



Washington Mill Survey 2008

Series Report #20

February 2010



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

Acknowledgements

DNR appreciates the support of the major forest industry associations, mill owners, mill operators and log exporters who provided data for this survey

Appreciation is also extended to Bruce Hiserote USDA Forest Service's Pacific Northwest Research Station for creating the database application that was used for this report.

This report was prepared by:

DNR Office of Budget and Economics Natural Resource Economist Group

Cullen Stephenson	Budget Director
Phil Aust	Lead Economist
Dorian Smith	Economist

Additional editorial assistance

Bob Redling	DNR Agency Editor
-------------	-------------------

Proofreading:

Jodi Barnes
Mary Beth Branson
Anna Jones

Address requests regarding this report to:

Dorian Smith
Office of Budget and Economics
Department of Natural Resources
PO Box 47041
Olympia, WA 98504-7041

Phone: 360-902-1026 **FAX:** 360-902-1780

E-mail: dorian.smith@dnr.wa.gov

Web Site:

http://www.dnr.wa.gov/BusinessPermits/Topics/EconomicReports/Pages/obe_washington_state_millsurvey.aspx

People who need this information in an alternate format may call:
360-902-1120 or Dial 7-1-1

Cover photo: A front-end loader feeds the log deck at the Sierra Pacific facilities in Burlington. In the background is a portal crane which also feeds the log deck.

Photo: Sheri Nelson / Sierra Pacific Industries

Washington Mill Survey 2008

Series Report #20

February 2010

Prepared by:

Dorian Smith
Economist

Bruce Hiserote
Information Management Specialist
Pacific Northwest Research Station
USDA Forest Service



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

Table of Contents

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

Acknowledgements	ii
Introduction	vii
Preface	viii-ix
Map: Economic areas used in this report	viii
Abbreviations and conversions	viii
Mill Survey Analysis	1
Graph 1 Production	2
Graph 2 Number of operations	3
Graph 3 Log consumption	4
Graph 4 Log consumption by industry	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
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 2008 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
Table 7 Operations—by sector and percentage of logs from original owners	33
Table 8 Log consumption—by sector and original log owners	36
Table 9 Log consumption—by species	38
Table 10 Wood and bark residues—production and use	40
Table 11 Hardwoods consumed—by volume	40
Table 12 Log consumption—by diameter in inches	41
Graph 16 Logs consumed in Washington—by origin of state or province	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
Table 22 Log consumption by sawmills—by counties and original owners	54
Table 23 Number of sawmills—by percentage of logs from various sources	56
Graph 16 County rank by log volume	59
Table 24 Logs consumed by sawmills—by species and mill size	60
Table 25 Log consumption by sawmills—by species and county	62
Table 26 Wood and bark residues—by county	64
Table 27 Wood residues from sawmills—by mill size and use	66
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 Lumber production—by headrig type and county	72
Table 31 Lumber produced by sawmills—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 22 Pulp mills’ production	82
Table 44 Wood fiber consumption by pulp mills—by fiber type	82
Table 45 Roundwood chip consumption by pulp mills—by species	82
Table 46 Logs, sawdust and roundwood chip use by pulp mills—by state	83
Graph 21 Pulp mills’ raw material	83

Continued on next page

Table of Contents, continued

Shake & Shingle	83
Table 47 Shake & shingle mills' capacity and operating days	84
Table 48 Shake & shingle mills with selected equipment	84
Table 49 Log consumption by shake & shingle mills—by type	84
Table 50 Shake & shingle mills' production	84
Table 51 Log consumption by shake & shingle mills—by original owners	85
Table 52 Log consumption by shake & shingle mills—by diameter (in inches)	85
Table 53 Wood and bark residues—produced by shake & shingle mills	85
Table 54 Wood residues—by use	86
Log Export	87
Table 55 Export logs—by port	88
Table 56 Export logs—by diameter in inches	88
Table 57 Export logs—by species	89
Table 58 Export logs—by county and original owners	89
Table 59 Export logs—by port of original owners	89
Graph 22 Log Exports—by Washington ports	90
Graph 23 Origin of logs exported through Washington's ports	90
Graph 24 Original owners of exported logs	90
Post, Pole, and Piling	91
Table 60 Number of post, pole and piling mills—by operating days and capacity	92
Table 61 Number of post, pole, and piling mills—by selected equipment	92
Table 62 Log consumption by post, pole, and piling mills—by diameter	92
Table 63 Post, pole, and piling mills' production	93
Graph 25 Post, pole, and piling logs by diameter	93
Chipping	95
Table 64 Number of chipping operations—by capacity and operating days	96
Table 65 Log consumption by log chipping mills—by diameter in inches	96
Table 66 Log consumption by log chipping mills—by original owners	96
Table 67 Log consumption by log chipping mills—by species	97
Table 68 Chip production—by economic area	97
Graph 26 Tree species consumed by chipping mills	98
Graph 27 Chipping log diameters (in inches)	98



Photo: Dorian Smith / DNR

Introduction

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

Few places on earth grow timber—Douglas fir and related species—that produce prized structural lumber so efficiently. In just 35 years Washington-grown Douglas fir trees can reach a harvestable age with a diameter of 12 to 14 inches and a height of 70 to 80 feet (up to 120 feet on some sites). A single acre of mature trees can yield 30,000 to 40,000 board feet, enough to build two to three average-sized homes.

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) are managed as commercial forests primarily for growing softwood.

The computer software and aerospace industries are major drivers in Washington's economy. But wood products still contribute more than \$5 billion to the state's Gross Domestic Product and employs about 30,000 workers. (See page 18)

Even though it has declined significantly in recent years, the log export industry still has gross revenue of about \$400 million annually, according to the state's Department of Commerce. Wood products is also a major industry in eastern Washington, which produces 27 percent of the state's total log volume.

The agricultural side of managing forest lands (growing, logging) adds 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 directly provided by mill managers and owners.

The report covers seven sectors, including:

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

While other agencies and wood products industry associations publish general summaries, the Mill Survey provides details and statistics not available elsewhere. The tables include data on log volumes, mill capacities, log species, days of operation, and the use of wood residues. It is a resource for a broad audience of industry managers, economists, public officials and state residents.

Most log measurements are in thousand board feet Scribner rule—an early 20th century scale that estimates a log's potential lumber volume. Due to mill efficiencies in recent decades, the sawmills output (measured in "lumber tally") usually exceeds log input in Scribner scale.

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

Preface

Mills resort to many changes during economic downturn

The forest products industry in Washington has always faced a series of challenges. At any time the industry can be plagued by natural disturbances (wildfires, windstorms, insect infestations and tree diseases), man-made disruptions (labor strife and environmental clashes) changing market demand and national and global politics. It's also one of the first sectors to suffer in an economic downturn and the last to breathe the fresh air of recovery. Economists call this transition: "creative destruction." Simply stated, it's when new technology and shifting economic fundamentals nullify old traditions and business models. But out of this turmoil the industry often emerges more efficient and competitive in future markets.

This edition of the Washington Mill Survey is a record of a new direction. For this reason, it is even more proper to thank the managers and owners of mills and operations who contributed the essential data.

The wood products industry knew a year in advance what the rest of the world discovered in 2008: the economy was in a recession and needed healing. By the end of March 2009 there were flashes of optimism as stock prices began to rise, retail stores greeted more customers and, belatedly, unemployment indicators improved.

But the wood products industry is still waiting for key signs of recovery

Difficult data-gathering

Researching and compiling data for the 2008 edition of the Mill Survey was more difficult than other years. Tracking down authorized company contacts was more time-consuming after many mills were closed, purchased or merged into new ownerships. Several mills were purchased, only for the equipment which was disassembled and moved to other operations.

For the first time in several years, a half-dozen mill owners and operators declined to answer the Mill Survey questionnaire. (Responders are re-assured that proprietary data will not be revealed.)



Hog fuel, a by-product of wood product manufacturing, is conveyed to feed Sierra-Pacific's cogeneration facility in Burlington to produce power .

Photo: Sheri Nelson / Sierra Pacific Industries

To avoid large scale data gaps, statistics from the 2006 Mill Survey were used when 2008 information was not available. This was done to make better comparisons and to more accurately monitor the path of changing trends in the forest products industry.

Throughout the Mill Survey's information-gathering phase, mill operators vented disappointments, claiming this is the most difficult downturn in memory

Faced with steep drops in the markets, mill operators reverted to last resort options. Some mills suspended operations temporarily or operated at reduced employee levels. Some employees were furloughed and others let go. In a gesture of empathy, the management of one mill assisted employees with the paperwork for applying for unemployment compensation when the mill operations were cut to four days a week.



A "merchandise" is equipped with several saw blades to quickly cut lumber to a variety of custom lengths. Photo: Sierra Pacific Industries / Sheri Nelson

Searching for last resorts and opportunities

One mill owner used several methods to keep his employees working. When desirable logs were hard to come by he purchased low quality beetle-kill logs from Canada and wildfire-scorched logs from tribal forests. He also kept his head-rigs operating by cutting other peoples' wood.

The owner of a one-man operation said he was mulling converting his decades-old mill into a tourist attraction.

But the budget crisis also brought opportunities. Dave Manke, manager of Manke Lumber Company's sawmill in Tacoma, said every stick of wood manufactured in 2008 was sold to Japanese customers. The orders were so voluminous, two shifts ran every day. But it did not come easily or quickly. He said the company committed years researching and re-tooling for the (metric-measured) different cutting patterns of Japanese lumber.

Tapping the Asian market was one example of the company's policy to be "flexible" and keep "irons in the fire," he said.

"We've been through tight markets before. We'll be here when the going gets good. I have to tell myself that every day"

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 an area where economic activity in the forest products industry is similar. The economic area boundaries are not all drawn according to natural geographic features.

Abbreviations and Conversions

Lumber

board foot	=	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 1/2 mbf
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

1998-2008

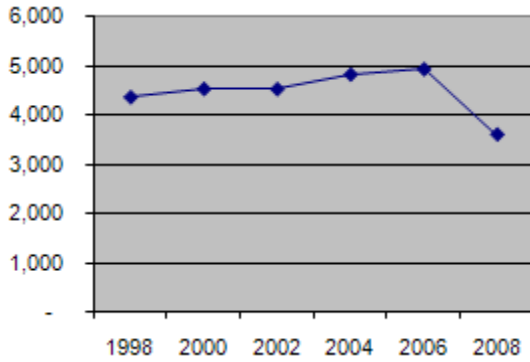
The analyses in this chapter provide multiple-year views of trends in the seven forest product sectors in Washington.

Graph 1 Production	2
Graph 2 Number of operations	3
Graph 3 Log consumption	4
Graph 4 Log consumption by industry	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
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 2006 primary wood products	18

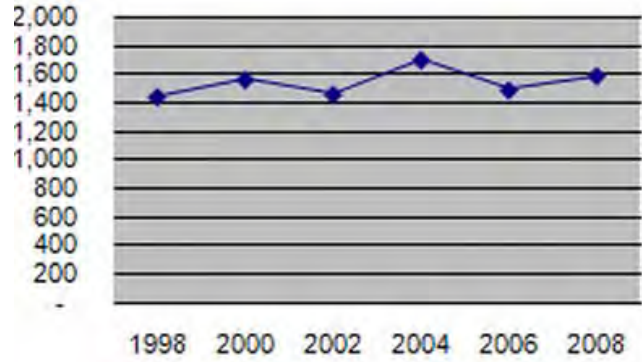
Graph 1 Production

Graphs 1a through 1f display total production by sector. Lumber output from sawmills suffered a 1.5 bbf drop between 2006 and 2008 (1a) as the housing market, then the world economy suffered its worst recession since the 1930s. Other sectors declining were pulp and shake & shingle mills (1d) which have been declining for a decade, but more slowly since 2002. However, production increases for veneer and plywood (1b), post, pole and piling production (1e) and log exports (1f) were seen.

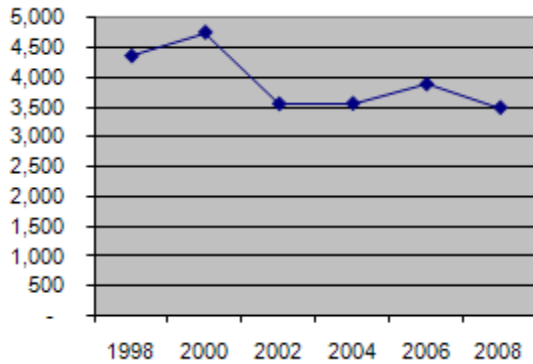
Sawmill
Graph 1a
(mmbf lumber tally)



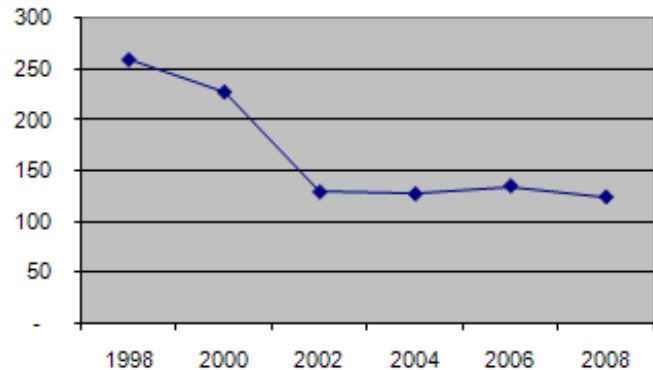
Veneer and Plywood
Graph 1b
(MMsf 3/8" basis)



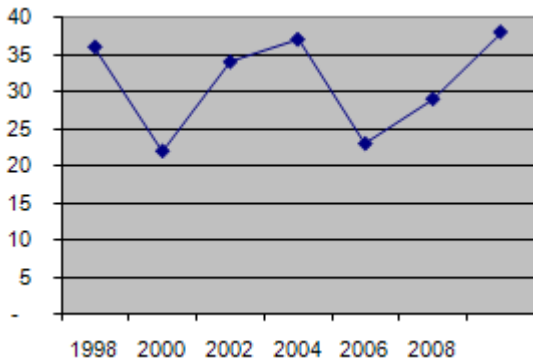
Pulp
Graph 1c
(bone dry tons)



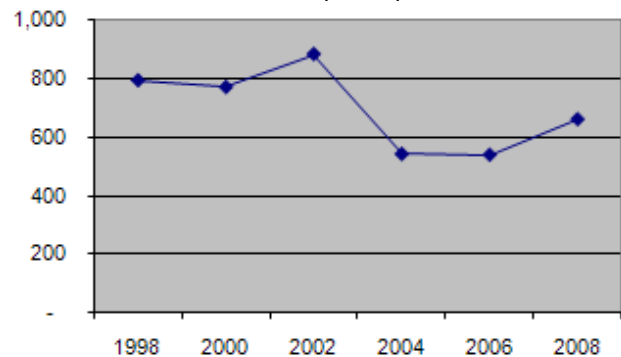
Shake & Shingle
Graph 1d
(million squares)



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

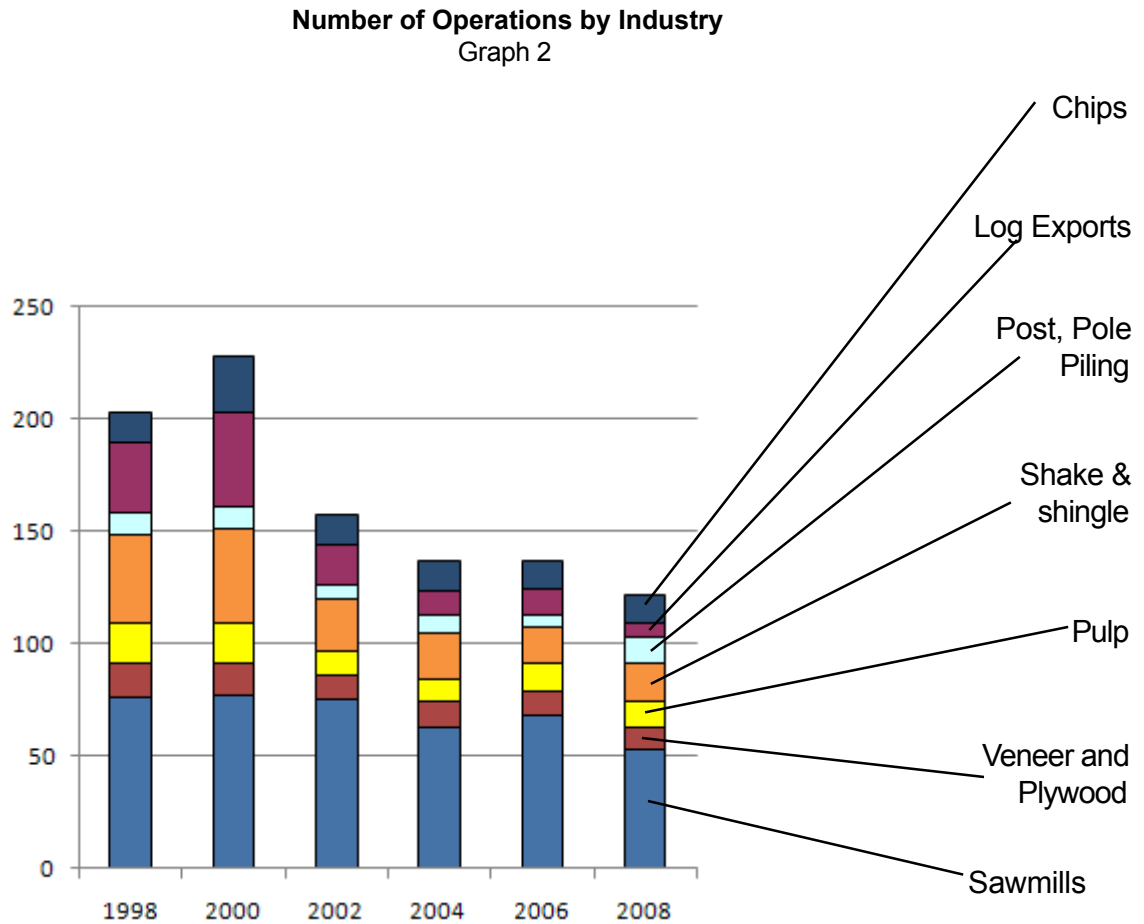


Log Export
Graph 1f
(mmbf)



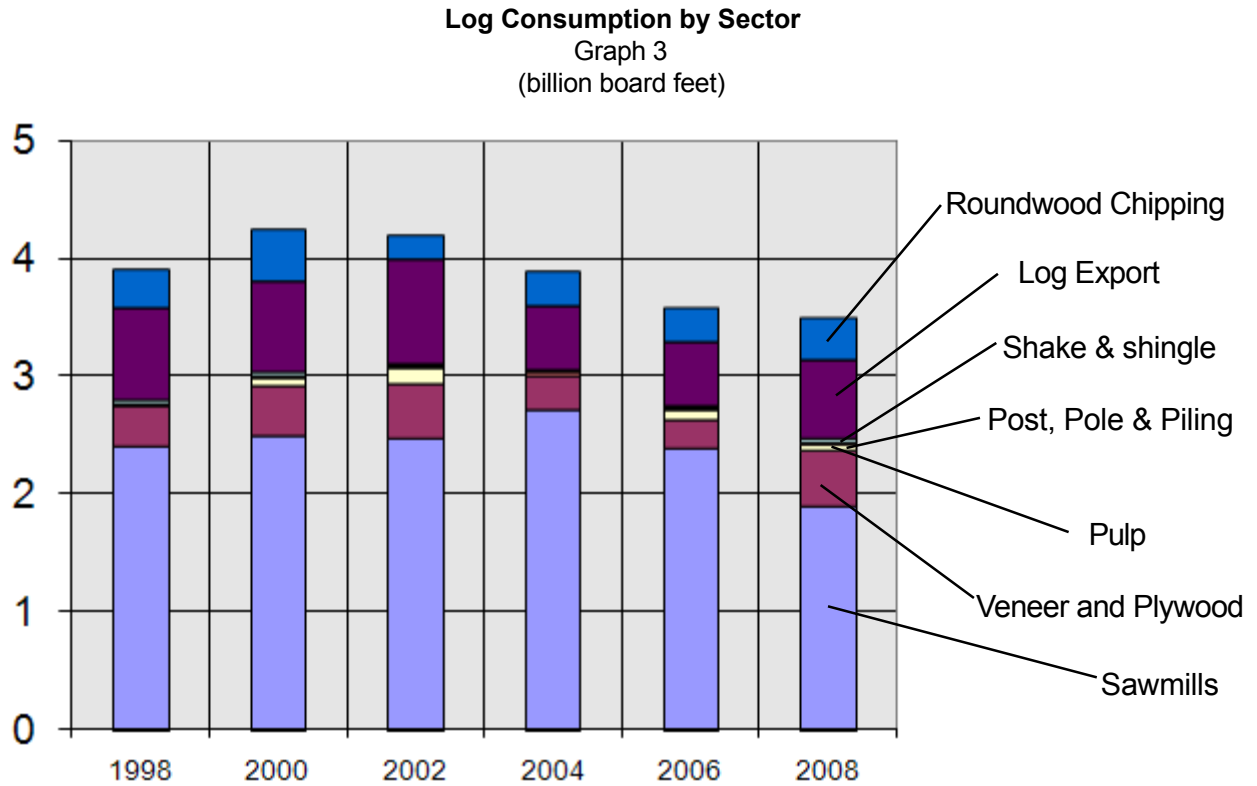
Graph 2 Number of operations

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. Since then, all sectors have seen decreases, with the greatest (over 50 percent each since 1998) in the log export, shake-and-shingle, and pulp sectors.



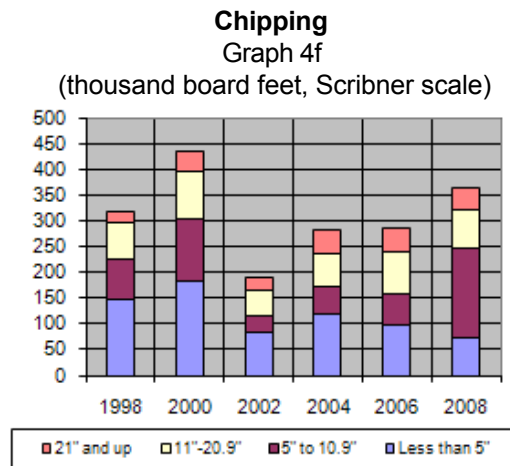
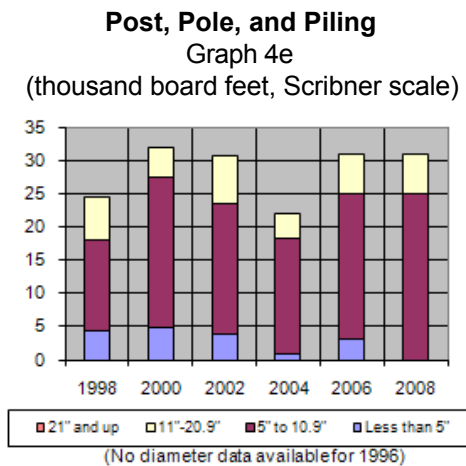
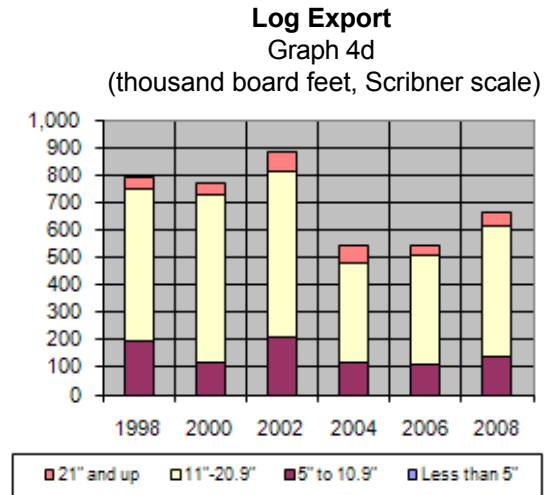
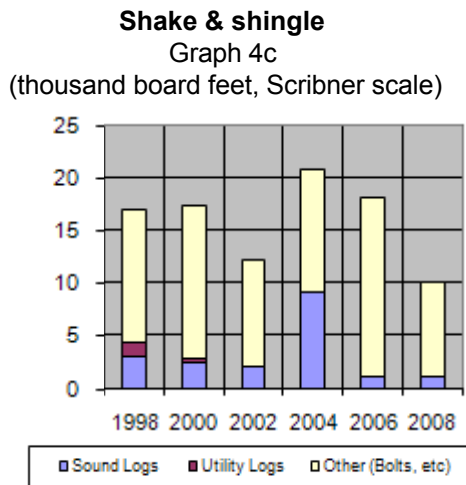
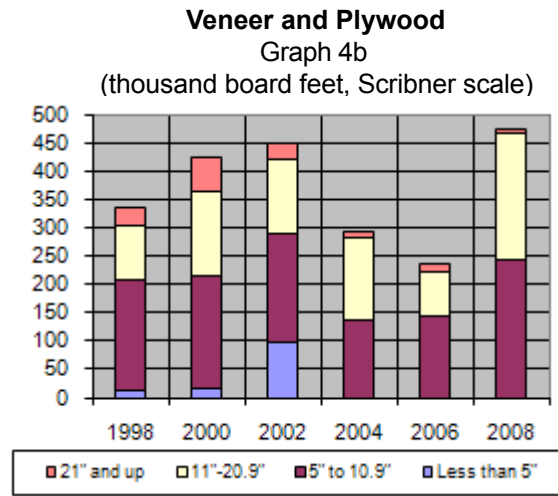
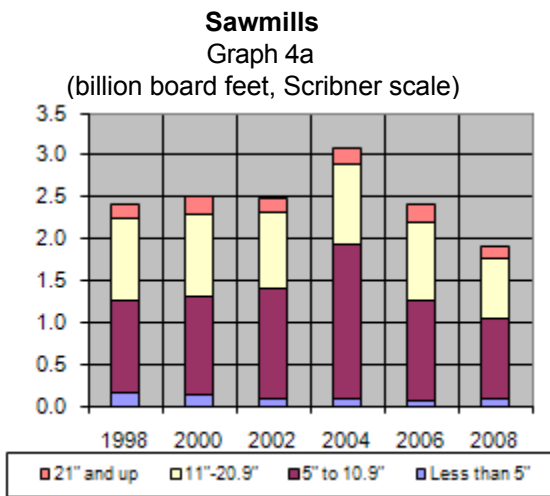
Graph 3 Log consumption

Total log consumption by Washington mills declined 16 percent in the 1998-2008 period. Mills consumed 4.4 billion board feet (bbf) in 1998 and 3.4 bbf in 2008.



Graph 4 Log consumption by log industry

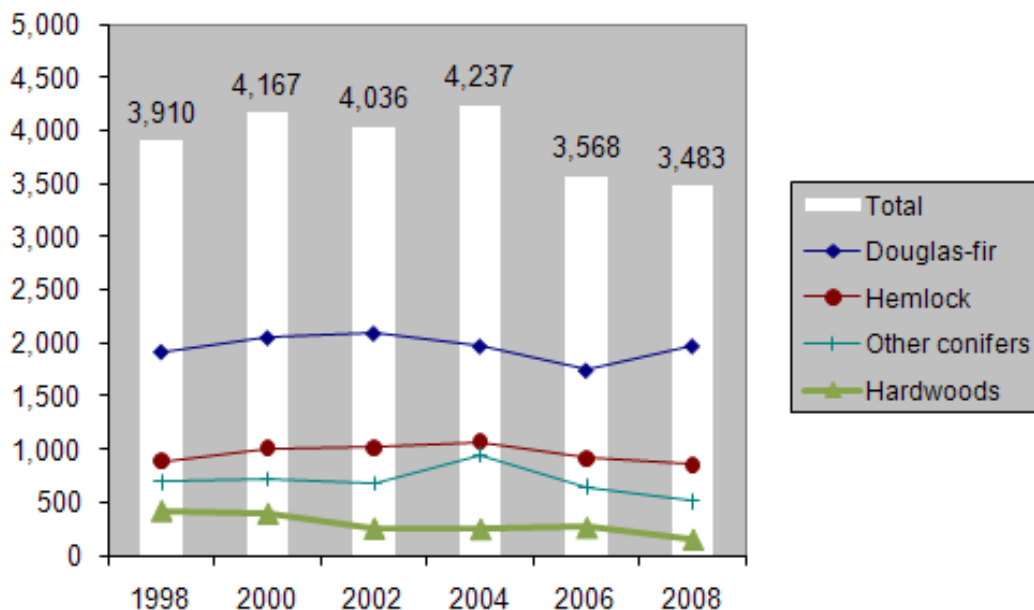
Tables 4a through 4f display log consumption by log size, except 4c (shake & shingle) which displays log consumption by type. In the shake & shingle industry nearly all of the material is delivered to mills as bolts (sections of logs or the remains of salvaging operations). Sectors such as shake & shingle,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



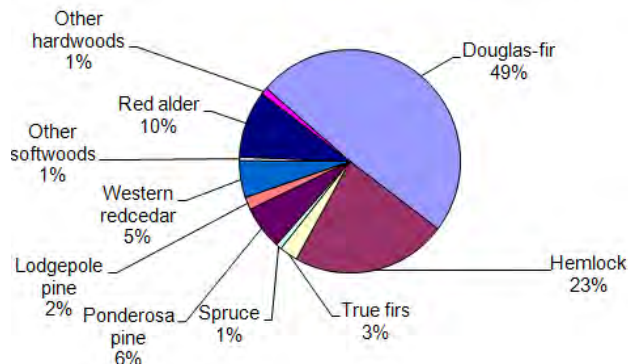
Graph 5 Tree species

Douglas fir was the dominant single species between 1996 and 2008, comprising about half of the consumed volume (Graph 5a). In general, each species or group has fairly consistent consumption levels over this period. Graphs 5b and 5c show that the species mix between 1998 and 2008 did not change much. Douglas fir gained about 7 percent. In eastern Washington, pines increased their share from 1 percent to 6 percent.

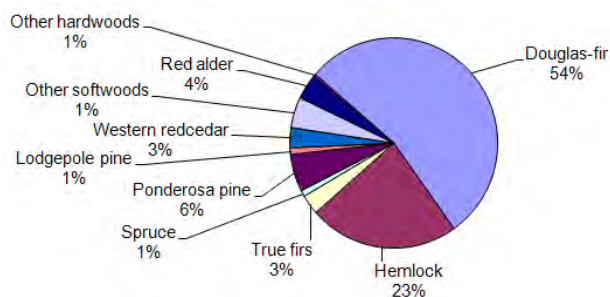
Log Consumption by Species
 Graph 5a
 (million board feet, Scribner scale)



Log Consumption by Species - 1998
 Graph 5b

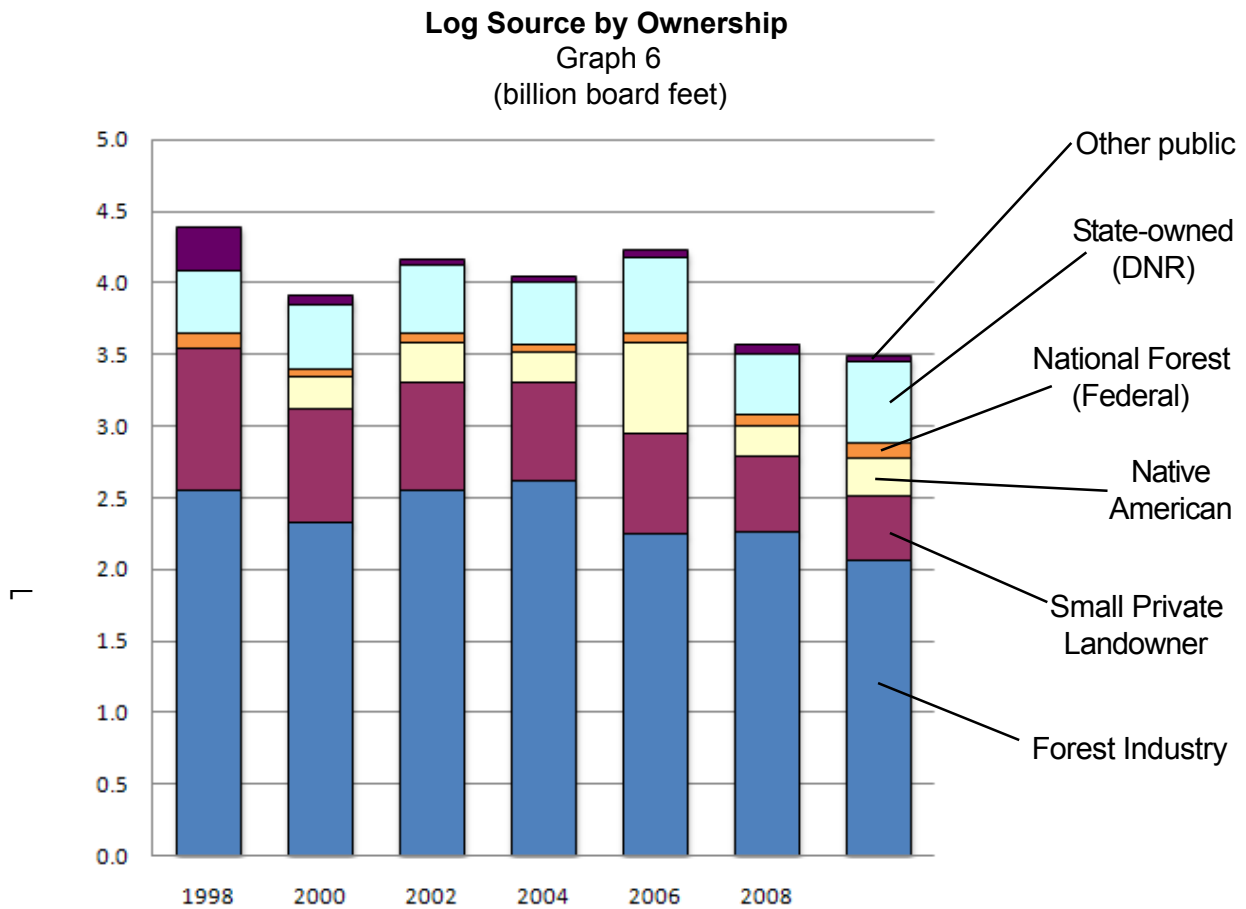


Log Consumption by Species - 2008
 Graph 5c

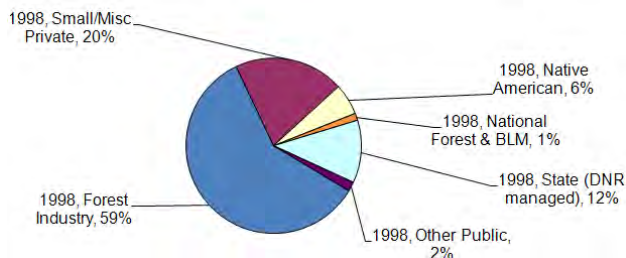


Graph 6 Log sources

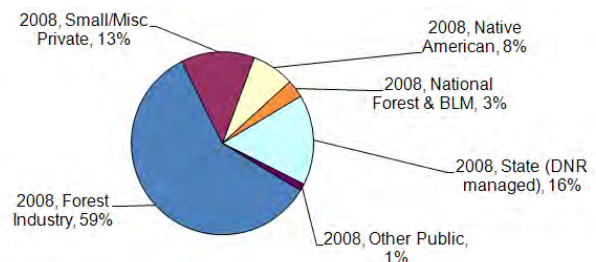
Log source by ownership, in Graph 6, shows that private timberland (Forest Industry and Small Private Landowners) continue to provide the bulk of the logs for the forest products industry. However, graphs 6b and 6c show that the Department of Natural Resources (state) supplies about 16 percent, a third higher share from 2006.



Log Consumption by Ownership - 1998
Graph 6b



Log Consumption by Ownership - 2008
Graph 6c

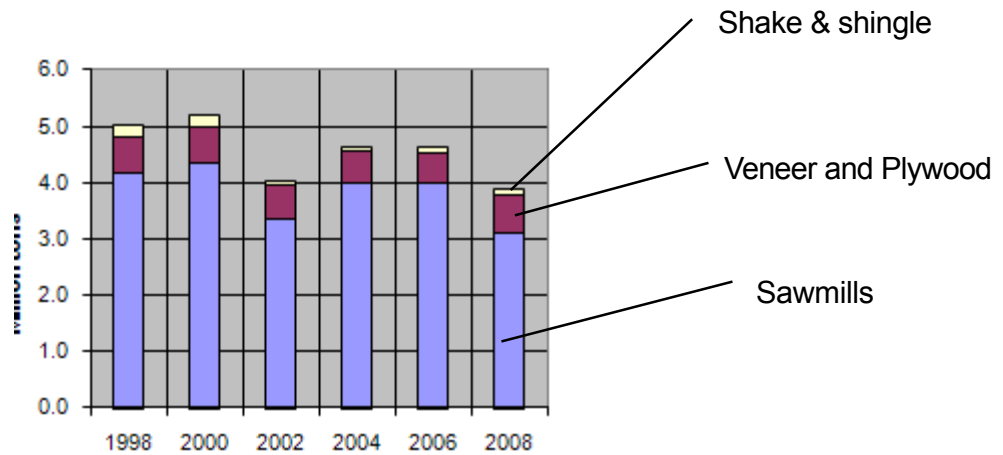


Graph 7 Wood residues

Graphs 7a and 7b display the production and use of wood residues by industry. Not surprisingly, sawmills are the largest producer of residues. Residues are predominately used for pulp, although between 1996 and 2008 they were increasingly used for fuel.

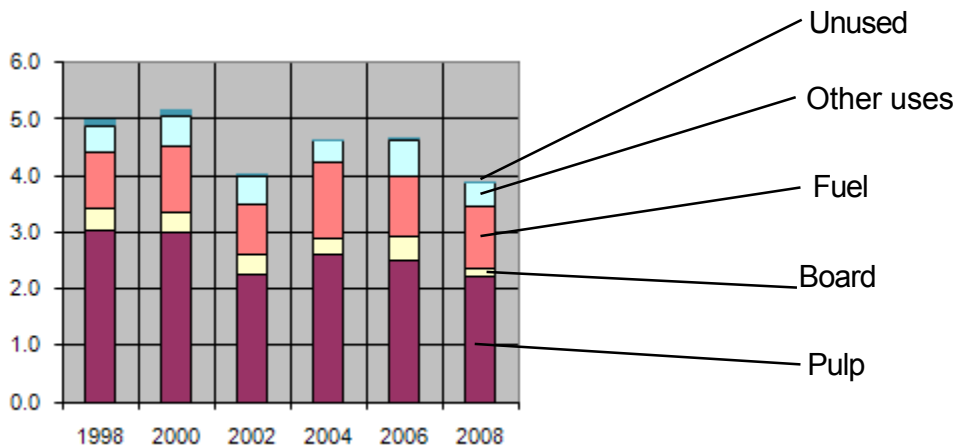
Production of Wood Residue (not bark)

Graph 7a
(millions of tons)



Use of Wood Residues (not bark)

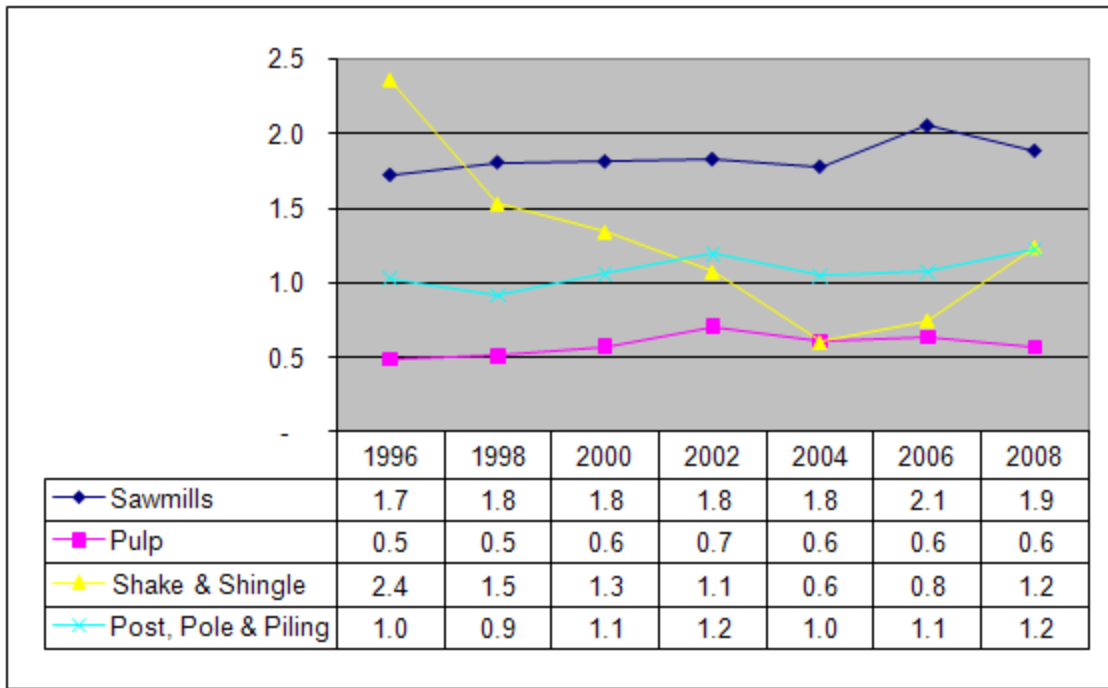
Graph 7b
(millions of tons)



Graph 8 Productivity

Productivity (production divided by consumption volumes) is displayed in Graph 8. All sectors remained at closely similar levels throughout the past 10 years, except shake & shingle mills. However, the remaining mills show an increase in productivity, indicating that the survivors were more efficient.

Productivity
 Graph 8
 (higher numbers indicate increased efficiency)

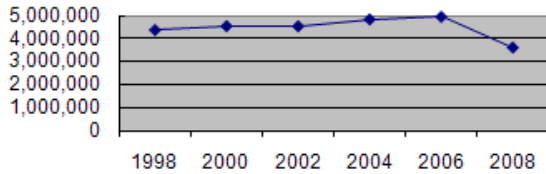


Used with permission by Great Western Lumber Co. Photo: Department of Natural Resources / Dorian Smith

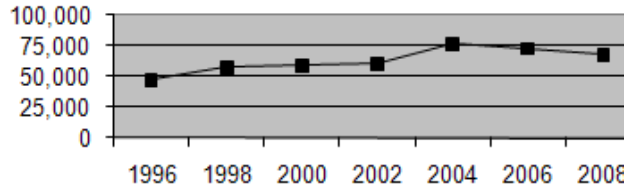
Graph 9 Sawmills

The sawmills' story over the 10-year period ending in 2006 is presented in these graphs. Total sawmills production (9a) fell to pre-1998 levels (about 3.5 bbf) from nearly 5 bbf in 2006. However, productivity remained higher per mill and total. These statistics underscore the fact that new mills have not replaced all the mills that have closed. They are larger and more efficient (9e).

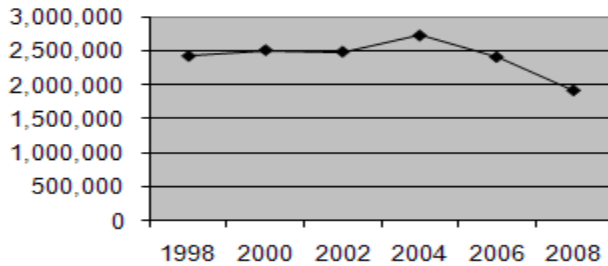
Total Sawmills Production
Graph 9a
(mbf lumber tally)



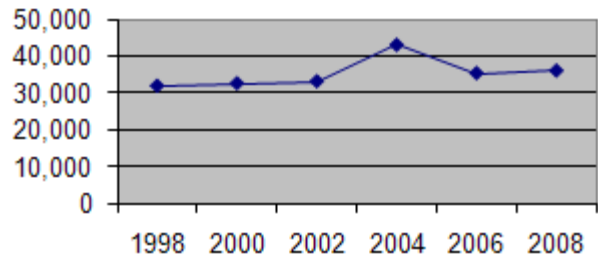
Avg Lumber Production per Mill
Graph 9b
(mbf lumber tally)



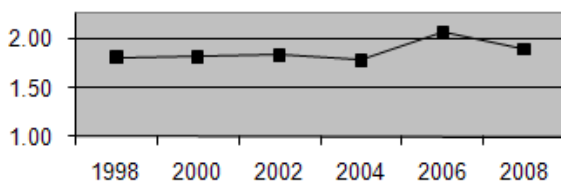
Total Log Consumption
Graph 9c
(mbf Scribner scale)



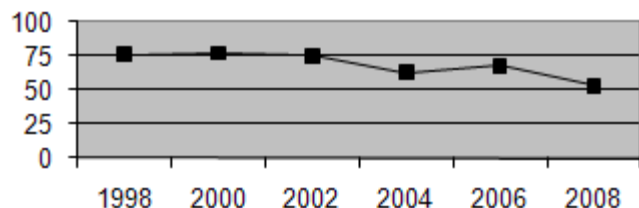
Avg Log Consumption per Mil
Graph 9d
(mbf Scribner scale)



Productivity of Sawmills
Graph 9e
(input/output ratio)



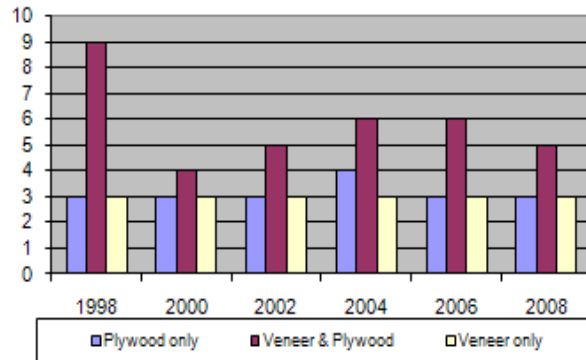
Number of Sawmills
Graph 9f



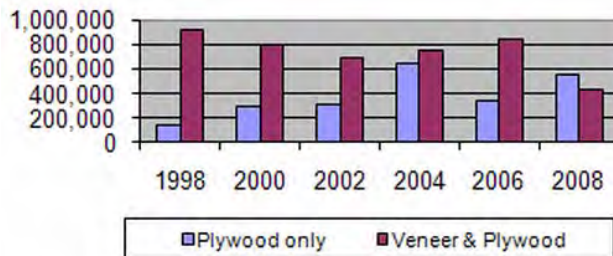
Graph 10 Veneer and Plywood mills

Up until the last decade, two-step plywood manufacturing was carried out primarily by integrated mill operations, which produced the veneer to make the plywood. But since 1998 the number of integrated mills has dropped from nine to five while the number of mills that specialize in veneer or plywood is unchanged (10a). On this page (10a - 10e) and the next page (10f - 10k) the move to specialization is revealed. In nearly every graph the bars representing integrated veneer and plywood mills shortened while the bars representing veneer-only or plywood-only mills lengthened or remained the same. This trend indicates the efforts of plywood mills to improve efficiencies and survive the competition with other “engineered” wood products (particle board, oriented strand board, etc.).

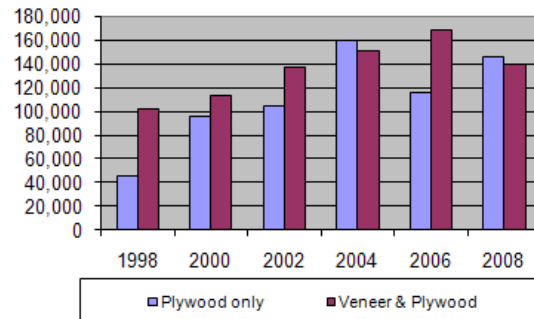
Number of Veneer and Plywood Mills
Graph 10a



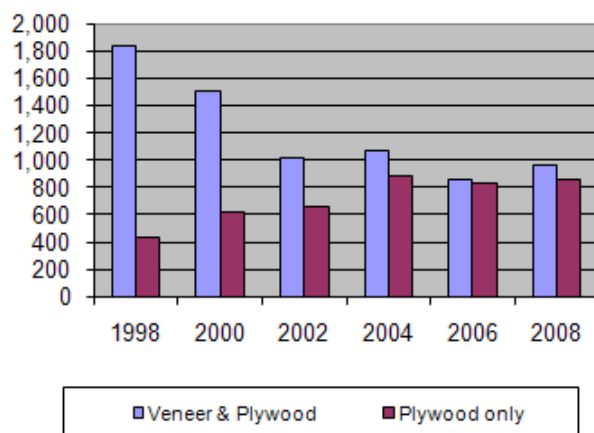
Total Plywood Production Statewide
Graph 10b
(thousand square feet, 3/8” basis)



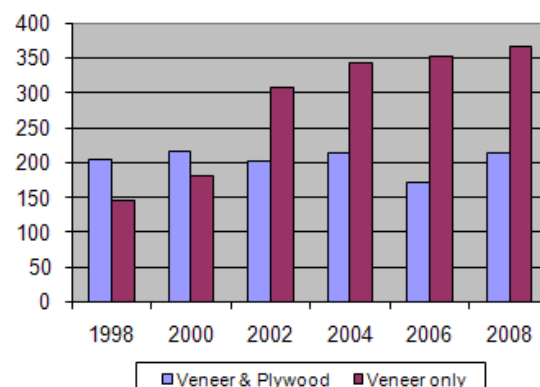
Avg Daily Plywood Production per Mill
Graph 10c
(thousand square feet, 3/8” basis)



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



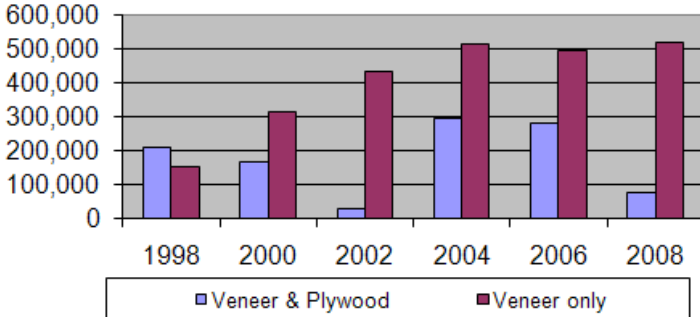
Avg Daily Plywood Capacity per Mill
Graph 10e
(thousand square feet, 3/8” basis)



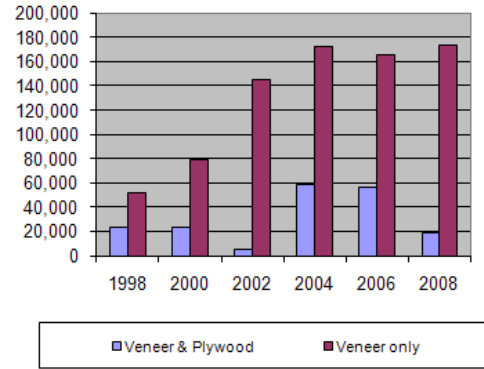
Veneer mill graphs on next page »

Veneer and Plywood mills continued

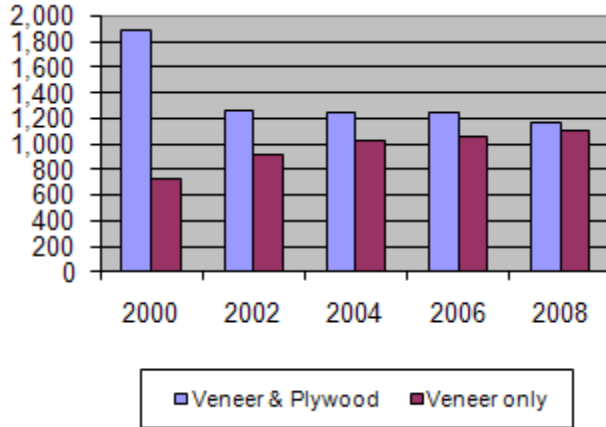
Total Veneer Production
Graph 10f
(thousand square feet, 3/8" basis)



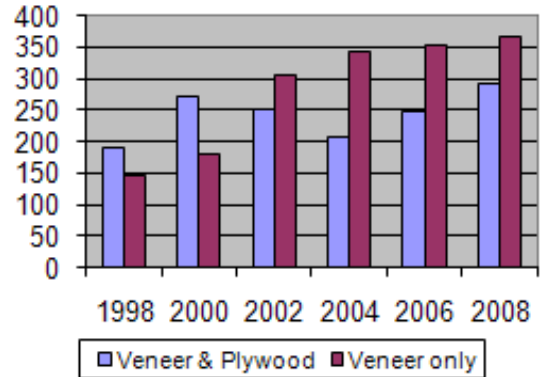
Avg Annual Veneer Production per Mill
Graph 10g
(thousand square feet, 3/8" basis)



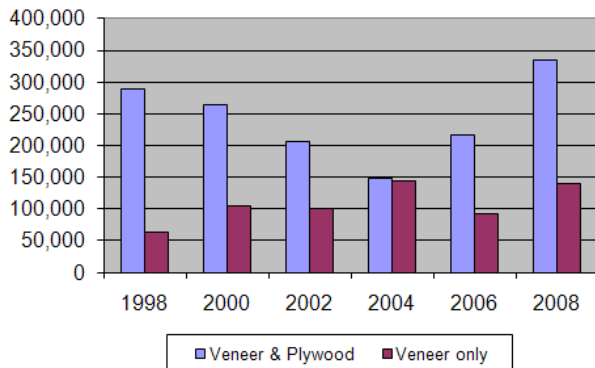
Total Daily Veneer Capacity
Graph 10h
(thousand square feet, 3/8" basis)



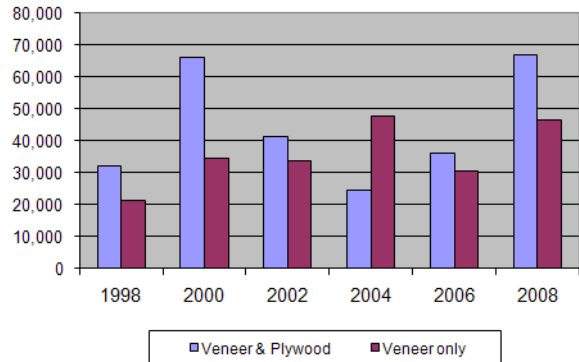
Avg Daily Veneer Capacity per Mill
Graph 10i
(thousand square feet, 3/8" basis)



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



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



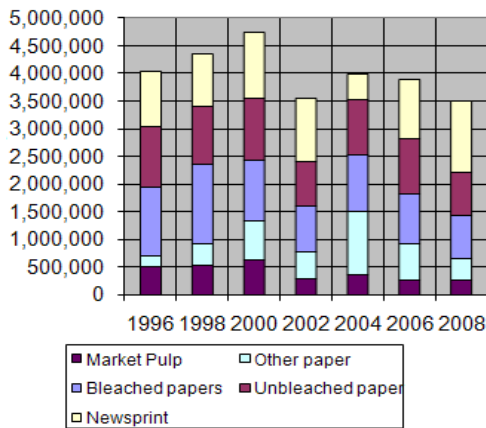
Graph 11 Pulp mills

[Table of Contents](#)

Major changes have been seen in pulp mill operations. The number of mills dropped by nearly half (11f). The heavy investment of the last two decades to meet environmental requirements did not always contribute to production efficiencies. Bleached (copy) and unbleached (corrugated) paper increased in volume (11a, 11b) while production of newsprint and “other” paper dropped. Chips (from mill residues and chipping mills) are the main raw material (11c, 11d). The volume of recycled paper (11e) has more than quadrupled since 2000 and now makes up to 16 percent of the raw material.

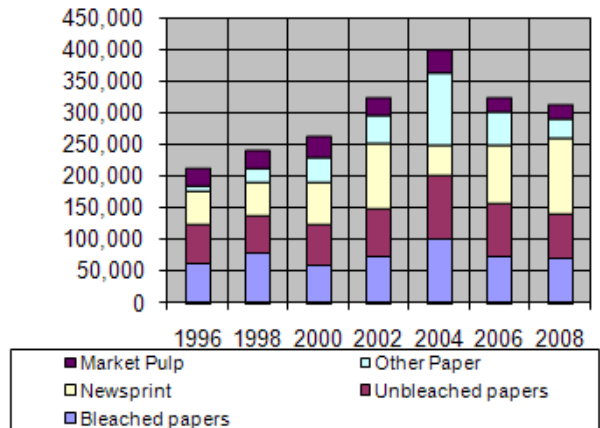
Total Production Volume

Graph 11a
(bone dry tons)



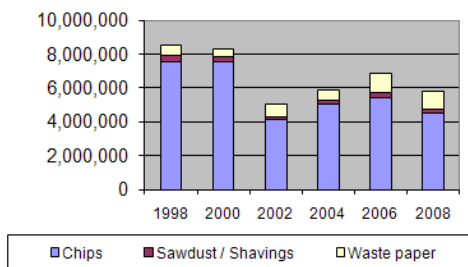
Avg Production per Mill

Graph 11b
(bone dry tons)



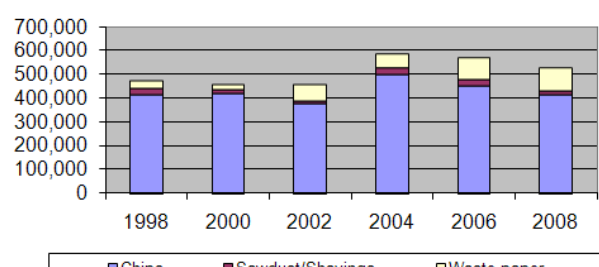
Total Consumption

Graph 11c
(bone dry tons)



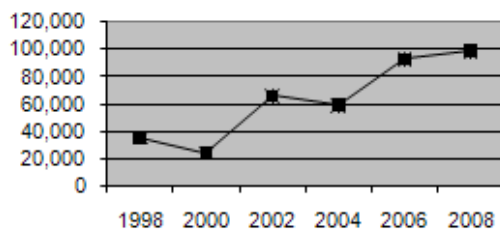
Avg Consumption per Pulp Mill

Graph 11c
(bone dry tons)



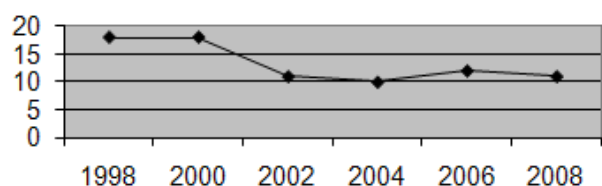
Recycled Paper

Graph 11e
(bone dry tons)



Number of Pulp Mills

Graph 11f
(bone dry tons)

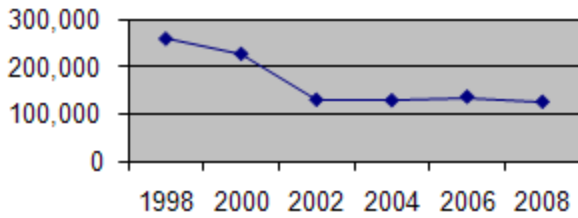


Graph 12 Shake & shingle mills

For several years the shake & shingle operations have been on a steady decline. This was seen in the number of mills (12f) and the volume of wood consumed (12c) As in other sectors as the total numbers dwindle, the averages per mill increases, indicating that the survivors push efficiencies. The average production per mill (12b) and average productivity increased with less wood. The supply of wood continues to dictate the direction of this sector

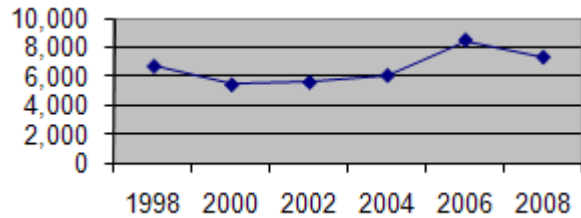
Total Production

Graph 12a
(squares)



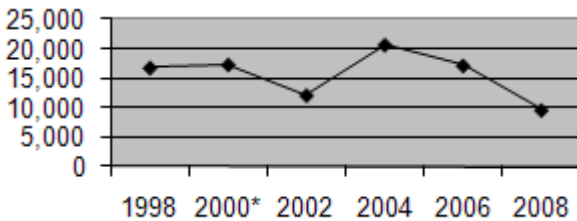
Avg Production per Mill

Graph 12b
(squares)



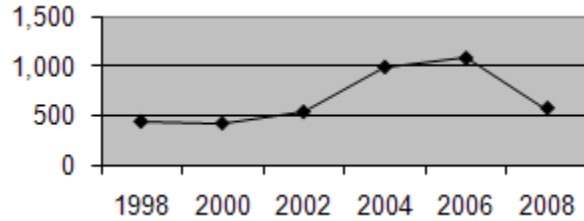
Total Wood Consumed

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



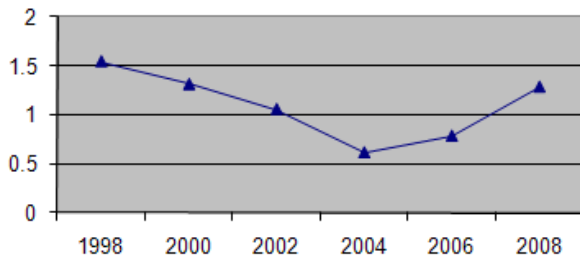
Avg Wood Consumed per Mill

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



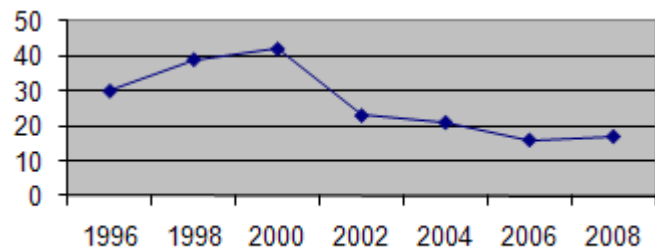
Productivity (efficiency)

Graph 12e
Input output ratio



Number of Mills

Graph 12f

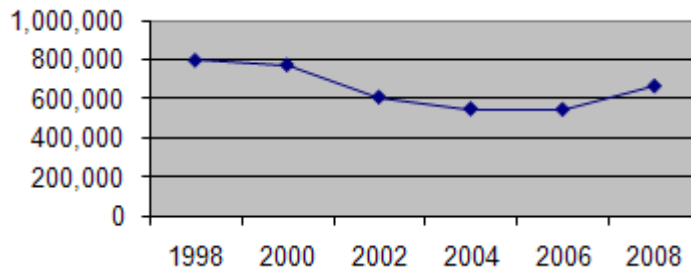


Graph 13 Log export operations

The heydays of the log export sector ended several years ago, due to Japan’s deflation. But after hitting bottom in 2006, the few hardy remaining operations sent a larger volume of export logs -- 661,725 mbf in 2008 compared to 541,038 mbf in 2006. The increase was partly affected by the high tariff for logs from Russia and other countries to bolster domestic wood products industries. This eliminated a major competitor for U.S. logs.

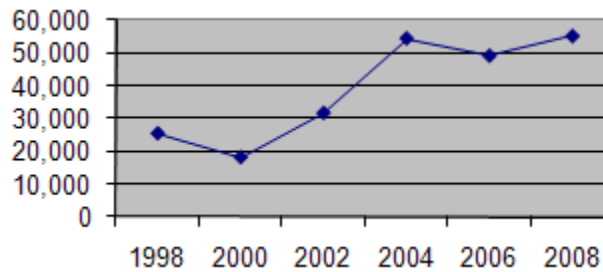
Total Volume Logs Exported

Graph 13a
(mbf, Scribner scale)



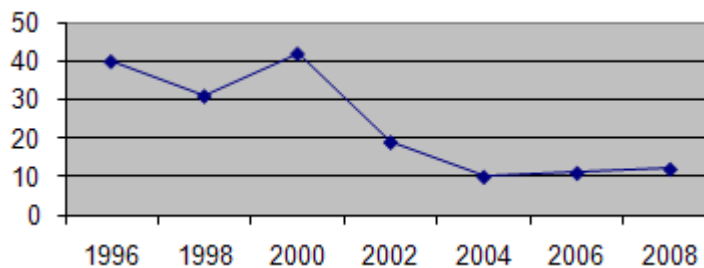
Avg Log Volume Exported

Graph 13b
(mbf, Scribner scale)



Number of Operations

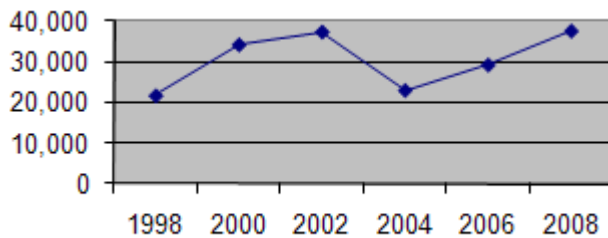
Graph 13c



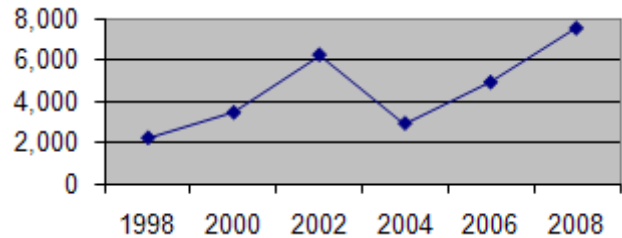
Graph 14 Post, pole, and piling mills

Poles, posts, and pilings are special forest products with unique characteristics that make them more valuable than saw logs. Good telephone and utility poles are tall but with narrow growth rings and minimal taper. Logs for poles are also worth more on average than their value as lumber. There have always been fewer operators compared to other sectors and in 2008 there were only five (14f). But those businesses enjoyed bumps in production (14a), consumption (14c and 14d) and productivity (14e).

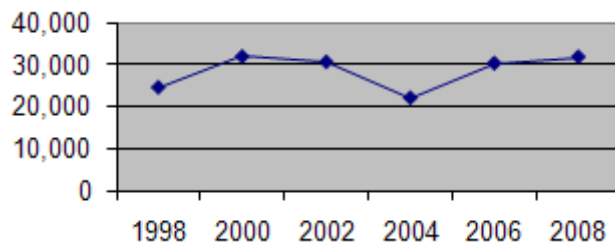
Total Production
Graph 14a
(mbf, Scribner scale)



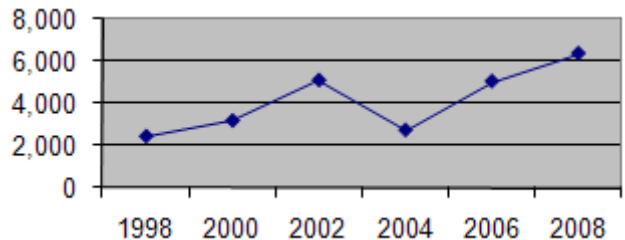
Avg Production per Mill
Graph 14b
(mbf, Scribner scale)



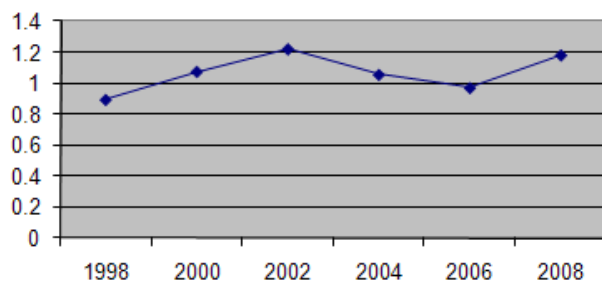
Total Log Consumption
Graph 14c
(mbf, Scribner scale)



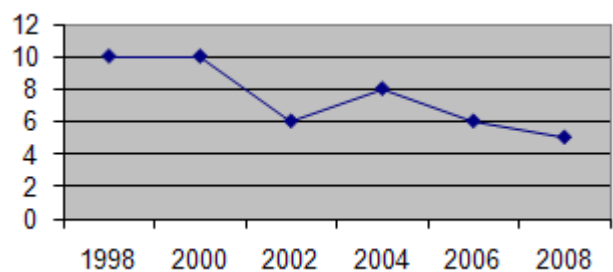
Avg Log Consumption per Mill
Graph 14d
(mbf, Scribner scale)



Productivity
Graph 14e



Number of Mills
Graph 14f



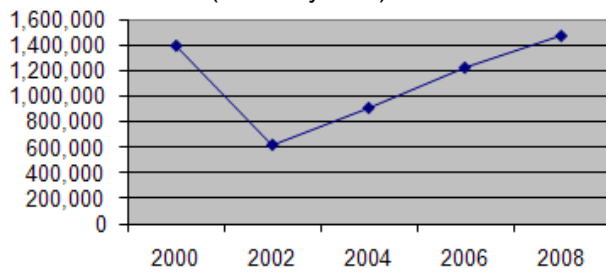
Graph 15 Chipping mills

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 in the more distant future. First, as sawmill production falls and efficiency increases, they produce less mill residues -- the main staple of pulp mills. Chipping mills have stepped forward and filled the gap. In 2008, chipping mills provided three quarters of a million tons more for pulp mills than in 2006. Fully 30 percent of the wood fiber for pulp mills came from chipping mills in 2008, nearly twice the proportion in 2006. This is a golden turnaround for the sector which in 2002 reached historic lows. Chipping mills can also expect more demand as alternate fuel research continues to seek practical uses for wood wastes.

Total Production

Graph 15a

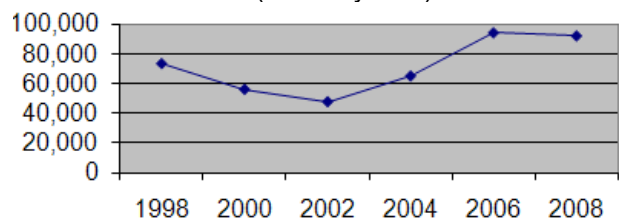
(bone dry tons)



Avg Production

Graph 15b

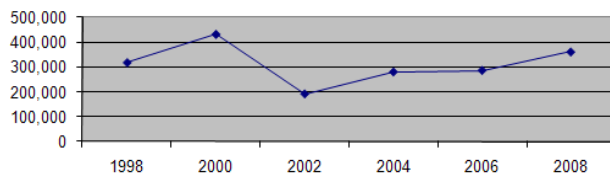
(bone dry tons)



Total Log Consumption

Graph 15c

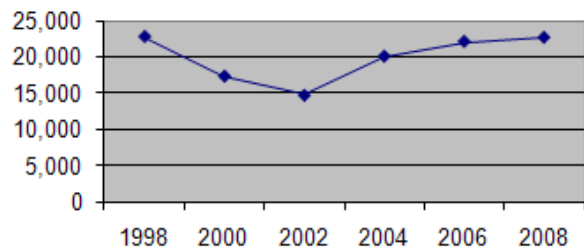
(mbf, Scribner scale)



Avg Log Consumption

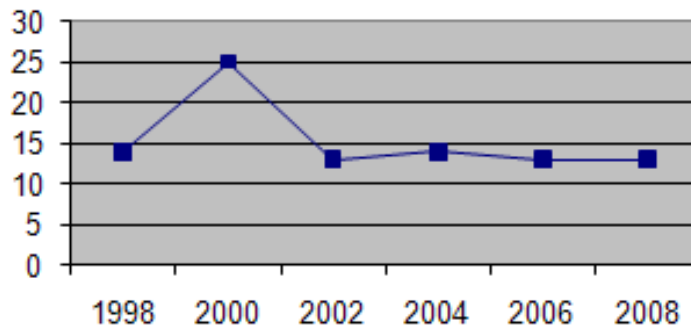
Graph 15d

(mbf, Scribner scale)



Number of Mills

Graph 15e



Value estimates for Washington’s 2008 primary wood products

Although the Mill Survey focuses on 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 at least \$5.4 billion in gross sales. Due to variability of prices and grades shingle prices do not total precisely.

Product	Units	Price	Total value
Export logs (mbf Scribner)	661,725	\$670	\$443,355,750
Plywood (m sq. ft.)	994,457	\$236	\$235,069,746
Veneer (m sq. ft.)	597,325	\$190	\$113,491,750
Shake Mills			
Shakes (squares)	1,655	\$168	\$278,040
Shingles (squares)	74,509	\$200	\$16,499,659
Other cedar (squares)	47,827	\$103	\$4,926,181
Roundwood chip (bone dry tons)	1,473,637	\$114	\$167,994,618
Pulp Mills			
Newsprint (metric tons)	1,285,275	\$695	\$893,266,125
Bleached paper (tons)	784,554	\$988	\$775,139,352
Unbleached paper (tons)	780,486	\$602	\$469,852,572
Other paper (tons)	388,135	\$1,088	\$422,290,880
Market Pulp (bone dry tons)	256,563	\$858	\$220,131,054
Post, Pole, and Pilings (mbf Scribner)	37,596	\$680	\$25,565,280
Lumber total (mbf lumber tally)			
Softwood	3,459,184	\$423	\$1,463,234,832
Hardwood	153,409	\$1,018	\$156,170,362
		Total	\$5,407,266,201



Lumber quality grader. Photo: Sierra Pacific Industries / Sheri Nelson

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 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
Table 7	Operations—by sector and percentage of logs from original owners	33
Table 8	Log consumption—by sector and original log owners	36
Table 9	Log consumption—by species	38
Table 10	Wood and bark residues—production and use	40
Table 11	Hardwoods consumed—by volume	40
Table 12	Log consumption—by diameter in inches	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](#)

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 2008. For instance, Grays Harbor County had the largest number of total mills (17), including 4 sawmills, 3 veneer and plywood mills, 8 shake & shingle mills, 1 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	Sector						
		Sawmills	Veneer and Plywood	Pulp	Shake and Shingle	Log Export	Post, Pole, & Piling	Roundwood Chipping
Puget Sound								
King	2	1	0	0	0	1	0	0
Pierce	9	3	1	1	0	2	1	1
Skagit	4	4	0	0	0	0	0	0
Snohomish	16	8	0	1	2	1	2	2
Whatcom	4	2	1	0	0	0	1	0
Total	35	18	2	2	2	4	4	3
Olympic Peninsula								
Clallam	11	4	0	1	4	1	0	1
Grays Harbor	17	4	3	0	8	1	0	1
Jefferson	1	1	0	0	0	0	0	0
Lewis	11	7	1	0	2	0	0	1
Mason	6	3	1	0	0	0	0	2
Pacific	2	2	0	0	0	0	0	0
Thurston	2	1	0	0	0	0	1	0
Total	50	22	5	1	14	2	1	5
Lower Columbia								
Clark	3	2	0	0	0	0	0	1
Cowlitz	14	1	0	4	0	6	0	3
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	20	4	1	4	1	6	0	4
Central Washington								
Kittitas	2	0	0	0	0	0	0	2
Okanogan	2	1	1	0	0	0	0	0
Yakima	2	2	0	0	0	0	0	0
Total	6	3	1	0	0	0	0	2
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	2	0	0	2	0	0	0	0
Whitman	2	1	0	0	0	0	0	1
Total	14	7	1	4	0	0	0	2
State total	125	54	10	11	17	12	5	16

Table 2 shows the total volume of logs and plant residues that were used by all wood products mills in each economic area and sector. For instance, the sawmills in the Olympic Peninsula economic area consumed 895,947 mbf (thousand board feet, Scribner scale) of logs. The pulp mills in the Lower Columbia economic area consumed about 3.2 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					
Sawmills	527,145	506,638	20,507	0	0
Log export	93,897	93,897	0	0	0
Post, pole & piling	24,204	24,204	0	0	0
Roundwood	45,426	12,800	32,626	0	0
Others*	40,400	38,400	2,000	1,025	1,303,512
Total	731,072	675,939	55,133	1,025	1,303,512
Olympic Peninsula					
Sawmills	895,947	852,368	43,579	1	0
Shake & shingle	156	131	25	7,562	0
Roundwood	108,666	56,000	52,666	0	0
Others*	110,884	110,884	0	0	498,155
Total	1,243,640	1,121,370	122,270	7,563	498,155
Lower Columbia					
Sawmills	153,855	152,453	1,402	500	0
Pulp & board	0	0	0	0	3,187,310
Log export	498,195	498,195	0	0	0
Others*	128,512	0	128,512	0	0
Total	780,562	650,648	129,914	500	3,187,310
Central Washington	182,050	164,211	17,839	0	0
Inland Empire					
Sawmills	222,586	181,386	41,200	0	0
Pulp & board	13,333	4,667	8,666	0	1,108,733
Others*	316,200	253,290	62,910	0	0
Total	552,119	439,343	112,776	0	1,108,733
State total					
Sawmills	1,913,037	1,804,332	108,705	1	0
Veneer & Plywoo	473,678	45,67	28,000	0	0
Pulp & board	46,984	38,318	8,666	0	6,097,710
Shake & shingle	556	531	25	9,087	0
Log export	661,725	661,725	0	0	0
Post, pole & piling	31,804	31,804	0	0	0
Roundwood	361,659	69,123	292,536	0	0
Total	3,489,443	3,051,511	437,932	9,088	6,097,710

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

Table 3 shows the total volume of logs used by each wood products sector and the states where they were harvested. For instance, more total Oregon logs (325,888 mbf) were exported to foreign markets through Washington ports (primarily Longview) than Washington logs (303,154 mbf).

Table 3 Log consumption—by sector and state of origin

(thousand board feet, Scribner scale)

Economic area and sector of operation	All sources	Origin					
		Washington	Oregon	Idaho	Montana	British Columbia	Other states
Puget Sound							
Sawmills	527,145	478,714	366	0	0	48,065	0
Pulp & board	24,204	17,505	491	5,984	57	166	0
Log export	93,897	61,214	0	0	0	32,640	42
Roundwood chipping	45,426	45,128	0	0	0	298	0
Others*	40,400	40,000	0	0	0	0	400
Total	731,072	642,562	857	5,984	57	81,170	442
Olympic Peninsula							
Sawmills	895,947	854,610	18,732	0	0	13,984	8,620
Veneer & Plywood	127,987	127,700	287	0	0	0	0
Shake & shingle	156	156	0	0	0	0	0
Post, pole & piling	7,600	6,992	608	0	0	0	0
Roundwood chipping	108,666	108,666	0	0	0	0	0
Others*	103,284	99,211	3,400	0	0	673	0
Total	1,243,640	1,197,336	23,027	0	0	14,657	8,620
Lower Columbia							
Sawmills	137,331	107,040	29,498	0	0	793	0
Pulp & board	0	0	0	0	0	0	0
Log export	498,195	175,707	322,488	0	0	0	0
Others*	145,036	118,495	26,541	0	0	0	0
Total	780,562	401,242	378,528	0	0	793	0
Central Washington							
Sawmills	130,028	130,028	0	0	0	0	0
Veneer & Plywood	36,200	36,200	0	0	0	0	0
Roundwood chipping	15,822	15,822	0	0	0	0	0
Total	182,050	182,050	0	0	0	0	0
Inland Empire							
Sawmills	222,586	179,495	500	40,843	1,357	391	0
Others*	329,533	262,670	6,000	60,196	667	0	0
Total	552,119	442,165	6,500	101,039	2,023	391	0
State total							
Sawmills	1,913,037	1,749,888	49,096	40,843	1,357	63,233	8,620
Veneer & Plywood	473,678	469,209	1,939	2,530	0	0	0
Pulp & board	46,984	38,978	0	6,667	667	673	0
Shake & shingle	556	156	0	0	0	0	400
Log export	661,725	303,154	325,888	0	0	32,640	42
Post, pole & piling	31,804	24,497	1,099	5,984	57	166	0
Roundwood chipping	361,659	279,473	30,889	51,000	0	298	0
Total	3,489,443	2,865,355	408,912	107,023	2,080	97,011	9,062

* "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). For instance, Snohomish County received logs from 12 counties. Stevens County mills received logs from 11 counties and 391 mbf from British Columbia.

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	County of log harvest (Puget Sound Economic Area)							
	Total Washington logs	San Juan, Island	King	Kitsap	Pierce	Skagit	Snohomish	Whatcom
Puget Sound								
Pierce	272,353	0	21,060	26,209	86,190	0	15,018	0
Skagit	124,108	0	3,769	0	6,578	45,489	14,352	27,237
Snohomish	230,391	3,052	9,551	707	735	52,782	85,664	32,177
Others*	14,378	446	386	0	415	3,969	419	7,506
Total	642,562	3,499	34,766	26,916	93,919	102,240	115,453	66,920
Olympic Peninsula								
Clallam	152,908	0	0	3,539	0	0	653	0
Grays Harbor	542,777	0	0	3,430	0	2,280	2,280	2,280
Mason	198,758	0	0	17,670	4,353	0	0	0
Others*	91,440	0	0	0	0	0	0	0
Total	1,197,336	0	1,111	25,490	18,133	2,541	2,933	2,280
Lower Columbia								
Clark	45,057	0	0	0	621	0	0	6,343
Cowlitz	317,564	0	3,680	0	2,459	0	0	0
Others*	38,621	0	0	0	0	0	0	0
Total	401,242	0	3,680	0	3,080	0	0	6,343
Central Washington	182,050	0	1,464	0	0	0	0	0
Inland Empire								
Stevens	416,859	0	0	0	0	0	0	0
Others*	25,306	0	0	0	0	0	0	0
Total	442,165	0	0	0	0	0	0	0
State total	2,865,355	3,499	41,021	52,406	115,132	104,781	118,386	75,543

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

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							
Pierce	8,729	3,652	1,177	39,892	41,081	0	27,120
Skagit	7,687	0	8,648	6,578	0	2,883	887
Snohomish	10,490	0	2,082	0	19,510	0	6,005
Others*	515	100	411	208	0	0	0
Total	27,421	3,752	12,319	46,677	60,590	2,883	34,011
Olympic Peninsula							
Clallam	117,946	596	27,502	0	2,672	0	0
Grays Harbor	39,786	330,807	18,810	6,660	23,290	108,433	4,722
Lewis	851	11,955	261	120,648	5,055	16,011	10,768
Mason	1,028	41,762	6,709	10,061	82,867	5,141	29,167
Others*	6,177	13,760	13,674	12,299	140	34,572	2,837
Total	165,787	398,879	66,954	149,669	114,024	164,157	47,494
Lower Columbia							
Clark	0	0	0	9,863	0	6,343	0
Cowlitz	0	7,120	0	62,995	6,110	8,034	10,972
Others*	0	0	0	0	0	0	0
Total	0	7,120	0	72,858	6,110	14,377	10,972
Central Washington							
	0	0	0	0	0	0	0
Inland Empire							
Stevens	0	7,600	0	0	950	950	0
Others*	0	0	0	0	0	0	0
Total	0	7,600	0	0	950	950	0
State Total	193,209	417,351	79,273	269,204	181,674	182,367	92,477

* "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					
Pierce	213	213	0	0	0
Skagit	0	0	0	0	0
Snohomish	0	0	0	0	0
Others*	0	0	0	0	0
Total	213	213	0	0	0
Olympic Peninsula					
Clallam	0	0	0	0	0
Grays Harbor	0	0	0	0	0
Lewis	261	8,661	0	0	6,217
Mason	0	0	0	0	0
Others*	699	839	0	0	6,444
Total	960	9,500	0	0	12,660
Lower Columbia					
Clark	5,748	15,955	0	184	0
Cowlitz	36,500	132,066	0	12,843	20,066
Others*	7,125	0	23,172	8,324	0
Total	49,372	148,021	23,172	21,351	20,066
Central Washington					
	0	0	897	0	0
Inland Empire					
Stevens	0	0	0	0	0
Others*	0	0	0	0	0
Total	0	0	0	0	0
State total	50,545	157,733	24,069	21,351	32,726

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

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	County of log harvest (Central Washington Economic Area)					
	Chelan	Douglas	Kittitas	Lincoln	Okanogan	Yakima
Puget Sound						
Pierce	0	0	1,800	0	0	0
Skagit	0	0	0	0	0	0
Snohomish	7,631	0	0	0	3	0
Others*	0	0	2	0	0	0
Total	7,631	0	1,802	0	3	0
Olympic Peninsula						
Clallam	0	0	0	0	0	0
Grays Harbor	0	0	0	0	0	0
Lewis	0	0	0	0	0	14,764
Mason	0	0	0	0	0	0
Others*	0	0	0	0	0	0
Total	0	0	0	0	0	14,764
Lower Columbia						
Clark	0	0	0	0	0	0
Cowlitz	0	0	14,720	0	0	0
Others*	0	0	0	0	0	0
Total	0	0	14,720	0	0	0
Central Washington	7,860	0	9,469	0	34,647	89,860
Inland Empire						
Stevens	6,711	0	6,370	5,296	44,168	0
Others*	0	0	0	180	0	0
Total	6,711	0	6,370	5,476	44,168	0
State total	22,202	0	32,360	5,476	78,818	104,624

* "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
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	37,854	0	0	0	0	0
Inland Empire								
Stevens	0	0	58,896	0	37,868	11,570	236,481	0
Others*	6,645	1,246	820	565	5,400	4,100	6,200	150
Total	6,645	1,246	59,716	565	43,268	15,670	242,681	150
State total	6,645	1,246	97,569	565	43,268	15,670	242,681	150

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

Table 4f shows the volume of logs harvested from other states and processed in Washington mills or exported through Washington ports. For instance, Washington mills and operations received 74 percent of their out-of-state logs from Oregon.

Table 4f Log consumption—by state 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					
Pierce	166	5,659	0	46,625	0
Skagit	366	0	0	7,512	0
Snohomish	325	325	57	20,194	400
Others*	0	0	0	6,840	42
Total	857	5,984	57	81,170	442
Olympic Peninsula					
Clallam	0	0	0	2,130	0
Grays Harbor	3,400	0	0	1,200	0
Lewis	18,732	0	0	250	8,620
Mason	287	0	0	11,077	0
Others*	608	0	0	0	0
Total	23,027	0	0	14,657	8,620
Lower Columbia					
Clark	9,436	0	0	793	0
Cowlitz	361,502	0	0	0	0
Others*	7,589	0	0	0	0
Total	378,528	0	0	793	0
Central Washington					
	0	0	0	0	0
Inland Empire					
Stevens	500	21,991	1,357	391	0
Others*	6,000	79,049	667	0	0
Total	6,500	101,039	2,023	391	0
State Total	408,912	107,023	2,080	97,011	9,062

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

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 Okanogan and Colville national forests in eastern Washington than the combined volume of logs from all three national forests in western Washington.

Table 5 Logs harvested from National Forests
(thousand board feet, Scribner scale)

Economic area and county of operation	All National Forests	Westside National Forests		
		Olympic	Gifford Pinchot	Mount Baker/Snoqualmie
Puget Sound	3,761	647	0	2,436
Olympic Peninsula	12,190	9,035	3,155	0
Lower Columbia	8,552	0	4,099	0
Central Washington	1,807	0	904	0
Inland Empire	73,605	0	0	0
State total	99,914	9,682	8,157	2,436
Sector				
Sawmills	40,292	923	5,718	841
Veneer & Plywood	38,919	974	0	0
Pulp & Board	1,333	0	0	0
Shake & Shingle	1	1	0	0
Roundwood chipping	19,369	7,784	2,440	1,596
State total	99,914	9,682	8,157	2,436

Continued below

Economic area and county of operation	Eastside National Forests				
	Wenatchee	Okanogan	Colville	Umatilla	Other
Puget Sound	27	0	0	0	651
Olympic Peninsula	0	0	0	0	0
Lower Columbia	0	0	0	0	4,453
Central Washington	904	0	0	0	0
Inland Empire	0	38,291	26,008	3,665	5,641
State total	931	38,291	26,008	3,665	10,745
Sector					
Sawmills	27	8,427	16,481	665	7,211
Veneer & plywood	0	29,218	8,727	0	0
Pulp & Board	0	0	800	0	533
Shake & shingle	0	0	0	0	0
Roundwood chipping	904	647	0	3,000	3,000
State total	931	38,291	26,008	3,665	10,745

Table 6 (on three p ages) shows the number of mills and their percent ages of log volume by economic area and landowner class. For instance, 68 mills (54 percent) received logs from state-owned forests.

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

Economic area and sector of operation	National forest				State				Bureau of Land Management			
	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												
Sawmills	15	3	0	0	6	5	6	1	18	0	0	0
Log Export	4	0	0	0	4	0	0	0	4	0	0	0
Post, Pole & Piling	4	0	0	0	0	0	1	3	4	0	0	0
Roundwood Chipping	1	2	0	0	0	3	0	0	3	0	0	0
Others*	5	1	0	0	5	1	0	0	5	1	0	0
Total	29	6	0	0	15	9	7	4	34	1	0	0
Olympic Peninsula												
Sawmills	19	3	0	0	5	10	4	3	20	2	0	0
Veneer & Plywood	4	6	0	0	3	4	3	0	10	0	0	0
Shake & Shingle	13	1	0	0	13	1	0	0	14	0	0	0
Others*	4	0	0	0	3	0	1	0	4	0	0	0
Total	40	10	0	0	24	15	8	3	48	2	0	0
Lower Columbia												
Sawmills	2	2	0	0	1	3	0	0	3	1	0	0
Pulp & Poard	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	4	0	0	0	1	3	0	0	4	0	0	0
Others*	2	0	0	0	1	1	0	0	2	0	0	0
Total	18	2	0	0	13	7	0	0	19	1	0	0
Central Washington												
Sawmills	3	0	0	0	2	1	0	0	3	0	0	0
Roundwood Chipping	1	1	0	0	0	2	0	0	2	0	0	0
Others*	1	0	0	0	0	1	0	0	1	0	0	0
Total	5	1	0	0	2	4	0	0	6	0	0	0
Inland Empire												
Sawmills	2	5	0	0	0	7	0	0	4	3	0	0
Pulp & Board	3	1	0	0	3	1	0	0	4	0	0	0
Roundwood Chipping	0	2	0	0	0	2	0	0	1	1	0	0
Others*	0	1	0	0	0	1	0	0	0	1	0	0
Total	5	9	0	0	3	11	0	0	9	5	0	0
State total												
Sawmills	41	13	0	0	14	26	10	4	48	6	0	0
Veneer & Plywood	12	8	0	0	9	8	3	0	18	2	0	0
Pulp & Board	11	1	0	0	10	1	1	0	12	0	0	0
Shake & Shingle	13	1	0	0	13	1	0	0	14	0	0	0
Log Export	10	0	0	0	10	0	0	0	10	0	0	0
Post, Pole & Piling	4	0	0	0	0	0	1	3	4	0	0	0
Roundwood Chipping	6	5	0	0	1	10	0	0	10	1	0	0
Total	97	28	0	0	57	46	15	7	116	9	0	0

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

Continued

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

Economic area and sector of operation	Forest Sector											
	Other public				Own wood supply				Other wood supply			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound												
Sawmills	14	4	0	0	14	4	0	0	5	5	6	2
Log Export	4	0	0	0	1	3	0	0	0	0	1	3
Post, Pole & Piling	3	1	0	0	4	0	0	0	1	3	0	0
Roundwood Chipping	2	1	0	0	3	0	0	0	0	0	3	0
Others*	5	1	0	0	6	0	0	0	5	0	1	0
Total	28	7	0	0	28	7	0	0	11	8	11	5
Olympic Peninsula												
Sawmills	18	4	0	0	15	3	2	2	6	6	5	5
Pulp & Board	4	0	0	0	3	0	0	1	1	1	1	1
Shake & Shingle	14	0	0	0	12	1	1	0	13	1	0	0
Others*	9	1	0	0	8	0	1	1	3	2	5	0
Total	45	5	0	0	38	4	4	4	23	10	11	6
Lower Columbia												
Sawmills	3	1	0	0	3	0	0	1	1	0	2	1
Pulp & Board	4	0	0	0	4	0	0	0	4	0	0	0
Log Export	6	0	0	0	1	0	2	3	3	2	1	0
Roundwood Chipping	4	0	0	0	4	0	0	0	0	0	0	4
Others*	2	0	0	0	1	0	1	0	1	1	0	0
Total	19	1	0	0	13	0	3	4	9	3	3	5
Central Washington												
Sawmills	3	0	0	0	3	0	0	0	3	0	0	0
Roundwood Chipping	2	0	0	0	2	0	0	0	0	0	0	2
Others*	1	0	0	0	1	0	0	0	1	0	0	0
Total	6	0	0	0	6	0	0	0	4	0	0	2
Inland Empire												
Sawmills	3	3	1	0	3	4	0	0	0	4	3	0
Pulp & Board	4	0	0	0	4	0	0	0	3	0	1	0
Roundwood	2	0	0	0	1	1	0	0	0	1	1	0
Others*	0	1	0	0	1	0	0	0	0	0	1	0
Total	9	4	1	0	9	5	0	0	3	5	6	0
State total												
Sawmills	41	12	1	0	38	11	2	3	15	15	16	8
Veneer & Plywood	17	3	0	0	17	0	2	1	10	3	7	0
Pulp & Board	12	0	0	0	11	0	0	1	8	1	2	1
Shake & Shingle	14	0	0	0	12	1	1	0	13	1	0	0
Log Export	10	0	0	0	2	3	2	3	3	2	2	3
Post, Pole & Piling	3	1	0	0	4	0	0	0	1	3	0	0
Roundwood	10	1	0	0	10	1	0	0	0	1	4	6
Total	107	17	1	0	94	16	7	8	50	26	31	18

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

Continued

Table 6c Operations—by percentage of logs from 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								
Sawmills	15	3	0	0	1	10	2	5
Log Export	3	1	0	0	0	4	0	0
Post, Pole & Piling	4	0	0	0	1	2	1	0
Roundwood Chipping	0	3	0	0	0	3	0	0
Others*	5	0	0	1	4	1	0	1
Total	27	7	0	1	6	20	3	6
Olympic Peninsula								
Sawmills	13	8	1	0	9	9	2	2
Pulp & Board	1	3	0	0	0	3	0	1
Shake & Shingle	12	0	2	0	12	1	0	1
Others*	6	4	0	0	4	6	0	0
Total	32	15	3	0	25	19	2	4
Lower Columbia								
Sawmills	3	1	0	0	1	3	0	0
Pulp & Board	4	0	0	0	4	0	0	0
Log Export	5	1	0	0	3	2	0	1
Roundwood Chipping	4	0	0	0	1	3	0	0
Others*	2	0	0	0	1	1	0	0
Total	18	2	0	0	10	9	0	1
Central Washington								
Sawmills	0	0	0	3	2	1	0	0
Roundwood Chipping	2	0	0	0	0	2	0	0
Others*	0	0	0	1	1	0	0	0
Total	2	0	0	4	3	3	0	0
Inland Empire								
Sawmills	1	6	0	0	0	6	1	0
Pulp & Board	3	1	0	0	3	0	1	0
Roundwood Chipping	0	2	0	0	0	2	0	0
Others*	0	1	0	0	0	1	0	0
Total	4	10	0	0	3	9	2	0
State total								
Sawmills	32	18	1	3	13	29	5	7
Veneer & Plywood	13	5	0	2	10	9	0	1
Pulp & Board	8	4	0	0	7	3	1	1
Shake & Shingle	12	0	2	0	12	1	0	1
Log Export	8	2	0	0	3	6	0	1
Post, Pole & Piling	4	0	0	0	1	2	1	0
Roundwood Chipping	6	5	0	0	1	10	0	0
Total	83	34	3	5	47	60	7	11

* "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) and their percent age of log volume by economic area where harvested. The percentage of categories are similar to Table 6, except the numbers are sorted by type of sector. For instance, 40 out of 54 sawmills purchased logs from state-owned forests.

Table 7a Operations—by sector and percentage of logs from original 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	4	0	0	0	4	0	0	0	4	0	0	0
Others*	2	0	0	0	2	0	0	0	2	0	0	0
Total	12	0	0	0	12	0	0	0	12	0	0	0
Sawmills												
Olympic Peninsula	19	3	0	0	5	10	4	3	20	2	0	0
Lower Columbia	2	2	0	0	1	3	0	0	3	1	0	0
Central Washington	3	0	0	0	2	1	0	0	3	0	0	0
Inland Empire	2	5	0	0	0	7	0	0	4	3	0	0
Puget Sound	15	3	0	0	6	5	6	1	18	0	0	0
Total	41	13	0	0	14	26	10	4	48	6	0	0
Post, pole & piling	5	0	0	0	0	0	2	3	5	0	0	0
Pulp & board												
Inland Empire	3	1	0	0	3	1	0	0	4	0	0	0
Lower Columbia	4	0	0	0	4	0	0	0	4	0	0	0
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	10	1	0	0	10	1	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	4	1	0	5	0	0	0
Lower Columbia	4	0	0	0	1	3	0	0	4	0	0	0
Others*	1	3	0	0	0	4	0	0	3	1	0	0
Total	6	10	0	0	1	14	1	0	15	1	0	0
Shake & shingle												
Olympic Peninsula	13	1	0	0	13	1	0	0	14	0	0	0
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	16	1	0	0	16	1	0	0	17	0	0	0
Veneer & plywood												
Olympic Peninsula	4	1	0	0	3	0	2	0	5	0	0	0
Puget Sound	1	1	0	0	1	1	0	0	1	1	0	0
Others*	3	2	0	0	1	4	0	0	3	2	0	0
Total	7	3	0	0	4	4	2	0	8	2	0	0
State total	97	28	0	0	57	46	15	7	116	9	0	0

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

Continued

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

Economic area and sector 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	1	0	2	3	3	2	1	0
Puget Sound	4	0	0	0	1	3	0	0	0	0	1	3
Others*	2	0	0	0	1	0	0	1	0	1		
Total	12	0	0	0	3	3	2	4	3	3	2	4
Sawmills												
Olympic Peninsula	18	4	0	0	15	3	2	2	6	6	5	5
Lower Columbia	3	1	0	0	3	0	0	1	1	0	2	1
Central Washington	3	0	0	0	3	0	0	0	3	0	0	0
Inland Empire	3	3	1	0	3	4	0	0	0	4	3	0
Puget Sound	14	4	0	0	14	4	0	0	5	5	6	2
Total	41	12	1	0	38	11	2	3	15	15	16	8
Post, pole & piling	4	1	0	0	5	0	0	0	1	3	1	0
Pulp & board												
Inland Empire	4	0	0	0	4	0	0	0	3	0	1	0
Puget Sound	2	0	0	0	2	0	0	0	2	0	0	0
Others*	5	0	0	0	5	0	0	0	5	0	0	0
Total	11	0	0	0	11	0	0	0	10	0	1	0
Roundwood												
Puget Sound	2	1	0	0	3	0	0	0	0	0	3	0
Olympic Peninsula	5	0	0	0	4	0	0	1	1	0	4	0
Lower Columbia	4	0	0	0	4	0	0	0	0	0	0	4
Others*	4	0	0	0	3	1	0	0	0	1	1	2
Total	15	1	0	0	14	1	0	1	1	1	8	6
Shake & shingle												
Olympic Peninsula	14	0	0	0	12	1	1	0	13	1	0	0
Others*	3	0	0	0	3	0	0	0	3	0	0	0
Total	17	0	0	0	15	1	1	0	16	1	0	0
Veneer & plywood												
Central Washington	1	0	0	0	1	0	0	0	1	0	0	0
Others*	6	3	0	0	7	0	2	0	3	3	3	0
Total	7	3	0	0	8	0	2	0	4	3	3	0
State Total	107	17	1	0	94	16	7	8	50	26	31	18

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

Continued

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

Economic area and sector of operation	Native American				Farmer and miscellaneous private			
	Percentage of log dependency							
	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Log export								
Lower Columbia	5	1	0	0	3	2	0	1
Puget Sound	3	1	0	0	0	4	0	0
Others*	0	2	0	0	0	2	0	0
Total	8	4	0	0	3	8	0	1
Sawmills								
Lower Columbia	3	1	0	0	1	3	0	0
Inland Empire	1	6	0	0	0	6	1	0
Olympic Peninsula	13	8	1	0	9	9	2	2
Central Washington	0	0	0	3	2	1	0	0
Puget Sound	15	3	0	0	1	10	2	5
Total	32	18	1	3	13	29	5	7
Post, pole & piling	5	0	0	0	1	3	1	0
Pulp & board								
Inland Empire	3	1	0	0	3	0	1	0
Lower Columbia	4	0	0	0	4	0	0	0
Others*	2	1	0	0	2	0	0	1
Total	9	2	0	0	9	0	1	1
Roundwood chipping								
Puget Sound	0	3	0	0	0	3	0	0
Olympic Peninsula	2	3	0	0	1	4	0	0
Lower Columbia	4	0	0	0	1	3	0	0
Others*	2	2	0	0	0	4	0	0
Total	8	8	0	0	2	14	0	0
Shake & shingle								
Olympic Peninsula	12	0	2	0	12	1	0	1
Others*	2	0	0	1	2	0	0	1
Total	14	0	2	1	14	1	0	2
Veneer & plywood								
Olympic Peninsula	4	1	0	0	3	2	0	0
Others*	3							
Total	7	2	0	1	5	5	0	0
State total	83	34	3	5	47	60	7	11

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

Table 8 (on two pages) shows the total volume of logs that were used by each wood product sector from each ownership category. For instance, 13 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					
Sawmills	527,145	165,651	1,766	0	2,204
Log export	93,897	0	0	0	0
Post, pole & piling	24,204	15,111	0	0	325
Roundwood chipping	45,426	4,836	1,596	0	533
Others*	40,400	11,200	400	800	1,600
Total	731,072	196,798	3,761	800	4,662
Olympic Peninsula					
Sawmills	895,947	172,082	2,295	2,053	21,956
Veneer & plywood	127,987	30,933	574	0	2,008
Shake & shingle	156	3	1	0	0
Roundwood chipping	108,666	18,187	9,320	0	0
Others*	110,884	3,800	0	0	0
Total	1,243,640	225,004	12,190	2,053	23,964
Lower Columbia					
Sawmills	137,331	28,583	8,552	2,969	4,757
Pulp & board	0	0	0	0	0
Log export	498,195	0	0	0	0
Others*	145,036	14,009	0	0	0
Total	780,562	42,592	8,552	2,969	4,757
Central Washington	182,050	3,571	1,807	0	0
Inland Empire					
Sawmills	222,586	33,460	27,015	5,748	6,248
Pulp & board	13,333	1,333	1,333	0	0
Others*	316,200	56,527	41,592	2,692	2,530
Total	552,119	91,320	69,940	8,439	8,777
State total					
Sawmills	1,913,037	400,178	39,627	10,769	35,165
Veneer & plywood	473,678	85,192	38,919	3,330	6,138
Pulp & board	46,984	1,333	1,333	0	0
Shake & shingle	556	3	1	0	0
Log export	661,725	0	0	0	0
Post, pole & piling	31,804	18,911	0	0	325
Roundwood chipping	361,659	53,666	16,369	162	533
Total	3,489,443	559,284	96,250	14,261	42,161

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

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				
Sawmills	28,113	219,750	1,123	108,539
Log export	21,347	59,490	777	12,283
Post, pole & piling	0	4,063	0	4,705
Roundwood chipping	0	24,486	1,862	12,113
Others*	0	22,000	400	4,400
Total	49,460	329,788	4,162	142,041
Olympic Peninsula				
Sawmills	248,217	370,812	32,161	46,372
Veneer & plywood	42,900	46,397	2,600	2,576
Shake & shingle	10	5	30	107
Roundwood chipping	20,533	45,533	5,920	9,173
Others*	55,080	11,826	3,206	36,971
Total	366,740	474,573	43,917	95,199
Lower Columbia				
Sawmills	41,245	42,483	396	8,346
Pulp & board	0	0	0	0
Log export	314,015	97,600	21,360	65,220
Others*	6,775	102,150	0	22,101
Total	362,035	242,234	21,756	95,668
Central Washington	0	11,607	159,981	5,084
Inland Empire				
Sawmills	27,804	64,818	22,770	34,722
Pulp & board	0	4,667	667	5,333
Others*	323	124,406	11,707	76,424
Total	28,128	193,891	35,144	116,480
State total				
Sawmills	345,379	697,863	182,042	202,013
Veneer & plywood	49,675	166,456	47,109	76,860
Pulp & board	0	4,667	2,349	37,302
Shake & shingle	10	5	430	507
Log export	390,442	165,876	23,660	81,747
Post, pole & piling	0	7,103	0	5,465
Roundwood chipping	20,856	210,123	9,370	50,579
Total	806,362	1,252,093	264,960	454,472

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

Table 9 (on two pages) shows the volume of logs (sorted by species) that were used by each wood product sector. For instance, Douglas fir was the dominant species harvested (56 percent) for Washington mills in 2008.

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						
Sawmills	527,145	326,079	147,797	0	0	0
Log export	93,897	73,801	16,112	1,173	2,811	0
Post, pole & piling	24,204	15,158	0	0	0	0
Roundwood chipping	45,426	13,226	21,013	0	0	0
Others*	40,400	26,400	12,400	0	0	0
Total	731,072	454,664	197,321	1,173	2,811	0
Olympic Peninsula						
Sawmills	895,947	320,450	430,543	12,142	12,772	3,238
Veneer & plywood	127,987	74,074	49,977	343	3,593	0
Shake & shingle	156	0	0	0	0	0
Roundwood chipping	108,666	45,300	43,166	0	1,167	0
Others*	110,884	50,783	57,604	457	2,040	0
Total	1,243,640	490,606	581,290	12,942	19,571	3,238
Lower Columbia						
Sawmills	137,331	124,047	2,634	6,531	1,150	2,969
Pulp & board	0	0	0	0	0	0
Log export	498,195	482,472	14,765	920	38	0
Others*	145,036	64,468	37,242	7,344	0	3,305
Total	780,562	670,988	54,641	14,795	1,188	6,273
Central Washington						
	182,050	33,792	8,822	13,276	3,620	116,129
Inland Empire						
Sawmills	222,586	70,590	9,000	12,653	7,530	74,242
Pulp & board	13,333	0	1,333	5,333	0	1,333
Others*	316,200	250,318	162	51,323	162	10,751
Total	552,119	320,907	10,495	69,310	7,692	86,326
State total						
Sawmills	1,913,037	849,034	589,973	38,792	21,452	192,134
Veneer & plywood	473,678	375,173	69,617	5,961	7,213	12,704
Pulp & board	46,984	5,048	29,937	5,333	0	1,333
Shake & shingle	556	0	0	0	0	0
Log export	661,725	594,408	59,878	2,550	4,889	0
Post, pole & piling	31,804	22,758	0	0	0	0
Roundwood chipping	361,659	124,536	103,165	58,859	1,328	5,795
Total	3,489,443	1,970,957	852,570	111,494	34,882	211,966

* "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					
Sawmills	0	12,472	0	34,577	6,221
Log export	0	0	0	0	0
Post, pole & piling	54	8,992	0	0	0
Roundwood chipping	0	267	0	8,633	2,287
Others*	0	400	0	0	1,200
Total	54	22,130	0	43,210	9,708
Olympic Peninsula					
Sawmills	0	63,941	0	51,021	1,842
Veneer & plywood	0	0	0	0	0
Shake & shingle	0	156	0	0	0
Roundwood chipping	0	0	0	19,033	0
Others*	0	0	0	0	0
Total	0	64,097	0	70,054	1,842
Lower Columbia					
Sawmills	0	0	0	0	0
Pulp & board	0	0	0	0	0
Log export	0	0	0	0	0
Others*	0	0	0	32,677	0
Total	0	0	0	32,677	0
Central Washington	6,412	0	0	0	0
Inland Empire					
Sawmills	20,782	27,777	12	0	0
Pulp & board	5,333	0	0	0	0
Others*	3,323	0	162	0	0
Total	29,439	27,777	174	0	0
State total					
Sawmills	23,789	104,190	12	85,598	8,063
Veneer & plywood	1,810	0	0	0	1,200
Pulp & board	5,333	0	0	0	0
Shake & shingle	0	556	0	0	0
Log export	0	0	0	0	0
Post, pole & piling	54	8,992	0	0	0
Roundwood chipping	4,918	267	162	60,343	2,287
Total	35,904	114,004	174	145,941	11,550

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

Table 10 shows the total volume of wood and bark residues that were produced in the Sawmill, Veneer & Plywood & Shake & Shingle industries. Pulp, Log Export and Post, Pole & Piling sectors do not produce marketable volumes of residues (secondary leftover material). 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, the mills in the Olympic Peninsula Economic Area produced more than 2.4 million dry tons of wood residues in 2008 and sold more than 1 million 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				Unused
				Pulp	Board	Fuel	Other	
Puget Sound	1,289,285	1,020,016	1,020,016	521,130	3,348	274,221	221,317	0
Olympic Peninsula	2,442,758	1,941,327	1,940,217	1,035,420	47,142	731,370	126,285	1,110
Lower Columbia	426,262	316,157	316,157	225,945	18,740	12,861	58,611	0
Central Washington	245,120	205,723	205,723	142,174	27,497	20,064	15,988	0
Inland Empire	472,661	407,817	407,817	293,060	59,651	50,462	4,644	0
Sawmills	3,978,191	3,117,839	3,117,710	1,843,263	123,603	808,494	342,350	129
Veneer & plywood	786,465	681,234	681,234	374,466	32,775	224,936	49,057	0
Shake & shingle	111,430	91,967	90,986	0	0	55,548	35,438	981
Total	4,876,086	3,891,040	3,889,930	2,217,729	156,378	1,088,978	426,845	1,110

Economic area and sector	All bark	Total use	Bark Residue				Unused
			Pulp	Board	Fuel	Other	
Puget Sound	269,269	269,269	0	0	109,541	159,728	0
Olympic Peninsula	501,431	501,422	0	0	311,713	189,709	9
Lower Columbia	110,105	110,105	0	0	41,248	68,857	0
Central Washington	39,397	39,397	0	0	34,927	4,470	0
Inland Empire	64,844	64,844	32	0	62,039	2,773	0
Sawmills	860,352	860,343	32	0	470,888	389,423	9
Veneer & plywood	105,231	105,231	0	0	79,749	25,482	0
Shake & shingle	19,463	19,463	0	0	8,831	10,632	0
Total	985,046	985,037	32	0	559,468	425,537	9

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	9	93,661
Veneer & plywood	1	1,200
Chipping	11	62,630
State total	21	157,491

4.9 million
bone dry tons of bark and wood residues created by Washington mills in 2008. Only 1,119 bone dry tons were unused.

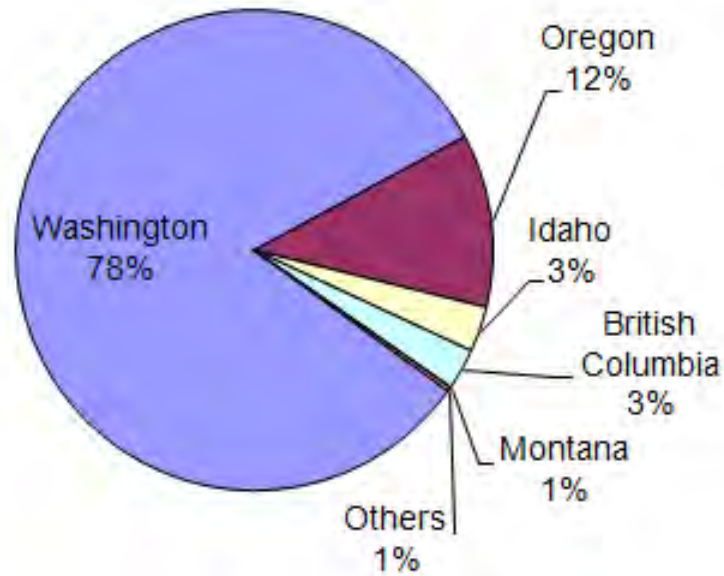
Table 12 shows the total volume by diameter of logs that were used by each wood products sector. This can indicate which log sizes are most economically viable. For instance, most logs used by the post-pole-piling sector (81 percent or 25,789 mbf out of 81,084 mbf) were between 10 and 20 inches in diameter.

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

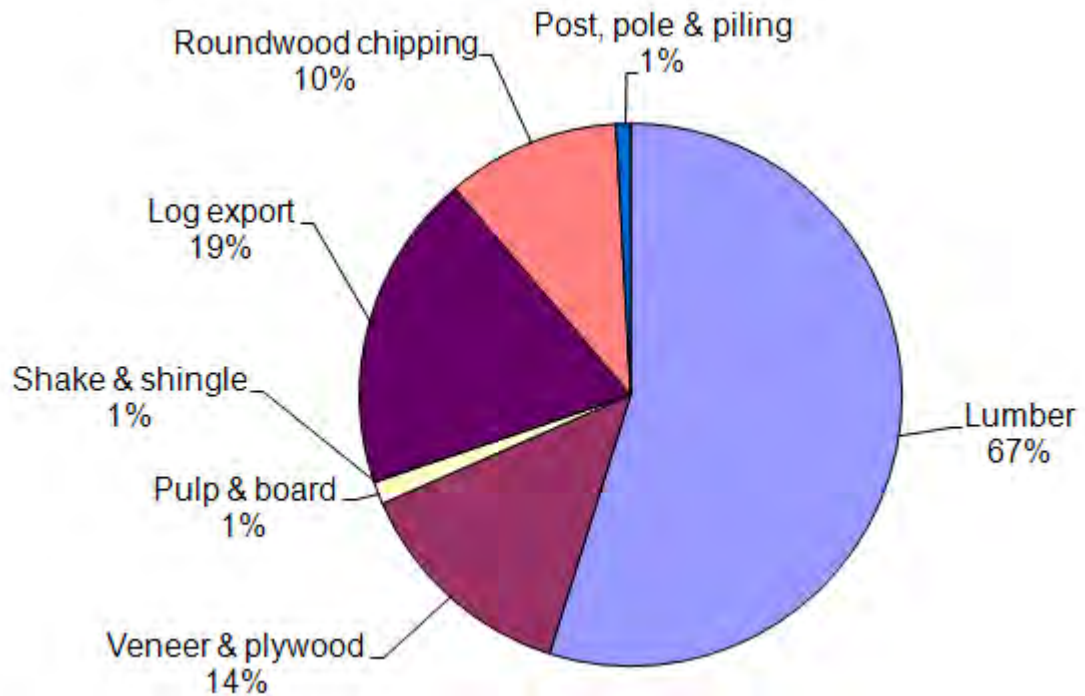
Economic area and sector of operation	Log diameter in inches				
	Total	less than 5	5 to 10	10 to 20	21 or more
Puget Sound					
Sawmills	527,145	5,358	235,161	200,375	86,251
Log export	93,897	0	22,176	66,553	5,168
Post, pole & piling	24,204	36	19,329	4,838	1
Roundwood chipping	45,426	14,983	19,676	6,754	4,013
Others*	40,400	0	12,000	28,000	400
Total	731,072	20,377	308,343	306,520	95,833
Olympic Peninsula					
Sawmills	895,947	19,517	555,533	295,996	24,901
Veneer & plywood	127,987	0	81,716	43,402	2,869
Shake & shingle	156	0	0	73	83
Roundwood chipping	108,666	19,133	56,600	20,567	12,367
Others*	110,884	16,826	38,752	48,425	6,882
Total	1,243,640	55,476	732,600	408,462	47,102
Lower Columbia					
Sawmills	137,331	1,484	61,193	68,071	6,582
Pulp & board	0	0	0	0	0
Log export	498,195	0	102,298	361,462	34,435
Others*	145,036	25,761	80,222	29,076	9,977
Total	780,562	27,245	243,713	458,609	50,995
Central Washington					
Sawmills	130,028	6,014	36,156	67,866	19,992
Others*	52,022	4,747	20,784	22,555	3,936
Total	182,050	10,761	56,940	90,421	23,928
Inland Empire					
Sawmills	222,586	50,000	81,943	78,499	12,145
Pulp & board	13,333	10,000	1,333	667	1,333
Others*	316,200	8,748	146,396	149,056	12,000
Total	552,119	68,748	229,672	228,221	25,478
State total					
Sawmills	1,913,037	82,373	969,986	710,806	149,871
Veneer & plywood	473,678	0	244,747	223,426	5,505
Pulp & board	46,984	26,825	18,159	667	1,333
Shake & shingle	556	0	0	73	483
Log export	661,725	0	139,941	475,300	46,485
Post, pole & piling	31,804	36	25,789	5,978	1
Roundwood chipping	361,659	73,372	172,646	75,984	39,656
Total	3,489,443	182,607	1,571,268	1,492,234	243,334

* "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 wood products industries
(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 (in inches)	51
Table 21	Log consumption by sawmills—by original owners and mill size	52
Table 22	Log consumption by sawmills—by counties and original owners	54
Table 23	Number of sawmills—by percentage of logs from various sources	56
Graph 16	County rank by log volume	59
Table 24	Logs consumed by sawmills—by species and mill size	60
Table 25	Log consumption by sawmills—by species and county	62
Table 26	Wood and bark residues—by county	64
Table 27	Wood residues from sawmills—by mill size and use	66
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 headrig type and county	72
Table 31	Lumber produced by sawmills—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

Table 13 shows the number of mills sorted by mill-size categories (AAA, AA, A, B, C, D) that operated in 2008 in each county and economic area. For example, 34 sawmills out of Washington's 54 are in the three largest categories—AAA=6, AA=14, A=14.

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	4	0	2	1	0	0	1
Snohomish	8	2	1	1	2	2	0
Whatcom	2	1	0	0	1	0	0
Total	18	4	3	3	4	2	2
Olympic Peninsula							
Clallam	4	0	1	1	0	2	0
Grays Harbor	4	0	0	0	2	1	1
Jefferson	1	0	0	0	1	0	0
Lewis	7	1	1	0	2	1	2
Mason	3	0	0	0	0	2	1
Pacific	2	0	1	0	0	1	0
Thurston	1	1	0	0	0	0	0
Total	22	2	3	1	5	7	4
Lower Columbia							
Clark	2	0	1	0	0	1	0
Cowlitz	1	0	0	0	0	1	0
Skamania	1	0	0	0	0	1	0
Total	4	0	1	0	0	3	0
Central Washington							
Okanogan	1	0	0	0	1	0	0
Yakima	2	0	0	0	2	0	0
Total	3	0	0	0	3	0	0
Inland Empire							
Ferry	1	0	0	1	0	0	0
Stevens	5	1	0	1	1	2	0
Whitman	1	0	0	0	1	0	0
Total	7	1	0	2	2	2	0
State total	54	7	7	6	14	14	6

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

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

Table 14 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 54 sawmills in Washington is 12.7 million board feet, enough lumber to build more than 280 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							
King	1	1	0	0	0	0	0
Pierce	820	0	0	100	200	0	520
Skagit	745	0	110	85	0	0	550
Snohomish	1178	27	60	91	200	800	0
Whatcom	222	2	0	0	220	0	0
Total	2,966	30	170	276	620	800	1,070
Olympic Peninsula							
Clallam	740	0	60	90	0	590	0
Grays Harbor	1580	0	0	0	380	400	800
Jefferson	150	0	0	0	150	0	0
Lewis	2214	4	55	0	380	325	1,450
Mason	1450	0	0	0	0	780	670
Pacific	480	0	80	0	0	400	0
Thurston	2	2	0	0	0	0	0
Total	6,616	6	195	90	910	2,495	2,920
Lower Columbia							
Clark	385	0	60	0	0	325	0
Cowlitz	426	0	0	0	0	426	0
Skamania	450	0	0	0	0	450	0
Total	1,261	0	60	0	0	1,201	0
Central Washington							
Okanogan	180	0	0	0	180	0	0
Yakima	280	0	0	0	280	0	0
Total	460	0	0	0	460	0	0
Inland Empire							
Ferry	85	0	0	85	0	0	0
Stevens	1126	25	0	90	171	840	0
Whitman	190	0	0	0	190	0	0
Total	1,401	25	0	175	361	840	0
State total	12,704	61	425	541	2,351	5,336	3,990

* This table 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 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, half of Washington's total 54 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 and mill-class size*	Total Mills	Barker	Chipper	Planer	Burner	Kiln
Puget Sound						
D	4	2	2	2	0	2
C	3	3	3	1	0	1
B	3	3	3	3	1	3
A	8	8	8	8	0	7
Total	18	16	16	14	1	13
Olympic Peninsula						
D	2	0	1	1	1	1
C	2	2	1	2	0	2
B	2	2	2	1	0	2
A	16	16	14	11	2	10
Total	22	20	18	15	3	15
Lower Columbia						
C	1	1	1	1	0	0
A	3	3	1	3	0	3
Total	4	4	2	4	0	3
Central Washington						
	3	3	1	3	1	3
Inland Empire						
D	1	0	1	1	0	0
B	2	2	2	1	0	1
A	4	3	4	4	1	4
Total	7	5	7	6	1	5
State total						
D	7	2	4	4	1	3
C	6	6	5	4	0	3
B	7	7	7	5	1	6
A	34	33	28	29	4	27
Total	54	48	44	42	6	39

* 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, 15 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						
King	1	0	0	1	0	0
Pierce	3	3	3	3	0	2
Skagit	4	4	4	2	1	3
Snohomish	8	8	7	7	0	7
Whatcom	2	1	2	1	0	1
Total	18	16	16	14	1	13
Olympic Peninsula						
Clallam	4	4	3	2	0	3
Grays Harbor	4	4	3	3	1	2
Jefferson	1	1	1	1	0	1
Lewis	7	6	6	5	1	5
Mason	3	3	3	2	1	2
Pacific	2	2	2	2	0	2
Thurston	1	0	0	0	0	0
Total	22	20	18	15	3	15
Lower Columbia						
Clark	2	2	2	2	0	1
Cowlitz	1	1	0	1	0	1
Skamania	1	1	0	1	0	1
Total	4	4	2	4	0	3
Central Washington						
Okanogan	1	1	1	1	1	1
Yakima	2	2	0	2	0	2
Total	3	3	1	3	1	3
Inland Empire						
Ferry	1	1	1	1	0	1
Stevens	5	3	5	4	1	3
Whitman	1	1	1	1	0	1
Total	7	5	7	6	1	5
State total	54	48	44	42	6	39

Table 17 shows the number of mills by size and type of headrig (sawmills cutting equipment). For instance, only the largest mills in Washington are equipped with chipping saws.

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	
Puget Sound										
D	0	2	0	0	0	2	0	0	0	0
C	0	0	0	0	0	2	0	0	0	0
B	0	0	0	0	0	2	1	0	0	0
A	0	0	0	0	0	4	3	2	3	0
Total	0	2	0	0	0	10	4	2	3	0
Olympic Peninsula										
D	0	1	0	0	0	1	0	0	0	0
C	0	0	0	0	1	1	0	0	0	1
B	0	0	0	0	0	1	1	0	0	0
A	0	2	0	0	2	8	3	3	5	2
Total	0	3	0	0	3	11	4	3	5	3
Lower Columbia										
C	0	0	0	0	0	0	1	0	0	0
A	0	0	0	0	1	1	0	0	0	0
Total	0	0	0	0	1	1	1	0	0	0
Central Washington										
	0	0	0	0	0	1	1	1	0	0
Inland Empire										
D	0	0	1	0	0	0	0	0	0	0
B	0	0	0	0	0	1	1	0	0	0
A	0	0	0	0	0	2	1	2	1	0
Total	0	0	1	0	0	3	2	2	1	0
State total										
D	0	3	1	0	0	3	0	0	0	0
C	0	0	0	0	1	3	1	0	0	1
B	0	0	0	0	0	4	3	0	0	0
A	0	2	0	0	3	16	8	8	9	2
Total	0	5	1	0	4	26	12	8	9	3

* 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 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 210 days in 2008.

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

Economic area and mill size *	Avg. annual operating days	Avg. single shift mbf capacity	Avg. mbf log consumption	Avg. lumber tally production per mill
Puget Sound				
A	199	336	54,987	111,360
B	227	92	22,427	29,000
C	213	57	5,126	9,685
D	175	8	1,147	1,289
Average	204	123	20,922	37,834
Olympic Peninsula				
A	215	395	53,669	112,156
Others*	181	49	6,207	9,468
Average	198	222	29,938	60,812
Lower Columbia	214	315	34,333	75,434
Central Washington	237	153	43,343	50,901
Inland Empire				
A	227	300	50,617	65,357
Others*	207	67	6,707	11,108
Average	217	183	28,662	38,232
State Average	210	177	27,856	47,576

* 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 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 5.7 percent of the total volume of logs milled by Washington's mills were in the low quality (utility) category.

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	4,589	4,401	188	0	0
C	15,378	14,648	730	0	0
B	67,281	61,642	5,639	0	0
A	439,897	425,947	13,950	0	0
Total	527,145	506,638	20,507	0	0
Olympic Peninsula					
A	858,706	815,403	43,303	0	1
Others*	37,241	36,965	276	0	0
Total	895,947	852,368	43,579	0	1
Lower Columbia	137,331	135,929	1,402	0	0
Central Washington	130,028	128,011	2,017	0	
Inland Empire					
A	202,466	162,466	40,000	0	0
Others*	20,120	18,920	1,200	0	0
Total	222,586	181,386	41,200	0	0
State total					
D	61,950	60,286	1,664	0	0
C	152,709	150,577	2,132	0	0
B	67,281	61,642	5,639	0	0
A	1,631,097	1,531,827	99,270	0	1
Total	1,913,037	1,804,332	108,705	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

Table 20 shows the volume of logs that were processed by sawmills, according to the diameters of the logs. For instance, 9.2 percent of all logs processed by sawmills were more than 21 inches in diameter .

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	4,589	0	1,152	2,775	663
C	15,378	837	3,256	7,209	4,076
B	67,281	366	19,226	29,126	18,563
A	439,897	4,155	211,528	161,264	62,950
Total	527,145	5,358	235,161	200,375	86,251
Olympic Peninsula					
A	858,706	19,207	540,680	278,227	20,592
Others*	37,241	310	14,853	17,768	4,309
Total	895,947	19,517	555,533	295,996	24,901
Lower Columbia	137,331	1,484	61,193	68,071	6,5820
Central Washington	130,028	6,014	36,156	67,866	19,992
Inland Empire					
A	202,466	50,000	77,425	68,645	6,397
Others*	20,120	0	4,518	9,854	5,748
Total	222,586	50,000	81,943	78,499	12,145
State total					
D	61,950	310	20,523	30,397	10,720
C	152,709	2,322	64,449	75,281	10,658
B	67,281	366	19,226	29,126	18,563
A	1,631,097	79,376	865,788	576,002	109,931
Total	1,913,037	82,373	969,986	710,806	149,871

* 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

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 received 83 times more logs from state-owned trust lands (147,542) than from national forests (1,766).

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	4,589	122	0	0	122
C	15,378	5,271	0	0	500
B	67,281	12,716	0	0	0
A	439,897	147,542	1,766	0	1,581
Total	527,145	165,651	1,766	0	2,204
Olympic Peninsula					
A	858,706	155,763	1,806	2,053	21,956
Others*	37,241	16,319	489	0	0
Total	895,947	172,082	2,295	2,053	21,956
Lower Columbia	137,331	28,583	8,552	2,969	4,757
Central Washington	130,028	403	0	0	0
Inland Empire					
A	202,466	30,954	26,515	5,748	748
Others*	20,120	2,506	500	0	5,500
Total	222,586	33,460	27,015	5,748	6,248
State total					
D	61,950	18,948	989	0	5,622
C	152,709	33,854	8,552	2,969	5,257
B	67,281	12,716	0	0	0
A	1,631,097	334,661	30,087	7,801	24,285
Total	1,913,037	400,178	39,627	10,769	35,165

* 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	245	0	4,099
C	0	5,651	0	3,956
B	0	29,883	0	24,683
A	28,113	183,972	1,123	75,801
Total	28,113	219,750	1,123	108,539
Olympic Peninsula				
A	248,217	363,559	31,020	34,333
Others*	0	7,253	1,141	12,039
Total	248,217	370,812	32,161	46,372
Lower Columbia	41,245	42,483	396	8,346
Central Washington	0	0	125,591	4,033
Inland Empire				
A	27,304	57,746	22,070	31,380
Others*	500	7,072	700	3,342
Total	27,804	64,818	22,770	34,722
State total				
D	500	14,570	1,841	19,480
C	41,245	48,134	396	12,303
B	0	29,883	0	24,683
A	303,634	605,277	179,804	145,548
Total	345,379	697,863	182,042	202,013

* 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

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 consumed. For instance, sawmills in Stevens County received the most volume of logs from national forests (25,408 mbf), about 14 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	158,818	6,580	0	0	0
Skagit	131,985	63,565	1,033	0	1,033
Snohomish	213,201	83,605	732	0	670
Whatcom and King	18,141	9,900	0	0	0
Total	527,145	165,651	1,766	0	2,204
Olympic Peninsula					
Clallam	96,421	31,180	489	0	0
Grays Harbor	339,923	46,736	0	0	10,606
Lewis	226,255	53,112	1,619	303	4,350
Mason	148,900	34,170	0	1,750	7,000
Thurston, Pacific and Jefferson	84,448	6,884	187	0	0
Total	895,947	172,082	2,295	2,053	21,956
Lower Columbia					
Clark	51,145	12,686	0	0	4,757
Skamania and Cowlitz	86,186	15,897	8,552	2,969	0
Total	137,331	28,583	8,552	2,969	4,757
Central Washington					
	130,028	403	0	0	0
Inland Empire					
Stevens	184,898	29,083	25,408	5,748	5,748
Whitman and Ferry	37,688	4,376	1,608	0	500
Total	222,586	33,460	27,015	5,748	6,248
State Total	1,913,037	400,178	39,627	10,769	35,165

*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	7,412	73,930	0	70,896
Skagit	12,399	36,699	0	17,255
Snohomish	7,581	105,821	943	13,848
Whatcom and King	720	1,800	180	5,541
Total	28,113	219,750	1,123	108,539
Olympic Peninsula				
Clallam	0	54,327	3,299	7,126
Grays Harbor	144,091	134,260	4,230	0
Lewis	14,667	112,138	23,695	16,371
Mason	30,580	56,565	0	18,835
Thurston, Pacific and Jefferson	58,878	13,522	937	4,040
Total	248,217	370,812	32,161	46,372
Lower Columbia				
Clark	0	30,608	396	2,696
Skamania and Cowlitz	41,245	11,874	0	5,650
Total	41,245	42,483	396	8,346
Central Washington	0	0	125,591	4,033
Inland Empire				
Stevens	21,767	45,974	21,186	29,984
Whitman and Ferry	6,038	18,844	1,584	4,738
Total	27,804	64,818	22,770	34,722
State total	345,379	697,363	182,042	202,013

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

Tables 23a-23c show the percentage of log volume of mills (classified by size) from original owner categories. For instance, all of the largest sawmills (A) in the Inland Empire received logs from state-owned lands.

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	4	0	0	0	3	1	0	0	4	0	0	0
C	3	0	0	0	0	1	2	0	3	0	0	0
B	3	0	0	0	1	1	0	1	3	0	0	0
A	5	3	0	0	2	2	4	0	8	0	0	0
Total	15	3	0	0	6	5	6	1	18	0	0	0
Olympic Peninsula												
A	14	2	0	0	3	9	3	1	14	2	0	0
Others*	5	1	0	0	2	1	1	2	6	0	0	0
Total	19	3	0	0	5	10	4	3	20	2	0	0
Lower Columbia	2	2	0	0	1	3	0	0	3	1	0	0
Central Washington	3	0	0	0	2	1	0	0	3	0	0	0
Inland Empire												
A	0	4	0	0	0	4	0	0	1	3	0	0
Others*	2	1	0	0	0	3	0	0	3	0	0	0
Total	2	5	0	0	0	7	0	0	4	3	0	0
State total												
D	11	2	0	0	5	5	1	2	13	0	0	0
C	5	2	0	0	1	4	2	0	6	1	0	0
B	3	0	0	0	1	1	0	1	3	0	0	0
A	22	9	0	0	7	16	7	1	26	5	0	0
Total	41	13	0	0	14	26	10	4	48	6	0	0

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

Economic area and mill-class size*	Forest Sector											
	Other public				Own wood supply				Other wood supply			
	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	1	0	0	4	0	0	0	3	1	0	0
C	2	1	0	0	3	0	0	0	0	1	2	0
B	3	0	0	0	3	0	0	0	1	0	2	0
A	6	2	0	0	4	4	0	0	1	3	2	2
Total	14	4	0	0	14	4	0	0	5	5	6	2
Olympic Peninsula												
A	12	4	0	0	9	3	2	2	3	3	5	5
Others*	6	0	0	0	6	0	0	0	3	3	0	0
Total	18	4	0	0	15	3	2	2	6	6	5	5
Lower Columbia												
	3	1	0	0	3	0	0	1	1	0	2	1
Central Washington												
	3	0	0	0	3	0	0	0	3	0	0	0
Inland Empire												
A	2	2	0	0	1	3	0	0	0	3	1	0
Others*	1	1	1	0	2	1	0	0	0	1	2	0
Total	3	3	1	0	3	4	0	0	0	4	3	0
State total												
D	10	2	1	0	12	1	0	0	6	5	2	0
C	5	2	0	0	6	0	0	1	1	1	4	1
B	3	0	0	0	3	0	0	0	1	0	2	0
A	23	8	0	0	17	10	2	2	7	9	8	7
Total	41	12	1	0	38	11	2	3	15	15	16	8

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

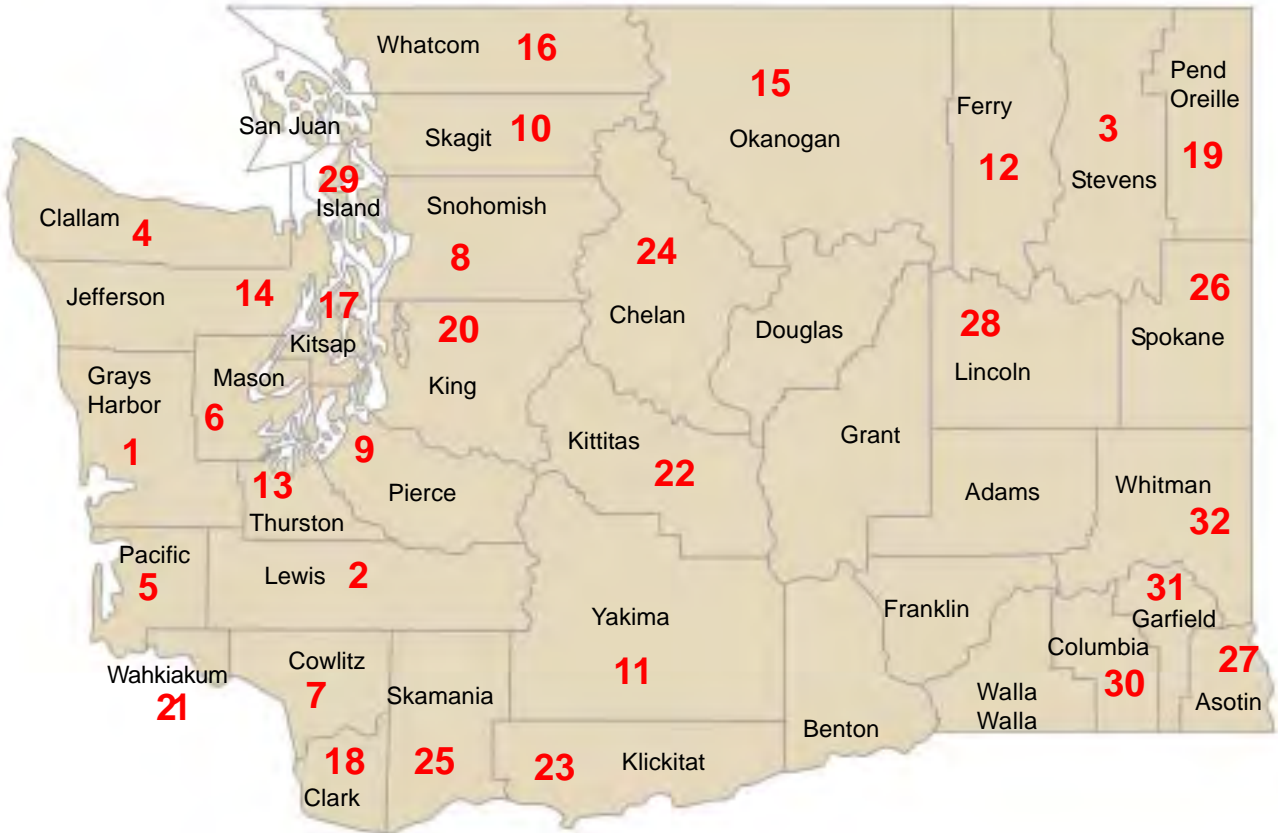
Economic area and mill size *	Percent of log volume							
	Native American				Farmer and miscellaneous private			
	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound								
D	4	0	0	0	0	0	0	4
C	3	0	0	0	0	2	1	0
B	3	0	0	0	0	2	1	0
A	5	3	0	0	1	6	0	1
Total	15	3	0	0	1	10	2	5
Olympic Peninsula								
A	8	7	1	0	8	8	0	0
Others*	5	1	0	0	1	1	2	2
Total	13	8	1	0	9	9	2	2
Lower Columbia								
	3	1	0	0	1	3	0	0
Central Washington								
	0	0	0	3	2	1	0	0
Inland Empire								
A	0	4	0	0	0	4	0	0
Others*	1	2	0	0	0	2	1	0
Total	1	6	0	0	0	6	1	0
State total								
D	10	3	0	0	1	3	3	6
C	6	1	0	0	1	5	1	0
B	3	0	0	0	0	2	1	0
A	13	14	1	3	11	19	0	1
Total	32	18	1	3	13	29	5	7

* 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 16 County rank by log volume



Counties where timber was harvested for Washington mills or export in 2008
(thousand board feet, Scribner scale)

1	Grays Harbor	417,351	17	Kitsap	52,406
2	Lewis	269,204	18	Clark	50,545
3	Stevens	242,681	19	Pend Orielle	43,268
4	Clallam	193,209	20	King	41,021
5	Pacific	182,367	21	Wahkiakum	32,726
6	Mason	181,674	22	Kittitas	32,360
7	Cowlitz	157,733	23	Klickitat	24,069
8	Snohomish	118,386	24	Chelan	22,202
9	Pierce	115,132	25	Skamania	21,351
10	Skagit	104,781	26	Spokane	15,670
11	Yakima	104,624	27	Asotin	6,645
12	Ferry	97,569	28	Lincoln	5,476
13	Thurston	92,477	29	Island	3,499
14	Jefferson	79,273	30	Columbia	1,246
15	Okanogan	78,818	31	Garfield	565
16	Whatcom	75,543	32	Whitman	150

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 east side or the wet westside of the state. For instance, 41 percent (664,253 mbf) of all the logs (1.6 billion mbf) used by the state's largest sawmills were Douglas fir.

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	4,589	40	6	0	0	0
A	439,897	276,368	145,460	0	0	0
Others*	77,659	49,670	2,330	0	0	0
Total	527,145	326,079	147,797	0	0	0
Olympic Peninsula						
A	858,706	309,486	429,328	12,142	12,772	3,238
Others*	37,241	10,964	1,214	0	0	0
Total	895,947	320,450	430,543	12,142	12,772	3,238
Lower Columbia	137,331	124,047	2,634	6,531	1,150	2,969
Central Washington	130,028	7,869	0	7,466	0	111,686
Inland Empire						
A	202,466	70,530	2,000	12,153	5,000	74,242
Others*	20,120	60	7,000	500	2,530	0
Total	222,586	70,590	9,000	12,653	7,530	74,242
State total						
D	61,950	11,064	8,220	500	2,530	0
C	214,990	171,967	4,964	6,531	1,150	2,969
A	1,631,097	664,253	576,789	31,761	17,772	189,166
Total	1,913,037	849,034	589,973	38,792	21,452	192,134

* 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 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	2,094	0	2,448	1
A	0	0	0	16,225	3,844
Others*	0	10,378	0	15,904	2,377
Total	0	12,472	0	34,577	6,221
Olympic Peninsula					
A	0	61,441	0	28,785	1,515
Others*	0	2,500	0	22,236	327
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					
A	20,782	17,759	0	0	0
Others*	0	10,018	12	0	0
Total	20,782	27,777	12	0	0
State total					
D	0	14,612	12	24,684	328
C	0	10,378	0	15,904	2,377
A	23,789	79,200	0	45,010	5,359
Total	23,789	104,190	12	85,598	8,063

* 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

Tables 25a-25b show the total volume of logs that were consumed in Washington, according to the mills' home county, economic area and tree species. (Tables 24a and 24b grouped the data by mill size.) For instance, Stevens County's mills processed more logs (184,898 mbf) than all other eastern Washington counties combined (167,716 mbf) -- 52 percent -- and 42 percent were Ponderosa or Lodgepole pine.

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	158,818	127,692	31,127	0	0	0
Skagit	131,985	61,996	41,330	0	0	0
Snohomish	218,201	121,951	71,734	0	0	0
Whatcom and King	18,141	14,440	3,606	0	0	0
Total	527,145	326,079	147,797	0	0	0
Olympic Peninsula						
Clallam	96,421	21,775	52,662	4,047	1,640	0
Grays Harbor	339,923	177,273	130,005	0	7,205	0
Lewis	226,255	16,998	126,636	8,095	2,428	3,238
Mason	148,900	104,370	44,530	0	0	0
Thurston, Pacific and Jefferson	84,448	34	76,709	0	1,499	0
Total	895,947	320,450	430,543	12,142	12,772	3,238
Lower Columbia						
Skamania, Cowlitz and Clark	137,331	124,047	2,634	6,531	1,150	2,969
Central Washington						
Yakima and Okanogan	130,028	7,869	0	7,466	0	111,686
Inland Empire						
Stevens	184,898	65,052	9,000	8,500	7,530	56,245
Whitman and Ferry	37,688	5,538	0	4,153	0	17,997
Total	222,586	70,590	9,000	12,653	7,530	74,242
State Total	1,913,037	849,034	589,973	38,792	21,452	192,134

* 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
Whatcom and King	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
Thurston, Pacific and Jefferson	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					
Stevens	20,782	17,777	12	0	0
Whitman and Ferry	0	10,000	0	0	0
Total	20,782	27,777	12	0	0
State total	23,789	104,190	12	85,598	8,063

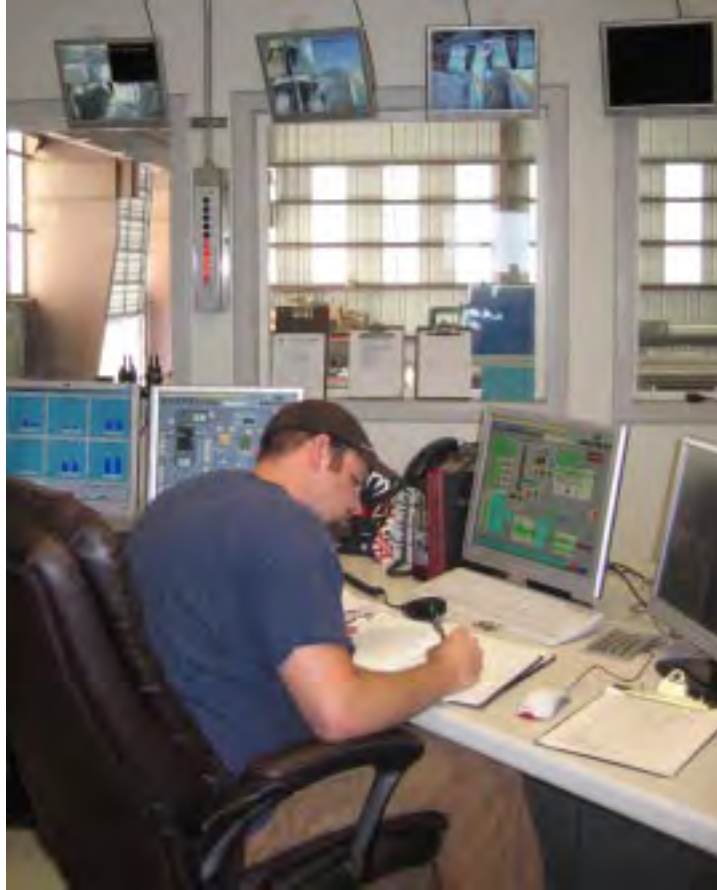
* The statistics for some counties were combined to avoid disclosure of individual corporate data.

Table 26 shows the volume of wood and bark residues by the sawmills' home counties and economic areas. For instance, Lewis and Snohomish counties sawmills produced 1,220,654 bone dry tons of wood and bark residues -- which accounted for one-third 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	Bark
Puget Sound			
Snohomish	546,075	426,093	119,982
Skagit	318,865	258,993	59,872
Pierce	262,164	196,468	65,696
Others*	38,710	30,531	8,179
Total	1,165,814	912,085	253,729
Olympic Peninsula			
Mason	362,586	279,303	83,283
Lewis	723,068	561,019	162,049
Grays Harbor	497,586	379,447	118,139
Clallam	197,817	142,276	55,542
Others*	161,239	155,717	5,522
Total	1,942,296	1,517,762	424,535
Lower Columbia			
Cowlitz	186,444	146,918	39,526
Clark	65,466	45,126	20,340
Others*	84,822	66,840	17,982
Total	336,732	258,884	77,848
Inland Empire			
Stevens	281,536	221,852	59,685
Others*	24,340	221,852	59,685
Total	347,509	282,665	64,845
Central Washington	185,840	146,443	39,397
State Total	3,978,191	3,117,839	860,354

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



Co-generation operation center in Burlington.
Photo: Sierra Pacific Industries/ Sheri Nelson



Douglas fir dimensional lumber (2" x 6") stacked at Great Western Lumber Company in Whatcom County.
Photo: DNR/ Dorian Smith

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, pulp mills consumed 1,843,263 bone dry tons of wood and bark residues from Washington mills—59 percent of the total.

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

Economic area and mill size*	All Types						
	Total	Total used	Pulp	Board	Fuel	Other	Unused
Puget Sound							
D	3,114	3,114	0	0	1,165	1,949	0
C	24,112	24,112	13,912	0	4,116	6,084	0
B	75,714	75,714	25,482	3,348	23,338	23,546	0
A	809,145	809,145	427,199	0	234,850	147,096	0
Total	912,085	912,085	466,593	3,348	263,469	178,675	0
Olympic Peninsula							
A	1,472,342	1,472,227	854,565	30,004	497,323	90,335	115
Others*	45,420	45,406	27,499	0	13,081	4,826	14
Total	1,517,762	1,517,633	882,064	30,004	510,404	95,161	129
Lower Columbia	258,884	258,884	186,015	18,740	6,247	47,882	0
Central Washington	146,443	146,443	102,958	27,497	0	15,988	0
Inland Empire							
A	250,707	250,707	197,531	44,014	6,678	2,484	0
Others*	31,958	31,958	8,102	0	21,696	2,160	0
Total	282,665	282,665	205,633	44,014	28,374	4,644	0
State total							
D	3,275	3,261	66	0	1,246	1,949	14
C	77,007	77,007	51,614	0	9,947	15,446	0
B	120,175	120,175	38,918	3,348	52,203	25,706	0
A	2,917,382	2,917,267	1,752,665	120,255	745,098	299,249	115
Total	3,117,839	3,117,710	1,843,263	123,603	808,494	342,350	129

* 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*	Coarse						
	Total	Total used	Pulp	Board	Fuel	Other	Unused
Puget Sound							
D	1,400	1,400	0	0	40	1,360	0
C	15,604	15,604	13,912	0	0	1,692	0
B	37,572	37,572	25,482	3,348	8,742	0	0
A	437,662	437,662	322,220	0	98,736	16,706	0
Total	492,238	492,238	361,614	3,348	107,518	19,758	0
Olympic Peninsula							
A	785,593	785,593	661,367	0	110,524	13,702	0
Others*	24,758	24,758	21,464	0	0	3,294	0
Total	810,351	810,351	682,831	0	110,524	16,996	0
Lower Columbia	128,533	128,533	128,533	0	0	0	0
Central Washington	80,475	80,475	80,475	0	0	0	0
Inland Empire							
A	137,771	137,771	137,771	0	0	0	0
Others*	17,562	17,562	7,022	0	10,540	0	0
Total	155,333	155,333	144,793	0	10,540	0	0
State total							
D	1,466	1,466	66	0	40	1,360	0
C	46,029	46,029	41,043	0	0	4,986	0
B	60,468	60,468	37,838	3,348	19,282	0	0
A	1,558,967	1,558,967	1,319,299	0	209,260	30,408	0
Total	1,666,930	1,666,930	1,398,246	3,348	228,582	36,754	0

* 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 27c Medium wood residue 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	566	566	0	0	550	16	0
C	2,176	2,176	0	0	0	2,176	0
B	18,916	18,916	0	0	6,820	12,096	0
A	178,666	178,666	8,094	0	86,277	84,295	0
Total	200,324	200,324	8,094	0	93,647	98,583	0
Olympic Peninsula							
A	309,204	309,089	15,249	30,004	249,771	14,065	115
Others*	7,890	7,883	0	0	7,824	59	7
Total	317,094	316,972	15,249	30,004	257,595	14,124	122
Lower Columbia	60,640	60,640	26,473	6,247	6,247	21,673	0
Central Washington	32,984	32,984	0	20,986	0	11,998	0
Inland Empire							
A	56,468	56,468	14,938	39,046	0	2,484	0
Others*	7,198	7,198	1,080	0	3,958	2,160	0
Total	63,666	63,666	16,018	39,046	3,958	4,644	0
State total							
D	613	606	0	0	590	16	7
C	12,602	12,602	0	0	5,831	6,771	0
B	28,067	28,067	1,080	0	12,731	14,256	0
A	637,962	637,847	64,754	96,283	342,295	134,515	115
Total	679,244	679,122	65,834	96,283	361,447	155,558	122

* 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	1,148	1,148	0	0	575	573	0
C	6,332	6,332	0	0	4,116	2,216	0
B	19,226	19,226	0	0	7,776	11,450	0
A	192,817	192,817	96,885	0	49,837	46,095	0
Total	219,523	219,523	96,885	0	62,304	60,334	0
Olympic Peninsula							
A	377,545	377,545	177,949	0	137,028	62,568	0
Others*	12,772	12,765	6,035	0	5,257	1,473	7
Total	390,317	390,310	183,984	0	142,285	64,041	7
Lower Columbia	65,175	65,175	31,009	12,493	0	21,673	0
Central Washington	32,984	32,984	22,483	6,511	0	3,990	0
Inland Empire							
A	56,468	56,468	44,822	4,968	6,678	0	0
Others*	7,198	7,198	0	0	7,198	0	0
Total	63,666	63,666	44,822	4,968	13,876	0	0
State total							
D	1,196	1,189	0	0	616	573	7
C	18,376	18,376	10,571	0	4,116	3,689	0
B	31,640	31,640	0	0	20,190	11,450	0
A	720,453	720,453	368,612	23,972	193,543	134,326	0
Total	771,665	771,658	379,183	23,972	218,465	150,038	7

* 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 28 totals the volume of bark residues by mill size. For instance, the largest category of sawmills produced 94 percent of the total bark residues.

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	1,495	1,495	0	0	765	730	0
C	5,669	5,669	0	0	2,485	3,184	0
B	14,448	14,448	0	0	0	14,448	0
A	232,117	232,117	0	0	106,291	125,826	0
Total	253,729	253,729	0	0	109,541	144,188	0
Olympic Peninsula							
A	406,940	406,940	0	0	239,508	167,432	0
Others*	17,594	17,585	0	0	15,882	1,703	9
Total	424,534	424,525	0	0	255,390	169,135	9
Lower Columbia	77,848	77,848	0	0	8,991	68,857	0
Central Washington	39,397	39,397	0	0	34,927	4,470	0
Inland Empire							
A	56,246	56,246	0	0	54,763	1,483	0
Others*	8,598	8,598	32	0	7,276	1,290	0
Total	64,844	64,844	32	0	62,039	2,773	0
State total							
D	1,556	1,547	32	0	785	730	9
C	21,802	21,802	0	0	11,497	10,305	0
B	29,864	29,864	0	0	14,126	15,738	0
A	807,130	807,130	0	0	444,480	362,650	0
Total	860,352	860,343	32	0	470,888	389,423	9

* 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 of the state's bark residues (162,049 mbf or 19 percent) 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	65,696	65,696	0	0	0	65,696	0
Skagit	59,872	59,872	0	0	51,029	8,843	0
Snohomish	119,982	119,982	0	0	58,512	61,470	0
Whatcom and King	8,179	8,179	0	0	0	8,179	0
Total	253,729	253,729	0	0	109,541	144,188	0
Olympic Peninsula							
Clallam	55,542	55,542	0	0	53,900	1,641	0
Grays Harbor	118,139	118,139	0	0	118,139	0	0
Mason	83,283	83,283	0	0	6,781	76,502	0
Thurston, Pacific and Jefferson	5,522	5,513	0	0	5,513	0	9
Lewis	162,049	162,049	0	0	71,057	90,992	0
Total	424,535	424,526	0	0	255,390	169,135	9
Lower Columbia							
Skamania, Cowlitz and Clark	77,848	77,848	0	0	8,991	68,857	0
Total	77,848	77,848	0	0	8,991	68,857	0
Central Washington							
Yakima and Okanogan	39,397	39,397	0	0	34,927	4,470	0
Total	39,397	39,397	0	0	34,927	4,470	0
Inland Empire							
Stevens	59,685	59,685	32	0	58,169	1,483	0
Whitman and Ferry	5,160	5,160	0	0	3,870	1,290	0
Total	64,845	64,845	32	0	62,039	2,773	0
State Total	860,354	860,345	32	0	470,888	389,423	9

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

Table 30 shows the volume of lumber produced by Washington’s sawmills, by county, economic area and type of headrig (saw). For instance, circular saws were used to produce 1.6 percent of the state’s total volume of lumber.

Table 30 Sawmills production—by headrig type and county*
(thousand board feet, lumber tally)

Economic area and county* of operation	All types	Circular saw	Band saw	Gang saw	Chipping saw	Others*
Puget Sound						
Pierce	254,637	0	48,847	205,790	0	0
Skagit	271,417	0	271,417	0	0	0
Snohomish	454,184	0	358,765	0	95,419	0
Whatcom and King	31,856	156	26,945	0	4,755	0
Total	1,012,094	156	705,975	205,790	100,174	0
Olympic Peninsula						
Clallam	206,767	0	106,076	63,140	37,552	0
Grays Harbor	548,774	40,870	469,904	0	38,000	0
Mason	322,800	0	42,594	235,806	44,400	0
Thurston, Pacific and Jefferson	161,540	0	156,787	0	4,753	0
Lewis	611,428	18,260	526,694	0	55,430	11,045
Total	1,851,309	59,130	1,302,054	298,946	180,134	11,045
Lower Columbia						
Skamania, Cowlitz and Clark	301,735	0	148,535	153,200	0	0
Total	301,735	0	148,535	153,200	0	0
Central Washington						
Yakima and Okanogan	152,704	0	98,469	54,235	0	0
Total	152,704	0	98,469	54,235	0	0
Inland Empire						
Stevens	231,337	125	93,026	92,186	46,000	0
Whitman and Ferry	63,414	0	63,414	0	0	0
Total	294,751	125	156,440	92,186	46,000	0
State Total	3,612,593	59,411	2,411,473	804,356	326,308	11,045

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

** Statistics for new technology are 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, the largest sawmills produced more than half of the state's hardwood lumber.

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

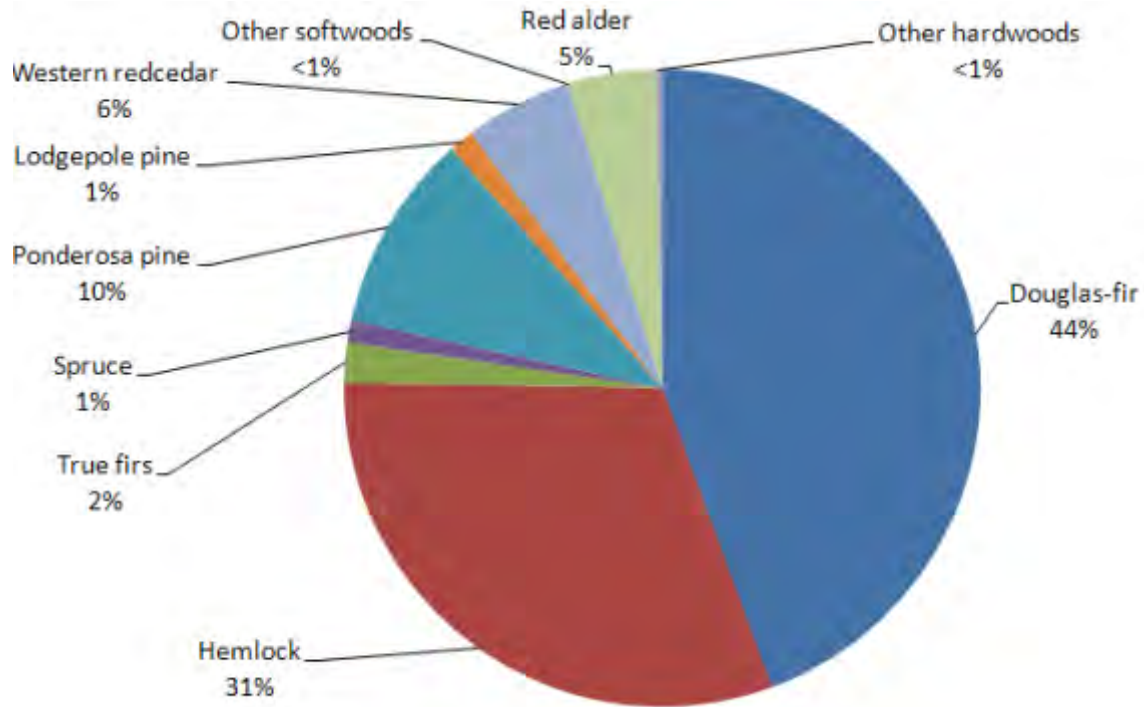
Economic area and mill size*	Total	Softwood	Hardwood
Puget Sound			
A	890,882	863,209	27,673
B	87,001	56,000	31,001
C	29,055	25,055	4,000
D	5,156	2,655	2,501
Total	1,012,094	946,919	65,175
Olympic Peninsula			
A	1,794,501	1,742,101	52,400
Others*	56,808	20,974	35,834
Total	1,851,309	1,763,075	88,234
Lower Columbia	301,735	301,735	0
Central Washington	152,704	152,704	0
Inland Empire			
A	261,426	261,426	0
Others*	33,325	33,325	0
Total	294,751	294,751	0
State Total	3,612,593	3,459,184	153,409

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

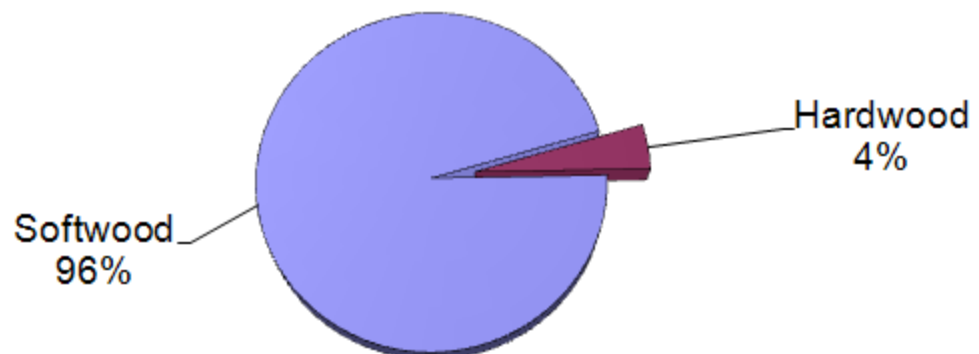
** Mill size classes indicate the capacity to process logs (in thousand board feet, Scribner scale) during an 8-hour shift

- 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 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, only four veneer mills can produce veneer from logs up to 39 inches in diameter.

Table 32 Veneer-producing mills—by lathe log diameter

Economic area	Lathe log max. diameter (inches)			
	Total	10-19	20-29	30-39
Puget Sound	1	0	0	1
Olympic Peninsula	3	0	1	2
Lower Columbia	1	0	0	1
Central Washington	1	0	1	0
Inland Empire	1	0	1	0
State Total	7	0	3	4

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, only 1 mill (both veneer-only and veneer-and-plywood mills) can peel veneer from logs 4 inches or thinner (5 mills can handle 4-inch logs, 1 mill can handle 3-inch logs.).

Table 33 Veneer-producing mills—by minimum core size

Economic area	Lathe log min. diameter (inches)			
	Total	3	4	5
Puget Sound	1	0	1	0
Olympic Peninsula	3	0	3	0
Lower Columbia	1	0	1	0
Central Washington	1	0	0	1
Inland Empire	1	1	0	0
State total	7	1	5	1

Table 34 shows the 8-hour capacity (thousand square feet) of mills that produce veneer and plywood. For instance, Washington's veneer mills can produce totally 2,262 thousand square feet (2.3 million square feet) of veneer 3/8-inch basis per 8-hour shift. The total includes sums from veneer-only plants (1,100 msq) and plants that produce veneer and plywood (1,162 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	400	195	0	0
Olympic Peninsula	700	770	320	220
Lower Columbia	0	0	322	206
Central Washington	0	0	240	160
Inland Empire	0	0	280	272
State Total	1,100	965	1,162	858

Table 35 displays the volume of logs processed to make veneer (from veneer-only and plywood-and-veneer mills) by log diameter. For instance, no all logs less than 5 inches in diameter were used. But 52 percent (244,747 mbf) of the veneer was made from logs between 5 and 11 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	244,747	52
11.0 to 20.9 inches	223,426	47
21 inches or more	5,505	1
State total	473,678	100

Table 36 displays the total volume from veneer-only, plywood-only and veneer-plywood mills in thousand square feet, 3/8-inch basis. For instance, Washington's mills produced 994,457 million square feet of plywood.

Table 36 Veneer and plywood production

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

Veneer	597,325
Plywood	994,457

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

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

Economic area and county	Total Mills	4-foot lathe	8-foot lathe	Slicer	Veneer chipper	Core chipper	Cold press	Hot press	Burner
Puget Sound									
Pierce	1	0	1	0	1	1	0	0	0
Whatcom	1	0	0	0	0	0	1	1	1
Total	2	0	1	0	1	1	1	1	1
Olympic Peninsula									
Grays Harbor	3	0	2	0	3	1	0	1	0
Lewis	1	0	0	0	1	0	0	1	0
Mason	1	0	1	0	1	1	0	1	0
Total	5	0	3	0	5	2	0	3	0
Lower Columbia	1	1	1	0	0	1	0	1	0
Central Washington	1	0	1	0	1	1	0	1	0
Inland Empire	1	0	1	0	1	1	0	1	0
State total	10	1	7	0	8	6	1	7	1

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 (374,466 tons) of the total wood residues (681,234 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	78,761	78,761	54,537	0	8,824	15,400	0
Medium	0	0	0	0	0	0	0
Fine	1,928	1,928	0	0	1,928	0	0
Total	80,689	80,689	54,537	0	10,752	15,400	0
Olympic Peninsula							
Coarse	349,426	349,426	153,356	17,138	154,952	23,980	0
Medium	0	0	0	0	0	0	0
Fine	10,466	10,466	0	0	10,466	0	0
Total	359,892	359,892	153,356	17,138	165,418	23,980	0
Lower Columbia							
Coarse	54,898	54,898	39,930	0	5,291	9,677	0
Medium	0	0	0	0	0	0	0
Fine	1,323	1,323	0	0	1,323	0	0
Total	56,221	56,221	39,930	0	6,614	9,677	0
Central Washington							
Coarse	59,280	59,280	39,216	0	20,064	0	0
Medium	0	0	0	0	0	0	0
Fine	0	0	0	0	0	0	0
Total	59,280	59,280	39,216	0	20,064	0	0
Inland Empire							
Coarse	125,152	125,152	87,427	15,637	22,088	0	0
Medium	0	0	0	0	0	0	0
Fine	0	0	0	0	0	0	0
Total	125,152	125,152	87,427	15,637	22,088	0	0
State total							
Coarse	667,517	667,517	374,466	32,775	211,219	49,057	0
Medium	0	0	0	0	0	0	0
Fine	13,717	13,717	0	0	13,717	0	0
Total	681,234	681,234	374,466	32,775	224,936	49,057	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	272	3
Plywood only	277	3
Veneer and plywood	268	4
State average	272	10

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
Table 44	Wood fiber consumption by pulp mills—by fiber type	82
Table 45	Roundwood chip consumption by pulp mills*—by species	82
Graph 19	Pulp mills' production	82
Table 46	Logs, sawdust and roundwood chip use by pulp mills—by state	83
Graph 20	Pulp mills' raw material	83

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, 4 out of 11 mills use mechanical grinding as part of the production process—3 groundwood and 1 semi-chemical.

Table 40 Number of pulp mills—by processing type

Economic area and county	Pulp Mills				
	All mills	Sulfite	Sulfate	Groundwood	Semi-chemical
Puget Sound					
Pierce	1	0	1	0	0
Snohomish	1	1	0	0	0
Total	2	1	1	0	0
Olympic Peninsula					
Clallam	1	0	1	0	0
Total	1	0	1	0	0
Lower Columbia					
Cowlitz	4	1	2	1	0
Total	4	1	2	1	0
Inland Empire					
Pend Orielle	1	0	0	1	0
Spokane	1	0	0	1	0
Walla Walla	2	0	1	0	1
Total	4	0	1	2	1
State total	11	2	5	3	1

Table 41 Pulp mills’ capacity (single 8-hour shift)—by mill type

(bone dry tons)

Pulp mill type	Capacity	Number
Sulfite	857	2
Sulfate	5,890	5
Groundwood and Semi-chemical	2,793	4
State total	9,540	11

Table 41 shows the average 8-hour shift capacity of the state’s pulp mills, according to process. For instance, the total average 8-hour shift capacity for all pulp mills in Washington was 9,540 bone dry tons.

Table 42 Average operating days of pulp mills

Pulp mill type	Operating days	Number
Sulfite	353	2
Sulfate	356	5
Groundwood and Semi-chemical	365	4
Average	358	11

Table 42 shows the average operating days and the number of pulp mills, based on type of mill operation. For instance, the average operating days in 2008 for all state pulp mills was 358.

Table 43 shows the volumes of products (types of paper, market pulp) in bone dry tons that were produced by pulp mills. For instance, newsprint (for newspapers) is produced in the greatest volumes (1.29 million tons) of all pulp mill products (3.5 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
Olympic Peninsula	294,842	0	0	219,965	0	74,877
Lower Columbia	1,782,511	833,147	290,834	548,395	110,135	0
Others*	1,417,660	452,128	493,720	12,126	278,000	181,686
State total	3,495,013	1,285,275	784,554	780,486	388,135	256,563
Type of Operation						
Sulfite	207,615	0	0	67,615	140,000	0
Sulfate	1,864,123	0	784,554	712,871	110,135	256,563
Groundwood	1,285,275	1,285,275	0	0	0	0
Semi-chemical	138,000	0	0	0	138,000	0
State total	3,495,013	1,285,275	784,554	780,486	388,135	256,563



The Boise Inc. paper mill in Wallula. Photo: Scott Butner

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

Table 44 Wood fiber consumption by pulp mills—by fiber type

(bone dry tons)

Economic area	Total	Chips			From Logs	Sawdust and shavings	Recycled paper
		Total Chips	From mill residues	From roundwood chipping mill			
Puget Sound	1,303,512	1,083,032	613,127	469,905	0	0	220,480
Olympic Peninsula	750,538	314,948	314,948	0	252,383	54,705	128,502
Lower Columbia	3,187,310	2,611,116	1,367,167	1,243,949	0	61,178	515,016
Inland Empire	1,208,731	835,094	591,494	243,600	99,998	51,600	222,039
State total	6,450,090	4,844,190	2,886,736	1,957,454	352,380	167,483	1,086,037

Table 45 shows the volume and species of (roundwood) chips. For instance, pulp mills statewide used 842,892 tons of Douglas fir chips.

Table 45 Roundwood chip consumption by pulp mills*—by species

(bone dry tons)

Economic area	All species	Douglas-fir	Hemlock	True Spruce fir	Ponderosa pine	Lodgepole pine	Western redcedar	Other conifer	Red alder	Other hardwood	
Lower Columbia	1,243,949	489,196	453,169	38,088	0	110,110	103,170	0	0	50,216	95
Inland Empire	243,600	36,900	9,600	75,300	0	9,600	75,300	0	0	0	36,900
Others*	469,905	338,935	83,138	0	0	0	19,292	19,292	0	9,247	0
State total	1,957,454	865,032	545,907	113,388	0	119,710	197,762	19,292	0	59,464	36,995

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

Graph 19 Pulp mills' production

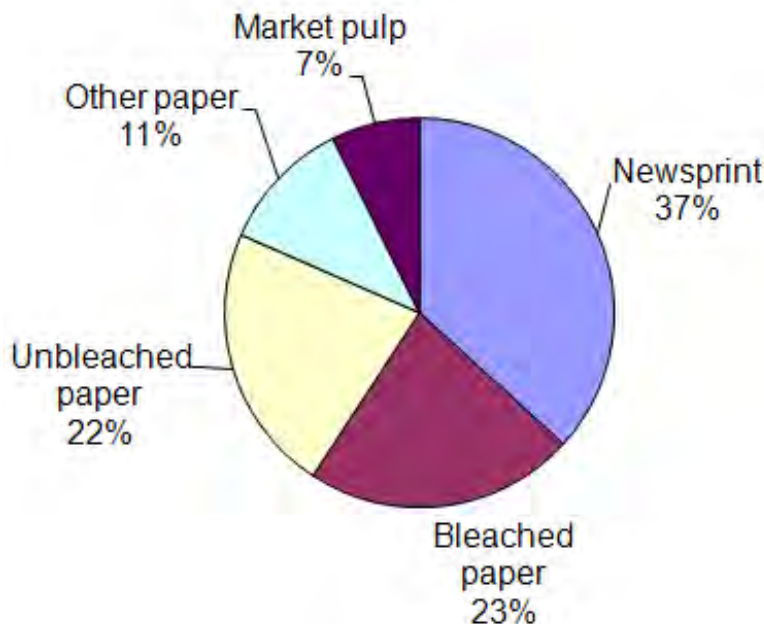


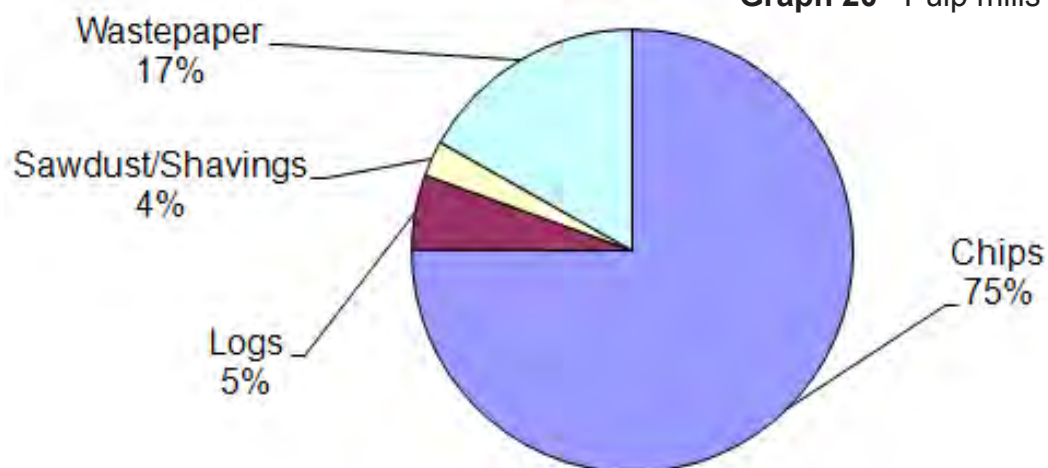
Table 46 shows the volume and wood fiber types from Pacific Northwest states and British Columbia that were used by Washington pulp mills. For instance, 38 percent of wood fiber (792,297 tons) for pulp mills came from out-of-state sources (Oregon: 488,567 bone dry tons; Idaho: 113,719 bone dry tons; and British Columbia: 6,008 bone dry tons). **These totals do not include recycled paper or chips from mill residues.**

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
Puget Sound						
Roundwood chips	469,905	469,905	0	0	0	0
Sawdust	0	0	0	0	0	0
Logs	0	0	0	0	0	0
Total	469,905	469,905	0	0	0	0
Olympic Peninsula						
Roundwood chips	0	0	0	0	0	0
Sawdust	54,705	54,705	0	0	0	0
Logs	252,383	247,335	0	0	0	5,048
Total	307,088	302,040	0	0	0	5,048
Lower Columbia						
Roundwood chips	1,243,949	859,234	379,179	0	5,536	0
Sawdust	61,178	51,390	9,788	0	0	0
Logs	0	0	0	0	0	0
Total	1,305,127	910,624	388,967	0	5,536	0
Inland Empire						
Roundwood chips	243,600	92,640	73,800	63,720	12,480	960
Sawdust	51,600	25,800	25,800	0	0	0
Logs	99,998	44,999	0	49,999	5,000	0
Total	395,198	163,439	99,600	113,719	17,480	960
State total						
Roundwood chips	1,957,454	1,421,779	452,979	63,720	18,016	960
Sawdust	167,483	131,895	35,588	0	0	0
Logs	352,380	292,334	0	49,999	5,000	5,048
Total	2,477,317	1,846,007	488,567	113,719	23,016	6,008

Graph 20 Pulp mills' raw material





The Simpson Tacoma Kraft's operation in Commencement Bay. Photo courtesy of Simpson Tacoma Kraft Co. LLC

Shake & Shingle

Table 47	Shake & shingle mills' capacity and operating days	84
Table 48	Shake & shingle mills with selected equipment	84
Table 49	Log consumption by shake & shingle mills—by type	84
Table 50	Shake & shingle mills' production	84
Table 51	Log consumption by shake & shingle mills—by original owners	85
Table 52	Log consumption by shake & shingle mills—by diameter (in inches)	85
Table 53	Wood and bark residues—produced by shake & shingle mills	85
Table 54	Wood residues—by use	86

Table 47 shows the average number of operating days, mill capacities and product volumes of shake & shingle mills. For instance, Washington's 17 shake & shingle mills operated an average of 188 days in 2008.

Table 47 Shake & shingle mills' capacity and operating days

Economic area	Total mills	Single Shift Capacity (Squares)			Avg number of operating days / year
		Shake	Shingle	Other	
Puget Sound	2	61	94	0	178
Olympic Peninsula	14	69	466	3,119	187
Lower Columbia	1	2	30	0	220
State total	17	132	590	3,119	188

Table 48 Shake & shingle mills with selected equipment

Economic area	Chipper	Barker	Burner	None
Olympic Peninsula	0	0	0	14
Others*	0	0	0	3
State Total	0	0	1	17

Table 48 shows the number of mills that used extra equipment for shake & shingle manufacturing. Only one shake & shingle mill in Washington possessed a burner.

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

Economic area	All types	Sound logs	Utility logs	Others *
Olympic Peninsula	7,718	131	25	7,562
Others*	1,925	400	0	1,525
State total	9,643	531	25	9,087

Table 49 shows the volume of logs and other forms of wood received by the shake & shingle sector. For instance, the mills received mostly blocks, bolts or lumber (9,087 mbf) and relatively few logs (556 mbf).

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

Table 50 Shake & shingle mills' production
(squares)

Economic area and county of operation	Total	Product		
		Shakes	Shingles	Other
Puget Sound	31,100	500	20,350	10,250
Olympic Peninsula	88,111	1,155	49,379	37,577
Lower Columbia	4,780	0	4,780	0
State total	123,991	1,655	74,509	47,827

Table 50 shows the volume of products (in squares) from shake & shingle mills. For instance, shingles made up 60 percent (74,509 squares out of 123,991 squares total) of the total production of shake & shingle mills.

Table 51 shows the volume of logs used by shake & shingle mills by ownership category . For instance, 77 percent of all of the logs consumed by shake & shingle mills Washington came from tribal lands.

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	556	3	1	0	0	10	5	430	107

Table 52 shows the volume of logs consumed by shake & shingle mills by diameter . For instance, 87 percent (483 mbf) of the logs consumed 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
State total	556	—	—	73	483

Table 53 shows the volumes of wood and bark residues that were used and not used. For instance, only 981 tons of residues were not used.

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

Economic area of operation	All residues			Wood residues		
	Total	Used	Unused	Total	Used	Unused
Puget Sound	35,852	35,852	0	27,242	27,242	0
Olympic Peninsula	74,527	73,546	981	63,674	62,693	981
Lower Columbia	1,052	1,052	0	1,052	1,052	0
State total	111,431	110,450	981	91,968	90,987	981

Economic area	Total	Used	Unused
Puget Sound	8,610	8,610	0
Olympic Peninsula	10,853	10,853	0
State total	19,463	19,463	0

Table 54 shows the volumes of bark and wood residues for pulp, fuel and other uses. For instance, the most prominent uses of wood and bark residues were landscaping and animal bedding (listed as “Other”). That category made up 58 percent (64,379 tons out of a total 111,431 tons).

Table 54 Wood residues—by use
(dry weight tons)

All types residues

Economic area and county of operation	Total	Total used	Pulp	Fuel	Other	Unused
Olympic Peninsula	63,674	62,693	0	55,548	7,144	981
Others	28,294	28,294	0	0	28,294	0
State Total	91,968	90,987	0	55,548	35,438	981

Coarse wood residues

Economic area of operation	Total	Used	Pulp	Fuel	Other	Unused
Olympic Peninsula	12,573	11,690	0	9,971	1,719	883
Others	7,894	7,894	0	0	7,894	0
State total	20,467	19,584	0	9,971	9,613	883

Fine wood residues

	Total	Used	Pulp	Fuel	Other	Unused
State total	78,821	78,691	2,752	29,467	46,472	130

Bark residues

	Total	Used	Pulp	Fuel	Other	Unused
State total	19,463	19,463	0	8,831	10,632	0



Log Exports

Table 55	Export logs—by port	88
Table 56	Export logs—by diameter in inches	88
Table 57	Export logs—by species	88
Table 58	Export logs—by county of original owners	89
Table 59	Export logs—by port and original owners	89
Graph 22	Log Exports—by Washington ports	90
Graph 23	Origin of logs exported through Washington’s ports	90
Graph 24	Original owners of exported logs	90

Table 55 shows the number of businesses, volume and percentage share of exported logs from each port. For instance, the Port of Longview handled 75 percent of the logs exported from Washington—496,152 mbf of a total of 661,725 mbf.

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

Port	Export operations	Total	% of State Total
Aberdeen	1	68,000	10%
Longview	4	496,152	75%
Olympia	2	2,896	<1%
Seattle	1	2,119	<1%
Tacoma	4	92,558	14%
State total	12	661,725	100%

Table 56 shows the volume of logs exported by log diameter. For instance, the Port of Tacoma handled 65,796 mbf of logs that were between 11 and 21 inches 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
Aberdeen	68,000	0	14,960	46,240	6,800
Longview	496,152	0	101,650	360,176	34,326
Olympia	2,896	0	898	1,816	183
Seattle	2,119	0	636	1,271	212
Tacoma	92,558	0	21,798	65,796	4,964
State total	661,725	0	139,941	475,300	46,485

Table 59 shows the volume and species of logs exported through Washington’s ports. For instance, most export logs were Douglas fir—594,408 mbf from a total of 661,725 mbf exported logs.

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

Port	All species	Douglas fir	Hemlock	True firs	Spruce
Aberdeen	68,000	37,400	28,560	0	2,040
Longview	496,152	482,472	12,760	920	0
Olympia	2,896	735	1,666	457	38
Seattle	2,119	212	1,589	106	212
Tacoma	92,558	73,589	15,303	1,067	2,599
State total	661,725	594,408	59,878	2,550	4,889

Table 57 shows the volume of logs from each county and which ports were used for export. It also shows the volume of out-of-state logs exported through each Washington port. For instance, Longview exported more out-of-state logs (320,488 mbf) than all of the logs exported from Washington (303,154 mbf).

Table 58 Export logs—by county of original owners

(thousand board feet, Scribner scale)

Economic area of logs' origin	Total	Port of export				
		Longview	Aberdeen	Seattle	Olympia	Tacoma
Puget Sound						
King	6,840	0	0	312	0	6,528
Pierce	13,736	2,459	0	415	0	10,862
Skagit	208	0	0	208	0	0
Snohomish	3,969	0	0	208	653	3,108
Total	24,753	2,459	0	1,165	653	20,498
Olympic Peninsula						
Clallam	9,587	0	0	424	980	8,192
Grays Harbor	45,176	7,120	37,468	0	0	588
Jefferson	1,488	0	0	318	0	1,177
Lewis	73,168	48,754	3,230	212	0	20,977
Mason	9,340	6,110	3,230	0	0	0
Pacific	22,412	1,103	19,380	0	1,149	780
Thurston	12,466	3,469	1,292	0	0	7,705
Total	173,638	66,555	64,600	954	2,129	39,419
Lower Columbia						
Clark	15,600	15,600	0	0	0	0
Cowlitz	72,997	72,997	0	0	0	0
Skamania	1,103	1,103	0	0	0	0
Wahkiakum	15,064	14,950	0	0	114	0
Total	104,763	104,649	0	0	114	0
State total	303,154	173,664	64,600	2,076	2,896	59,918
Out-of-state	358,570	322,488	3,400	43	0	32,640
Grand total	661,725	496,152	68,000	2,119	2,896	92,558

Table 58 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 (556,318 mbf), 84 percent.

Table 59 Export logs—by port and original owners

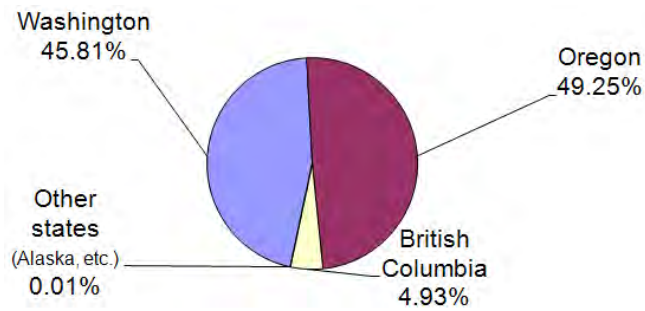
(thousand board feet, Scribner scale)

Port	Total	Forest sector			
		Own wood supply	Other wood supply	Native American	Farmer and miscellaneous private
Aberdeen	68,000	55,080	7,480	1,360	4,080
Longview	496,152	311,972	97,600	21,360	65,220
Olympia	2,896	1,263	1,306	163	163
Seattle	2,119	106	1,907	0	106
Tacoma	92,558	22,021	57,582	777	12,177
Total	661,725	390,442	165,876	23,660	81,747

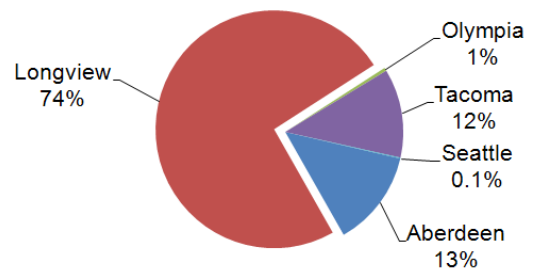


The Port of Longview is the largest facility for exporting logs from both Washington and Oregon
Photo: Sam Beebe / Ecotrust

Graph 23 Origin of logs exported through Washington's ports



Graph 22 Log Exports—by Washington ports



Graph 24 Original owners of exported logs



Post, Pole, and Piling

Table 60	Number of post, pole and piling mills—by operating days and capacity	92
Table 61	Number of post, pole, and piling mills—by selected equipment	92
Table 62	Log consumption by post, pole, and piling mills—by diameter	92
Table 63	Post, pole, and piling mills’ production	93
Graph 25	Post, pole, and piling logs by diameter	93

Table 60 shows the capacity by volume of logs that post, pole, and piling mills can peel and/or treat annually. The table also shows the average number of days post, pole, and piling mills operated in 2008. For instance, post, pole and piling mills operated between 216 (peeling operations) and 235 (treatment operations) days.

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

Economic area and county of operation	Number	Annual capacity (thousand board feet, Scribner scale)		Average number of operating days in 2008	
		Peeling	Treatment	Peeling	treatment
State total	5	201	217	216	235

Table 61 shows the numbers of post, pole, and piling operations with peelers and burners. For instance, there are four post, pole, and piling operations with peeling equipment.

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

Economic area and county of operation	Number	Peeler	Burner
State total	5	4	1

Table 62 shows the volume of logs by diameter in inches that were processed by post, pole, and piling mills. For instance, 81 percent (21,735 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)

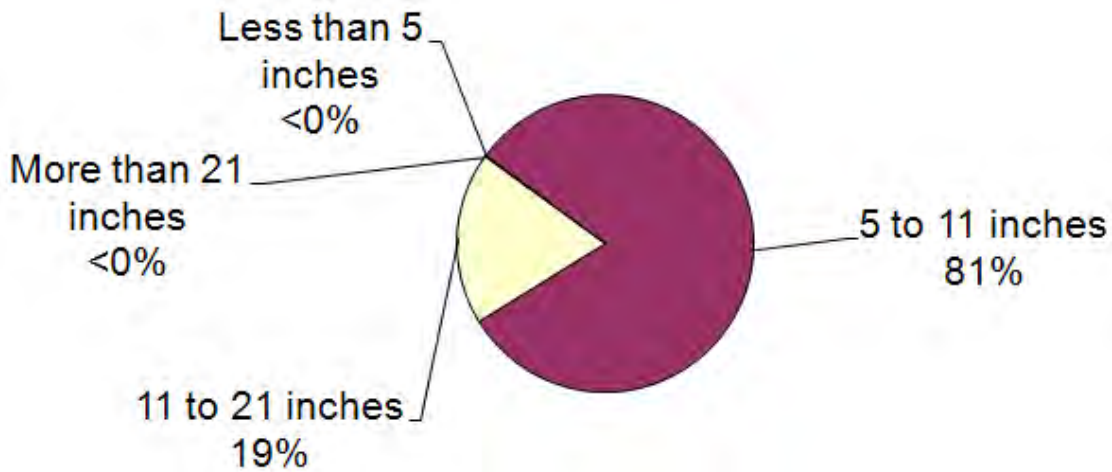
Economic area and county of operation	Total	Diameter in inches			
		Less than 5	5 to 11	11 to 21	21 or more
State total	31,804	36	25,789	5,978	1

Table 63 shows the total volume of logs that were processed with and without treatment. For instance, the ratio of treated to untreated logs was about four to one (7,500 mbf to 30,096 mbf).

Table 63 Post, pole, and piling mills' production
(thousand board feet, Scribner scale)

Total	Untreated	Treated
37,596	7,500	30,096

Graph 25 Post, pole, and piling logs by diameter





Debarked poles stacked at PLS PoleYard in Rochester. Photo: DNR/Dorian Smith

Log Chipping

Table 64	Number of chipping operations—by capacity and operating days	96
Table 65	Log consumption by log chipping mills—by diameter in inches	96
Table 66	Log consumption by log chipping mills—by original owners	96
Table 67	Log consumption by log chipping mills—by species	97
Table 68	Chip production—by economic area	97
Graph 26	Tree species consumed by chipping mills	98
Graph 27	Chipping log diameters (in inches)	98

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

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	603	242
Olympic Peninsula	5	1,940	218
Lower Columbia	4	2,450	240
Others*	4	1,392	209
State Total	16	6,385	224

Table 65 shows the volume of logs used by chipping mills by diameter in inches. For instance, a total of 73,372 mbf of logs (about 20%) 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	45,426	14,983	19,676	6,754	4,013
Olympic Peninsula	108,666	19,133	56,600	20,567	12,367
Lower Columbia	128,512	25,761	77,743	15,857	9,151
Others*	79,055	13,495	18,627	32,807	14,126
State total	361,659	73,372	172,646	75,984	39,656

Table 66 shows the volume of logs consumed by chipping mills by the logs' original owners. For instance, about 15 percent of the logs that were consumed by the state's chipping mills came from state lands, 53,666 mbf out of a total of 361,659 mbf.

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

Economic area of operation	All owners	State	National Forest	Bureau of Land Mgt	Other public	Forest sector		Native American	Farmer and misc. private
						Own wood supply	Other wood supply		
Olympic Peninsula	108,666	18,187	9,320	0	0	20,533	45,533	5,920	9,173
Others*	252,993	35,479	7,050	162	533	323	164,590	3,450	41,405
State Total	361,659	53,666	16,369	162	533	20,856	210,123	9,370	50,579

Table 67 shows species of logs consumed by log chipping mills. For instance, more than half (54%) of the red alder logs consumed by chipping mills were harvested in the Lower Columbia Economic Area.

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	45,426	13,226	21,013	0	0	0	0	267	0	8,633	2,287
Olympic Peninsula	108,666	45,300	43,166	0	1,167	0	0	0	0	19,033	0
Lower Columbia	128,512	56,867	37,242	1,726	0	0	0	0	0	32,677	0
Others*	79,055	9,143	1,744	57,133	162	5,795	4,918	0	162	0	0
State Total	361,659	124,536	103,165	58,859	1,328	5,795	4,918	267	162	60,343	2,287

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

Table 68 Chip production—by economic area

(bone dry tons)

Economic area	Chip production
Puget Sound	166,351
Lower Columbia	545,910
Olympic Peninsula	407,000
Others*	573,351
State total	1,473,637

Table 68 shows the total production of chips by log chipping mills by economic area. For instance, chipping mills statewide produced 1,473,637 tons of chips in 2008.

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



Photo: Michael Smith

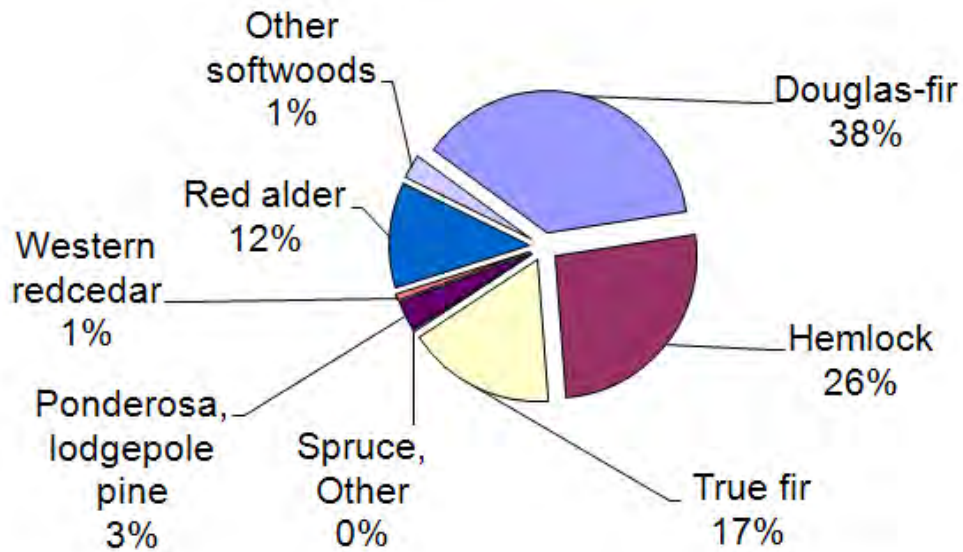


Wood chips (above) have been widely used on farms (animal bedding, horse corrals) and homes (garden landscaping) or converted to wood pellets as a commercial heating fuel (left). At left is the Coeur d'Alene Fiber Fuel, Inc. wood pellet plant in Hauser, Idaho. The company also operates pellet plants in Omak and Shelton. Future uses of wood chips may include manufacturing alternative fuels such as ethanol.

Photo courtesy of Coeur d' Alene Fiber Fuels, Inc.

Graph 26

Tree species consumed by chipping mills



Graph 27

Chipping log diameters (in inches)

