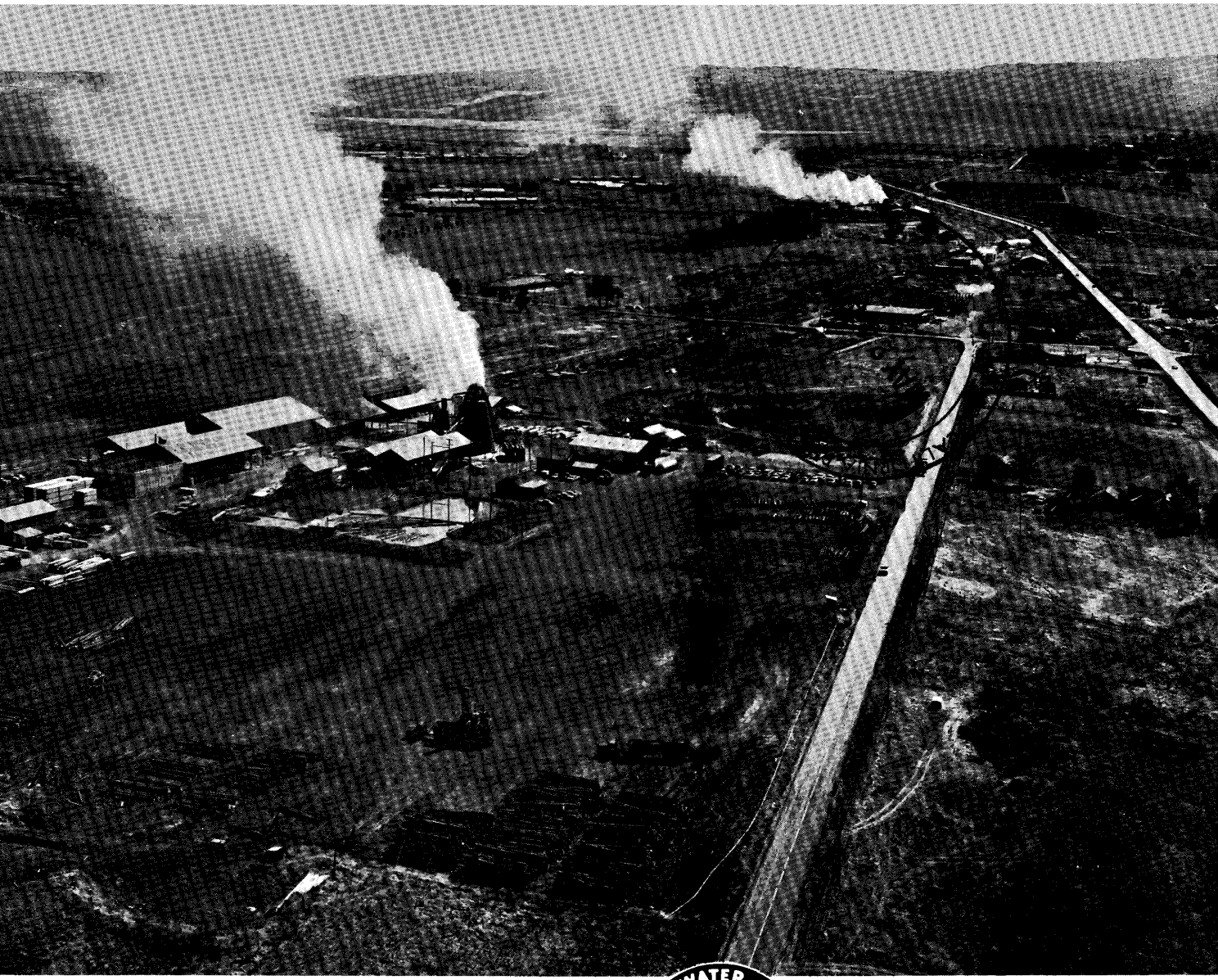
FOREST INDUSTRIES OF EASTERN WASHINGTON

by Brian R. Wall, Donald R. Gedney, Robert B. Forster [and others]



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COVER PHOTO: Mills in the 0- to 39,000-board-foot size class, Walla Walla, Wash.

Contents

Introduction

A sawmill, built in 1872, marked the beginning of the forest industry in eastern Washington — almost half a century after the emergence of the lumber industry in western Washington. Since then, this industry has increased in importance to eastern Washington's economy, now furnishing about one-fifth of the total manufacturing employment and wages paid — in some counties and many communities, it is the major source of employment and wages. In 1962, various forest products firms paid about $43 million in wages to more than 8,000 employees (Washington Employment Security Department 1963).

The forest industries are not only important to the whole economy of eastern Washington, but the health of these industries determines how intensively the forest resource can and will be managed. In order to inform those interested in the forest resource as well as those interested in the general economy of eastern Washington, the present primary forest industries are examined in this paper; these include lumber, pulp, plywood, and a number of relatively smaller forest industries. The basis for this examination is a survey, made during the summers of 1963 and 1964. Each wood manufacturing plant was personally contacted, and information was obtained on log consumption, source of logs, equipment, production, degree of manufacturing, and use of mill residues.

The single most important forest industry in eastern Washington is lumber. To obtain additional background, a study was made of the numbers and stability of sawmills between 1945 and 1963.[1] Other historical data were obtained from two publications: "Washington, A Guide to the Evergreen State" (Writers' Program 1941) and "The Lumber Industry in Washington" (Melton 1938).

[1] *Data based on information taken from directories of the forest products industry, published by Miller Freeman Publications, 1946 through 1964.*

Lumber Industry of Eastern Washington

Production Increase Is Relatively Greater Than in Rest of Western Pine Region

The earliest recorded lumber production in the State of Washington was in 1826, when whipsawed boards were produced in western Washington near Fort Vancouver. In 1872, eastern Washington produced its first lumber from a waterpowered mill at Spokane Falls. However, most of the 1 billion board feet of lumber produced in the State in 1889 was still sawn in mills located west of the Cascade Range. By 1905, Washington led the Nation in lumber production, and in 1926 its output reached a peak of 7.5 billion board feet. Never since has Washington led. By 1932, lumber production had dropped to a low of 2.3 billion board feet, rising to 5.2 billion board feet in 1941 (Moravets 1949) and leveling off after World War II to an annual production ranging between 3 and 4 billion board feet.

The trend of lumber production in eastern Washington was much the same as that for the whole State until the end of World War II. Then, in 1946, east-side production began to increase sharply. During the period 1946-63, eastern Washington's softwood lumber production increased 83 percent — from 546 million to slightly over 1 billion board feet (table 1, page 21). This relative increase exceeded a similar change of 66 percent for the western pine region and 8 percent for the entire United States. During this same period, eastern Washington's share of the Nation's softwood lumber production increased from 2.1 percent in 1946 to 3.6 percent in 1963. For comparison, the 1904-63 lumber production trends for eastern Washington, Washington, and the United States are shown in figure 1. Here, the sharply increasing production in eastern Washington since 1946, relative to both Washington and the United States, is evident.

Employment Stable in the Lumber Industry

Although lumber production has been increasing in eastern Washington, employment in sawmills and planing mills has remained stable. In fact, this is the only area in the Pacific Northwest which has had stable employment in the lumber industry with the gains in productivity per employee paralleled by increasing total production. In 1950, there were approximately 4,800 covered employees[2] in the sawmills and planing mills in eastern Washington, and in 1963 there were still about the same number (Washington Employment Security Department 1951, 1963). However, lumber production per employee, which amounted to 139,900 board feet in 1950, had risen to 210,000 board feet per employee in 1963. The average annual increase in productivity for employees in sawmills and planing mills was 3.2 percent for this period.

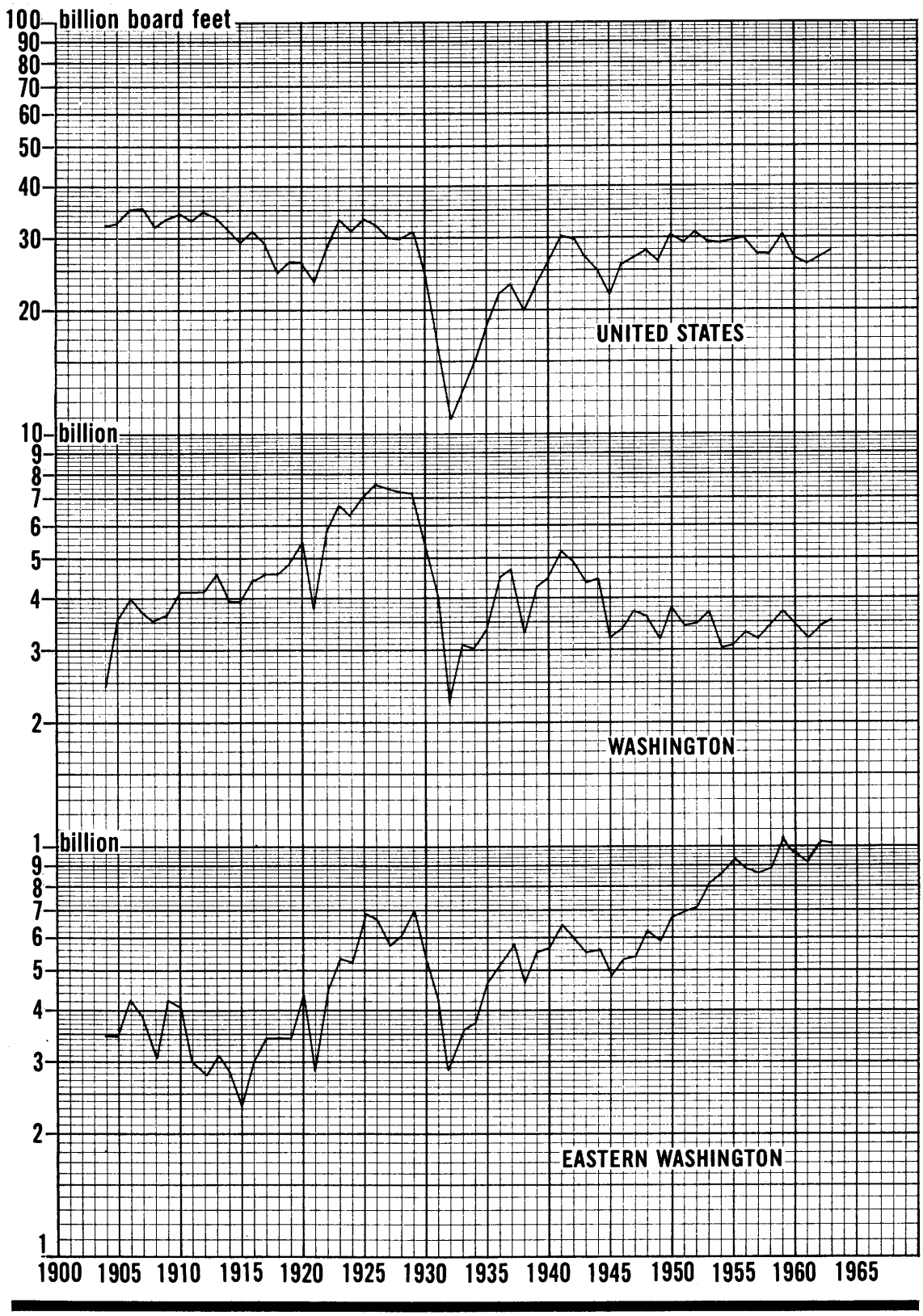
Number of Sawmills Declining

Because of the significant economic changes since World War II, the period from 1945 to 1963 was chosen to study changes that have occurred in numbers of mills (figure 2; table 2, page 22). For this purpose, the mills were classified on the basis of their 8-hour headsaw capacity into four size classes as follows: 0 to 39,000 board feet, 40,000 to 79,000 board feet, 80,000 to 119,000 board feet, and 120,000 board feet or more.

The majority of eastern Washington sawmills have been small, with a maximum 8-hour headsaw capacity of 39,000 board feet or less. Between 1946 and 1952, with the exception of the sharp decrease in numbers of mills at the start of the Korean conflict in 1950, the number of small mills did not change substantially.

[2]*The covered employment data are based on statistics which include only workers directly employed by wood-using industries and those recorded by the Washington Employment Security Department.*

Figure 1 / **Production of softwood lumber, 1904-63.**



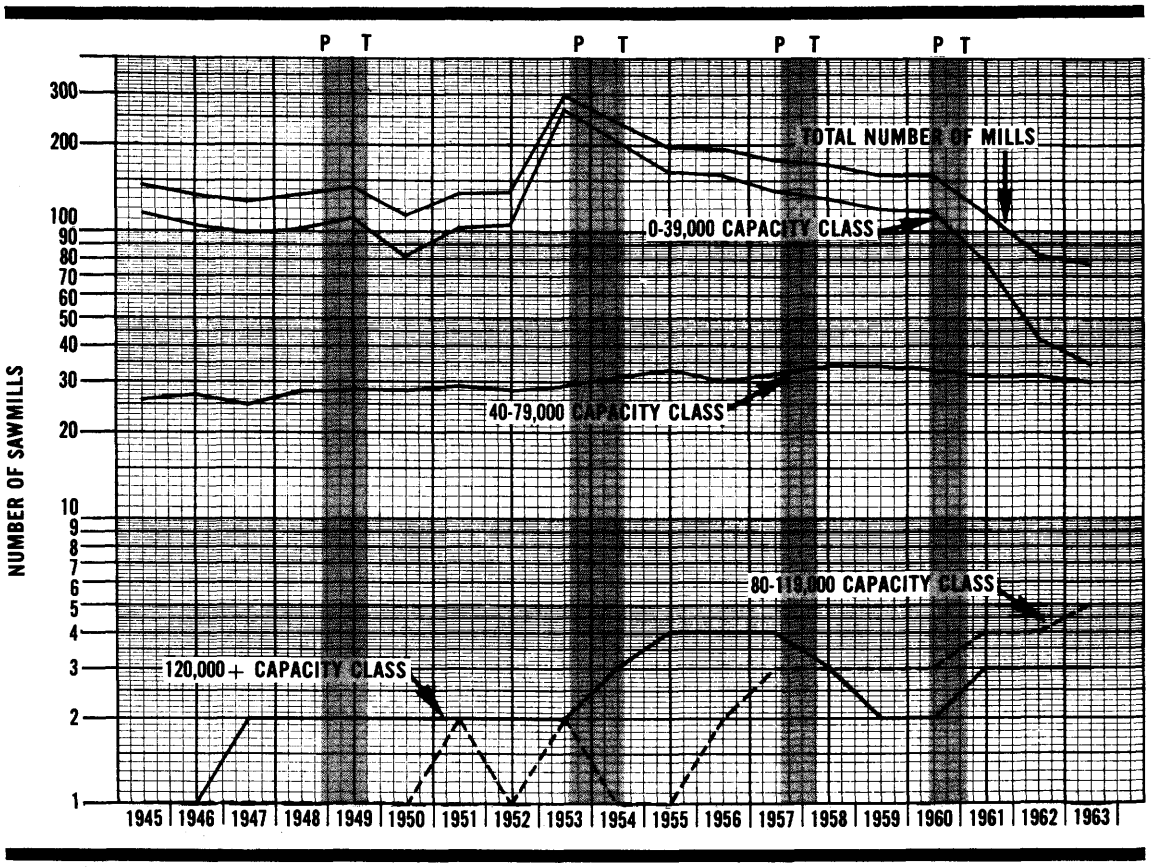
The number of small mills peaked in 1953 at the height of the general business cycle but since then has declined.

The trend of decreasing numbers of small mills is counter to increasing lumber production. During the 1953-63 period lumber production in eastern Washington increased 22 percent while the number of small mills declined 85 percent. This decrease is also common to the rest of the Pacific Northwest. In eastern Oregon, the number of small mills peaked earlier, in 1948 or 1949, but since then the number has steadily decreased (Gedney 1963). In the Douglas-fir subregion, total daily capacity in this small-mill class peaked in 1951 and then declined 42 percent to its 1960 level (Fedkiw 1964).

Except for those in the smallest size class, the number of mills in each class gradually increased throughout the study period. In 1945, there were 26 mills in the next largest size class, 40,000 to 79,000 board feet per 8-hour shift. By 1963, the number rose to 30. The relative stability of established mills in this class and the fact that these produce more lumber than any other class indicate that economies of scale have tended to favor these mills. This class of mill also dominates the eastern Oregon sawmill economy but has been of decreasing importance in the Douglas-fir subregion.

The next larger size class of mill (80,000 to 119,000 board feet) increased from one mill in 1945 to five mills in 1963. The largest class (120,000+ board feet) had three mills in 1963 where one existed in 1945. The number of mills in these two classes fluctuated from two in 1945 to a high of eight mills in 1963. The general upward trend in numbers

Figure 2 / **Number of sawmills in eastern Washington, 1945-63.**



Shaded areas represent contractions in the general business cycle.
(U.S. Bureau of Census 1965)
P—Peak in business activity in the U.S.
T—Trough in business activity in the U.S.

of mills in these two classes is evident. Within each class, some minor fluctuation is present.

The net result of the changes in the various mill-size classes is a decrease in the number of mills and an increase in the average mill size. There were 144 mills in eastern Washington in 1945, and this number remained fairly stable through 1952. In 1953, the number of mills increased 114 percent, to a total of 296 mills. Since 1953, the number of mills has declined to the 1963 total of 77 mills (table 2).

One-third of Today's Mills Operating Since 1945

In spite of the decline in number of small sawmills in eastern Washington, there is an unexpectedly long tenure in the surviving mills of all classes. Of the 77 mills operating in 1963, 27 (35 percent) were operating in 1945, including 5 which had changed names and management (table 3). Of the 39 mills included in the smallest mill-size class in 1963, 10 (26 percent) were active in 1945. In the next largest class, 11 (37 percent) of the mills producing in 1963 were operating during the entire 18-year study period. In the third largest class, four out of five mills have competed successfully since World War II, and two of the three mills in the largest size class have been operating since 1945. Included in these estimates of surviving mills is the movement of mills from lower capacity classes into higher classes.

In eastern Washington, 21 mills expanded operations sufficiently between 1945 and 1963 to be reclassified into a higher capacity class; 17 of these, or 81 percent, were still operating in 1963. The number of mills expanding into higher mill capacities since 1945 are shown by their original capacity class in the following tabulation:

Original capacity class	Number of mills expanding	Number of mills still in operation, 1963
(M bd. ft. per 8-hour shift,		
0 - 39	14	11
40 - 79	4	3
80 - 119	2	2
120 - 199	1	1

Not too different from many small mills in the 0-to 39,000-board-foot-capacity class was this sawmill, producing rough, green lumber at Naches, Wash., in Yakima County. All of the lumber produced here was shipped to nearby Yakima for further processing — planing and drying. The small size of mill and lack of specialized high-volume equipment, such as barkers and chippers, made more profitable utilization of residues difficult. Here, most of the residues were used either for fuel or for agricultural purposes. The smokestack in the power plant to the right of the sawmill indicates that fuelwood was used to generate power to operate the mill. The several gray-appearing, speckled, square areas to the rear are piles of slabs to be sold for residential fuel. A storage hopper to the immediate left of the building held sawdust for agricultural use; a truck is waiting to be loaded and one is just loading.

The picture was taken in 1964; now, in 1966, the mill has ceased operation, indicating that the trend of the decreasing number of smaller mills, as described in the text, is continuing. The logs which formerly would have been consumed by this mill are now being processed by a larger, integrated mill complex in Yakima.

The importance of agriculture to the economy can be seen by the extensive orchards along the top of the photograph. Under intensive agriculture, many high-value crops are produced here — including world-famous apples. Further to the east under dryland farming conditions, as illustrated in the background of the cover photo, many thousand acres of the rolling Palouse country produce thousands of bushels of wheat for both domestic use and export. Agriculture and the forest industries are often closely related in the eastern Washington economy.

The Lumber Industry, 1963

Saw-Log Consumption

Sawmills processed 92 percent of the 971,-760,000 board feet (International 1/4-inch rule) of logs consumed by eastern Washington forest industries. The 30 mills in the 40,000- to 79,000-board-foot-capacity class consumed the largest volume of logs — 413,-606,000 board feet. Ranked second were the five mills in the 80,000- to 119,000-board-foot-capacity class with a total log consumption of 200,288,000 board feet. The three largest mills were a close third, with a consumption of 191,530,000 board feet. The 39 smallest mills consumed only 87,384,000 board feet, less than 10 percent of the total (table 9, page 26).

Lumber Production

The 77 sawmills in eastern Washington in 1963 ranged in size from a two-man operation capable of producing only 4,000 board feet in an 8-hour shift to mills employing more than 500 persons and capable of producing over 200,000 board feet in a single shift. The 30 mills in the 40,000- to 79,000-board-foot-capacity class produced the most lumber — 493 million board feet. The five mills in the 80,000- to 119,000-board-foot-capacity bracket ranked second with 215 million feet of lumber produced.

The three largest mills, each sawing 120,000 board feet or more per 8-hour shift, accounted for 194 million feet of lumber, whereas the 39 smallest mills (0- to 39,000-board-foot capacity) produced the least amount of lumber — 99 million board feet (table 4, page 24).

All of the mills together produced a total of 1 billion board feet of lumber from roundwood (table 4, page 24). Of this volume, 84 million board feet were purchased rough green from smaller mills for remanufacturing by larger mills (table 5, page 24). The study showed that the degree of manufacturing varied with mill size. The largest mills produced 87 percent of their output in the form of surfaced-dry lumber; the proportions of surfaced-dry dropped to 58 percent for the next two classes of mills (40,000-79,000 and 80,000-119,000 board feet). The smallest mills (0-39,000 board feet) produced only 16 percent of their output dried and surfaced.

Utilization of Sawmill Capacity

In 1963-64, there were 77 sawmills in operation in eastern Washington. Their total 8-hour capacity was 3,199,000 board feet in 1963 (table 4, page 24). Increased lumber demand and production resulted in relatively full utilization of existing sawmill capacity in 1963. This was most noticeable in the larger mills, such as those in the 80,000- to 119,000-board-foot size class, which worked an aver-

age of 472 8-hour shifts. On the basis of a 230-day work year, these mills operated an average of two shifts per day. Mills on either side of this size class did not maintain this high level of plant utilization. For example, the largest mills, which produced over 120,000 board feet in 8 hours, averaged 422 shifts in 1963, and the mills producing 40,000 to 79,000 board feet averaged 305 shifts. Thus, the larger mills tended to double shift during at least part of the year. The number of shifts worked by the smallest mills (0-39,000 board feet) averaged only 148 shifts in 1963. These mills usually worked fewer days during the year with the number of shifts approximating the number of days.

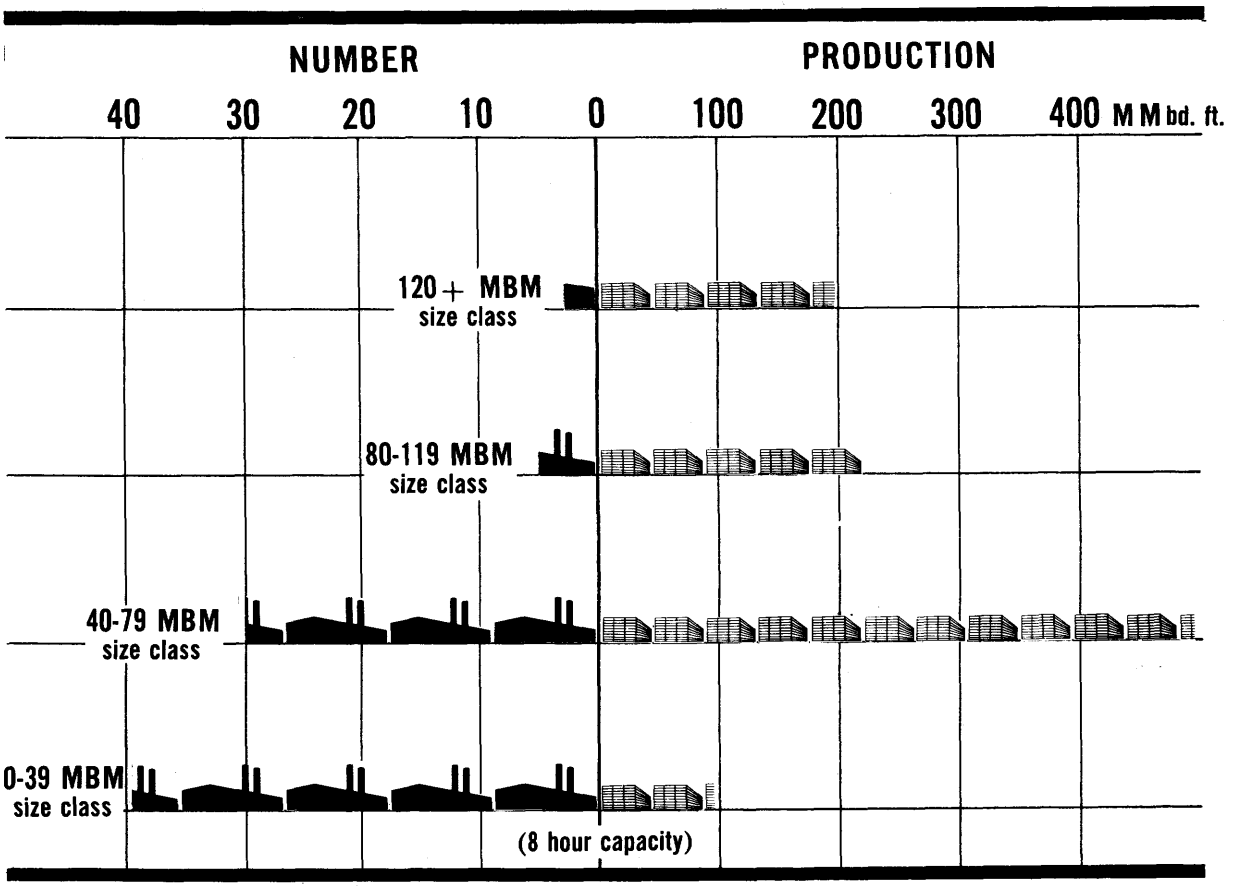
Sawmill Equipment

The larger the sawmill, the greater was its investment in manufacturing equipment. Each mill in the largest size class had a planer, dry kiln, barker, and chipper. In the 80,000- to 119,000-board-foot-capacity class, four out of the five mills had a planer, dry kiln, and chipper. All of the mills in this class had barkers, and one had a hog (table 6, page 25).

The 30 mills in the 40,000- to 79,000-board-foot class were not as well equipped on the average; 80 percent (24) of the mills had planers, 60 percent (18) had dry kilns, 40 percent (12) had barkers, and 37 percent (11) had chippers. There was one mill with a hog in this class.

None of the 39 smallest mills had a barker or a chipper. One mill had a hog, 62 percent (24) of the mills had a planer, and only 13 percent (5) had a dry kiln.

Figure 3 / **Eastern Washington timber production by sawmill size class, 1963.**



In an analysis of planned investment in equipment other than a headrig, it was learned that only a small amount was scheduled for 1964 and 1965. A total addition of one planer and one barker was planned in the smallest size class. In the 40,000- to 79,000-board-foot-capacity class, the purchase of three barkers and three chippers was planned. No additions were contemplated by the larger mills.

Location of Sawmills

The pattern of sawmills generally follows the pattern of distribution of forest land. Starting at the Columbia River, mills usually occur at population centers at lower elevations along the east slope of the Cascade Range north to Okanogan County. Across the forested, northern tier of counties, sawmills are scattered eastward to the Idaho border (table 7, page 25). The few mills located in the southeast corner of the State, in Walla Walla, Asotin, and Columbia Counties, are associated with the forested Blue Mountains.

Most of the mills are in the northeast part of the State, with Stevens County having the greatest number of mills. Mills in Ferry, Stevens, and Spokane Counties are mostly in the smallest size class. The largest mills (120,000+ board feet per 8-hour shift) were in Klickitat, Okanogan, and Yakima Counties. These three counties also supported many medium-sized mills.

Planing Mills

Independent planing mills buy rough green lumber from sawmills which do not have their own planing facilities. The planing mills tend to be near small mills and to have access to distribution routes. In 1963, seven planing mills were located in eastern Washington; four of these operated within the City of Spokane. The towns of Kettle Falls, Danville, and Clarkston claimed the three remaining mills. The planing mills of eastern Washington ranged in size from 45,000- to 110,000-board-foot capacity in an 8-hour shift. Four had dry kilns, and a fifth had definite plans to install a kiln within 2 years. In 1963, approximately 53.4 million board feet were processed, with 11.2 million board feet surfaced-green and 42.2 million board feet both surfaced and dried.

The mill shown here is an example of mills' locating near a raw material supply. The locale is the small community of Trout Lake in Klickitat County, only a few miles from the boundary of the Gifford Pinchot National Forest and the forested Yakima Indian Reservation. This mill, owned by the S.D.S. Lumber Co., is not on any rail line or main highway, but its proximity to timber is sufficiently attractive to offset the 35-mile haul south to the Columbia River and rail, major highway, and water transportation. The mill shown is a good example of the steadily increasing number of larger mills. In 1963, this mill was rated at 60,000 board feet per shift; and now, according to the 1966 Directory of the Forest Products Industry, it has expanded to a capacity of 80,000 board feet. Although this study was not designed to obtain information on mergers, it is interesting to note that this mill was independently owned in 1963 and, in 1966, is part of a larger company. The advantages of size, compared with the smaller mills, can be plainly seen in this photograph: a barker is located at the end of the log deck; chips are being loaded on a chip van seen slightly to the left of the burner; other visible equipment are the planer to the right of the main sawmill building and dry kilns located behind the planer.

Other Forest Industries

Pulp and Paper Industry Developed Early

In 1885, a pulpwood mill moved from Oregon City, Oreg., to Camas, Wash., and became the first pulpmill in Washington, a groundwood mill. This groundwood process remained the mainstay of the pulp and paper industry in Washington through the early part of the 1920's. By the late 1920's, chemical pulping dominated the industry. However, the pulp and paper industry first came to eastern Washington in 1911 when a groundwood mill began operation at Millwood, near Spokane. Five years later, in 1916, sulfite production was added to the plant. In 1966, a modern refiner groundwood system replaced the stone grinders at Millwood, and the mill started consuming chips instead of roundwood. It was not until the beginning of the 1960's that eastern Washington could claim its second pulp and paper plant — this time, a sulfate process mill at Wallula, Wash.

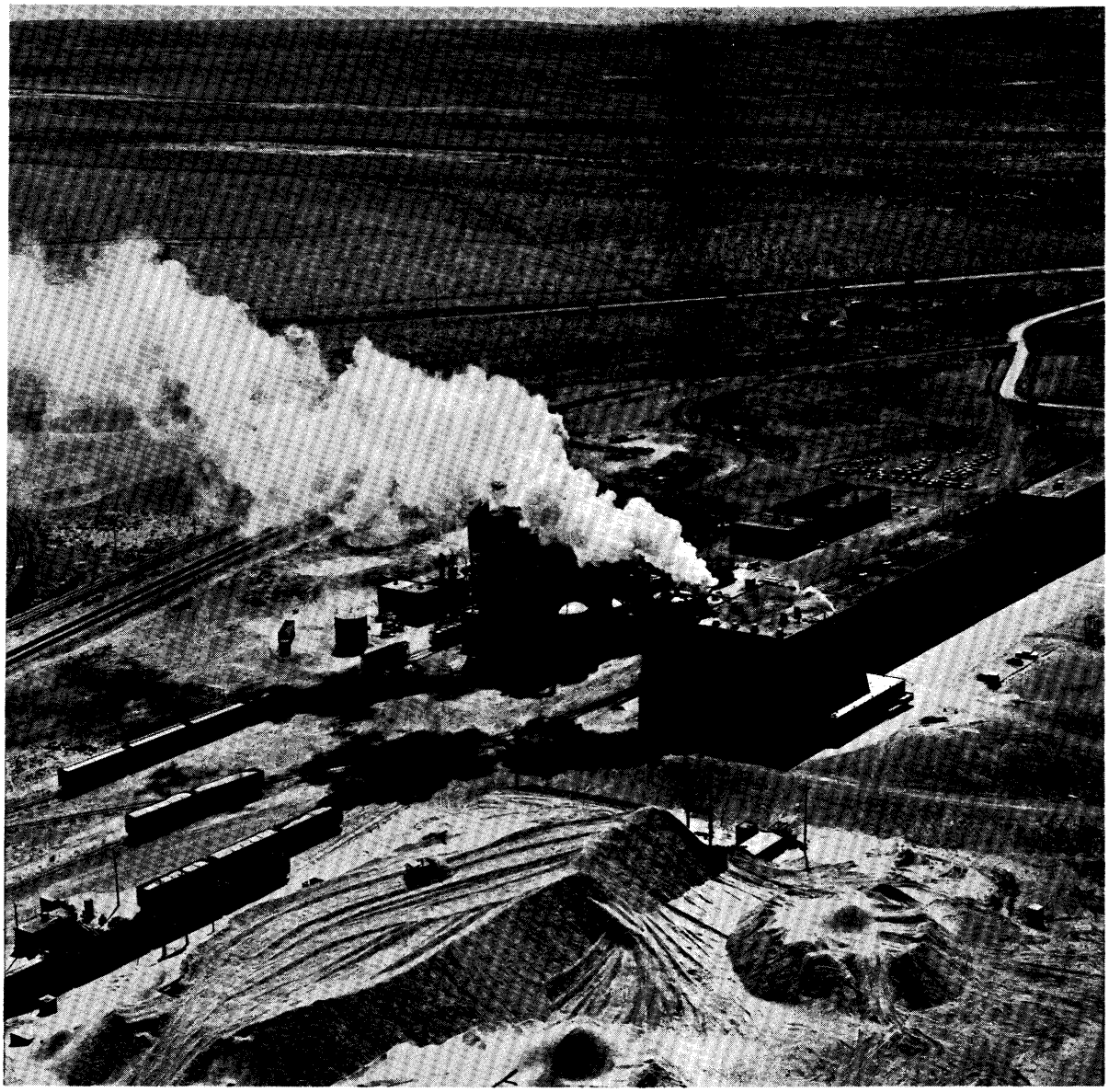
The sulfite and groundwood mill had a rated 24-hour capacity of 137 tons of pulp in 1963, of which 42 tons were sulfite and 95 tons were groundwood. The mill had a daily rated capacity of 115 tons of paper. The second mill, at Wallula in Walla Walla County, used only lumber and wood products residue, unlike the plant at Millwood which depended on roundwood for its wood supply. This mill had a capacity of 375 tons of unbleached sulfate pulp in 24 hours. The pulp from this operation was used to produce linerboard (Lockwood Trade Journal Co., Inc. 1964).

A plant producing molded-pulp fruit trays, not included in the 1963 survey, is not in the data shown in this report. The plant, located in Wenatchee, was classified as a groundwood pulpmill with a capacity of 50 tons per 24 hours, according to the 1965 Lockwood's Directory.

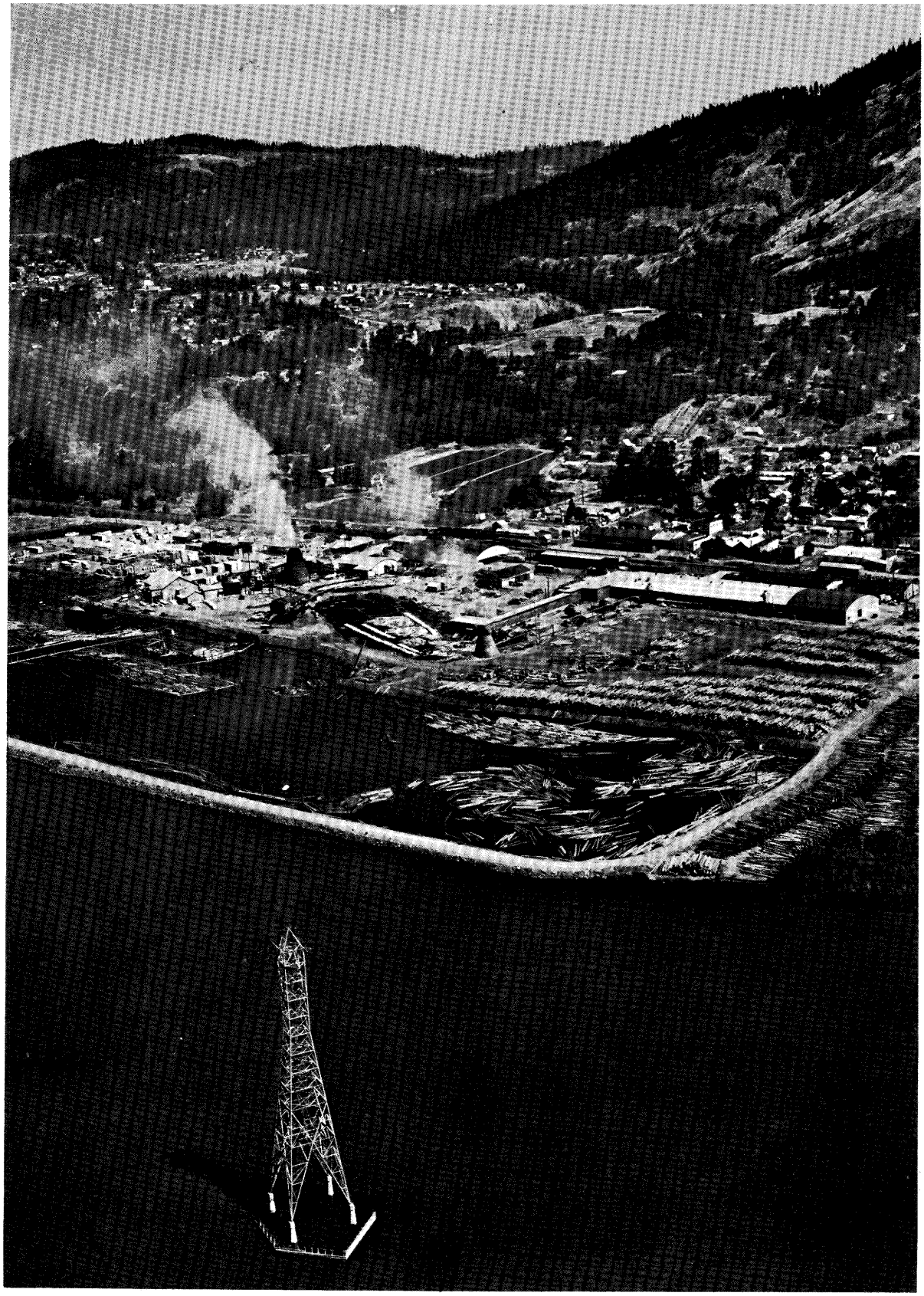
Plywood — A New Industry

Douglas-fir plywood was first shown as a potential product at the 1905 Lewis and Clark Exposition in Portland, Oreg. Although the first plywood in the region was produced at St. Johns, Oreg., the industry first located in western Washington, principally at Tacoma. Most early plywood plants were associated with door manufacturers. Eastern Washington waited nearly half a century before the first plywood plant was constructed at Bingen in 1958. In 1963, a second plant began operations in Yakima.

The plant at Yakima had a 1963 capacity of 84 million square feet (3/8-inch basis) and production for that year was estimated at 81 million square feet (Anonymous 1964). In 1964, the Bingen plant was rated at an annual capacity of 60 million square feet (3/8-inch basis) and produced about that amount (Anonymous 1965). Based on these levels of



The pulpmill of Boise Cascade Corp., at Wallula in Walla Walla County, is indicative of the increasing diversification of eastern Washington's forest industries and typifies the growing opportunity for fuller use of the annual timber harvest. The chips and sawdust piled high in the foreground of the picture will be processed by this mill. This is a more profitable use for residue formerly burned by outlying sawmills and plywood plants. To the left of the residue pile are chip cars being unloaded, and a chip van is just about to pass between the separated cars of the freight train in the left center of the photograph. The sagebrush in the background might make the location look improbable, but the pulpmill is central to the small and scattered forest industries in the Inland Empire. This mill draws residues from its own corporate mills as well as independent mills located in eastern Washington, Idaho, and eastern Oregon. Not seen here, but just beyond the right edge of the photograph, lies the Columbia River, backed up to form the pool behind McNary Dam.

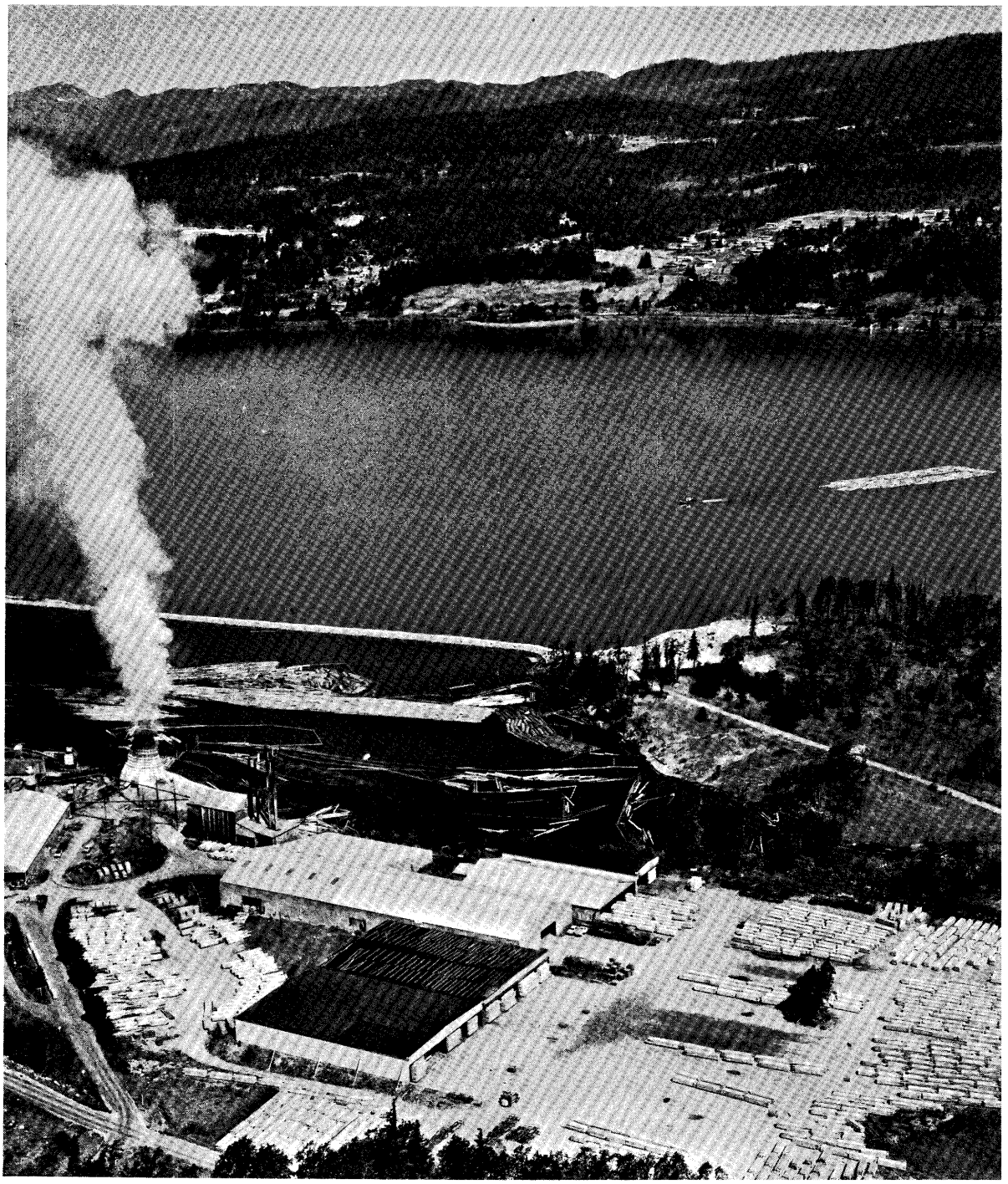


production, an estimated 65 million board feet (International 1/4-inch rule) of logs was consumed by the two plants. Over half of this volume came from eastern Washington.

Miscellaneous Forest Industries

Four pole and piling yards operated in eastern Washington in 1963. All had barkers, and three had thermal nonpressure treating plants. The piling yard without a treatment plant sent its production to other plants within the area for treatment. In 1963, these plants produced 2,886,000 lineal feet of poles and more than 30,000 posts. One remaining forest industry operated in eastern Washington, an excelsior plant in Yakima County.

The Bingen Plywood Co., right center, is located in Klickitat County, Wash., in the town for which it was named. The plywood industry is still relatively small in eastern Washington. This mill and one other comprised the entire industry in 1964. However, now, in 1966, at least two other mills, one a green veneer mill and the other a plywood mill, are scheduled for early operation. Next to the plywood mill, and sharing some of the attractive features of this area as an industrial site, is the S.D.S. Lumber Co. with its 100,000-board-foot-capacity sawmill. Excellent transportation facilities, including highway, rail, and water, are available to this industrial complex. One of these facilities can be seen in the left center of the picture, where a barge is loading residue; less plainly seen, to the rear of the sawmill, are freight cars being loaded with chips. In the foreground, behind a dike which also serves as a roadway, is an extensive log holding and sorting area. In the millponds, center, are peeled logs and peeler blocks. The towns of Bingen and adjacent White Salmon, like many other communities in eastern Washington, find their economy depends to a very considerable extent on forest industry payrolls.



Characterizing the relatively easy movement of logs out of eastern Washington is the log raft, right center, moving down the Columbia River from eastern Washington to a mill at Cascade Locks in Hood River County, Oreg. Eastern Washington was an exporter of 128 million board feet of logs in 1963. The Columbia River provides easy, economical transportation of these logs, not only to Oregon but also to mills downstream in western Washington.

Log Imports and Exports

The greatest volume of logs imported into eastern Washington in 1963 came from Skamania County. These logs went to mills located in Klickitat County (table 8, page 26). This import of 63 million board feet (International 1/4-inch rule) was due to both the attractive timber market in Klickitat County and the easy access between the two counties. County boundaries between eastern and western Washington generally follow the crest of the Cascades. However, a significant portion of Skamania County, considered a western county, lies east of the Cascade crest.

Spokane County ranked second with 25 million board feet imported from Idaho and Montana. The pulpmill at Millwood, which demands specific species, consumed most of this volume. About 2 million board feet of logs flowed south to Okanogan County from Canada, making this county the third largest log importer.

Although eastern Washington imported logs for use in local mills, it was a net exporter of logs in 1963. Over 1 billion board feet (International 1/4-inch rule) of logs were produced in eastern Washington;[3] 882 million feet of these were consumed by eastern Washington's industries and 128 million board feet were exported (table 9, page 26). Since 90 million feet of logs were imported, it was estimated that eastern Washington had a net export of about 38 million board feet in 1963.

[3]*Based on Berger (1964).*

Wood Residues

Residues Developed in Manufacturing

Forest product residues in eastern Washington were divided into two categories, coarse and fine. Coarse residues included slabs, edgings, trimmings, veneer clippings, roundup, log trim, and spur end. Sawdust and shavings were classified as fine residues. Residue volumes in eastern Washington were estimated by using factors developed by Corder and Gedney (1956).

In 1963, Yakima County produced more residue than any other county — 172,930 tons. Okanogan County ranked second in residue production with 129,630 tons, and Klickitat County followed closely with 118,330 tons. All of the counties in eastern Washington produced 857,660 tons of residue. Table 10 (page 27) shows the breakdown of this total in detail by county; the general breakdown is as follows: 50 percent coarse residue, 31 percent sawdust, and 19 percent shavings.

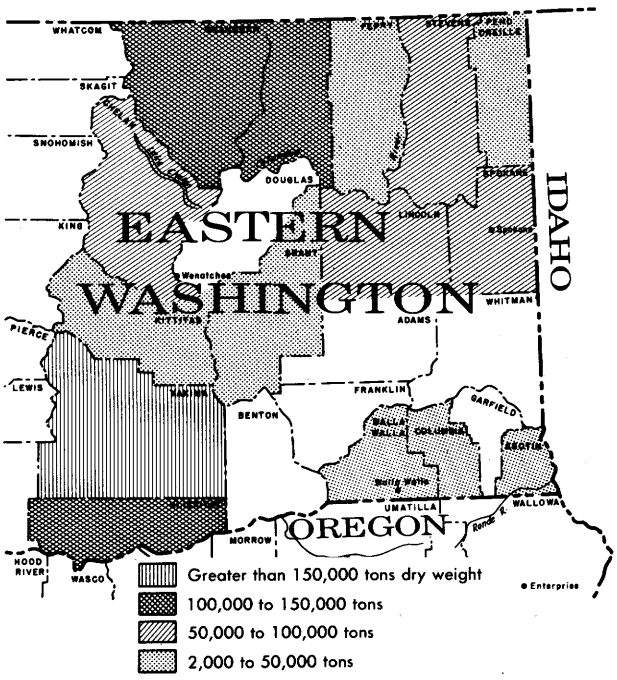
Residue from Douglas-fir and larch made up 60 percent of the total output of coarse residue and shavings. Pine accounted for 26 percent of the coarse residues and 28 percent of the shavings, with other species making up only 13 percent of the coarse residues and 14 percent of the shavings (table 10).

Plywood plants produced 27,440 tons of coarse residue. The group of sawmills with a daily capacity of 40,000 to 79,000 board feet per 8-hour shift produced 192,800 tons of coarse residue, more than any other sawmill group. This same group of sawmills also produced the most fine residues — 130,370 tons of sawdust and 74,610 tons of shavings (table 11, page 28). On a per-mill basis, however, most of the residues were produced by the few mills in the two largest capacity classes. A detailed breakdown of residue developed in eastern Washington is shown in tables 12 through 15.

Residue Disposition

About 56 percent of the coarse residues produced in sawmills in eastern Washington

Figure 4 / **Amount of residues developed in eastern Washington counties, 1963.**



were chipped and shipped to pulpmills. Of the remaining volume, 21 percent was burned as fuel, and 23 percent was not put to any use. All of the mills above the smallest size class converted a substantial proportion of their coarse residue to chips. Only in the three smallest capacity classes was it found that coarse residue went unused (table 16, page 32).

Of the sawdust developed in eastern Washington, 62 percent was used for fuel; 10 percent was used for agriculture and miscellaneous uses; and 28 percent was unused. In general, the smaller the mill, the larger was the proportion of residue not used. In the smallest size class, 65 percent of the sawdust produced remained unused. In the next two classes, this percentage of unused sawdust dropped to 38 percent and 5 percent, respectively. Most of the sawdust developed by the mills in the largest size classes was burned as fuel to operate dry kilns.

About 52 percent of the shavings developed in eastern Washington was used as fuel, 23 percent was used for agriculture, and the remainder was burned as waste.

About 75 percent of all the residues developed in eastern Washington were used (table 16, page 32). It was estimated that 95,160 dry tons of coarse residue (23 percent), 74,560 tons of sawdust (28 percent), and 41,710 tons of shavings (25 percent) went unused.

The substantial volume of residues unused or going to low-value uses not only offers promise for industrial growth but also offers a means to strengthen existing forest industries through greater returns from their operations.

Figure 5 / **Amount of residue developed in eastern Washington's wood industries, 1963.**

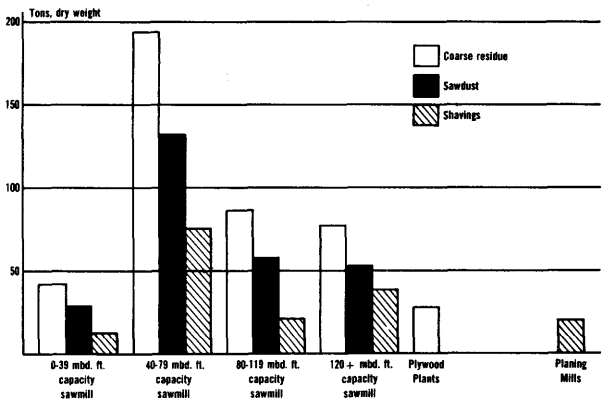
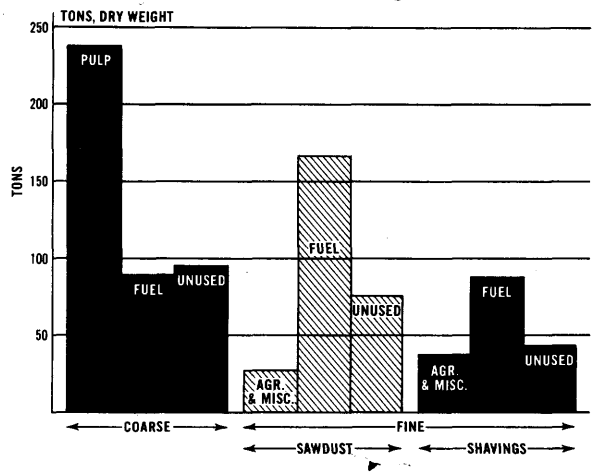


Figure 6 / **Disposition of wood residue in eastern Washington, 1963.**



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Appendix

Table 1 / **Softwood lumber production in eastern Washington, in the western pine region, and in the United States, 1946-63**

Year	Eastern Washington[1]			Western pine region[1]		United States production[2]
	Production	Percent of western pine region	Percent of U.S.	Production	Percent of U.S.	
	Million bd. ft.			Million bd. ft.		Million bd. ft.
1963	1,001[3]	9.9	3.6	10,092	36.3	27,821
1962	1,006	10.6	3.8	9,463	35.3	26,819
1961	907	10.0	3.5	9,054	34.7	26,066
1960	988	10.8	3.7	9,168	34.4	26,672
1959	1,031	10.4	3.4	9,924	32.5	30,509
1958	873	10.3	3.2	8,508	31.1	27,379
1957	851	10.6	3.1	8,050	29.7	27,100
1956	875	9.7	2.9	9,030	30.2	29,890
1955	929	10.5	3.1	8,818	29.6	29,815
1954	862	10.8	2.9	7,983	27.3	29,282
1953	823	10.7	2.8	7,721	26.1	29,562
1952	708	9.8	2.3	7,259	24.0	30,234
1951	683	9.4	2.3	7,288	24.7	29,493
1950	668	8.8	2.2	7,612	24.8	30,633
1949	597	9.1	2.3	6,546	24.7	26,472
1948	621	8.8	2.2	7,096	25.1	28,299
1947	574	8.8	2.1	6,517	23.3	27,937
1946	546	9.0	2.1	6,069	23.5	25,856

[1]*Data from:*

Western Pine Association. Production by States and species 1951 to 1961. Circ. No. 750. 1963.

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[2]*Data from:*

U. S. Bureau of the Census. Current industrial reports, lumber production and mill stocks. Series M24T. 1958-63.

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[3]*Estimate by Forest Survey.*

Table 2 / **Number of sawmills in eastern Washington, by mill-size class, 1945-63**

Year	Mill-size class[1]				All classes
	0-39	40-79	80-119	120+	
1963	39	30	5	3	77
1962	44	31	4	3	82
1961	78	31	4	3	116
1960	118	33	3	2	156
1959	120	34	3	2	159
1958	130	34	3	3	170
1957	139	32	3	4	178
1956	156	30	2	4	192
1955	160	33	1	4	198
1954	205	31	1	3	240
1953	263	29	2	2	296
1952	107	28	1	2	138
1951	102	29	2	2	135
1950	82	28	1	2	113
1949	110	28	1	2	141
1948	102	28	1	2	133
1947	99	25	1	2	127
1946	104	27	1	1	133
1945	116	26	1	1	144

[1]*Thousand-board-foot capacity per 8-hour shift.*

Table 3 / **Date of origin of sawmills operating in eastern Washington in 1963, by mill-size class, 1945-63**

Year	Mill-size class[1]				All classes
	0-39	40-79	80-119	120+	
1963	1	0	1	0	2
1962	0	1	0	0	1
1961	1	1	0	0	2
1960	1	3	0	0	4
1959	0	1	0	0	1
1958	2	1	0	0	3
1957	1	1	0	0	2
1956	3	1	0	0	4
1955	6	2	0	0	8
1954	0	1	0	0	1
1953	5	2	0	0	7
1952	1	1	0	0	2
1951	3	1	0	0	4
1950	0	0	0	0	0
1949	2	1	0	0	3
1948	1	0	0	1	2
1947	1	1	0	0	2
1946	1	1	0	0	2
Mills operating in:					
1945	10	11	4	2	27
1963	39	30	5	3	77

[1]*Thousand-board-foot capacity per 8-hour shift.*

Table 4 / **Log consumption, lumber production, and average number of shifts in eastern Washington; by sawmill-size class, 1963**

Size class[1]	Headsaw capacity, 8 hours	Average number of 8-hour shifts	Total log consumption	Actual lumber production	Percent of total lumber production
	M bd. ft.		M bd. ft.[2]	M bd. ft.	
0-39	669	148	87,384	99,234	10
40-79	1,615	305	413,606	493,133	49
80-119	455	472	200,288	214,787	21
120+	460	422	191,530	194,062	20
Total	3,199	1,347	892,808	1,001,216	100

[1]*Thousand-board-foot capacity per 8-hour shift.*
[2]*International 1/4-inch rule.*

Table 5 / **Lumber production in eastern Washington, by mill-size class and degree of manufacture, 1963**

(In thousand board feet)

Lumber	Mill-size class[1]				All classes
	0-39	40-79	80-119	120+	
Rough green	28,663	75,278	—	—	103,941
Surfaced-green	55,161	132,978	6,540	34,500	229,179
Rough dry	8,845	2,150	83,187	—	94,182
Surfaced-dry	17,090	291,227	125,160	224,700	658,177
Total production	109,759	501,633	214,887	259,200	1,085,479[2]
Portion of production purchased from other mills for further manufacturing	10,525	8,500	100	65,138	84,263

[1]*Thousand-board-foot capacity per 8-hour shift.*
[2]*Includes 84,263,000 board feet of lumber purchased for additional manufacturing. Total lumber production from logs in eastern Washington was 1,001,216,000 board feet.*

Table 6 / **Number of sawmills in eastern Washington having additional manufacturing equipment, by mill-size class, 1963**

Mill-size class[1]	Total number of mills	Planer	Dry kiln	Barker	Chipper	Hog
0-39	39	24	5	0	0	1
40-79	30	24	18	12	11	1
80-119	5	4	4	5	4	1
120+	3	3	3	3	3	0

[1]*Thousand-board-foot capacity per 8-hour shift.*

Table 7 / **Number and location of sawmills in eastern Washington by mill-size class, 1963**

Sawmill location	Mill-size class[1]				All classes
	0-39	40-79	80-119	120+	
County:					
Asotin	1	0	0	0	1
Chelan	0	4	0	0	4
Columbia	0	1	0	0	1
Ferry	9	1	0	0	10
Grant	0	1	0	0	1
Kittitas	2	2	0	0	4
Klickitat	1	4	1	1	7
Lincoln	1	0	1	0	2
Okanogan	5	3	1	1	10
Pend Oreille	2	2	0	0	4
Spokane	5	2	1	0	8
Stevens	12	4	1	0	17
Walla Walla	1	2	0	0	3
Yakima	0	4	0	1	5
Total	39	30	5	3	77

[1]*Thousand-board-foot capacity per 8-hour shift.*

Table 8 / **Import of logs into eastern Washington, by source and destination, 1963**

(In thousand board feet, International 1/4-inch rule)

Source	County destination			Total
	Okanogan	Spokane	Klickitat	
Canada	1,830	—	—	1,830
Idaho and Montana	—	24,931	—	24,931
Skamania County	—	—	62,916	62,916
Total	1,830	24,931	62,916	89,677

Table 9 / **Forest industry log consumption in eastern Washington, by source, 1963**

(In thousand board feet, International 1/4-inch rule)

Log consumption	Total	Sawmills[1]				Other industry
		0-39	40-79	80-119	120+	
Total	971,760	87,384	413,606	200,288	191,530	78,952
From eastern Washington lands	882,083	86,806	394,057	200,288	163,282	37,650
Imported to eastern Washington mills	89,677	578	19,549	0	28,248	41,302

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

Table 10 / **Amount of plant residue developed in eastern Washington, by class of residue, species, and counties, 1963**

(In tons, dry weight)

County	Coarse residue				Sawdust, all species	Shavings				Total
	Douglas-fir —larch	Pine	Other	Total		Douglas-fir —larch	Pine	Other	Total	
Asotin	620	2,170	340	3,130	2,450	340	990	960	2,290	7,870
Chelan	19,610	11,700	3,120	34,430	24,340	7,700	4,200	1,460	13,360	72,130
Columbia	—	1,000	300	1,300	1,030	—	—	—	—	2,330
Ferry	12,010	560	1,030	13,600	8,780	4,710	780	570	6,060	28,440
Grant	790	1,640	—	2,430	1,890	300	590	—	890	5,210
Kittitas	15,540	90	5,310	20,940	13,360	5,160	—	1,690	6,850	41,150
Klickitat	29,930	18,780	12,820	61,530	36,340	8,370	6,730	5,360	20,460	118,330
Lincoln	17,440	14,040	—	31,480	22,950	90	520	—	610	55,040
Okanogan	45,610	14,990	510	61,110	42,020	18,620	7,670	210	26,500	129,630
Pend Oreille	5,890	1,340	860	8,090	4,960	1,080	150	830	2,060	15,110
Spokane	16,030	12,550	2,170	30,750	21,670	17,210	8,380	1,190	26,780	79,200
Stevens	34,570	8,760	3,450	46,780	26,920	22,040	1,400	1,570	25,010	98,710
Walla Walla	6,640	60	8,280	14,980	9,620	3,110	20	3,850	6,980	31,580
Yakima	54,560	21,160	16,760	92,480	52,520	6,890	15,260	5,780	27,930	172,930
Total	259,240	108,840	54,950	423,030	268,850	95,620	46,690	23,470	165,780	857,660

Table 11 / **Amount of mill residue developed in eastern Washington, by industry and class of residue, 1963**

(In tons, dry weight)

Industry class	Coarse residue	Sawdust	Shavings
Sawmills (M bd. ft. per 8-hour shift):			
0-39	42,190	27,580	13,350
40-79	192,800	130,370	74,610
80-119	84,580	58,350	20,570
120+	76,020	52,550	37,580
Planing mills	—	—	19,670
Plywood plants	27,440	—	—
Total	423,030	268,850	165,780

Table 12 / **Amount of coarse residue developed in eastern Washington, by county, by sawmill-size class, and by plywood plants, 1963**

(In tons, dry weight)

County	Sawmill[1]				Plywood plants	Total
	0-39	40-79	80-119	120+		
Asotin	3,130	—	—	—	—	3,130
Chelan	—	34,430	—	—	—	34,430
Columbia	—	1,300	—	—	—	1,300
Ferry	6,760	6,840	—	—	—	13,600
Grant	—	2,430	—	—	—	2,430
Kittitas	980	19,960	—	—	—	20,940
Klickitat	270	17,230	17,220	16,250	10,560	61,530
Lincoln	1,570	—	29,910	—	—	31,480
Okanogan	6,720	14,950	17,360	22,080	—	61,110
Pend Oreille	4,390	3,700	—	—	—	8,090
Spokane	4,050	17,040	9,660	—	—	30,750
Stevens	13,520	22,830	10,430	—	—	46,780
Walla Walla	800	14,180	—	—	—	14,980
Yakima	—	37,910	—	37,690	16,880	92,480
Total	42,190	192,800	84,580	76,020	27,440	423,030

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

Table 13 / **Amount of coarse residue by species developed in eastern Washington by county, by sawmill-size class, and by plywood plants, 1963**

(In tons, dry weight)

County	Pine					Douglas-fir—larch					Other species				
	Sawmills[1]				Plywood plants	Sawmills[1]				Plywood plants	Sawmills[1]				Plywood plants
	0-39	40-79	80-119	120+		0-39	40-79	80-119	120+		0-39	40-79	80-119	120+	
Asotin	2,170	—	—	—	0	620	—	—	—	—	340	—	—	—	—
Chelan	—	11,700	—	—	0	—	19,610	—	—	—	—	3,120	—	—	—
Columbia	—	1,000	—	—	0	—	—	—	—	—	—	300	—	—	—
Ferry	60	500	—	—	0	6,260	5,750	—	—	—	440	590	—	—	—
Grant	—	1,640	—	—	0	—	790	—	—	—	—	—	—	—	—
Kittitas	90	—	—	—	0	450	15,090	—	—	—	440	4,870	—	—	—
Klickitat	40	890	17,220	630	0	230	11,220	—	8,980	9,500	—	5,120	—	6,640	1,060
Lincoln	1,460	—	12,580	—	0	110	—	17,330	—	—	—	—	—	—	—
Okanogan	590	—	5,510	8,890	0	6,060	14,950	11,850	12,750	—	70	—	—	440	—
Pend Oreille	930	410	—	—	0	3,230	2,660	—	—	—	230	630	—	—	—
Spokane	1,590	7,830	3,130	—	0	1,950	8,470	5,610	—	—	510	740	920	—	—
Stevens	640	1,860	6,260	—	0	11,890	19,990	2,690	—	—	990	980	1,480	—	—
Walla Walla	60	—	—	—	0	600	6,040	—	—	—	140	8,140	—	—	—
Yakima	—	10,670	—	10,490	0	—	18,020	—	23,660	12,880	—	9,220	—	3,540	4,000
Total	7,630	36,500	44,700	20,010	0	31,400	122,590	37,480	45,390	22,380	3,160	33,710	2,400	10,620	5,060

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

Table 14 / **Amount of sawdust and shavings developed in eastern Washington, by county, by sawmill-size class, and by planing mills, 1963**

(In tons, dry weight)

County	Sawdust (sawmills[1])				Shavings				
					Sawmills[1]				Planing mills
	0-39	40-79	80-119	120+	0-39	40-79	80-119	120+	
Asotin	2,450	—	—	—	—	—	—	—	2,290
Chelan	—	24,340	—	—	—	13,360	—	—	—
Columbia	—	1,030	—	—	—	—	—	—	—
Ferry	4,320	4,460	—	—	1,930	3,440	—	—	690
Grant	—	1,890	—	—	—	890	—	—	—
Kittitas	650	12,710	—	—	260	6,590	—	—	—
Klickitat	180	11,160	14,520	10,480	70	6,650	6,220	7,520	—
Lincoln	1,300	—	21,650	—	610	—	—	—	—
Okanogan	4,400	9,520	12,200	15,900	2,080	6,170	6,610	11,640	—
Pend Oreille	2,520	2,440	—	—	500	1,560	—	—	—
Spokane	2,430	12,440	6,800	—	930	6,080	4,180	—	15,590
Stevens	8,740	15,000	3,180	—	6,610	13,740	3,560	—	1,100
Walla Walla	590	9,030	—	—	360	6,620	—	—	—
Yakima	—	26,350	—	26,170	—	9,510	—	18,420	—
Total	27,580	130,370	58,350	52,550	13,350	74,610	20,570	37,580	19,670

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

Table 15 / **Amount of shavings by species developed in eastern Washington, by county, by sawmill-size class and by planing mills, 1963**

(In tons, dry weight)

County	Pine					Douglas-fir—larch					Other species				
	Sawmills[1]				Planing mills	Sawmills[1]				Planing mills	Sawmills[1]				Planing mills
	0-39	40-79	80-119	120+		0-39	40-79	80-119	120+		0-39	40-79	80-119	120+	
Asotin	—	—	—	—	990	—	—	—	—	340	—	—	—	—	960
Chelan	—	4,200	—	—	—	—	7,700	—	—	—	—	1,460	—	—	—
Columbia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ferry	480	200	—	—	100	1,250	2,940	—	—	520	200	300	—	—	70
Grant	—	590	—	—	—	—	300	—	—	—	—	—	—	—	—
Kittitas	—	—	—	—	—	120	5,040	—	—	—	140	1,550	—	—	—
Klickitat	70	220	6,220	220	—	—	4,170	—	4,200	—	—	2,260	—	3,100	—
Lincoln	520	—	—	—	—	90	—	—	—	—	—	—	—	—	—
Okanogan	210	—	1,990	5,470	—	1,870	6,170	4,620	5,960	—	—	—	—	210	—
Pend Oreille	30	120	—	—	—	420	660	—	—	—	50	780	—	—	—
Spokane	100	2,540	1,130	—	4,610	680	3,400	2,620	—	10,510	150	140	430	—	470
Stevens	180	820	230	—	170	6,230	12,350	2,640	—	820	200	570	690	—	110
Walla Walla	20	—	—	—	—	280	2,830	—	—	—	60	3,790	—	—	—
Yakima	—	3,850	—	11,410	—	—	3,040	—	3,850	—	—	2,620	—	3,160	—
Total	1,610	12,540	9,570	17,100	5,870	10,940	48,600	9,880	14,010	12,190	800	13,470	1,120	6,470	1,610

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

Table 16 / **Production and disposition of residue in eastern Washington by sawmills, plywood plants, and planing mills, 1963**

Residue and disposition	Sawmills[1]				Plywood plants	Planing mills	Total	
	0-39	40-79	80-119	120+				
	Tons, dry weight							Percent
Coarse residue:								
Pulp	—	83,190	59,200	68,600	27,440	—	238,430	56
Fuel	6,300	71,870	3,850	7,420	—	—	89,440	21
Unused	35,890	37,740	21,530	—	—	—	95,160	23
Total	42,190	192,800	84,580	76,020	27,440	—	423,030	100
Fine residue:								
Sawdust:								
Agriculture and misc.	3,570	13,620	3,740	6,290	—	—	27,220	10
Fuel	6,060	67,350	51,590	42,070	—	—	167,070	62
Unused	17,950	49,400	3,020	4,190	—	—	74,560	28
Total	27,580	130,370	58,350	52,550	—	—	268,850	100
Shavings:								
Agriculture and misc.	1,670	28,420	3,190	—	—	4,280	37,560	23
Fuel	1,060	29,730	14,710	30,060	—	10,950	86,510	52
Unused	10,620	16,460	2,670	7,520	—	4,440	41,710	25
Total	13,350	74,610	20,570	37,580	—	19,670	165,780	100

[1]*Mill-size class by thousand-board-foot capacity per 8-hour shift.*

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