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1978

WASHINGTON MILL SURVEY

WOOD CONSUMPTION AND MILL CHARACTERISTICS

by

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FOREWORD

This report presents comprehensive statistics on wood consumption and the characteristics of primary wood processing mills† operating in Washington State during calendar year 1978. It documents the findings of the sixth in a series of biennial surveys regarding mill characteristics, wood flow and the input of raw materials into the State's wood-using industries:

- Sawmills
- Veneer and plywood mills
- Pulp and board mills
- Shake and shingle mills
- Pole, post and piling mills
- Log export operations

The 1978 statistics were obtained from a mail survey with telephone follow-up conducted in 1979. Firms contacted were based on the 1976 survey list updated to 1978.

As the survey was a 100-percent canvass, no sampling error is involved. In a few cases some data had to be estimated based on extrapolation from previous reportings.

The information collected from each mill is assumed to be the most reliable and best available. An exception is the sawmill and veneer plant log inventory data included in this report for the beginning and end of the survey year. It was not possible to secure

†Mills that use roundwood or are the original firm to process the raw material.

recorded data or an informed estimate for a number of mills. Hence, these data are understated in this report.

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

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

The text highlights noteworthy statistics presented in the tables. It also provides a summary of the timber economy in 1978 as well as some recent trend information.

It is hoped that the information on residue and commodity production and wood consumption will allow utilization people to track production and consumption trends.

Special Note:

In the process of working with 1976 log export operations data, an error was discovered that resulted in numerous changes in the 1976 Mill Survey. Since the report had already been published, an errata is available from the Department of Natural Resources (see page ii and the last paragraph of the Log Export discussion in this report) that covers these corrections.

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COMPARISON

1968 - 1970 - 1972 - 1974 - 1976 - 1978

This section graphically compares data developed from the 1968, 1970, 1972, 1974, 1976 and 1978 surveys.

Number of Mills Included in the Surveys†

	1968	1970	1972	1974	1976	1978
Sawmills	212	185	177	187	175	182
Veneer and Plywood	43	41	41	37	36	36
Pulp and Board	35	31	26	25	26	26
Shake and Shingle	158	172	176	205	252	337
Pole, Post and Piling	19	25	25	23	22	23
Log Export	‡	‡	96	90	81	160
Totals	467	454	541	567	592	764

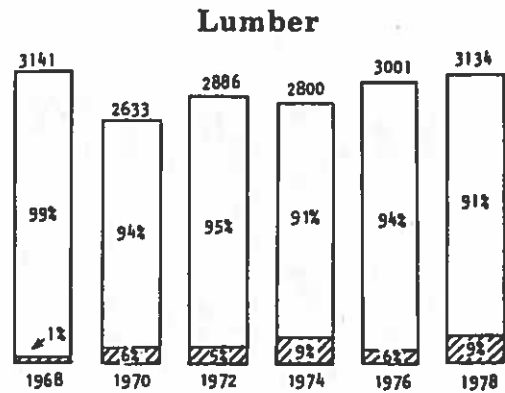
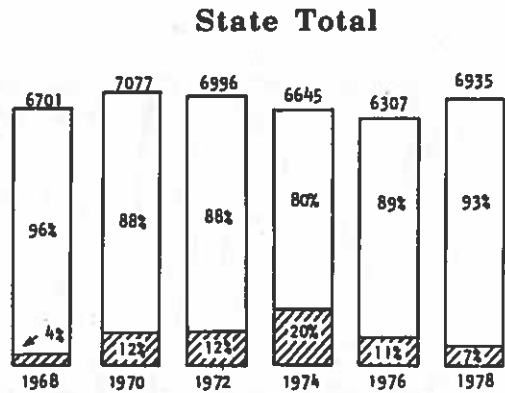
†Only primary wood processing mills that operated during the survey year are included.

‡Not available.

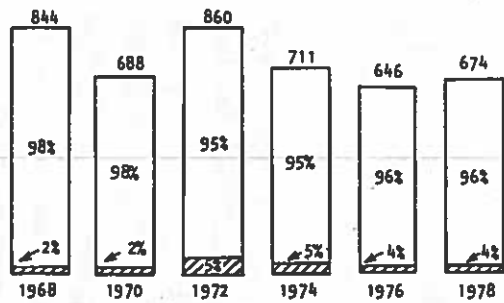
Trends

- The total number of primary processing facilities in the forest products industry has increased 29 percent from 1976 to 1978. The Log Export sector with a 98 percent increase and the Shake and Shingle sector with a 34 percent increase are the most significant growth sectors.
- The Export sector's share of total log consumption continues to increase, expanding by more than nine percentage points since 1976. The growth in the Log Export sector has been offset by a decline in log consumption by the Pulp and Board sector. Log consumption by the Pulp and Board sector fell from 545 million board feet in 1976 to 270 million board feet in 1978. Although log consumption by the Shake and Shingle sector declined from 1976 to 1978, total wood consumption for the sector increased by 10 percent.
- The use of hemlock by the Lumber sector continues to expand as a percentage of its log consumption. The use of hemlock by the Veneer and Plywood sector also set a new record as a percent of that sector's log consumption. Douglas fir continues to expand as a percent of the Log Export sector's log consumption.
- Young growth log consumption continues to increase as a share of total log consumption in all sectors except Veneer and Plywood.
- The number of mills more than two-thirds dependent on a single ownership class for their log supply increased from 337 in 1976 to 451 in 1978. The Shake and Shingle sector accounted for the largest increase in the number of mills at 59. The number of mills dependent on public ownership increased 26 percent, while the number of mills dependent on private ownership increased 37 percent.
- The percentage of wood and bark residue that is used continues to increase, reaching 92 percent for all sectors in 1978. This is a one percent increase over 1976.
- Single shift lumber production capacity for the Lumber sector continues to increase with a two percent gain from 1976. Capacity remained almost the same in Western Washington while Eastern Washington experienced an 18 percent increase. Capacity for size-class A (120,000+ board foot capacity per shift) and D (less than 40,000) mills remained about the same while there was a significant shift of capacity from size-class C (40,000-79,999) to size-class B (80,000-119,999) mills.

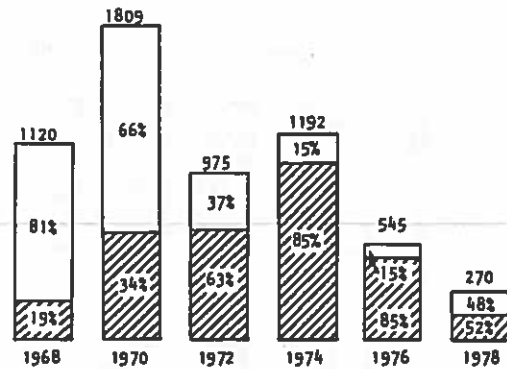
Roundwood Consumption and Percent Utility Logs by Industry (Million Board Feet Scribner)



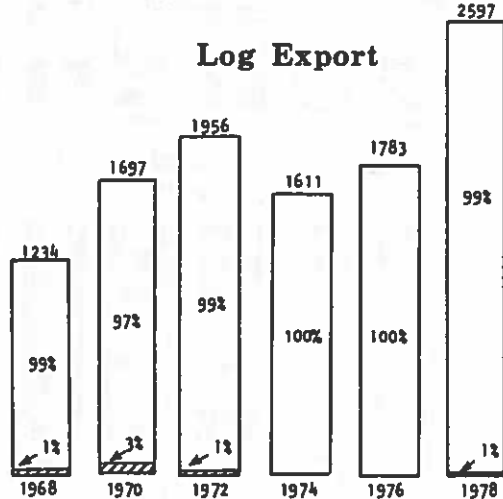
Veneer and Plywood



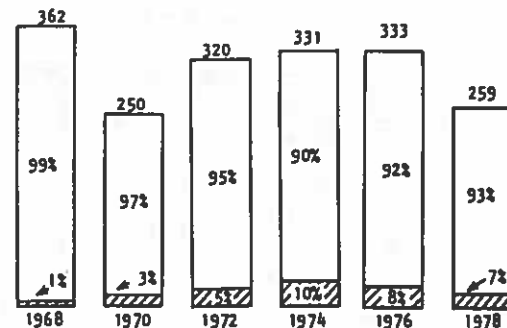
Pulp and Board



Log Export



Shake and Shingle; Pole, Post & Piling

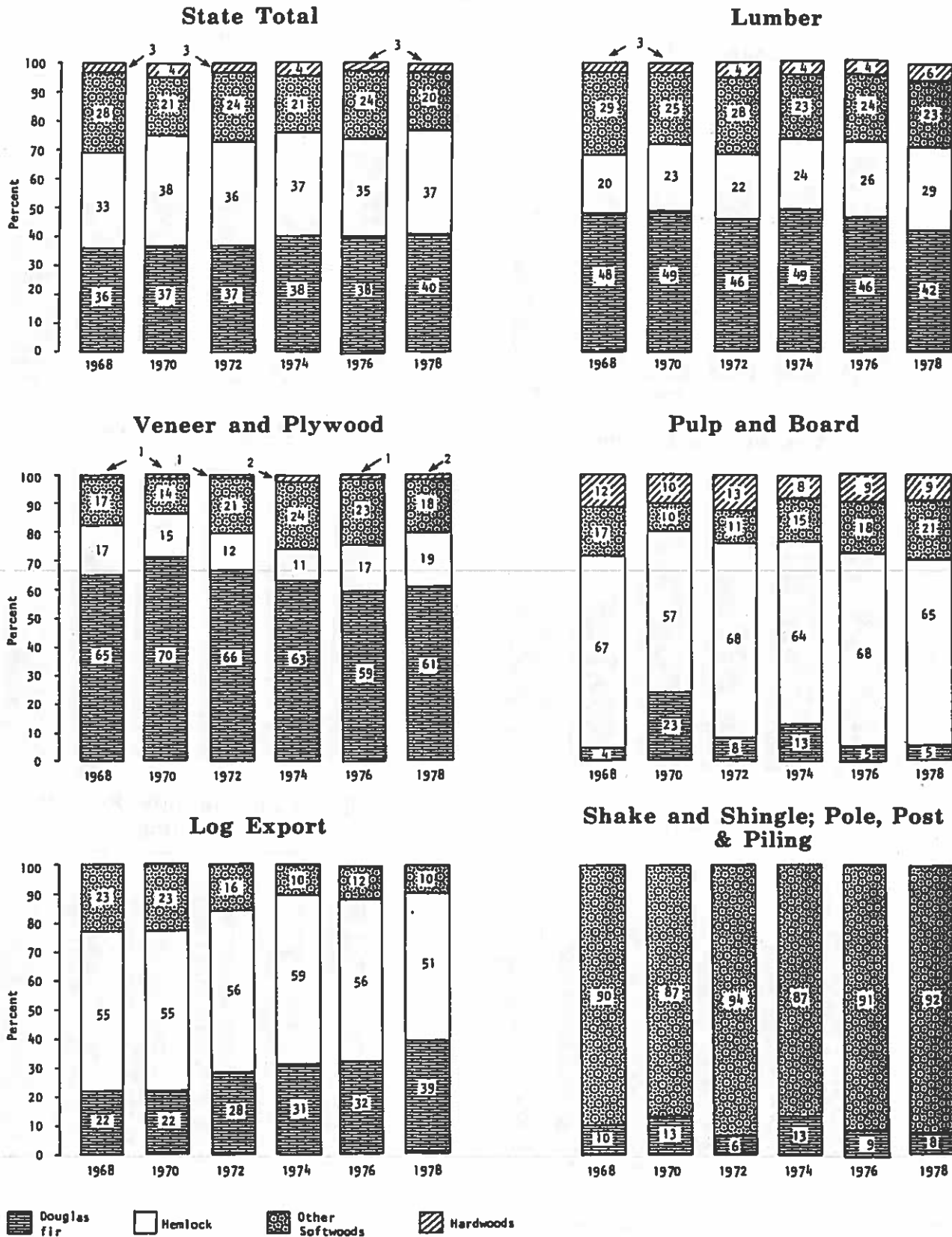


Roundwood

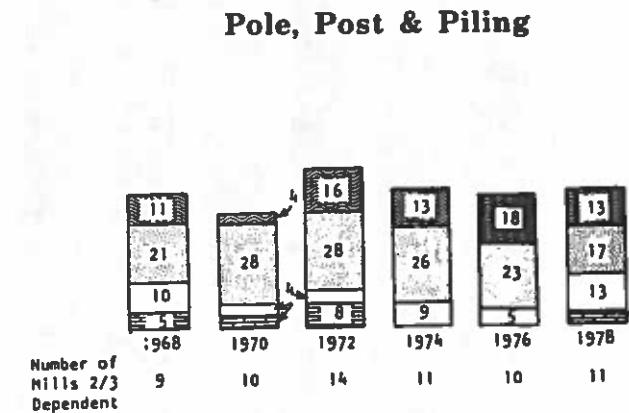
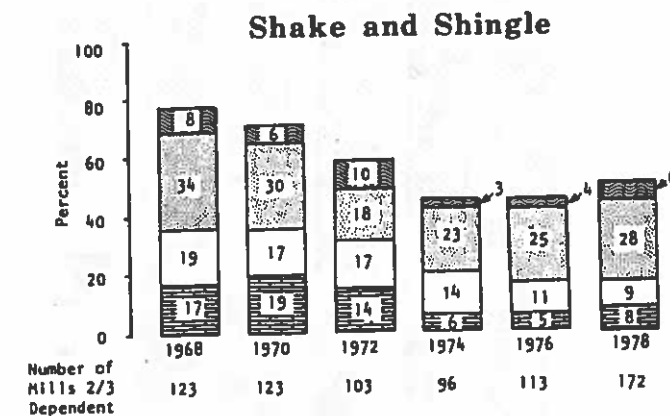
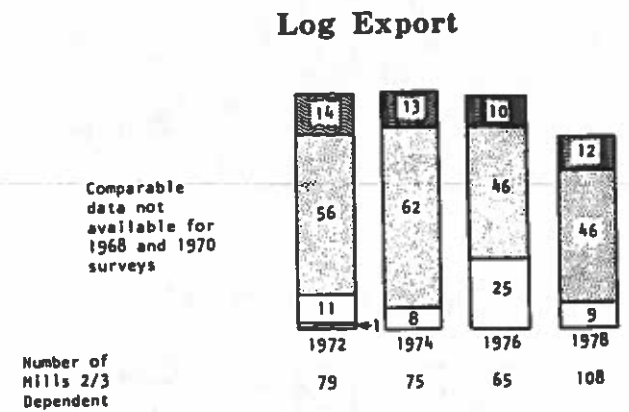
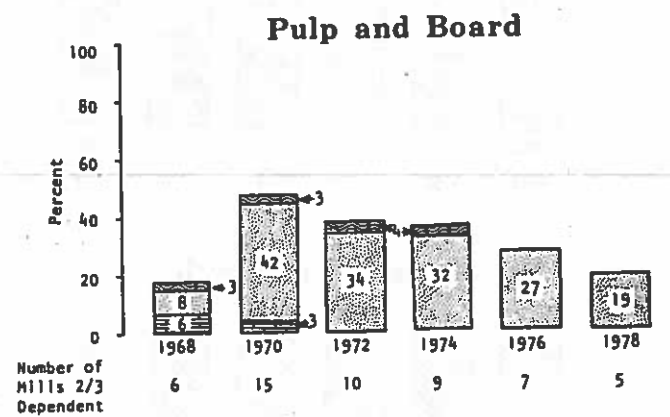
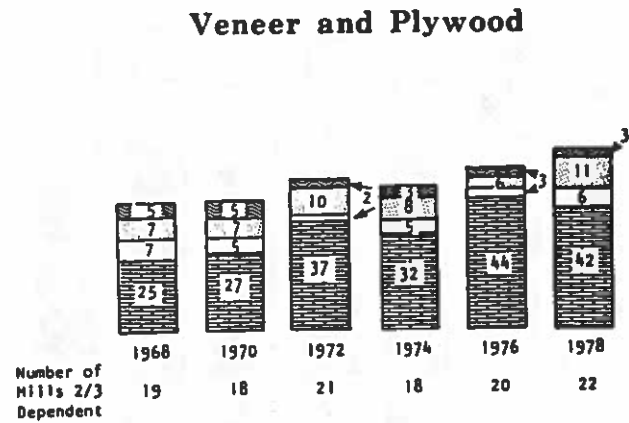
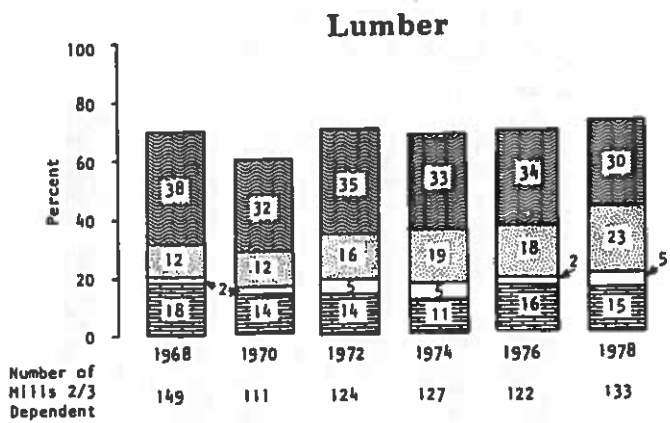


NOTE: Scale for height of bar is different for each industry. Hence visual comparison among the different industries is not valid.

Log Consumption by Species by Industry (Percent)

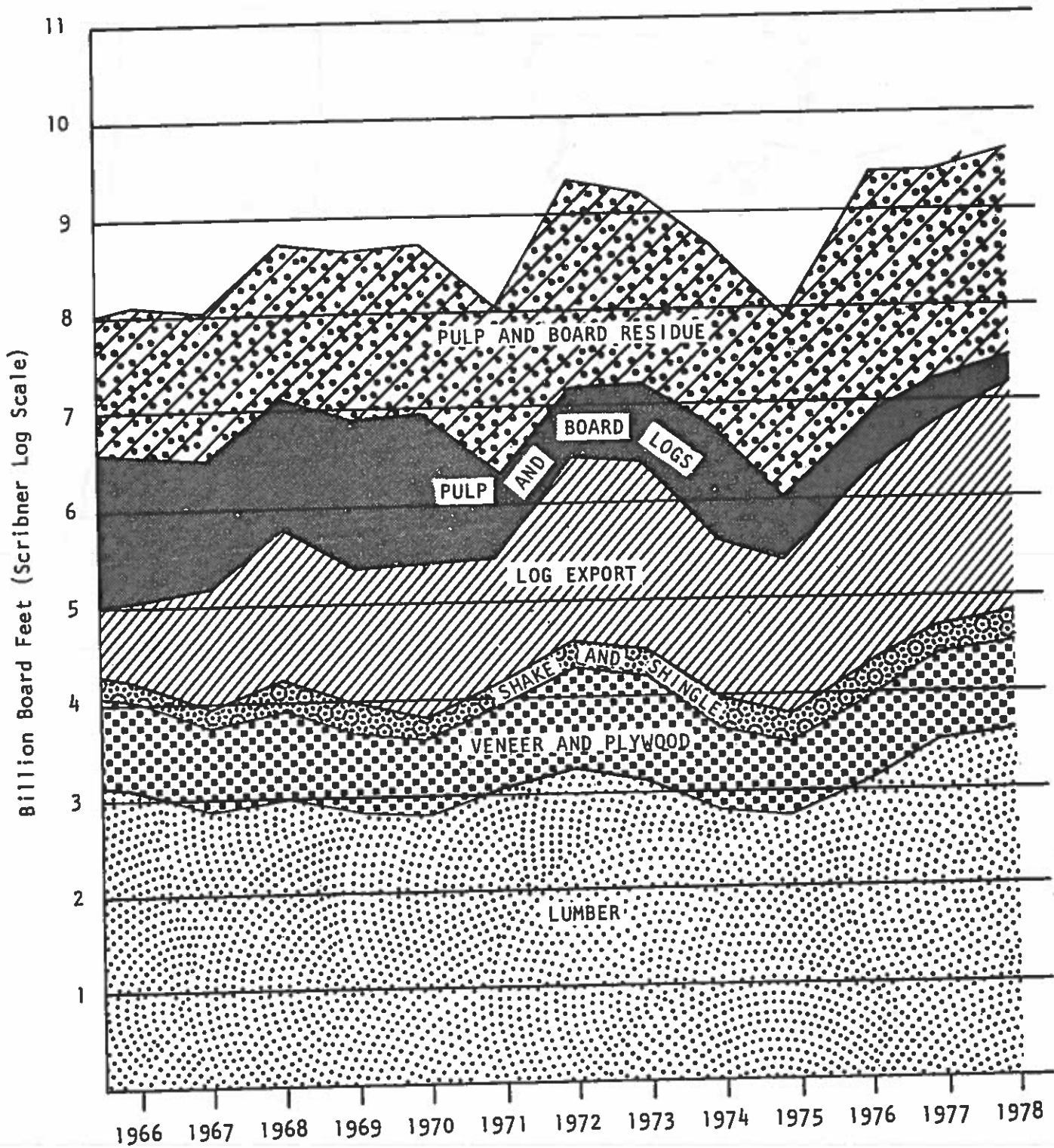


Number of Mills and Percent of Mills More than Two-Thirds Dependent on a Single Ownership Class for Logs by Industry



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

Figure 2.—Washington Wood Use by Major Forest Industries,† 1966-1978
 (Converted to Log Equivalent of Final Product)

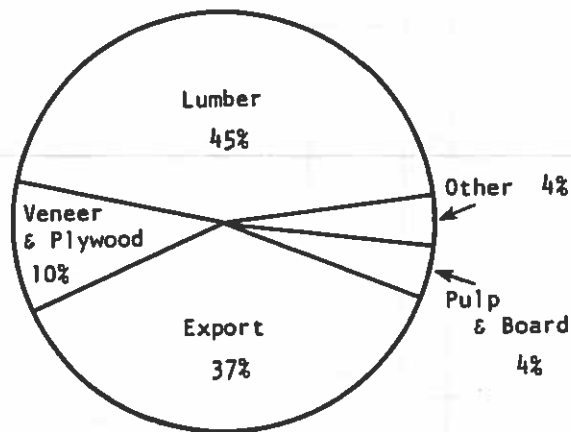


†Pole, Post and Piling Industry volume less than 100 million board feet.

WOOD CONSUMPTION

During 1978, Washington's primary forest products industries consumed about 6.9 billion board feet of logs,† 122 million board feet of other wood, and 5.2 million tons of chips and wood and bark residue. Sound logs made up 93 percent of the total roundwood, with sawmills consuming the greatest portion (44 percent). The remaining seven percent of the roundwood (utility or cull material) was again consumed mainly by the Sawmill Industry (57 percent). Figure 4 illustrates the total log consumption by industry segment.

Figure 4.—Log Consumption by Type of Industry



The 5.2 million tons of chips and residues consumed by the Pulp and Board Industry consisted of mill residues and material from roundwood chipping plants as well as other fiber residues. This volume is equivalent to 2.6 billion board feet of round logs. Thus, total wood consumption of the forest products industry can be expressed as the equivalent of 9.5 billion board feet (Scribner) for 1978.

†Scribner log rule has been 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.

The forest products industries relied on a number of ownerships for their log supplies but met over half of the demand from their own lands.

Ownership	Log Supply Percent
State	14
National Forest	17
Bureau of Land Management	††
Other Public	4
Total Public	35
Forest	} Own Wood Supply 21
Industry	
Farmer & Misc. Private	13
Total Private	65
All Owners	100

††Less than 0.5 percent.

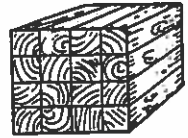
The log flow from the National Forests came from the following forests:

National Forest	National Forest Log Flow Percent
Olympic	27
Gifford Pinchot	25
Mt. Baker—Snoqualmie	22
Wenatchee	9
Colville	8
Okanogan	6
Other	3
All National Forests	100

Ownership dependency can be expressed on an individual mill basis by showing those that obtain more than two-thirds of their logs from a single ownership class.

Ownership	Number of Mills Two-Thirds Dependent
State	25
National Forest	71
Bureau of Land Management	2
Other Public	31
Total Public	129
Forest	} Own Wood Supply 39
Industry	
Farmer & Misc. Private	99
Total Private	322
All Owners	451

LUMBER INDUSTRY



MILL CHARACTERISTICS

Primary Operation

Only those sawmills that engaged in primary processing (consumed roundwood) were included in the survey. Data were also gathered on the non-roundwood consumed by these mills (Table 18).

Size-Class

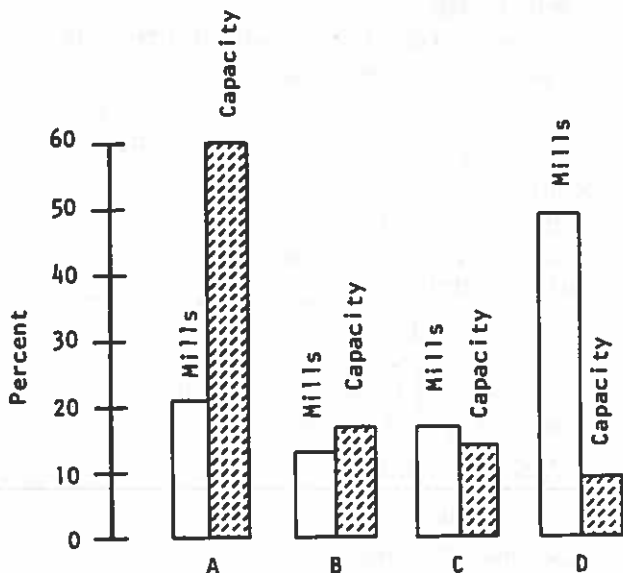
The 182 sawmills operating in 1978 were classified by size-class based on maximum production for a single shift.

Mill Size-Class	Capacity per Single Shift MBF Lumber Tally
A	120+
B	80-119
C	40-79
D	less than 40

Table 11 gives the number of sawmills per size-class in each county. Snohomish County continues to rank highest, as it has since 1970, with 22 mills. Among the five Economic Areas, the Olympic Peninsula took over the lead from Puget Sound with a total of 57 mills — a seven mill increase over 1976.

Production Capacity

Figure 6.—Percent of Sawmills by Size-Class and Percent of Total Shift Capacity.



Single shift capacity in 1978 remained fairly constant at 12,368 MBF — only a two percent increase over 1976.

The number of Class D mills increased by nine with a capacity increase of three percent since 1976. Class C mills continued to diminish in number, as well as capacity, with a decrease of 11 mills and a corresponding decline in capacity of 29 percent. Class B mills increased by six, with a capacity increase of 37 percent. The growth of Class A mills slowed in 1978, with three additional mills and a capacity increase of six percent.

Equipment

Planers, chippers, and barkers were used by more than half of the sawmills during 1978, as shown in Table 13. Only 17 percent of the mills had burners, while 38 percent operated kilns.

The percentage of mills having various types of equipment is shown below.

Equipment	Mill Size-Class				All
	A	B	C	D	
Planer	87	78	77	50	66
Chipper	92	100	93	26	60
Barker	97	96	90	18	57
Kiln	79	57	50	12	38
Burner	10	22	27	16	17

Information on size and type of headrig is presented in Table 15. Band saws had the greatest production by type of headrig with 75 percent of the total. Chipping saws were next with 14 percent, followed by circular saws with five percent, and scragg saws with three percent. Band saws accounted for 78 percent of Class A production, 71 percent of Class B, 74 percent of Class C, and 40 percent of Class D.

A breakdown of ownership sources by mill size-class shows that size-class B mills are most dependent on public timber.

Mill Size-Class†	Forest Industry		All Public
	Own Wood Supply	Other Wood Supply	
A	45	8	38
B	12	10	54
C	20	20	37
D	3	31	22
All Mills	33	11	40

†Refer to Table 22 for size-class combinations.

Public timberlands supplied the Central Washington, Inland Empire, and Olympic Peninsula Area sawmills with 72, 52, and 50 percent of their logs respectively. Comparable figures for Puget Sound and Lower Columbia Area mills are 30 and 19 percent. Ninety-three percent of the sawmills more than two-thirds dependent on Farmer and Miscellaneous Private ownership are size-class D mills. Dependency data as shown in Table 24 are useful in evaluating the effects of timber supply policies on the industry.

**Mills More Than Two-Thirds
Dependent on a Single Type
of Ownership**

Ownership	percent
State	1
National Forest	15
Bureau of Land Management	1
Other Public	3
Total Public	20
Forest Industry	11.5
{ Own Wood Supply	11.5
{ Other Wood Supply	11.5
Farmer & Misc. Private	30
Total Private	53
All Owners	73

Species

During 1978, sawmills used 42 percent Douglas fir logs and 29 percent western hemlock logs (Table 25). Figure 8 illustrates the species variation by economic area.

The two leading species consumed in each of the Economic Areas were:

- Puget Sound—Douglas fir, hemlock
- Olympic—hemlock, Douglas fir
- Lower Columbia—Douglas fir, hemlock
- Central Washington—ponderosa pine, Douglas fir
- Inland Empire—Douglas fir, ponderosa pine

Minimum Log Diameter

Economic Area	Mills Accepting Logs with Small-End Diameters Under Six Inches
	percent
Puget Sound	40
Olympic Peninsula	42
Lower Columbia	33
Central Washington	38
Inland Empire	33
Total State	38

The percentage of mills accepting small logs increased notably in the Puget Sound and Olympic Peninsula Areas from 1976. A small increase also occurred in the Inland Empire Area, while a significant decline occurred in the Lower Columbia Area.

Imports

Washington timberlands supplied over 97 percent of the logs consumed; almost two percent came from Oregon with most of the remainder from Idaho and British Columbia.

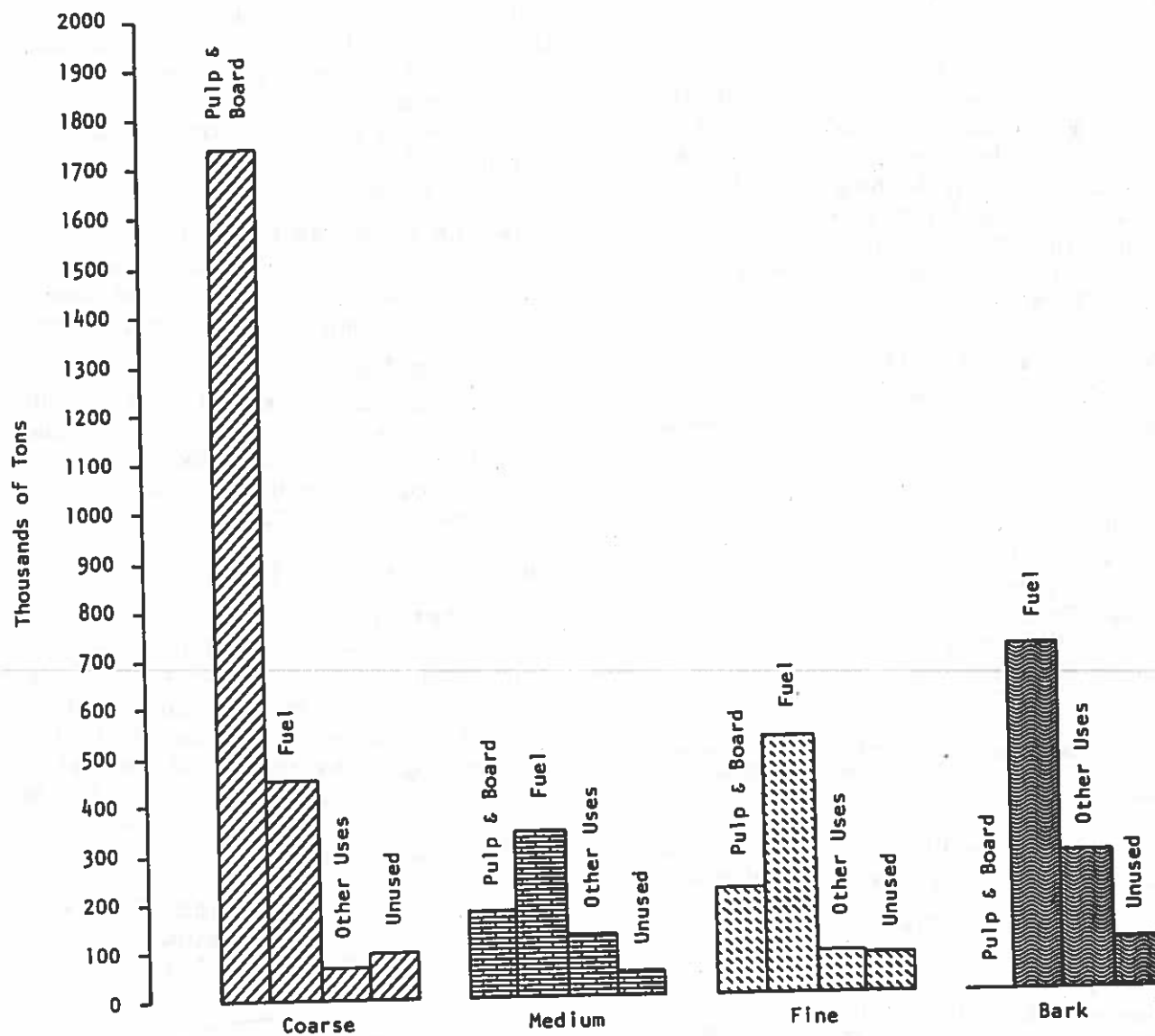
PRODUCTION

Lumber

Sawmills in the State of Washington produced 4.2 billion board feet of lumber during 1978. Lumber produced by the 182 primary sawmills surveyed was 25 percent rough and 48 percent green.

Economic Area	Lumber Production Percent
Puget Sound	30
Olympic Peninsula	29
Lower Columbia	21
Central Washington	11
Inland Empire	9
Total State	100

Figure 9.—Type and Disposition of Sawmill Residues



Mill Size-Class	Wood Residue Use			
	Pulp & Board	Fuel	Other Uses	Unused
	percent			
A	57	37	5	1
B ¹	45	30	11	14
C	56	26	8	10
D	45	17	14	24
All Mills	54	33	7	6

Mill Size-Class	Bark Residue Use			
	Pulp & Board	Fuel	Other Uses	Unused
	percent			
A	—	73	25	2
B ¹	—	50	28	22
C	—	60	24	16
D	8	21	35	36
All Mills	†	64	26	10

¹Class B includes Class A for Inland Empire.

†Less than 0.5 percent.

Age

Timber more than 100 years old made up 64 percent of the logs used. Use of old growth varied from 33 percent in the Lower Columbia Area to 88 percent in the Central Washington and Inland Empire Areas.

Ownership

Public lands were the source of 58 percent of the logs consumed by the industry, with National Forest lands being the greatest single source (Table 46).

Economic Area	Source of Logs	
	National Forest Lands	Forest Industry Own Wood Supply
	percent	
Puget Sound	62	22
Olympic Peninsula	51	22
Lower Columbia	43	41
Central Washington and Inland Empire	37	23
Total State	47	28

The Forest Industry's own land contributed the major portion of wood consumed from private timberlands.

Although those two sources provided the majority of logs, many other ownerships contributed to the total.

Ownership	Logs Supplied Percent
State	6
National Forest Bureau of Land Management	47
Other Public	4
Total Public	59
Forest Industry	28
Farmer & Misc. Private	6
	7
Total Private	41
All Owners	100

Table 6 shows the dependency of individual mills on each ownership class, indicating 17 mills were at least two-thirds dependent on public lands (with 15 of these dependent on National Forest lands) and five mills were similarly dependent on private lands.

Species

Sixty-one percent of the logs used by the industry were Douglas fir (Table 47). Second in importance was hemlock with 19 percent. The Lower Columbia Area used 64 percent Douglas fir and 17 percent hemlock. In Eastern Washington, Douglas fir was the most widely used species accounting for 72 percent of the consumption followed by hemlock with 14 percent.

Imports

Three Economic Areas acquired logs from outside the state, but these imports accounted for only one percent of the industry's log consumption. The Lower Columbia Area imported the greatest volume which accounted for only three percent of its log consumption (Table 3).

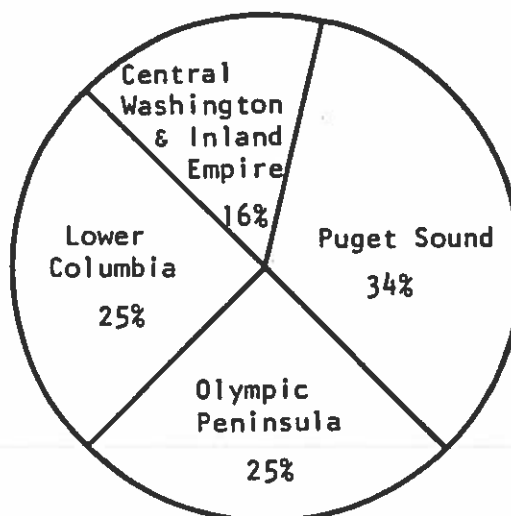
In addition to logs, the industry consumed 285,206,000 square feet of 3/8-inch veneer more than it produced for sale or transfer during 1978. Converted to Scribner log scale (at 2.5 square feet per board foot) this is equivalent to about 114 million board feet or 17 percent of the industry's total wood consumption. This veneer may originate from inventory reductions or it may be imported from out-of-state.

PRODUCTION

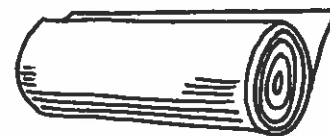
Veneer and Plywood

During 1978 the individual mills produced 2,227,581,000 square feet (3/8-inch

Figure 11.—Plywood Production by Economic Area



PULP AND BOARD INDUSTRY



MILL CHARACTERISTICS

Facilities

Each operation at a multiple plant facility is considered a separate mill.

Twenty-six mills were identified — eight sulfite, eight sulfate, four groundwood, four semichemical, and two board. Operations were located in 11 counties. The leading county was Cowlitz with six mills; the leading Areas were Puget Sound and Lower Columbia with nine mills each (Table 52).

Production Capacity

Daily pulp production capacity was 11,431 tons. Three-fifths of all mills were either sulfite or sulfate and accounted for 83 percent of the daily capacity (Table 53).

Economic Area	Percent of Pulp Capacity
Puget Sound	29
Olympic Peninsula	20
Lower Columbia	44
Inland Empire	7
All	100

Site and Ownership Tenure

All of the mills had occupied their present sites for more than 10 years and most (24 mills) for more than 20 years. As shown in Table 54, 24 of the 26 mills had been under the present ownership for over 10 years.

Operating Days

The average number of operating days declined between 1976 and 1978, with the exception of the Lower Columbia Economic Area.

Economic Area	Average Number of Operating Days	
	Pulp	Board
Puget Sound	302	252
Olympic Peninsula	279	—
Lower Columbia	331	220
Inland Empire	226	—
Total State	305	240

WOOD CONSUMPTION

Raw Material

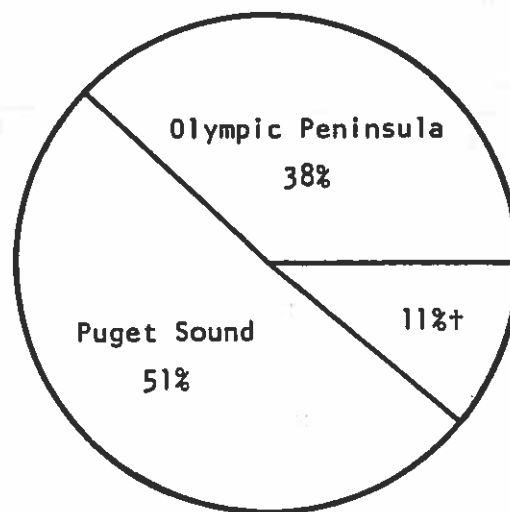
The industry consumed 270 million board feet of roundwood and 5.2 million tons of chips, sawdust, shavings, bark, and wastepaper. This is the equivalent of approximately 5.7 million bone dry tons of wood. Ninety-one percent of the raw material consumed by the industry was in the form of chips and other residues; the remainder was roundwood. The percentage of the consumption in each area was:

Economic Area	Chips from Round-Mill Residue wood	
	percent	
Puget Sound	46	15
Olympic Peninsula	45	18
Lower Columbia & Inland Empire†	90	2
Total State	67	9
Million Bone Dry Tons	3.8	0.5

†Combined to avoid disclosure.

The Pulp and Board Industry is the second largest user of utility grade (cull) logs; these constituted 52 percent of this industry's 1978 roundwood consumption.

Figure 12.—Percent of Roundwood Consumed by Economic Area



†Lower Columbia & Inland Empire



LOG EXPORT INDUSTRY

INDUSTRY CHARACTERISTICS

The 160 log export operations reported in this survey represent trading companies, log brokers, or other firms who ship logs from nine public port areas in the State of Washington (note that each port used by a firm is considered a separate operation). The greatest number of operations are located in the Puget Sound Area (72), followed closely by the Olympic Peninsula Area (64).

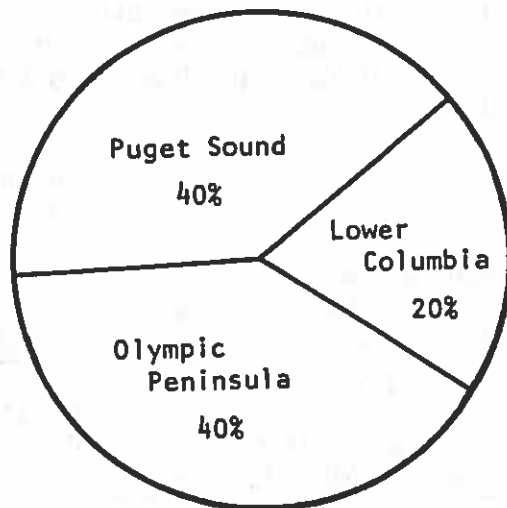
Fifty-four percent of the operations had used the present site for at least five years.

Since ports handle a variety of material, the Log Export Industry's average days of operation and production capacity cannot be meaningfully quantified.

LOG CONSUMPTION

Export shipments totaled 2.6 billion board feet in 1978, making the Export Industry second only to the Lumber Industry in log consumption in the State. Export Industry log consumption is considered to be equivalent to log export shipments for the year 1978. As shown in Figure 13, the Olympic Peninsula and Puget Sound Areas account for equal shares.

Figure 13.—Log Export by Economic Area



Only one percent of the export volume was utility grade logs. Sixty-five percent of the logs were from old growth timber.

Ownership	Log Supply Percent
State	23
National Forest	†
Other Public	2
<hr/>	
Total Public	25
Forest Industry	64
Farmer & Misc. Private	11
<hr/>	
Total Private	75
All Owners	100

†Less than 0.5 percent.

Over 67 percent of the operations were more than two-thirds dependent for supplies on a single ownership class. Seventy-four of the 160 operations were more than two-thirds dependent on Forest Industry lands, 20 on other private lands, and 14 on State land.

Log export operations consumed more hemlock and spruce than any other industry.

Species	Log Supply Percent
Hemlock	51
Douglas fir	39
Western redcedar	3
Spruce	3
All other	4
<hr/>	
Total All Species	100

Washington's timberlands supplied practically all (98 percent) of the logs exported from the State. Logs originating in Oregon and British Columbia were primarily moved through the Lower Columbia and Puget Sound Areas respectively.

1976 Data Error

A questionable log export entry was corrected after the 1976 Mill Survey was published. The data changed total log consumption for 1976 from 6.640 billion board feet to 6.307 billion board feet, and total export consumption from 2.116 to 1.783 billion board feet. The change affects the Olympic Peninsula Area, total export, and total Washington log consumption. Further detailed errata information can be obtained by writing to Operations Research as shown on page ii.

During 1978, about 51 percent of the individual mills obtained more than two-thirds of their log supply from a single ownership class — 58 mills from public sources, 114 from private sources.

Almost 99 percent of the industry's log consumption came from timberlands in Washington. Small quantities came from British Columbia and Oregon, and some came from Idaho.

PRODUCTION AND RESIDUES

Total production amounted to 3,859,821 squares, of which 82 percent were shakes, 16 percent were shingles, and two percent were hip and ridge and shims. This production created 281,387 bone dry tons of residue, composed of 73 percent wood (classified 42 percent coarse and 58 percent fine) and 27 percent bark. As mentioned

earlier, recovery of residue is uneconomical for many mills and accounts for the high percentage of unused material.

In addition, some of the residue produced by this sector may be left in the woods rather than appearing at the mill site. This would occur when the mill is using blocks, bolts, or boards as a raw material, rather than logs.

Use	Residue Type and Distribution		
	Coarse	Fine	Bark
	percent		
Pulp & Board	14	6	3
Fuel	17	28	30
Other	12	12	11
Unused	57	54	56
All	100	100	100

The Lower Columbia Area mills used 92 percent of their residues.

HARDWOOD INDUSTRY

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

INTRODUCTION

Processing of hardwood is an important, growing segment of the Washington wood products industry. Many different species, including alder, maple, birch, and cottonwood, are processed by sawmills, plywood and veneer mills, and pulp mills, as well as other specialty plants. Their 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 1978, there were twelve sawmills, one veneer and plywood operation, and two pulp mills using hardwoods for over 90 percent of their log and chip consumption. All mills using hardwood were located in the following counties:

County	Sawmills		Plywood & Veneer		Pulp	
	Number of Mills and Dependency on Hardwood					
	Under 90%	90% +	Under 90%	90% +	Under 90%	90% +
Clallam	1	—	—	—	—	—
Clark	1	—	—	—	1	—
Cowlitz	1	1	—	—	—	—
Grays Harbor	—	1	—	—	—	—
King	1	—	—	—	—	—
Kittitas	—	—	1	—	—	—
Lewis	1	3	3	—	—	—
Mason	—	1	—	—	—	—
Pacific	—	1	—	—	—	—
Pierce	3	—	1	—	1	—
Skagit	—	1	1	—	—	1
Snohomish	3	4	—	1	—	—
Thurston	1	—	—	—	—	—
Whatcom	1	—	—	—	—	1
Total	13	12	6	1	2	2

Twelve sawmills in Washington were dependent upon hardwood for at least two-thirds of their consumption. The number in previous years had been relatively stable at 16 to 17 sawmills.

WOOD CONSUMPTION

Hardwood log consumption by mills in Washington in 1978 was 226,617,000 board feet Scribner. An additional 4,068 bone dry tons of hardwood chips from roundwood were consumed by the Pulp Industry.

Industry	Hardwood Log Consumption	
	—percent—	
Sawmills	81	
Veneer and Plywood	7	
Pulp and Board	11	
Export	1	
Total Industry	100	

In 1978, 184,247,000 board feet of hardwood were consumed by sawmills, or almost 6 percent of their all-species consumption. This was an increase of 140 percent in hardwood consumption from 1970, and a 34 percent increase from 1976. Sawmills more than two-thirds dependent on hardwoods used 95 percent of the 184.2 million board feet of logs consumed. Most of these mills were small in size. Nearly 59 percent of the 184.2 million board feet was processed in C and D size-class mills.

The Veneer and Plywood Industry in Washington consumed 14,559,000 board feet of Western hardwoods or approximately 2 percent of their total log consumption. This was twice the hardwood volume consumed in 1976.

The Pulp Industry consumed 25,548,000 board feet of hardwood logs in 1978 (9 percent of their all-species log consumption).

Hardwood log export shipments from Washington totaled 2,263,000 board feet in 1978, or less than 0.1 percent of total shipments.

APPENDIX

MEASUREMENT UNITS

Scribner is the only board-foot scale used in this report. Some mills are using more than one scale, and some are using cubic scale, although there appears to be no strong shift toward the use of cubic measurement.

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 with the exception of purchased or transferred veneer consumed by plywood mills (square feet, $\frac{3}{8}$ -inch basis) and chips and other residue consumed by pulp mills (bone dry tons).

Board foot lumber tally is the unit of measure used for lumber production, square feet $\frac{3}{8}$ -inch basis for plywood and veneer production, square (10' x 10' area coverage) for shake and shingle production, board foot Scribner 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. Other measurements were converted as follows:

Unit Conversions Used in This Report

LUMBER INDUSTRY

1.2 board feet
lumber tally = 1 board foot, Scribner (Approximately)

VENEER AND PLYWOOD

2.5 square feet
($\frac{3}{8}$ -inch basis) = 1 board foot, Scribner

1 square foot
($\frac{3}{8}$ -inch basis) = 0.885 square meters
(1mm basis)

1,130 square feet
($\frac{3}{8}$ -inch basis) = 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.

††1 square covers 100 square feet.

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		Dry Weight
	Cubic Feet	Percent	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, and 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.

COMPUTER PROGRAMS 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 constant changes could be made to input without impacting system functions. All corrections were made by DNR 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 1978 program package was designed to handle other states' data with minor modifications.

There is a complete documentation package for this system that consists of the following:

- Warnier Diagram for each program.
- Sample input documents.
- Key punch 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.

d. Ownership origin

State _____ %
 US Forest Service* _____ %
 BLM _____ %
 Other Public _____ %
 Forest | Other Supply _____ %
 Industry | Other Supply _____ %
 Farmer & Misc. Private _____ %
 100 % _____ %

Name of National Forest _____ \$;
 _____ \$;
 _____ \$;

7. 1978 Veneer and Plywood Production

Veneer for sale or transfer _____,000 sq. ft. 1/8 inch _____ 1 inch _____
 Plywood _____,000 sq. ft. 1/8 inch _____ 1 inch _____

8. Disposition of Plant Residues

By type of residue, indicate disposition as a percent.

Disposition of Residue	Type of Residue			
	Log trim, Spur trim, Roundup, Veneer chip	Core	Panel trim	Bark
For plant fuel	67 %	68 %	69 %	71 %
Sold for fuel	72 %	73 %	74 %	76 %
For pulp	77 %	78 %	79 %	81 %
For board	82 %	83 %	84 %	85 %
For other purposes	87 %	88 %	89 %	91 %
UNUSED				
Burned	92 %	93 %	94 %	95 %
Unburned	100 %	100 %	100 %	100 %

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9. Percent Distribution by State of all Veneer Sold or Transferred

Wash. _____ % British Columbia _____ %
 Cal. _____ % Oregon _____ %
 Idaho _____ % Other _____ %

The Department of Natural Resources plans to publish a Forest Products Directory listing the name and address of each plant. Also, with your permission, we would like to include the following selected information concerning your plant:

- Daily per shift production class converted as follows:
 under 15 MBF, 15 to 29 MBF, 30 to 39 MBF, 40 to 49 MBF, over 50 MBF.
- Number of shifts per day.
- Species processed.
- Maximum and minimum log diameter limits.
- Type of plant.
- Lathe and press equipment.
- Retail yard - yes or no.

() Permission granted to place the selected information in the directory.
 () Permission granted, but do not include the circled items on the above list.

Please () send, () do not send a copy of the report which will be compiled from questionnaires sent to all Washington mills in the six major segments of the wood products industry.

Thank you for your help with this questionnaire. When you have answered the questions as completely as possible, please fold this form so that our address is showing, staple it closed, and mail.

5. Origin of Wood Consumed During 1978 (cont.)

a. State or Province of Origin (cont.)

State or Province	Sawdust & Shavings	Bark
Washington	_____ %	_____ %
Oregon	_____ %	_____ %
Idaho	_____ %	_____ %
British Columbia	_____ %	_____ %
Other	_____ %	_____ %
	100 %	100 %

b. Ownership origin:

Ownership origin	Logs
State	_____ %
US Forest Service*	_____ %
B/M	_____ %
Other Public (Indian, etc.)	_____ %
Forest Industry	_____ %
Farmer & Misc. Private	_____ %
	100 %

*Name of National Forest _____ %

c. Age group

Age group	Logs
Old growth (100 + yrs.)	_____ %
Young growth	_____ %
	100 %

d. County of Origin (Wash.)

County of Origin (Wash.)	Logs
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
From outside Washington	_____ %
	100 %

Wood Consumption - Items a-h indicate the nature of the wood or fiber as it comes into your woodyard-before any processing or break-down.

Utility Logs - Logs of lower quality than Number 3 sawlogs or usually having the following minimum specifications: 6 inches diameter, 12 foot length, 50 + percent of gross scale chipable.

Cardwood - Any log below the minimum specification stated for utility logs.

Specify log scale used if other than Scribner and conversion factor if appropriate:

The Department of Natural Resources plans to publish a Forest Products Directory listing the name and address of each plant. Also, with your permission, we would like to include the following selected information concerning your plant.

1. Daily per shift production class converted as follows: under 15 MBF, 15 to 39 MBF, 30 to 79 MBF, 40 to 49 MBF, over 50 MBF
2. Species processed
3. Type of plant

() Permission granted to place the selected information in the Directory.

() Permission granted, but do not include the circled items on the above list.

Please () send, () do not send a copy of the report which will be compiled from questionnaires sent to all Washington mills in the six major segments of the wood products industry.

Thank you for your help with this questionnaire. When you have answered the questions as fully as possible, please fold this form so that our address is showing, staple it closed, and mail.

6. 1978 Production:

Shakes _____	squares or _____	bundles _____	48
Shingles _____	squares or _____	bundles _____	49
Hip & ridge _____	squares or _____	bundles _____	50
Other _____	squares or _____	bundles _____	51

7. Disposition of Residue Type of residue, indicate disposition as a percent

USED	Type of Residue	Disposition as a percent	
		Sawdust	Bark
	For plant fuel	52%	5%
	Sold for fuel	55%	57%
	For pulp (incl. Export)	58%	60%
	For board	61%	63%
	For other purposes	64%	66%
UNUSED	Burned	67%	69%
	Unburned	70%	72%
		100%	100%

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General Definitions

- a. Utility logs - Logs of lower quality than Number 3 sawlogs and usually having the following minimum specifications: 6 inches diameter, 12 foot length, 50 + percent of gross scale.
- b. Other - Any other roundwood or other material (blocks, bolts, boards, etc.).

The Department of Natural Resources plans to publish a Forest Products Directory listing the name and address of each plant. Also, with your permission, we would like to include the following selected information concerning your plant:

1. Daily per shift production class converted as follows: under 15 MBF, 15 to 29 MBF, 30 to 39 MBF, 40 to 49 MBF, over 50 MBF
2. Number of shifts per day
3. Type of product
4. Retail yard - yes or no

() Permission granted to place the selected information in the Directory.

() Permission granted, but do not include the circled items on the above list. Please () send, () do not send a copy of the report which will be compiled from questionnaires sent to all Washington mills in the six major segments of the wood products industry.

Thank you for your help with this questionnaire. When you have answered the questions as completely as possible, please fold this form so that our address is showing, staple it closed, and mail.

7. Disposition of Residue
Type of Residue, indicate disposition as a percent.

USED	Coarse (wood)	Bark
For Pulp (incl. export)	60	61
For Plant Fuel	62	63
Sold for Fuel	64	65
For Board	66	67
For other Purposes	68	69
UNUSED		
Burned	70	71
Unburned	72	73
	100	100

The Department of Natural Resources plans to publish a Forest Products Directory listing the name and address of each plant. Also, with your permission, we would like to include the following selected information concerning your plant:

- Species processed.
 - Type of Product.
 - Treatment
- () Permission granted to place the selected information in the Directory.
 () Permission granted, but do not include the circled items on the above list.

Please () send, () do not send a copy of the report which will be compiled from questionnaires sent to all Washington mills in the six major segments of the wood products industry.

Thank you for your help with this questionnaire. When you have answered the questions as completely as possible, please fold this form so that our address is showing, staple it closed, and mail.

b. County of origin (Wash.) _____

Logs _____ %

c. Age group: _____ %

Old growth (100 yrs. +) _____ %

Young growth _____ %

d. Ownership origin _____ %

State _____ %

US Forest Service _____ %

BLM _____ %

Other Public (Indian, etc.) _____ %

Forest Industry _____ %

Other Supply _____ %

Farmer and Hlar. Private _____ %

100 %

Name of National Forest _____ %

50 _____ %

51 _____ %

52 _____ %

53 _____ %

Specify units _____

6. Quantity of 1978 Shipments

	Treated	Untreated
Poles	_____	_____
Piling	_____	_____
Posts	_____	_____

100 Bd. Ft. _____
 Scribner Cc. _____
 Lineal Ft. _____

34 _____
 35 _____
 36 _____
 37 _____
 38 _____
 39 _____
 40 _____
 41 _____
 42 _____
 43 _____
 44 _____
 45 _____
 46 _____
 47 _____
 48 _____
 49 _____
 50 _____
 51 _____
 52 _____
 53 _____
 54 _____
 55 _____
 56 _____
 57 _____
 58 _____
 59 _____

General Definitions

- a. Utility logs - Logs of lower quality than Number 3 sawlogs in grade, or usually having the following minimum specifications of: 6 inches diameter; 12 foot length, 50 + percent of gross scale chipable.
- b. Other - any other roundwood.

Please () send, () do not send a copy of the report which will be compiled from questionnaires sent to all Washington mills in the six major segments of the wood products industry.

Thank you for your help with this questionnaire. When you have answered the questions as fully as possible, please fold this form so that our address is showing, staple it closed, and mail.

32	_____
33	_____
34	_____
35	_____
36	_____
37	_____
38	_____
39	_____
40	_____
41	_____
42	_____
43	_____
44	_____
45	_____

c. Age group:

Old growth (100 yrs. +) _____ %

Young growth _____ %

100 %

d. Ownership origin:

State _____ %

US Forest Service* _____ %

BLM _____ %

Other Public (Indian, etc.) _____ %

Forest Industry | Own Supply _____ %

 | Other Supply _____ %

Farmer & Misc. Private _____ %

100 %

*Name of National Forest _____ %

_____ %

_____ %

7. Residue Disposition

Percent of volume debarked before shipment _____ %

Indicate Disposition as a Percent

USED	Bark
For Pulp (incl. export)	46
For Plant Fuel	67
Sold for Fuel	48
For Board	49
For other Purposes	50
UNUSED	
Burned	51
Unburned	52
	100%

Table 1—Number of mills in the timber industry, by industry and area.

Economic area	All Industries	Industry					
		Lumber	Veneer and plywood	Pulp and board ¹	Shake and shingle	Export ²	Pole, post and piling
Puget Sound	222	52	9	9	73	72	7
Olympic Peninsula	370	57	16	5	224	64	4
Lower Columbia	98	27	7	9	26	24	5
Central Washington	24	16	3	--	4	--	1
Inland Empire	50	30	1	3	10	--	6
Total, State	764	182	36	26	337	160	23

¹ Each pulping process at a multiplant location is considered an individual mill.

² Represents the number of identifiable operations involved in the export trade.

Table 3—Log flows to mills by state or province of log origin, area, and industry.
(Thousand board feet, Scribner log rule)

Economic area and industry	Origin					
	All	Washington	Oregon	Idaho	British Columbia	Other
Puget Sound						
Lumber	944,883	932,377	3,077	--	4,335	5,094
Veneer and plywood	126,359	125,395	--	--	964	--
Pulp and board	138,392	131,626	--	738	3,014	3,014
Shake and shingle	47,597	45,249	--	--	2,348	--
Export	1,027,452	1,005,903	563	--	20,622	364
Pole, post, and piling	11,844	11,077	237	--	530	--
Total	2,296,527	2,251,627	3,877	738	31,813	8,472
Olympic Peninsula						
Lumber	874,178	869,573	3,518	--	1,087	--
Veneer and plywood	175,644	175,644	--	--	--	--
Pulp and board	102,972	102,972	--	--	--	--
Shake and shingle	147,908	147,908	--	--	--	--
Export	1,045,479	1,045,479	--	--	--	--
Pole, post, and piling	7,432	7,432	--	--	--	--
Total	2,353,613	2,349,008	3,518	--	1,087	--
Lower Columbia						
Lumber	662,753	618,345	44,408	--	--	--
Veneer and plywood	198,534	192,217	6,317	--	--	--
Pulp and board ¹	29,000	11,800	17,200	--	--	--
Shake and shingle	28,078	27,017	988	73	--	--
Export	524,030	492,236	31,199	--	--	595
Pole, post, and piling ²	5,737	3,583	2,154	--	--	--
Total	1,448,132	1,345,198	102,266	73	--	595
Central Washington						
Lumber	369,276	369,276	--	--	--	--
Veneer and plywood ³	173,663	173,007	656	--	--	--
Pulp and board	--	--	--	--	--	--
Shake and shingle	2,136	2,136	--	--	--	--
Export	--	--	--	--	--	--
Pole, post, and piling ²	--	--	--	--	--	--
Total	545,075	544,419	656	--	--	--
Inland Empire						
Lumber	282,862	260,117	10,843	11,902	--	--
Veneer and plywood ³	--	--	--	--	--	--
Pulp and board ¹	--	--	--	--	--	--
Shake and shingle	2,133	2,125	--	8	--	--
Export	--	--	--	--	--	--
Pole, post, and piling	6,537	6,032	--	457	48	--
Total	291,532	268,274	10,843	12,367	48	--
Total, State						
Lumber	3,133,952	3,049,688	61,846	11,902	5,422	5,094
Veneer and plywood	674,200	666,263	6,973	--	964	--
Pulp and board	270,364	246,398	17,200	738	3,014	3,014
Shake and shingle	227,852	224,435	988	81	2,348	--
Export	2,596,961	2,543,618	31,762	--	20,622	959
Pole, post, and piling	31,550	28,124	2,391	457	578	--
Total	6,934,879	6,758,526	121,160	13,178	32,948	9,067

¹ Inland Empire combined with Lower Columbia to avoid disclosure.

² Central Washington combined with Lower Columbia to avoid disclosure.

³ Inland Empire combined with Central Washington to avoid disclosure.

f-state origins, and by area and county of use.
(cribner 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
--	--	--	--	--	--	--	--	--	--	--	--
3,200	20,013	8,000	63,180	6,123	13,087	3,102	--	--	--	--	--
298	--	28,231	--	4,127	--	--	--	--	--	--	--
2,150	744	7,548	180,334	25,021	4,008	37,655	--	747	--	--	--
3,801	547	6,298	--	--	--	--	--	--	--	--	--
22,899	8,891	23,459	102,619	7,189	16,004	22,092	--	--	--	3,244	--
2,328	--	--	--	--	--	--	--	--	--	--	--
34,676	30,195	73,536	346,133	42,460	33,099	62,849	--	747	--	3,244	--
401,986	12,538	141,681	--	676	--	--	--	--	--	--	--
5,168	625,727	150,797	3,951	9,121	231,387	10,953	--	203	--	--	2,726
5,237	204	39,371	--	910	--	--	--	--	--	--	--
--	8,809	--	202,540	4,770	8,834	13,052	--	7,183	--	29,176	4,373
--	19,719	286	4,609	183,753	--	6,247	--	--	--	--	--
--	394	--	12,707	19,432	--	33,224	--	973	--	200	--
412,391	667,391	332,135	223,807	218,662	240,221	63,476	--	8,359	--	29,376	7,099
--	--	--	--	--	--	--	5,190	49,890	1,550	63,616	5,400
--	7,364	--	179,525	--	9,684	--	42,654	747,548	--	40,583	6,552
--	--	--	--	--	--	--	18	--	64,674	97,487	--
--	--	--	--	--	1,120	--	--	--	--	--	1,420
--	7,364	--	179,525	--	10,804	--	47,862	797,438	66,224	201,686	13,372
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	22,147	--	--
--	--	--	--	--	--	--	--	--	22,147	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
447,067	704,950	405,671	749,465	261,122	284,124	126,325	47,862	806,544	88,371	234,306	20,471

Table 5—Log flows to mills from National Forests, by area and industry.
(Thousand board feet, Scribner log rule)

Economic Area ¹	All National Forests	Mt. Baker-Snoqualmie	Colville	Gifford Pinchot	Kaniksu	Okanogan	Olympic	Wenatchee	Umatilla	Out-of-State National Forests
Puget Sound	308,004	250,175	--	12,683	--	--	40,387	4,759	--	--
Olympic Peninsula	417,614	8,722	--	128,193	--	--	280,699	--	--	--
Lower Columbia	166,605	--	--	163,753	--	132	--	--	--	2,720
Central Washington	191,404	--	11,211	--	--	73,285	--	106,908	--	--
Inland Empire	112,789	--	87,824	--	148	1,427	--	--	19,219	4,171
Total, State	1,196,416	258,897	99,035	304,629	148	74,844	321,086	111,667	19,219	6,891
Industry										
Lumber	818,456	165,624	86,674	162,865	--	62,705	250,043	67,107	19,219	4,219
Veneer and plywood	317,385	62,699	11,211	125,353	--	10,506	61,408	44,211	--	1,997
Pulp and board	17,451	12,623	--	1,797	--	--	2,076	280	--	675
Shake and shingle	30,679	17,811	84	3,883	100	1,501	7,231	69	--	--
Export	9,058	--	--	9,058	--	--	--	--	--	--
Pole, post, and piling	3,387	140	1,066	1,673	48	132	328	--	--	--
Total, All Industries	1,196,416	258,897	99,035	304,629	148	74,844	321,086	111,667	19,219	6,891

¹ Note combinations made in Table 7 are also used here to avoid disclosure.

Table 7—Log consumption by ownership, area, and industry.
(Thousand board feet, Scribner log rule)

Economic area and industry	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								
Lumber	944,883	81,429	196,610	--	3,925	415,805	67,783	179,331
Veneer and plywood	126,359	6,466	78,212	--	--	27,803	6,926	6,952
Pulp and board	138,392	7,578	14,025	--	--	76,263	35,934	4,592
Shake and shingle	47,597	7,118	18,794	--	325	853	11,946	8,561
Export	1,027,452	189,922	--	--	20,087	55,232	608,107	154,104
Pole, post, and piling	11,844	1,860	363	--	112	335	5,550	3,624
Total	2,296,527	294,373	308,004	--	24,449	576,291	736,246	357,164
Olympic Peninsula								
Lumber	874,178	106,944	316,100	--	15,103	192,618	126,610	116,803
Veneer and plywood	175,644	14,818	89,738	7,106	--	38,751	4,800	20,431
Pulp and board	102,972	11,258	2,076	--	5,537	39,228	44,873	--
Shake and shingle	147,908	8,843	8,198	--	45,345	20,730	57,364	7,428
Export	1,045,479	289,099	--	--	22,098	4,056	609,774	120,452
Pole, post, and piling	7,432	2,954	1,502	--	--	953	575	1,448
Total	2,353,613	433,916	417,614	7,106	88,083	296,336	843,996	266,562
Lower Columbia								
Lumber	662,753	38,129	69,295	1,075	19,127	327,890	137,450	69,787
Veneer and plywood	198,534	7,871	84,560	--	--	80,767	25,256	80
Pulp and board ¹	29,000	--	1,350	--	--	22,250	2,700	2,700
Shake and shingle	28,078	235	1,934	--	250	11,919	13,700	40
Export	524,030	123,349	9,058	--	--	3,514	378,136	9,973
Pole, post, and piling ²	5,737	276	408	--	340	2,070	1,907	736
Total	1,448,132	169,860	166,605	1,075	19,717	448,410	559,149	83,316
Central Washington								
Lumber	369,276	26,877	124,960	--	112,476	70,095	13,851	21,017
Veneer and plywood ³	173,663	10,634	64,875	19,010	10,573	40,757	7,155	20,659
Pulp and board	--	--	--	--	--	--	--	--
Shake and shingle	2,136	--	1,569	64	--	--	495	8
Export	--	--	--	--	--	--	--	--
Pole, post, and piling ²	--	--	--	--	--	--	--	--
Total	545,075	37,511	191,404	19,074	123,049	110,852	21,501	41,684
Inland Empire								
Lumber	282,862	16,892	111,491	777	18,229	14,444	641	120,388
Veneer and plywood ³	--	--	--	--	--	--	--	--
Pulp and board ¹	--	--	--	--	--	--	--	--
Shake and shingle	2,133	21	184	--	--	5	--	1,923
Export	--	--	--	--	--	--	--	--
Pole, post, and piling	6,537	3,114	1,114	--	552	240	213	1,304
Total	291,532	20,027	112,789	777	18,781	14,689	854	123,615
Total, State								
Lumber	3,133,952	270,271	818,456	1,852	168,860	1,020,852	346,335	507,326
Veneer and plywood	674,200	39,789	317,385	26,116	10,573	188,078	44,137	48,122
Pulp and board	270,364	18,836	17,451	--	5,537	137,741	83,507	7,292
Shake and shingle	227,852	16,217	30,679	64	45,920	33,507	83,505	17,960
Export	2,596,961	602,370	9,058	--	42,185	62,802	1,596,017	284,529
Pole, post, and piling	31,550	8,204	3,387	--	1,004	3,598	8,245	7,112
Total	6,934,879	955,687	1,196,416	28,032	274,079	1,446,578	2,161,746	872,341

¹ Inland Empire combined with Lower Columbia to avoid disclosure.

² Central Washington combined with Lower Columbia to avoid disclosure.

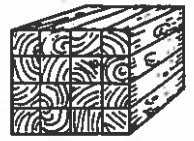
³ Inland Empire combined with Central Washington to avoid disclosure.

Table 9—Production and disposition of wood and bark residues, by area and industry.
(Tons, dry weight)

Economic area and residue-producing industry	All residues	Wood residue					Bark residue												
		All wood	Used ¹				All bark	Used ¹											
			Total	Pulp and board	Fuel	Other		Unused	Total	Pulp and board	Fuel	Other	Unused						
Puget Sound																			
Lumber and plywood	1,472,508	1,144,848	1,118,943	478,301	523,278	117,364	25,905	327,660	326,033	1,122	148,266	176,645	1,627						
Veneer and plywood	307,229	252,272	252,103	88,154	143,114	20,515	89	54,957	53,155	--	53,155	--	1,002						
Shake and shingle	60,029	44,289	13,449	4,445	3,868	5,136	30,840	15,740	1,599	18	39,068	2,737	14,141						
Other ²	41,805	--	--	--	--	--	--	41,805	41,805	--	--	--	--						
Total	1,881,571	1,441,409	1,384,575	570,900	676,260	143,115	56,814	440,162	422,592	1,140	241,311	180,141	17,570						
Olympic Peninsula																			
Lumber and plywood	1,458,508	1,139,574	1,077,406	656,954	333,450	86,562	62,168	318,934	275,573	2,812	201,702	75,059	39,361						
Veneer and plywood	201,246	232,667	238,109	144,180	76,178	17,751	4,558	58,579	47,616	--	41,544	6,072	10,963						
Shake and shingle	186,531	135,121	56,454	11,420	28,455	16,579	78,667	29,211	23,639	2,444	15,402	5,793	27,771						
Other ²	29,211	--	--	--	--	--	--	29,211	27,795	--	25,894	1,901	1,416						
Total	1,875,496	1,517,362	1,371,969	812,554	438,083	121,292	145,333	458,134	378,623	5,256	284,542	88,825	79,511						
Lower Columbia																			
Lumber and plywood	1,140,377	906,869	904,651	651,500	212,314	40,467	2,208	233,508	232,041	--	229,817	2,224	1,467						
Veneer and plywood	414,044	327,268	327,268	208,385	52,860	66,023	--	86,816	86,232	--	86,232	--	584						
Shake and shingle	31,555	22,873	21,161	3,224	15,207	2,730	1,712	8,682	7,965	--	6,928	1,037	717						
Other ²	51,724	--	--	--	--	--	--	51,724	51,153	--	51,112	41	571						
Total	1,637,700	1,257,010	1,253,090	863,109	280,381	109,600	3,920	340,730	377,391	--	374,089	3,202	3,339						
Central Washington																			
Lumber and plywood	550,954	431,140	417,736	211,732	191,719	14,285	13,404	119,814	115,068	--	91,468	22,600	4,746						
Veneer and plywood	287,315	211,817	211,817	124,097	77,096	10,624	--	56,168	46,122	--	30,332	15,790	10,046						
Shake and shingle	1,710	1,124	124	--	87	--	590	586	13	--	13	--	573						
Other ²	--	--	--	--	--	--	--	--	--	--	--	--	--						
Total	820,649	644,081	629,687	335,829	268,902	24,956	14,394	176,568	161,203	--	122,813	38,390	15,365						
Inland Empire																			
Lumber and plywood	428,001	334,553	212,179	136,913	49,036	26,230	122,374	93,448	35,555	--	29,450	6,105	57,893						
Veneer and plywood	1,562	1,120	791	--	46	745	319	462	435	--	15	420	7						
Shake and shingle	2,025	--	--	--	--	--	--	2,205	463	--	--	463	1,562						
Other ²	--	--	--	--	--	--	--	--	--	--	--	--	--						
Total	431,588	335,673	212,970	136,913	49,082	26,975	122,703	95,915	36,453	--	29,465	6,988	59,462						
Total, State																			
Lumber	5,050,348	3,956,984	3,730,325	2,135,440	1,309,797	285,688	236,059	1,093,364	988,270	3,934	701,703	282,633	195,094						
Veneer and plywood	1,290,544	1,034,024	1,029,377	564,816	349,248	125,313	4,647	256,520	233,125	--	211,263	21,862	23,395						
Shake and shingle	281,387	204,527	91,969	19,089	47,863	25,237	112,538	76,860	31,651	2,462	23,180	8,009	63,209						
Other ²	124,765	--	--	--	--	--	--	124,765	121,216	--	116,074	5,142	3,549						
Total	6,747,044	5,195,535	4,852,291	2,719,345	1,706,788	426,238	343,244	1,551,509	1,376,262	6,396	1,052,220	317,646	175,247						

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.
 3 Central Washington combined with Lower Columbia to avoid disclosure.
 4 Inland Empire combined with Central Washington to avoid disclosure.

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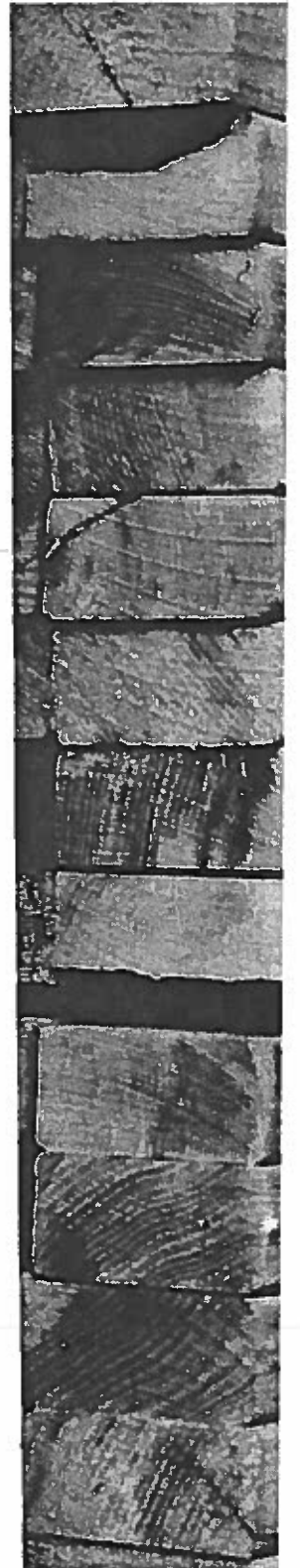


Table 11—Number of sawmills by mill size-class, area, and county.

Economic area and county	All classes	Mill size-class ¹			
		D	C	B	A
Puget Sound					
Island	2	1	1	--	--
King	10	6	1	1	2
Kitsap	1	--	--	--	1
Pierce	11	4	1	2	4
San Juan	2	2	--	--	--
Skagit	2	1	--	--	1
Snohomish	22	11	4	4	3
Whatcom	2	1	1	--	--
Total	52	26	8	7	11
Olympic Peninsula					
Clallam	10	8	1	--	1
Grays Harbor	12	6	2	--	4
Jefferson	3	2	--	--	1
Lewis	12	4	1	4	3
Mason	9	5	1	1	2
Pacific	3	--	1	--	2
Thurston	8	5	2	1	--
Total	57	30	8	6	13
Lower Columbia					
Clark	7	5	1	--	1
Cowlitz	11	2	3	2	4
Klickitat	5	1	2	1	1
Skamania	2	--	--	1	1
Wahkiakum	2	2	--	--	--
Total	27	10	6	4	7
Central Washington					
Chelan	4	1	--	2	1
Kittitas	1	1	--	--	--
Lincoln	1	--	--	--	1
Okanogan	6	2	1	1	2
Yakima	4	--	1	2	1
Total	16	4	2	5	5
Inland Empire					
Asotin	1	--	1	--	--
Columbia	1	1	--	--	--
Ferry	7	4	1	1	1
Pend Oreille	4	4	--	--	--
Spokane	2	1	--	--	1
Stevens	13	9	3	--	1
Walla Walla	2	1	1	--	--
Total	30	20	6	1	3
Total, State	182	90	30	23	39

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000 - 119,999, C = 40,000 - 79,999, D = less than 40,000.

Table 13—Number of sawmills with selected equipment, by mill size-class and area.

Economic area and mill size-class ¹	Barker	Chipper	Planer	Burner	Mill
Puget Sound					
D	3	5	17	--	4
C	8	8	7	1	4
B	7	7	5	--	4
A	11	10	10	--	8
Total	29	30	39	1	20
Olympic Peninsula					
D	7	9	11	6	5
C	5	7	3	--	2
B	5	6	5	3	3
A	13	12	11	2	10
Total	30	34	30	11	20
Lower Columbia					
D	1	4	6	1	1
C	6	6	6	1	4
B	4	4	3	--	2
A	6	6	6	--	5
Total	17	20	21	2	12
Central Washington					
D	--	--	1	--	--
C	2	2	2	2	1
B	5	5	4	1	4
A	5	5	4	--	5
Total	12	12	11	3	10
Inland Empire					
D	5	5	10	7	1
C	6	5	5	4	4
B	1	1	1	1	--
A	3	3	3	2	3
Total	15	14	19	14	8
Total, State					
D	16	23	45	14	11
C	27	28	23	8	15
B	22	23	18	5	13
A	38	36	34	4	31
Total	103	110	120	31	70

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.

Table 15—Number of sawmills by headrig type and size, area, and mill size-class.

Economic area and mill size-class ¹	Circular saw				Band saw				Gang saw			Chipping saw			Scrapp double cut saw		
	2 ft.	4 ft.	6 ft.	8+ ft.	4 ft.	6 ft.	8 ft.	10+ ft.	2 ft.	3 ft.	4 ft.	2 ft.	3 ft.	4 ft.	2 ft.	3 ft.	4 ft.
	Puget Sound	5	12	6	--	2	--	--	--	--	--	--	--	--	--	--	--
D	--	--	1	--	7	1	--	--	--	--	--	1	--	--	--	--	--
C	--	1	--	--	3	1	1	--	1	1	--	4	--	--	1	--	--
B	--	1	--	--	2	4	3	--	--	--	--	--	--	--	--	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	5	14	7	--	14	6	4	--	1	1	--	5	--	--	2	--	--
Olympic Peninsula	4	12	3	2	4	2	--	--	--	1	--	--	--	--	3	--	--
D	--	2	2	--	--	2	--	--	1	--	--	2	--	--	--	--	--
C	--	2	--	--	2	--	2	--	1	--	--	1	--	--	2	--	--
B	--	--	--	--	3	8	1	--	1	--	--	5	--	--	1	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	4	16	5	2	9	12	3	--	2	1	--	8	--	--	6	--	--
Lower Columbia	--	4	3	2	--	1	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	1	4	--	--	--	--	--	1	--	--	--	--	--
C	--	--	--	--	1	2	--	1	--	--	--	1	--	--	1	--	--
B	--	--	--	--	2	3	1	--	1	--	--	2	--	--	--	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	4	3	2	4	10	1	2	1	--	--	4	--	--	1	--	--
Central Washington	--	3	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	1	--	--	--	1	--	--	--	--	2	--	--	--	--	--
C	--	1	--	--	--	2	1	--	1	--	--	--	--	--	--	--	--
B	--	--	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	4	2	--	--	6	2	--	1	--	--	2	--	--	--	--	--
Inland Empire	3	13	2	--	2	--	--	--	--	--	--	--	--	--	1	--	--
D	--	1	1	--	--	2	2	--	--	--	--	--	--	--	1	--	--
C	--	1	--	--	--	2	1	--	--	--	--	--	--	--	1	--	--
B	--	--	--	--	2	1	--	--	--	--	--	--	--	--	--	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	3	15	3	--	4	3	2	--	--	--	--	--	--	--	3	--	--
Total, State	12	44	15	4	8	3	--	--	--	1	--	--	--	--	4	--	--
D	--	3	5	--	8	9	3	--	3	1	--	4	--	--	4	--	--
C	--	5	--	--	6	5	4	1	2	--	--	11	--	--	4	--	--
B	--	1	--	--	9	20	5	1	--	--	--	--	--	--	--	--	--
A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	12	53	20	4	31	37	12	2	5	2	--	19	--	--	12	--	--

¹Mill size-classes identified as follows: Class A mills = 120,000+ board ft. capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.
 Note: Sizes of headrigs are upper limits. Thus, the 6-foot size class includes saws 49 through 72 inches.

Table 17—Average number of operating days by area and mill size-class.

Economic area and mill size-class ¹	Average number of operating days per year	Economic area and mill size-class ¹	Average number of operating days per year
Puget Sound		Central Washington	
D	229	D	108
C	230	C	226
B	240	B ²	241
A	242	A	237
Average	<u>240</u>	Average	<u>239</u>
Olympic Peninsula		Inland Empire	
D	219	D	205
C	239	C	251
B	236	B ²	--
A	240	A	251
Average	<u>238</u>	Average	<u>242</u>
Lower Columbia		Total, State	
D	229	D	218
C	247	C	242
B	243	B	239
A	245	A	242
Average	<u>245</u>	Average	<u>241</u>

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.

² Central Washington and Inland Empire Class B mills combined to avoid disclosure; however, area averages are actual.

**Table 19—Age of logs consumed, by area and mill size-class.
(Thousand board feet, Scribner log rule)**

Economic area and mill size-class ¹	All age groups	Old growth (100+ years)	Young growth (less than 100 years)
Puget Sound			
D	32,572	3,717	28,855
C	66,714	21,592	45,122
B	152,929	36,528	116,401
A	692,668	341,267	351,401
Total	944,883	403,104	541,779
Olympic Peninsula			
D	58,240	7,495	50,745
C	91,260	27,218	64,042
B	145,265	43,517	101,748
A	579,413	339,315	240,098
Total	874,178	417,545	456,633
Lower Columbia			
D	13,498	1,992	11,506
C and B ²	236,915	104,256	132,659
A	412,340	206,978	205,362
Total	662,753	313,226	349,527
Central Washington			
D	1,156	1,050	106
C and B ²	160,490	113,338	47,152
A	207,630	174,513	33,117
Total	369,276	288,901	80,375
Inland Empire			
D	34,577	8,959	25,618
C	107,848	73,801	34,047
B and A ²	140,437	52,884	87,553
Total	282,862	135,644	147,218
Total, State			
D	140,043	23,213	116,830
C	451,769	201,568	250,201
B ³	650,089	271,566	378,523
A	1,892,051	1,062,073	829,978
Total	3,133,952	1,558,420	1,575,532

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000 - 119,999, C = 40,000 - 79,999, D = less than 40,000.

² Combined to avoid disclosure.

³ Total for Class B includes Class A for Inland Empire.

**Table 21—Log inventory changes, log consumption, and apparent log receipts by area.
(Thousand board feet, Scribner log rule)**

Economic area	Log Inventory			1978 log consumption	Apparent 1978 log receipts
	January 1, 1978	December 31, 1978	Net change		
Puget Sound	271,516	206,687	-64,829	944,883	880,054
Olympic Peninsula	200,110	207,772	7,662	874,178	881,840
Lower Columbia	130,069	111,242	-18,827	662,753	643,926
Central Washington	91,441	68,309	-23,132	369,276	346,144
Inland Empire	46,090	46,053	- 37	282,862	282,825
Total, State	739,226	640,063	-99,163	3,133,952	3,034,789

Table 23—Ownership origin of logs consumed, by area and county.
(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								
Island and San Juan ¹	7,468	--	--	--	56	5,250	6	2,156
King	213,531	25,211	27,008	--	--	153,763	830	6,719
Kitsap, Skagit, and Whatcom ¹	101,234	30,312	15,677	--	3,282	23,268	3,127	25,568
Pierce	226,361	5,892	41,065	--	587	57,493	34,104	87,220
Snohomish	396,289	20,014	112,860	--	--	176,031	29,716	57,668
Total	944,883	81,429	196,610	--	3,925	415,805	67,783	179,331
Olympic Peninsula								
Clallam	60,775	6,544	43,723	--	--	3,903	4,224	2,381
Grays Harbor and Pacific ¹	342,684	49,245	57,147	--	12,128	148,133	38,646	37,385
Jefferson	36,774	30,606	3,088	--	--	--	1,350	1,730
Lewis	215,459	12,459	88,747	--	733	14,451	68,222	30,847
Mason	170,458	4,520	113,495	--	490	26,131	5,580	20,242
Thurston	48,028	3,570	9,900	--	1,752	--	8,588	24,218
Total	874,178	106,944	316,100	--	15,103	192,618	126,610	116,803
Lower Columbia								
Clark	56,670	4,956	20,119	--	--	4,505	25,471	1,619
Cowlitz, Skamania, and Wahkiakum ¹	496,465	18,197	23,270	1,075	1,075	292,390	94,882	65,576
Klickitat	109,618	14,976	25,906	--	18,052	30,995	17,097	2,592
Total	662,753	38,129	69,295	1,075	19,127	327,890	137,450	69,787
Central Washington								
Chelan and Kittitas ¹	69,886	--	23,574	--	--	43,336	50	2,926
Lincoln and Okanogan ¹	159,084	14,822	54,778	--	71,756	390	--	17,338
Yakima	140,306	12,055	46,608	--	40,720	26,369	13,801	753
Total	369,276	26,877	124,960	--	112,476	70,095	13,851	21,017
Inland Empire								
Asotin, Columbia, and Walla Walla ¹	54,823	1,080	26,030	--	--	--	--	27,713
Ferry	64,955	3,647	46,278	--	5,941	--	--	9,089
Pend Oreille, Spokane, and Stevens ¹	163,084	12,165	39,183	777	12,288	14,444	641	83,586
Total	282,862	16,892	111,491	777	18,229	14,444	641	120,388
Total, State	3,133,952	270,271	818,456	1,852	168,860	1,020,852	346,335	507,326

¹ Combined to avoid disclosure.

Table 25—Log consumption by species, area, and mill size-class.
(Thousand board feet, Scribner log rule)

Economic area and mill size-class ¹	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound										
D	32,572	8,222	1,149	20	60	--	--	11,241	158	11,722
C	66,714	19,697	15,323	5,419	156	--	--	22,835	--	3,284
B	152,929	25,081	63,448	--	--	--	--	28,370	--	36,030
A	692,668	402,626	261,674	8,946	--	--	--	19,044	378	--
Total	944,883	455,626	341,594	14,385	216	--	--	81,490	536	51,036
Olympic Peninsula										
D	58,240	7,074	400	8	364	4	2	20,858	4	29,526
C	91,260	41,849	3,528	--	--	--	--	25,807	--	20,076
B	145,265	59,499	37,748	--	--	--	--	8,266	--	39,752
A	579,413	146,062	381,381	42,529	6,593	988	--	1,860	--	--
Total	874,178	254,484	423,057	42,537	6,957	992	2	56,791	4	89,354
Lower Columbia										
D	13,498	5,107	250	--	1,005	37	--	5,242	--	1,857
C and B ²	236,915	50,603	40,348	400	--	57,881	576	45,107	--	42,000
A	412,340	310,391	87,857	12,167	--	225	450	450	800	--
Total	662,753	366,101	128,455	12,567	1,005	58,143	1,026	50,799	800	43,857
Central Washington										
D	1,156	572	--	--	--	155	110	15	304	--
C and B ²	160,490	48,146	5,036	7,687	1,544	89,554	80	1,510	6,933	--
A	207,630	55,198	2,068	6,500	1,407	134,714	--	--	7,743	--
Total	369,276	103,916	7,104	14,187	2,951	224,423	190	1,525	14,980	--
Inland Empire										
D	34,577	16,358	2,213	685	2,994	5,285	1,510	2,460	3,072	--
C	107,848	33,258	--	19,562	6,616	40,351	703	4,028	3,330	--
B and A ²	140,437	72,909	4,500	1,610	3,440	41,065	5,310	3,090	8,513	--
Total	282,862	122,525	6,713	21,857	13,050	86,701	7,523	9,578	14,915	--
Total, State										
D	140,043	37,333	4,012	713	4,423	5,481	1,622	39,816	3,538	43,105
C	451,769	137,496	27,251	26,731	8,236	104,081	1,079	75,531	6,004	65,360
B ³	650,089	213,546	142,680	7,947	3,520	134,770	5,590	63,482	12,772	75,782
A	1,892,051	914,277	732,980	70,142	8,000	135,927	450	21,354	8,921	--
Total	3,133,952	1,302,652	906,923	105,533	24,179	370,259	8,741	200,183	31,235	184,247

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.

² Combined to avoid disclosure.

³ Total for Class B includes Class A for Inland Empire.

Table 27—Production and disposition of wood and bark residues, by area and mill size-class.
(Tons, dry weight)

Economic area and mill size-class ¹	All residues			Wood residue			Bark residue		
	Total	Used ²	Unused	Total	Used ²	Unused	Total	Used ²	Unused
Puget Sound									
D	44,476	40,691	3,785	33,728	31,570	2,158	10,748	9,121	1,627
C	115,235	113,928	1,307	90,957	89,650	1,307	24,278	24,278	--
B	252,901	230,461	22,440	196,521	174,081	22,440	56,380	56,380	--
A	1,059,896	1,059,896	--	423,642	823,642	--	236,254	236,254	--
Total	1,472,508	1,444,976	27,532	1,144,848	1,118,943	25,905	327,660	326,033	1,627
Olympic Peninsula									
D	77,065	65,345	11,720	58,303	49,949	8,354	18,762	15,396	3,366
C	146,806	146,806	--	111,429	111,429	--	35,377	35,377	--
B	254,101	195,108	58,993	197,230	161,587	35,643	56,871	33,521	23,350
A	980,536	949,720	30,816	772,612	754,441	18,171	207,924	195,279	12,645
Total	1,458,508	1,356,979	101,529	1,139,574	1,077,406	62,168	318,934	279,573	39,361
Lower Columbia									
D	21,110	17,662	3,448	15,969	13,988	1,981	5,141	3,674	1,467
C and B ³	414,005	413,778	227	341,874	341,647	227	72,131	72,131	--
A	705,262	705,262	--	549,026	549,026	--	156,236	156,236	--
Total	1,140,377	1,136,702	3,675	906,869	904,661	2,208	233,508	232,041	1,467
Central Washington									
D	667	554	113	495	412	83	172	142	30
C and B ³	238,411	221,152	17,259	185,995	173,452	12,543	52,416	47,700	4,716
A	311,876	311,098	778	244,650	243,872	778	67,226	67,226	--
Total	550,954	532,804	18,150	431,140	417,736	13,404	119,814	115,068	4,746
Inland Empire									
D	54,069	20,229	33,840	42,231	18,563	23,668	11,838	1,666	10,172
C	164,837	90,119	74,718	128,241	74,550	53,691	36,596	15,569	21,027
B and A ³	209,095	137,386	71,709	164,081	119,066	45,015	45,014	18,320	26,694
Total	428,001	247,734	180,267	334,553	212,179	122,374	93,448	35,555	57,893
Total Washington									
D	197,387	144,481	52,906	150,726	114,482	36,244	46,661	29,999	16,662
C	745,008	662,353	82,655	599,022	539,788	59,284	145,986	122,565	23,421
B ⁴	1,050,383	886,385	163,998	817,306	705,674	111,632	233,077	180,711	52,366
A	3,057,570	3,025,976	31,594	2,389,930	2,370,981	18,949	667,640	654,995	12,645
Total	5,050,348	4,719,195	331,153	3,956,984	3,730,925	226,059	1,093,364	988,270	105,094

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.

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 B includes Class A for Inland Empire.

residues, by area and mill size-class.
(weight)

Medium ⁴							Fine ⁵						
Total	Total used ²	Pulp	Board	Fuel	Other	Unused	Total	Total used ²	Pulp	Board	Fuel	Other	Unused
4,181	4,178	--	581	553	3,044	3	8,466	8,453	--	759	1,484	6,210	13
20,140	19,928	605	--	7,089	12,234	212	21,474	21,366	3,413	--	7,484	10,469	108
36,717	36,717	10,451	--	13,138	13,128	--	47,284	47,284	--	--	27,780	19,504	--
140,087	140,087	34,640	--	96,939	8,508	--	199,491	199,491	40,608	--	143,558	15,325	--
201,125	200,910	45,696	581	117,719	36,914	215	276,715	276,594	44,021	759	180,306	51,508	121
7,804	7,529	4,946	--	1,549	1,034	275	14,217	11,810	6,882	--	3,041	1,887	2,407
12,001	12,001	4,131	--	7,668	202	--	28,562	28,562	14,313	--	11,419	2,830	--
37,475	28,284	25,960	--	1,162	1,162	9,191	46,864	28,064	24,954	--	3,110	--	18,800
127,971	121,664	10,152	11,923	76,725	22,864	6,307	174,091	163,992	10,152	8,822	117,899	27,119	10,099
185,251	169,478	45,189	11,923	87,104	25,262	15,773	263,734	232,428	56,301	8,822	135,469	31,836	31,306
1,338	1,050	864	--	--	186	288	4,293	3,272	1,944	--	1,067	261	1,021
48,235	48,008	15,074	5,832	20,807	6,295	227	60,882	60,882	33,318	--	26,068	1,496	--
99,093	99,093	12,070	4,698	50,042	32,283	--	130,802	130,802	60,182	--	70,620	--	--
148,666	148,151	28,008	10,530	70,849	38,764	515	195,977	194,956	95,444	--	97,755	1,757	1,021
--	--	--	--	--	--	--	144	120	--	--	8	112	24
35,045	31,193	864	11,696	15,350	3,283	3,852	43,883	39,935	864	--	37,948	1,123	3,948
47,088	47,088	14,450	--	32,638	--	--	57,434	56,656	--	--	56,656	--	778
82,133	78,281	15,314	11,696	47,988	3,283	3,852	101,461	96,711	864	--	94,612	1,235	4,750
8,139	5,221	--	1,080	3,254	887	2,918	9,912	4,799	1,080	--	2,258	1,461	5,113
22,527	14,020	3,856	--	6,830	3,334	8,507	30,962	7,761	6,427	--	--	1,334	23,201
34,446	21,918	--	--	5,958	15,960	12,528	37,686	14,558	--	--	14,558	--	23,128
65,112	41,159	3,856	1,080	16,042	20,181	23,953	78,560	27,118	7,507	--	16,816	2,795	51,442
21,462	17,978	5,810	1,661	5,356	5,151	3,484	37,032	28,454	9,906	759	7,858	9,931	8,578
93,920	82,969	16,592	3,078	40,275	23,024	10,951	123,130	97,817	35,223	--	47,961	14,633	25,313
152,666	129,100	44,349	14,450	37,727	32,574	23,566	194,467	150,595	48,066	--	80,406	22,123	43,872
414,239	407,932	71,312	16,621	256,344	63,655	6,307	561,818	550,941	110,942	8,822	388,733	42,444	10,877
682,287	637,979	138,063	35,810	339,702	124,404	44,308	916,447	827,807	204,137	9,581	524,958	89,131	88,640

Table 30—Production and disposition of wood and bark residues, by area and county.
(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									
Island and San Juan ²	12,744	12,378	366	10,026	9,670	356	2,718	2,708	10
King	298,775	298,775	--	230,501	230,501	--	68,274	68,274	--
Kitsap, Skagit, and Whatcom ²	187,441	183,314	4,127	146,752	143,657	3,095	40,689	39,657	1,032
Pierce	369,842	347,393	22,449	289,936	267,496	22,440	79,906	79,897	9
Snohomish	603,706	603,116	590	467,633	467,619	14	136,073	135,497	576
Total	1,472,508	1,444,976	27,532	1,144,848	1,118,943	25,905	327,660	326,033	1,627
Olympic Peninsula									
Clallam	91,195	86,459	4,736	70,249	66,714	3,535	20,946	19,745	1,201
Grays Harbor and Pacific ²	517,854	512,306	5,548	399,475	398,475	1,000	118,379	113,031	4,548
Jefferson	91,115	72,913	18,202	81,382	72,526	8,856	9,733	387	9,346
Lewis	366,085	313,379	52,706	284,003	250,901	33,102	82,082	62,478	19,604
Nason	311,364	292,901	18,463	241,833	227,529	14,304	69,531	65,372	4,159
Thurston	80,895	79,021	1,874	62,632	61,261	1,371	18,263	17,760	503
Total	1,450,508	1,356,979	101,529	1,139,574	1,077,406	62,168	318,934	279,573	39,361
Lower Columbia									
Clark	100,794	100,789	5	78,785	78,780	5	22,009	22,009	--
Cowlitz, Skamania, and Wahkiakum ²	867,782	864,668	3,114	693,297	691,579	1,718	174,485	173,089	1,396
Klickitat	171,801	171,245	556	134,787	134,302	485	37,014	36,943	71
Total	1,140,377	1,136,702	3,675	906,869	904,661	2,208	233,508	232,041	1,467
Central Washington									
Chelan and Kittitas ²	113,382	112,504	878	89,340	88,488	852	24,042	24,016	26
Lincoln and Okanogan ²	233,834	216,562	17,272	182,021	169,469	12,552	51,813	47,093	4,720
Yakima	203,738	203,738	--	159,779	159,779	--	43,959	43,959	--
Total	550,954	532,804	18,150	431,140	417,736	13,404	119,814	115,068	4,746
Inland Empire									
Asotin, Columbia, and Walla Walla ²	78,101	46,089	32,012	60,963	38,801	22,162	17,138	7,288	9,850
Ferry	99,511	50,595	48,916	77,770	50,200	27,570	21,741	395	21,346
Pend Oreille, Spokane, and Stevens ²	250,389	151,050	99,339	195,820	123,178	72,642	54,569	28,872	26,697
Total	428,001	247,734	180,267	334,553	212,179	122,374	93,448	35,555	57,893
Total, State	5,050,348	4,719,195	331,153	3,956,984	3,730,925	226,059	1,093,364	988,270	105,094

¹ Used residues were not necessarily consumed in the area or county in which produced.
² Combined to avoid disclosure.

of wood residues, by area and county.
weight)

Medium ²							Fine ³						
Total	Total Used ⁴	Pulp	Board	Fuel	Other	Unused	Total	Total Used ⁴	Pulp	Board	Fuel	Other	Unused
2,200	1,985	--	--	--	1,985	215	2,275	2,154	--	--	16	2,138	121
32,352	32,352	--	--	23,429	8,923	--	57,735	57,735	--	--	46,177	11,558	--
30,045	30,045	19,224	--	74	10,747	--	33,787	33,787	19,224	--	545	14,018	--
57,139	57,139	11,967	--	45,017	155	--	70,131	70,131	--	--	69,582	549	--
79,389	79,389	14,505	581	49,199	15,104	--	112,787	112,787	24,797	759	63,986	23,245	--
201,125	200,910	45,696	581	117,719	36,914	215	276,715	276,594	44,021	759	180,306	51,508	121
9,922	9,647	--	--	9,601	46	275	17,540	16,589	--	--	16,182	407	951
61,916	61,916	10,152	--	28,900	22,864	--	97,698	97,307	10,152	--	59,697	27,458	391
7,511	6,064	--	--	5,789	275	1,447	8,150	3,942	--	--	3,618	324	4,208
55,364	42,750	24,595	--	16,970	1,185	12,614	65,443	44,955	24,686	--	20,234	35	20,488
40,422	38,985	528	11,923	25,844	690	1,437	59,646	54,767	10,447	8,822	34,718	780	4,879
10,116	10,116	9,914	--	--	202	--	15,257	14,868	11,016	--	1,020	2,832	389
185,251	169,478	45,189	11,923	87,104	25,262	15,773	263,734	232,428	56,301	8,822	135,469	31,836	31,306
15,298	15,298	864	--	12,955	1,479	--	18,533	18,528	3,888	--	14,395	245	5
105,493	105,255	10,736	10,530	46,756	37,233	238	146,135	145,182	71,678	--	71,995	1,509	953
27,875	27,598	16,408	--	11,138	52	277	31,309	31,246	19,878	--	11,365	3	63
148,666	148,151	28,008	10,530	70,849	38,764	515	195,977	194,956	95,444	--	97,755	1,757	1,021
20,102	20,102	864	--	19,238	--	--	20,129	19,329	864	--	18,461	4	800
32,807	28,955	--	--	28,750	205	3,852	43,378	39,428	--	--	39,104	324	3,950
29,224	29,224	14,450	11,696	--	3,078	--	37,954	37,954	--	--	37,047	907	--
82,133	78,281	15,314	11,696	47,988	3,283	3,852	101,461	96,711	864	--	94,612	1,235	4,750
11,604	8,270	3,856	1,080	--	3,334	3,334	14,349	8,876	7,507	--	35	1,334	5,473
14,832	11,916	--	--	5,958	5,958	2,916	18,527	3,375	--	--	3,312	63	15,152
38,676	20,973	--	--	10,084	10,889	17,703	45,684	14,867	--	--	13,469	1,398	30,817
65,112	41,159	3,856	1,080	16,042	20,181	23,953	78,560	27,118	7,507	--	16,816	2,795	51,442
682,287	637,979	138,063	35,810	339,702	124,404	44,308	916,447	827,807	204,137	9,581	524,958	89,131	88,640

**Table 33—Degree of lumber manufacture, by area and mill size-class.
(Thousand board feet, lumber tally)**

Economic area and mill size-class ¹	Green	Kiln-dried	Air-dried	Total	Rough	Surfaced
Puget Sound						
D	27,100	10,740	604	38,444	19,298	19,146
C	63,850	35,050	300	99,200	6,020	93,180
B	102,758	97,881	15,966	216,605	47,039	169,566
A	468,799	419,174	35,600	923,573	275,017	648,556
Total	662,507	562,845	52,470	1,277,822	347,374	930,448
Olympic Peninsula						
D	37,071	26,915	62	64,048	28,410	35,638
C	99,667	31,260	--	130,927	75,700	55,227
B	107,715	106,396	--	214,111	41,267	172,844
A	314,211	491,751	--	805,962	213,497	592,465
Total	558,664	656,322	62	1,215,048	358,874	856,174
Lower Columbia						
D	18,862	824	49	19,735	13,539	6,196
C and B ²	137,044	140,547	3,300	280,891	57,847	223,044
A	412,652	184,474	8,438	605,564	146,808	458,756
Total	568,558	325,845	11,787	906,190	218,194	687,996
Central Washington						
D	607	--	60	667	667	--
C and B ²	99,195	103,040	928	203,163	40,916	162,247
A	27,157	226,380	12,360	265,897	47,900	217,997
Total	126,959	329,420	13,348	469,727	89,483	380,244
Inland Empire						
D	14,706	23,314	7,865	45,885	8,200	37,685
C	62,244	71,421	9,677	143,342	39,044	104,298
B and A ²	41,823	117,752	14,900	174,475	15,000	159,475
Total	118,773	212,487	32,442	363,702	62,244	301,458
Total, State						
D	98,346	61,793	8,640	168,779	70,114	98,665
C	312,349	244,302	10,905	567,556	133,398	434,158
B ³	401,947	459,045	34,166	895,158	189,435	705,723
A	1,222,819	1,321,779	56,398	2,600,996	683,222	1,917,774
Total	2,035,461	2,086,919	110,109	4,232,489	1,076,169	3,156,320

¹ Mill size-classes identified as follows: Class A mills = 120,000+ board foot capacity per shift, B = 80,000-119,999, C = 40,000-79,999, D = less than 40,000.

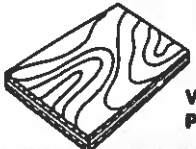
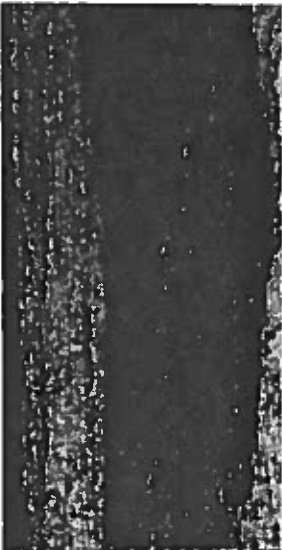
² Combined to avoid disclosure.

³ Total for Class B includes Class A for Inland Empire.

**Table 35—Lumber production by headrig type, area, and county.
(Thousand board feet, lumber tally)**

Economic area and county	All types	Circular saw	Band saw	Gang saw	Chipping saw	Scragg double cut saw
Puget Sound						
Island and San Juan ¹	10,533	533	9,000	--	1,000	--
King	267,288	6,207	213,081	48,000	--	--
Kitsap, Skagit, and Whatcom ¹	155,798	4,000	47,718	--	104,080	--
Pierce	324,200	15,753	208,113	15,966	22,500	61,868
Snohomish	520,003	17,551	482,652	--	19,800	--
Total	1,277,822	44,044	960,564	63,966	147,380	61,868
Olympic Peninsula						
Clallam	81,206	11,358	42,494	--	27,354	--
Grays Harbor and Pacific ¹	450,605	29,188	314,059	11,750	95,608	--
Jefferson	37,725	4,225	33,500	--	--	--
Lewis	299,093	32,268	166,400	24,200	43,800	32,425
Mason	275,824	29,674	146,330	--	97,811	2,009
Thurston	70,595	1,110	51,800	2,925	12,000	2,760
Total	1,215,048	107,823	754,583	38,875	276,573	37,194
Lower Columbia						
Clark	85,801	1,159	57,985	--	26,657	--
Cowlitz, Skamania, and Wahkiakum ¹	675,441	10,270	575,947	7,000	82,224	--
Klickitat	144,948	306	134,517	--	--	10,125
Total	906,190	11,735	768,449	7,000	108,881	10,125
Central Washington						
Chelan and Kittitas ¹	93,187	120	61,040	14,027	18,000	--
Lincoln and Okanogan ¹	200,827	2,547	190,280	--	8,000	--
Yakima	175,713	--	138,897	--	36,816	--
Total	469,727	2,667	390,217	14,027	62,816	--
Inland Empire						
Asotin, Columbia, and Walla Walla ¹	66,430	5,800	60,630	--	--	--
Ferry	85,770	24,602	34,756	--	--	26,412
Pend Oreille, Spokane, and Stevens ¹	211,502	23,122	187,340	--	--	1,040
Total	363,702	53,524	282,726	--	--	27,452
Total, State	4,232,489	219,793	3,156,539	123,868	595,650	136,639

¹ Combined to avoid disclosure.



VENEER
PLYWOOD



VENEER & PLYWOOD

Table 36—Number of veneer and plywood mills by type, area, and county.

Economic area and county	All types	Veneer only	Layup only	Veneer and layup
Puget Sound				
King	3	--	--	3
Pierce	3	--	1	2
Skagit	1	--	--	1
Snohomish	1	--	--	1
Whatcom	1	--	--	1
Total	9	--	1	8
Olympic Peninsula				
Clallam	1	--	--	1
Grays Harbor	5	1	1	3
Jefferson	1	1	--	--
Lewis	5	4	--	1
Mason	1	--	--	1
Thurston	3	1	2	--
Total	16	7	3	6
Lower Columbia				
Clark	2	--	--	2
Cowlitz	2	--	--	2
Klickitat	1	--	--	1
Skamania	2	1	--	1
Total	7	1	--	6
Central Washington				
Kittitas	1	1	--	--
Okanogan	1	--	--	1
Yakima	1	--	--	1
Total	3	1	--	2
Inland Empire				
Stevens				
Total	1	--	--	1
Total, State	36	9	4	23

Table 38—Number of mills by lathe log diameter limit and area.

Economic area	Lathe log diameter limit							
	Layup only	20-29	30-39	40-49	50-59	60-69	70-79	80+
Puget Sound	1	--	1	1	--	1	--	5
Olympic Peninsula	3	--	2	2	--	2	2	5
Lower Columbia	--	--	--	2	1	1	1	2
Central Washington	--	1	--	--	1	--	--	1
Inland Empire	--	--	--	--	--	1	--	--
Total, State	4	1	3	5	2	5	3	13

Table 39—Number of mills by minimum core size produced and area.

Economic area	Diameter of cores (Inches)									No lathe or core
	3	4	5	6	7	8	9	10	11+	
Puget Sound	--	--	1	1	4	2	--	--	--	1
Olympic Peninsula	--	2	1	5	4	1	--	--	--	3
Lower Columbia	--	--	1	1	4	1	--	--	--	--
Central Washington	--	--	1	2	--	--	--	--	--	--
Inland Empire	--	--	1	--	--	--	--	--	--	--
Total, State	--	2	5	9	12	4	--	--	--	4

Table 41—Number of mills by tenure of present ownership, by area, and years of site occupancy.

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						
11-20	1	--	--	--	1	--
21+	8	--	--	1	--	7
Total	9	--	--	1	1	7
Olympic Peninsula						
6-10	2	--	--	2	--	--
11-20	5	--	1	1	3	--
21+	9	1	1	--	2	5
Total	16	1	2	3	5	5
Lower Columbia						
11-20	2	--	--	--	2	--
21+	5	--	--	--	1	4
Total	7	--	--	--	3	4
Central Washington						
6-10	2	1	1	--	--	--
11-20	1	--	--	--	1	--
Total	3	1	1	--	1	--
Inland Empire						
11-20	1	--	--	--	1	--
Total	1	--	--	--	1	--
Total, State						
6-10	4	1	1	2	--	--
11-20	10	--	1	1	8	--
21+	22	1	1	1	3	16
Total	36	2	3	4	11	16

**Table 43—Log consumption by type of material, area, and county.
(Thousand board feet, Scribner log rule)**

Economic area	Total roundwood	Sound logs	Utility logs
Puget Sound			
King	45,747	43,728	2,019
Pierce	22,391	19,021	3,370
Skagit, Snohomish, and Whatcom	58,221	58,221	--
Total	126,359	120,970	5,389
Olympic Peninsula			
Clallam, Jefferson, Mason, and Thurston ¹	83,202	78,682	4,520
Grays Harbor	24,842	24,047	795
Lewis	67,600	60,960	6,640
Total	175,644	163,689	11,955
Lower Columbia			
Clark and Cowlitz ¹	154,204	147,876	6,328
Klickitat and Skamania ¹	44,330	41,603	2,727
Total	198,534	189,479	9,055
Central Washington and Inland Empire			
Kittitas, Okanogan, Yakima, and Stevens ¹			
Total	173,663	172,662	1,001
Total, State	674,200	646,800	27,400

¹ Combined to avoid disclosure.

**Table 45—Log inventory changes, log consumption, and apparent log receipts, by area.
(Thousand board feet, Scribner log rule)**

Economic area	Log inventory			1978 log consumption	Apparent 1978 log receipts
	January 1, 1978	December 31, 1978	Net change		
Puget Sound	71,856	59,342	-12,514	126,359	113,845
Olympic Peninsula	44,933	34,346	-10,587	175,644	165,057
Lower Columbia	57,174	70,193	13,019	198,534	211,553
Central Washington and Inland Empire ¹	49,089	54,555	5,466	173,663	179,129
Total, State	223,052	218,436	- 4,616	674,200	669,584

¹ Combined to avoid disclosure.

Washington Veneer and Plywood Mills, 1978

Table 47—Log consumption by species, area, and county.
(Thousand board feet, Scribner log rule)

Economic area and county	All species	Douglas fir	Hemlock	True firs	Spruce	Ponderosa pine	Lodgepole pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound										
King	45,747	25,981	16,299	1,088	139	--	310	1,861	69	--
Pierce	22,391	11,935	5,893	517	750	--	--	296	--	3,000
Skagit, Snohomish, and Whatcom ¹	58,221	19,343	15,858	18,227	--	--	--	251	291	4,251
Total	126,359	57,259	38,050	19,832	889	--	310	2,408	360	7,251
Olympic Peninsula										
Clallam, Jefferson, Mason, and Thurston ¹	83,202	59,797	6,426	--	332	--	--	16,647	--	--
Grays Harbor	24,842	1,877	8,975	1,940	1,405	--	401	5,644	600	--
Lewis	67,600	38,980	17,660	720	--	--	--	3,260	--	6,980
Total	175,644	100,654	33,061	2,660	1,737	--	401	29,551	600	6,980
Lower Columbia										
Clark and Cowlitz ¹	154,204	99,006	21,612	8,622	--	--	--	24,964	--	--
Klickitat and Skamania ¹	44,330	27,790	11,839	3,300	--	230	300	300	571	--
Total	198,534	126,796	33,451	11,922	--	230	300	25,264	571	--
Central Washington and Inland Empire										
Kittitas, Okanogan, Yakima, and Stevens ¹	173,663	124,815	25,052	3,881	5,715	8,369	5,503	--	--	328
Total	173,663	124,815	25,052	3,881	5,715	8,369	5,503	--	--	328
Total, State	674,200	409,524	129,614	38,295	8,341	8,599	6,514	57,223	1,531	14,559

¹ Combined to avoid disclosure.

**Table 49—Production and disposition of wood residues, by area and county.
(Tons, dry weight)**

Economic area and county	All types										Coarse ² and medium ³					Fine ⁴				
	Total	Total used			Unused	Total used			Unused	Total used			Unused	Total used			Unused			
		Pulp and board	Fuel	Other		Pulp and board	Fuel	Other		Pulp and board	Fuel	Other		Pulp and board	Fuel	Other				
Puget Sound	110,875	53,687	42,972	14,216	--	104,775	104,775	53,687	36,072	14,216	--	6,100	6,100	--	--	--				
King	50,455	3,975	39,781	6,699	--	45,017	45,017	3,975	34,343	6,699	--	5,438	5,438	--	--	--				
Pierce	90,942	90,853	30,492	60,361	89	85,833	85,774	30,492	55,282	--	59	5,109	5,079	--	30	30				
and Whatcom ⁵	252,272	252,183	88,154	143,114	20,915	235,625	235,566	88,154	126,497	20,915	59	16,647	16,617	--	30	30				
Olympic Peninsula	117,845	115,545	64,766	38,950	11,829	111,237	108,937	64,766	32,342	11,829	2,300	6,608	6,608	--	--	--				
Clallam, Jefferson,	47,312	47,312	12,070	32,014	3,028	42,854	42,854	12,070	26,956	3,028	--	5,058	5,058	--	--	--				
Mason, and Thurston ⁵	76,910	74,652	66,544	5,214	2,894	76,076	73,818	66,544	4,380	2,894	2,258	834	834	--	--	--				
Grays Harbor	242,667	238,109	144,180	76,178	17,751	230,167	225,609	144,180	63,678	17,751	4,558	12,500	12,500	--	--	--				
Lewis	257,595	257,595	179,197	47,138	31,260	240,466	240,466	179,197	39,858	29,411	--	9,129	9,129	--	--	--				
Total	69,673	69,673	29,168	5,722	34,763	66,754	66,754	27,459	4,732	34,763	--	2,919	2,919	--	--	--				
Lower Columbia	327,268	327,268	208,385	52,860	66,023	315,220	315,220	206,456	44,590	64,174	--	12,048	12,048	--	--	--				
Clark and Cowlitz ⁵	211,817	211,817	124,097	77,096	10,624	204,005	204,005	124,097	69,284	10,624	--	7,812	7,812	--	--	--				
Klickitat and Stamanla ⁵	1,024,024	1,025,377	564,816	349,248	115,313	985,017	980,100	562,887	304,049	113,464	4,617	49,007	49,977	1,929	45,199	1,849				
Total	211,817	211,817	124,097	77,096	10,624	204,005	204,005	124,097	69,284	10,624	--	7,812	7,812	--	--	--				
Central Washington and Inland Empire ⁵	1,034,024	1,025,377	564,816	349,248	115,313	985,017	980,100	562,887	304,049	113,464	4,617	49,007	49,977	1,929	45,199	1,849				
Klickitas, Okanogan, Stevens, and Yakima ⁵	211,817	211,817	124,097	77,096	10,624	204,005	204,005	124,097	69,284	10,624	--	7,812	7,812	--	--	--				
Total	1,034,024	1,025,377	564,816	349,248	115,313	985,017	980,100	562,887	304,049	113,464	4,617	49,007	49,977	1,929	45,199	1,849				
Total, State	1,034,024	1,025,377	564,816	349,248	115,313	985,017	980,100	562,887	304,049	113,464	4,617	49,007	49,977	1,929	45,199	1,849				

1 Used residues were not necessarily consumed in the area or county in which produced.

2 Coarse residue includes log trim, cores, veneer clippings, roundup, spur trim.

3 Medium residue includes reject veneer and panel trim.

4 Fine residue includes sander dust.

5 Combined to avoid disclosure.

Table 51—Veneer and plywood production, by area and county.
(Thousand square feet, 3/8-inch basis)

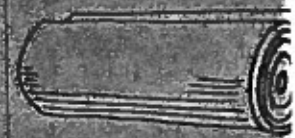
Economic area and county	Veneer	Plywood ¹
Puget Sound King, Pierce, Skagit, Snohomish, and Whatcom ²	96,356	756,695
Olympic Peninsula Clallam, Jefferson, Grays Harbor, Lewis, Mason, and Thurston ²	318,188	568,155
Lower Columbia Clark, Cowlitz, Klickitat, Kittitas, and Skamania ^{2,3}	277,133	547,660
Central Washington and Inland Empire Okanogan, Yakima, and Stevens ²	--	355,071
Total, State	691,677	2,227,581

¹ Includes hardwood and softwood faced plywood.

² Combined to avoid disclosure.

³ Kittitas County included in Lower Columbia to avoid disclosure.

**PULP &
BOARD**



PULP & BOARD

Table 52—Number of pulp and board mills, by type and county.

Economic area and county	All mills	Type of pulp Mill				Type of board Mill		
		Sulfite	Sulfate	Groundwood	Semichemical	Hardboard	Insulation board	Particle board
Puget Sound								
Pierce	2	--	1	1	--	--	--	--
Skagit	2	1	--	--	--	1	--	--
Snohomish	3	1	1	1	--	--	--	--
Whatcom	2	1	--	--	1	--	--	--
Total	9	3	2	2	1	1	--	--
Olympic Peninsula								
Clallam	2	1	--	1	--	--	--	--
Grays Harbor	2	2	--	--	--	--	--	--
Jefferson	1	--	1	--	--	--	--	--
Total	5	3	1	1	--	--	--	--
Lower Columbia								
Clark	3	1	2	--	--	--	--	--
Cowlitz	6	1	2	--	2	--	--	1
Total	9	2	4	--	2	--	--	1
Inland Empire								
Spokane	1	--	--	1	--	--	--	--
Walla Walla	2	--	1	--	1	--	--	--
Total	3	--	1	1	1	--	--	--
Total, State	26	8	8	4	4	1	--	1

Table 54—Number of mills by tenure of present ownership and years of site occupancy.

Mill type and site occupancy (years)	Tenure of present ownership (years)				
	0-2	3-5	6-10	11-20	21+
Sulfite					
11-20	--	--	--	--	--
21+	--	--	--	3	5
Sulfate					
11-20	--	--	--	1	--
21+	--	--	--	1	6
Groundwood					
21+	--	--	1	--	3
Semichemical					
6-10	--	--	--	--	--
11-20	--	--	--	1	--
21+	--	--	--	1	2
Hardboard					
21+	--	--	1	--	--
Particle					
21+	--	--	--	1	--
Total	--	--	2	8	16

Table 55—Average number of operating days by area.

Economic area	Pulp	Board
Puget Sound	302	252
Olympic Peninsula	279	--
Lower Columbia	331	220
Inland Empire	226	--
Total, State	305	240

Table 57—Type of wood consumed by area.

Economic area	Roundwood			Other					
	Total	Sound logs	Utility logs	Total	Chips		Sawdust	Shavings and bark	Waste-paper
					From mill residue	From roundwood chipping mill			
	----- Thousand board feet, Scribner log rule -----			----- Bone Dry Tons -----					
Puget Sound	138,392	24,586	113,806	1,593,461	860,537	732,924	--	--	--
Olympic Peninsula	102,972	91,810	11,162	916,135	502,846	387,903	25,251	--	135
Lower Columbia and Inland Empire ¹	29,000	12,800	16,200	2,654,572	2,438,763	23,652	128,674	53,382	10,101
Total, State	270,364	129,196	141,168	5,164,168	3,802,146	1,144,479	153,925	53,382	10,236

¹ Combined to avoid disclosure.

Table 59—Residue and off-site roundwood chip consumption by state or province of origin and area.
(Tons, dry weight)

Economic area and type of material	Total volume	Washington	Oregon	Idaho	British Columbia	Other
Puget Sound						
Chip residue ¹	860,537					
Chip roundwood	732,924	446,303	2,981	57,813	171,048	54,779
Sawdust and shavings	--	--	--	--	--	--
Bark	--	--	--	--	--	--
Total	1,593,461					
Olympic Peninsula						
Chip residue ¹	502,846					
Chip roundwood	387,903	165,353	--	--	222,550	--
Sawdust and shavings	25,251	20,453	--	--	4,798	--
Bark	--	--	--	--	--	--
Total	916,000					
Lower Columbia and Inland Empire²						
Chip residue ¹	2,438,763					
Chip roundwood	23,652	4,674	--	18,978	--	--
Sawdust and shavings	182,056	131,074	50,982	--	--	--
Bark	--	--	--	--	--	--
Total	2,644,471					
Total, State						
Chip residue ¹	3,802,146					
Chip roundwood	1,144,479	616,330	2,981	76,791	393,598	54,779
Sawdust and shavings	207,307	151,527	50,982	--	4,798	--
Bark	--	--	--	--	--	--
Total	5,153,932					

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

² Combined to avoid disclosure.

SHAKE & SHINGLE



SHAKE
SHINGI



Table 60—Number of shake and shingle mills and their operating characteristics by county.

Economic area and county	Number of mills	Total single shift capacity ¹ (Squares)			Average number operating days/year
		Shake	Shingle	Other	
Puget Sound					
Island and Snohomish ²	29	1,159	629	20	
King, Kitsap, and Pierce ²	10	333	80	38	
Skagit and Whatcom ²	34	1,956	454	104	
Total	73	3,448	1,163	162	219
Olympic Peninsula					
Clallam	67	3,849	599	49	
Grays Harbor	109	7,594	1,226	535	
Jefferson	11	480	20	63	
Lewis	21	575	64	10	
Mason	5	222	75	69	
Pacific	11	706	210	15	
Total	224	13,426	2,194	741	217
Lower Columbia					
Clark, Klickitat, and Wahkiakum ²	12	279	142	13	
Cowlitz	14	1,102	200	36	
Total	26	1,381	342	49	239
Central Washington					
Chelan and Okanogan ²	4	115	25	5	
Total	4	115	25	5	187
Inland Empire					
Ferry and Spokane ²	3	62	--	--	
Pend Oreille and Stevens ²	7	214	--	9	
Total	10	276	--	9	192
Total, State	337	18,646	3,724	966	219

¹ Normally eight hours but some mills operate other than eight hours in a shift.

² Combined to avoid disclosure.

Table 62—Number of shake and shingle mills by tenure of present ownership and years of 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	77	74	2	1	--	--
3- 5	76	13	61	2	--	--
6-10	80	13	9	57	1	--
11-20	68	8	6	12	42	--
21+	36	4	3	4	7	18
Total	337	112	81	76	50	18

Table 64—Ownership origin of logs consumed, by area and county.
(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								
Island and Snohomish ¹	19,802	3,561	11,857	--	325	--	3,572	487
King and Pierce ¹	4,669	405	555	--	--	--	293	3,416
Skagit and Whatcom ¹	23,126	3,152	6,382	--	--	853	8,081	4,658
Total	47,597	7,118	18,794	--	325	853	11,946	8,561
Olympic Peninsula								
Cllallam	32,697	3,701	1,684	--	1	4,581	21,222	1,508
Grays Harbor	91,873	4,483	4,327	--	43,294	5,477	29,257	5,035
Jefferson	2,182	45	--	--	--	--	2,132	5
Lewis	3,706	--	1,971	--	1,150	--	535	50
Mason	2,200	44	66	--	--	--	1,540	550
Pacific	15,250	570	150	--	900	10,672	2,678	280
Total	147,908	8,843	8,198	--	45,345	20,730	57,364	7,428
Lower Columbia								
Clark, Klickitat, and Wahkiakum	2,814	--	454	--	250	--	2,095	15
Cowlitz	25,264	235	1,480	--	--	11,919	11,605	25
Total	28,078	235	1,934	--	250	11,919	13,700	40
Central Washington								
Chelan and Okanogan ¹	2,136	--	1,569	64	--	--	495	8
Total	2,136	--	1,569	64	--	--	495	8
Inland Empire								
Ferry and Spokane ¹	121	21	84	--	--	5	--	11
Pend Oreille	2,012	--	100	--	--	--	--	1,912
Total	2,133	21	184	--	--	5	--	1,923
Total, State	227,852	16,217	30,679	64	45,920	33,507	83,505	17,960

¹ Combined to avoid disclosure.

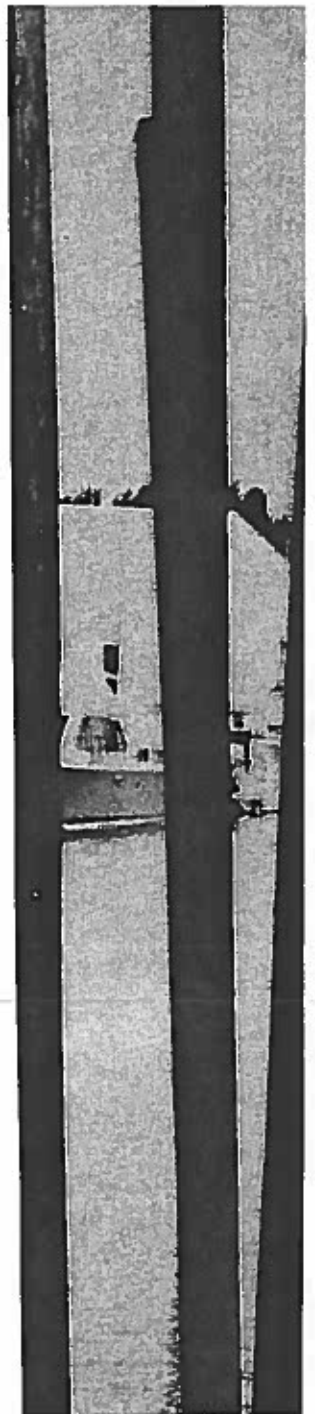
Table 68—Mill production by product type, area, and county.

Economic area and county	Shakes	Shingles	Other ¹
----- Squares -----			
Puget Sound			
Island and Snohomish ²	168,107	88,047	1,371
King, Kitsap, and Pierce ²	44,598	10,011	4,026
Skagit and Whatcom ²	365,194	81,783	13,136
Total	577,899	179,841	18,533
Olympic Peninsula			
Clallam	622,715	91,569	3,739
Grays Harbor	1,287,930	182,574	57,227
Jefferson	51,707	3,724	2,088
Lewis	76,236	10,115	866
Mason	21,457	7,664	--
Pacific	190,917	22,830	915
Total	2,250,962	318,476	64,835
Lower Columbia			
Clark, Klickitat, and Wahkiakum ²	22,187	12,930	1,300
Cowlitz	278,215	80,825	4,467
Total	300,402	93,755	5,767
Central Washington			
Chelan and Okanogan ²			
Total	23,941	480	14
Inland Empire			
Ferry and Spokane ²	4,708	--	--
Pend Oreille and Stevens ²	19,731	--	477
Total	24,439	--	477
Total, State	3,177,643	592,552	89,626

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

² Combined to avoid disclosure.

**POLE, POST
& PILING**



**POL
POE
PILI**



Table 69—Number of pole, post and piling mills and their operating characteristics by area.

Economic area	Number of mills	Yearly installed capacity, thousand board feet, Scribner log rule		Average number of operating days in 1978	
		Peeling	Treatment	Peeling	Treatment
Puget Sound	7	15,283	21,295	193 (7) ¹	218 (5)
Olympic Peninsula	4	10,761	--	227 (4)	--
Lower Columbia and Central Washington ²	6	13,099	18,420	103 (6)	360 (3)
Inland Empire	6	900	299	213 (6)	288 (5)
Total, State	23	47,842	49,553	160 (23)	306 (13)

¹ Number of mills.

² Combined to avoid disclosure.

Table 72—Mill production, by product type and area.

Economic Area	Shipments		
	Treated	Untreated	Total
Puget Sound	9,208	4,299	13,507
Olympic Peninsula	--	4,447	4,447
Lower Columbia and Central Washington ¹	17,090	2,704	19,794
Inland Empire	6,523	526	7,049
Total, State	32,821	11,976	44,797

¹ Combined to avoid disclosure.

LOG EXPORT



Washington Log Export Operations, 1978

Table 73—Number of export operations and type of logs exported by county.

Port of Export		Number of Operations	Volume of Wood Exported		
Economic area and Port	County		Sound logs	Utility logs	Total
			- (Thousand board feet, Scribner log scale) -		
Puget Sound Anacortes and Bellingham ¹ Everett and Seattle ¹ Tacoma	Skagit				
	Whatcom	4	38,529	--	38,529
	Snohomish				
	King	38	395,765	10,076	405,841
	Pierce	30	576,492	6,590	583,082
Total		72	1,010,786	16,666	1,027,452
Olympic Peninsula Grays Harbor and Olympia ¹ Port Angeles	Grays Harbor				
	Thurston	36	626,774	5,886	632,660
	Clallam	28	411,763	1,056	412,819
Total		64	1,038,537	6,942	1,045,479
Lower Columbia Longview	Cowlitz				
Total		24	516,861	7,169	524,030
Total, State		160	2,566,184	30,777	2,596,961

¹ Combined to avoid disclosure.

Table 74—Number of export operations by tenure of present ownership and years of site occupancy.

Years of Site Occupancy (Years)	All Mills	Tenure of Present Ownership				
		0-2	3-5	6-10	11-20	21+
0- 2	43					
3- 5	31					
6-10	37					
11-20	41					
21+	8					
Total		Distribution of tenure not available for export operations				
Total		160				

Washington Log Export Operations, 1978

Table 76—Log consumption by species, area, and county.
(Thousand board feet, Scribner log rule)

Economic area and county	All species	Douglas fir	Henlock	True firs	Spruce	Ponderosa pine	Western redcedar	Other softwoods	Hardwoods
Puget Sound									
King and Snohomish ¹	405,841	168,911	189,417	10,208	7,407	1,288	13,642	13,781	1,187
Pierce	583,082	328,013	215,005	13,668	4,959	1,494	6,555	13,314	74
Skagit and Whatcom ¹	38,529	16,926	15,735	1,348	199	--	1,931	1,992	398
Total	1,027,452	513,850	420,157	25,224	12,565	2,782	22,128	29,087	1,659
Olympic Peninsula									
Clallam	412,819	29,551	346,455	3,652	18,856	110	13,193	480	522
Grays Harbor and Thurston ¹	632,660	154,047	368,439	18,719	39,379	--	46,641	5,353	82
Total	1,045,479	183,598	714,894	22,371	58,235	110	59,834	5,833	604
Lower Columbia									
Cowlitz									
Total	524,030	309,628	190,194	2,282	4,519	--	3,807	13,600	--
Total, State	2,596,961	1,007,076	1,325,245	49,877	75,319	2,892	85,769	48,520	2,263

¹ Combined to avoid disclosure.