1984 WASHINGTON MILL SURVEY

WOOD CONSUMPTION AND MILL CHARACTERISTICS

SERIES REPORT NO. 9

1986

by
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Acknowledgments

We appreciate the support of the major forest industry associations, individual mill owners, operators and exporters who provided data for this survey.

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Foreword

This report presents comprehensive statistics on wood consumption and the characteristics of primary wood processing mills[1] operating in Washington during calendar year 1984. It documents the findings of the ninth biennial survey about mill characteristics, wood flows, and the input of raw materials into the state's six wood-using industries:

- o sawmills
- o veneer and plywood mills
- o pulp mills
- o pole, post and piling mills
- o shake and shingle mills
- o log export operations

The 1984 statistics were obtained from a mail survey. Telephone followup was conducted in 1985. Firms contacted were based on an up-to-date mailing list.

Since this survey was a 100 percent canvas, no sampling error is involved.

However, in a few cases data had to be estimated based on extrapolations from previous reports. Log imports to Washington from British Columbia Crown lands are included in the out-of-state national forest category. In total, this report provides the best and most reliable estimate of the status of wood-using industries in Washington as of 1984.

Information about individual mills or companies is confidential. Data that might reveal individual mill identity have been combined with other data to avoid disclosure.

Though not a major objective of this survey, production data were obtained to provide information on wood requirements for given levels of production and to generate residue volumes.

The text highlights some statistics presented in the tables. It also provides a summary of the 1984 timber economy, as well as recent trend information. Residue, commodity production, and wood consumption information can aid in tracking production and consumption trends.

[1]Mills that use roundwood or are the original firm to process the raw material.

Abbreviations

bf	= board feet
M	= thousand
Mbf	= thousand board feet Scribner
MMbf	= million board feet Scribner
sf	= square feet
Msf	= thousand square feet 3/8-inch basis
MMsf	= million square feet 3/8-inch basis
Square	= hundred square feet
M sq.	= thousand squares

Report Preface
Comparison of Past Years

This section graphically compares data developed from the 1974, 1976, 1978, 1980, 1982 and 1984 surveys.

Number of Mills Included in the Surveys*

	1974	1976	1978	1980	1982	1984
Sawmills	187	175	182	208	169	150
Veneer and plywood	37	36	36	34	27	28
Pulp	25	26	26	23	21	20
Shake and shingle	205	252	337	267	195	131
Pole, post, and piling	23	22	23	21	13	11
Log export	90	81	160	134	124	102
Totals	567	592	764	687	549	442

* Only primary wood processing mills that operated during the survey year are included.

Trends

- The total number of operations in the forest products industry decreased 19.5 percent from 1982 to 1984. By percent, the pole, post, and piling sector declined 15.4; shake and shingle decreased 32.8; veneer and plywood increased 3.7; and sawmills decreased 11.2. All sectors declined except veneer and plywood.

- The lumber sector has shown a marked 22 percent increase in roundwood consumption from 1982 to 1984.

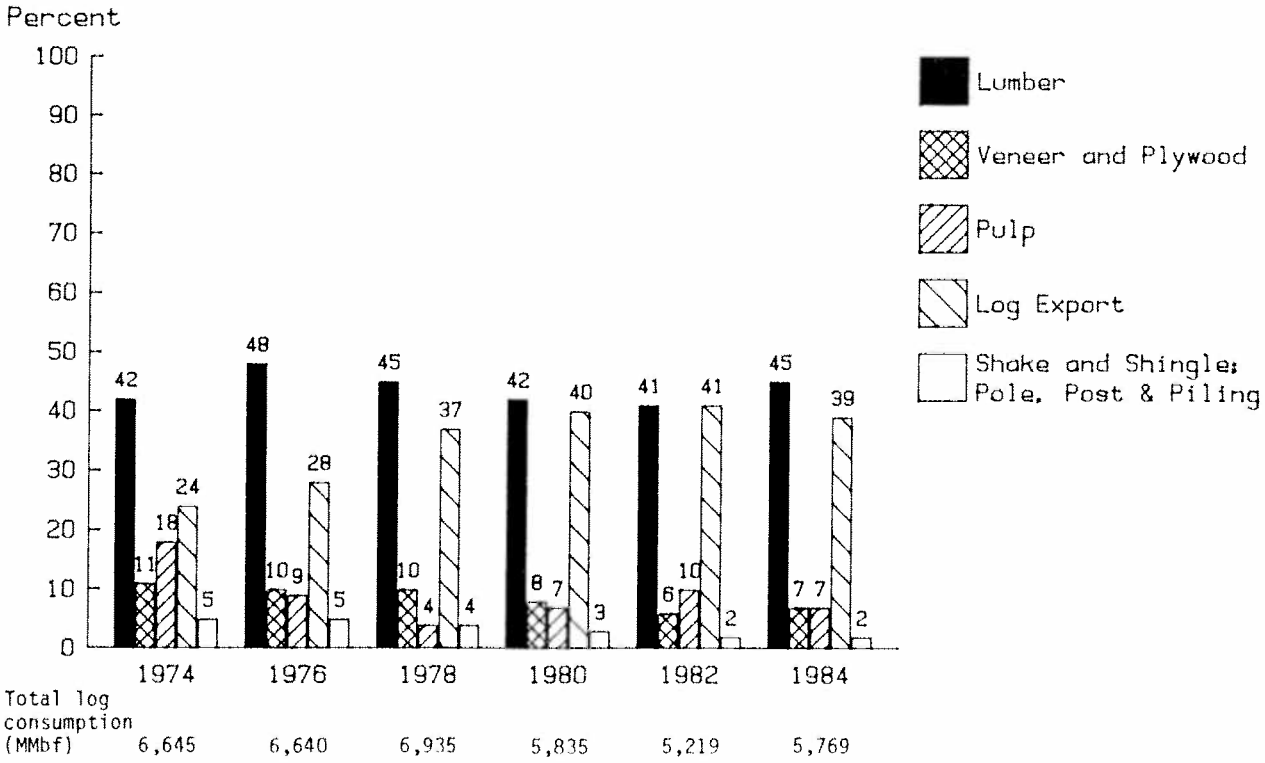
- The log export sector share of total log consumption declined from 41 percent in 1982 to 39 percent in 1984. However, log export volume increased from 2.1 in 1982 to 2.3 billion board feet Scribner in 1984 (a 9.5 percent increase).

- Douglas fir accounted for 46 percent of the harvest volume in 1984, the same as in 1982. However, Douglas fir declined as a percent of log export log consumption from 56 to 48 percent of the volume exported from 1982 to 1984.

- Those mills more than two-thirds dependent on a single ownership class for log supply decreased from 346 in 1982 to 272 in 1984. Mills more than two-thirds dependent on public ownership decreased 1 percent; private ownership decreased 28 percent. However, the percent of all operating mills more than two-thirds dependent on a single-owner class only declined from 63 percent in 1982 to 62 percent in 1984.

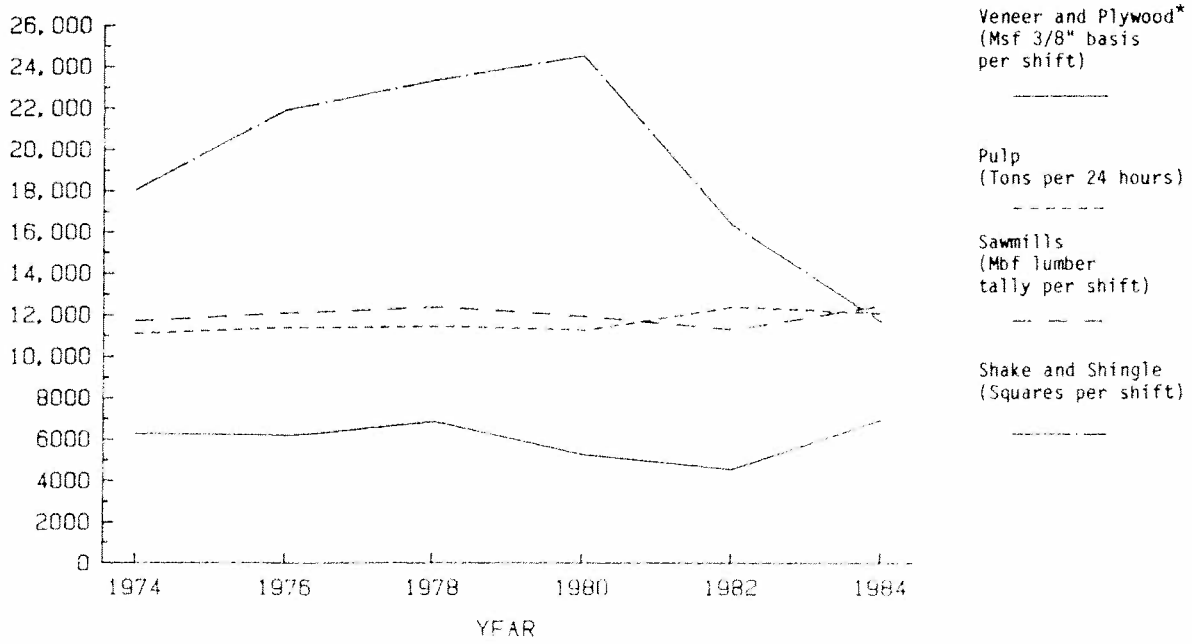
- The percent of wood and bark residues being used increased and reached 98 percent in 1984. The increase from 1982 was 1 percent. The lumber sector increased use slightly to 98.4 percent. The veneer and plywood sector use level slightly exceeded 99.8 percent. The shake and shingle industry lags substantially with the use of residues at the 59 percent level.

Total log consumption by year and industry



Total log consumption (MMbf)	1974	1976	1978	1980	1982	1984
	6,645	6,640	6,935	5,835	5,219	5,769

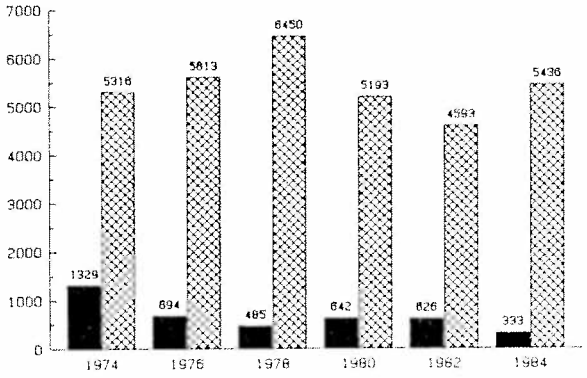
Installed shift capacity



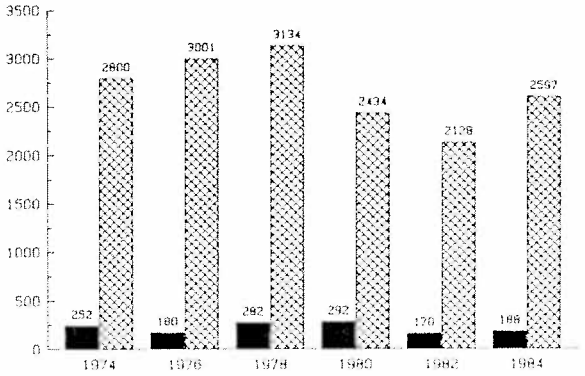
*Capacity includes total capacity for veneer-only and layup-only operations, but for veneer and layup plants it only includes the layup capacity.

Roundwood consumption of sound and utility logs (Million board feet Scribner)

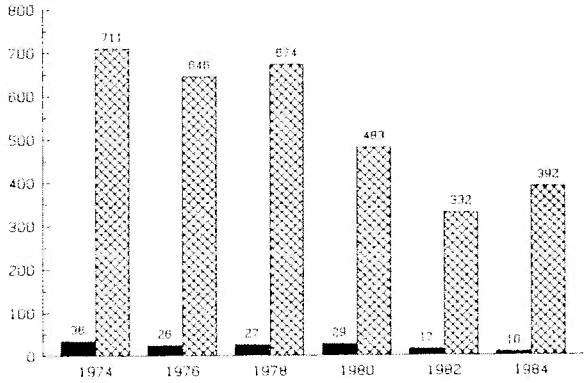
State Total



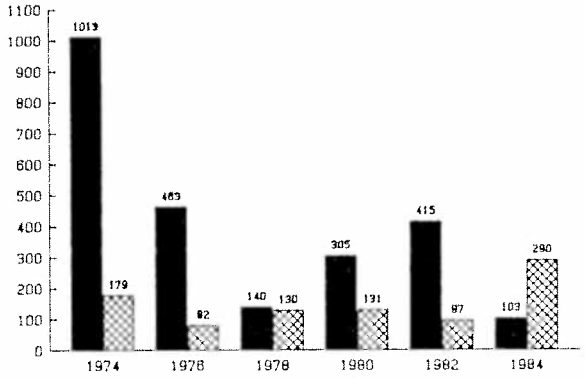
Lumber



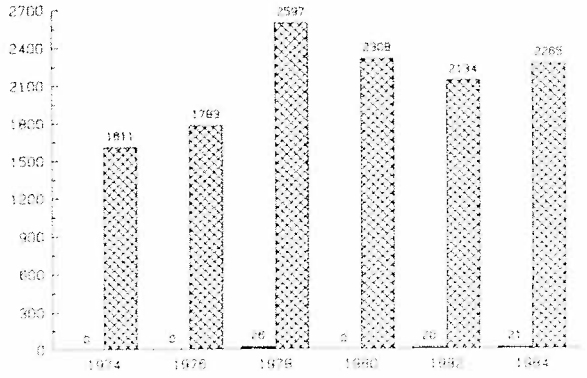
Veneer and Plywood



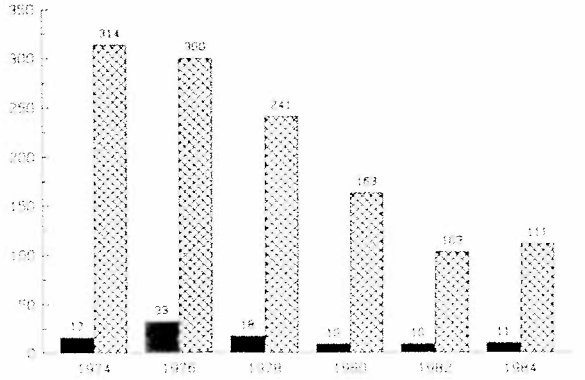
Pulp



Log Export



Shake and Shingle; Pole, Post and Piling

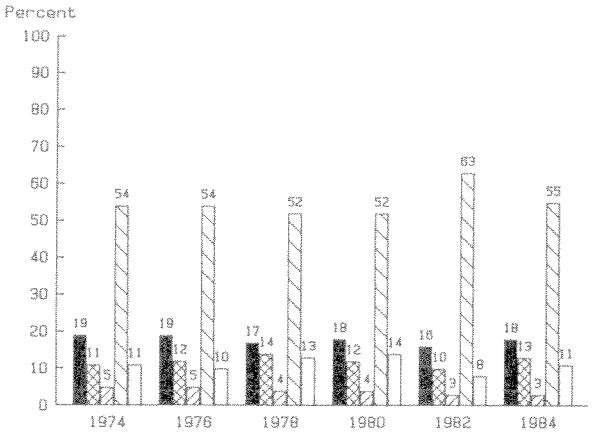


Utility Logs Sound Logs

NOTE: Scale for height of bar is different for each industry. Hence visual comparison among the different industries is not valid.

Log consumption by ownership class

State Total



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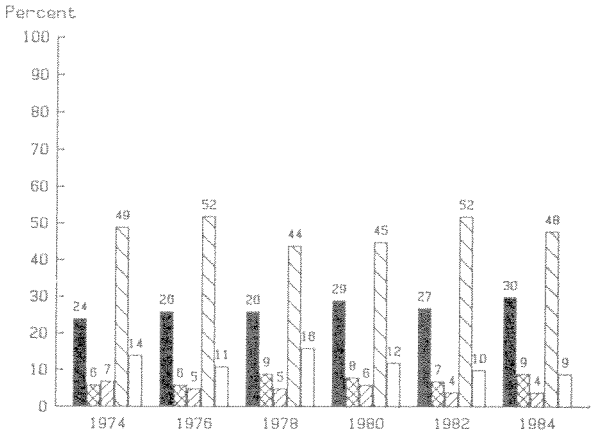
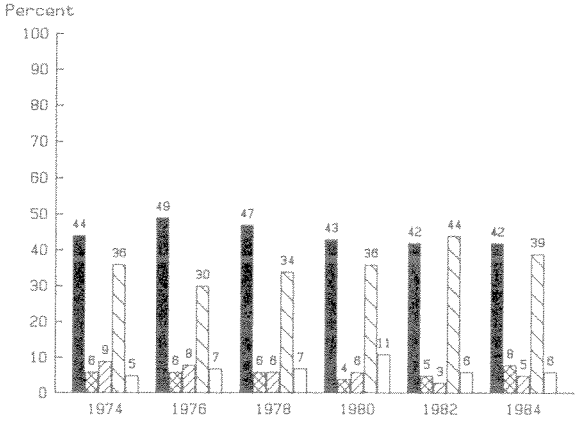
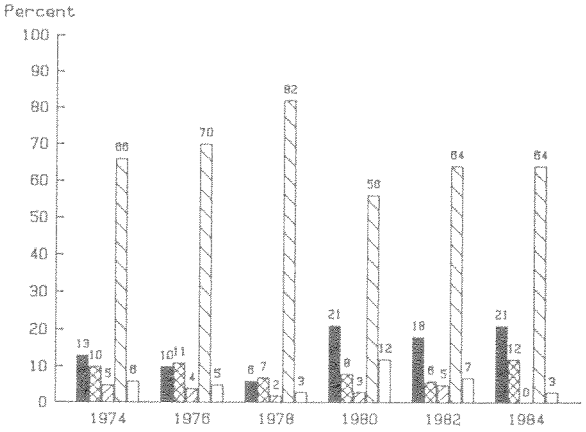


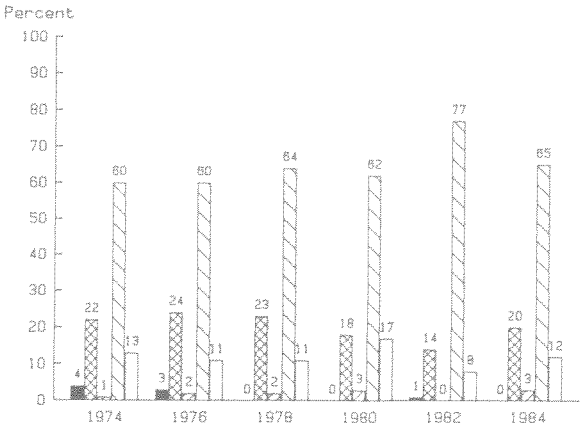
Veneer and Plywood



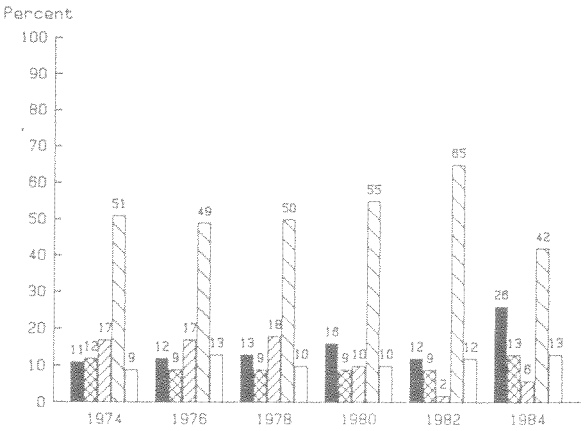
Pulp



Log Export



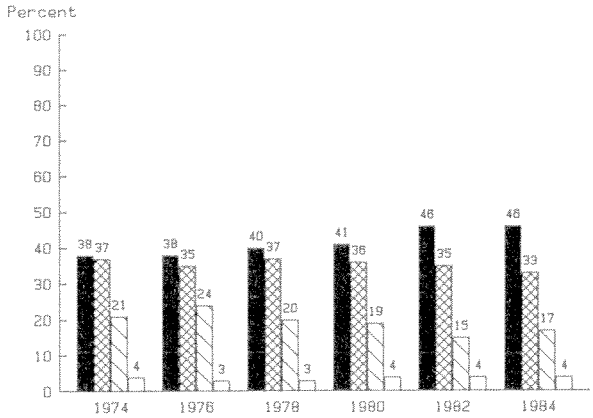
Shake and Shingle; Pole, Post and Piling



National Forest | State | Other Public | Forest Industry | Farmer and Misc. Private

Log consumption by species

State Total



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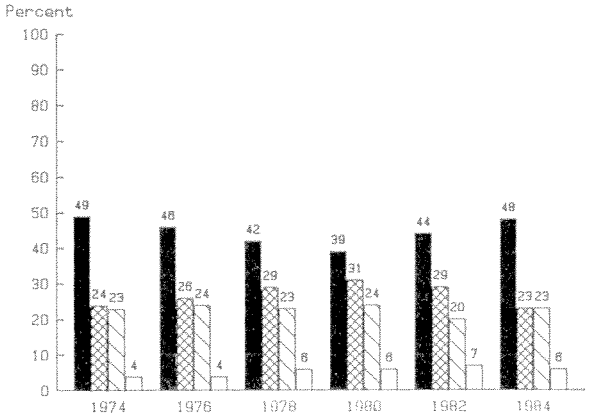
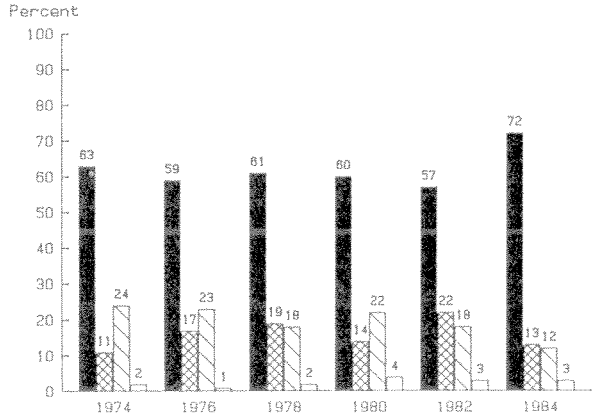
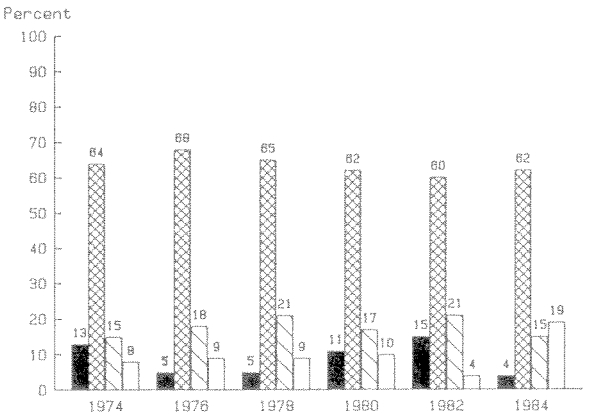


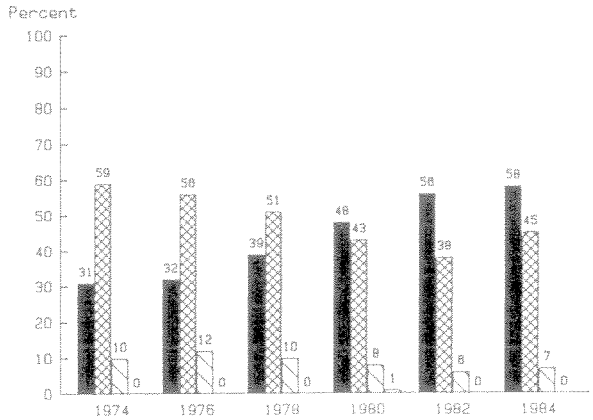
Veneer and Plywood



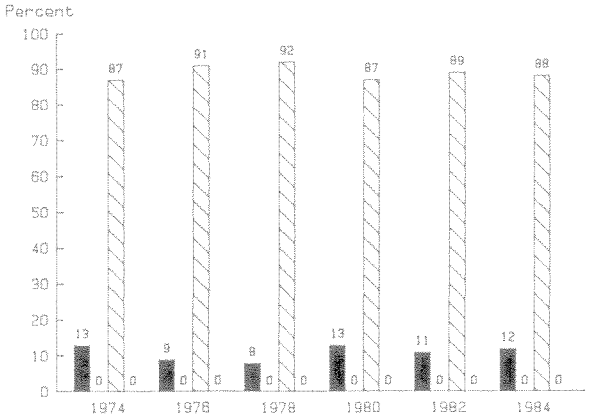
Pulp



Log Export

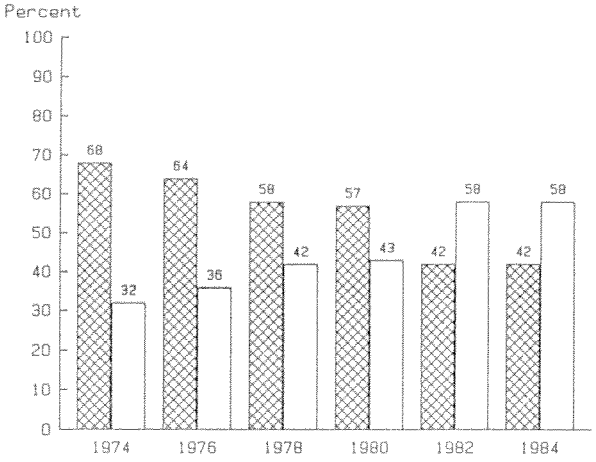


Shake and Shingle; Pole, Post and Piling



Log consumption by timber age group

State Total



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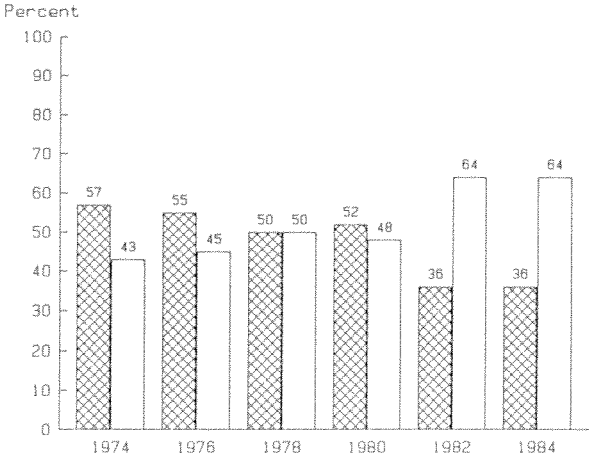
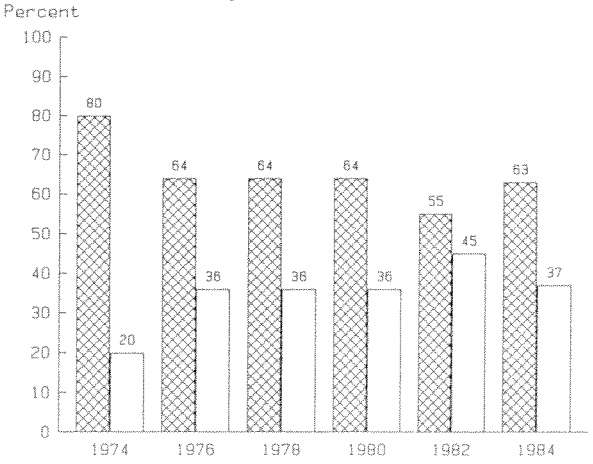
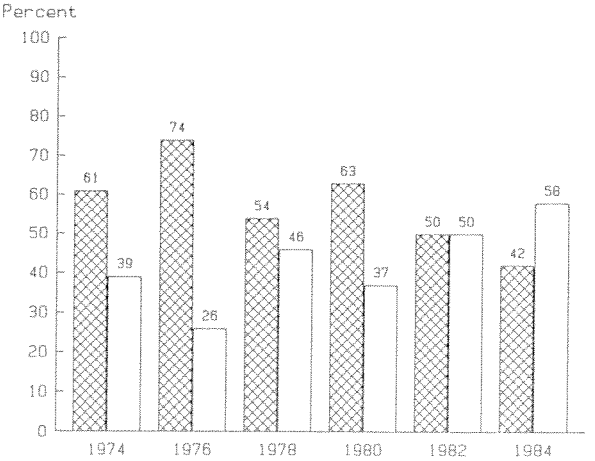


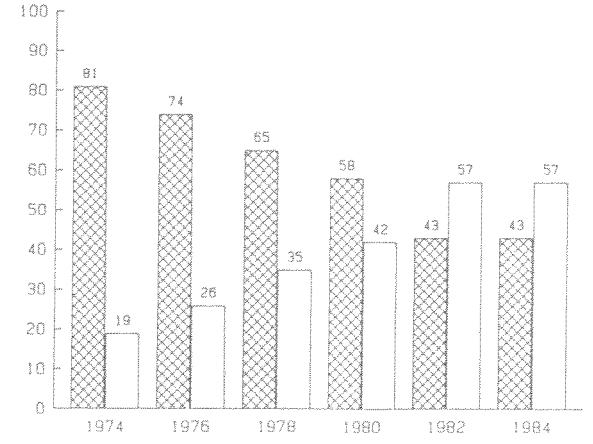
Veneer and Plywood



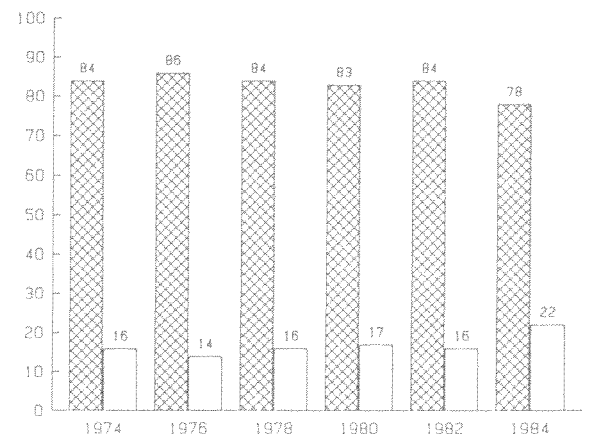
Pulp



Log Export



Shake and Shingle; Pole, Post and Piling

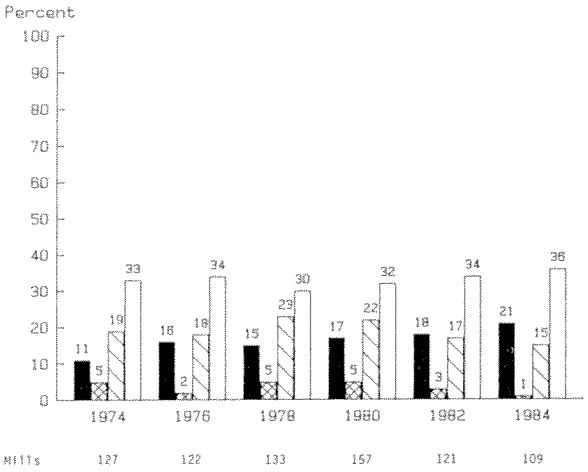


Old Growth (100+ Years)

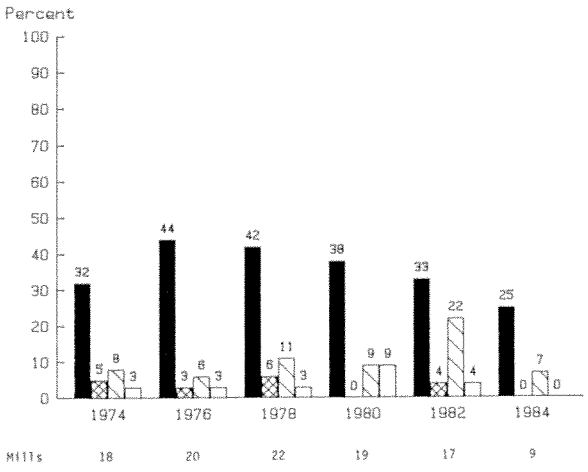
Young Growth (Less than 100 yrs.)

Number of and percent of mills more than two-thirds dependent on a single ownership class for logs

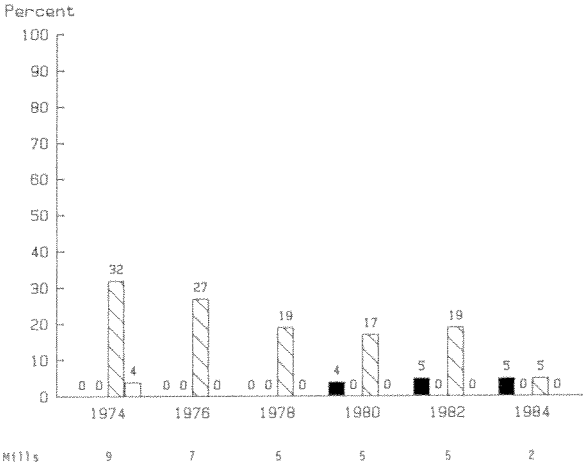
Lumber



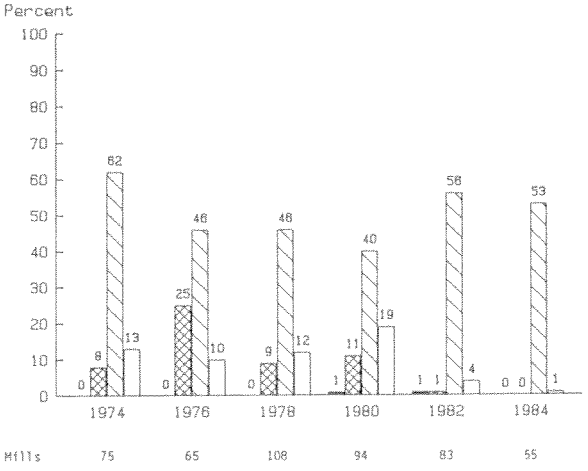
Veneer and Plywood



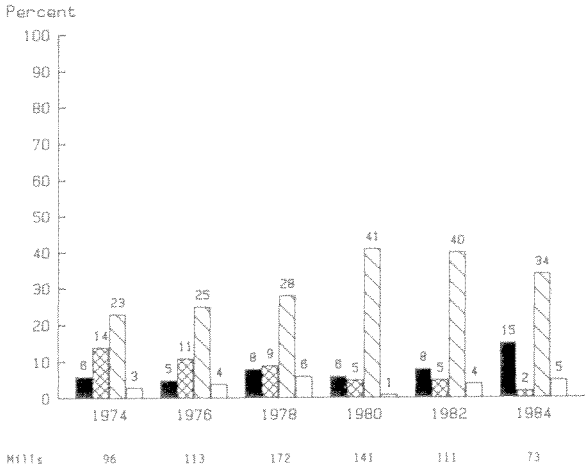
Pulp



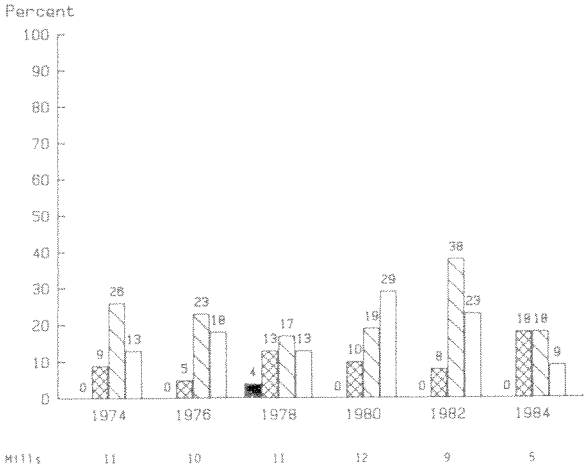
Log Export



Shake and Shingle



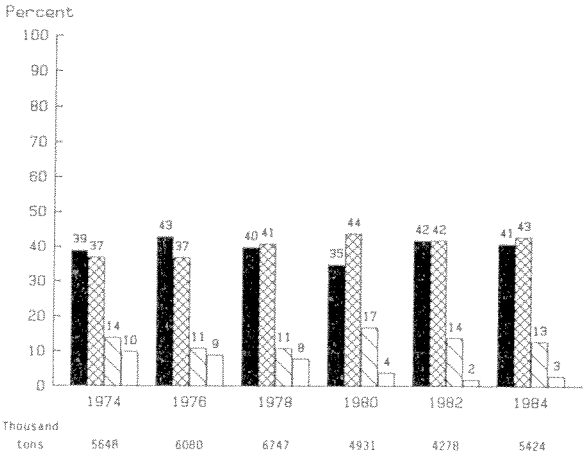
Pole, Post and Piling



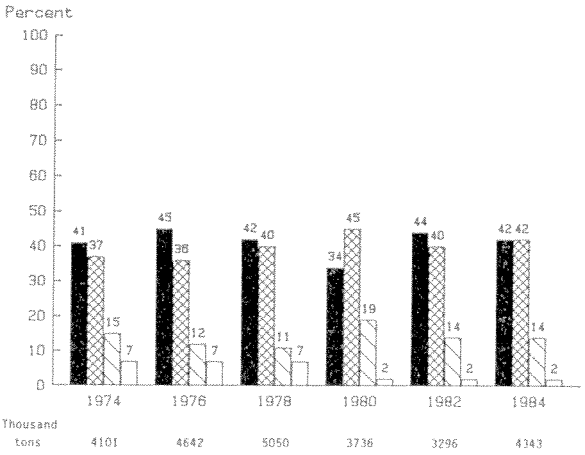
National Forest | State and Other Public | Forest Industry | Farmer and Misc. Private

Production and disposition of wood and bark residue

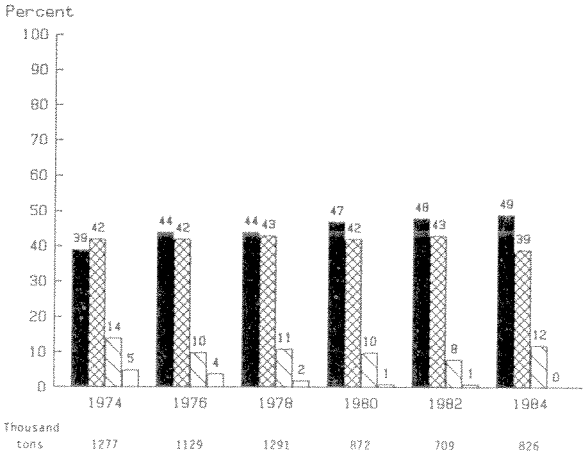
State Total



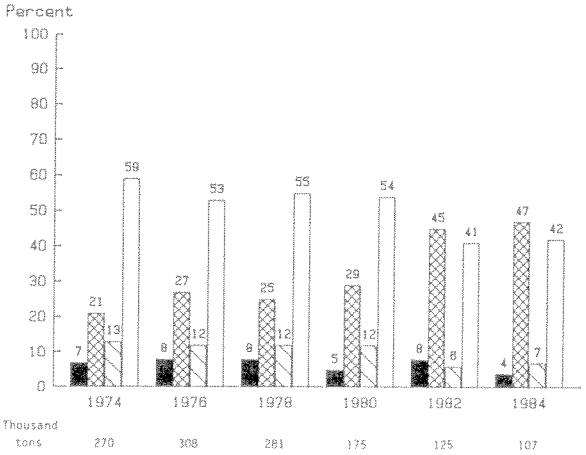
Lumber



Veneer and Plywood



Shake and Shingle



Pulp and Board Fuel Other Uses Unused

1984 Highlights

Mills operating in Washington in 1984 totaled 442. Analysis of single-shift capacity and number of mills type shows:

442 mills total:

Type of mill	Number of mills	Single shift capacity
Sawmills	150	12.4 MMbf
Veneer & plywood	28	4.5 MMsf (3/8" basis)
Pulp	20	12.0 M Tons (Daily)
Log Export	102	NA
Shake & Shingle	131	11.6 M Sq.
Pole, Post and Piling	11	34.9 MMbf (Peeling-Yearly)

- o Grays Harbor county led with 75 operations.
- o The 45 largest sawmills (Class A) had 72 percent of the total eight-hour shift sawmilling capacity.

Wood Consumption

- o 5.8 billion board feet of roundwood logs were consumed.
- o 37 million board feet (log scale) of peeler cores, cants, blocks, bolts, and miscellaneous peeled products were consumed.
- o 6.8 million tons of chips, sawdust and shavings were consumed by the pulp industry.

Leading counties in roundwood use were:

Grays Harbor, Jefferson and Mason**	1,076 MMbf
Cowlitz	968 MMbf
Pierce	620 MMbf
Snohomish	614 MMbf

**Combined to avoid disclosure

* The term "mill" is used in this report for all types of primary processing plants. It is recognized that some are better described by other terms, such as export operations or facilities, and pole and piling yards.

Roundwood use by industry:

Sawmills	45 %
Log export	39 %
Pulp & board	7 %
Veneer & plywood	7 %
Shake & shingle	2 %
Pole, post & piling	<.5 %

- o 91 percent of total wood used by the pulp sector was in the form of chips, sawdust, shavings, and waste paper.
- o 94 percent of all log volume used was from sound timber.
- o 46 percent of roundwood volume was Douglas fir; 33 percent hemlock; and 5 percent western red cedar.
- o 5 percent of all log volume was imported; 87 percent came from Oregon.
- o 55 percent of log volume came from forest-industry timberlands; 18 percent from National Forests; 13 percent from state.
- o 68 percent of national forest log volume statewide came from combined harvests in the Gifford Pinchot, Olympic, and Mt. Baker-Snoqualmie National Forests; 30 percent from the Gifford Pinchot; 18 percent from the Olympic; and 20 percent from the Mt. Baker-Snoqualmie.

Residues

5.4 million tons of wood and bark residues were generated:

Type of mill	Percent	Million tons
Sawmills	80	4.3
Veneer & plywood	15	0.8
Shake & shingle & other	5	0.3

- o 76 percent of residue was wood; 24 percent was bark. Ninety-eight percent of wood residues

and 98 percent of the bark were used. Unused were 114,446 tons of wood and bark.

- 54 percent of wood residue went to the pulp sector; 33 percent to fuel; 11 percent other uses; 2 percent was unused.

Table number cross index
(Between the nine Washington mill survey reports[1])
report year and table number

1984, 1982, 1980, and 1978	1976	1974	1972 and 1970	1968
1	1	1	1	1*
2	2,26*,76*	2,25,74*	2,24,72*	2*,23,67*
3	3	3	3	3*
4	4	4	4	4
5	5	5	81	--
6	6	6,47,60,72	4,45,58,70	5,42,55,66
7	7,61,77*	7,59,70	6,57,68	19,41,54,64
8	8,76*	8,74*,75	7,72*,73	6*,67*
9	9	9	8	7
10	10,60	18,44,58,69*	17,42,56,67*	16,39,53,63*
11	11	10	9	8
12	12	11	10	9
13	13	12	11	10
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35	36	35	--	--
36	37	36	34	31
37	38	37	35	32
38	39	38	36	34
39	40	39	37	35
40	41	40	38	33

1984 and 1982	1980 and 1978	1976	1974	1972 and 1970	1968
41	41	42	41	39	36
42	42	43	42	40	37
--	43	44	43	41	38
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51	57	59	57	55*	52*
52	58	62	61	59	56
53	59	63	62	60	--
54	60	64	63,64,67	61,62,65	57,58,61
55	61	65	65*	63*	59*
56	62	66	66	64	60
57	63	67	68	66	62
58	64	68	71*	69*	65*
59	65	69	78	76	69
60	66	70	79	77	70
61	67	71	80	78	71
62	68	72	81*	79*	--
63	69	73	63,64,67	61,62,65	57,61
64	70	74	66	64	60
65	71	75	65*	63*	59*
66	--	--	--	--	--
67	72	78	81	79	--
68	73	79	68*	66*	62*
69	74	80	66	64	60
70	75	81	--	--	--
71	76	82	73*	71*	68*
72	77	7*	70*	68*	64*
--	--	--	76	74	--
--	--	--	77	75	--
--	--	--	82	80	72

[1]Base year 1984

*Contains part of same information

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Industry Overview

The Timber Economy

The Washington timber economy continued to adapt to challenging economic conditions during 1984. Unexpected lower inflation rates and lower product demands affected stumpage contracts. Also, the U.S. dollar was relatively strong internationally, resulting in higher levels of forest product imports. Yet, the state remained one of the leading timber industry states, producing 12.7 percent of the nation's softwood lumber, 7 percent of the nation's softwood plywood, and providing 68 percent of the nation's softwood log exports.

Housing starts are often used as an indicator of the timber industry's general health. In 1984 there were 1.7 million housing starts nationally, compared to 1.1 million in 1982. Although this was a respectable number, there were difficulties in the Washington timber industry. Many companies were faced with disposing stumpage purchased during the double-digit inflation period of 1979-80. It was not profitable to harvest high-priced stumpage in the 1984 market environment. While negotiations to resolve the issues were taking place between the public managers and stumpage contract owners, bankruptcies resulted for some contract owners.

To illustrate the change, the average stumpage price of timber sold on publicly owned or managed lands in Western Washington plummeted from $238 per thousand board feet in 1980 to $79 in 1984.[1] Most firms lowered manufacturing costs. In some instances, wage rates were renegotiated to lower levels. Others used profit-sharing to increase output per unit of input. Plant modernization and product market specialization were other strategies used to remain profitable in the competitive environment of 1984. To survive meant innovation.

Imports of lumber from Canada to the United States increased substantially over the past decade, going from 5.5 billion board feet in 1975 to 11.6 billion board feet in 1983 and to a record high of 12.9 billion board feet in 1984.[2] The strength of the U.S. dollar relative to the Canadian dollar has been a contributing factor to the changing competitive environment in recent years.

There have been substantial changes in Washington forest products production from 1982 to 1984.[3]

- o Plywood production up 32 percent to 1.54 billion square feet, 3/8-inch basis.
- o Softwood lumber production up 29 percent to 3.93 billion board feet.
- o Log export shipments up 7 percent cent to 2.31 billion board feet.
- o Chip export shipments down 35 percent to 0.25 million cords.
- o Pulpwood consumption up 23 percent to 6.24 million cords.

Consider 1984 production levels relative to production high levels experienced during the past ten years:

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[1] USDA Forest Service Resource Bulletin PNW-127, October 1985. Production, Prices, Employment, and Trade in Northwest Forest Industries, Second Quarter 1985. Table 49.

[2] Washington State Department of Natural Resources. A Review of Washington Forest Industries 1984. Table 2.

[3] Production figures beyond this tabulation are based on survey results and not adjusted to Bureau of Census data.

- Plywood production was 26 percent below 1978 output.
- Softwood lumber production was 5.2 percent below the 1978 banner year production of 4.15 billion board feet.
- Wood chip exports were about one-third of the volume exported in 1976.
- Pulpwood consumption was 1 percent below the 1980 consumption volume.

Despite increased product production during the 1982-84 period, employment[4] in the lumber and wood products sector (SIC 24) only increased 2.5 percent, going from 39.4 to 40.4 thousand employees. Employment in the pulp and paper industry (SIC 26) was relatively static, declining slightly from 16.1 to 16.0 thousand. Total employment in the Washington forest products industry has been trending downward, going from 71.7 thousand in 1977 to 56.4 thousand in 1984. This is approximately a 20 percent decline during this seven-year period. Nationally, Washington accounted for 5.3 percent of the forest products employment in 1977 but only 4.1 percent in 1984. This is a reflection of the interregional adjustments that are occurring as product mix and productivity adjustments are made.

Washington's total timber harvest (Figure 1) for 1984 was 5.8 billion board feet, down 4.7 percent from the 1983 level, but 14 percent higher than the 1982 harvest level.[5] However, this harvest level is still considerably below the peak timber harvest of 7.8 billion board feet which occurred in 1973.

Total wood use by Washington mills is shown in Figure 2. In developing this graph, final units of production were converted to log equivalents, Scribner scale. The pulp residue volume consumed does not represent additional timber harvest but is the use of by-products primarily from the lumber and veneer and plywood sectors. The pole, post, and piling sector is not shown due to graphics limitations. This sector only consumed 20 million board feet (a fraction of 1 percent of all roundwood consumed). However, it is a sector which produces high value specialty products and is an important part of the Washington forest products industry.

[4]Employment and wage data reported to the Employment Security Department on quarterly tax reports by employers subject to the Washington Employment Security Act. Timber industry employment (SIC 24 and 26) does not include some segments, such as longshore workers or truckers, not entirely attributable to the timber industry.

[5]Washington State Department of Natural Resources. 1984 Timber Harvest Report.

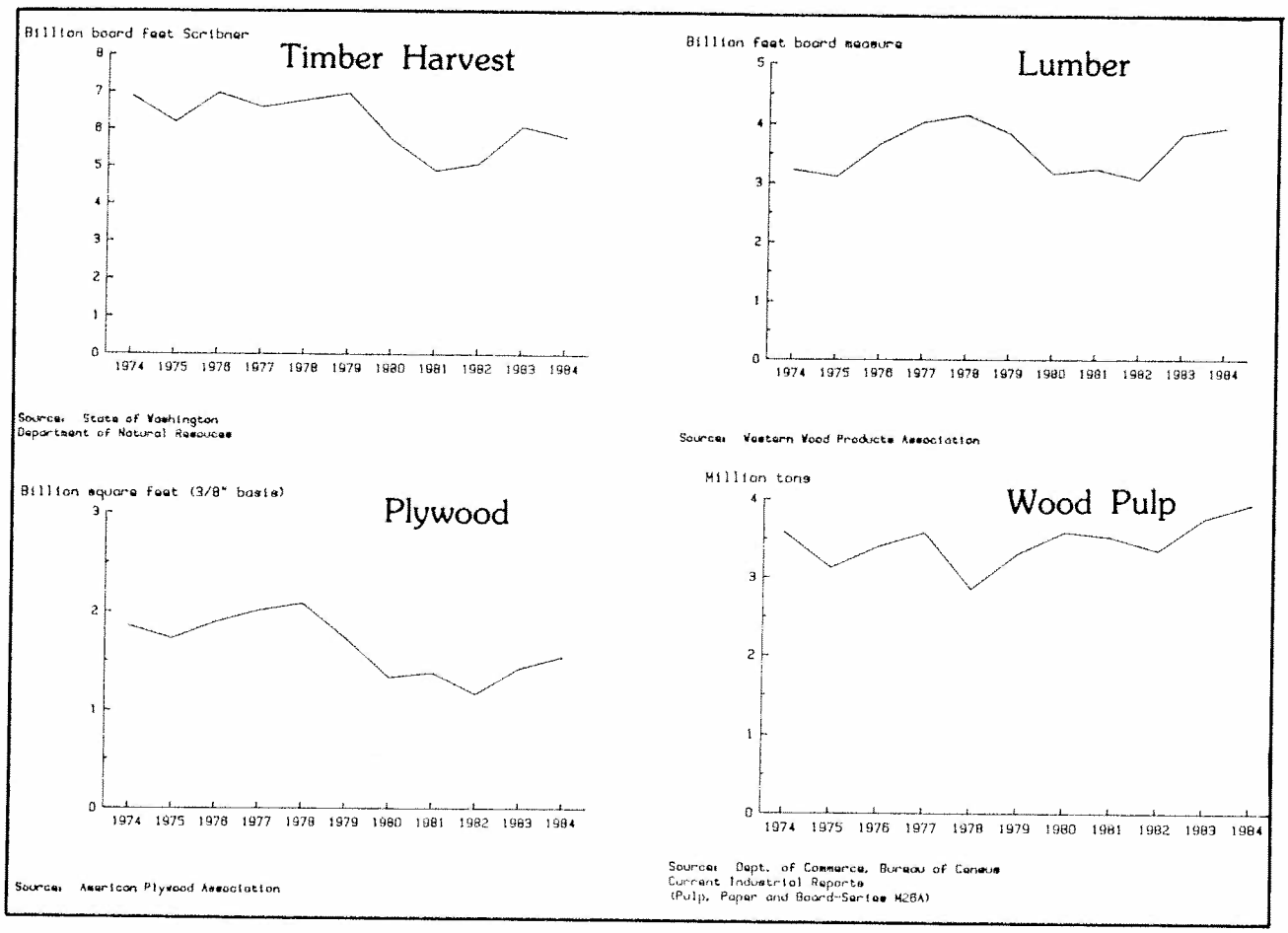
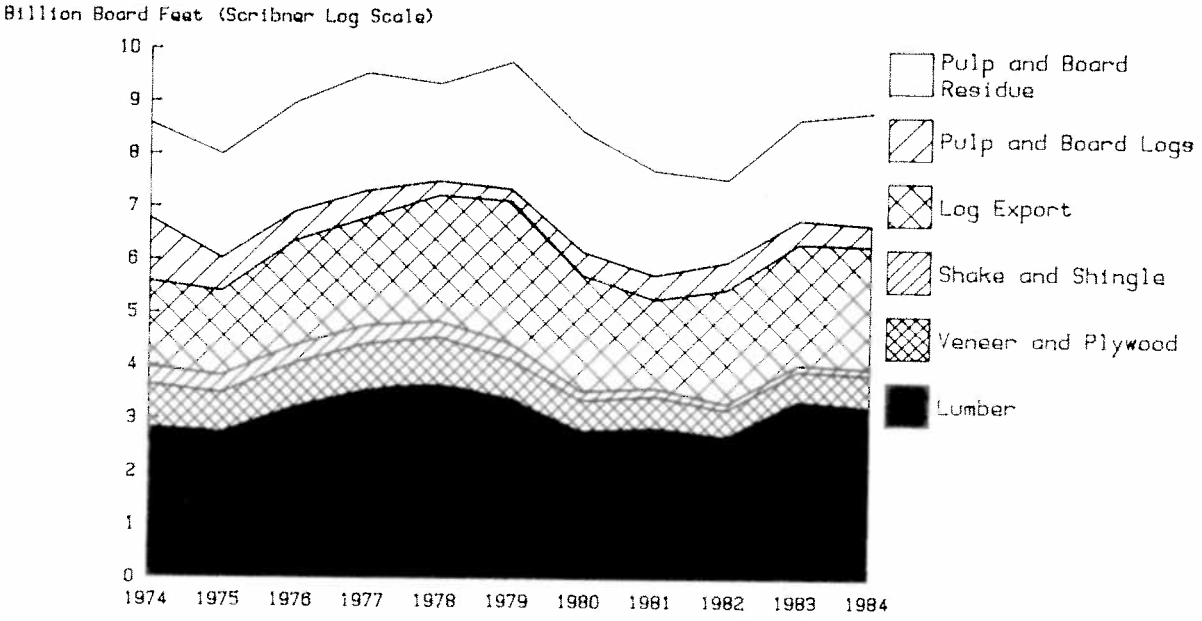
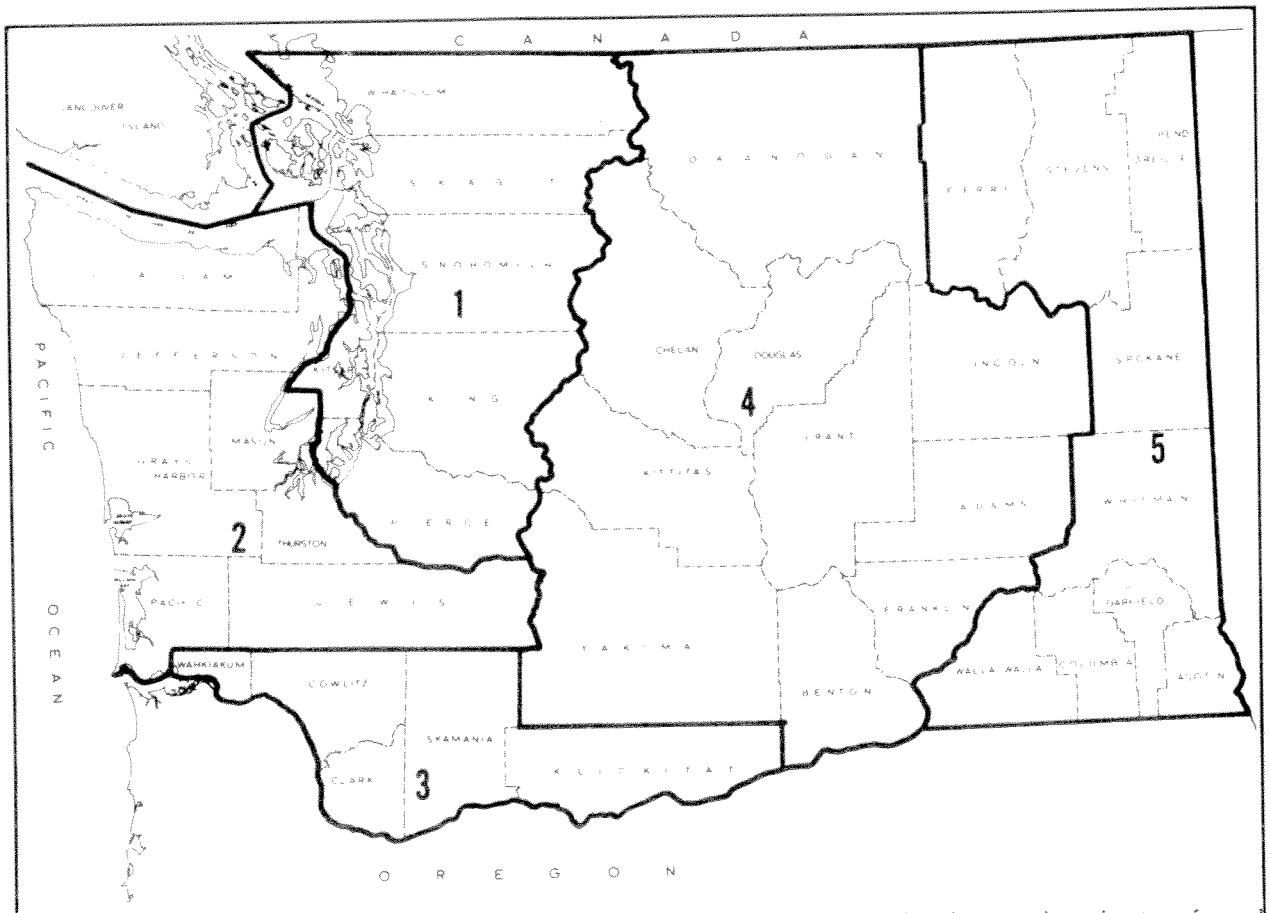


Figure 1 Output of major timber products for Washington



* Pole, post and piling industry volume is not shown because it is less than 100 million board feet

Figure 2 Washington wood use by major forest industries (Converted to log equivalent of final product)



The five Economic Areas used in this report to show regional consumption of wood and regional production of wood products are: (1) Puget Sound, (2) Olympic Peninsula, (3) Lower Columbia, (4) Central Washington and (5) Inland Empire.

Figure 3 The five Economic Areas encompassing 39 counties

Industry Characteristics

The industry is divided into six segments in this report: lumber; veneer and plywood[6]; pulp; log export; shake and shingle; and pole, post and piling. Each sector is unique in its raw material requirements, production methods, and marketing procedures. Efforts have been made to present data for each industry sector independently where data was sufficient to avoid disclosure of confidential information from individual operations. Counties which had fewer than three operations were combined with others. Economic areas are illustrated in Figure 3. In all cases data were grouped to maximize the identity of geographic origin. Where possible, these groupings have remained the same as those used in previous surveys to allow comparison. Comparisons between sectors and economic areas can quickly be obtained by using Tables 1-10.

[6]The veneer and plywood industry consists mainly of mills producing softwood veneer and plywood. A few of these mills do use relatively small volumes of local hardwoods.

Wood Consumption

During 1984, Washington's primary forest products industries consumed about 5.8 billion board feet of logs,[7] 37 million board feet of other wood and 6.8 million tons of chips and wood residue. Sound logs comprised 94 percent of the total roundwood. Export accounted for 41 percent of sound log use; sawmills consumed 44 percent. Utility and cull logs accounted for 6 percent of total roundwood with the sawmill industry consuming 57 percent of these materials. Figure 4 illustrates the total log consumption by industry sector.

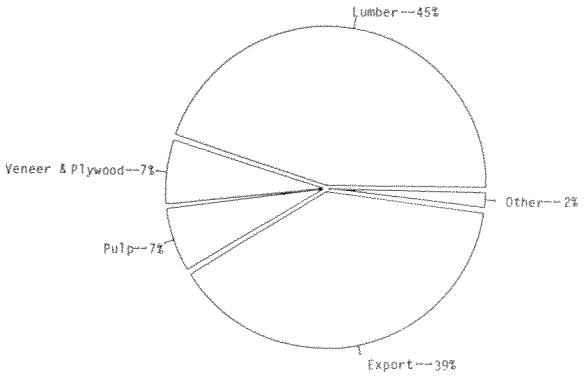


Figure 4 Log consumption by type of industry

The 6.8 million tons of chips and residues consumed by the pulp industry consisted of mill residues and material from roundwood chipping plants as well as other fiber residues. This volume is equivalent to 3.4 billion board feet of roundwood logs. Total wood consumption by the forest products industry can be expressed as the equivalent of 9.2 billion board feet (Scribner) for 1984. Most of the chips were by-products of manufacturing operations.

The forest products industries relied on several ownerships for log supplies. Yet, over 55 percent of industry consumption (including log export) was met from forest industry lands. This, despite, the forest industry owning 26 percent of commercial forest lands in the state. It reflects, in part, the bidding for stumpage on public lands in 1979 and 1980. Owners of high bid sales found that it was not economical to log these sales in 1984. Some sales defaulted because harvest was not profitable.

Ownership		Log supply
		(Percent)
State		13
National Forest		18
Bureau of Land Management		*
Other public		3
Total Public		34
Forest Industry	Own wood supply	24
	Other wood supply	31
Farmer & Misc. private		11
Total private		66
All owners		100

* Less than 0.5 percent.

Log flows measured from national forests:

National Forest	National Forest log flow
	(Percent)
Gifford Pinchot	30
Mt. Baker-Snoqualmie	20
Olympic	18
Wenatchee	12
Colville	9
Other	11
All National Forests	100

[7] Scribner log rule was used to express board foot volume of logs. In some cases, it has been used to provide a board foot equivalent for chips, cordwood and other materials commonly measured in units, tons, pieces, etc.

Dependence for timber supply by ownership class is expressed by summing individual mills that obtain more than two-thirds of their logs from a single ownership class. Percents are taken as a share of 442 mills in the state.

Ownership	Mills over two-thirds dependent	
	(Number)	(Percent)
State	19	4.3
National Forest	58	13.1
Bureau of Land Management	1	0.2
Other public	4	0.9
Total public	82	18.5
Forest Industry Own wood supply	20	4.5
Forest Industry Other wood supply	107	24.2
Farmer & Misc. private	63	14.3
Total private	190	43.0
All owners	272	61.5

At the state level, Douglas fir (46 percent) and hemlock[8] (33 percent) were the dominant species consumed by the industry during 1984. In western Washington the three major species (in order of importance) were Douglas fir, hemlock and western red cedar. Douglas fir and ponderosa pine were the major species in eastern Washington.

Most segments of the industry use several species. However, four sectors tend to be species-specific. The pole, post and piling industry and the veneer and plywood industry are both 72 percent dependent on Douglas fir, the pulp industry's consumption of roundwood is 62 percent dependent on hemlock. The shake and shingle industry is almost exclusively dependent on western red cedar.

Washington supplied 95 percent of the industry's log consumption. Oregon contributed 4.2 percent, with most (83 percent of this volume) consumed in the Lower Columbia area.[9]

[8]Western hemlock and mountain hemlock have been combined under the generic designation of hemlock in this report.

[9]Although Klickitat county lies east of the Cascades, it was included in the Lower Columbia area and is considered part of western Washington for report purposes.

Residues

Production

The sawmill; veneer and plywood; shake and shingle; pole, post and piling; and export segments of the industry generated 5.4 million tons of wood and bark residues in 1984. Of this amount, the sawmill, and veneer and plywood sectors provided 95 percent of the total. Of their share, 99 percent was used.

Of all residues produced, 98 percent were used. The pulp industry took 2.2 million tons (41 percent) while fuel use accounted for nearly 2.4 million tons (43 percent) of all residues.

Use

A significant achievement of the forest products industry is the relatively high use of wood residues. Use increased from 1982 to 1984 with 2 percent unused in 1984. This is an extremely impressive achievement considering the total volume of residues was more than 25 percent higher in 1984.

Wood residue disposition	Percent
Pulp & board	54
Fuel	33
Other uses	11
Unused	2
All wood residue	100

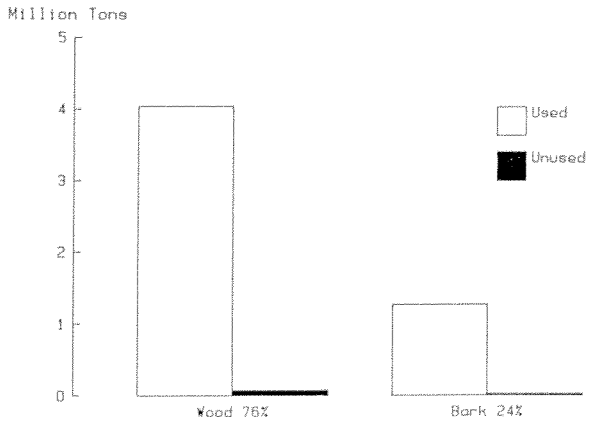


Figure 5 Relative and absolute residue volume

Wood residues are important to the pulp industry; wood volume increasing by nearly one-fourth from 1982 to 1984. This occurred despite a slight decline (56 to 54 percent) in wood residues going to the pulp industry.

Summary of 1984 Survey Results

Lumber Industry

Mill Characteristics

Primary Operation

Only sawmills that were primary processors of roundwood were included in this survey. However, data on nonroundwood consumed by these mills (peeler cores and cants) were also gathered and included (Table 18).[10]

Size-Class

Sawmills are classified by size-class based on the maximum production for a single eight-hour shift.

Mill size-class	Capacity per single 8-hour shift
	(Mbf Lumber Tally)
A	120+
B	80-119
C	40-79
D	less than 40

The 150 sawmills operating in 1984 are 19 fewer than the mills reported in 1982. The distribution of all mills by economic area, county and mill size-class is provided in Table 11. Since 1970, Snohomish county has had the most mills and continues to dominate with 18 mills. Stevens county follows with 14. Among the five economic areas, the Puget Sound area leads with 47 mills. The Olympic Peninsula is second with 44 mills. Although the statewide number of mills has decreased since 1982, single-shift capacity has risen to 12.445 million board feet representing an 11 percent increase.

[10]Tables cited in this section are in Appendix D, Report Data.

Production Capacity

The number of class D capacity mills decreased by 17; mill capacity declined by 21 percent since 1982. Class C mills lost five mills, an 18 percent decline; while capacity decreased 14 percent. Class B mills stayed the same; mill capacity declined 3 percent. Class A mills did not follow the trends of the smaller production capacity mills. Class A mills increased by 3 to 45 mills; mill capacity increased substantially by 26 percent. Class A mills account for nearly three-fourths of the single-shift production capacity.

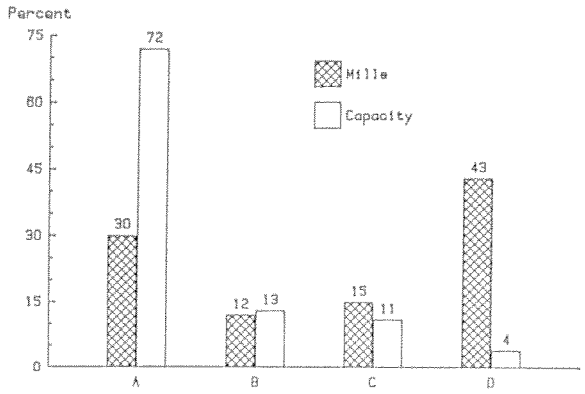


Figure 6 Percent of sawmills by size-class

Equipment

Barkers and chippers were used by about 60 percent of the sawmills during 1984 (Table 13). The number of mills with planers actually increased since the 1982 survey. Nearly 70 percent of the mills had planner capacity in 1984. There were 56 mills with kilns, that is 37 percent of all mills. However, over 80 percent of the class A and class B mills have kilns. This means a concentration of kilns exists in the mill classes having the bulk of the lumber production. Seven mills still have burners and tend to be lower-capacity mills. Only one class A mill still has a burner. The percent of mills

having varied equipment is shown below:

Equipment	Mill size-class A	B	C	D	All
	(Percent)				
Planer	89	83	91	41	68
Chipper	96	100	100	13	61
Barker	100	89	100	8	59
Kiln	60	72	43	9	37
Burner	2	0	17	3	5

Information on size and type of headrig is presented in Table 15 of Appendix D. Band saws are the most numerous with 80. These saws account for 77 percent of lumber produced by type of headrig (Table 35). Next were 14 chipping saws with 10 percent, followed by Scragg saws with 6 percent and circular saws with 5 percent. Band saws accounted for 76 percent of class A production, 81 percent of class B, 87 percent of class C, and 33 percent of class D (Table 34).

Site and Ownership Tenure

Site and ownership tenure by mill size-class are cross-tabulated in Table 16. The data shows that size-class D mills have shorter site occupancy than larger mills. This is partially because some size-class D mills, being portable, are moved from site to site. However, nearly 60 percent of the class D mills have been at the same location for over 10 years. This compares with the A, B and C class mills which have had at least 80 percent of the mills at the same location for over ten years.

Mill size-class	Over 10 Years: Under present ownership	Over 10 Years: At present site
	(Percent)	
A	71	80
B	61	83
C	52	83
D	55	59
All mills	60	72

Operating Days

The normal five-day work week provides about 250 operating days per year. In 1984, the statewide average was 167 days. However, the operating days ranged from a low of 66 days for size-class D mills in the Inland Empire to a high of 246 days for size-class A in the Inland Empire area (Table 17). Statewide, the A and B class mills operated an average of 210 days.

Mill size-class	Average days of operation 1984	Percent change from 1982
A	210	+13
B	210	+ 7
C	203	+10
D	112	- 1
All mills	167	+ 9

Wood Consumption

Raw Materials

This survey only includes mills that consume roundwood logs. Resaw and planing mills were not included. However, 19.6 million board feet of wood consumed by the mills surveyed were not in log form but were either from peeler cores or cants. Of the logs consumed, 93 percent were sound and 7 percent were utility grade (Table 18).

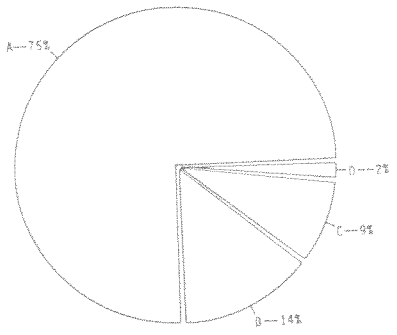


Figure 7 Sawmill log consumption by mill size-class

Class A mills have increased considerably in importance since 1982 (Figure 7). From 1982 to 1984 the percentage of roundwood volume consumed by class A mills has increased from 50 to nearly 75 percent.

Roundwood Age

Nearly two-thirds of log volume consumed by sawmills during 1984 were classified young growth timber (less than 100 years old). This is a continuation of the young growth trend which was interrupted in 1980 because of timber salvage after the volcanic eruption of Mount St. Helens. In 1984, only the central Washington ecomomic area had more old growth volume harvested than young growth.

Economic Area	Mill size-class* A	B&C	D	All mills
	(Young growth percent)			
Puget Sound	73	67	97	73
Olympic Peninsula	61	76	71	64
Lower Columbia	68	55	34	66
Central Washington	50	46*	18*	48
Inland Empire	67	43	70	53
Total state	66	58*	70*	64

*refer to Table 19 for size-class combinations.

Consumption by timber age, economic area, county and mill size-class is provided in Tables 19 and 20.

Ownership

Sawmills relied on public timberlands for 43 percent of their log volume (Table 22).

Ownership		Log supply
		(Percent)
State		9
National Forest		30
Bureau of Land Management		*
Other public		4
Total public		43
Forest Industry	Own wood supply	33
	Other wood supply	14
Farmer & Misc. private		10
Total private		57
All owners		100

* Less than 0.5 percent

A breakdown of ownership sources by mill size-class shows size-class B mills depended on public timber acquiring over half their log volume from public lands. Class D mills acquired half their log volume from farmer and miscellaneous private ownerships.

Mill size-class*	Forest industry: Own wood supply	Forest industry: Other wood supply	All public
		(Percent)	
A	38	15	42
B	19	13	51
C	20	11	41
D	<.5	28	23
All mills	33	14	43

*Refer to Table 22 for size-class combinations.

Public timberlands supplied Central Washington, Inland Empire and Olympic Peninsula area sawmills with 72, 51 and 47 percent of their log volumes respectively (Table 22). Comparable figures for Puget Sound and Lower Columbia area mills are 39 and 23 percent.

Eighty-seven percent of sawmills more than two-thirds dependent on farmer and miscellaneous private ownerships are size-class D mills. Dependency data are useful in evaluating the effects of timber supply policies on the industry (Table 24).

Ownership		Mills more than two-thirds dependent on a single type of ownership
		(Percent)
State		1
National Forest		21
Bureau of Land Management		--
Other public		1
Total public		23
Forest Industry	Own wood supply	6
	Other wood supply	9
Farmer & Misc. private		36
Total private		51
All owners		74

Species

In 1984, sawmills used 48 percent Douglas fir and 23 percent hemlock logs (Table 25). Figure 8 illustrates species variation by economic area.

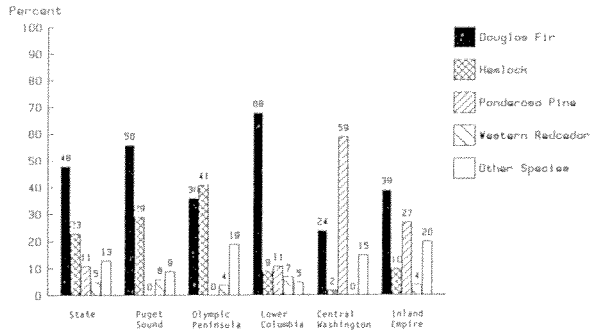


Figure 8 Sawmill log consumption by species and area

The two leading species consumed in each economic area were:

Puget Sound - Douglas fir, hemlock

Olympic - hemlock, Douglas fir

Lower Columbia - Douglas fir, ponderosa pine

Central Washington - ponderosa pine, Douglas fir

Inland Empire - Douglas fir, ponderosa pine

Minimum Log Diameter

One-third of the mills in the state accepted small diameter logs under six inches in 1984. A slight decline occurred after 1982. The Olympic Peninsula was the only economic area to increase the percentage of mills accepting small diameter logs.

Economic Area	Mills accepting logs with small-end diameters under 6 inches
	(Percent)
Puget Sound	30
Olympic Peninsula	36
Lower Columbia	18
Central Washington	36
Inland Empire	42
Total state	33

Imports

Washington timberlands supplied over 95 percent of the logs consumed; slightly over 4 percent came from Oregon. The remainder came mainly from British Columbia and Idaho (Table 3).

Production

Lumber

Sawmills in Washington produced 3.7 billion board feet of lumber during 1984. This was a 30 percent increase over the 1982 production level. Lumber produced by the 150 primary sawmills surveyed was 22 percent rough and 53 percent green (Table 33).

Economic Area	Lumber production
	(Percent)
Puget Sound	30
Olympic Peninsula	27
Lower Columbia	21
Central Washington	9
Inland Empire	13
Total state	100

Residues

Lumber production of 3.7 billion board feet resulted in 4.3 million tons of residue (Table 30). Bark accounted for 22 percent of the total while wood was the balance. Wood residues are classified in three categories: coarse (slabs, edgings, trim and spur ends); medium (shavings); and fine (sawdust) shown in Table 28. These wood residues made up 3.4 million tons of the total, or 0.9 tons for every 1,000 board feet of lumber produced.

Residue uses include raw material for the pulp industry, fuel for industry and community, animal bedding, gardening, landscaping and mulch. These and other uses consumed 98 percent of all residues produced by sawmills (Figure 9).

Unused residue was generally burned (but not as a source of fuel), left in the woods (by portable mills), or dumped near the mill site.

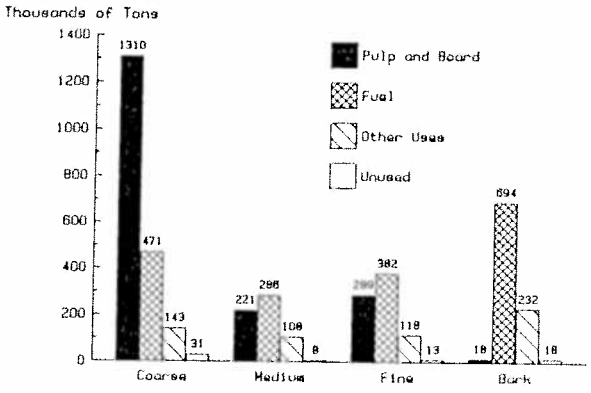


Figure 9 Type and disposition of sawmill residues

Mill size-class	Wood residue use			
	Pulp & board	Fuel	Other uses	Unused
	(Percent)			
A	59	32	8	1
B	33	44	23	<.5
C*	44	39	15	2
D*	22	21	35	21
All mills	54	34	11	2

*Class D includes Class C for Central Washington

Mill size-class	Bark residue use			
	Pulp & board	Fuel	Other uses	Unused
	(Percent)			
A	2	76	20	2
B	--	59	41	<.5
C*	4	66	28	2
D*	8	31	30	31
All mills	2	72	24	2

*Class D includes Class C for Central Washington

Veneer and Plywood Industry

Mill Characteristics

Facilities

The 28 veneer and plywood mills surveyed were distributed throughout the five economic areas and in 18 of the 39 counties. All but five mills were located in western Washington (Table 36). Grays Harbor county had a total of four mills. The Olympic Peninsula led with 12 mills.

Production Capacity

Table 37 shows the production capacity per shift for each type of mill by county. Compared with 1982 data, total eight-hour shift capacity for the industry declined about 2 percent. However, layup capacity was about 1 percent higher.

Mill type	Average shift capacity per mill* Msf 3/8" basis
Puget Sound	165
Olympic Peninsula	163
Lower Columbia	144
Central Washington and Inland Empire[1]	147
Total state	158

*Excludes veneer capacity within veneer and layup plants, but includes capacities from veneer-only and lay-up only operations.

[1]Combined to avoid disclosure

Veneer-only mills had a lower average shift capacity than other types of mills.

Mill type	Average shift capacity Msf 3/8" basis	Number of mills
Veneer & layup*	135	13
Veneer-only	109	8
Layup-only	258	7
All types	158	28

*Excludes veneer capacity within a veneer and layup plant

Equipment

Tables 38 and 39 present statistics on log use relative to lathe diameter limits and size of cores produced. About one-third of the mills could handle logs 60 inches or larger in diameter. One mill could peel to a 5-inch core diameter while 5 mills produced cores that fell in the 11+ inches category. The other 15 mills with peeling operations are in the 6- to 10-inch core diameter range.

Nearly 40 percent of the core material was used as a source of chips for the pulp industry and most of the remainder for other purposes such as lumber, fuel and posts. Nineteen of the mills used veneer chippers during 1984 while only two mills used a burner (Table 40).

Site and Ownership Tenure

All but one mill have been at their present site and 82 percent under the same ownership for more than ten years (Table 41).

Operating Days

Veneer-only mills operated 151 days on the average followed by veneer and layup operating 241 days and layup-only averaging 255 days. Averages for each mill type by area are shown in Table 42.

Wood Consumption

Raw Material

The veneer and plywood industry consumed 392 million board feet of logs during 1984. Over one-third of consumption was in eastern Washington. Utility-grade logs accounted for 2 percent of the statewide log volume (Table 2). Utility log consumption by area varied from none in the Puget Sound area to 5 percent in the Lower Columbia area.

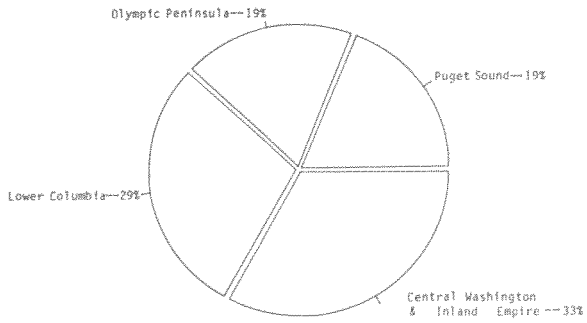


Figure 10 Veneer and plywood log consumption by economic area

Roundwood Age

Timber older than 100 years comprised nearly 63 percent of logs used. Use of old growth varied from 73 percent in the Puget Sound area to 46 percent in the Olympic Peninsula area (Table 10).

Ownership

Public lands were the source of 55 percent of logs consumed by the industry. National forest lands were the greatest single source with 42 percent (Table 7). The forest industry lands contributed nearly 39 percent of wood consumed. These two sources provided over 80 percent of the volume consumed by this sector.

Ownership		Logs supplied
		(Percent)
State		8
National Forest		42
Bureau of Land Management		<.5
Other public		5
Total public		55
Forest Industry	Own wood supply	37
	Other wood supply	2
Farmer & Misc. private		6
Total private		45
All owners		100

The national forests provided over 56 percent of the volume consumed in the Lower Columbia area. In eastern Washington, forest industry provided 37 percent; national forests provided 35 percent.

Economic Area	Source of logs: National forest lands	Source of logs: Forest industry own wood supply
	(Percent)	
Puget Sound	38	45
Olympic Peninsula	35	28
Lower Columbia	57	38
Central Washington & Inland Empire	35	37
Total state	42	37

Table 6 shows dependency of individual mills on each ownership class. Seven mills were at least two-thirds dependent on national forest lands; two mills were similarly dependent on private lands.

Species

Seventy-two percent of logs used by the industry were Douglas fir (Table 8). Second was hemlock with 13 percent. The Lower Columbia area used 72 percent Douglas fir and 20 percent hemlock. In eastern Washington, Douglas fir was the most widely used species accounting for 83 percent of consumption. True firs followed with 12 percent. The Olympic Peninsula was the only area to use western red cedar (9 percent consumption).

Imports

Two economic areas acquired logs from outside the state, accounting for 1.6 percent of the industry's log consumption. The Lower Columbia area imported the greater volume, accounting for 5 percent of its log consumption (Table 3).

Veneer

In addition to logs, the industry consumed 335,734,000 square feet of 3/8-inch veneer more than it pro-

duced for sale or transfer during 1984. Converted to Scribner log scale (at 2.5 square feet per board foot), this equals about 129 million board feet or 33 percent of the industry's total wood consumption. This veneer originated from inventory reductions or was imported from out-of-state.

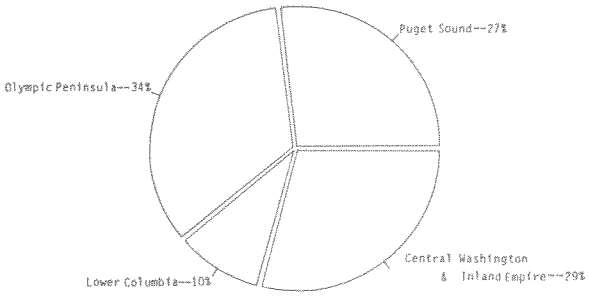


Figure 11 Plywood production by economic area

Production

Veneer and Plywood

During 1984, individual mills produced 1,561,727,000 square feet (3/8-inch basis) of plywood (Table 45). They produced 334,788,000 square feet (3/8-inch basis) of veneer sold or transferred to other mills.

Residues

Residues that come from the manufacture of veneer and plywood amounted to 0.83 million tons; 99.8 percent of this volume was productively used (Table 9).

Wood residue accounted for 80 percent of all residues; bark the remaining 20 percent. Three classifications of wood residues were identified: coarse (log trim, cores, round-up, veneer clip, spur trim); medium (panel trim, reject veneer); and fine (sander dust) (Table 44).

Residue type	Residue use			
	Pulp & board	Fuel	Other uses	Unused
	(Percent)			
Cores	41	<.5	59	--
Coarse & medium (less cores)	65	28	7	<.5
Fine	--	93	7	--
All wood	60	30	10	<.5
Bark	--	75	25	<.5
All residue	49	39	12	<.5

Production and disposition of residues by economic area is presented in Tables 9 and 44.

Pulp Industry

Mill Characteristics

Facilities

Each operation at a multiple plant facility is considered a separate mill. Identified were 20 mills: 5 sulfite, 7 sulfate, 4 groundwood and 4 semichemical. No board mills operated in 1984. Operations were located in ten counties. Cowlitz county lead with 5 mills. The leading area was the Lower Columbia with 7 mills, followed by Puget Sound with 6 mills (Table 46).

Production Capacity

Daily pulp production capacity was 12,019 tons, 3 percent below the 1982 daily capacity. Of the 20 pulp mills, 12 were either sulfite or sulfate (60 percent). They accounted for 74 percent of the daily capacity (Table 47). Over half the daily pulping capacity is located in the Lower Columbia economic area.

Economic Area	Percent of pulp capacity
Puget Sound	20
Olympic Peninsula	18
Lower Columbia	52
Inland Empire	10
Total state	100

Site and Ownership Tenure

Site occupancy by 19 of the 20 mills has been for over ten years. For 18 mills it was longer than 20 years (Table 48). Eighteen mills were in present ownership for over ten years, and 14 of the mills have been held by a single owner for over 20 years.

Operating Days

The average number of operating days per year for pulp mills increased between 1982 and 1984 from 314 to 347 (Table 49).

Economic Area	Average number of operating days
	Pulp
Puget Sound	344
Olympic Peninsula	340
Lower Columbia	352
Inland Empire	349
Total state	347

Wood Consumption

Raw Material

The industry consumed 393 million board feet of roundwood and 6.8 million bone dry tons of chips, sawdust, shavings and waste paper (Table 51). In total, this equals approximately 7.6 million bone dry tons of wood. Figure 12 shows percent roundwood consumption by economic area. Ninety percent of the raw material consumed by the industry was in the form of chips and other residues with the balance roundwood. The percent consumption in each area was:

Economic Area	Chips from mill residue	Roundwood
	(Percent)	
Puget Sound	44	8
Olympic Peninsula	28	28
Lower Columbia & Inland Empire*	58	4
Total state	48	10
Million bone dry tons	3.6	0.8

*Combined to avoid disclosure

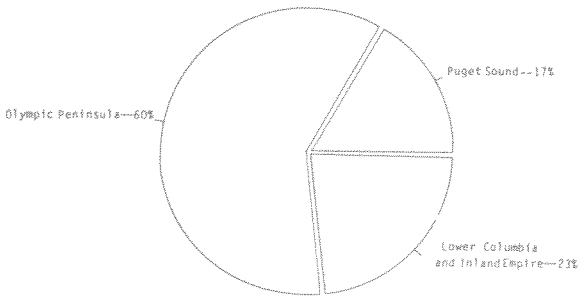


Figure 12 Percent of roundwood consumed by economic area

The pulp industry became the second largest user of utility grade (cull) logs, accounting for slightly over 30 percent of all utility log volume consumed in 1984 (Table 2). Within this industry, utility logs accounted for 26 percent of roundwood consumed (Table 51). This is a substantial change from 1982 when utility logs accounted for over 80 percent of roundwood consumed.

Roundwood Age

Table 10 shows roundwood consumption by age class for each economic area. For the pulp industry statewide, old growth timber accounted for 42 percent of the roundwood consumed, declining from 50 percent in 1982. This is a continuation of the trend to switching to young growth as an input to the pulp industry. This is 8 percent lower than in 1982.

Ownership

Ownership		Log supply
		(Percent)
State		12
National Forest		21
Bureau of Land Management		0
Other Public		0
Total public		33
Forest Industry	Own wood supply	36
	Other wood supply	29
Farmer & Misc. private		2
Total private		67
All Owners		100

Private timber holdings supplied two-thirds of the total roundwood consumed (Table 7). Slightly over one-third of roundwood came from company-owned lands for their own pulp mills.

One mill was more than two-thirds dependent on public timberlands, and one mill was more than two-thirds dependent on private timberlands for logs they used (Table 6).

Species

Hemlock accounted for 62 percent of the industry's roundwood log consumption. The greatest volume of hemlock was harvested in the Olympic Peninsula area (Table 52).

Roundwood species consumed	Percent
Hemlock	62
Hardwoods	20
True firs	10
Douglas fir	4
Spruce	1
Other softwoods	3
Total	100

Origin

Ninety-one percent of roundwood consumed by the pulp industry came from within the state. The remainder was imported with 8 percent from Oregon and 1 percent from British Columbia. Mills in the Lower Columbia area imported 35 percent of their logs from Oregon (Table 3).

Residues

Chips constituted the major sources of raw material for the industry (Table 51). Chips accounted for 85 percent of the wood consumption with roundwood chipping mills providing 37 percent of the wood input.

Residue type	Total volume
	(Percent)
Chips	
Residue	48
Roundwood	38
Sawdust & shavings	4
Wastepaper	<.5
All types	90
Logs	10
Total	100

Shake and Shingle Industry

Mill Characteristics

During 1984, 131 shake, shingle, and hip and ridge mills operated; a decline of 33 percent from 1982. Of the total, 60 percent (79) were located in the Olympic Peninsula. Of these, nearly 42 percent were in Grays Harbor county (Table 54).

The single-shift capacity of shake and shingle industry mills operating in 1984 was 11,639 squares, or nearly 1.2 million board feet Scribner log scale; a single shift capacity decline of nearly 30 percent.

Forty-seven mills used burners to dispose of wood residues. In contrast, 15 mills used chippers (Table 55).

Nine percent of the mills have been operating at their present site for five years or less, while 21 percent have been under present ownership for five years or less. Sixty percent of the mills operating in 1984 have been in their present location more than ten years, but only 47 percent have been under present ownership for more than ten years (Table 56).

The number of mill-operation days averaged 166 during 1984 (Table 54), a 15 percent increase from the average 144 days in 1982.

Wood Consumption

Industry consumption during 1984 totaled 118 million board feet, including logs and the equivalent of 17 million board feet in blocks, bolts and other material (Table 57). Figure 13 shows roundwood consumption by economic area. Figure 13 shows roundwood consumption by economic area. Of the total volume, sound logs accounted for 78 percent; utility grade (cull logs) accounted for 7 percent and other materials accounted for 15 percent.

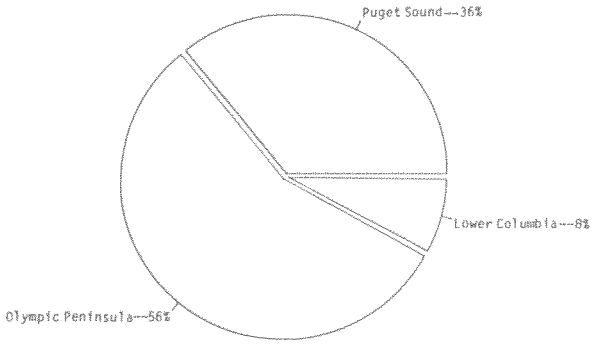


Figure 13 Shake and shingle roundwood consumption by economic area

Western red cedar is the most important species in Washington suitable for manufactured shakes and shingles. In the 1984 survey, western red cedar was used exclusively (Table 8). Product specifications further limit consumption. Ninety-four percent of the materials used were old growth (Table 10).

Because of the species dependency, the industry obtained its log supply from many ownership classes (Table 58). Although old growth is relatively limited on forest industry lands, these lands were the source of 40 percent of the timber.

Ownership		Log supply
		(Percent)
State		14
National Forest		30
Bureau of Land Management		<.5
Other public		5
Total public		49
Forest Industry	Own wood supply	3
	Other wood supply	37
Farmer & Misc. private		11
Total private		51
All owners		100

During 1984, about 63 percent of the individual mills obtained more than two-thirds of their log supply from a single ownership class: 30 mills from public sources, 52 from private sources (Table 6).

Ninety-seven percent of the industry's log consumption came from Washington. Over 50 percent of the rest came from Idaho, over 40 percent from British Columbia and nominal volumes from Oregon and other sources (Table 3).

Production and Residues

Production amounted to 1,301,098 squares: 67 percent were shakes, 29 percent were shingles and 4 percent were hip, ridge, shims and others (Table 62). This production resulted in 107,199 bone dry tons of residues, composed of 73 percent wood and 27 percent bark (Table 59). When use of residues is considered, only 59 percent was used: 60 percent of wood residues and 59 percent of bark. The Lower Columbia area mills are a notable exception to the state average with 99 percent of residues being used.

Wood residues are divided into two size classes. Coarse materials accounted for 37 percent of the total and fine materials accounted for 63 percent (Table 60). However, 58 percent of coarse wood residues and 60 percent of the fine wood residues were used.

For many mills it is not economical to recover residues. Low product volume of the mill operation probably is the major factor. Also, some residues produced by this sector are left in the woods rather than produced at mill sites. This occurs when mills use blocks, bolts or boards as a raw material, instead of logs.

Use	Residue type & distribution		
	Coarse	Fine	Bark
	(Percent)		
Pulp & board	5	5	3
Fuel	44	47	52
Other	9	9	4
Unused	42	39	41
All	100	100	100

Pole, Post and Piling Industry

Industry Characteristics

The smallest segment of the forest products industry (11 mills) had 73 percent of its operations located in western Washington.

The reported annual peeling capacity for 1984 was 35 million board feet, coupled with 39 million board feet treatment capacity (Table 63). This industry rarely uses the board foot unit of measure. However, data for this report have been converted to board foot units for comparison.

Ten of 11 operations had a peeler for preparing products (Table 65). Of the 11 mills, 8 had facilities for treating wood. Mills used pentachlorophenol, cresote, CCA or Osmose K-33.

From 1982 to 1984 the pole, post and piling industry declined by two operations. This 15 percent decline resulted in a 35 percent decrease in peeling capacity. Of the 1984 mills, 91 percent of the operations have been under the same ownership more than ten years (Table 64).

The industry averaged 142 days of peeling operation. Treatment facilities operated an average of 187 days(Table 63).

Wood Consumption

Total wood consumption during 1984 was 20,389,000 board feet. Figure 14 shows wood consumption by economic area. Sound logs accounted for 91 percent of all log consumption (Table 2). Post volume has been classified as utility logs and accounted for 9 percent of total volume.

The pole, post and piling sector is oriented primarily to young growth timber. In 1984, 99 percent of logs consumed were classified as young growth (Table 10).

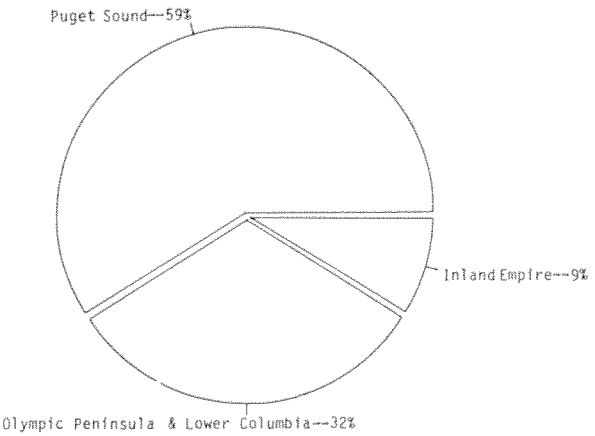


Figure 14 Pole, post and piling wood consumption by economic area

Five of 11 mills were over two-thirds dependent on a single-owner class for log supplies (Table 6). This included two operations depending on public timber, two operations depending on forest industry timber and one operation depending on other private timber.

Ownership		Log supply
		(Percent)
State		9
National Forest		6
Other public		7
Total public		22
Forest Industry	Own wood supply	18
	Other wood supply	31
Farmer & Misc. private		29
Total private		78
All owners		100

Douglas fir and western red cedar, used principally for poles and piling, accounted for 91 percent of the total log consumption (Table 8). These two species are well suited for pole and piling uses because of their strength and durability.

Washington timberlands supplied 87 percent of the industry's needs with nearly 12 percent coming from Oregon. The remaining volume came from British Columbia and "other" origin categories (Table 3).

Log Export Industry

Industry Characteristics

The 102 log export operations reported in this survey represent trading companies, log brokers or other firms that ship logs from nine public port areas in the state. Each port used by a firm is considered a separate operation. Fifty operations were located in the Olympic Peninsula area followed by the Puget Sound area with 36 (Table 68).

Sixty-two percent of the operations have used the present site for over five years (Table 69).

Ports handle a variety of materials. Because of this, the average days of operation and production capacity are not meaningful statistics when evaluating the log export industry.

Log Consumption

Following sawmills, export shipments totaled 2.3 billion board feet in 1984, making the export industry the second largest log consumer in Washington (Table 3). The export industry's log consumption is considered equal to log export shipments for the year 1984. Figure 15 shows log exports by economic area.

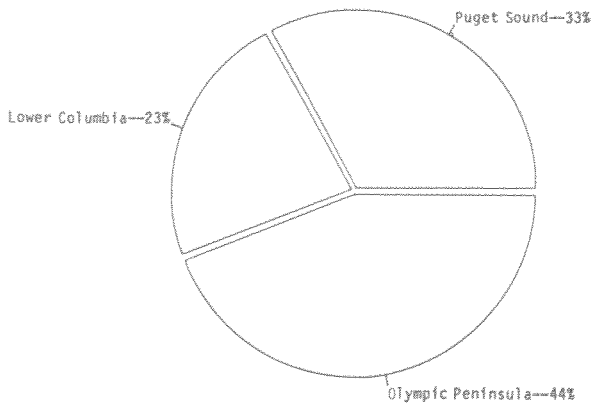


Figure 15 Log export by economic area

Most logs exported were sound. Less than 1 percent of export volume was utility grade logs (Table 2).

Ownership	Log supply
	(Percent)
State	20
National Forest	*
Other public	3
Total public	23
Forest Industry	64
Farmer & Misc. private	13
Total private	77
All owners	100

Sixty-one percent of the operations were more than two-thirds dependent for supplies on a single ownership class. Fifty-four of the 102 operations were more than two-thirds dependent on forest industry lands and one on other private lands (Table 6).

Log export operations consumed more hemlock and spruce than any other industry (Table 8). Of logs exported, Douglas fir ranked first with over 48 percent of the volume, followed by hemlock with nearly 45 percent. Western red cedar was third with nearly 3 percent of the export volume.

Species	Log supply
	(Percent)
Douglas fir	48
Hemlock	45
True firs	2
Western redcedar	2
Spruce	2
All others	1
Total all species	100

Washington timberlands supplied 95 percent of logs exported from the state (Table 3). Those logs originating in Oregon and British Columbia were primarily moved through the Lower Columbia and Puget Sound areas, respectively.

Hardwood Industry

NOTE: The following was extracted from the data in previous sections and is included here for your convenience.

Hardwood processing is another segment of the Washington wood products industry. Many different species including alder, maple and cottonwood are processed by sawmills, veneer and plywood mills, and pulp mills. Finished products are shipped throughout the United States for use in furniture, other specialty products and pulp. The market for hardwood chips is also growing in Washington as well as abroad.

Industry Characteristics

In 1984, there were 11 sawmills, one veneer and plywood operation, and one pulp mill using hardwoods for over 90 percent of their log or chip consumption. Mills using hardwood were located in the following counties:

	Sawmills		Veneer & Plywood		Pulp	
	Number of mills and dependency on hardwood					
County	Under 90%	90% +	Under 90%	90% +	Under 90%	90% +
Clark	1	--	--	--	--	--
Cowlitz	1	--	--	--	1	1
Grays Harbor	--	1	--	--	1	--
King	--	--	1	--	--	--
Lewis	--	3	--	--	--	--
Mason	--	1	--	--	--	--
Pacific	1	1	--	--	--	--
Pierce	1	--	--	--	1	--
Skagit	--	1	--	--	--	--
Snohomish	--	3	--	1	1	--
Walla Walla	--	1	--	--	--	--
Whatcom	1	--	1	--	--	--
Total	5	11	2	1	4	1

Wood Consumption

Hardwood log consumption by mills in 1984 was 243,483,000 board feet Scribner (Table 8). This is a 33 percent increase in volume from 1982. In addition, 293,540 bone dry tons of hardwood chips from roundwood were consumed by the pulp industry. This was an increase in chip volume of nearly four times from 1982 to 1984.

Industry	Hardwood log consumption
	(Percent)
Sawmills	63
Veneer & Plywood	4
Pulp	31
Post, Pole & Piling	--
Export	2
Total industry	100

In 1984, 153,372,000 board feet of hardwoods were consumed by sawmills. This was almost 6 percent of their all-species consumption and was a slight volume increase over 1982. Of this amount, 98 percent of hardwood volume consumed was by those sawmills more than two-thirds dependent on hardwoods. Nearly 55 percent of these mills were size-class D mills. However, size-class B mills consumed 64 percent of the hardwood volume (Table 25).

The veneer and plywood industry consumed 9,970,000 board feet of western hardwoods or 2.5 percent of their total log consumption (Table 8). This was 10 percent more hardwood volume than consumed in 1982.

The pulp industry used 76,433,000 board feet of hardwood logs in 1984 (nearly 20 percent of their all-species log consumption). This was a three-fold increase from their 1982 hardwood log consumption. In addition, this industry consumed 2.8 million bone dry tons of chips from hardwood roundwood (Table 52). This chip consumption represented a doubling of roundwood chipping plant consumption since 1982. Apparently the pulp industry is buying chips in the open market or by transfer from another cor-

porate division rather than buying logs and then chipping them as part of the pulp mill operation.

Hardwood Supply

Snohomish, Lewis and Cowlitz counties accounted for over half the hardwood supplied to sawmills 90 percent-plus dependent upon hardwoods in 1984. Of the 149,922,000 board feet consumed by these mills in 1984, the following counties (based on a proportional distribution) supplied:

County of origin	Percent
Snohomish	21
Lewis	19
Cowlitz	13
Skagit	10
Grays Harbor	9
Pacific	8
Thurston	4
King	4
Clallam	1
Total	100

Ownership

The hardwood consumed by sawmills 90 percent-plus dependent on hardwoods came largely from private ownerships. Data show that hardwood mills tend to be very specialized. This is reflected by the fact that 31 percent of the volume came from other forest industry wood supply and 27 percent from farmer and miscellaneous private ownerships.

Sawmill hardwood log consumption
mills 90%+ dependent on hardwoods

Ownership	Volume MBF	Log supply
	(Scribner)	(Percent)
State	36,382	24
National Forest	21	<.5
Other public	4,732	3
Total public	41,135	27
Forest Own wood supply	22,204	15
Industry Other wood supply	46,255	31
Farmer & Misc. private	40,328	27
Total private	108,787	73
All owners	149,922	100

Hardwood Harvest

The Department of Natural Resources "Timber Harvest Report" lists the following hardwood harvest information for 1984.

Species	1984 Harvest	
	Mbf, Scribner	(Percent)
Red Alder	131,632	43
Other species	67,246	22
Cull & utility	105,707	35
Total	304,585	100

Of the above total, 592,000 board feet were harvested in eastern Washington. This is less than 0.1 percent of the statewide hardwood harvest.

Appendix A

Measurement Units

Scribner is the only board foot scale used in this report, but some mills use more than one scale. Others use cubic scale, although there appears to be no strong shift to using cubic measure.

Lumber, veneer and plywood mills relied almost entirely on Scribner scale. Pulp and board mills used tons, cords and cubic measure as well as board foot scale. Although the export; shake and shingle; and pole, post and piling mills made extensive use of Scribner scale, they also reported a variety of other measurement units: cords, bolts, pieces, shake blocks, squares, lineal feet, etc.

Board foot is the unit of measure used in this report for all wood consumption. An exception is allowed for purchased or transferred veneer consumed by plywood mills (square feet, 3/8-inch basis) and chips and other residue consumed by pulp mills (bone dry tons).

The following measurement units were used:

- Board foot lumber tally is used for lumber production.
- Square feet 3/8-inch basis is used for plywood and veneer production.
- Square (10' x 10' area coverage) is used for shake and shingle production.
- Board foot Scribner is used for log export shipments and for pole, post and piling production.

Bolts, pieces and shake blocks were generally converted to Scribner scale by the operator. Measurement equivalencies are shown below.

Unit conversion used in this report:

Lumber Industry		
1.3 board feet lumber tally	= 1 board foot, Scribner (Approximately)	
Veneer and Plywood (3/8-inch basis)		
2.5 square feet	= 1 board foot, Scribner	
1 square foot	= 0.885 square meters	
1,130 square feet	= 1 cubic meter	
Pulp and Board		
1 cord	= 500 board feet	= 2.41 cubic meters(S.W.E.)*
1 short ton	= 500 board feet	= 0.907 metric tons
200 cubic foot units	= 1 bone dry ton	= 0.907 metric tons
1 bone dry unit	= 1.2 bone dry tons	= 1.088 metric tons
Shake and Shingle		
10 squares**	= 1,000 board feet	= 4.7 cubic meters(S.W.E.)*
Pole, Post and Piling		
1 cubic foot	= 6 board feet	
All Industries		
211.9 board feet	= 1 cubic meter	

*(S.W.E.) = solid wood equivalent
**One square covers 100 square feet

Appendix B

Mill Residues

Residue production figures in this report are calculated, not reported values. The mills were asked merely to indicate on a percent basis the uses made of their various residues. These percents were applied to residue estimates developed using the following residue factors:

Softwood Sawmill Residues†

Average quantity of residues developed from producing 1,000 board feet of lumber.

Item	Solid volume†† (Cubic feet)	(Percent)	Dry weight (Tons)	Residue type
Wood residue				
Slabs, edgings, sawmill trim	36	24.8	0.486	Coarse
Planer trim	3	2.1	0.041	
Sawdust	16	11.0	0.216	Fine
Planer shavings	16	11.0	0.216	Medium
Total wood residue	71	48.9	0.959	
Bark	17	11.7	0.258	Bark
Lumber	57	39.4	0.864	
Whole log	145	100.0	2.081	

†Based on data from Oregon mills compiled by Oregon State University, School of Forestry, in 1967, and adjusted for changes in lumber standards by James O. Howard, Resource Analyst, Pacific Northwest Forest and Range Experiment Station. Dry weights adjusted for different species mix utilized in Washington.

††Green Volume.

Softwood Plywood Residues†

Average quantity of residue developed in producing the equivalent of 1,000 square feet of ⅜-inch plywood (rough basis).

Plywood residue	Solid volume (Cubic feet†††)		Dry weight (Tons)	Residue type (Percent)
Wood residue				
Log trim	3.4	0.048	4.2	
Cores	6.3	0.088	7.8	Coarse
Veneer clippings, roundup & spur trim	19.3	0.270	23.7	
Dry trim & layup loss	6.3	0.088	7.8	Medium
Sander dust	1.6	0.022	1.9	Fine
Total wood residue	36.9	0.516	45.4	
Bark	8.8	0.132	11.6	Bark
All residue	45.7	0.648	57.0	
Plywood	34.9	0.489	43.0	
Whole log	80.6	1.137	100.0	

†All residue factors except sander dust and bark from data collected via various mill studies by the Characterization and Utilization of Western Softwoods and Forest Residues Project, Pacific Northwest Forest and Range Experiment Station, and compiled by James O. Howard, Resource Analyst. Sander dust and bark factors based on data from Oregon mills compiled in 1967 by Oregon State University, School of Forestry. Because of the similarity of mills and species used, no adjustment was made in applying these data to Washington.

††Green Volume.

Shingle Mill Residues†

Average quantity of residue developed in utilizing 1,000 board feet of logs, Scribner scale, or in producing the equivalent volume of 10 squares.

Shake and shingle residue	Solid volume (Cubic Feet)	Solid volume (Percent)	Dry weight (Tons)
Shingles:			
Coarse	23	13.7	0.22
Fine	78	46.8	0.75
Bark	19	11.5	0.28
Shakes:			
Coarse	23	13.7	0.22
Fine	24	14.5	0.23
Bark	19	11.5	0.28

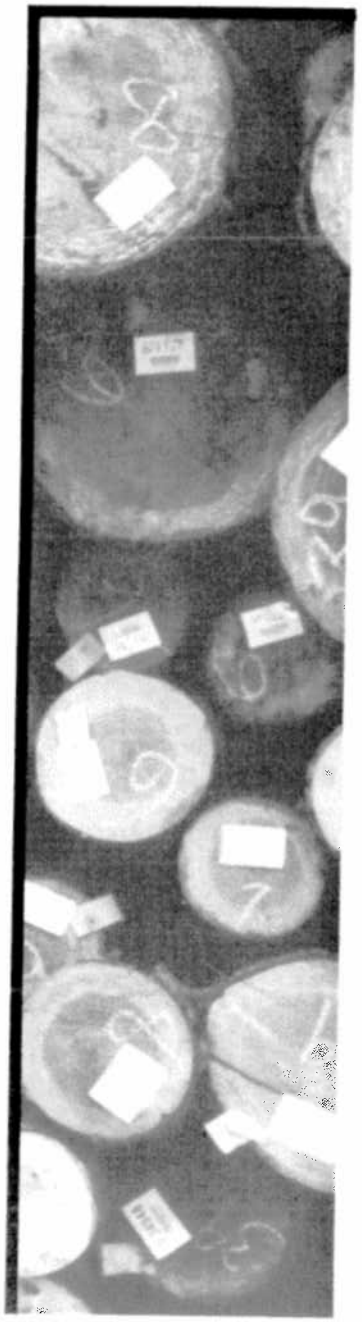
†From information provided by the Red Cedar Shingle Bureau

Hardwood Sawmill Residues†

Average residue developed from producing 1,000 board feet of lumber using a narrow kerf bandsaw.

Item	200 cu. ft. (Units)	Dry weight (Tons)	Residue type
Wood residue			
Slabs, edgings, sawmill			
Trim & planer trim	0.71	0.60	Coarse
Planer shavings	0.26	0.22	Medium
Sawdust	0.27	0.23	Fine
Bark	0.40	0.34	Bark

†Based on information furnished by Northwest Hardwoods, Inc.



Appendix C

Computer Program Used for this Report

The automated Mill Survey System was developed on an IBM 370/158 MVS computer at the Washington Data Processing Service Center, Olympia, Washington.

The master file was built and edited by programs written in ANSI COBOL. Each mill type has its own independent edit program and was designed so that data changes could be made by Department of Natural Resources staff using on-line terminals. The calculations for the various tables and summaries were produced by separate ANSI COBOL programs. There are two programs for each table. One selects the data from the master file; the other program summarizes and formats the table.

The program package was designed to handle other states' data with minor modifications.

A complete documentation package for this system consists of:

- Warnier Diagram for each program
- Sample input documents
- Keypunch instructions
- File descriptions for each file
- Data description including edit criteria for each field
- Reasonableness edits for each input file
- Edit error message tables for each input file
- Report layouts of each Output report
- Sample Output reports
- Source program listings
- Job Control Language listings for execution of system

Appendix D

Report Data

Summary

Table 1 Number of mills by timber industry

Economic area and county	All industries	Industry					
		Lumber	Veneer and plywood	Pulp[1]	Shake and shingle	Export[2]	Pole, post and piling
Puget Sound							
Island	1	1	--	--	--	--	--
King	12	8	2	--	2	--	--
Kitsap	2	2	--	--	--	--	--
Pierce	31	8	2	2	2	16	1
San Juan	1	1	--	--	--	--	--
Skagit	24	5	1	--	15	3	--
Snohomish	51	18	1	1	13	17	1
Whatcom	12	4	1	2	4	--	1
Total	134	47	7	5	36	36	3
Olympic Peninsula							
Clallam	61	9	2	2	30	17	1
Grays Harbor	75	9	4	2	33	27	--
Jefferson	6	3	--	1	2	--	--
Lewis	22	10	2	--	10	--	--
Mason	7	5	1	--	--	--	1
Pacific	8	5	--	--	3	--	--
Thurston	15	3	3	--	1	6	2
Total	194	44	12	5	79	50	4
Lower Columbia							
Clark	12	6	1	2	3	--	--
Cowlitz	37	8	1	5	6	16	1
Klickitat	6	5	1	--	--	--	--
Skamania	3	2	1	--	--	--	--
Wahkiakum	4	1	--	--	3	--	--
Total	62	22	4	7	12	16	1
Central Washington							
Adams	--	--	--	--	--	--	--
Benton	--	--	--	--	--	--	--
Chelan	3	2	--	--	1	--	--
Douglas	--	--	--	--	--	--	--
Franklin	--	--	--	--	--	--	--
Grant	--	--	--	--	--	--	--
Kittitas	1	--	1	--	--	--	--
Lincoln	--	--	--	--	--	--	--
Okanogan	7	5	2	--	--	--	--
Yakima	5	4	1	--	--	--	--
Total	16	11	4	--	1	--	--
Inland Empire							
Asotin	2	2	--	--	--	--	--
Columbia	1	1	--	--	--	--	--
Ferry	2	2	--	--	--	--	--
Garfield	--	--	--	--	--	--	--
Pend Oreille	3	2	--	--	1	--	--
Spokane	4	3	--	1	--	--	--
Stevens	20	14	1	--	2	--	3
Walla Walla	4	2	--	2	--	--	--
Whitman	--	--	--	--	--	--	--
Total	36	26	1	3	3	--	3
Total, State	442	150	28	20	131	102	11

[1]Each pulping process at a mutiplant location is counted as an individual mill

[2]Represents the number of identifiable operations involved in the export trade

Table 2 Primary wood consumption

Economic area and industry	Roundwood: All roundwood	Roundwood: Sound logs	Roundwood: Utility logs	Other[1]	Residue[2]
	--Thousand board feet, Scribner log rule--				Bone dry tons
Puget Sound					
Lumber	764,811	704,123	60,688	137	--
Veneer & plywood	54,649	54,649	--	--	--
Pulp	65,611	57,713	7,898	--	1,536,561
Shake & shingle	38,491	34,720	3,771	3,682	--
Export	736,398	735,225	1,173	--	--
Pole, post & piling	11,981	11,946	35	--	--
Total	1,671,941	1,598,376	73,565	3,819	1,536,561
Olympic Peninsula					
Lumber	729,459	658,299	71,160	12,136	--
Veneer & plywood	74,528	71,522	3,006	--	--
Pulp	237,375	206,874	30,501	--	1,225,307
Shake & shingle	53,795	51,855	1,940	12,461	--
Export	1,002,418	982,586	19,832	--	--
Pole, post & piling[3]	6,624	6,559	65	--	--
Total	2,104,199	1,977,695	126,504	24,597	1,225,307
Lower Columbia					
Lumber	530,021	497,666	32,355	--	--
Veneer & plywood	115,173	108,929	6,244	--	--
Pulp[4]	89,956	25,656	64,300	--	4,038,164
Shake & shingle	8,630	5,578	3,052	764	--
Export	526,625	526,209	416	--	--
Pole, post & piling[3]	--	--	--	--	--
Total	1,270,405	1,164,038	106,367	764	4,038,164
Central Washington					
Lumber	241,498	217,689	23,809	7,345	--
Veneer & plywood[5]	147,692	147,304	388	--	--
Pulp	--	--	--	--	--
Shake & shingle[5]	210	122	88	389	--
Export	--	--	--	--	--
Pole, post & piling	--	--	--	--	--
Total	389,400	365,115	24,285	7,734	--
Inland Empire					
Lumber	331,308	330,952	356	--	--
Veneer & plywood[5]	--	--	--	--	--
Pulp[4]	--	--	--	--	--
Shake & shingle[5]	--	--	--	--	--
Export	--	--	--	--	--
Pole, post & piling	1,784	6	1,778	--	--
Total	333,092	330,958	2,134	--	--
Total, State					
Lumber	2,597,097	2,408,729	188,368	19,618	--
Veneer & plywood	392,042	382,404	9,638	--	--
Pulp	392,942	290,243	102,699	--	6,800,032
Shake & shingle	101,126	92,275	8,851	17,296	--
Export	2,265,441	2,244,020	21,421	--	--
Pole, post & piling	20,389	18,511	1,878	--	--
Total	5,769,037	5,436,182	332,855	36,914	6,800,032

[1]Includes peeler cores, lumber and cants used by sawmills (converted to log scale assuming 30 percent overrun), blocks, boards, bolts used by shake and shingle mills, and miscellaneous peeled products used by pole, post, and piling mills

[2]Includes residues from the sawmill, veneer and plywood, and shake and shingle industries plus chips from roundwood chipping plants, and wastepaper

[3]Olympic Peninsula and Lower Columbia combined to avoid disclosure

[4]Lower Columbia and Inland Empire combined to avoid disclosure

[5]Inland Empire and Central Washington combined to avoid disclosure

Table 3 Log use by industry and origin (Thousand board feet, Scribner log rule)

Economic area and industry	Origin					
	All	Washington	Oregon	Idaho	British Columbia	Other
Puget Sound						
Lumber	764,811	759,466	--	--	5,345	--
Veneer & plywood	54,649	54,649	--	--	--	--
Pulp	65,611	65,611	--	--	--	--
Shake & shingle	38,491	37,450	--	--	995	46
Export	736,398	728,443	--	--	7,955	--
Pole, post & piling	11,981	9,377	2,288	--	145	171
Total	1,671,941	1,654,996	2,288	--	14,440	217
Olympic Peninsula						
Lumber	729,459	722,291	5,100	--	960	1,108
Veneer & plywood	74,528	74,528	--	--	--	--
Pulp	237,375	235,189	--	--	2,186	--
Shake & shingle	53,795	53,760	--	--	35	--
Export	1,002,418	991,998	--	--	10,420	--
Pole, post & piling[1]	6,624	6,481	143	--	--	--
Total	2,104,199	2,084,247	5,243	--	13,601	1,108
Lower Columbia						
Lumber	530,021	459,136	70,885	--	--	--
Veneer & plywood	115,173	108,906	6,267	--	--	--
Pulp[2]	89,956	58,355	31,601	--	--	--
Shake & shingle	8,630	7,163	117	1,350	--	--
Export	526,625	429,174	95,099	--	--	2,352
Pole, post & piling[1]	--	--	--	--	--	--
Total	1,270,405	1,062,734	203,969	1,350	--	2,352
Central Washington						
Lumber	241,498	241,498	--	--	--	--
Veneer & plywood[3]	147,692	147,612	--	--	80	--
Pulp	--	--	--	--	--	--
Shake & shingle[3]	210	210	--	--	--	--
Export	--	--	--	--	--	--
Pole, post & piling	--	--	--	--	--	--
Total	389,400	389,320	--	--	80	--
Inland Empire						
Lumber	331,308	294,594	33,181	3,533	--	--
Veneer & plywood[3]	--	--	--	--	--	--
Pulp[2]	--	--	--	--	--	--
Shake & shingle[3]	--	--	--	--	--	--
Export	--	--	--	--	--	--
Pole, post & piling	1,784	1,784	--	--	--	--
Total	333,092	296,378	33,181	3,533	--	--
Total, State						
Lumber	2,597,097	2,476,985	109,166	3,533	6,305	1,108
Veneer & plywood	392,042	385,695	6,267	--	80	--
Pulp	392,942	359,155	31,601	--	2,186	--
Shake & shingle	101,126	98,583	117	1,350	1,030	46
Export	2,265,441	2,149,615	95,099	--	18,375	2,352
Pole, post & piling	20,389	17,642	2,431	--	145	171
Total	5,769,037	5,487,675	244,681	4,883	28,121	3,677

[1]Olympic Peninsula combined with Lower Columbia to avoid disclosure

[2]Inland Empire combined with Lower Columbia to avoid disclosure

[3]Inland Empire combined with Central Washington to avoid disclosure

Table 4 Log consumption by county and harvest origin by county (Thousand board feet, Scribner log rule)

Economic area and county of use	Total	Economic area and county of origin						
		Puget Sound						
		Island and San Juan[1]	King	Kitsap	Pierce	Skagit	Snohomish	Whatcom
Puget Sound								
Island/San Juan/Kitsap[1]	144,228	4,164	--	39,264	--	--	--	--
King	143,223	--	75,815	--	34,006	--	9,575	--
Pierce	619,647	--	89,881	23,305	153,208	--	30,791	--
Skagit	53,190	150	617	--	--	35,439	6,541	8,455
Snohomish	614,534	934	43,597	171	18,231	172,190	188,995	58,123
Whatcom	97,119	--	1,156	--	--	34,093	5,788	40,965
Total	1,671,941	5,248	211,066	62,740	205,445	241,722	241,690	107,543
Olympic Peninsula								
Clallam	352,024	--	2,445	--	--	255	--	--
Grays Harbor/Jefferson[1]	1,075,770	--	--	--	--	--	--	--
Lewis/Mason[1]	462,753	237	2,550	3,281	13,532	--	468	--
Pacific	75,723	--	--	--	--	--	2,290	--
Thurston	137,450	--	--	--	18,280	5,136	3,852	3,852
Total	2,103,720	237	4,999	3,281	31,812	5,391	6,610	3,852
Lower Columbia								
Clark	126,441	--	--	--	--	--	--	--
Cowlitz	967,851	--	--	--	--	--	--	--
Klickitat/Skamania/ Wahkiakum[1]	176,592	--	--	--	--	--	--	--
Total	1,270,884	--	--	--	--	--	--	--
Central Washington								
Chelan/Lincoln/ Okanogan/Yakima[1]	342,545	--	--	--	--	--	--	--
Total	342,545	--	--	--	--	--	--	--
Inland Empire								
Asotin/Walla Walla[1]	54,867	--	--	--	--	--	--	--
Columbia/Ferry[1]	47,631	--	--	--	--	--	--	--
Pend Oreille	24,000	--	--	--	--	--	--	--
Spokane	30,132	--	--	--	--	--	--	--
Stevens	223,317	--	--	--	--	--	--	--
Total	379,947	--	--	--	--	--	--	--
Total, State	5,769,037	5,485	216,061	66,021	237,257	247,113	248,300	111,395

[1]Combined to avoid disclosure

Table 4 (Continued) Log consumption by county and harvest origin by county (Thousand board feet, Scribner log rule)

Economic area and county of origin											
Olympic Peninsula							Lower Columbia				
Clallam	Grays Harbor	Jefferson	Lewis	Mason	Pacific	Thurston	Clark	Cowlitz	Klickitat	Skamania	Wahkiakum
9,800	--	63,000	--	28,000	--	--	--	--	--	--	--
2,000	--	5,600	15,687	540	--	--	--	--	--	--	--
7,652	554	3,301	194,019	49,653	--	24,551	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
6,146	1,952	3,493	62,107	3,555	3,427	11,268	943	771	55	342	--
11,515	--	3,457	--	--	--	--	--	--	--	--	--
37,113	2,506	78,851	271,813	81,748	3,427	35,819	943	771	55	342	--
229,450	8,290	102,915	--	2,483	--	--	--	--	--	--	--
32,504	735,106	125,226	17,155	8,289	150,181	4,411	--	--	--	--	2,863
--	53,987	4,039	143,565	118,383	6,475	11,035	--	19,809	--	61,224	--
--	21,044	--	372	--	49,917	--	--	--	--	--	2,100
--	144	--	21,972	17,170	--	59,603	--	1,021	--	--	--
261,954	818,571	232,180	183,064	146,325	206,573	75,049	--	20,830	--	61,224	4,963
--	--	--	24,600	--	3,748	1,427	7,298	5,747	153	33,242	6,603
--	141	--	87,869	--	550	--	31,195	560,854	707	91,995	34,549
69	156	--	--	--	381	--	--	400	75,863	79,454	781
69	297	--	112,469	--	4,679	1,427	38,493	567,001	76,723	204,691	41,933
--	--	--	--	--	--	--	--	--	32,208	--	--
--	--	--	--	--	--	--	--	--	32,208	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
299,136	821,374	311,031	567,346	228,073	214,679	112,295	39,436	588,602	108,986	266,257	46,896

Table 4 (Continued) Log consumption by county and harvest origin by county (Thousand board feet, Scribner log rule)

Economic area and county of use	Economic area and county of origin: Central Washington — Chelan	Kittitas	Lincoln	Okanogan	Yakima
Puget Sound					
Inland/San Juan/Kitsap[1]	--	--	--	--	--
King	--	--	--	--	--
Pierce	3,764	35,421	--	--	--
Skagit	--	--	--	635	--
Snohomish	9,730	16,604	--	--	--
Whatcom	--	--	--	--	--
Total	13,494	52,025	--	635	--
Olympic Peninsula					
Clallam	--	--	--	--	--
Grays Harbor/Jefferson[1]	--	--	--	--	--
Lewis/Mason	--	--	--	--	17,000
Pacific	--	--	--	--	--
Thurston	--	--	--	--	--
Total	--	--	--	--	17,000
Lower Columbia					
Clark	--	--	--	--	--
Cowlitz	--	--	--	--	--
Klickitat/Skamania/ Wahkiakum[1]	--	--	--	--	15,288
Total	--	--	--	--	15,288
Central Washington					
Chelan/Lincoln/ Okanogan/Yakima[1]	35,779	42,424	--	123,302	108,752
Total	35,779	42,424	--	123,302	108,752
Inland Empire					
Asotin/Walla Walla[1]	--	--	--	--	--
Columbia/Ferry[1]	--	--	--	4,742	--
Pend Oreille	--	--	--	--	--
Spokane	--	--	11,896	--	--
Stevens	--	--	--	--	--
Total	--	--	11,896	4,742	--
Total, State	49,273	94,449	11,896	128,679	141,040

[1] Combined to avoid disclosure

Table 4 (Continued) Log consumption by county and harvest origin by county (Thousand board feet, Scribner log rule)

Economic area and county of origin									
Inland Empire									Out-of-State origin
Asotin	Columbia	Ferry	Garfield	Pend Oreille	Spokane	Stevens	Walla Walla	Whitman	
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	3,547
--	--	--	--	--	--	--	--	--	1,353
--	--	--	--	--	--	--	--	--	11,900
--	--	--	--	--	--	--	--	--	145
--	--	--	--	--	--	--	--	--	16,945
--	--	--	--	--	--	--	--	--	6,186
--	--	--	--	--	--	--	--	--	35
--	--	--	--	--	--	--	--	--	7,168
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	6,420
--	--	--	--	--	--	--	--	--	19,809
--	--	--	--	--	--	--	--	--	43,623
--	--	--	--	--	--	--	--	--	159,991
--	--	--	--	--	--	--	--		4,200
--	--	--	--	--	--	--	--	--	207,814
--	--	--	--	--	--	--	--	--	80
--	--	--	--	--	--	--	--	--	80
6,484	2,804	--	6,564	--	--	--	2,598	--	36,417
--	200	42,689	--	--	--	--	--	--	--
--	--	--	--	21,600	600	1,800	--	--	--
--	--	--	--	1,599	12,179	1,486	--	2,675	297
--	--	61,321	--	45,473	--	116,523	--	--	--
6,484	3,004	104,010	6,564	68,672	12,779	119,809	2,598	2,675	36,714
6,484	3,004	104,010	6,564	68,672	12,779	119,809	2,598	2,675	281,362

Table 5 Log use from National Forests (Thousand board feet, Scribner log rule)

Economic area[1]	All National Forests	Mount Baker Snoqualmie	Colville[2]	Gifford Pinchot	Okanogan	Olympic	Wenatchee	Umatilla	Out-of-State National Forests
Puget Sound	267,014	206,539	--	11,524	317	32,828	15,806	--	--
Olympic Peninsula	324,716	5,482	--	144,698	--	158,836	15,700	--	--
Lower Columbia	194,895	1,183	--	161,028	--	--	--	--	32,684
Central Washington	146,569	--	3	--	47,799	--	98,767	--	--
Inland Empire	122,914	--	89,904	--	16,555	--	--	16,455	--
Total	1,056,108	213,204	89,907	317,250	64,671	191,664	130,273	16,455	32,684
Industry									
Lumber	777,960	165,519	86,217	221,614	41,924	136,935	104,704	16,455	4,592
Veneer & plywood	163,935	16,976	3,279	61,825	22,747	29,549	25,359	--	4,200
Pulp	83,041	5,557	--	32,604	--	20,988	--	--	23,892
Shake & shingle	29,852	24,844	--	606	--	4,192	210	--	--
Export	173	173	--	--	--	--	--	--	--
Pole, post & piling	1,147	135	411	601	--	--	--	--	--
Total, All Industries	1,056,108	213,204	89,907	317,250	64,671	191,664	130,273	16,455	32,684

[1]Note: Combinations made in Table 7 are also used here to avoid disclosure

[2]Log harvests reported from the portion of the Kaniksu National Forest located in Washington State are included with the Colville National Forest harvest

Table 6 Number of mills dependent upon ownerships

Economic area and industry	National Forest				State				Bureau of Land Management				Other Public				Forest Industry: Own wood supply				Forest Industry: Other wood supply				Farmer & miscellaneous private			
	Dependency percent																											
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-34	34-66	67-100	0	1-33	34-66	67-100
Puget Sound																												
Lumber	23	10	1	13	30	15	2	--	47	--	--	--	39	8	--	--	38	3	3	3	28	10	6	3	15	11	4	17
Veneer & plywood	4	1	--	2	6	1	--	--	7	--	--	--	7	--	--	--	6	--	--	1	7	--	--	--	7	--	--	--
Pulp	3	2	--	--	3	1	1	--	5	--	--	--	5	--	--	--	3	1	1	--	3	2	--	--	4	1	--	--
Shake & shingle	21	3	--	12	29	6	--	1	36	--	--	--	36	--	--	--	34	1	--	1	27	2	--	7	29	4	--	3
Export	35	1	--	--	3	24	8	1	36	--	--	--	34	2	--	--	35	--	--	1	6	1	11	18	10	21	5	--
Pole, post & piling	--	3	--	--	1	2	--	--	3	--	--	--	3	--	--	--	1	2	--	--	--	--	3	--	--	2	1	--
Total	86	20	1	27	72	49	11	2	134	--	--	--	124	10	--	--	117	7	4	6	71	15	20	28	65	39	10	20
Olympic Peninsula																												
Lumber	25	6	4	9	27	15	--	2	44	--	--	--	43	1	--	--	34	4	5	1	30	4	3	7	18	8	4	14
Veneer & plywood	6	2	2	2	6	3	2	1	12	--	--	--	11	1	--	--	9	2	1	--	12	--	--	--	12	--	--	--
Pulp	2	3	--	--	2	3	--	--	5	--	--	--	5	--	--	--	3	--	2	--	2	1	1	1	4	1	--	--
Shake & shingle	67	5	4	3	60	5	6	8	78	--	--	1	70	5	3	1	78	--	--	1	42	3	4	30	70	2	3	4
Export	50	--	--	--	2	31	11	6	50	--	--	--	34	16	--	--	44	--	1	5	12	7	10	21	9	35	6	--
Pole, post & piling[3]	4	1	--	--	4	1	--	--	5	--	--	--	3	1	--	1	4	--	--	1	3	--	1	1	3	2	--	--
Total	154	17	10	14	101	58	19	17	194	--	--	1	166	24	3	2	172	6	9	8	101	15	19	60	116	48	13	18
Lower Columbia																												
Lumber	14	3	2	3	10	12	--	--	22	--	--	--	18	4	--	--	13	1	4	4	18	--	--	4	6	9	--	7
Veneer & plywood	1	--	1	2	2	2	--	--	4	--	--	--	3	1	--	--	2	--	1	1	4	--	--	--	4	--	--	--
Pulp[3]	7	--	2	1	7	3	--	--	10	--	--	--	10	--	--	--	7	2	1	--	8	2	--	--	9	1	--	--
Shake & shingle	8	1	--	3	11	1	--	--	12	--	--	--	12	--	--	--	12	--	--	--	6	--	--	6	11	1	--	--
Export	16	--	--	--	2	13	1	--	16	--	--	--	16	--	--	--	15	--	1	--	1	1	5	9	4	11	--	1
Pole, post & piling[3]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	46	4	5	9	32	31	1	--	64	--	--	--	59	5	--	--	49	3	7	5	37	3	5	19	34	22	--	8
Central Washington																												
Lumber	1	6	3	1	4	6	1	--	11	--	--	--	6	3	2	--	8	2	1	--	10	1	--	--	3	4	2	2
Veneer & plywood[2]	1	1	2	1	2	3	--	--	4	1	--	--	2	3	--	--	2	1	2	--	5	--	--	--	5	--	--	--
Shake & shingle[2]	3	--	--	1	4	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pulp	--	--	--	--	--	--	--	--	--	--	--	--	4	--	--	--	4	--	--	--	4	--	--	--	4	--	--	--
Export	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pole, post & piling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	5	7	5	3	10	9	1	--	19	1	--	--	12	6	2	--	14	3	3	--	19	1	--	--	12	4	2	2
Inland Empire																												
Lumber	14	6	1	5	21	5	--	--	24	2	--	--	19	6	--	1	21	1	3	1	25	--	1	--	4	8	--	14
Veneer & plywood[2]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pulp[3]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shake & shingle[2]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Export	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pole, post & piling	1	1	1	--	2	--	1	--	3	--	--	--	2	--	--	1	3	--	--	--	3	--	--	--	1	1	--	1
Total	15	7	2	5	23	5	1	--	27	2	--	--	21	6	--	2	24	1	3	1	28	--	1	--	5	9	--	15
Total, State																												
Lumber	77	31	11	31	92	53	3	2	148	2	--	--	125	22	2	1	114	11	16	9	111	15	10	14	46	40	10	54
Veneer & plywood	12	4	5	7	16	9	2	1	27	1	--	--	23	5	--	--	19	3	4	2	28	--	--	--	28	--	--	--
Pulp	12	5	2	1	12	7	1	--	20	--	--	--	20	--	--	--	13	3	4	--	13	5	1	1	17	3	--	--
Shake & shingle	99	9	4	19	104	12	6	9	130	--	--	1	122	5	3	1	128	1	--	2	79	5	4	43	114	7	3	7
Export	101	1	--	--	7	68	20	7	102	--	--	--	84	18	--	--	94	--	2	6	19	9	26	48	23	67	11	1
Pole, post & piling	5	5	1	--	7	3	1	--	11	--	--	--	8	1	--	2	8	2	--	1	6	--	4	1	4	5	1	1
Total	306	55	23	58	238	152	33	19	438	3	--	1	382	51	5	4	376	20	26	20	256	34	45	107	232	122	25	63

[1] Inland Empire combined with Lower Columbia to avoid disclosure

[2] Inland Empire combined with Central Washington to avoid disclosure

[3] Lower Columbia combined with Olympic Peninsula to avoid disclosure

Table 7 Log consumption by ownership (Thousand board feet, Scribner log rule)

Economic area and industry	All owners	State	National[1] Forest	Bureau of Land Management	Other public	Forest Industry		Farmer & miscellaneous private
						Own wood supply	Other wood supply	
Puget Sound								
Lumber	764,811	81,822	211,053	--	6,859	256,023	146,254	62,800
Veneer & plywood	54,649	1,363	20,971	--	--	24,525	4,015	3,775
Pulp	65,611	11,840	9,441	--	--	30,810	7,757	5,763
Shake & shingle	38,491	1,996	24,810	--	--	2,795	2,517	6,373
Export	736,398	111,443	173	--	10,923	50,625	460,987	102,247
Pole, post & piling	11,981	343	566	--	--	1,318	4,902	4,852
Total	1,671,941	208,807	267,014	--	17,782	366,096	626,432	185,810
Olympic Peninsula								
Lumber	729,459	61,199	277,086	--	4,400	205,425	126,505	54,844
Veneer & plywood	74,528	11,576	26,114	--	174	20,825	4,866	10,973
Pulp	237,375	27,240	17,104	--	--	92,558	99,599	874
Shake & shingle	53,795	12,451	4,242	250	5,285	668	26,652	4,247
Export	1,002,418	259,627	--	--	47,237	161,957	422,857	110,740
Pole, post & piling[2]	6,624	1,023	170	--	699	2,400	1,424	908
Total	2,104,199	373,116	324,716	250	57,795	483,833	681,903	182,586
Lower Columbia								
Lumber	530,021	41,770	72,344	--	7,091	285,446	92,080	31,290
Veneer & plywood	115,173	2,642	65,465	--	260	43,529	--	3,277
Pulp[3]	89,956	8,348	56,496	--	--	16,737	4,915	3,460
Shake & shingle	8,630	72	590	--	--	--	7,828	140
Export	526,625	78,893	--	--	--	23,800	343,185	80,747
Pole, post & piling[2]	--	--	--	--	--	--	--	--
Total	1,270,405	131,725	194,895	--	7,351	369,512	448,008	118,914
Central Washington								
Lumber	241,498	18,983	98,253	--	56,867	36,111	3,928	27,356
Veneer & plywood[4]	147,692	16,470	51,385	468	18,721	54,745	250	5,653
Pulp	--	--	--	--	--	--	--	--
Shake & shingle[4]	210	--	210	--	--	--	--	--
Export	--	--	--	--	--	--	--	--
Pole, post & piling	--	--	--	--	--	--	--	--
Total	389,400	35,453	149,848	468	75,588	90,856	4,178	33,009
Inland Empire								
Lumber	331,308	21,214	119,224	654	26,280	76,976	5,000	81,960
Veneer & plywood[4]	--	--	--	--	--	--	--	--
Pulp[3]	--	--	--	--	--	--	--	--
Shake & shingle[4]	--	--	--	--	--	--	--	--
Export	--	--	--	--	--	--	--	--
Pole, post & piling	1,784	403	411	--	750	--	--	220
Total	333,092	21,617	119,635	654	27,030	76,976	5,000	82,180
Total State								
Lumber	2,597,097	224,988	777,960	654	101,497	859,981	373,767	258,250
Veneer & plywood	392,042	32,051	163,935	468	19,155	143,624	9,131	23,678
Pulp	392,942	47,428	83,041	--	--	140,105	112,271	10,097
Shake & shingle	101,126	14,519	29,852	250	5,285	3,463	36,997	10,760
Export	2,265,441	449,963	173	--	58,160	236,382	1,227,029	293,734
Pole, post & piling	20,389	1,769	1,147	--	1,449	3,718	6,326	5,980
Total	5,769,037	770,718	1,056,108	1,372	185,546	1,387,273	1,765,521	602,499

[1]National Forest includes Canadian federal and British Columbia provincial forests

[2]Olympic Peninsula combined with Lower Columbia to avoid disclosure

[3]Inland Empire combined with Lower Columbia to avoid disclosure

[4]Inland Empire combined with Central Washington to avoid disclosure

Table 8 Log consumption by species (Thousand board feet, Scribner log rule)

Economic area and industry	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound										
Lumber	764,811	425,458	220,697	11,932	215	--	--	45,329	75	61,105
Veneer & plywood	54,649	21,806	20,301	2,300	272	--	--	--	--	9,970
Pulp	65,611	577	28,816	28,240	--	--	--	--	--	7,978
Shake & shngle	38,491	--	--	--	--	--	--	38,491	--	--
Export	736,398	439,555	254,108	24,658	1,886	945	134	8,965	2,578	3,569
Pole, post & piling	11,981	8,068	--	--	--	--	--	3,913	--	--
Total	1,671,941	895,464	523,922	67,130	2,373	945	134	96,698	2,653	82,622
Olympic Peninsula										
Lumber	729,459	265,301	296,063	29,334	3,031	--	2,102	29,567	11,808	92,253
Veneer & plywood	74,528	55,791	9,245	123	--	--	--	6,480	2,889	--
Pulp	237,375	--	158,136	10,494	3,487	--	--	--	12,200	53,058
Shake & shingle	53,795	--	--	--	--	--	--	53,795	--	--
Export	1,002,418	256,528	640,174	17,420	41,270	--	--	45,955	932	139
Pole, post & piling[3]	6,624	6,552	--	--	--	--	--	72	--	--
Total	2,104,199	584,172	1,103,618	57,371	47,788	--	2,102	135,869	27,829	145,450
Lower Columbia										
Lumber	530,021	361,710	47,024	27,422	320	56,483	--	36,319	739	4
Veneer & plywood	115,173	82,536	22,823	9,814	--	--	--	--	--	--
Pulp[1]	89,956	17,041	57,518	--	--	--	--	--	--	15,397
Shake & shingle	8,630	--	--	--	--	--	--	8,630	--	--
Export	526,625	389,128	121,307	11,658	245	--	--	4,287	--	--
Pole, post & piling[3]	--	--	--	--	--	--	--	--	--	--
Total	1,270,405	850,415	248,672	48,894	565	56,483	--	49,236	739	15,401
Central Washington										
Lumber	241,498	58,999	4,041	23,651	3,779	141,435	2,057	530	7,006	--
Veneer & plywood[2]	147,692	121,970	--	17,864	1,734	1,876	3,111	--	1,137	--
Pulp	--	--	--	--	--	--	--	--	--	--
Shake & shingle[2]	210	--	--	--	--	--	--	210	--	--
Export	--	--	--	--	--	--	--	--	--	--
Pole, post & piling	--	--	--	--	--	--	--	--	--	--
Total	389,400	180,969	4,041	41,515	5,513	143,311	5,168	740	8,143	--
Inland Empire										
Lumber	331,308	129,754	31,633	6,297	10,478	89,616	38,952	13,558	11,010	10
Veneer & plywood[2]	--	--	--	--	--	--	--	--	--	--
Pulp[1]	--	--	--	--	--	--	--	--	--	--
Shake & shingle[2]	--	--	--	--	--	--	--	--	--	--
Export	--	--	--	--	--	--	--	--	--	--
Pole, post & piling	1,784	--	--	--	--	--	1,784	--	--	--
Total	333,092	129,754	31,633	6,297	10,478	89,616	40,736	13,558	11,010	10
Total, State										
Lumber	2,597,097	1,241,222	599,458	98,636	17,823	287,534	43,111	125,303	30,638	153,372
Veneer & plywood	392,042	282,103	52,369	30,101	2,006	1,876	3,111	6,480	4,026	9,970
Pulp	392,942	17,618	244,470	38,734	3,487	--	--	--	12,200	76,433
Shake & shingle	101,126	--	--	--	--	--	--	101,126	--	--
Export	2,265,441	1,085,211	1,015,589	53,736	43,401	945	134	59,207	3,510	3,708
Pole, post & piling	20,389	14,620	--	--	--	--	1,784	3,985	--	--
Total	5,769,037	2,640,774	1,911,886	221,207	66,717	290,355	48,140	296,101	50,374	243,483

[1]Inland Empire has been combined with Lower Columbia to avoid disclosure

[2]Inland Empire has been combined with Central Washington to avoid disclosure

[3]Lower Columbia has been combined with Olympic Peninsula to avoid disclosure

Table 9 Production and disposition of wood and bark residues (Tons, dry weight)

Economic area and residue-producing industry	Wood Residue							Bark residue					
			Used[1]						Used[1]				
	All residues	All wood	Total	Pulp and board	Fuel	Other	Unused	All bark	Total	Pulp and board	Fuel	Other	Unused
Puget Sound													
Lumber	1,303,327	1,014,918	978,137	385,383	443,860	148,894	36,781	288,409	276,855	13,869	151,156	111,830	11,554
Veneer & plywood	169,506	138,567	137,417	63,725	67,228	6,464	1,150	30,939	30,939	--	19,528	11,411	--
Shake & shingle	31,308	22,510	12,681	--	9,713	2,968	9,829	8,798	4,683	--	4,095	588	4,115
Other[2]	47,943	--	--	--	--	--	--	47,943	47,943	--	45,312	2,631	--
Total	1,552,084	1,175,995	1,128,235	449,108	520,801	158,326	47,760	376,089	360,420	13,869	220,091	126,460	15,669
Olympic Peninsula													
Lumber	1,168,105	910,356	899,920	626,109	190,615	83,196	10,436	257,749	254,177	350	216,832	36,995	3,572
Veneer & plywood	226,314	184,250	184,250	107,701	61,226	15,323	--	42,064	42,064	--	24,706	17,358	--
Shake & Shingle	64,797	47,132	25,636	735	21,681	3,220	21,496	17,665	9,882	--	9,535	347	7,783
Other[2]	40,393	--	--	--	--	--	--	40,393	40,393	--	40,393	--	--
Total	1,499,609	1,141,738	1,109,806	734,545	273,522	101,739	31,932	357,871	346,516	350	291,466	54,700	11,355
Lower Columbia													
Lumber	908,364	703,432	703,432	421,884	245,613	35,935	--	204,932	204,881	3,715	157,434	43,732	51
Veneer & plywood	148,886	116,166	116,166	82,484	5,791	27,891	--	32,720	32,720	--	21,896	10,824	--
Shake & shingle	10,764	8,013	8,013	3,186	4,206	621	--	2,751	2,639	886	1,600	153	112
Other[2]	59,218	--	--	--	--	--	--	59,218	59,218	--	59,218	--	--
Total	1,127,232	827,611	827,611	507,554	255,610	64,447	--	299,621	299,458	4,601	240,148	54,709	163
Central Washington													
Lumber	416,834	328,982	325,653	150,541	126,767	48,345	3,329	87,852	86,009	--	61,603	23,406	2,843
Veneer & plywood[3]	281,098	223,647	223,552	146,634	63,926	12,992	95	57,451	57,411	--	56,707	704	40
Shake and shingle	330	270	39	--	--	39	231	60	60	--	--	60	--
Other[2]	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	698,262	552,899	549,244	297,175	190,693	61,376	3,655	145,363	142,480	--	118,310	24,170	2,883
Inland Empire													
Lumber	546,424	423,533	422,896	236,378	132,473	54,045	637	123,891	122,732	--	106,976	15,756	159
Veneer & plywood[3]	--	--	--	--	--	--	--	--	--	--	--	--	--
Shake & shingle[3]	--	--	--	--	--	--	--	--	--	--	--	--	--
Other[2]	553	--	--	--	--	--	--	553	320	--	249	71	233
Total	546,977	423,533	422,896	236,378	132,473	54,045	637	123,444	123,052	--	107,225	15,827	392
Total, State													
Lumber	4,343,054	3,381,221	3,330,038	1,820,295	1,139,328	370,415	51,183	961,833	943,654	17,934	694,001	231,719	18,179
Veneer & plywood[3]	625,804	662,630	661,385	400,544	198,171	62,670	1,245	163,174	163,134	--	122,837	40,297	40
Shake & shingle	107,199	77,925	46,369	3,921	35,600	6,848	31,556	29,274	17,264	886	15,230	1,148	12,010
Other[2]	148,107	--	--	--	--	--	--	148,107	147,874	--	145,172	2,702	233
Total	5,424,164	4,121,776	4,037,792	2,224,760	1,373,099	439,933	83,984	1,302,388	1,271,926	18,820	977,240	275,866	30,462

[1]Used residues were not necessarily consumed in the economic area in which they were produced

[2]Includes log export, and pole, post and piling operations

[3]Inland Empire combined with Central Washington to avoid disclosure

Table 10 Log consumption by timber age (Thousand board feet, Scribner log rule)

Economic area and industry	All age groups	Old growth (100+ years)	Young growth (Less than 100 years)
Puget Sound			
Lumber	764,811	209,678	555,133
Veneer & plywood	54,649	40,083	14,566
Pulp	65,611	59,051	6,560
Shake & shingle	38,491	35,232	3,259
Export	736,398	366,722	369,676
Pole, post & piling	11,981	29	11,952
Total	1,671,941	710,795	961,146
Olympic Peninsula			
Lumber	729,459	260,959	468,500
Veneer & plywood	74,528	34,154	40,374
Pulp	237,375	34,671	202,704
Shake & shingle	53,795	50,961	2,834
Export[1]	1,002,418	305,519	696,899
Pole, post & piling	6,624	193	6,431
Total	2,104,199	686,457	1,417,742
Lower Columbia			
Lumber	530,021	183,366	346,655
Veneer & plywood	115,173	73,681	41,492
Pulp[2]	89,956	71,922	18,034
Shake & shingle	8,630	8,346	284
Export	526,625	304,856	221,769
Pole, post & piling[1]	--	--	--
Total	1,270,405	642,171	628,234
Central Washington			
Lumber	241,498	126,308	115,190
Veneer & plywood[3]	147,692	97,608	50,084
Pulp	--	--	--
Shake & shingle[3]	210	147	63
Export	--	--	--
Pole, post & piling	--	--	--
Total	389,400	224,063	165,337
Inland Empire			
Lumber	331,308	154,927	176,381
Veneer & plywood[3]	--	--	--
Pulp[2]	--	--	--
Shake & shingle[3]	--	--	--
Export	--	--	--
Pole, post & piling	1,784	75	1,709
Total	333,092	155,002	178,090
Total, State			
Lumber	2,597,097	935,238	1,661,859
Veneer & plywood	392,042	245,526	146,516
Pulp	392,942	165,644	227,298
Shake & shingle	101,126	94,686	6,440
Export	2,265,441	977,097	1,288,344
Pole, post & piling	20,389	297	20,092
Total	5,769,037	2,418,488	3,350,549

[1] Olympic Peninsula combined with Lower Columbia to avoid disclosure

[2] Inland Empire combined with Lower Columbia to avoid disclosure

[3] Inland Empire combined with Central Washington to avoid disclosure

Table 11 Number of sawmills by mill size-class

Economic area and county	All classes	Mill size-class[1] D	C	B	A
Puget Sound					
Island	1	--	1	--	--
King	8	3	1	1	3
Kitsap	2	1	--	--	1
Pierce	8	1	1	2	4
San Juan	1	1	--	--	--
Skagit	5	3	1	--	1
Snohomish	18	7	3	3	5
Whatcom	4	3	1	--	--
Total	47	19	8	6	14
Olympic Peninsula					
Clallam	9	8	--	--	1
Grays Harbor	9	4	1	1	3
Jefferson	3	2	--	1	--
Lewis	10	2	2	1	5
Mason	5	1	--	--	4
Pacific	5	3	1	--	1
Thurston	3	2	--	--	1
Total	44	22	4	3	15
Lower Columbia					
Clark	6	4	1	1	--
Cowlitz	8	2	1	--	5
Klickitat	5	1	1	2	1
Skamania	2	--	--	--	2
Wahkiakum	1	1	--	--	--
Total	22	8	3	3	8
Central Washington					
Chelan	2	--	--	1	1
Okanogan	5	2	1	1	1
Yakima	4	--	--	1	3
Total	11	2	1	3	5
Inland Empire					
Asotin	2	1	--	1	--
Columbia	1	1	--	--	--
Ferry	2	1	--	--	1
Pend Oreille	2	--	2	--	--
Spokane	3	2	1	--	--
Stevens	14	7	3	2	2
Walla Walla	2	1	1	--	--
Total	26	13	7	3	3
Total, State	150	64	23	18	45

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

Table 12 Installed eight-hour single-shift capacity (Thousand board feet, lumber tally)

Economic area and county	Total capacity	Mill size-class[1]			
		D	C	B	A
Puget Sound					
Island	40	--	40	--	--
King	954	24	40	100	790
Kitsap	402	2	--	--	400
Pierce	1,062	6	60	201	795
San Juan	5	5	--	--	--
Skagit	183	18	40	--	125
Snohomish	1,582	94	160	258	1,070
Whatcom	69	9	60	--	--
Total	4,297	158	400	559	3,180
Olympic Peninsula					
Clallam	218	68	--	--	150
Grays Harbor	848	58	40	100	650
Jefferson	121	31	--	90	--
Lewis	1,219	9	130	88	992
Mason	833	30	--	--	803
Pacific	251	13	70	--	168
Thurston	144	4	--	--	140
Total	3,634	213	240	278	2,903
Lower Columbia					
Clark	198	28	70	100	--
Cowlitz	1,323	14	60	--	1,249
Klickitat	410	15	65	190	140
Skamania	305	--	--	--	305
Wahkiakum	7	7	--	--	--
Total	2,243	64	195	290	1,694
Central Washington					
Chelan	220	--	--	100	120
Okanogan	319	4	55	80	180
Yakima	525	--	--	100	425
Total	1,064	4	55	280	725
Inland Empire					
Asotin	94	4	--	90	--
Columbia	8	8	--	--	--
Ferry	155	10	--	--	145
Pend Oreille	142	--	142	--	--
Spokane	83	8	75	--	--
Stevens	651	56	140	176	279
Walla Walla	74	2	72	--	--
Total	1,207	88	429	266	424
Total, State	12,445	527	1,319	1,673	8,926

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

Table 13 Number of sawmills with selected equipment by mill size-class[1]

Economic area and mill size-class	Barker	Chipper	Planer	Burner	Kiln
Puget Sound					
D	2	4	9	--	2
C	8	8	7	1	3
B	5	6	5	--	4
A	14	14	12	--	9
Total	29	32	33	1	18
Olympic Peninsula					
D	2	4	9	1	3
C	4	4	3	--	2
B	3	3	3	--	3
A	15	15	14	1	6
Total	24	26	29	2	14
Lower Columbia					
D	--	--	2	--	1
C	3	3	3	--	1
B	3	3	2	--	1
A	8	6	6	--	4
Total	14	12	13	--	7
Central Washington					
D	--	--	--	--	--
C	1	1	1	1	--
B	3	3	3	--	3
A	5	5	5	--	5
Total	9	9	9	1	8
Inland Empire					
D	1	--	6	1	--
C	7	7	7	2	4
B	2	3	2	--	2
A	3	3	3	--	3
Total	13	13	18	3	9
Total, State					
D	5	8	26	2	6
C	23	23	21	4	10
B	16	18	15	--	13
A	45	43	40	1	27
Total	89	92	102	7	56

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

Table 14 Number of sawmills with selected equipment by county

Economic area and county	Barker	Chipper	Planer	Burner	Kiln
Puget Sound					
Island	1	1	1	1	--
King	5	5	6	--	3
Kitsap	1	1	2	--	--
Pierce	7	7	6	--	4
San Juan	--	--	1	--	--
Skagit	2	2	2	--	2
Snohomish	12	15	13	--	8
Whatcom	1	1	2	--	1
Total	29	32	33	1	18
Olympic Peninsula					
Clallam	1	2	3	2	1
Grays Harbor	6	6	5	--	3
Jefferson	1	1	1	--	1
Lewis	8	9	10	--	6
Mason	5	5	5	--	1
Pacific	2	2	2	--	2
Thurston	1	1	3	--	--
Total	24	26	29	2	14
Lower Columbia					
Clark	2	2	4	--	1
Cowlitz	6	4	4	--	1
Klickitat	4	4	3	--	3
Skamania	2	2	2	--	2
Wahkiakum	--	--	--	--	--
Total	14	12	13	--	7
Central Washington					
Chelan	2	2	2	--	2
Okanogan	3	3	3	1	2
Yakima	4	4	4	--	4
Total	9	9	9	1	8
Inland Empire					
Asotin	1	1	1	--	1
Columbia	--	--	--	--	--
Ferry	1	1	1	--	1
Pend Oreille	2	2	2	--	1
Spokane	1	1	2	1	1
Stevens	7	7	10	2	4
Walla Walla	1	1	2	--	1
Total	13	13	18	3	9
Total, State	89	92	102	7	56

Table 15 Number of sawmills by headrig type and size

Economic area and mill size class[1]	Circular saw				Band saw			Gang saw			Chipping saw			Scragg	
	2 ft.	4 ft.	6 ft.	8+ ft.	4 ft.	6 ft.	8 ft.	2 ft.	3 ft.	4 ft.	2 ft.	3 ft.	4 ft.	2 ft.	3 ft.
Puget Sound															
D	1	14	1	2	1	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	6	2	--	--	--	--	1	--	--	--	--
B	--	1	1	--	3	1	--	--	--	--	2	--	--	1	--
A	--	--	--	--	7	5	1	--	--	--	2	--	--	2	--
Total	1	15	2	2	17	8	1	--	--	--	5	--	--	3	--
Olympic Peninsula															
D	2	8	5	6	3	--	--	--	--	--	--	--	--	1	--
C	1	--	--	--	1	2	--	--	--	--	--	--	--	--	--
B	--	--	--	1	2	1	--	--	--	--	1	--	--	--	--
A	1	--	--	--	8	5	--	1	--	--	4	--	--	2	--
Total	4	8	5	7	14	8	--	1	--	--	5	--	--	3	--
Lower Columbia															
D	1	4	2	1	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	3	--	--	--	--	--	--	--	--	--
B	--	--	--	--	--	3	--	1	--	--	--	--	--	--	--
A	--	--	--	--	3	3	2	--	2	--	1	--	--	1	--
Total	1	4	2	1	3	9	2	1	2	--	1	--	--	1	--
Central Washington															
D	--	1	1	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	1	--	--	--	--	--	1	--	--	--	--
B	1	--	--	--	1	2	--	--	--	--	--	--	--	--	--
A	--	--	--	--	--	3	--	--	--	--	2	--	--	--	--
Total	1	1	1	--	2	5	--	--	--	--	3	--	--	--	--
Inland Empire															
D	2	8	2	--	1	--	--	--	--	--	--	--	--	--	--
C	--	3	--	--	4	--	--	--	--	--	--	--	--	1	--
B	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--
A	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--
Total	2	11	2	--	11	--	--	--	--	--	--	--	--	1	--
Total, State															
D	6	35	11	9	5	--	--	--	--	--	--	--	--	1	--
C	1	3	--	--	12	7	--	--	--	--	2	--	--	1	--
B	1	1	1	1	9	7	--	1	--	--	3	--	--	1	--
A	1	--	--	--	21	16	3	1	2	--	9	--	--	5	--
Total	9	39	12	10	47	30	3	2	2	--	14	--	--	8	--

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

Note: Sizes of headrigs are upper limits. Thus, the 6-foot size class includes saws 49 through 72 inches

Table 16 Number of sawmills by tenure of present ownership by site occupancy

Present mill size-class[1]	Site occupancy (years)	All mills	Tenure of present mill ownership (years)				
			0-2	3-5	6-10	11-20	21+
D	0-2	2	1	--	1	--	--
	3-5	9	--	8	1	--	--
	6-10	15	--	--	14	--	1
	11-20	17	--	--	1	16	--
	21+	21	3	--	--	3	15
	Total	64	4	8	17	19	16
C	0-2	--	--	--	--	--	--
	3-5	2	--	2	--	--	--
	6-10	2	--	--	2	--	--
	11-20	4	--	--	1	2	1
	21+	15	2	--	4	3	6
	Total	23	2	2	7	5	7
B	0-2	--	--	--	--	--	--
	3-5	2	--	2	--	--	--
	6-10	1	--	--	1	--	--
	11-20	3	--	--	--	3	--
	21+	12	1	2	1	2	6
	Total	18	1	4	2	5	6
A	0-2	1	1	--	--	--	--
	3-5	1	--	1	--	--	--
	6-10	7	--	--	7	--	--
	11-20	9	--	--	--	8	1
	21+	27	1	--	3	6	17
	Total	45	2	1	10	14	18
Total State	0-2	3	2	--	1	--	--
	3-5	14	--	13	1	--	--
	6-10	25	--	--	24	--	1
	11-20	33	--	--	2	29	2
	21+	75	7	2	8	14	44
	Total	150	9	15	36	43	47

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

Table 17 Average number of operating days

Economic area and mill size-class[1]	Average number of operating days per year
Puget Sound	
D	147
C	190
B	183
A	196
Average	174
Olympic Peninsula	
D	110
C	178
B	233
A	201
Average	156
Lower Columbia	
D	92
C	197
B	239
A	228
Average	176
Central Washington	
D[2]	185
B	178
A	232
Average	204
Inland Empire	
D	66
C	228
B	243
A	246
Average	153
Total, State	
D	112
C	203
B	210
A	210
Average	167

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Size-class D includes size-class C for Central Washington

Table 18 Type of wood consumed (Thousand board feet)

Economic area and mill size-class[1]	Roundwood			Other	
	All roundwood	Sound logs	Utility logs	Peeler cores	Cants
	---------Scribner log rule---------			--Lumber tally--	
Puget Sound					
D	15,487	14,787	700	--	--
C	46,237	45,389	848	--	137
B	96,205	86,969	9,236	--	--
A	606,882	556,978	49,904	--	--
Total	764,811	704,123	60,688	--	137
Olympic Peninsula					
D	21,111	20,425	686	--	1,393
C	39,553	39,153	400	--	--
B	92,520	72,960	19,560	--	--
A	576,275	525,761	50,514	10,743	--
Total	729,459	658,299	71,160	10,743	1,393
Lower Columbia					
D	1,335	1,305	30	--	--
C	37,555	37,240	315	--	--
B	66,975	66,037	938	--	--
A	424,156	393,084	31,072	--	--
Total	530,021	497,666	32,355	--	--
Central Washington					
D and C[2]	7,983	7,933	50	--	--
B	48,597	42,418	6,179	--	--
A	184,918	167,338	17,580	1,978	5,367
Total	241,498	217,689	23,809	1,978	5,367
Inland Empire					
D	1,696	1,555	141	--	--
C	113,258	113,258	--	--	--
B	73,256	73,041	215	--	--
A	143,098	143,098	--	--	--
Total	331,308	330,952	356	--	--
Total, State					
D[3]	47,612	46,005	1,607	--	1,393
C	236,603	235,040	1,563	--	137
B[4]	377,553	341,425	36,128	--	--
A	1,935,329	1,786,259	149,070	12,721	5,367
Total	2,597,097	2,408,729	188,368	12,721	6,897

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 19 Age of logs consumed (Thousand board feet, Scribner log rule)

Economic area and mill size-class[1]	All age groups	Old growth (100 + years)	Youth growth (less than 100 years)
Puget Sound			
D	15,487	463	15,024
C	46,237	20,188	26,049
B	96,205	26,443	69,762
A	606,882	162,584	444,298
Total	764,811	209,678	555,133
Olympic Peninsula			
D	21,111	6,045	15,066
C	39,553	3,800	35,753
B	92,520	28,416	64,104
A	576,275	222,698	353,577
Total	729,459	260,959	468,500
Lower Columbia			
D	1,335	879	456
C	37,555	7,530	30,025
B	66,975	39,591	27,384
A	424,156	135,366	288,790
Total	530,021	183,366	346,655
Central Washington			
D and C[2]	7,983	6,556	1,427
B	48,597	26,449	22,148
A	184,918	93,303	91,615
Total	241,498	126,308	115,190
Inland Empire			
D	1,696	516	1,180
C	113,258	52,594	60,664
B	73,256	54,292	18,964
A	143,098	47,525	95,573
Total	331,308	154,927	176,381
Total, State			
D[3]	47,612	14,459	33,153
C	236,603	84,112	152,491
B	377,553	175,191	202,362
A	1,935,329	661,476	1,273,853
Total	2,597,097	935,238	1,661,859

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,000; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 20 Log consumption by timber age (Thousand board feet, Scribner log rule)

Economic area and county	All age groups	Old growth (100 + years)	Young growth (less than 100 years)
Puget Sound			
Island/Kitsap/ San Juan[1]	144,228	--	144,228
King	114,764	63,352	51,412
Pierce	159,861	27,861	132,000
Skagit	19,985	2,312	17,673
Snohomish	318,298	112,140	206,158
Whatcom	7,675	4,013	3,662
Total	764,811	209,678	555,133
Olympic Peninsula			
Clallam	13,232	5,244	7,988
Grays Harbor	174,860	34,646	140,214
Jefferson	31,626	23,629	7,997
Lewis	275,446	127,773	147,673
Mason	139,593	69,652	69,941
Pacific	72,684	15	72,669
Thurston	22,018	--	22,018
Total	729,459	260,959	468,500
Lower Columbia			
Clark	25,665	13,020	12,645
Cowlitz	369,751	109,587	260,164
Klickitat	92,273	36,938	55,335
Skamania/Wahkiakum[1]	42,332	23,821	18,511
Total	530,021	183,366	346,655
Central Washington			
Chelan/Okanogan[1]	98,917	68,567	30,350
Yakima	142,581	57,741	84,840
Total	241,498	126,308	115,190
Inland Empire			
Asotin/Walla Walla[1]	54,867	16,293	38,574
Columbia/Ferry[1]	47,631	4,762	42,869
Pend Oreille/Spokane[1]	54,132	26,266	27,866
Stevens	174,678	107,606	67,072
Total	331,308	154,927	176,381
Total, State	2,597,097	935,238	1,661,859

[1]Combined to avoid disclosure

Table 21 Log inventory changes, log consumption, and apparent log receipts (Thousand board feet, Scribner log rule)

Economic area	Log inventory			1984 Log consumption	Apparent 1984 log receipts
	January 1, 1984	December 31, 1984	Net change		
Puget Sound	120,662	67,724	-52,938	764,811	711,873
Olympic Peninsula	86,168	71,945	-14,223	729,459	715,236
Lower Columbia	62,467	61,818	- 649	530,021	529,372
Central Washington	53,378	49,264	- 4,114	241,498	237,384
Inland Empire	67,213	46,859	-20,354	331,308	310,954
Total, State	389,888	297,610	-92,278	2,597,097	2,504,819

Table 22 Ownership origin of logs consumed by mill size (Thousand board feet, Scribner log rule)

Economic area and mill size-class[1]	All owners	State	National Forest	Bureau of Land Management	Other public	Forest industry: Own wood supply	Forest industry: Other wood supply	Farmer and miscellaneous private
Puget Sound								
D	15,487	426	509	--	262	--	1,352	12,938
C	46,237	5,038	25,700	--	1,306	2,413	5,033	6,747
B	96,205	19,223	28,160	--	4,832	6,750	29,080	8,160
A	606,882	57,135	156,684	--	459	246,860	110,789	34,955
Total	764,811	81,822	211,053	--	6,859	256,023	146,254	62,800
Olympic Peninsula								
D	21,111	1,494	1,183	--	--	5	11,125	7,304
C	39,553	4,400	3,000	--	--	--	7,003	25,150
B	92,520	34,416	14,628	--	--	15,300	21,600	6,576
A	576,275	20,889	258,275	--	4,400	190,120	86,777	15,814
Total	729,459	61,199	277,086	--	4,400	205,425	126,505	54,844
Lower Columbia								
D	1,335	5	5	--	--	--	800	525
C	37,555	7,027	--	--	2,341	18,107	10,080	--
B	66,975	16,023	15,829	--	4,410	22,725	--	7,988
A	424,156	18,715	56,510	--	340	244,614	81,200	22,777
Total	530,021	41,770	72,344	--	7,091	285,446	92,080	31,290
Central Washington								
D and C[2]	7,983	4,727	1,773	--	--	--	--	1,483
B	48,597	90	10,764	--	18,004	--	--	19,739
A	184,918	14,166	85,716	--	38,863	36,111	3,928	6,134
Total	241,498	18,983	98,253	--	56,867	36,111	3,928	27,356
Inland Empire								
D	1,696	--	256	--	100	--	--	1,340
C	113,258	1,200	44,182	--	2,974	26,291	5,000	33,611
B	73,256	7,240	10,338	268	6,659	27,297	--	21,454
A	143,098	12,774	64,448	386	16,547	23,388	--	25,555
Total	331,308	21,214	119,224	654	26,280	76,976	5,000	81,960
Total, State								
D[3]	47,612	6,652	3,726	--	362	5	13,277	23,590
C	236,603	17,665	72,882	--	6,621	46,811	27,116	65,508
B	377,553	76,992	79,719	268	33,905	72,072	50,680	63,917
A	1,935,329	123,679	621,633	386	60,609	741,093	282,694	105,235
Total	2,597,097	224,988	777,960	654	101,497	859,981	373,767	258,250

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999, B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 23 Ownership origin of logs consumed by county (Thousand board feet, Scribner log rule)

Economic area and mill size-class[1]	All owners	State	National Forest	Bureau of Land Management	Other public	Forest industry		Farmer and miscellaneous private
						Own wood supply	Other wood supply	
Puget Sound								
Island/Kitsap/Juan[1]	144,228	42,000	--	--	--	44,259	57,505	464
King	114,764	1,900	16,586	--	--	87,300	8,398	580
Pierce[1]	159,861	5,040	41,062	--	791	40,440	44,095	28,433
Skagit	19,985	7,191	1,208	--	381	154	3,153	7,898
Snohomish	318,298	24,966	147,847	--	4,962	83,870	32,378	24,275
Whatcom	7,675	725	4,350	--	725	--	725	1,150
Total	764,811	81,822	211,053	--	6,859	256,023	146,254	62,800
Olympic Peninsula								
Clallam	13,232	727	2,364	--	--	976	4,038	5,127
Grays Harbor	174,860	2,100	37,998	--	--	91,973	41,168	1,621
Jefferson	31,626	23,825	4,428	--	--	--	1,872	1,501
Lewis	275,446	27,947	164,518	--	--	21,364	28,261	33,356
Mason	139,593	--	67,778	--	--	52,766	18,588	461
Pacific	72,684	--	--	--	--	38,346	32,563	1,775
Thurston	22,018	6,600	--	--	4,400	--	15	11,003
Total	729,459	61,199	277,086	--	4,400	205,425	126,505	54,844
Lower Columbia								
Clark	25,665	766	11,482	--	--	--	10,080	3,337
Cowlitz	369,751	16,170	11,605	--	--	239,681	81,200	21,095
Klickitat	92,273	24,664	12,167	--	7,091	42,725	--	5,626
Skamania/Wahkiakum[1]	42,332	170	37,090	--	--	3,040	800	1,232
Total	530,021	41,770	72,344	--	7,091	285,446	92,080	31,290
Central Washington								
Chelan/Okanogan[1]	98,917	13,554	36,866	--	13,951	10,463	3,928	20,155
Yakima	142,581	5,429	61,387	--	42,916	25,648	--	7,201
Total	241,498	18,983	98,253	--	56,867	36,111	3,928	27,356
Inland Empire								
Asotin/Walla Walla[1]	54,867	--	16,455	--	--	23,291	--	15,121
Columbia/Ferry[1]	47,631	--	35,559	--	9,482	--	--	2,590
Pend Oreille/Spokane[1]	54,132	1,200	19,200	--	2,974	--	--	30,758
Stevens	174,678	20,014	48,010	654	13,824	53,685	5,000	33,491
Total	331,308	21,214	119,224	654	26,280	76,976	5,000	81,960
Total, State	2,597,097	224,988	777,960	654	101,497	859,981	373,767	258,250

[1]Combined to avoid disclosure

Table 24 Number of mills dependent upon ownerships

Economic area and mill-size-class[1]	National Forest				State				Bureau of Land Management				Other Public				Forest Industry: Own wood supply				Forest Industry: Other wood supply				Farmer & miscellaneous private			
	Dependency percent																											
	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100	0	1-33	34-66	67-100
Puget Sound																												
D	15	4	--	--	16	3	--	--	19	--	--	--	17	2	--	--	19	--	--	--	16	1	1	1	1	--	2	16
C	2	1	1	4	4	3	1	--	8	--	--	--	5	3	--	--	6	1	1	--	4	2	2	--	3	4	--	1
B	2	1	--	3	4	1	1	--	6	--	--	--	4	2	--	--	5	1	--	--	2	2	1	1	4	2	--	--
A	4	4	--	6	6	8	--	--	14	--	--	--	13	1	--	--	8	1	2	3	6	5	2	1	7	5	2	--
Total	23	10	1	13	30	15	2	--	47	--	--	--	39	8	--	--	38	3	3	3	28	10	6	3	15	11	4	17
Olympic Peninsula																												
D	16	3	1	2	16	5	--	1	22	--	--	--	22	--	--	--	21	--	1	--	16	1	--	5	5	3	3	11
C	3	--	--	1	2	2	--	--	4	--	--	--	4	--	--	--	4	--	--	--	3	--	--	1	--	2	--	2
B	1	1	--	1	--	2	--	1	3	--	--	--	3	--	--	--	2	1	--	--	1	1	1	--	1	2	--	--
A	5	2	3	5	9	6	--	--	15	--	--	--	14	1	--	--	7	3	4	1	10	2	2	1	12	1	1	1
Total	25	6	4	9	27	15	--	2	44	--	--	--	43	1	--	--	34	4	5	1	30	4	3	7	18	8	4	14
Lower Columbia																												
D	7	1	--	--	7	1	--	--	8	--	--	--	8	--	--	--	8	--	--	--	7	--	--	1	1	--	--	7
C	3	--	--	--	2	1	--	--	3	--	--	--	2	1	--	--	1	--	1	1	2	--	--	1	3	--	--	--
B	1	--	1	1	--	3	--	--	3	--	--	--	1	2	--	--	1	--	2	--	3	--	--	--	--	3	--	--
A	3	2	1	2	1	7	--	--	8	--	--	--	7	1	--	--	3	1	1	3	6	--	--	2	2	6	--	--
Total	14	3	2	3	10	12	--	--	22	--	--	--	18	4	--	--	13	1	4	4	18	--	--	4	6	9	--	7
Central Washington																												
D and C[2]	1	2	--	--	2	--	1	--	3	--	--	--	3	--	--	--	3	--	--	--	3	--	--	--	--	1	--	2
B	--	2	1	--	2	1	--	--	3	--	--	--	2	--	1	--	3	--	--	--	3	--	--	--	--	1	2	--
A	--	2	2	1	--	5	--	--	5	--	--	--	1	3	1	--	2	2	1	--	4	1	--	--	3	2	--	--
Total	1	6	3	1	4	6	1	--	11	--	--	--	6	3	2	--	8	2	1	--	10	1	--	--	3	4	2	2
Inland Empire																												
D	12	--	--	1	13	--	--	--	13	--	--	--	12	--	--	1	13	--	--	--	13	--	--	--	1	1	--	11
C	2	2	--	3	6	1	--	--	7	--	--	--	6	1	--	--	5	1	--	1	6	--	1	--	3	2	--	2
B	--	3	--	--	1	2	--	--	2	1	--	--	1	2	--	--	1	--	2	--	3	--	--	--	--	2	--	1
A	--	1	1	1	1	2	--	--	2	1	--	--	--	3	--	--	2	--	1	--	3	--	--	--	--	3	--	--
Total	14	6	1	5	21	5	--	--	24	2	--	--	19	6	--	1	21	1	3	1	25	--	1	--	4	8	--	14
Total, State																												
D[3]	51	10	1	3	54	9	1	1	65	--	--	--	62	2	--	1	64	--	1	--	55	2	1	7	8	5	5	47
C	10	3	1	8	14	7	1	--	22	--	--	--	17	5	--	--	16	2	2	2	15	2	3	2	9	8	--	5
B	4	7	2	5	7	9	1	1	17	1	--	--	11	6	1	--	12	2	4	--	12	3	2	1	5	10	2	1
A	12	11	7	15	17	28	--	--	44	1	--	--	35	9	1	--	22	7	9	8	29	8	4	4	24	17	3	1
Total	77	31	11	31	92	53	3	2	148	2	--	--	125	22	2	1	114	11	16	9	111	15	10	14	46	40	10	54

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet of capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 25 Log consumption by species, by mill size-class[1] (Thousand board feet, Scribner log rule)

Economic area and mill-size-class	All Species	Douglas fir	Hemlock	True Firs	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound										
D	15,487	4,491	378	--	--	--	--	5,602	75	4,941
C	46,237	16,815	10,552	3,320	--	--	--	6,160	--	9,390
B	96,205	3,167	22,073	3,572	--	--	--	20,619	--	46,774
A	606,882	400,985	187,694	5,040	215	--	--	12,948	--	--
Total	764,811	425,458	220,697	11,932	215	--	--	45,329	75	61,105
Olympic Peninsula										
D	21,111	1,856	30	1	96	--	3	10,625	--	8,500
C	39,553	2,240	2,560	2,000	--	--	--	--	--	32,753
B	92,520	600	27,312	--	1,800	--	--	--	11,808	51,000
A	576,275	260,605	266,161	27,333	1,135	--	2,099	18,942	--	--
Total	729,459	265,301	296,063	29,334	3,031	--	2,102	29,567	11,808	92,253
Lower Columbia										
D	1,335	775	--	47	320	95	--	94	--	4
C	37,555	17,340	--	4,449	--	11,709	--	4,057	--	--
B	66,975	18,145	--	6,615	--	42,215	--	--	--	--
A	424,156	325,450	47,024	16,311	--	2,464	--	32,168	739	--
Total	530,021	361,710	47,024	27,422	320	56,483	--	36,319	739	4
Central Washington										
D and C[2]	7,983	6,683	--	--	792	90	391	--	27	--
B	48,597	12,436	3,089	830	411	30,803	--	411	617	--
A	184,918	39,880	952	22,821	2,576	110,542	1,666	119	6,362	--
Total	241,498	58,999	4,041	23,651	3,779	141,435	2,057	530	7,006	--
Inland Empire										
D	1,696	808	3	66	--	286	191	12	320	10
C	113,258	39,300	13,194	3,283	891	30,904	8,197	7,939	9,550	--
B	73,256	21,582	2,373	2,948	3,883	36,388	3,327	2,755	--	--
A	143,098	68,064	16,063	--	5,704	22,038	27,237	2,852	1,140	--
Total	331,308	129,754	31,633	6,297	10,478	89,616	38,952	13,558	11,010	10
Total, State										
D[3]	47,612	14,613	411	114	1,208	471	585	16,333	422	13,455
C	236,603	75,695	26,306	13,052	891	42,613	8,197	18,156	9,550	42,143
B	377,553	55,930	54,847	13,965	6,094	109,406	3,327	23,785	12,425	97,774
A	1,935,329	1,094,984	517,894	71,505	9,630	135,044	31,002	67,029	8,241	--
Total	2,597,097	1,241,222	599,458	98,636	17,823	287,534	43,111	125,303	30,638	153,372

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 26 Log consumption by species, by county (Thousand board feet, Scribner log rule)

Economic area and industry	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound										
Island/Kitsap/ San Juan[1]	144,228	143,378	755	--	--	--	--	32	63	--
King	114,764	57,692	49,504	4,572	--	--	--	2,986	10	--
Pierce	159,861	77,588	67,853	--	215	--	--	12,431	--	1,774
Skagit	19,985	4,261	3,502	--	--	--	--	4,499	--	7,723
Snohomish	318,298	141,759	97,633	5,040	--	--	--	23,923	2	49,941
Whatcom	7,675	780	1,450	2,320	--	--	--	1,458	--	1,667
Total	764,811	425,458	220,697	11,932	215	--	--	45,329	75	61,105
Olympic Peninsula										
Clallam	13,232	1,734	2,363	1	983	--	--	8,151	--	--
Grays Harbor	174,860	66,670	89,235	6,980	1,818	--	3	3,154	--	7,000
Jefferson	31,626	3	17,712	--	--	--	--	2,103	11,808	--
Lewis	275,446	71,358	106,329	16,224	224	--	224	5,053	--	76,034
Mason	139,593	84,352	35,688	6,129	--	--	1,875	11,088	--	461
Pacific	72,684	19,181	44,736	--	6	--	--	3	--	8,758
Thurston	22,018	22,003	--	--	--	--	--	15	--	--
Total	729,459	265,301	296,063	29,334	3,031	--	2,102	29,567	11,808	92,253
Lower Columbia										
Clark	25,665	25,585	--	--	--	--	--	78	--	2
Cowlitz	369,751	292,408	38,035	3,233	--	--	--	36,073	--	2
Klickitat	92,273	21,703	--	16,551	--	54,019	--	--	--	--
Skamania/Wahkiakum[1]	42,332	22,014	8,989	7,638	320	2,464	--	168	739	--
Total	530,021	361,710	47,024	27,422	320	56,483	--	36,319	739	4
Central Washington										
Chelan/Okanogan	98,917	24,054	4,041	3,095	3,779	59,555	2,057	530	1,806	--
Yakima	142,581	34,945	--	20,556	--	81,880	--	--	5,200	--
Total	241,498	58,999	4,041	23,651	3,779	141,435	2,057	530	7,006	--
Inland Empire										
Asotin/Walla Walla[1]	54,867	18,068	12,687	--	3,883	14,582	647	--	4,990	10
Columbia/Ferry[1]	47,631	25,289	--	40	--	6,637	15,645	--	20	--
Pend Oreille/Spokane[1]	54,132	13,556	2,883	1,783	891	22,781	--	7,678	4,560	--
Stevens	174,678	72,841	16,063	4,474	5,704	45,616	22,660	5,880	1,440	--
Total	331,308	129,754	31,633	6,297	10,478	89,616	38,952	13,558	11,010	10
Total, State	2,597,097	1,241,222	599,458	98,636	17,823	287,534	43,111	125,303	30,638	153,372

[1]Combined to avoid disclosure

Table 27 Production and disposition of wood and bark residues by mill size-class[1] (Tons, dry weight)

Economic area and mill size-class	All residue			Wood residue			Bark residue		
	Total	Used[2]	Unused	Total	Used[2]	Unused	Total	Used[2]	Unused
Puget Sound									
D	20,227	17,893	2,334	15,137	13,404	1,733	5,090	4,489	601
C	77,969	77,780	189	60,154	60,006	148	17,815	17,774	41
B	148,591	148,591	--	112,690	112,690	--	35,901	35,901	--
A	1,056,540	1,010,728	45,812	826,937	792,037	34,900	229,603	218,691	10,912
Total	1,303,327	1,254,992	48,335	1,014,918	978,137	36,781	288,409	276,855	11,554
Olympic Peninsula									
D	30,864	23,302	7,562	23,402	17,349	6,053	7,462	5,953	1,509
C	52,401	46,599	5,802	39,401	35,018	4,383	13,000	11,581	1,419
B	138,365	138,365	--	105,126	105,126	--	33,239	33,239	--
A	946,475	945,831	644	742,427	742,427	--	204,048	203,404	644
Total	1,168,105	1,154,097	14,008	910,356	899,920	10,436	257,749	254,177	3,572
Lower Columbia									
D	1,485	1,434	51	1,109	1,109	--	376	325	51
C	56,028	56,028	--	43,442	42,442	--	12,586	12,586	--
B	103,814	103,814	--	80,909	80,909	--	22,905	22,905	--
A	747,037	747,037	--	577,972	577,972	--	169,065	169,065	--
Total	908,364	908,313	51	703,432	703,432	--	204,932	204,881	51
Central Washington									
D and C[3]	12,944	7,589	5,355	10,153	7,538	2,615	2,791	51	2,740
B	82,182	81,365	817	64,567	63,853	714	17,615	17,512	103
A	321,708	321,708	--	254,262	254,262	--	67,446	67,446	--
Total	416,834	410,662	6,172	328,982	325,653	3,329	87,852	85,009	2,843
Inland Empire									
D	2,116	1,320	796	1,606	969	637	510	351	159
C	181,111	181,111	--	139,515	139,515	--	41,596	41,596	--
B	109,913	109,913	--	84,802	84,802	--	25,111	25,111	--
A	253,284	253,284	--	197,610	197,610	--	55,674	55,674	--
Total	546,424	545,628	796	423,533	422,896	637	122,891	122,732	159
Total, State									
D[4]	67,636	51,538	16,098	51,407	40,369	11,038	16,229	11,169	5,060
C	367,509	361,518	5,991	282,512	277,981	4,531	84,997	83,537	1,460
B	582,865	582,048	817	448,094	447,380	714	134,771	134,668	103
A	3,325,044	3,278,588	46,456	2,599,208	2,564,308	34,900	725,836	714,280	11,556
Total	4,343,054	4,273,692	69,362	3,381,221	3,330,038	51,183	961,833	943,654	18,179

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Used residues were not necessarily consumed in the economic area in which they were produced

[3]Combined to avoid disclosure

[4]Total for Class D includes Class C for Central Washington

Table 28 Production and disposition of wood residues by mill size-class[1] (Tons, dry weight)

Economic area and mill size-classs	All types							Coarse[3,8]					
	Total	Total used[2]	Pulp	Board	Fuel	Other	Unused	Total	Total used[2]	Pulp	Fuel	Other	Unused
Puget Sound													
D	15,137	13,404	3,731	--	1,965	7,708	1,733	9,924	8,695	3,076	925	4,694	1,229
C	60,154	60,006	19,950	--	14,595	25,461	148	35,444	35,360	19,950	4,351	11,059	84
B	112,690	112,690	17,265	--	55,306	40,119	--	69,207	69,207	17,265	24,150	27,792	--
A	826,937	792,037	344,437	--	371,994	75,606	34,900	468,998	446,707	296,654	132,747	17,306	22,291
Total	1,014,918	978,137	385,383	--	443,860	148,894	36,781	583,573	559,969	336,945	162,173	60,851	23,604
Olympic Peninsula													
D	23,402	17,349	310	--	7,483	9,556	6,053	14,438	10,890	310	4,498	6,082	3,548
C	39,401	35,018	4,089	--	29,477	1,452	4,383	23,499	20,994	4,089	16,905	--	2,505
B	105,126	105,126	20,602	--	41,766	42,758	--	63,172	63,172	17,362	15,810	30,000	--
A	742,427	742,427	601,108	--	111,889	29,430	--	422,465	422,465	351,898	52,122	18,445	--
Total	910,356	899,920	626,109	--	190,615	83,196	10,436	523,574	517,521	373,659	89,335	54,527	6,053
Lower Columbia													
D	1,109	1,109	--	--	818	291	--	771	771	--	611	160	--
C	43,442	43,442	22,200	4,570	16,672	--	--	25,711	25,711	17,535	8,176	--	--
B	80,909	80,909	26,162	--	54,747	--	--	46,788	46,788	22,836	23,952	--	--
A	577,972	577,972	361,349	7,603	173,376	35,644	--	345,341	345,341	256,129	89,212	--	--
Total	703,432	703,432	409,711	12,173	245,613	35,935	--	418,611	418,611	296,500	121,951	160	--
Central Washington													
D and C[6]	10,153	7,538	7,278	--	260	--	2,615	5,704	5,586	5,481	105	--	118
B	64,567	63,853	19,623	12,570	20,558	11,102	714	35,979	35,329	19,623	4,728	10,978	650
A	254,262	254,262	84,665	26,405	105,949	37,243	--	138,814	138,814	83,901	37,897	17,016	--
Total	328,982	325,653	111,566	38,975	126,767	48,345	3,329	180,497	179,729	109,005	42,730	27,994	768
Inland Empire													
D	1,606	969	--	--	365	604	637	1,051	568	--	363	205	483
C	139,515	139,515	73,976	--	49,565	15,974	--	84,966	84,966	69,792	15,174	--	--
B	84,802	84,802	51,298	--	26,183	7,321	--	51,298	51,298	51,298	--	--	--
A	197,610	197,610	103,895	7,209	56,360	30,146	--	113,725	113,725	73,749	39,976	--	--
Total	423,533	422,896	229,169	7,209	132,473	54,045	637	251,040	250,557	194,839	55,513	205	483
Total, State													
D[7]	51,407	40,369	11,319	--	10,891	18,159	11,038	31,888	26,510	8,867	6,502	11,141	5,378
C	282,512	277,981	120,215	4,570	110,309	42,887	4,531	169,620	167,031	111,366	44,606	11,059	2,589
B	448,094	447,380	134,950	12,570	198,560	101,300	714	266,444	265,794	128,384	68,640	68,770	650
A	2,599,208	2,564,308	1,495,454	41,217	819,568	208,069	34,900	1,489,343	1,467,052	1,062,331	351,954	52,767	22,291
Total	3,381,221	3,330,038	1,761,938	58,357	1,139,328	370,415	51,183	1,957,295	1,926,387	1,310,948	471,702	143,737	30,908

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet capacity per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Used residues were not necessarily consumed in the economic area in which they were produced

[3]Slabs, edgings, trim and spur ends

[4]Shavings

[5]Sawdust

[6]Combined to avoid disclosure

[7]Total for Class D includes Class C for Central Washington

[8]The Board column in the "Coarse" section had no figures and was therefore deleted

Table 28 (Continued) Production and disposition of wood residues by mill size-class
(Tons, dry weight)

Medium[4]							Fine[5]						
Total	Total used[2]	Pulp	Board	Fuel	Other	Unused	Total	Total used[2]	Pulp	Board	Fuel	Other	Unused
1,233	1,233	--	--	500	733	--	3,980	3,476	655	--	540	2,281	504
10,315	10,285	--	--	3,142	7,143	30	14,395	14,361	--	--	7,102	7,259	34
15,814	15,814	--	--	13,810	2,004	--	27,669	27,669	--	--	17,346	10,323	--
165,713	162,111	20,956	--	121,576	19,579	3,602	192,226	183,219	26,827	--	117,671	38,721	9,007
193,075	189,443	20,956	--	139,028	29,459	3,632	238,270	228,725	27,482	--	142,659	58,584	9,545
2,888	1,858	--	--	312	1,546	1,030	6,076	4,601	--	--	2,673	1,928	1,475
6,786	5,868	--	--	5,142	726	918	9,116	8,156	--	--	7,430	726	960
16,858	16,858	--	--	15,079	1,779	--	25,096	25,096	3,240	--	10,877	10,979	--
146,810	146,810	117,684	--	24,081	5,045	--	173,152	173,152	131,526	--	35,686	5,940	--
173,342	171,394	117,684	--	44,614	9,096	1,948	213,440	211,005	134,766	--	56,666	19,573	2,435
26	26	--	--	--	26	--	312	312	--	--	207	105	--
7,193	7,193	1,555	4,570	1,068	--	--	10,538	10,538	3,110	--	7,428	--	--
14,945	14,945	--	--	14,945	--	--	19,176	19,176	3,326	--	15,850	--	--
91,090	91,090	9,405	7,603	38,438	35,644	--	141,541	141,541	95,815	--	45,726	--	--
113,254	113,254	10,960	12,173	54,451	35,670	--	171,567	171,567	102,251	--	69,211	105	--
2,112	--	--	--	--	--	2,112	2,337	1,952	1,797	--	155	--	385
13,843	13,800	--	8,052	5,624	124	43	14,745	14,724	--	4,518	10,206	--	21
57,394	57,394	--	26,405	21,868	9,121	--	58,054	58,054	764	--	46,184	11,106	--
73,349	71,194	--	34,457	27,492	9,245	2,155	75,136	74,730	2,561	4,518	56,545	11,106	406
129	104	--	--	--	104	25	426	297	--	--	2	295	129
19,725	19,725	2,092	--	15,303	2,330	--	34,824	34,824	2,092	--	19,088	13,644	--
12,480	12,480	--	--	5,159	7,321	--	21,024	21,024	--	--	21,024	--	--
37,277	37,277	15,034	7,209	--	15,034	--	46,608	46,608	15,112	--	16,384	15,112	--
69,611	69,586	17,126	7,209	20,462	24,789	25	102,882	102,753	17,204	--	56,498	29,051	129
6,388	3,221	--	--	812	2,409	3,167	13,131	10,638	2,452	--	3,577	4,609	2,493
44,019	43,071	3,647	4,570	24,655	10,199	948	68,873	67,879	5,202	--	41,048	21,629	994
73,940	73,897	--	8,052	54,617	11,228	43	107,710	107,689	6,566	4,518	75,303	21,302	21
498,284	494,682	163,079	41,217	205,963	84,423	3,602	611,581	602,574	270,044	--	261,651	70,879	9,007
622,631	614,871	166,726	53,839	286,047	108,259	7,760	801,295	788,780	284,264	4,518	381,579	118,419	12,515

Table 29 Production and disposition of bark residues by mill size-class[1] (Tons, dry weight)

Economic area and mill size-class	All bark	Used[2]					Unused
		Total	Pulp	Board	Fuel	Other	
Puget Sound							
D	5,090	4,489	969	--	1,352	2,168	601
C	17,815	17,774	--	--	9,683	8,091	41
B	35,901	35,901	--	--	17,343	18,558	--
A	229,603	218,691	--	12,900	122,778	83,013	10,912
Total	288,409	276,855	969	12,900	151,156	111,830	11,554
Olympic Peninsula							
D	7,462	5,953	350	--	2,972	2,631	1,509
C	13,000	11,581	--	--	10,714	867	1,419
B	33,239	33,239	--	--	7,740	25,499	--
A	204,048	203,404	--	--	195,406	7,998	644
Total	257,749	254,177	350	--	216,832	36,995	3,572
Lower Columbia							
D	376	325	--	--	268	57	51
C	12,586	12,586	3,715	--	8,871	--	--
B	22,905	22,905	--	--	22,905	--	--
A	169,065	169,065	--	--	125,390	43,675	--
Total	204,932	204,881	3,715	--	157,434	43,732	51
Central Washington							
D and C[3]	2,791	51	--	--	51	--	2,740
B	17,615	17,512	--	--	7,797	9,715	103
A	67,446	67,446	--	--	53,755	13,691	--
Total	87,852	85,009	--	--	61,603	23,406	2,843
Inland Empire							
D	510	351	--	--	314	37	159
C	41,596	41,596	--	--	26,927	14,669	--
B	25,111	25,111	--	--	24,061	1,050	--
A	55,674	55,674	--	--	55,674	--	--
Total	122,891	122,732	--	--	106,976	15,756	159
Total, State							
D[4]	16,229	11,169	1,319	--	4,957	4,893	5,060
C	84,997	83,537	3,715	--	56,195	23,627	1,460
B	134,771	134,668	--	--	79,846	54,822	103
A	725,836	714,280	--	12,900	553,003	148,377	11,556
Total	961,833	943,654	5,034	12,900	694,001	231,719	18,179

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Used residues were not necessarily consumed in the economic area in which they were produced

[3]Combined to avoid disclosure

[4]Total for Class D includes Class C for Central Washington

Table 30 Production and disposition of wood and bark residues by county (Tons, dry weight)

Economic area and county	All residues			Wood residues			Bark residues		
	Total	Used[1]	Unused	Total	Used[1]	Unused	Total	Used[1]	Unused
Puget Sound									
Island/Kitsap/ San Juan[2]	247,789	247,619	170	195,252	195,118	134	52,537	52,501	36
King	218,889	218,870	19	171,963	171,949	14	46,926	46,921	5
Pierce	286,688	286,688	--	222,618	222,618	--	64,070	64,070	--
Skagit	31,652	29,401	2,251	24,298	22,627	1,671	7,354	6,774	580
Snohomish	502,277	456,465	45,812	388,302	353,402	34,900	113,975	103,063	10,912
Whatcom	16,032	15,949	83	12,485	12,423	62	3,547	3,526	21
Total	1,303,327	1,254,992	48,335	1,014,918	978,137	36,781	288,409	276,855	11,554
Olympic Peninsula									
Clallam	20,634	13,958	6,676	15,801	10,621	5,180	4,833	3,337	1,496
Grays Harbor	249,335	249,294	41	193,609	193,578	31	55,726	55,716	10
Jefferson	42,777	42,777	--	33,664	33,664	--	9,113	9,113	--
Lewis	432,493	431,660	833	336,605	335,772	833	95,888	95,888	--
Mason	288,357	287,713	644	225,992	225,992	--	62,365	61,721	644
Pacific	95,659	89,848	5,811	74,873	70,483	4,390	20,786	19,365	1,421
Thurston	38,850	38,847	3	29,812	29,810	2	9,038	9,037	1
Total	1,168,105	1,154,097	14,008	910,356	899,920	10,436	257,749	254,177	3,572
Lower Columbia									
Clark	49,419	49,419	--	38,411	38,411	--	11,008	11,008	--
Cowlitz	628,729	628,729	--	485,566	485,566	--	143,163	143,163	--
Klickitat	147,481	147,430	51	115,012	115,012	--	32,469	32,418	51
Skamania/ Wahkiakum[2]	82,735	82,735	--	64,443	64,443	--	18,292	18,292	--
Total	908,364	908,313	51	703,432	703,432	--	204,932	204,881	51
Central Washington									
Chelan/Okanogan[2]	177,010	171,278	5,732	139,437	136,548	2,889	37,573	34,730	2,843
Yakima	239,824	239,384	440	189,545	189,105	440	50,279	50,279	--
Total	416,834	410,662	6,172	328,982	325,653	3,329	87,852	85,009	2,843
Inland Empire									
Asotin/Walla Walla[2]	85,461	85,460	1	64,946	64,945	1	20,515	20,515	--
Columbia/Ferry[2]	88,779	88,762	17	69,912	69,895	17	18,867	18,867	--
Pend Oreille/Spokane[2]	96,012	96,012	--	75,575	75,575	--	20,437	20,437	--
Stevens	276,172	275,394	778	213,100	212,481	619	63,072	62,913	159
Total	546,424	545,628	796	423,533	422,896	637	122,891	122,732	159
Total, State	4,343,054	4,273,692	69,362	3,381,221	3,330,038	51,183	961,833	943,654	18,179

[1]Used residues were not necessarily consumed in the area or county in which they were produced

[2]Combined to avoid disclosure

Table 31 Production and disposition of wood residues by county (Tons, dry weight)

Economic area and county	All Types							Coarse[1,6]					
	Total	Total used[4]	Pulp	Board	Fuel	Other	Unused	Total	Total used[4]	Pulp	Fuel	Other	Unused
Puget Sound													
Island/Kitsap/ San Juan[5]	195,252	195,118	--	--	187,964	7,154	134	107,315	107,241	--	103,292	3,949	74
King	171,963	171,949	94,438	--	68,356	9,155	14	95,859	95,849	94,438	345	1,066	10
Pierce	222,618	222,618	95,578	--	115,028	12,012	--	130,716	130,716	95,578	32,546	2,592	--
Skagit	24,298	22,627	3,705	--	7,786	11,136	1,671	14,294	13,109	3,705	5,192	4,212	1,185
Snohomish	388,302	353,402	184,903	--	62,535	105,964	34,900	228,359	206,068	136,465	20,754	48,849	22,291
Whatcom	12,485	12,423	6,759	--	2,191	3,473	62	7,030	6,986	6,759	44	183	44
Total	1,014,918	978,137	385,383	--	443,860	148,894	36,781	583,573	559,969	336,945	162,173	60,851	23,604
Olympic Peninsula													
Clallam	15,801	10,621	2,213	--	6,636	1,772	5,180	9,874	6,976	2,213	3,184	1,579	2,898
Grays Harbor	193,609	193,578	155,774	--	30,153	7,651	31	113,170	113,148	92,925	15,810	4,413	22
Jefferson	33,664	33,664	17,362	--	12,723	3,579	--	18,617	18,617	17,362	1,240	15	--
Lewis	336,605	335,772	233,184	--	60,853	41,735	833	193,877	193,256	122,801	40,401	30,054	621
Mason	225,992	225,992	197,751	--	22,798	5,443	--	127,901	127,901	127,364	537	--	--
Pacific	74,873	70,483	19,825	--	50,648	10	4,390	41,673	39,163	10,994	28,163	6	2,510
Thurston	29,812	29,810	--	--	6,804	23,006	2	18,462	18,460	--	--	18,460	2
Total	910,356	899,920	626,109	--	190,615	83,196	10,436	523,574	517,521	373,659	89,335	54,527	6,053
Lower Columbia													
Clark	38,411	38,411	26,974	--	11,241	196	--	22,488	22,488	22,309	57	122	--
Cowlitz	485,566	485,566	277,195	--	172,675	35,696	--	292,433	292,433	203,183	89,212	38	--
Klickitat	115,012	115,012	52,439	4,570	57,960	43	--	66,326	66,326	34,093	32,233	--	--
Skamania/ Wahkiakum[5]	64,443	64,443	53,103	7,603	3,737	--	--	37,364	37,364	36,915	449	--	--
Total	703,432	703,432	409,711	12,173	245,613	35,935	--	418,611	418,611	296,500	121,951	160	--
Central Washington													
Chelan/ Okanogan[5]	139,437	136,548	64,225	--	54,447	17,876	2,889	76,751	76,423	61,664	2,849	11,910	328
Yakima	189,545	189,105	47,341	38,975	72,320	30,469	440	103,746	103,306	47,341	39,881	16,084	440
Total	328,982	325,653	111,566	38,975	126,767	48,345	3,329	180,497	179,729	109,005	42,730	27,994	768
Inland Empire													
Asotin/Walla Walla[5]	64,946	64,945	41,897	--	11,033	12,015	1	41,908	41,908	41,897	11	--	--
Columbia/ Ferry[5]	69,912	69,895	54,041	--	142	15,712	17	38,541	38,529	38,387	142	--	12
Pend Oreille/ Spokane[5]	75,575	75,575	45,697	7,209	25,513	4,365	--	41,750	41,750	41,513	158	79	--
Stevens	213,100	212,481	87,534	--	95,785	21,953	619	128,841	128,370	73,042	55,202	126	471
Total	423,533	422,896	229,169	7,209	132,473	54,045	637	251,040	250,557	194,839	55,513	205	483
Total, State	3,381,221	3,330,038	1,761,938	58,357	1,139,328	370,415	51,183	1,957,295	1,926,387	1,310,948	471,702	143,737	30,908

[1]Coarse residue includes slabs, edgings, sawmill trim, and planer trim

[2]Medium residue is planer shavings

[3]Fine residue is sawdust

[4]Used residues were not necessarily consumed in the economic area in which they were produced

[5]Combined to avoid disclosure

[6]The Board column under "Coarse" has been deleted because no figures were reported

Table 31 (Continued) Production and disposition of wood residues by county (Tons, dry weight)

Medium[2]							Fine[3]						
Total	Total Used[4]	Pulp	Board	Fuel	Other	Unused	Total	Total Used[4]	Pulp	Board	Fuel	Other	Unused
43,942	43,912	--	--	42,336	1,576	30	43,995	43,965	--	--	42,336	1,629	30
36,817	36,817	--	--	32,598	4,219	--	39,287	39,283	--	--	35,413	3,870	4
38,353	38,353	--	--	34,264	4,089	--	53,549	53,549	--	--	48,218	5,331	--
4,269	4,269	--	--	169	4,100	--	5,735	5,249	--	--	2,425	2,824	486
67,101	63,499	20,956	--	28,632	13,911	3,602	92,842	83,835	27,482	--	13,149	43,204	9,007
2,593	2,593	--	--	1,029	1,564	--	2,862	2,844	--	--	1,118	1,726	18
193,075	189,443	20,956	--	139,028	29,459	3,632	238,270	228,725	27,482	--	142,659	58,584	9,545
1,882	852	--	--	852	--	1,030	4,045	2,793	--	--	2,600	193	1,252
34,168	34,168	27,914	--	4,713	1,541	--	46,271	46,262	34,935	--	9,630	1,697	9
7,116	7,116	--	--	5,337	1,779	--	7,931	7,931	--	--	6,146	1,785	--
64,460	64,460	51,154	--	11,573	1,733	--	78,268	78,056	59,229	--	8,879	9,948	212
45,678	45,678	34,291	--	11,128	259	--	52,413	52,413	36,096	--	11,133	5,184	--
16,254	15,336	4,325	--	11,011	--	918	16,946	15,984	4,506	--	11,474	4	962
3,784	3,784	--	--	--	3,784	--	7,566	7,566	--	--	6,804	762	--
173,342	171,394	117,684	--	44,614	9,096	1,948	213,440	211,005	134,766	--	56,666	19,573	2,435
6,709	6,709	1,555	--	5,128	26	--	9,214	9,214	3,110	--	6,056	48	--
73,277	73,277	--	--	37,633	35,644	--	119,856	119,856	74,012	--	45,830	14	--
21,502	21,502	7,115	4,570	9,817	--	--	27,184	27,184	11,231	--	15,910	43	--
11,766	11,766	2,290	7,603	1,873	--	--	15,313	15,313	13,898	--	1,415	--	--
113,254	113,254	10,960	12,173	54,451	35,670	--	171,567	171,567	102,251	--	69,211	105	--
31,231	29,076	--	--	25,976	3,100	2,155	31,455	31,049	2,561	--	25,622	2,866	406
42,118	42,118	--	34,457	1,516	6,145	--	43,681	43,681	--	4,518	30,923	8,240	--
73,349	71,194	--	34,457	27,492	9,245	2,155	75,136	74,730	2,561	4,518	56,545	11,106	406
5,863	5,863	--	--	5,159	704	--	17,175	17,174	--	--	5,863	11,311	1
15,576	15,576	7,788	--	--	7,788	--	15,795	15,790	7,866	--	--	7,924	5
16,715	16,715	2,092	--	12,525	2,098	25	17,110	17,110	2,092	--	12,830	2,188	--
31,457	31,432	7,246	7,209	2,778	14,199	--	52,802	52,679	7,246	--	37,805	7,628	123
69,611	69,586	17,126	7,209	20,462	24,789	25	102,882	102,753	17,204	--	56,498	29,051	129
622,631	614,871	166,726	53,839	286,047	108,259	7,760	801,295	788,780	284,264	4,518	381,579	118,419	12,515

Table 32 Production and disposition of bark residues by county (Tons, dry weight)

Economic area and county	All bark	Used[1]					Unused
		Total	Pulp	Board	Fuel	Other	
Puget Sound							
Island/Kitsap							
San Juan[2]	52,537	52,501	--	--	50,671	1,830	36
King	46,926	46,921	--	12,900	26,742	7,279	5
Pierce	64,070	64,070	--	--	57,900	6,170	--
Skagit	7,354	6,774	--	--	1,352	5,422	580
Snohomish	113,975	103,063	969	--	12,395	89,699	10,912
Whatcom	3,547	3,526	--	--	2,096	1,430	21
Total	288,409	276,855	969	12,900	151,156	111,830	11,554
Olympic Peninsula							
Clallam	4,833	3,337	--	--	3,106	231	1,496
Grays Harbor	55,726	55,716	--	--	53,335	2,381	10
Jefferson	9,113	9,113	--	--	607	8,506	--
Lewis	95,888	95,888	350	--	77,671	17,867	--
Mason	62,365	61,721	--	--	55,529	6,192	644
Pacific	20,786	19,365	--	--	19,360	5	1,421
Thurston	9,038	9,037	--	--	7,224	1,813	1
Total	257,749	254,177	350	--	216,832	36,995	3,572
Lower Columbia							
Clark	11,008	11,008	3,715	--	7,249	44	--
Cowlitz	143,163	143,163	--	--	99,475	43,688	--
Klickitat	32,469	32,418	--	--	32,418	--	51
Skamania/Wahkiakum[2]	18,292	18,292	--	--	18,292	--	--
Total	204,932	204,881	3,715	--	157,434	43,732	51
Central Washington							
Chelan/Okanogan[2]	37,573	34,730	--	--	30,394	4,336	2,843
Yakima	50,279	50,279	--	--	31,209	19,070	--
Total	87,852	85,009	--	--	61,603	23,406	2,843
Inland Empire							
Asotin/Walla Walla[2]	20,515	20,515	--	--	5,954	14,561	--
Columbia/Ferry[2]	18,867	18,867	--	--	18,867	--	--
Pend Oreille/Spokane[2]	20,437	20,437	--	--	20,436	1	--
Stevens	63,072	62,913	--	--	61,719	1,194	159
Total	122,891	122,732	--	--	106,976	15,756	159
Total State	961,833	943,654	5,034	12,900	694,001	231,719	18,179

[1]Used residues were not necessarily consumed in the economic area in which they were produced

[2]Combined to avoid disclosure

Table 33 Degree of lumber manufacture (Thousand board feet, lumber tally)

Economic area and mill size-class[1]	Green	Kiln-dried	Air-dried	Total	Rough	Surfaced
Puget Sound						
D	15,429	2,560	150	18,139	12,456	5,683
C	46,357	19,655	--	66,012	18,425	47,587
B	71,968	53,312	--	125,280	52,555	72,725
A	487,373	402,578	--	889,951	122,729	767,222
Total	621,127	478,105	150	1,099,382	206,165	893,217
Olympic Peninsula						
D	11,555	8,617	7,440	27,612	14,375	13,237
C	11,050	29,064	--	40,114	9,200	30,914
B	68,445	44,500	--	112,945	35,500	77,445
A	419,248	382,309	93	801,650	121,939	679,711
Total	510,298	464,490	7,533	982,321	181,014	801,307
Lower Columbia						
D	1,360	55	55	1,470	1,345	125
C	29,044	19,747	--	48,791	15,488	33,303
B	43,334	45,451	--	88,785	19,590	69,195
A	529,538	115,516	10,248	655,302	233,582	421,720
Total	603,276	180,769	10,303	794,348	270,005	524,343
Central Washington						
D and C[2]	8,546	--	2,280	10,826	1,048	9,778
B	11,304	56,915	60	68,279	4,183	64,096
A	28,412	236,829	3,538	268,779	3,052	265,727
Total	48,262	293,744	5,878	347,884	8,283	339,601
Inland Empire						
D	1,822	--	184	2,006	1,393	613
C	46,321	104,101	10,810	161,232	69,897	91,335
B	44,171	39,600	13,572	97,343	39,555	57,788
A	75,857	139,942	--	215,799	43,207	172,592
Total	168,171	283,643	24,566	476,380	154,052	322,328
Total, State						
D[3]	38,936	11,232	10,309	60,477	31,041	29,436
C	132,548	172,567	10,610	315,725	112,586	203,139
B	239,222	239,778	13,632	492,632	151,383	341,249
A	1,540,428	1,277,174	13,879	2,831,481	524,509	2,306,972
Total	1,951,134	1,700,751	48,430	3,700,315	819,519	2,880,796

[1]Mill size-classes identified as follows: Class D mills = less than 40,000 board feet per 8-hour shift; C= 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Size-class D includes size-class C for Central Washington

Table 34 Lumber production by headrig type, by mill size-class[1] (Thousand board feet, lumber tally)

Economic area and mill size-class	All types	Circular saw	Band saw	Gang saw	Chipping saw	Scragg double cut saw
Puget Sound						
D	18,139	15,864	2,275	--	--	--
C	66,012	--	64,212	--	1,800	--
B	125,280	37,196	59,745	--	21,700	6,639
A	889,951	--	692,949	--	47,652	149,350
Total	1,099,382	53,060	819,181	--	71,152	155,989
Olympic Peninsula						
D	27,612	17,653	7,742	--	--	2,217
C	40,114	8,352	31,762	--	--	--
B	112,945	3,000	92,445	--	17,500	--
A	801,650	69,540	467,075	49,605	156,366	59,064
Total	982,321	98,545	599,024	49,605	173,866	61,281
Lower Columbia						
D	1,470	1,470	--	--	--	--
C	48,791	--	48,791	--	--	--
B	88,785	--	79,695	9,090	--	--
A	655,302	--	566,401	32,912	40,251	15,738
Total	794,348	1,470	694,887	42,002	40,251	15,738
Central Washington						
D and C[2]	10,826	424	9,362	--	1,040	--
B	68,279	300	67,979	--	--	--
A	268,779	--	199,468	--	69,311	--
Total	347,884	724	276,809	--	70,351	--
Inland Empire						
D	2,006	1,706	300	--	--	--
C	161,232	23,860	131,132	--	--	6,240
B	97,343	--	97,343	--	--	--
A	215,799	--	215,799	--	--	--
Total	476,380	25,566	444,574	--	--	6,240
Total, State						
D[3]	60,053	37,117	19,679	--	1,040	2,217
C	316,149	32,212	275,897	--	1,800	6,240
B	492,632	40,496	397,207	9,090	39,200	6,639
A	2,831,481	69,540	2,141,692	82,517	313,580	224,152
Total	3,700,315	179,365	2,834,475	91,607	355,620	239,248

[1]Mill size-class identified as follows: Class D mills = less than 40,000 board feet per 8-hour shift; C = 40,000 - 79,999; B = 80,000 - 119,999; A = 120,000 +

[2]Combined to avoid disclosure

[3]Total for Class D includes Class C for Central Washington

Table 35 Lumber production by headrig type, by county (Thousand board feet, lumber tally)

Economic area and mill size-class[1]	All types	Circular saw	Band saw	Gang saw	Chipping saw	Scragg double cut saw
Puget Sound						
Island/Kitsap/San Juan[1]	203,691	491	201,400	--	1,800	--
King	181,899	699	181,200	--	--	--
Pierce	247,814	16,356	132,119	--	48,300	51,039
Skagit	26,062	2,460	17,250	--	6,352	--
Snohomish	426,804	32,534	274,620	--	14,700	104,950
Whatcom	13,112	520	12,592	--	--	--
Total	1,099,382	53,060	819,181	--	71,152	155,989
Olympic Peninsula						
Clallam	18,744	11,588	4,939	--	--	2,217
Grays Harbor	213,778	3,448	108,825	49,605	51,900	--
Jefferson	36,721	3,776	32,945	--	--	--
Lewis	357,492	1,261	279,667	--	17,500	59,064
Mason	242,628	517	172,645	--	69,466	--
Pacific	77,924	77,924	--	--	--	--
Thurston	35,034	31	3	--	35,000	--
Total	982,321	98,545	599,024	49,605	173,866	61,281
Lower Columbia						
Clark	42,678	344	42,334	--	--	--
Cowlitz	554,907	73	514,583	--	40,251	--
Klickitat	125,861	200	100,833	9,090	--	15,738
Skamania/Wahkiakum[1]	70,902	853	37,137	32,912	--	--
Total	794,348	1,470	694,887	42,002	40,251	15,738
Central Washington						
Chelan/Okanogan[1]	145,646	724	126,190	--	18,732	--
Yakima	202,238	--	150,619	--	51,619	--
Total	347,884	724	276,809	--	70,351	--
Inland Empire						
Asotin/Walla Walla[1]	79,522	20	79,502	--	--	--
Columbia/Ferry[1]	73,135	294	72,841	--	--	--
Pend Oreille/Spokane[1]	79,225	150	79,075	--	--	--
Stevens	244,498	25,102	213,156	--	--	6,240
Total	476,380	25,566	444,574	--	--	6,240
Total, State	3,700,315	179,365	2,834,475	91,607	355,620	239,248

[1]Combined to avoid disclosure

Table 36 Number of veneer and plywood mills

Economic area and county	All types	Veneer only	Layup only	Veneer and layup
Puget Sound				
King	2	--	--	2
Pierce	2	--	2	--
Skagit	1	--	1	--
Snohomish	1	--	--	1
Whatcom	1	--	--	1
Total	7	--	3	4
Olympic Peninsula				
Clallam	2	1	--	1
Grays Harbor	4	1	2	1
Lewis	2	2	--	--
Mason	1	--	--	1
Thurston	3	1	2	--
Total	12	5	4	3
Lower Columbia				
Clark	1	--	--	1
Cowlitz	1	1	--	--
Klickitat	1	--	--	1
Skamania	1	--	--	1
Total	4	1	--	3
Central Washington				
Kittitas	1	1	--	--
Okanogan	2	1	--	1
Yakima	1	--	--	1
Total	4	2	--	2
Inland Empire				
Stevens	1	--	--	1
Total	1	--	--	1
Total, State	28	8	7	13

Table 37 Installed eight-hour single-shift capacity (Thousand square feet, 3/8-inch basis)

Economic area and county	Type of operation			
	Veneer only	Layup only	Veneer and layup	
			Veneer	Layup
Puget Sound				
King	--	--	350	340
Pierce	--	296	--	--
Skagit	--	350	--	--
Snohomish	--	--	70	30
Whatcom	--	--	180	140
Total	--	646	600	510
Olympic Peninsula				
Clallam	105	--	190	180
Grays Harbor	80	470	60	150
Lewis	180	--	--	--
Mason	--	--	290	45
Thurston	60	690	--	--
Total	425	1,160	540	375
Lower Columbia				
Clark	--	--	225	200
Cowlitz	144	--	--	--
Klickitat	--	--	250	100
Skamania	--	--	120	130
Total	144	--	595	430
Central Washington				
Kittitas	200	--	--	--
Okanogan	100	--	250	100
Yakima	--	--	240	175
Total	300	--	490	275
Inland Empire				
Stevens	--	--	256	160
Total	--	--	256	160
Total, State	869	1,806	2,481	1,750

Table 38 Number of mills by lathe log diameter limit

Economic area	Lathe log diameter limit							
	Layup only	20-29	30-39	40-49	50-59	60-69	70-79	80+
Puget Sound	3	--	--	2	--	--	1	1
Olympic Peninsula	4	--	2	1	1	1	1	2
Lower Columbia	--	--	--	1	--	--	--	3
Central Washington	--	1	--	2	1	--	--	--
Inland Empire	--	1	--	--	--	--	--	--
Total, State	7	2	2	6	2	1	2	6

Table 39 Number of mills by minimum core size produced

Economic area	Diameter of cores (inches)									No lathe or core
	3	4	5	6	7	8	9	10	11+	
Puget Sound	--	--	--	--	--	--	--	1	3	3
Olympic Peninsula	--	--	1	--	--	3	--	2	2	4
Lower Columbia	--	--	--	1	--	--	--	3	--	--
Central Washington	--	--	--	1	1	1	--	1	--	--
Inland Empire	--	--	--	--	--	1	--	--	--	--
Total, State	--	--	1	2	1	5	--	7	5	7

Table 40 Number of mills having selected equipment

Economic area and county	4-foot lathe	8-foot lathe	Slicer	Veneer chipper	Core chipper	Cold press	Hot press	Burner
Puget Sound								
King	--	2	1	2	2	--	2	--
Pierce	--	--	--	--	--	1	2	--
Skagit	--	--	--	--	--	--	1	--
Snohomish	1	--	--	1	1	1	--	--
Whatcom	1	1	--	--	--	--	--	--
Total	2	3	1	3	3	2	5	--
Olympic Peninsula								
Clallam	1	2	--	2	2	--	1	--
Grays Harbor	1	2	--	3	1	--	3	--
Lewis	2	--	--	2	2	--	--	--
Mason	--	1	--	1	1	--	1	--
Thurston	1	--	--	--	--	--	1	--
Total	5	5	--	8	6	--	6	--
Lower Columbia								
Clark	1	1	--	1	1	--	1	--
Cowlitz	--	1	--	1	--	--	--	--
Klickitat	--	1	--	--	--	--	--	1
Skamania	1	1	--	1	--	--	1	1
Total	2	4	--	3	1	--	2	2
Central Washington								
Kittitas	--	1	--	1	--	--	--	--
Okanogan	2	1	--	2	1	--	1	--
Yakima	1	1	--	1	1	--	1	--
Total	3	3	--	4	2	--	2	--
Inland Empire								
Stevens	--	1	--	1	1	--	1	--
Total	--	1	--	1	1	--	1	--
Total, State	12	16	1	19	13	2	16	2

Table 41 Number of mills by tenure of present ownership

Economic area and site occupancy (years)	All mills	Tenure of present mill ownership (years)				
		0-2	3-5	6-10	11-20	21+
Puget Sound						
21+	7	1	--	--	--	6
Total	7	1	--	--	--	6
Olympic Peninsula						
11-20	2	--	--	--	2	--
21+	10	--	1	1	2	6
Total	12	--	1	1	4	6
Lower Columbia						
21+	4	--	--	--	--	4
Total	4	--	--	--	--	4
Central Washington						
6-10	1	--	--	1	--	--
11-20	2	--	--	1	1	--
21+	1	--	--	--	--	1
Total	4	--	--	2	1	1
Inland Empire						
11-20	1	--	--	--	1	--
Total	1	--	--	--	1	--
Total, State						
6-10	1	1	--	1	--	--
11-20	5	--	--	1	4	--
21+	22	--	1	1	2	17
Total	28	1	1	3	6	17

Table 42 Average number of operating days

Economic area	Veneer only	Layup only	Veneer and layup
Puget Sound	--	218	230
Olympic Peninsula	175	283	209
Lower Columbia	235	--	245
Central Washingtion	50	--	266
Inland Empire	--	--	324
Statewide Average	151	255	241

Table 43 Log inventory changes, log consumption and apparent log receipts (Thousand board feet, Scribner log rule)

Economic area	Log inventory			1984 log consumption	Apparent 1984 log receipts
	January 1, 1984	December 31, 1984	Net change		
Puget Sound	16,449	12,100	- 4,349	54,649	50,300
Olympic Peninsula	15,030	16,639	+ 1,609	74,528	76,137
Lower Columbia	30,587	21,912	- 8,675	115,173	106,498
Central Washington/ Inland Empire[1]	35,613	34,093	- 1,520	147,692	146,172
Total, State	97,679	84,744	-12,935	392,042	379,107

[1]Combined to avoid disclosure

Table 44 Production and disposition of wood residues (Tons, dry weight)

Economic area	Total	Total Used[1]	Used			Unused
			Pulp and board	Fuel	Other	
Puget Sound						
Coarse[2] & medium[3]	129,887	128,737	63,725	58,592	6,420	1,150
Fine[4]	8,680	8,680	--	8,636	44	--
Total	138,567	137,417	63,725	67,228	6,464	1,150
Olympic Peninsula						
Coarse[2] & medium[3]	173,277	173,277	107,701	50,643	14,933	--
Fine[4]	10,973	10,973	--	10,583	390	--
Total	184,250	184,250	107,701	61,226	15,323	--
Lower Columbia						
Coarse[2] & medium[3]	113,061	113,061	82,484	4,633	25,944	--
Fine[4]	3,105	3,105	--	1,158	1,947	--
Total	116,166	116,166	82,484	5,791	27,891	--
Central Washington/ Inland Empire[5]						
Coarse[2] & medium[3]	214,259	214,164	146,634	54,538	12,992	95
Fine[4]	9,388	9,388	--	9,388	--	--
Total	223,647	223,552	146,634	63,926	12,992	95
Total, State						
Coarse[2] & medium[3]	630,484	629,239	400,544	168,406	60,289	1,245
Fine[4]	32,146	32,146	--	29,765	2,381	--
Total	662,630	661,385	400,544	198,171	62,670	1,245

[1]Used residues were not necessarily consumed in the area in which they were produced

[2]Coarse residue includes log trim, cores, veneer clippings, roundup and spur trim

[3]Medium residue includes reject veneer and panel trim

[4]Fine residue includes sawdust and sander dust

[5]Combined to avoid disclosure

Table 45 Veneer and plywood production (Thousand square feet, 3/8-inch basis)

Economic area and county	Veneer	Plywood
Puget Sound		
King/Pierce/Skagit Snohomish/Whatcom[2]	17,905	394,612
Olympic Peninsula		
Clallam/Grays Harbor/ Lewis/Mason/ Thurston[2]	182,487	498,847
Lower Columbia		
Clark/Cowlitz/Klickitat/ Skamania[2]	125,909	241,520
Central Washington/ Inland Empire[2]		
Okanogan/Yakima/Kittitas[2]	8,487	426,748
Total, State	334,788	1,561,727

[1]Includes hardwood and softwood faced plywood

[2]Combined to avoid disclosure

Table 46 Number of pulp mills[1]

Economic area and county	All mills	Type of pulp mill			
		Sulfite	Sulfate	Groundwood	Semichemical
Puget Sound					
Pierce	2	--	1	1	--
Snohomish	1	--	1	--	--
Whatcom	2	1	--	--	1
Total	5	1	2	1	1
Olympic Peninsula					
Clallam	2	1	--	1	--
Grays Harbor	2	2	--	--	--
Jefferson	1	--	1	--	--
Total	5	3	1	1	--
Lower Columbia					
Clark	2	1	1	--	--
Cowlitz	5	--	2	1	2
Total	7	1	3	1	2
Inland Empire					
Spokane	1	--	--	1	--
Walla Walla	2	--	1	--	1
Total	3	--	1	1	1
Total, State	20	5	7	4	4

[1]No board mills have operated in Washington State since 1982

Table 47 Installed capacity by type of mill

Economic area and county	All mills	Type of pulp mill			
		Sulfite	Sulfate	Groundwood	Semichemical
	Bone dry tons[1]				
Puget Sound					
Pierce	1,415	--	1,000	415	--
Snohomish	424	--	424	--	--
Whatcom	540	486	--	--	54
Total	2,379	486	1,424	415	54
Olympic Peninsula					
Clallam	1,000	500	--	500	--
Grays Harbor	767	767	--	--	--
Jefferson	430	--	430	--	--
Total	2,197	1,267	430	500	--
Lower Columbia					
Clark	1,202	410	792	--	--
Cowlitz	5,009	--	3,285	1,244	480
Total	6,211	410	4,077	1,244	480
Inland Empire					
Spokane	212	--	--	212	--
Walla Walla	1,020	--	752	--	268
Total	1,232	--	752	212	268
Total, State	12,019	2,163	6,683	2,371	802

[1] 24 hour capacity

Table 48 Number of mills by tenure of present ownership

Mills type and site occupancy (years)	Tenure of present ownership (years)				
	0-2	3-5	6-10	11-20	21+
Sulfite					
21+	--	--	--	2	3
Sulfate					
21+	1	--	--	--	6
Groundwood					
3-5	--	--	1	--	--
21+	--	--	--	1	2
Semichemical					
11-20	--	--	--	1	--
21+	--	--	--	--	3
Total	1	--	1	4	14

Table 49 Average number of operating days

Economic area	Pulp
Puget Sound	344
Olympic Peninsula	340
Lower Columbia	352
Inland Empire	349
Total, State	347

Table 50 Mill production by product and operation (bone dry tons)

Economic area	All products	Type of product				
		Newsprint	Bleached paper	Unbleached paper	Other paper	Market pulp
Puget Sound	829,598	170,168	22,029	225,297	91,444	320,660
Olympic Peninsula	605,969	9,512	101,799	--	302,946	191,712
Lower Columbia and Inland Empire[1]	2,286,417	496,823	804,468	985,059	67	--
Total, State	3,721,984	676,503	928,296	1,210,356	394,457	512,372
Type of Operation, Statewide						
Sulfite	664,040	--	111,159	723	275,977	276,181
Sulfate	2,033,981	--	715,338	982,266	100,186	236,191
Groundwood	778,302	676,503	101,799	--	--	--
Semichemical	245,661	--	--	227,367	18,294	--
Total, State	3,721,984	676,503	928,296	1,210,356	394,457	512,372

[1]Combined to avoid disclosure

Table 51 Type of wood consumed

Economic area	Roundwood			Other					
					Chips				
	Total	Sound logs	Utility logs	Total	From mill residue	From roundwood chipping mill	Sawdust	Shavings	Waste paper
	Thousand board feet, Scribner log rule			Bone dry tons					
Puget Sound	65,611	57,713	7,898	1,536,561	734,612	801,949	--	--	--
Olympic Peninsula	237,375	206,874	30,501	1,225,307	468,660	714,999	35,669	--	930
Lower Columbia and Inland Empire[1]	89,956	25,656	64,300	4,038,164	2,445,067	1,318,699	249,336	--	25,062
Total, State	392,942	290,243	102,699	6,800,032	3,648,339	2,835,647	285,005	--	25,992

[1]Combined to avoid disclosure

Table 52 Roundwood and chip consumption (log consumption: Thousand board feet, Scribner log rule) (chip consumption: bone dry tons)

Economic area	All species	Douglas fir	Hemlock	True firs	Spruce	Lodgepole pine	Other softwoods	Hardwoods
Puget Sound								
Total logs	65,611	577	28,816	28,240	--	--	--	7,978
Chips								
Roundwood	801,949	274,295	276,495	162,454	--	1,595	22,343	64,767
Residue[1]	734,612	--	--	--	--	--	--	--
Total Chips	1,536,561							
Olympic Peninsula								
Total logs	237,375	--	158,136	10,494	3,487	--	12,200	53,058
Chips								
Roundwood	714,999	66,163	405,670	34,410	76,959	--	24,972	106,825
Residue[1]	468,660	--	--	--	--	--	--	--
Total Chips	1,183,659							
Lower Columbia/ Inland Empire[2]								
Total logs	89,956	17,041	57,518	--	--	--	--	15,397
Chips								
Roundwood	1,318,699	387,450	273,171	151,432	16,520	230,225	121,156	138,745
Residue[1]	2,445,067	--	--	--	--	--	--	--
Total Chips	3,763,766							
Total, State								
Total logs	392,942	17,618	244,470	38,734	3,487	--	12,200	76,433
Chips								
Roundwood	2,835,647	727,908	955,336	348,296	93,479	231,820	168,471	310,337
Residue[1]	3,648,339	--	--	--	--	--	--	--
Total Chips	6,483,986							

[1]Species breakdown for residue chips is not available

[2]Combined to avoid disclosure

Table 53 Residue and off-site roundwood chip consumption by state or province (Tons, dry weight)

Economic area and type of material	Total volume	Washington	Oregon	Idaho	British Columbia	Other
Puget Sound						
Chip residue[1]	734,612	--	--	--	--	--
Chip roundwood	801,949	589,766	--	6,630	202,238	3,315
Sawdust and shavings	--	--	--	--	--	--
Total	1,536,561[3]	589,766	--	6,630	202,238	3,315
Olympic Peninsula						
Chip residue[1]	468,660	--	--	--	--	--
Chip roundwood	714,999	584,065	--	--	130,934	--
Sawdust and shavings	40,718	7,903	--	--	32,815	--
Total	1,224,377[3]	591,968	--	--	163,749	--
Lower Columbia/ Inland Empire[2]						
Chip residue[1]	2,445,067	--	--	--	--	--
Chip roundwood	1,318,699	804,106	326,031	188,562	--	--
Sawdust and shavings	249,336	144,441	103,939	956	--	--
Total	4,013,102[3]	948,547	429,970	189,518	--	--
Total, State						
Chip residue[1]	3,648,339	--	--	--	--	--
Chip roundwood	2,835,647	1,977,937	326,031	195,192	333,172	3,315
Sawdust and shavings	290,054	152,344	103,939	956	32,815	--
Total	6,774,040[3]	2,130,281	429,970	196,148	365,987	3,315

[1] State or province of origin for residue chips is not available

[2] Combined to avoid disclosure

[3] Includes chip residue total

Table 54 Number of shake and shingle mills and their operating characteristics

Economic area and county	Number of mills	Total single shift capacity[1] (Squares)			Average number of operating days/year
		Shake	Shingle	Other	
Puget Sount					
King/Pierce[2]	4	147	60	20	155
Skagit	15	1,195	356	39	166
Snohomish	13	589	710	10	156
Whatcom	4	60	30	25	150
Total	36	1,991	1,156	94	159
Olympic Peninsula					
Clallam	30	1,929	857	25	169
Grays Harbor	33	2,933	509	409	183
Jefferson/Thurston[2]	3	95	--	--	198
Lewis	10	229	45	4	144
Pacific	3	473	80	--	131
Total	79	5,659	1,491	438	171
Lower Columbia					
Clark	3	105	50	16	218
Cowlitz	6	166	210	14	139
Wahkiakum	3	105	52	--	153
Total	12	376	312	30	162
Central Washington/ Inland Empire[2]					
Chelan/Pend Oreille/ Stevens[2]	4	69	5	18	133
Total	4	69	5	18	133
Total, State	131	8,095	2,964	580	166

[1]8-hour shift capacity

[2]Combined to avoid disclosure

Table 55 Number of shake and shingle mills with selected equipment

Economic area and county	Chipper	Barker	Burner
Puget Sound			
King/Pierce[1]	1	--	1
Skagit	--	--	9
Snohomish	3	--	4
Whatcom	--	--	1
Total	4	--	15
Olympic Peninsula			
Clallam	1	--	17
Grays Harbor	4	--	12
Jefferson/Thurston[1]	--	--	1
Lewis	1	--	2
Pacifc	1	--	--
Total	7	--	32
Lower Columbia			
Clark	1	--	--
Cowlitz	2	--	--
Wahkiakum	--	--	--
Total	3	--	--
Central Washington/ Inland Empire[1]			
Chelan/Pend Oreille Stevens[1]	1	--	--
Total	1	--	--
Total, State	15	--	47

[1] Combined to avoid disclosure

Table 56 Number of shake and shingle mills by tenure of present ownership and site occupancy

Type of mill and site occupancy (Years)	All mills	Tenure of present mill ownership (years)				
		0-2	3-5	6-10	11-20	21+
Shake and shingle						
0-2	3	1	2	--	--	--
3-5	9	1	8	--	--	--
6-10	41	3	3	34	1	--
11-20	52	2	5	6	39	--
21+	26	1	1	3	4	17
Total	131	8	19	43	44	17

Table 57 Type of wood consumed (Thousand board feet, Scribner log rule)

Economic area and county	All types	Sound logs	Utility logs	Other
Puget Sound				
King/Pierce[1]	2,180	1,860	200	120
Skagit	28,834	27,314	17	1,503
Snohomish	10,239	5,221	3,554	1,464
Whatcom	920	325	--	595
Total	42,173	34,720	3,771	3,682
Olympic Peninsula				
Clallam	23,143	18,509	690	3,944
Grays Harbor	37,490	29,902	924	6,664
Jefferson/Thurston[1]	588	312	--	276
Lewis	1,516	378	41	1,097
Pacific	3,519	2,754	285	480
Total	66,256	51,855	1,940	12,461
Lower Columbia				
Clark	2,855	1,337	1,518	--
Cowlitz	5,402	3,254	1,534	614
Wahkiakum	1,137	987	--	150
Total	9,394	5,578	3,052	764
Central Washington/ Inland Empire[1]				
Chelan/Pend Oreille/ Stevens[1]	599	122	88	389
Total	599	122	88	389
Total, State	118,422	92,275	8,851	17,296

[1] Combined to avoid disclosure

Table 58 Ownership origin of logs consumed (Thousand board feet, Scribner log rule)

Economic area and county	All owners	State	National Forest	Bureau of Land Management	Other public	Forest Industry		Farmer and miscellaneous private
						Own wood supply	Other wood supply	
Puget Sound								
King/Pierce[1]	2,060	200	260	--	--	--	--	1,600
Skagit	27,331	--	18,607	--	--	2,638	1,832	4,254
Snohomish	8,775	1,706	5,733	--	--	157	660	519
Whatcom	325	90	210	--	--	--	25	--
Total	38,491	1,996	24,810	--	--	2,795	2,517	6,373
Olympic Peninsula								
Clallam	19,199	7,549	321	--	326	--	10,914	89
Grays Harbor	30,826	2,840	3,679	250	4,959	668	14,272	4,158
Jefferson/Thurston[1]	312	--	192	--	--	--	120	--
Lewis	419	60	50	--	--	--	309	--
Pacific	3,039	2,002	--	--	--	--	1,037	--
Total	53,795	12,451	4,242	250	5,285	668	26,652	4,247
Lower Columbia								
Clark	2,855	72	556	--	--	--	2,087	140
Cowlitz	4,788	--	34	--	--	--	4,754	--
Wahkiakum	987	--	--	--	--	--	987	--
Total	8,630	72	590	--	--	--	7,828	140
Central Washington/ Inland Empire[1]								
Chellan/Pend Oreille/ Stevens[1]	210	--	210	--	--	--	--	--
Total	210	--	210	--	--	--	--	--
Total, State	101,126	14,519	29,852	250	5,285	3,463	36,997	10,760

[1]Combined to avoid disclosure

Table 59 Production and disposition of wood and bark residues (Tons, dry weight)

Economic area and county	All residues			Wood Residue			Bark residue		
	Total	Used[1]	Unused	Total	Used[1]	Unused	Total	Used[1]	Unused
Puget Sound									
King/Pierce[2]	1,978	1,978	--	1,388	1,388	--	590	590	--
Skagit	20,057	6,945	13,112	14,267	4,983	9,284	5,790	1,962	3,828
Snohomish	8,743	8,196	547	6,448	6,079	369	2,295	2,117	178
Whatcom	530	245	285	407	231	176	123	14	109
Total	31,308	17,364	13,944	22,510	12,681	9,829	8,798	4,683	4,115
Olympic Peninsula									
Clallam	24,775	5,956	18,819	18,490	4,454	14,036	6,285	1,502	4,783
Grays Harbor	34,281	26,084	8,197	24,333	18,388	5,945	9,948	7,696	2,252
Jefferson/Thurston[2]	507	188	319	400	163	237	107	25	82
Lewis	1,591	1,154	437	1,402	1,101	301	189	53	136
Pacific	3,643	2,136	1,507	2,507	1,530	977	1,136	606	530
Total	64,797	35,518	29,279	47,132	25,636	21,496	17,665	9,882	7,783
Lower Columbia									
Clark	2,948	2,836	112	2,026	2,026	--	922	810	112
Cowlitz	6,740	6,740	--	5,229	5,229	--	1,511	1,511	--
Wahkiakum	1,076	1,076	--	758	758	--	318	318	--
Total	10,764	10,652	112	8,013	8,013	--	2,751	2,639	112
Central Washington/ Inland Empire[2]									
Chelan/Pend Oreille/ Stevens[2]	330	99	231	270	39	231	60	60	--
Total	330	99	231	270	39	231	60	60	--
Total, State	107,199	63,633	43,566	77,925	46,369	31,556	29,274	17,264	12,010

[1]Used residues were not necessarily consumed in the area in which they were produced

[2]Combined to avoid disclosure

Table 60 Production and disposition of wood residues (Tons, dry weight)

Economic area and county	All Types						Coarse[1]					Fine[2]					
	Total	Total used[3]	Pulp and board	Fuel	Other	Unused	Total	Total used[3]	Pulp and board	Fuel	Other	Unused	Total	Total used[3]	Pulp and board	Fuel	Other	Unused
Puget Sound																		
King/Pierce[4]	1,388	1,388	--	1,257	131	--	526	526	--	462	64	--	862	862	--	795	67	--
Skagit	14,267	4,983	--	3,345	1,638	9,284	5,119	1,794	--	1,128	666	3,325	9,148	3,189	--	2,217	972	5,959
Snohomish	6,448	6,079	--	5,111	968	369	2,235	1,993	--	1,700	293	242	4,213	4,086	--	3,411	675	127
Whatcom	407	231	--	--	231	176	172	86	--	--	86	86	235	145	--	--	145	90
Total	22,510	12,681	--	9,713	2,968	9,829	8,052	4,399	--	3,290	1,109	3,653	14,458	8,282	--	6,423	1,859	6,176
Olympic Peninsula																		
Clallam	18,490	4,454	--	4,334	120	14,036	6,219	1,191	--	1,163	28	5,028	12,271	3,263	--	3,171	92	9,008
Grays Harbor	24,333	18,388	735	16,027	1,626	5,945	9,903	7,428	735	5,964	729	2,475	14,430	10,960	--	10,063	897	3,470
Jefferson/Thurston[4]	400	163	--	34	129	237	196	66	--	34	32	130	204	97	--	--	97	107
Lewis	1,402	1,101	--	309	792	301	634	532	--	309	223	102	768	569	--	--	569	199
Pacific	2,507	1,530	--	977	553	977	1,102	686	--	416	270	416	1,405	844	--	561	283	561
Total	47,132	25,636	735	21,681	3,220	21,496	18,054	9,903	735	7,886	1,282	8,151	29,078	15,733	--	13,795	1,938	13,345
Lower Columbia																		
Clark	2,026	2,026	--	2,020	6	--	724	724	--	718	6	--	1,302	1,302	--	1,302	--	--
Cowlitz	5,229	5,229	3,186	1,507	536	--	1,388	1,388	772	481	135	--	3,841	3,841	2,414	1,026	401	--
Wahkiakum	758	758	--	679	79	--	282	282	--	249	33	--	476	476	--	430	46	--
Total	8,013	8,013	3,186	4,206	621	--	2,394	2,394	772	1,448	174	--	5,619	5,619	2,414	2,758	447	--
Central Washington/ Inland Empire[4]																		
Chelan/Pend Oreille/ Stevens[4]	270	39	--	--	39	231	128	20	--	--	20	108	142	19	--	--	19	123
Total	270	39	--	--	39	231	128	20	--	--	20	108	142	19	--	--	19	123
Total, State	77,925	46,369	3,921	35,600	6,848	31,556	28,628	16,716	1,507	12,624	2,585	11,912	49,297	29,653	2,414	22,976	4,263	19,644

[1]End block trim, splats

[2]Splints and sawdust

[3]Used residues were not necessarily consumed in the economic area in which they were produced

[4]Combined to avoid disclosure

Table 61 Production and disposition of bark residues (Tons, dry weight)

Economic area and county	Bark					
	Total	Total used[1]	Pulp and board	Fuel	Other	Unused
Puget Sound						
King/Pierce[2]	590	590	--	580	10	--
Skagit	5,790	1,962	--	1,435	527	3,828
Snohomish	2,295	2,117	--	2,080	37	178
Whatcom	123	14	--	--	14	109
Total	8,798	4,683	--	4,095	588	4,115
Olympic Peninsula						
Clallam	6,285	1,502	--	1,502	--	4,783
Grays Harbor	9,948	7,696	--	7,503	193	2,252
Jefferson/Thurston[2]	107	25	--	--	25	82
Lewis	189	53	--	--	53	136
Pacific	1,136	606	--	530	76	530
Total	17,665	9,882	--	9,535	347	7,783
Lower Columbia						
Clark	922	810	--	810	--	112
Cowlitz	1,511	1,511	886	472	153	--
Wahkiakum	318	318	--	318	--	--
Total	2,751	2,639	886	1,600	153	112
Central Washington						
Inland Empire[2]						
Chelan/Pend Oreille/ Stevens[2]	60	60	--	--	60	--
Total	60	60	--	--	60	--
Total, State	29,274	17,264	886	15,230	1,148	12,010

[1]Used residues were not necessarily consumed in the economic area in which they were produced

[2]Combined to avoid disclosure

Table 62 Mill production by product type

Economic area and county	Shakes	Shingles	Other[1]
	---------- Squares ----------		
Puget Sound			
King/Pierce[2]	16,405	6,000	1,500
Skagit	156,677	73,019	2,951
Snohomish	64,027	36,040	1,556
Whatcom	4,900	1,080	1,800
Total	242,009	116,139	7,807
Olympic Peninsula			
Clallam	171,016	111,000	581
Grays Harbor	329,801	78,357	41,950
Jefferson/Thurston[2]	8,872	--	--
Lewis	26,088	2,020	675
Pacific	45,297	4,843	--
Total	581,074	196,220	43,206
Lower Columbia			
Clark	20,490	10,473	1,950
Cowlitz	14,627	45,953	2,505
Wahkiakum	9,375	3,465	--
Total	44,492	59,891	4,455
Central Washington and Inland Empire[2]			
Chelan/Pend Oreille/ Stevens[2]	5,075	153	577
Total	5,075	153	577
Total, State	872,650	372,403	56,045

[1] Other includes such products as hip and ridge shakes, wedges, etc.

[2] Combined to avoid disclosure

Table 63 Number of pole, post and piling mills and their operating characteristics

Economic area	Number of mills	Yearly installed capacity, Thousand board feet, Scribner log rule		Average number of operating days in 1984	
		Peeling	Treatment	Peeling	Treatment
Puget Sound	3	13,676	9,855	195 (3)	161 (3)
Olympic Peninsula/ Lower Columbia[2]	5	8,153	13,320	140 (4)	303 (2)
Inland Empire	3	13,043	15,830	93 (3)	110 (3)
Total, State	11	34,872	39,005	142 (10)	187 (8)

[1] Number of mills is noted by figures in parentheses

[2] Combined to avoid disclosure

Table 64 Number of pole, post and piling mills by tenure of present ownership and site occupancy

Years of site occupancy	Total	Tenure of present mill ownership in years				
		0-2	3-5	6-10	11-20	21+
Pole, post and piling						
3-5	--	--	--	--	--	--
6-10	--	--	--	--	--	--
11-20	2	--	--	--	2	--
21+	9	--	--	1	3	5
Total	11	--	--	1	5	5