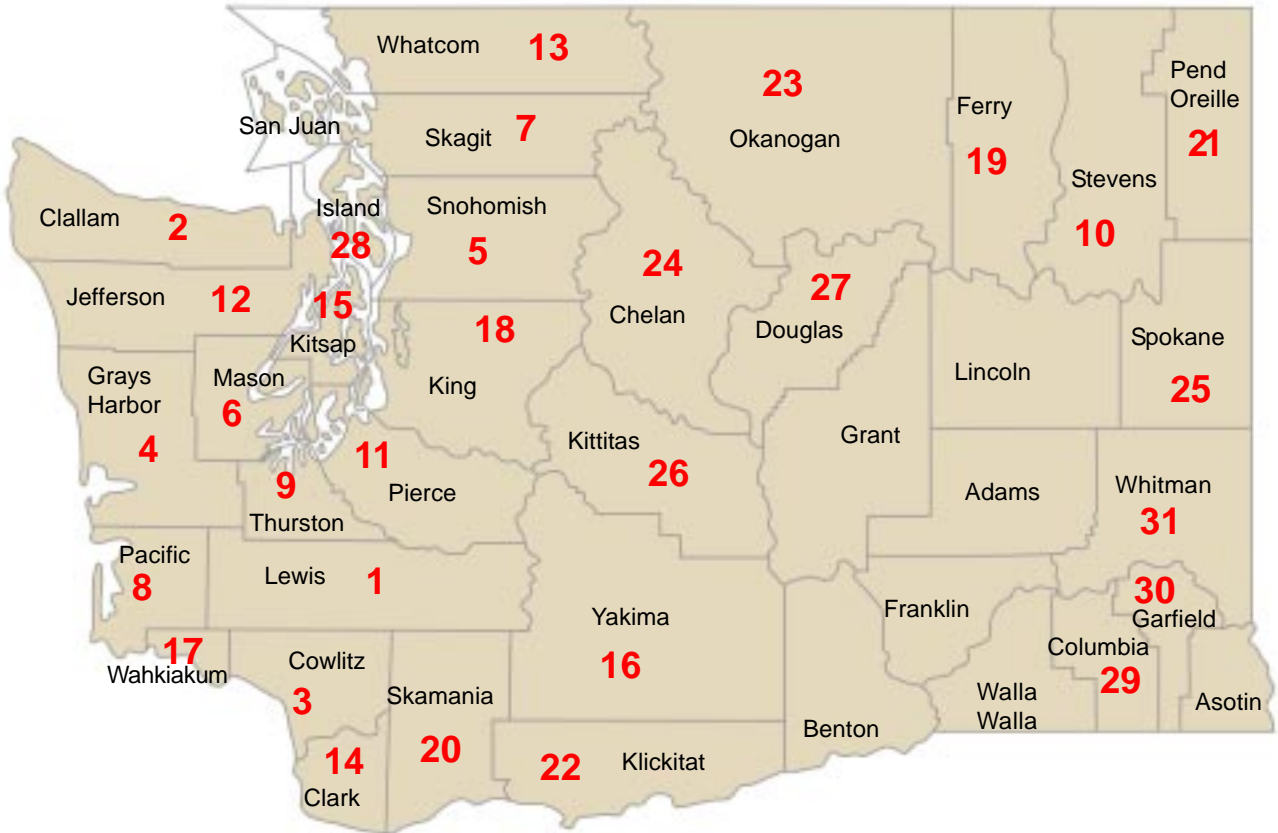
Class C: 40-80 mbf

Class D: less than 40 mbf

70% of the largest mills received wood from farmers and other small private landowners.

33% of the smallest mills received wood from farmers and other small private landowners.

Graph 16 County rank by log volume



Counties where timber was harvested for Washington mills or export in 2010
(thousand board feet)

1. Lewis	361,955	17. Wahkiakum	50,172
2. Clallam	302,822	18. King	43,509
3. Cowlitz	301,405	19. Ferry	40,890
4. Grays Harbor	225,380	20. Skamania	36,560
5. Snohomish	216,712	21. Pend Orielle	34,576
6. Mason	148,588	22. Klickitat	30,326
7. Skagit	141,804	23. Okanogan	25,587
8. Pacific	141,329	24. Chelan	11,228
9. Thurston	139,870	25. Spokane	10,735
10. Stevens	130,206	26. Kittitas	9,408
11. Pierce	123,298	27. Douglas	3,914
12. Jefferson	99,223	28. Island	2,765
13. Whatcom	96,311	29. Columbia	547
14. Clark	88,871	30. Garfield	137
15. Kitsap	82,761	31. Whitman	137
16. Yakima	66,652		

Table of Contents

Tables 24a-24b show the total volume of logs that were processed by sawmills, according to mill size*, economic area and species. This chart can indicate which species are more plentiful in the dry eastside or the wet westside of the state. For instance, 75 percent (10,841) of all logs (14,544) consumed in the smallest mills were western red cedar.

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

(thousand board feet, Scribner scale)

Economic area and mill-size class*	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
D	861	17	0	0	0	0
C	8,316	2,500	500	0	0	250
B	85003	48000	975	0	0	0
A	506,386	303,850	194,709	7827	0	0
Total	600,566	354,367	196,184	7827	0	250
Olympic Peninsula						
B	61,524	20,450	8,760	600	1,800	0
A	859608	496323	246221	13770	12141	918
Others*	42243	10624	10431	34	3932	0
Total	963,375	527,397	265,413	14,404	17,874	918
Lower Columbia	259,156	239,992	5,190	9,183	0	4,791
Central Washington	62,874	3,772	0	6,287	0	52,814
Inland Empire	163,832	62,637	2,000	8,958	5,000	36,622
State total						
D	14,544	1,674	0	958	0	110
C	50,559	13,124	10,931	34	3,932	250
B	146,527	68,450	9,735	600	1,800	0
A	1,838,173	1,104,917	448,121	45,067	17,141	95,035
Total	2,049,803	1,188,166	468,787	46,659	22,874	95,396

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

- Class A:** More than 120 mbf
- Class B:** 80-120 mbf
- Class C:** 40-80 mbf
- Class D:** less than 40 mbf

74% the percentage of dependence on western redcedar logs (10,841 mbf) for the smallest size sawmills

4% the percentage of dependence on western redcedar logs (79,731 mbf) for the largest size sawmills.

Continued

Table 24b **Log consumption by sawmills—by species and mill-size****

(thousand board feet, Scribner scale)

Economic area and mill-size class*	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
D	0	841	0	0	3
C	250	3,316	0	0	1,500
B	0	0	0	31,407	4,621
A	0	0	0	0	0
Total	250	4,157	0	31,407	6,124
Olympic Peninsula					
B	0	0	0	29,303	610
A	918	62,716	0	25,270	1,330
Others*	0	2,500	17	14,266	439
Total	918	65,216	17	68,839	2,379
Lower Columbia	0	0	0	0	0
Central Washington	0	0	0	0	0
Inland Empire	21,600	27,015	0	0	0
State total					
D	958	10,841	0	0	3
C	250	5,816	17	14,266	1,939
B	0	0	0	60,711	5,231
A	21,560	79,731	0	25,270	1,330
Total	22,768	96,388	17	100,247	8,503

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf**Class B:** 80-120 mbf**Class C:** 40-80 mbf**Class D:** less than 40 mbf

Table of Contents

Tables 25a-25b show the total volume of logs that were consumed in Washington, according to the mills' home counties, economic areas and tree species. (Tables 24a and 24b group the data by mill size.) For instance, 99 percent of all the Ponderosa pine and Lodgepole pine were processed by mills in eastern Washington.

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

(thousand board feet, Scribner scale)

Economic area and county of operation *	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine
Puget Sound						
Pierce	225,330	166,628	58,703	0	0	0
Skagit	224,124	85,166	106,228	7,827	0	0
Snohomish	137,183	89,769	30,141	0	0	250
Others*	13,929	12,804	1,112	0	0	0
Total	600,566	354,367	196,184	7,827	0	250
Olympic Peninsula						
Clallam	122,968	37,320	64,257	0	6,771	0
Grays Harbor	188,972	67,878	87,865	600	7,263	0
Lewis	328,594	140,014	72,938	13,770	3,672	918
Others*	322,841	282,186	40,353	34	168	0
Total	963,375	527,397	265,413	14,404	17,874	918
Lower Columbia	259,156	239,992	5,190	9,183	0	4,791
Central Washington	62,874	3,772	0	6,287	0	52,814
Inland Empire	163,832	62,637	2,000	8,958	5,000	36,622
State Total	2,049,803	1,188,166	468,787	46,659	22,874	95,396

* The statistics for some counties were combined to avoid disclosure of individual corporate data.

Continued

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

Economic area and county of operation*	Lodgepole pine	Western redcedar	Other softwoods	Red alder	Other hardwoods
Puget Sound					
Pierce	0	0	0	0	0
Skagit	0	10,378	0	15,904	2,377
Snohomish	0	2,000	0	18,673	3,844
Others*	0	94	0	0	1
Total	0	12,472	0	34,577	6,221
Olympic Peninsula					
Clallam	0	0	0	15,971	326
Grays Harbor	0	25,441	0	0	0
Lewis	0	38,500	0	28,844	1,516
Mason	0	0	0	0	0
Others*	0	0	0	6,206	0
Total	0	63,941	0	51,021	1,842
Lower Columbia	0	0	0	0	0
Central Washington	3,007	0	0	0	0
Inland Empire	20,782	27,777	12	0	0
State total	23,789	104,190	12	85,598	8,063

* The statistics for some counties were combined to avoid disclosure of individual corporate data.

Table of Contents

Table 26 shows the volume of wood and bark residues by the sawmills' home counties and economic areas. For instance, Lewis and Skagit counties' sawmills produced 1,332,517 bone dry tons of wood and bark residues— which accounted for 35 percent of the state's total.

Table 26 Wood and bark residues—by county*

(dry weight tons)

Economic area and county of operation*	All residues	Wood Residues	Bark Residues
Puget Sound			
Snohomish	274,525	212,796	61,729
Skagit	624,837	506,058	118,778
Pierce	221,519	179,981	41,538
Others*	26,350	20,764	5,586
Total	1,147,231	919,599	227,631
Olympic Peninsula			
Lewis	707,680	547,653	160,027
Grays Harbor	389,039	308,190	80,849
Clallam	147,322	111,996	35,326
Others*	421,244	323,059	98,185
Total	1,665,285	1,290,898	374,387
Lower Columbia	686,432	534,615	151,816
Inland Empire	243,286	191,736	51,551
Central Washington	83,837	66,064	17,773
State Total	3,826,071	3,002,912	823,158

* The statistics for some counties were combined to avoid disclosure of individual corporate data.



In fiscal year 2011, the Capitol State Forest (above, state-owned and managed by DNR) generated \$20.6 million from the harvest of 50 mmbf of timber. In calendar year 2010 state-owned forests grew 26 percent of all logs that were processed by Washington's lumber mills.

Photo: DNR/ Joe Rocchio

Table of Contents

Tables 27a-27d show the volumes of mill residues (chips, sawdust, etc.) that were used or sold for secondary purposes (such as pulp, composite boards and fuel), according to type of residue (not bark) and mill size.** The "Total" category includes residues that were used and unused. For instance, more than half (58 percent) of all of the bark and mill residues (1.74 million bone dry tons) produced by all state sawmills were sold to pulp mills.

Table 27a Wood residues from sawmills—by mill size* and use
(bone dry tons)

All Types							
Economic area and mill size*	Total	Total used	Pulp	Board	Fuel	Other	Unused
Puget Sound							
D	31,388	31,388	0	0	16	31,372	0
C	14,105	14,105	8,049	0	1,207	4,849	0
B	112,978	112,978	48,169	2,223	32,768	29,818	0
A	761,128	761,128	428,975	0	178,059	154,094	0
Total	919,599	919,599	485,193	2,223	212,050	220,133	0
Olympic Peninsula							
B	68,697	68,697	7,378	0	55,697	5,622	0
A	1,177,906	1,177,906	713,865	15,181	383,696	65,164	0
Others*	44,391	44,165	14,624	0	22,863	6,678	226
Total	1,290,994	1,290,768	735,867	15,181	462,256	77,464	226
Lower Columbia	534,615	534,615	351,525	77,640	0	105,450	0
Central Washington, Inland Empire	257,800	257,800	165,273	48,493	39,390	4,644	0
State total							
D	33,745	33,519	53	0	60	33,406	226
C	56,139	56,139	22,620	0	24,026	9,493	0
B	200,855	200,855	56,627	2,223	104,405	37,600	0
A	2,712,269	2,712,269	1,658,558	141,314	585,205	327,192	0
Total	3,003,008	3,002,782	1,737,858	143,537	713,696	407,691	226

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

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 Wood residues from sawmills—by mill size and use**
 (bone dry tons)

Economic area and mill-size class*	Total	Total used	Coarse+					Unused
			Pulp	Board	Fuel	Other		
Puget Sound								
D	17,249	17,249	0	0	16	17,233	0	
C	8,506	8,506	8,049	0	0	457	0	
B	58,677	58,677	48,169	2,223	8,285	0	0	
A	404,207	404,207	362,574	0	0	41,633	0	
Total	488,639	488,639	418,792	2,223	8,301	59,323	0	
Olympic Peninsula								
B	36,488	36,488	7,378	0	29,110	0	0	
A	677,782	677,782	625,082	0	52,700	0	0	
Others*	24,452	24,452	14,624	0	6,534	3,294	0	
Total	738,722	738,722	647,084	0	88,344	3,294	0	
Lower Columbia	280,413	280,413	280,413	0	0	0	0	
Central Washington, Inland Empire	141,669	141,669	131,129	0	10,540	0	0	
State total								
D	17,302	17,302	53	0	16	17,233	0	
C	32,905	32,905	22,620	0	6,534	3,751	0	
B	105,705	105,705	55,547	2,223	47,935	0	0	
A	1,493,531	1,493,531	1,399,198	0	52,700	41,633	0	
Total	1,649,443	1,649,443	1,477,418	2,223	107,185	62,617	0	

+ Coarse residues are large waste products from mills (such as slabs, edgings, veneer cores, etc.) and are suitable for chipping.

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table of Contents

Continued

Table 27c **Medium wood residues from sawmills—by mill size** and use**
(bone dry tons)

Economic area and mill-size class	Total	Medium+					Unused
		Total used	Pulp	Board	Fuel	Other	
Puget Sound							
D	7,069	7,069	0	0	0	7,069	0
C	2,176	2,176	0	0	0	2,176	0
B	26,859	26,859	0	0	14,763	12,096	0
A	178,461	178,461	0	0	100,525	77,936	0
Total	214,565	214,565	0	0	115,288	99,277	0
Olympic Peninsula							
B	13,837	13,837	0	0	13,837	0	0
A	238,461	238,461	15,403	15,181	183,920	23,957	0
Others*	8,043	8,043	0	0	8,043	0	0
Total	260,341	260,341	15,403	15,181	205,800	23,957	0
Lower Columbia	127,101	127,101	26,283	60,257	0	40,561	0
Central Washington, Inland Empire	58,065	58,065	3,821	48,493	1,107	4,644	0
State total							
D	7,091	7,091	0	0	22	7,069	0
C	10,197	10,197	0	0	8,021	2,176	0
B	45,016	45,016	1,080	0	29,680	14,256	0
A	597,768	597,768	44,427	123,931	284,472	144,938	0
Total	660,072	660,072	45,507	123,931	322,195	168,439	0

+ Medium residues are principally chips which are used for energy but also for many manufactured products such as paper.

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

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**
 (bone dry tons)

Economic area and mill-size class	Fine +						
	Total	Total used	Pulp	Board	Fuel	Other	Unused
Puget Sound							
D	7,070	7,070	0	0	0	7,070	0
C	3,423	3,423	0	0	1,207	2,216	0
B	27,442	27,442	0	0	9,720	17,722	0
A	178,460	178,460	66,401	0	77,534	34,525	0
Total	216,395	216,395	66,401	0	88,461	61,533	0
Olympic Peninsula							
B	18,372	18,372	0	0	12,750	5,622	0
A	261,663	261,663	73,380	0	147,076	41,207	0
Others*	11,896	11,670	0	0	8,286	3,384	226
Total	291,931	291,705	73,380	0	168,112	50,213	226
Lower Columbia	127,101	127,101	44,829	17,383	0	64,889	0
Central Washington, Inland Empire	58,066	58,066	30,323	0	27,743	0	0
State total							
D	9,352	9,126	0	0	22	9,104	226
C	13,037	13,037	0	0	9,471	3,566	0
B	50,134	50,134	0	0	26,790	23,344	0
A	620,970	620,970	214,933	17,383	248,033	140,621	0
Total	693,493	693,267	214,933	17,383	284,316	176,635	226

+ Fine residues include planar shavings and sawdust and are not suitable for chipping due to their small particle size. The end use categories include fuel, fiber, mulch and barn bedding.

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

* Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table of Contents

Table 28 totals the volume of bark residues by mill size. For instance, the largest category of sawmills (A) produced 91 percent of total bark residues -- 747,700 bone dry tons.

Table 28 Bark residues from sawmills—by mill size and use**
(bone dry tons)

Economic area and mill-size class *	Total	Total used	Used				Unused
			Pulp	Board	Fuel	Other	
Puget Sound							
D	266	266	0	0	8	258	0
C	4,350	4,350	0	0	1,367	2,983	0
B	25,131	25,131	0	0	19,971	5,160	0
A	197,885	196,522	0	0	115,716	80,806	1,363
Total	227,632	226,269	0	0	137,062	89,207	1,363
Olympic Peninsula							
B	24,762	24,762	0	0	14,201	10,561	0
A	333,832	333,832	0	0	247,235	86,597	0
Others*	15,793	15,523	0	0	11,482	4,041	270
Total	374,387	374,117	0	0	272,918	101,199	270
Lower Columbia	151,817	151,817	0	0	22,495	129,322	0
Central Washington	17,773	17,773	0	0	15,996	1,777	0
Inland Empire	52,975	52,975	0	0	48,777	4,198	0
State total							
D	4,416	4,146	0	0	34	4,112	270
C	17,418	17,418	0	0	12,823	4,595	0
B	55,053	55,053	0	0	38,042	17,011	0
A	747,697	746,334	0	0	446,349	299,985	1,363
Total	824,584	822,951	0	0	497,248	325,703	1,633

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift.

Class A: More than 120 mbf

Class B: 80-120 mbf

Class C: 40-80 mbf

Class D: less than 40 mbf

Table 29 is an accompanying view of the data in Table 28. Instead of displaying the totals according to mill size, it shows the volume of bark residues by the sawmills' home counties and economic areas. For instance, the sawmills in Lewis County produced more bark residues (160,027 mbf, or 19 percent of the state's total) than any other county.

Table 29 Bark residues from sawmills—by county* and use
(bone dry tons)

Economic area and county of operation *	Total	Used					Unused
		Total used	Pulp	Board	Fuel	Other	
Puget Sound							
Pierce	41,538	41,538	0	0	11,610	29,928	0
Skagit	118,778	117,415	0	0	117,083	333	1,363
Snohomish	61,729	61,729	0	0	8,361	53,368	0
Others*	5,586	5,586	0	0	8	5,578	0
Total	227,631	226,268	0	0	137,062	89,207	1,363
Olympic Peninsula							
Clallam	35,326	35,326	0	0	34,946	380	0
Grays Harbor	80,849	80,849	0	0	80,849	0	0
Mason	69,660	69,660	0	0	19,711	49,949	0
Lewis	160,027	160,027	0	0	111,586	48,441	0
Others*	28,525	28,255	0	0	25,826	2,429	0
Total	374,387	374,117	0	0	272,918	101,199	270
Lower Columbia	151,816	151,816	0	0	22,495	129,322	0
Central Washington	17,773	17,773	0	0	15,996	1,777	0
Inland Empire	52,976	52,976	0	0	48,777	4,198	0
State Total	824,583	822,950	0	0	497,248	325,703	1,633

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

Table of Contents

Table 30 shows the volume of lumber produced by Washington's sawmills, by county, economic area and type of headrig (saw). For instance, the state's mills used band saws to cut 63 percent of the state's total volume of lumber.

Table 30 Sawmills production—by saw type and county*

(thousand board feet, lumber tally)

Economic area and county* of operation	All types	Circular saw			Chipping saw		Others**
		Band saw	Gang saw				
Puget Sound							
Pierce	220,219	0	43,344	163,375	13,500	0	
Skagit	525,758	31,700	493,384	0	0	674	
Snohomish	230,173	0	140,702	966	88,506	0	
Others*	21,652	30	19,460	0	2,162	0	
Total	997,802	31,730	696,889	164,341	104,168	674	
Olympic Peninsula							
Clallam	129,200	0	86,243	0	42,958	0	
Grays Harbor	398,872	35,502	325,370	0	38,000	0	
Mason	270,000	0	24,640	245,360	0	0	
Lewis	592,705	13,230	482,960	34,482	60	61,973	
Others*	110,561	0	100,561	0	0	0	
Total	1,501,338	48,732	1,029,774	279,842	81,018	61,973	
Lower Columbia	588,434	174,307	244,127	170,000	0	0	
Central Washington	68,888	0	68,888	0	0	0	
Inland Empire	205,457	125	90,332	0	46,000	69,000	
State Total	3,361,919	254,894	2,130,010	614,183	231,186	131,646	

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

** Statistics for new technology are included in the *Others* category.

Table 31 shows the volume of lumber that was produced by sawmills, by softwood and hardwood species, mill size** and economic area. For instance, about 5 percent of the state's sawmill logs was hardwood (red alder, other species) .

Table 31 Lumber produced by sawmills—by softwood and hardwood
(thousand board feet, lumber tally)

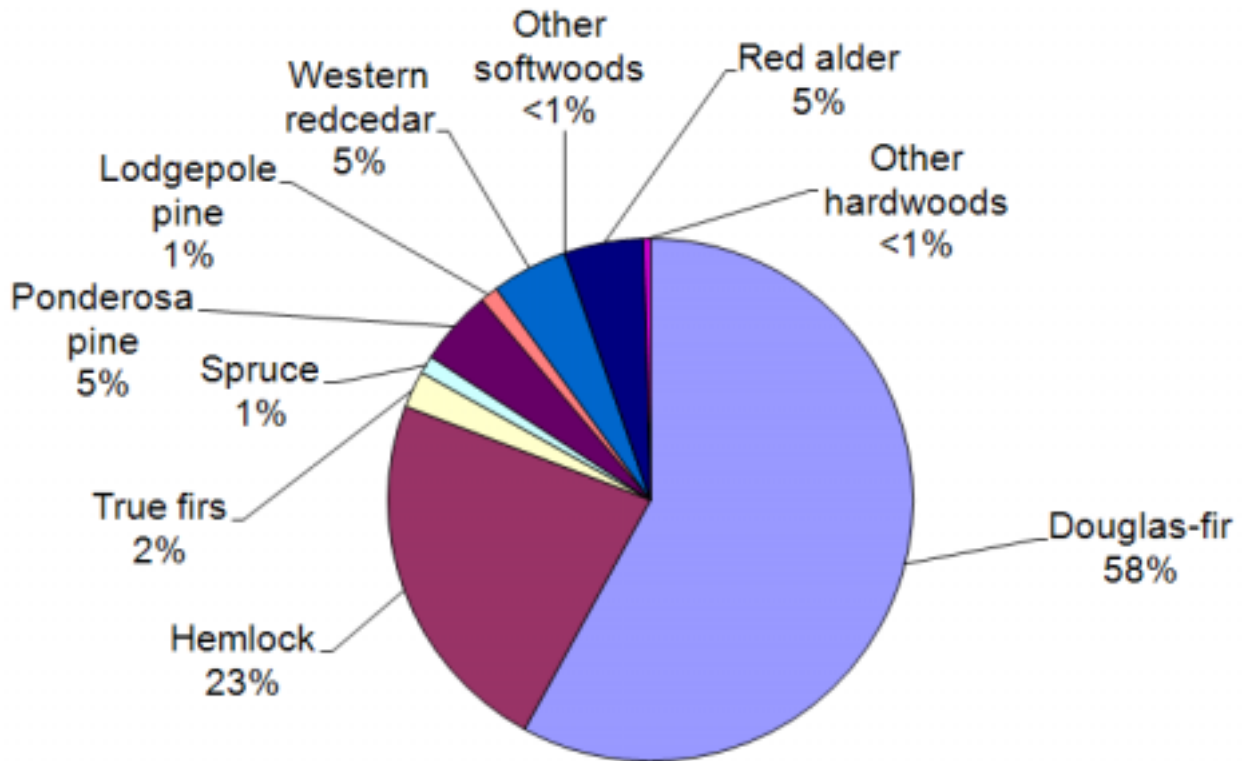
Economic area and mil size*	Total	Softwood	Hardwood
Puget Sound			
A	826,215	826,215	0
B	123,270	65,000	58,270
C	15,587	11,587	4,000
D	32,730	32,728	2
Total	997,802	935,530	62,272
Olympic Peninsula			
A	1,365,584	1,322,032	43,552
B	82,260	39,109	43,151
Others*	53,494	29,209	24,285
Total	1,501,338	1,390,350	110,988
Lower Columbia	588,434	588,434	0
Central Washington	68,888	68,888	0
Inland Empire	205,457	205,457	0
State Total	3,361,919	3,188,659	173,260

* Some mill-size classes were combined to avoid disclosure of individual corporate data.

** Mill-size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift

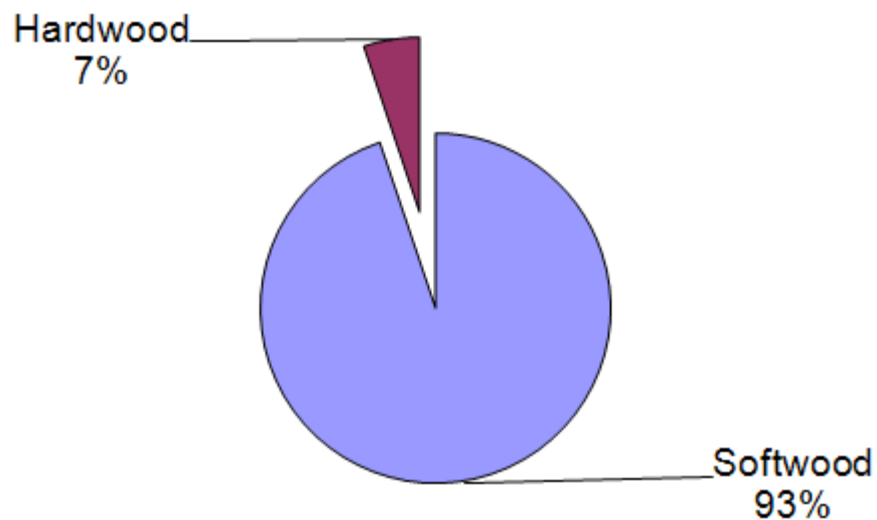
- Class A:** More than 120 mbf
- Class B:** 80-120 mbf
- Class C:** 40-80 mbf
- Class D:** less than 40 mbf

Graph 17 Tree species consumed by sawmills



Graph 18

Proportion of softwood and hardwood lumber produced by Washington's sawmills



Veneer and Plywood

Table 32	Veneer-producing mills—by lathe log diameter	76
Table 33	Veneer-producing mills—by minimum core size	76
Table 34	Veneer and plywood mills—by 8-hour single shift production capacity	76
Table 35	Logs consumed by veneer and plywood mills—by diameter	77
Table 36	Veneer and plywood production	77
Table 37	Number of veneer and plywood mills—by selected equipment	77
Table 38	Wood residues from veneer and plywood mills	78
Table 39	Average number of operating days—veneer and plywood mills	78

Table of Contents

Table 32 displays the number of mills that produce veneer by maximum lathe diameter. (A lathe peels veneer by spinning a log on its axis against a blade.) For instance, online one veneer mill can handle logs over 40 inches in diameter.

Table 32 Veneer-producing mills—by lathe log diameter

Economic area	Lathe log diameter limit in inches					
	Total	Plywood only	10-19	20-29	30-39	40-49
Puget Sound	2	1	0	0	1	0
Olympic Peninsula	5	2	0	0	2	1
Others*	2	0	0	1	1	0
State total	9	3	0	1	4	1

Table 33 displays the number of veneer mills by the minimum core size—the thinnest log that can be peeled with the mill's equipment. For instance, in Washington, only one mill can peel veneer from a log as narrow as three inches.

Table 33 Veneer-producing mills—by minimum core size

Economic area	Total	Lathe log diameter limit in inches						No Lathe or core
		3	4	5	6	7	8	
Puget Sound	2	1	0	0	0	0	0	1
Olympic Peninsula	5	0	2	0	0	0	1	2
Lower Columbia	1	0	1	0	0	0	0	0
Inland Empire	1	0	0	1	0	0	0	0
State total	9	1	3	1	0	0	1	3

Table 34 shows the 8-hour capacity (thousand square feet) of mills that produce veneer and plywood. For instance, Washington's plywood mills could together produce nearly 1.8 million square feet of plywood (3/8-inch basis) per 8-hour shift. The total includes production from plywood-only mills (965 million square feet (msq)) and mills that produce both veneer and plywood (798 msq).

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

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

Economic area and county	Veneer only mills	Plywood only mills	Veneer and plywood mills	
			Veneer	Plywood
Puget Sound	350	195	0	0
Olympic Peninsula	400	770	420	320
Others*	0	0	602	478
State Total	750	965	1,022	798

*Some economic areas were combined to avoid revealing statistics for individual mills.

Table 35 displays the volume of logs processed to make veneer (from veneer-only and plywood-and-veneer mills) by log diameter. For instance, 99 percent of all logs processed to make veneer were between 5 and 21 inches in diameter.

Table 35 Logs consumed by veneer and plywood mills—by diameter
(thousand board feet, Scribner scale)

Minimum log diameter	Volume	Percent
Less than 5 inches	0	0
5.0 to 10.9 inches	83,157	42
11.0 to 20.9 inches	110,745	56
21 inches or more	2,199	1
State total	196,101	100

Table 36 displays the total volume of veneer and plywood from veneer-only, plywood-only and veneer-plywood mills, on thousand square feet, 3/8-inch basis. For instance, Washington's plywood mills produced 808 million square feet of plywood in 2010. That's enough to cover 14,000 NFL-regulation football fields.

Table 36 Veneer and plywood production

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

Veneer	526,138
Plywood	807,556

Table 37 displays the number of veneer and plywood mills which possess a variety of related equipment. For instance, six out of nine plywood mills operate with a hot press, which simultaneously heats and presses together three or more layers of veneer. The heated glue is better spread and bonds to the layers of veneer.

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
Puget Sound	2	0	1	0	1	1	1	1	1
Olympic Peninsula	5	0	3	0	4	3	0	3	1
Lower Columbia	1	1	1	0	0	1	0	1	0
Inland Empire	1	0	1	0	1	1	0	1	0
State total	9	1	6	0	6	6	1	6	2

Table of Contents

Table 38 shows the volume in bone dry tons of the use of bark and mill residues produced by plywood and veneer mills. For instance, about half (279,609 tons) of the total wood residues (571,898 tons) was sold to pulp mills.

Table 38 Wood residues from veneer and plywood mills

(bone dry tons)

Economic area and residue type	Total	Used					Unused
		Total used	Pulp	Board	Fuel	Other	
Puget Sound							
Coarse	74,318	74,318	32,436	0	7,460	34,422	0
Medium	0	0	0	0	0	0	0
Fine	1,325	1,325	0	0	1,325	0	0
Total	75,643	75,643	32,436	0	8,785	34,422	0
Olympic Peninsula							
Coarse	312,737	312,737	125,385	0	149,099	38,253	0
Medium	0	0	0	0	0	0	0
Fine	9,909	9,909	0	0	9,909	0	0
Total	322,646	322,646	125,385	0	159,000	38,253	0
Lower Columbia							
Coarse	55,533	55,533	40,375	0	5,373	9,785	0
Medium	0	0	0	0	0	0	0
Fine	1,343	1,343	0	0	1,343	0	0
Total	56,876	56,876	40,375	0	6,716	9,785	0
Inland Empire							
Coarse	116,733	116,733	81,413	24,941	10,379	0	0
Medium	0	0	0	0	0	0	0
Fine	0	0	0	0	0	0	0
Total	116,733	116,733	81,413	24,941	10,379	0	0
State total							
Coarse	559,321	559,321	279,609	24,941	172,311	82,460	0
Medium	0	0	0	0	0	0	0
Fine	12,577	12,577	0	0	12,577	0	0
Total	571,898	571,898	279,609	24,941	184,888	82,460	0

Table 39 shows the average number of mills and average annual operating days of three categories of production: veneer only, plywood only, and both plywood and veneer. For instance, there are four mills that produce both veneer and plywood.

Table 39 Average number of operating days—veneer and plywood mills

Mill type	Avg days statewide	Mills
Veneer only	251	2
Plywood only	293	3
Veneer and Plywood	234	4
State average	259	9

Pulp

Table 40	Number of pulp mills—by processing type	80
Table 41	Pulp mills' capacity (single 8-hour shift)—by mill type	80
Table 42	Average operating days of pulp mills	80
Table 43	Pulp mill production—by product, area and type of operation	81
Graph 19	Pulp mills' production	81
Table 44	Wood fiber consumption by pulp mills—by fiber type	82
Table 45	Roundwood chip consumption by pulp mills*—by species	82
Graph 20	Pulp mills' raw material	82
Table 46	Logs, sawdust and roundwood chip use by pulp mills—by state	83

Table of Contents

Table 40 shows the number of pulp mills based on their method of production. Methods include **chemical** (sulphate [or "kraft"] and sulphite), **groundwood** (mechanical grinding) and **semi-chemical** (both chemical and mechanical "chemi-thermomechanical"). For instance, five out of 11 mills use mechanical grinding as part of the production process—four groundwood and one semi-chemical.

Table 40 Number of pulp mills—by processing type

Economic area	Pulp Mills				
	All mills	Sulfite	Sulfate	Groundwood	Semi-chemical
Puget Sound	2	2	0	0	0
Olympic Peninsula	2	0	1	1	0
Lower Columbia	4	0	2	1	1
Inland Empire	3	0	1	2	0
State total	11	2	4	4	1

Table 41 shows the average 8-hour shift capacity of the state's pulp mills, by manufacturing process. The total average 8-hour shift capacity for all pulp mills in Washington was 11,208 bone dry tons.

Table 41 Pulp mills' capacity (single 8-hour shift)—by mill type
(bone dry tons)

Pulp mill type	Capacity	Number
Sulfite	2,052	2
Sulfate	5,590	4
Groundwood and Semi-chemical	3,566	5
State total	11,208	11

Table 42 shows the average operating days and the number of pulp mills, based on type of mill operation. For instance, all state pulp mills average about 276 days of operation in 2010, a decline of about 80 days from 2008.

Table 42 Average operating days of pulp mills

Pulp mill type	Operating days	Number
Sulfite	343	2
Sulfate	268	4
Groundwood and Semi-chemical	218	5
Average	276	11

Table 43 shows the volumes of products (types of paper, market pulp, etc.) in bone dry tons that were produced by pulp mills. For instance, newsprint (for newspapers) is produced in the greatest volumes (1.25 million tons) of all pulp mill products (3.9 million tons).

Table 43 Pulp mill production—by product, area and type of operation

(bone dry tons)

Economic area	All products	Products				
		Newsprint	Bleached paper	Unbleached paper	Other paper	Market pulp
Puget Sound	620,000	0	300,000	100,000	140,000	80,000
Olympic Peninsula	456,035	0	0	219,775	158,919	77,341
Lower Columbia	1,899,283	828,385	292,733	651,934	126,231	0
Inland Empire	879,522	420,522	186,000	133,000	0	140,000
State total	3,854,840	1,248,907	778,733	1,104,709	425,150	297,341
Type of Operation						
Sulfite	620,000	0	300,000	100,000	140,000	80,000
Sulfate	1,767,333	0	478,733	945,028	126,231	217,341
Groundwood	1,407,826	1,248,907	0	0	158,919	0
Semi-chemical	59,681	0	0	59,681	0	0
State total	3,854,840	1,248,907	778,733	1,104,709	425,150	297,341

Graph 19 Pulp mills' production

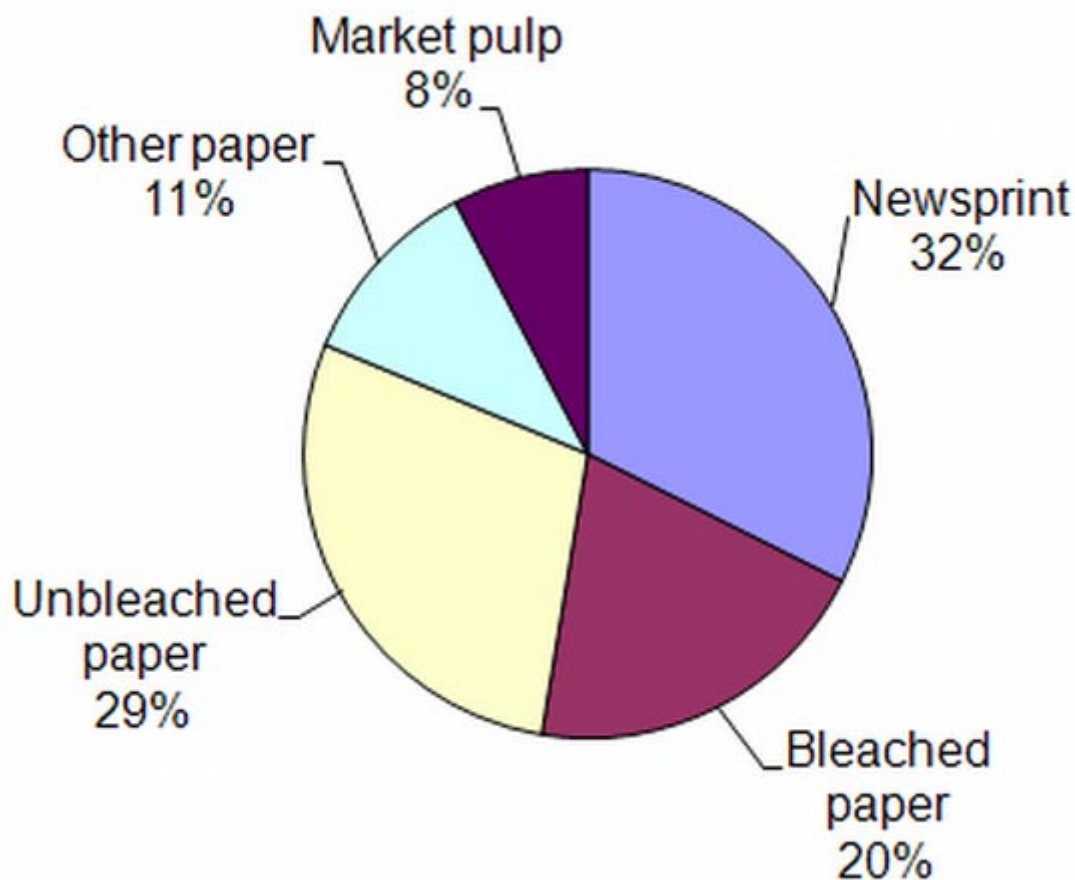


Table of Contents

Table 44 shows the volume and wood fiber type used by pulp mills. For instance, in 2010 pulp mills statewide used a total of 6.9 million tons of chips, mill residues, sawdust, shavings and recycled paper. Pulp mills used 6.5 million tons in 2008.

Table 44 Wood fiber consumption by pulp mills—by fiber type
(bone dry tons)

Economic area	Total	Chips		From roundwood chipping mill	From Logs	Sawdust and shavings	Recycled paper
		Total Chips	From mill residues				
Puget Sound	1,211,351	1,031,351	674,173	357,178	0	0	180,000
Olympic Peninsula	787,359	429,910	167,025	262,885	155,618	57,608	144,223
Lower Columbia	2,943,174	2,422,911	1,196,316	1,226,595	0	36,448	483,815
Inland Empire	1,995,219	1,356,628	810,531	546,097	294,998	194,480	149,113
State total	6,937,102	5,240,800	2,848,045	2,392,755	450,615	288,536	957,151

Table 45 shows the volume and species of (roundwood) chips. For instance, in 2010 pulp mills statewide used 943,402 tons of Douglas fir chips, an increase of 9 percent over 2008 (865,032 tons).

Table 45 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
Lower Columbia	1,226,595	399,208	453,004	16,075	0	90,851	171,484	0	0	59,499	36,472
Inland Empire	513,150	224,400	6,435	44,963	22,440	102,630	112,283	0	0	0	0
Others*	620,063	319,793	251,876	0	1,343	0	13,500	13,500	2,615	15,692	1,744
State total	2,359,808	943,402	711,315	61,038	23,783	193,481	297,267	13,500	2,615	75,191	38,216

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

Graph 20 Pulp mills' raw material

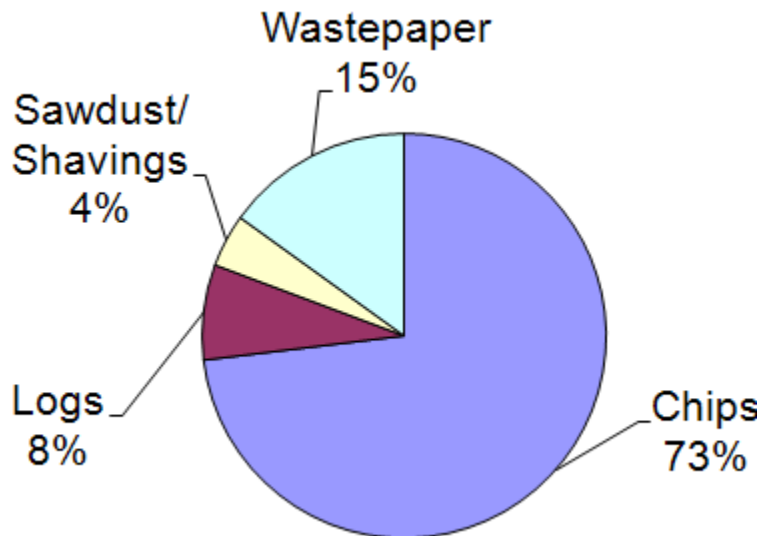


Table of Contents

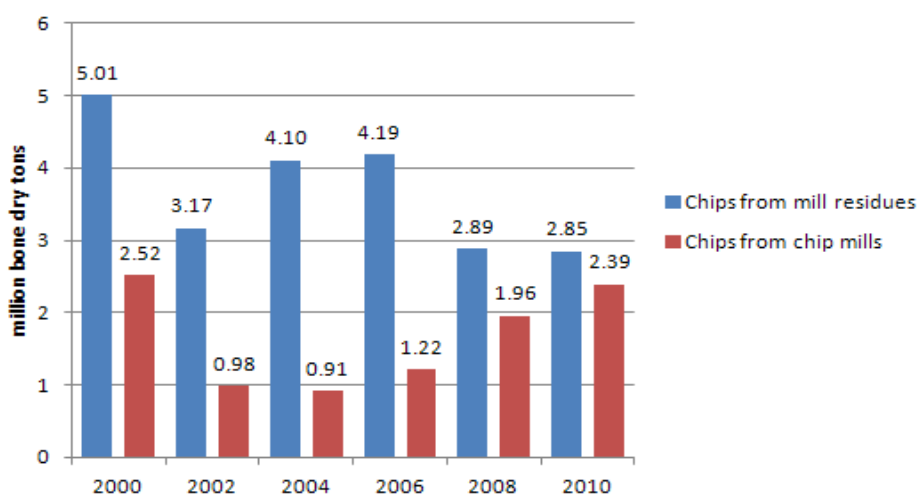
Table 46 shows the volume and wood fiber types from Pacific Northwest states and British Columbia that were used by Washington pulp mills, **not including recycled paper or chips from mill residues**. For instance, the total volume of wood fiber in this category that came from out-of-state increased by 84 percent between 2008 (631,310 bdt) and 2010 (1,158,420 bdt).

Table 46 Logs, sawdust and roundwood chip use by pulp mills—by state

(bone dry tons)

Economic area	Total volume	Washington	Oregon	Idaho	Montana	British Columbia	Others
Puget Sound							
Roundwood chips	357,178	356,306	0	0	0	872	0
Sawdust	0	0	0	0	0	0	0
Logs	0	0	0	0	0	0	0
Total	357,178	356,306	0	0	0	872	0
Olympic Peninsula							
Roundwood chips	262,885	259,808	0	0	0	3,077	0
Sawdust	57,608	56,456	0	0	0	1,152	0
Logs	155,618	155,618	0	0	0	0	0
Total	476,111	471,882	0	0	0	4,229	0
Lower Columbia							
Roundwood chips	1,226,595	733,579	410,540	16,339	12,422	0	53,716
Sawdust	36,448	36,084	364	0	0	0	0
Logs	0	0	0	0	0	0	0
Total	1,263,043	769,662	410,904	16,339	12,422	0	53,716
Inland Empire							
Roundwood chips	546,097	173,595	201,960	98,280	72,262	0	0
Sawdust	194,480	58,344	87,516	19,448	29,172	0	0
Logs	294,998	139,749	123,750	27,999	3,500	0	0
Total	1,035,575	371,688	413,226	145,727	104,934	0	0
State total							
Roundwood chips	2,392,755	1,523,288	612,500	114,619	84,684	3,948	0
Sawdust	288,536	150,883	87,880	19,448	29,172	1,152	0
Logs	450,615	295,366	123,750	27,999	3,500	0	0
Total	3,131,906	1,969,538	824,130	162,066	117,356	1,152	53,716

Chip mills provide more roundwood chips for pulp mills



This 10-year chart shows the decline of sawmills, veneer, shake and plywood mills as the largest source of chips for pulp mills. The tilt became more pronounced in 2011. According to one chip mill operator, chip mills are now providing more than 50 percent of the wood chips for pulp mills. In 2004 chip mills only provided 18 percent.

Following is the lumber cut of Puget Sound and the state as compiled by the *Seattle Post-Intelligencer*, from December 1, 1889, to November 30, 1890:

THE LUMBER CUT OF PUGET SOUND.

	<i>Lumber,</i>	<i>Lath, etc.</i>
Washington mill	22,301,000	7,200,000
Port Madison mill	21,116,000	5,420,000
Port Discovery mill	31,035,521	10,006,400
Puget Mill Co., Pt. Gamble	28,432,655	8,009,790
Puget Mill Co., Ludlow	21,051,144	9,009,523
Puget Mill Co., Utsalady	25,700,585	7,806,116
St. Paul & Tacoma mill	48,090,415	7,572,000
Gig Harbor Lumber Co	19,575,299	6,079,175
Tacoma Mill Co.	70,538,453	28,322,800
Port Blakeley Mill Co	60,000,000	28,000,000
Thirteen mills in Seattle	102,000,000	23,000,000
Local mills in Tacoma	107,300,000	13,200,000
Bellingham Bay mills	55,000,000	8,200,000
All other mills	64,500,000	9,500,000
Total Puget Sound mills	779,330,042	174,186,806

LUMBER CUT OF PUGET SOUND, 1890. In 1891, the mill stopped running. The closure was thought to be temporary because of the need for upgrading. (Figures from *History of Seattle, Washington*, American Pub and Engraving Company, 1891.)

Washington leads the nation in the production of softwood products. In 2010 all the state's sawmills produced 3.3 bbf of lumber (lumber tally). This 1890 newspaper clipping, "The Lumber Cut of Puget Sound" named 14 companies and communities around Puget Sound, many with multiple sawmills, that produced 779 mmbf of lumber. Just a year after statehood, Washington's prominence as a leader in the nation's wood industry was already recognized.

Shake & Shingle

Table 47	Shake & shingle mills' capacity and operating days	86
Table 48	Shake & shingle mills with selected equipment	86
Table 49	Log consumption by shake & shingle mills—by type	86
Table 50	Shake & shingle mills' production	86
Table 51	Log consumption by shake & shingle mills—by original owners	87
Table 52	Log consumption by shake & shingle mills—by diameter	87
Table 53	Wood and bark residues—produced by shake & shingle mills	87
Table 54	Wood residues—by use	88

Table of Contents

Table 47 shows the average number of operating days, mill capacities and product volumes of shake & shingle mills. For instance, Washington's 16 shake & shingle mills operated an average of 151 days in 2010. In 2008 the average was 188 days.

Table 47 Shake & shingle mills' capacity and operating days

	Single Shift Capacity (Squares)				Avg number of operating days / year
	Total mills	Shake	Shingle	*Other	
State total	16	128	399	478	151

*Includes siding panels

Table 48 shows that no shake & shingle mills used a chipper, barker or burner in 2010.

Table 48 Shake & shingle mills with selected equipment

	Chipper	Barker	Burner	None
State Total	0	0	0	16

Table 49 shows the volume of logs and other forms of wood received by the shake & shingle sector. For instance, the mills received 94 percent of their wood in the forms of blocks and bolts (5,182 squares of a total of 5,518).

Table 49 Log consumption by shake & shingle mills—by type
(thousand board feet, Scribner scale)

	All types	Sound logs	Utility logs	Others **
State total	5,518	328	8	5,182

**Other includes blocks, bolts, lumber, etc.

Table 50 shows the volume of products (in squares) produced in 2010. For instance, shingles made up 62.4 percent (50,962 of 81,641 total) of the total production of the mills.

Table 50 Shake & shingle mills' production
(squares)

	Product			
	Total	Shakes	Shingles	* Other
State total	81,641	1,069	50,962	29,610

Table 51 shows the volume of logs used by shake & shingle mills by ownership category. For instance, 99 percent of all of the logs consumed by shake & shingle mills in Washington came from tribal lands. (Most western redcedar is collected in blocks and bolts.)

Table 51 Log consumption by shake & shingle mills—by original owners
(thousand board feet, Scribner scale)

	All owners	Forest sector							
		State	National Forest	Bureau of Land Management	Other public	Own wood supply	Other wood supply	Native American	Farmer and miscellaneous private
State total	335	0	0	0	0	2	0	334	0

Table 52 shows the volume of logs consumed by shake & shingle mills by diameter (not including blocks of cedar wood). For instance, nearly all (98.2 percent) of the western redcedar logs were at least 21 inches in diameter.

Table 52 Log consumption by shake & shingle mills—by diameter (in inches)
(thousand board feet, Scribner scale)

	Total	Log diameter in inches			
		less than 5	5 to 10	10 to 20	21 or more
Total	335	—	—	6	329

Table 53 shows the volumes of wood and bark residues that were used. For instance, only 1.1 percent of all the wood and bark residues from shake & shingle mills were not used.

Table 53 Wood and bark residues—produced by shake & shingle mills
(bone dry tons)

	All residues			Wood residues		
	Total	Used	Unused	Total	Used	Unused
State total	61,525	60,718	807	52,355	51,548	807

	Bark residues		
	Total	Used	Unused
State Total	9,170	9,170	0



Table of Contents

Table 54 shows the volumes of bark and wood residues for pulp, fuel and other uses. For instance, 49 percent (30,233 bdt) of all western redcedar residues (52,355 bdt of wood and 9,170 bdt of bark) was used as fuel.

Table 54 Wood residues—by use

(bone dry tons)

All types wood residues (does not include bark residues)

Economic area	Total	Used	Pulp	Fuel	Other	Unused
Olympic Peninsula	25,886	25,079	0	22,659	2,419	807
Others*	26,469	26,469	0	0	26,469	0
State Total	52,355	51,548	0	22,659	28,888	807

Coarse wood residues

Economic area	Total	Used	Pulp	Fuel	Other	Unused
Olympic Peninsula	7,466	6,771	0	6,149	622	695
Others*	6,534	6,534	0	0	6,534	0
State total	14,000	13,305	0	6,149	7,156	695

Fine wood residues

Economic area	Total	Used	Pulp	Fuel	Other	Unused
Olympic Peninsula	18,419	18,307	0	16,510	1,797	112
Others*	19,935	19,935	0	0	19,935	0
State total	38,354	38,242	0	16,510	21,732	112

Bark residues

Economic area	Total	Used	Pulp	Fuel	Other	Unused
Olympic Peninsula	2,282	2,282	0	1,596	686	0
Others*	6,888	6,888	0	0	6,888	0
State total	9,170	9,170	0	1,596	7,574	0

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



Log Exports

Table 55	Export logs—by port	90
Table 56	Export logs—by diameter in inches	90
Table 57	Export logs—by species	90
Table 58	Export logs—by region of original owners	91
Graph 22	Log Exports—by Washington ports	91
Table 59	Export logs—by port and original owners	91
Graph 23	Origin of logs exported through Washington’s ports	92
Graph 24	Original owners of exported logs	92

Table of Contents

Table 55 shows the number of exporters and the volume and percentage share of exported logs from each port. For instance, the Port of Longview handled 53 percent of the logs exported from Washington—567,834 mbf out of a total of 916,734 mbf. In 2010 the Port of Seattle exported 20 percent of the state’s total and less than 1 percent in 2008. Seattle’s sudden rise as a log exporter was accommodated by the heavy use of containers, instead of break bulk log ships.

Table 55 Export logs—by port
(thousand board feet, Scribner scale)

Port	Total	% of Total
Everett	8,895	1.0%
Grays Harbor	50,530	5.5%
Longview	567,834	61.9%
Olympia	117,000	12.8%
Port Angeles	21,374	2.3%
Seattle	57,670	6.3%
Tacoma	93,431	10.2%
State total	916,734	100.0%

The Port of Seattle’s sudden rise as the state’s second largest log exporting port in 2010 was possible through the heavy use of containers which can transport as few as 4,000 board feet. Previously most logs were exported in large-volume break bulk log ships. **The Port of Seattle reported more than 60 new log exporters**, many who captured the smallest fractions of the Chinese market, but at higher prices than seen in years.

Table 56 shows the volume of logs exported by log diameter. For instance, 27 percent of the logs were less than five inches in diameter, 21 percent were between 5 and 11 inches in diameter, 44 percent were between 11 and 21 inches in diameter and 8 percent were 21 inches and wider in diameter.

Table 56 Export logs—by diameter in inches
(thousand board feet, Scribner scale)

Port	Total	Diameter in inches			
		Less than 5	5 to 11	11 to 21	21 or more
Longview	567,834	0	106,468	404,460	56,906
Tacoma	93,431	0	37,559	51,393	4,479
Others*	255,469	0	85,290	161,293	8,887
State total	916,734	0	229,317	617,146	70,271

Table 57 shows the volume and species of logs exported through Washington’s ports. For instance, 70 percent of the export logs were Douglas fir—660,290 mbf from a total of 916,734 mbf exported logs.

Table 57 Export logs—by species
(thousand board feet, Scribner scale)

Port	All species	Douglas fir	Hemlock	True firs	Spruce	Hardwoods
Longview	567,834	447,105	111,498	7,303	1,927	0
Seattle	57,670	36,806	15,020	4,215	1,628	0
Tacoma	93,431	41,378	36,849	11,004	3,752	448
Others*	197,799	135,001	51,035	4,317	7,448	0
State total	916,734	660,290	214,403	26,839	14,754	448

Table 58 shows the volume of logs from each region and ports used for export. It also shows the volume of out-of-state logs exported through each Washington port. For instance, 45 percent of the logs exported to foreign markets through Longview were from out-of-state.

Table 58 Export logs—by port and region or state harvested
(thousand board feet, Scribner scale)

Original log ownership	Total	Ports of Export						
		Longview	Aberdeen	Everett	Olympia	Port Angeles	Tacoma	Seattle
Lower Columbia	203,080	186,797	0	0	2,839	0	13,443	0
Olympic Peninsula	329,225	102,605	50,530	0	96,054	21,053	34,727	24,256
Puget Sound	119,459	22,821	0	8,895	8,746	321	45,261	33,414
Washington	651,763	312,223	50,530	8,895	107,640	21,374	93,431	57,670
Out-of-state	264,971	255,611	0	0	9,360	0	0	0
Grand total	916,734	567,834	50,530	8,895	117,000	21,374	93,431	57,670

Graph 22 Log Exports by Washington ports

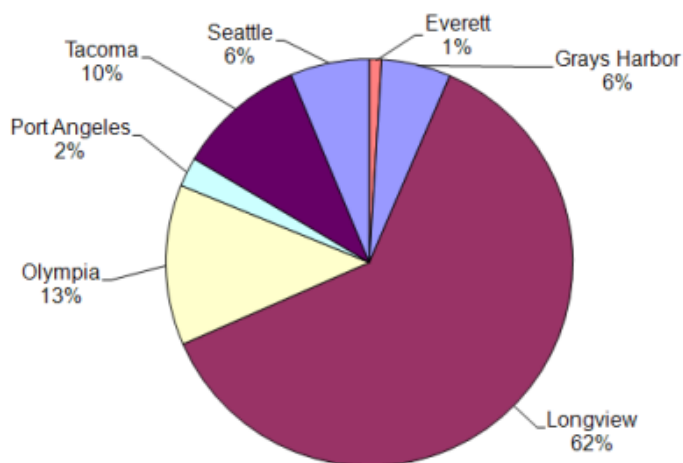


Table 59 shows the volume and ownership categories of logs exported from each port in Washington. (Federal law prohibits exporting logs harvested from public lands.) For instance, the greatest volume of exported logs were from large industrial forests (862,392 mbf), 83 percent .

Table 59 Export logs—by port and original owners
(thousand board feet, Scribner scale)

Port	Total	Forest sector			
		Own wood supply	Other wood supply	Native American	Farmer and miscellaneous private
Longview	567,834	292,856	175,106	28,712	71,160
Tacoma	93,431	46,751	41,180	1,627	3,873
Others*	255,469	98,509	102,333	19,766	34,860
Total	916,734	438,116	318,619	50,105	109,894

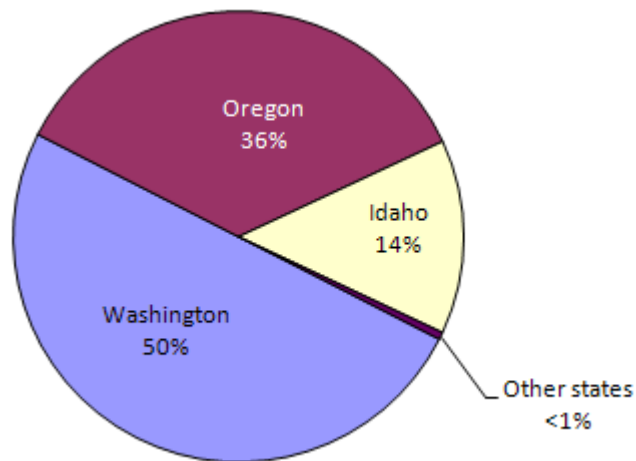
Ports were combined to avoid revealing statistics for individual operations.

The Global Wisdom arrived at Port of Olympia's Marine Terminal on April 16, 2011, where it was loaded with 5.7 mmbf of logs bound for China. That is about the total volume that Olympia exported during all of 2008.

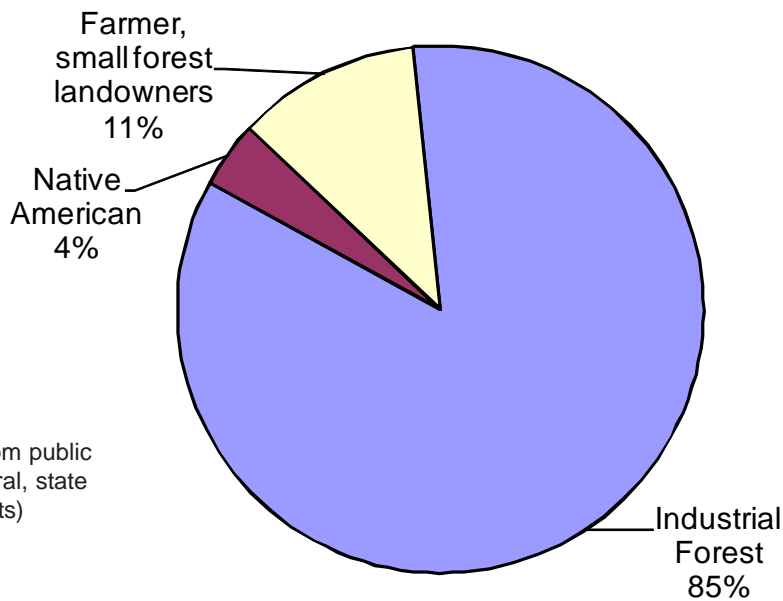
Photo: **Port of Olympia**



Graph 23 Origin of logs exported through Washington's ports



Graph 24 Original owners of exported logs



Unprocessed logs from public lands (including federal, state and local governments) cannot be exported..

Post, Pole, and Piling

Table 60	Number of post, pole and piling mills—by operating days and capacity	94
Table 61	Number of post, pole, and piling mills—by selected equipment	94
Table 62	Log consumption by post, pole, and piling mills—by diameter	94
Table 63	Post, pole, and piling mills’ production	94
Graph 25	Post, pole, and piling logs by diameter	95

Table of Contents

Table 60 shows the capacity by volume of logs that post, pole, and piling mills can shave and/or treat annually. The table also shows the average number of days post, pole, and piling mills operated in 2010. For instance, post, pole and piling mills operated between 222 (shaving operations) and 325 (treatment operations) days.

Table 60 Number of post, pole, and piling mills—by operating days and capacity

	Mills	Annual capacity (thousand board feet, Scribner scale)		Average number of operating days in 2010	
		Shaving	Treatment	Shaving	Treatment
State total	6	119	120	222	325

Table 61 shows the numbers of post, pole, and piling operations with peelers and burners. For instance, in 2010 there were four post, pole, and piling operations with peeler equipment.

Table 61 Number of post, pole, and piling mills—by selected equipment

	Mills	Peeler	Burner
State total	6	4	0

Table 62 shows the volume of logs by diameter in inches that were processed by post, pole, and piling mills. For instance, 84% (41,254 mbf) of the logs processed by post, pole, and piling operations were 5 to 11 inches in diameter.

Table 62 Log consumption by post, pole, and piling mills—by diameter
(thousand board feet, Scribner scale)

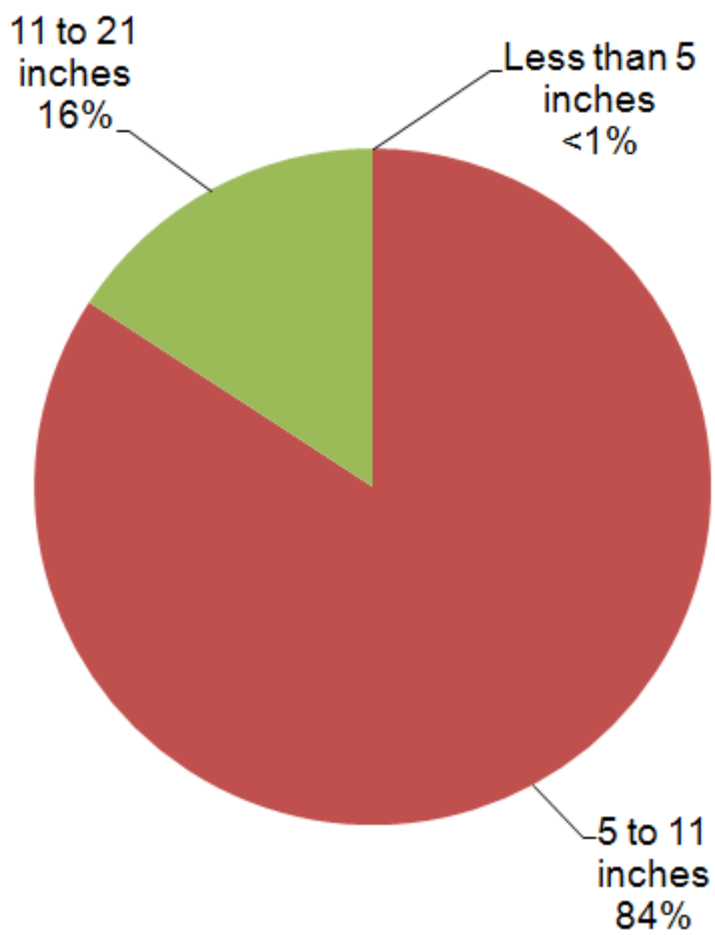
Economic area	Total	Diameter in inches			
		Less than 5	5 to 11	11 to 21	21 or more
Puget Sound	25,080	0	19,506	5,574	0
Olympic Peninsula	23,927	0	21,748	2,179	0
State total	49,007	0	41,254	7,753	0

Table 63 shows the total volume of logs that were processed with and without treatment. For instance, the percentage of untreated logs was about 47 percent (31,836 mbf of 60,496 mbf total).

Table 63 Post, pole, and piling mills' production
(thousand board feet, lumber tally)

	Total	Untreated	Treated
State total	60,496	31,836	28,660

Graph 25 Post, pole, and piling logs by diameter





Telephone poles made from trees can last 75 to 100 years.
Steve Thorne/ Benton (County) PUD Photo

Log Chipping

Table 64	Number of chipping operations—by capacity and operating days	98
Table 65	Log consumption by log chipping mills—by diameter in inches	98
Table 66	Log consumption by log chipping mills—by original owners	98
Table 67	Log consumption by log chipping mills—by species	99
Table 68	Chip production—by economic area	99
Graph 26	Tree species consumed by chipping mills	99
Graph 27	Chipping log diameters (in inches)	100

Table of Contents

Table 64 shows the total number of chipping operations, 8-hour capacity and average days operated in 2010. For instance, the average chipping mill operated 212 days. In 2008 the average days operated was 224.

Table 64 Number of chipping operations—by capacity and operating days

Economic area	Number	8-hour capacity (bone dry tons)	Avg days operated
Puget Sound	3	595	237
Olympic Peninsula	5	2,110	182
Lower Columbia	3	2,090	179
Others*	3	1,192	270
State Total	14	5,987	212

Table 65 shows the volume of logs used by chipping mills by diameter in inches. For instance, a total of 94,639 mbf of logs (about 24 percent) were less than 5 inches in diameter.

Table 65 Log consumption by log chipping mills—by diameter in inches
(thousand board feet, Scribner)

Economic area	Total	Diameter in inches			
		Less than 5	5 to 11	11 to 21	21 or more
Puget Sound	47,521	26,625	9,854	6,510	4,531
Olympic Peninsula	154,120	33,736	69,736	28,824	21,824
Lower Columbia	110,785	11,734	72,147	11,018	15,885
Others*	90,147	22,544	18,245	37,396	11,963
State total	402,573	94,639	169,982	83,748	54,203

Table 66 shows the volume of logs consumed by chipping mills by the logs' original owners. For instance, about 11.5 percent of the logs that were consumed by the state's chipping mills came from state lands, 46,173 mbf out of a total of 402,573 mbf.

Table 66 Log consumption by log chipping mills—by original owners
(thousand board feet, Scribner scale)

Economic area	All owners	State	National Forest	Bureau of Land Mgt	Other public	Forest sector		Native American	Farmer and misc. private
						wood supply	Other wood supply		
Puget Sound	47,521	4,124	2,776	0	469	0	26,144	3,385	10,624
Olympic Peninsula	154,120	21,978	12,778	0	0	10,500	84,240	11,505	13,118
Lower Columbia	110,785	5,240	0	0	0	0	83,987	0	21,558
Others*	90,147	14,830	12,599	833	0	1,667	52,977	833	6,408
State Total	402,573	46,173	28,153	833	469	12,167	247,348	15,724	51,708

* "Others" indicates economic areas were combined to avoid disclosing individual corporate data.

Table 67 shows species of logs consumed by log chipping mills. For instance, Douglas-fir and hemlock were the only species harvested in all regions of the state. Those two species represented 65 percent of the statewide chipping log harvest.

Table 67 Log consumption by log chipping mills—by species

(thousand board feet, Scribner)

Economic area	All species	Douglas-fir	Hemlock	True fir	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other conifer	Red alder	Other hardwood
Puget Sound	47,521	15,751	22,346	0	0	0	0	440	0	7,655	1,329
Olympic Peninsula	154,120	51,820	73,560	0	2,000	0	0	0	0	25,240	1,500
Lower Columbia	110,785	45,467	33,465	0	0	0	0	0	0	31,854	0
Central Washington	18,815	3,763	1,882	7,526	0	2,822	2,822	0	0	0	0
Inland Empire	71,332	12,733	833	48,133	833	3,567	4,400	0	833	0	0
State Total	402,573	129,534	132,086	55,659	2,833	6,389	7,222	440	833	64,749	2,829

Table 68 shows the total production of chips by log chipping mills by economic area. Chipping mills statewide produced 1,402,826 tons of chips in 2010.

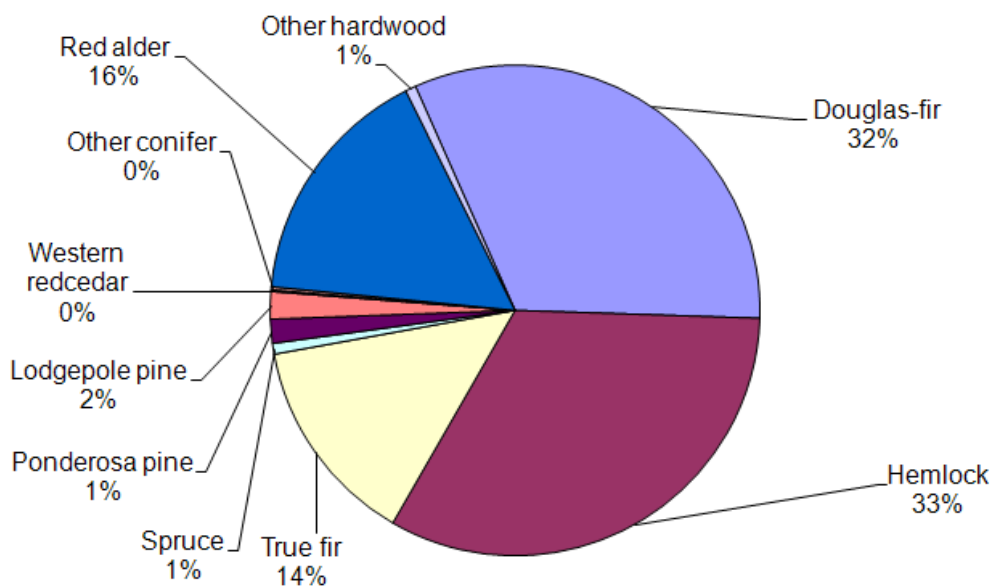
Table 68 Chip production—by economic area

(bone dry tons)

Economic area	Chip production
Central Washington	47,692
Inland Empire	285,000
Lower Columbia	403,740
Olympic Peninsula	533,722
Puget Sound	132,672
State total	1,402,826

Graph 26

Tree species consumed by chipping mills



Graph 27
Chipping log diameters
(in inches)

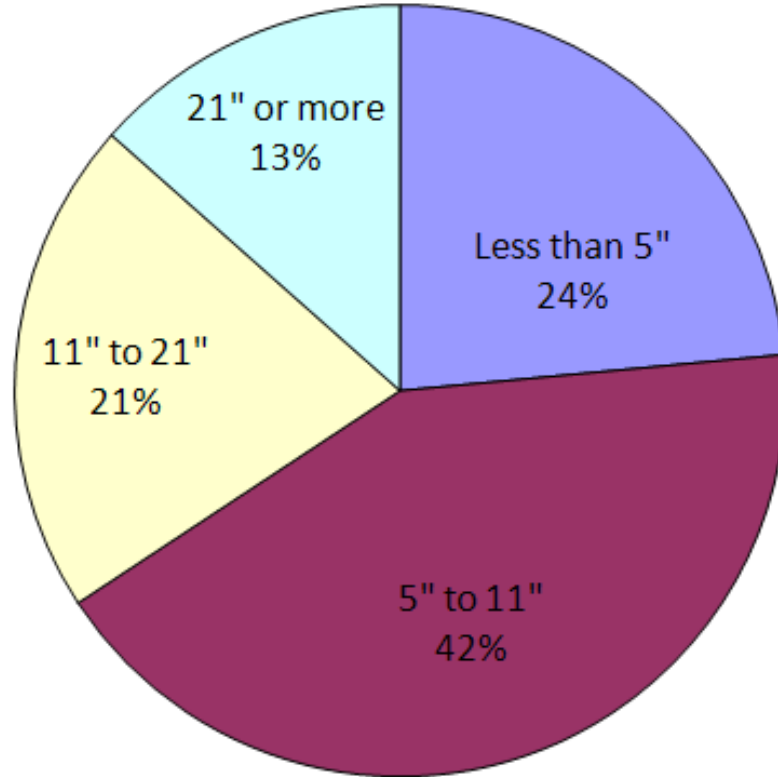


Photo: DNR/ Joe Rocchio