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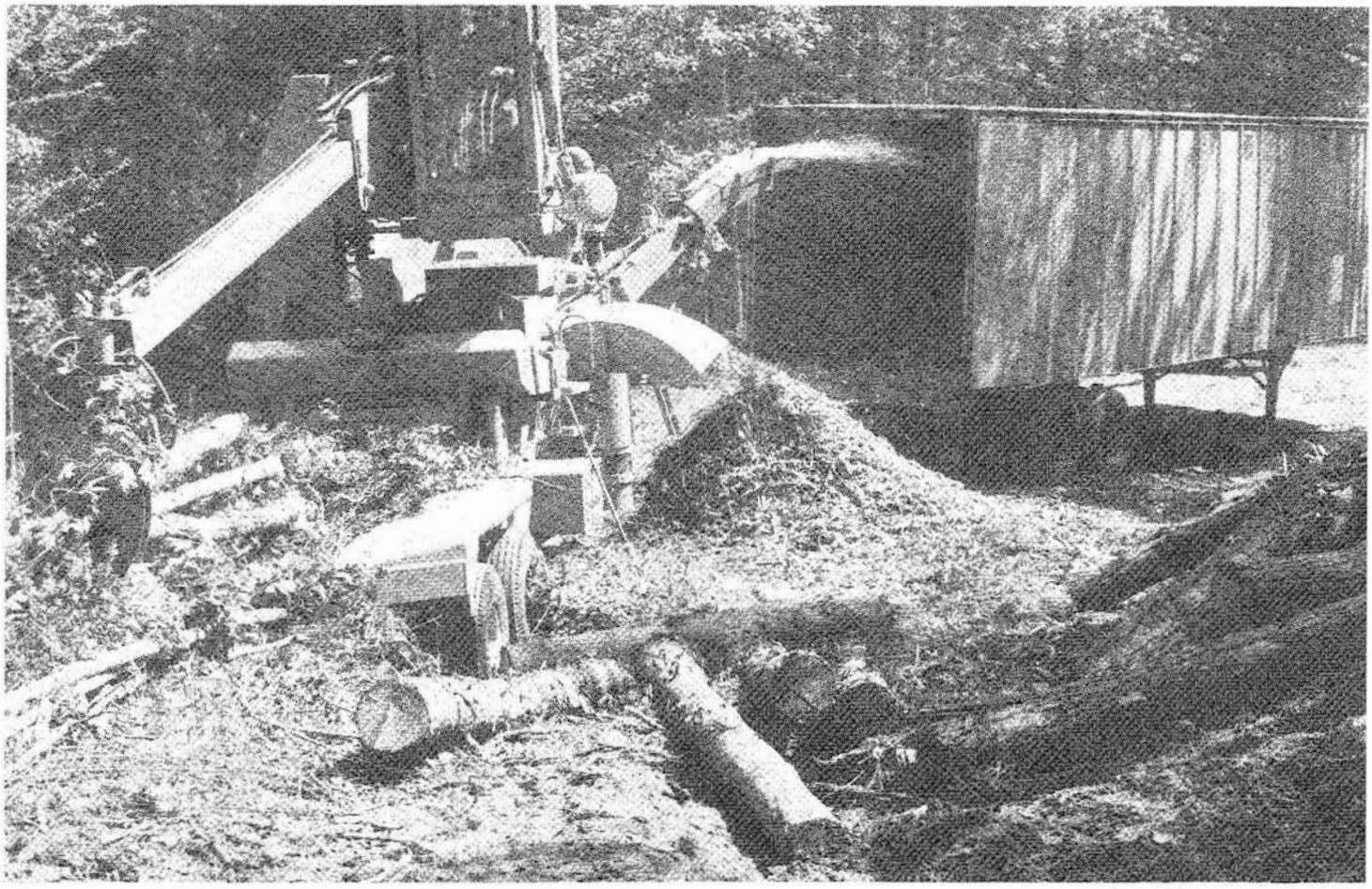
NORTHEASTERN PULPWOOD, 1978: an Annual Assessment of Regional Timber Output

by Robert L. Nevel, Jr.
and James T. Bones



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Cover Photo

This chipping system, operating near Waitsfield, Vermont, illustrates how a recent development in harvesting technology has led to the acceptance of whole-tree chips as furnish. Initially, mill managers resisted the use of whole-tree chips because of the amount of bark and other foreign material that was introduced into the pulping system. By adding a baffle to the outfeed mechanism of the whole-tree chipping system, much of the bark and other undesirable material is deflected. (Photo courtesy of Bill Gove, Vermont Department of Forests, Parks, and Recreation)

Abstract

This annual assessment of regional timber output is based on a canvass of the pulpmills in the Northeast that use roundwood or wood residue as a basic raw material for paper, insulation, and hardboard products. The report includes a discussion and tabular data on roundwood and chips from plant residues produced in and received by the 14 northeastern states in 1978: pulpwood production by state, county, and selected species; pulpwood receipts from roundwood by state and selected species; pulpwood chip receipts by state and selected species; and production of total-tree chips. From 1977 to 1978, pulpwood production increased by 3 percent; roundwood production rose by 7 percent; and chipped residue production declined by 8 percent. Current record levels are discussed and trends in pulpwood production for the past 16 years are illustrated. A list of the woodpulp mills that received northeastern pulpwood during 1978 is included.

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INTRODUCTION

THIS REPORT IS BASED on a canvass of pulpmills in the Northeast that use wood —whether roundwood or plant residues—as a basic raw material. Cross-boundary shipments are traced by exchanging information with neighboring experiment stations that conduct similar canvasses. Mills that use pulpwood as a raw material in producing insulation board and hardboard were included in the canvass.

The statistics for production from roundwood are based on mill receipts, which are subject to fluctuations caused by uneven wood-inventory buildups or liquidations from year to year. The plant residues are received at the pulpmill mostly in chip form. Origins of mill receipts of pulpwood from roundwood are reported by county where harvested. However, pulpwood from plant residue can be traced only to the state where it was produced. Some of the logs from which the residue came probably were harvested in states other than the one in which they were processed.

The 76.2 million cords of pulpwood produced domestically in 1978 brought United States production to within 20,000 cords of the lofty prerecession level recorded in 1974. But most economists agree that we are now in—or at the beginning of—another economic slowdown which will adversely affect national demand for woodpulp and pulpwood output. In the Northeast, because our market share is relatively small and our products diverse, it seems that we are less affected by economic aberrations. Our slow continuous growth rate can be traced to incremental expansion and replacement of existing plants rather than the new plant construction that has proliferated in the South.

An original reason for locating the woodpulp industry in the Northeast was that the region had an ample timber supply. Over the years, the supply situation has improved so that more growing stock is physically present today than at any time in the past half century. The Northeast, however, has become home to many Americans, and nagging problems must be solved relating to owners of small woodlots, timber availability, and the extent to which the owner will harvest the timber as a crop. Even those who do not own timber land have made their wishes known. Several years ago, concerns for the preservation of New England's picturesque environment led voters there to reject the proposed construction of a pulpmill.

For those pulpwood industry planners who have successfully identified and adjusted for the Northeast's current economic and political uncertainties, there is a third challenge to be met and overcome—raw material allocation. Traditional markets favor channeling timber into its most profitable use—historically, solid wood products. This has been accomplished in recent years by adding primary manufacturing plants to existing woodpulp facilities, or by providing for timber breakdown and distribution at an intermediate point. As these practices grew, the round pulpwood deficit was offset by chipped byproducts from these and neighboring processing plants. High energy costs, however, have upset current distribution channels for raw material. Industrial fuel and power generation is an alternative market for today's waste material. The raw material supplier has been quick to identify the advantages of selling to this new market: a greater portion of his total manufacturing residue is acceptable; and while uniform moisture content and size of the material are often critical, the amount of bark and other contaminants is not. Whole-tree chipping operations, which

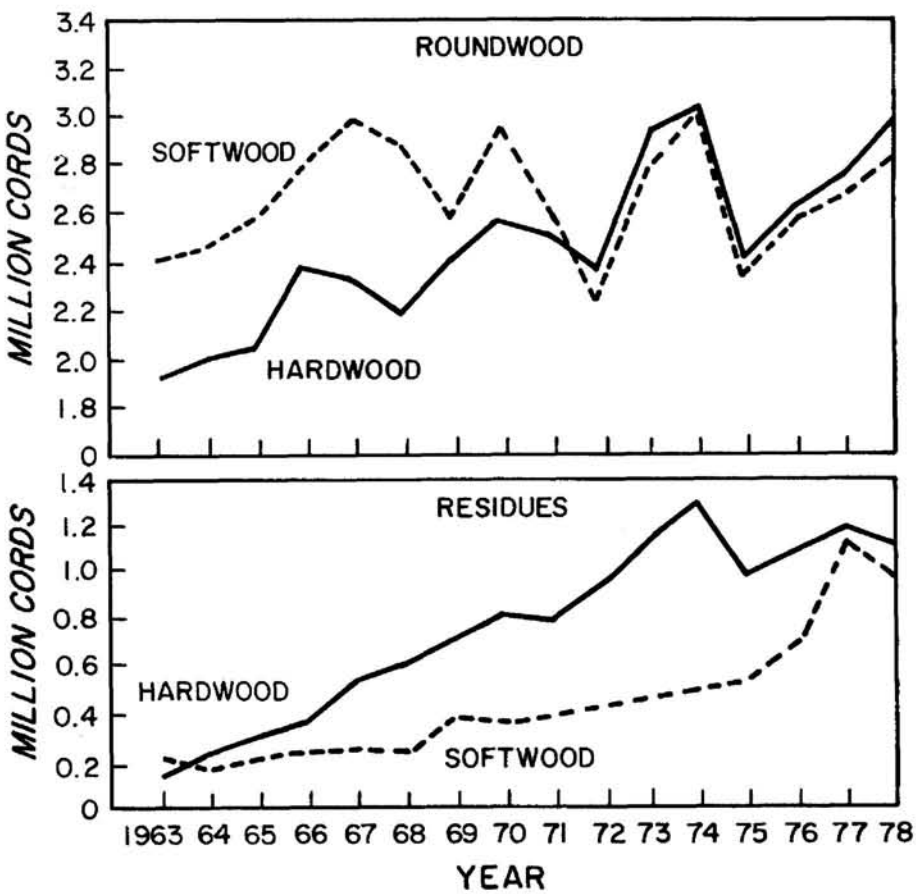
have been a growing source of pulp chips in the Northeast, are also well suited for producing energy wood. As alternate energy costs continue to climb, more byproducts and round timber will be used for fuelwood.

Another industry which competes directly with the woodpulp industry for raw material is the board industry. At present, two plants are under construction in the Northeast —an oriented strand board plant at Claremont, New Hampshire, and a waferboard plant at Woodland, Maine. The former will use both plant residues and round timber; the latter will use round timber only. Their combined annual raw material requirement could reach 300,000 cord equivalents. (One standard cord equals 85 cubic feet (ft^3) or 2.41 cubic meters (m^3).)

PULPWOOD PRODUCTION RISES BY 3 PERCENT

The 7,884,800 cords of pulpwood produced in the 14 northeastern states (Connecticut, Delaware, Kentucky, Maine, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia) in 1978 (Table 1) represented an increase of 3 percent over the 7,668,200 cords reported in 1977, and a record high since annual surveys were begun in 1963. Production of both softwood and hardwood roundwood was higher in 1978 than in 1977, but production of both softwood and hardwood chips from manufacturing residues was down for the period (Fig. 1). Some observers attribute this drop to a diver-

Figure 1.—Pulpwood production for Northeastern States, by year and sources of wood.



sion of chipped residues for industrial fuel. Hardwood roundwood production outperformed the other components of total production, increasing by 8 percent between 1977 and 1978. Softwood roundwood increased by 7 percent over the previous year and softwood and hardwood chipped residue production decreased by 10 and 5 percent, respectively.

Monthly pulpwood use in the Northeast was ahead of 1977 levels during the first part of the year, but tended to trail off during the fall. This caused woodyard inventories to build toward the end of 1978.

Roundwood pulpwood production from hardwoods exceeded that from softwoods by only 137,200 cords. While roundwood production increased by 7 percent from 1977, chipped residue production decreased by 8 percent. Hardwoods accounted for 52 percent of all pulpwood produced in 1978, up 1 percent from 1977.

Receipts of pulpwood at woodpulp mills in the Northeast totaled 8,544,400 cords in 1978, up more than 1 percent from 1977. This total represented a record high, breaking the previous record of 8,462,700 cords set in 1974. The 1978 receipts include wood harvested in the Northeast and pulpwood imported from other regions. Hardwood receipts exceeded those of softwoods by 45,400 cords, reversing last year's trend. Total receipts exceeded total production by 659,600 cords (Table 2).

Six of the 14 states (Connecticut, Delaware, Massachusetts, New York, Vermont, and West Virginia) produced more wood than they received. Delaware, Massachusetts, and West Virginia had no operating woodpulp mills, so all production in those states was shipped to other states for manufacture. Vermont had only one operating pulpmill. Production declined between 1977 and 1978 in only six of the northeastern states. Production declined by more than 20 percent in Massachusetts, Rhode Island, and Ohio. The decline in production in Rhode Island was caused by the closure of that state's only pulpmill. Production increases of more than 10 percent were registered in Connecticut, Maryland, and Pennsylvania. In Ohio and Rhode Island, pulpwood receipts declined by more than 15 percent. An increase in pulpwood receipts of 25 percent or more over 1977 levels was registered in New Jersey.

In previous years, a major portion of the requirement for pulpwood in the Northeast was satisfied by imports of Canadian softwood. This trend has been changing as more southern pulpwood has been finding its way into northern woodyards and as pulpmills use larger amounts of hardwood. In 1978, about 35 percent of the pulpwood shipments into the Northeast came from Canada, and 49 percent came from the southern states. The remaining 16 percent came from the North Central States. Although softwood roundwood imports were greater than hardwood imports in 1978, the reverse was true for imports of chipped manufacturing residue.

PRODUCTION FROM ROUNDWOOD UP BY 7 PERCENT

The production of pulpwood from roundwood increased by 392,600 cords—an increase of 7 percent from 1977. The 5,769,600 cords of roundwood produced in 1978 represent a continuation of the incremental climb that began in 1975 when a periodic low was reached during an economic slowdown. In 1966, roundwood production in the Northeast first exceeded 5 million cords and it has remained above that level for 10 of the last 13 years.

The 1978 pulpwood production from roundwood was up from 1977 in 6 of the 14 states. Delaware, Maine, Maryland, New Jersey, New York, and Pennsylvania all registered production increases. Pennsylvania's 19-percent production gain was the greatest year-to-year percentage increase. Roundwood production in Maine, which showed the largest volume increase—374,500 cords—accounted for more than 55 percent of the total northeastern harvest. Ohio had the largest year-to-year decline in pulpwood harvest—declining by 34,900 cords to 251,800 cords in 1978.

EIGHTEEN COUNTIES TOP 50-THOUSAND-CORD MARK

Eighteen counties in four states produced more than 50,000 cords of pulpwood from roundwood in 1978. This is a decrease of 1 county from 1977 when counties in 6 of the 14 states were high producers. The 3.8 million cords of roundwood harvested from these counties represents nearly two-thirds of the total roundwood harvest in the Northeast.

The position of the first nine counties on the list did not change between 1977 and 1978. However, one Maine county was added to the list in 1978 and the single high-producing counties in Pennsylvania and Ohio were dropped. As in previous years, Maine counties dominated the high-producer list, accounting for 9 of the 18 counties listed. Counties that produced more than 50,000 cords of pulpwood from roundwood in 1978 and their production totals are:

County	*Production (thousand cords)*
Aroostook, Maine	651.3
Piscataquis, Maine	581.8
Somerset, Maine	454.2
Washington, Maine	330.8
Oxford, Maine	287.2
Penobscot, Maine	285.5
Coos, New Hampshire	216.2
Franklin, Maine	158.6
Essex, Vermont	116.8
Kennebec, Maine	112.0
Essex, New York	84.6
Franklin, New York	84.5
Warren, New York	84.2
Hamilton, New York	75.1
Carroll, New Hampshire	75.0
Hancock, Maine	72.8
Saratoga, New York	64.4
St. Lawrence, New York	51.5

TOTAL-TREE UTILIZATION

The acceptance of harvesting and chipping the entire above-ground portion of the tree continues to grow in the Northeast as more logging contractors are involved in clearing forest land. By adding a baffle to the outfeed of the currently produced harvesting system, much of the leaves and bark are left at the harvesting site (see cover), thus upgrading the final product. Most total-tree chips produced in the region are used to produce kraft pulp from hardwoods.

Output increased most rapidly between 1974 and 1976 as output doubled from 236,100 cords to 472,400 cords. After a slight decline in 1977, the output of total-tree chips increased by 16 percent in the Northeast from 1977 to 1978:

State	*1977 (thousand cords)*	*1978 (thousand cords)*	*Change (percent)*
Kentucky	3.2	2.4	-25
Maine	142.5[b]	124.1[b]	-13
Maryland	5.7	20.0	[a]
New Hampshire	97.8	62.3	-36
New York	18.4	19.4	+ 5
Ohio	132.4	195.9	+48
Pennsylvania	6.6	71.7	[a]
Vermont	34.9	27.2	-22
West Virginia	9.0	0.4	-96
Total	450.4	523.3	+16

[a] Greater than 100 percent
[b] Includes all forms of brown, unbarked chips, such as bole- and tree-length material.

In 1978, chip production increased in four states and decreased in five. Three New England states, Maine, New Hampshire, and Vermont, experienced decreases in production in 1978. This may indicate that the chips are being diverted for energy related uses. Production increased in these Middle Atlantic States that are large hardwood producers—New York, Ohio, Pennsylvania, and Maryland. Maryland and Pennsylvania had the greatest percentage gains—over 100 percent—and Ohio and Pennsylvania had the greatest volume increases in 1978. The 195,900 cords of output in Ohio comprised

over three-fourths of the State's total roundwood production and over half of the total pulpwood production.

Production of total-tree chips was highest in Ohio and Maine in 1978. The combined production for these states represented three-fifths of the production total. The 124,100 cords produced in Maine, however, represented only 3 percent of the State's 1978 production total.

ROUNDWOOD HARVEST RELATED TO GROWING-STOCK INVENTORY

Figures 3, 4, and 5 show the total roundwood harvest by production class and county in the Northeast, but they do not relate the volume harvested to the volume of growing-stock trees that are actually present. Growing-stock volume is net volume in cubic feet of sound live trees of commercial species that are 5.0 inches in diameter at breast height (dbh) or larger, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central bole, or to the point where the bole breaks into limbs. The growing-stock volumes by species group and state that are used for this comparison are based on data compiled for the 1977 Forest Statistics of the United States.

The following tabulation of harvesting intensity shows the volume of growing stock present per unit harvested—by state and species group—in thousand cubic feet of growing stock present for each cord of pulpwood harvested in 1978:

Softwoods

Delaware	6.1
Maryland	6.9
Maine	7.6
New Jersey	9.0
Average	11.5
Vermont	19.0
New York	20.3
New Hampshire	27.4
West Virginia	33.9
Ohio	34.8
Pennsylvania	54.5
Connecticut	96.6
Kentucky	150.2
Rhode Island	269.7
Massachusetts	350.9

Hardwoods

Maine	6.4
Ohio	18.5
New Hampshire	19.2
New York	21.1
Vermont	27.3
Average	28.5
Pennsylvania	35.2
Maryland	38.0
Delaware	48.0
West Virginia	103.4
Kentucky	247.2
Rhode Island	506.8
New Jersey	986.2
Connecticut	3,729.0
Massachusetts	4,908.6

The states have been ranked (top to bottom) from the state in which the roundwood harvest was most intensive to the state in which the harvest was least intensive. The average for the region is shown where it falls in the rankings. These rankings and the regional averages should not be viewed as an index or standard for harvesting, but simply as a means of directing individuals engaged in pulpwood procurement from several alternative areas toward the most promising one.

For each cord of pulpwood harvested in the Northeast in 1978, there were 11,500 cubic feet (135 cords) of softwood growing stock and 28,500 cubic feet (335 cords) of hardwood growing stock. Harvesting intensity for softwoods was greater than the regional average in four states: Delaware, Maryland, Maine, and New Jersey. The hardwood harvest was more intensive than the regional average in five states: Maine, Ohio, New Hampshire, New York, and Vermont. Harvesting intensity was relatively low in the urbanized states and in those states that have few or no operating pulpmills.

WOOD CHIP PRODUCTION DECLINES BY 8 PERCENT

The production of wood chips and sawdust from plant residues for use as wood pulp declined by 8 percent from the record 2,291,200 cord equivalents produced in 1977. Some observers believe the decrease occurred because woody material that had been previously used for pulp chips was diverted for industrial fuel. The skyrocketing cost of fuel oil and other energy materials combined with tighter regulation on residue disposal have encouraged primary manufacturers to install wood- and bark-burning boilers.

Chip production in 1978 constituted 27 percent of the total pulpwood production, down 3 percent from 1977. Softwood chip production declined by 10 percent while hardwood chip production declined by 5 percent. Since 1977, pulpwood chip production declined in 8 of the 14 northeastern states and increased in 5:

State	*1977*	*1978*	*Change*
	(thousand cord equivalents)		*(percent)*
Connecticut	3.5	6.1	+74
Delaware	13.5	9.2	-30
Kentucky	215.5	229.5	+ 6
Maine	900.0	770.2	-14
Maryland	106.1	127.1	+20
Massachusetts	34.1	23.1	-32
New Hampshire	147.7	83.9	+25
New Jersey	5.4	4.1	-24
New York	158.9	152.5	- 4
Ohio	175.6	119.8	-32
Pennsylvania	299.5	294.3	- 2
Rhode Island	[a]	[a]	[a]
Vermont	73.6	75.7	+ 3
West Virginia	158.1	119.3	-25
	2,291.2	2,115.2	- 8

[a] Less than 50 cords or 0.5 percent.

Production records were set in Connecticut, Maryland, New Hampshire, and Vermont even though total production was down. Delaware, Massachusetts, and Ohio experienced production declines of 30 percent or more.

APPENDIX

Definition of Terms

Commercial species. Tree species presently or prospectively suitable for industrial wood products.

Diameter at breast height (dbh). The diameter outside bark of a standing tree measured at 4½ feet, or 1.3716 meters, above the ground.

Growing-stock trees. Live trees of commercial species classified as sawtimber, poletimber, saplings, and seedlings; that is, all live trees of commercial species except rough and rotten trees.

Growing-stock volume. The net volume in cubic feet of growing-stock trees 5.0 inches dbh or larger, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the bole breaks into limbs. Net volume equals gross volume less deduction for cull.

Hardwoods. Dicotyledonous trees, usually broad-leaved and deciduous.

Harvest. The aggregate volume of timber produced for industrial or consumer uses.

Harvesting intensity. The growing-stock volume present in an area for each unit of timber production from the area, such as cubic feet of trees per cord of pulpwood.

Manufacturing plant or wood residues. Wood materials, such as sawmill slabs and edgings, sawdust, veneer clippings and cores, post and pole trimmings, and pulp screening obtained incidental to the manufacture of wood products.

Pulpwood. Roundwood converted into 4- or 5-foot lengths or chips and chipped plant residues that are used to make woodpulp.

Pulpwood receipts. Pulpwood received at woodpulp mills.

Pulpwood imports. Pulpwood receipts originating from outside the region.

Roundwood products. Logs, bolts, total-tree chips, and other round timber generated by harvesting trees for industrial or consumer use.

Softwoods. Coniferous trees, usually evergreen having needles or scalelike leaves.

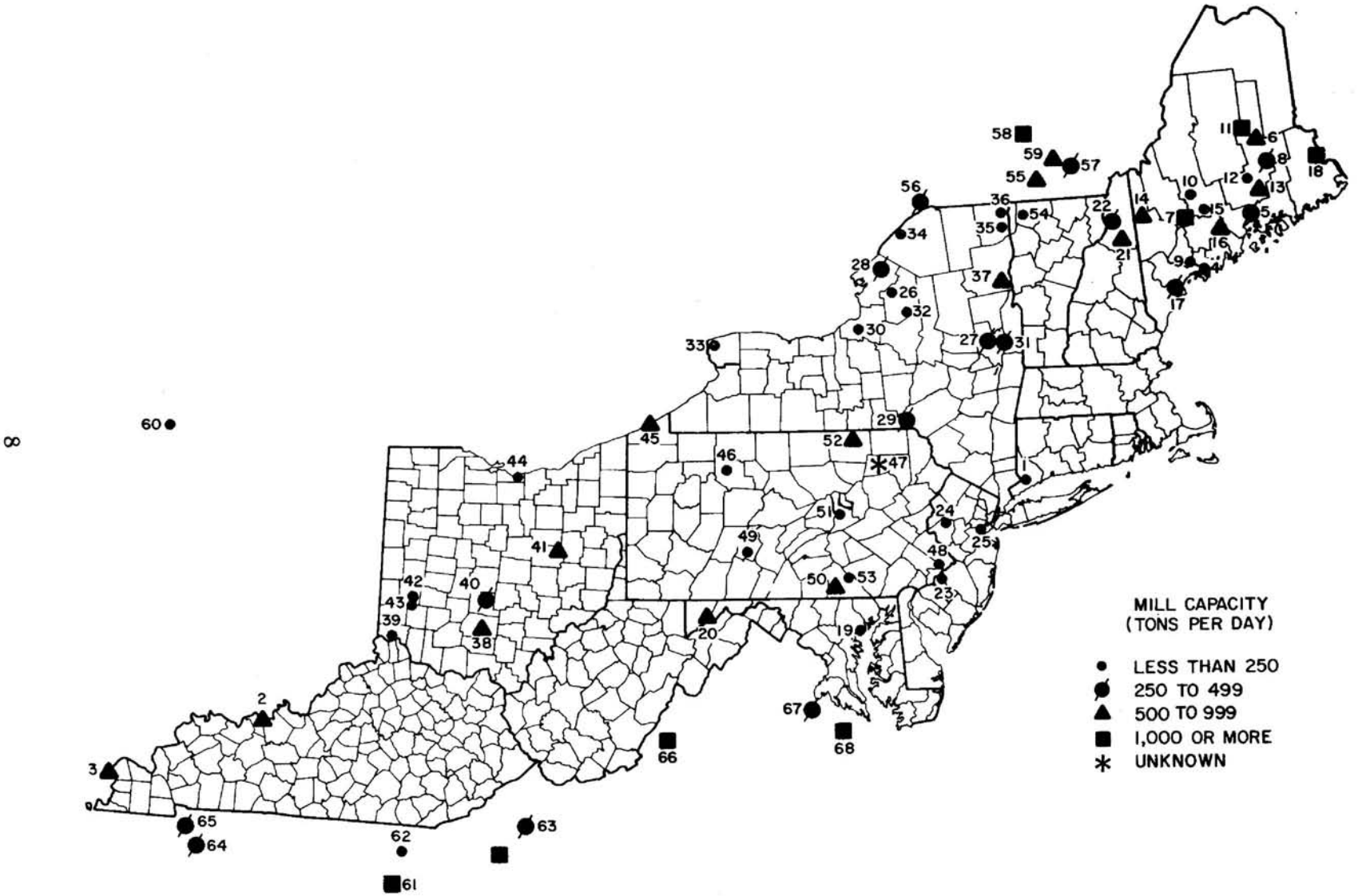
Standard cord. A unit of measure for stacked bolts of wood, encompassing 128 cubic feed of wood, bark, and air space. In the Northeast, the measure refers to a stack of wood containing 85 cubic feet, or 2.41 cubic meters, of solid wood.

Standard-cord equivalent. A unit of measure that is applied to forms of wood other than roundwood, such as chips, slabs, edgings, and other manufacturing residues and equal to 85 cubic feet of solid wood.

Timber products output. Production total from timber harvesting and plant byproduct recovery.

Total-tree chips. Unbarked wood chips generated from the aboveground portion of a tree, including bolewood, limbs, and leaves.

Figure 2.—Mills using northeastern pulpwood in 1978.



Woodpulp mills using northeastern pulpwood by location, type of pulp produced, and oven-dry capacity in tons per 24 hours, 1978

Location	Company	Type of pulp produced					
		Total	Sulfate	Ground-wood	Semi-chemical	Sulfite	Miscellaneous[a]
WITHIN THE NORTHEAST							
Connecticut:							
1. Stratford	Tilo Company, Inc.	35	—	—	—	—	35
Total (1 mill)		35	—	—	—	—	35
Kentucky:							
2. Hawesville	Western Kraft Paper Group Willamette Industries, Inc.[b]	620	320	—	300	—	—
3. Wickliffe	Westvaco Corp.	600	600	—	—	—	—
Total (3 mills)		1,220	920	—	300	—	—
Maine:							
4. Brunswick	Pejepscot Paper Co.	160	—	160	—	—	—
5. Bucksport	St. Regis Paper Co.[b]	500	—	350	—	—	150
6. East Millinocket	Great Northern Nekoosa Corp.	800	—	800	—	—	—
7. Jay	International Paper Co.[b]	1,350	1,200	150	—	—	—
8. Lincoln	Preco Corp.	360	360	—	—	—	—
9. Lisbon Falls	United States Gypsum Co.	100	—	100	—	—	—
10. Madison	Madison Paper Corp.	120	—	120	—	—	—
11. Millinocket	Great Northern Nekoosa Corp.[b]	1,500	—	900	—	600	—
12. Old Town	Lily Tulip Corp.	50	—	50	—	—	—
13. Old Town	Diamond International Corp.[b]	575	575	—	—	—	—
14. Rumford	Boise Cascade Corp.[b]	705	595	110	—	—	—
15. Shawmut	Keyes Fibre Co.	120	—	120	—	—	—
16. Skowhegan	Scott Paper Co.	750	750	—	—	—	—
17. Westbrook	Scott Paper Co.	300	300	—	—	—	—
18. Woodland	Georgia-Pacific Corp.[b]	1,040	800	240	—	—	—
Total (21 mills)		8,430	4,580	3,100	—	600	150
Maryland:							
19. Finksburg	Congoleum Corp.	45	—	—	—	—	45
20. Luke	Westvaco Corp.	789	789	—	—	—	—
Total (2 mills)		834	789	—	—	—	45
New Hampshire:							
21. Berlin	Brown Co.[b]	925	725	—	200	—	—
22. Groveton	Diamond International Corp.	250	—	—	250	—	—
Total (3 mills)		1,175	725	—	450	—	—
New Jersey:							
23. Gloucester City	GAF Corp.	192	—	—	—	—	192
24. Manville	Johns-Manville Products Corp.	81	—	—	—	—	81
25. Perth Amboy	Jim Walter Corp.	100	—	—	—	—	100
Total (3 mills)		373	—	—	—	—	373

Continued

Woodpulp Mills--Continued

Location	Company	Type of pulp produced					
		Total	Sulfate	Ground-wood	Semi-chemical	Sulfite	Miscellaneous[a]
New York:							
26. Beaver Falls	Boise Cascade Corp.	70	—	70	—	—	—
27. Corinth	International Paper Co.	255	—	255	—	—	—
28. Deferiet	St. Regis Paper Co.	285	—	285	—	—	—
29. Deposit	Jim Walter Corp.	300	—	—	—	—	300
30. Fulton	Armstrong Cork Co.	130	—	—	—	—	130
31. Glens Falls	Finch, Pruyn & Co., Inc.	220	—	—	—	220	—
32. Lyons Falls	Georgia-Pacific Corp.	120	—	—	120	—	—
33. Niagara Falls	Nitec Paper Corp.	100	—	100	—	—	—
34. Ogdensburg	Diamond International Corp.	110	—	110	—	—	—
35. Plattsburgh	Diamond International Corp.	50	—	50	—	—	—
36. Plattsburgh	Georgia-Pacific Corp.	100	—	—	100	—	—
37. Ticonderoga	International Paper Co.	500	500	—	—	—	—
Total (12 mills)		2,240	500	870	220	220	430
Ohio:							
38. Chillicothe	The Mead Corp.	600	600	—	—	—	—
39. Cincinnati	Jim Walter Corp.	100	—	—	—	—	100
40. Circleville	Container Corp. of America	300	—	—	300	—	—
41. Coshocton	Stone Container Corp.[b]	650	—	—	650	—	—
42. Franklin	Bird & Son, Inc.	80	—	—	—	—	80
43. Franklin	Georgia-Pacific Corp.	85	—	—	—	—	85
44. Milan	Certain-Teed Corp.	90	—	—	—	—	90
Total (7 mills)		1,905	600	—	950	—	355
Pennsylvania:							
45. Erie	Hammermill Paper Co.	700	—	—	700	—	—
46. Johnsonburg	Penntech Papers, Inc.	190	190	—	—	—	—
47. Mehoopany	Proctor & Gamble Co.	c	—	—	—	c	—
48. Philadelphia	Jim Walter Corp.	160	—	—	—	—	160
49. Roaring Spring	Appleton Papers, Inc.	180	180	—	—	—	—
50. Spring Grove	The P.H. Glatfelter Co.	525	525	—	—	—	—
51. Sunbury	Jim Walter Corp.	240	—	—	240	—	—
52. Towanda	Masonite Corp.	500	—	—	—	—	500
53. York	Certain-Teed Corp.	50	—	—	—	—	50
Total (9 mills)		2,545	895	—	940	c	710
Vermont:							
54. Sheldon Springs	Saxon Industries	50	—	50	—	—	—
Total (1 mill)		50	—	50	—	—	—
All northeast states (62 mills)		18,807	9,009	4,020	2,860	820	2,098

Woodpulp Mills—Continued

OUTSIDE THE NORTHEAST							
Canada:							
55. Bromptonville	Kruger Pulp & Paper, Ltd.	500	500	—	—	—	—
56. Cornwall	Domtar Woodlands, Ltd.	400	400	—	—	—	—
57. East Angus	Domtar Woodlands, Ltd.[b]	340	220	—	120	—	—
58. Three Rivers	Kruger Pulp & Paper, Ltd.[b]	1,150	—	940	—	210	—
59. Windsor	Domtar Woodlands, Ltd.	500	500	—	—	—	—
Total (6 mills)		2,890	1,620	940	120	210	—
Illinois:							
60. Joliet	GAF Corp.	100	—	100	—	—	—
Total (1 mill)		100	—	100	—	—	—
Tennessee:							
61. Calhoun	Bowater Southern Paper Corp.[b]	1,700	550	925	—	—	225
62. Harriman	Harriman Paperboard Corp.	190	—	—	190	—	—
63. Kingsport	The Mead Corp.	270	—	—	—	270	—
64. New Johnsonville	Inland Container Corp.	450	—	—	450	—	—
65. Paris	Jim Walter Corp.	300	—	—	—	—	300
Total (7 mills)		2,910	550	925	640	270	525
Virginia:							
66. Covington	Westvaco Corp.[b]	1,260	1,100	—	160	—	—
67. Doswell	Weyerhauser	300	—	300	—	—	—
68. West Point	Chesapeake Corp. of Va.	1,150	1,150	—	—	—	—
Total (4 mills)		2,710	2,250	300	160	—	—
Total all other states (18 mills)		8,610	4,420	2,265	920	480	525
Total all states (80 mills)		27,417	13,429	6,285	3,780	1,300	2,623

[a]Roofing, insulation board, and hard board plants.
[b]More than one pulpmill operating.
[c]Capacity unknown.

INDEX TO TABLES

Metric Equivalents

One standard cord = 85 cubic feet (ft^3) = 2.41 cubic meters (m^3)
One cubic foot (ft^3) = 28.317 cubic centimeters (cm^3) = 0.028 cubic meters (m^3)
One inch - 2.540 centimeters (cm)

Table 1.—Total production of pulpwood in the Northeast, by state and source, 1978

(In thousands of standard cords)[a]

State	Source		
	Roundwood	Manufacturing residues	All sources
Connecticut	5.0	6.1	11.1
Delaware	37.3	9.2	46.5
Kentucky	50.8	229.5	280.3
Maine	3,184.8	770.2	3,955.0
Maryland	186.0	127.1	313.1
Massachusetts	4.6	23.5	28.1
New Hampshire	324.2	183.9	508.1
New Jersey	29.1	4.1	33.2
New York	649.7	152.5	802.2
Ohio	251.8	119.8	371.6
Pennsylvania	674.7	294.3	969.0
Rhode Island	1.0	b	1.0
Vermont	212.1	75.7	287.8
West Virginia	158.5	119.3	277.8
All states	5,769.6	2,115.2	7,884.8

[a]Rough wood basis, equivalent to 85 ft^3 solid wood.
[b]Less than 50 cord equivalents.

Table 2.—Total production and receipts of pulpwood in the Northeast, by state and softwood and hardwood, 1978

(In thousands of standard cords)

State	Production		Receipts		Production surplus (+) or deficit (-)
	Softwood	Hardwood	Softwood	Hardwood	
Connecticut	7.5	3.6	(D)	(D)	+(D)
Delaware	34.0	12.5	—	—	+46.5
Kentucky	10.6	269.7	181.4	475.2	-376.3
Maine	2,844.8	1,110.2	3,218.0	1,185.8	-448.8
Maryland	183.0	130.1	124.4	269.7	-81.0
Massachusetts	15.1	13.0	—	—	+28.1
New Hampshire	257.7	250.4	141.2	369.8	-2.9
New Jersey	29.7	3.5	60.3	12.5	-39.6
New York	213.0	589.2	265.1	506.1	+31.0
Ohio	4.7	366.9	20.0	469.9	-118.3
Pennsylvania	45.5	923.5	207.2	1,004.1	-242.3
Rhode Island	.4	.6	(D)	(D)	-(D)
Vermont	123.7	164.1	(D)	(D)	+(D)
West Virginia	37.6	240.2	—	—	+277.8
Total	3,807.3	4,077.5	4,249.5	4,294.9	-659.6

(D) Withheld to avoid disclosure of data from individual mills.

Table 3.—Pulpwood production from roundwood in the Northeast, by state, softwood and hardwood, and destination of shipments, 1978

(In thousands of standard cords)

State	Softwood				Hardwood				All Species
	Retained in state	Shipped to other states		Total	Retained in state	Shipped to other states		Total	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	3.7	0.7	—	4.4	—	0.6	—	0.6	5.0
Delaware	—	13.9	13.9	27.8	—	9.4	0.1	9.5	37.3
Kentucky	—	—	6.1	6.1	23.8	10.0	10.9	44.7	50.8
Maine	2,137.0	20.9	.5	2,158.4	972.3	54.1	—	1,026.4	3,184.8
Maryland	18.2	48.3	48.4	114.9	52.7	17.7	.7	71.1	186.0
Massachusetts	—	4.1	—	4.1	—	.5	—	.5	4.6
New Hampshire	35.6	92.6	.4	128.6	153.8	41.8	—	195.6	324.2
New Jersey	27.8	—	—	27.8	1.1	.2	—	1.3	29.1
New York	138.9	3.1	35.2	177.2	366.9	35.4	70.2	472.5	649.7
Ohio	—	4.4	—	4.4	246.9	.5	—	247.4	251.8
Pennsylvania	22.3	11.6	—	33.9	595.9	44.9	—	640.8	674.7
Rhode Island	.4	—	—	.4	.6	—	—	.6	1.0
Vermont	21.2	73.5	1.3	96.0	—	116.1	—	116.1	212.1
West Virginia	—	30.0	2.2	32.2	—	72.8	53.5	126.3	158.5
All states	2,405.1	303.1	108.0	2,816.2	2,414.0	404.0	135.4	2,953.4	5,769.6

Table 4.—Pulpwood chip production from manufacturing residues in the Northeast, by state, softwood and hardwood, and destination of shipments, 1978[a]

(In thousands of standard-cord equivalents)

State	Softwood				Hardwood				All species
	Retained in state	Shipped to other states		Total	Retained in state	Shipped to other states		Total	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	[b]	3.1	—	3.1	—	3.0	—	3.0	6.1
Delaware	—	6.2	—	6.2	—	3.0	—	3.0	9.2
Kentucky	—	4.0	0.5	4.5	138.0	58.4	28.6	225.0	229.5
Maine	685.9	.5	—	686.4	77.0	6.8	—	83.8	770.2
Maryland	3.7	48.4	16.0	68.1	17.3	38.1	3.6	59.0	127.1
Massachusetts	—	11.0	—	11.0	—	12.5	—	12.5	23.5
New Hampshire	59.2	68.6	1.3	129.1	47.4	7.4	—	54.8	183.9
New Jersey	—	1.9	—	1.9	—	2.2	—	2.2	4.1
New York	20.4	15.4	—	35.8	50.2	53.5	13.0	116.7	152.5
Ohio	[b]	.3	—	.3	117.3	2.2	—	119.5	119.8
Pennsylvania	9.0	2.6	—	11.6	237.6	45.1	—	282.7	294.3
Rhode Island	—	—	—	—	—	[b]	—	[b]	[b]
Vermont	—	26.4	1.3	27.7	—	47.7	0.3	48.0	75.7
West Virginia	—	1.8	3.6	5.4	—	53.9	60.0	113.9	119.3
All states	788.2	190.2	22.7	991.1	648.8	333.8	105.5	1,124.1	2,115.2

[a] Includes sawmill slabs and edgings, sawdust, veneer cores, and post and piling trimmings.
[b] Less than 50 cords.

Table 5.—Pulpwood receipts from roundwood in the Northeast, by state, softwood and hardwood, and origin of shipments, 1978

(In thousands of standard cords)

State[a]	Softwood				Hardwood				All species
	Cut in state	Received from other states		Total	Cut in state	Received from other states		Total	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	3.7	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
Kentucky	—	—	134.1	123.1	23.8	—	111.3	135.1	269.2
Maine	2,137.0	65.2	134.8	2,337.0	972.3	46.0	78.3	1,096.6	3,433.6
Maryland	18.2	40.1	41.3	99.6	52.7	113.4	7.6	173.7	273.3
New Hampshire	35.6	34.2	—	69.8	153.8	144.5	.2	298.5	368.3
New Jersey	27.8	3.8	—	31.6	1.1	—	—	1.1	32.7
New York	138.9	87.5	.2	226.6	366.9	24.9	.2	392.0	618.6
Ohio	—	—	—	—	246.9	10.6	9.5	267.0	267.0
Pennsylvania	22.3	67.4	63.2	152.9	595.9	63.4	8.6	667.9	820.8
Rhode Island	.4	(D)	(D)	(D)	.6	(D)	(D)	(D)	(D)
Vermont	21.2	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
All states	2,405.1	303.1	373.6	3,081.8	2,414.0	403.9	215.7	3,033.6	6,115.4

[a]States with no pulpmills are omitted.
(D) Withheld to avoid disclosure of data from individual mills.

Table 6.—Pulpwood chip receipts from manufacturing residues in the Northeast, by state, softwood and hardwood, and origin of shipments, 1978 [a]

(In thousands of standard-cord equivalents)

State[b]	Softwood				Hardwood				All species
	Produced in state	Received from other states		Total	Produced in state	Received from other states		Total	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	[c]	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
Kentucky	—	—	47.3	47.3	138.0	—	202.1	340.1	387.4
Maine	685.9	72.7	122.4	881.0	77.0	10.4	1.8	89.2	970.2
Maryland	3.7	3.3	17.8	24.8	17.3	71.8	6.9	96.0	120.8
New Hampshire	59.2	11.8	.4	71.4	47.4	21.5	2.4	71.3	142.7
New Jersey	—	28.7	—	28.7	—	11.4	—	11.4	40.1
New York	20.4	18.1	—	38.5	50.2	46.5	17.4	114.1	152.6
Ohio	[c]	15.1	4.9	20.0	117.3	84.9	.7	202.9	222.9
Pennsylvania	9.0	39.4	5.9	54.3	237.6	86.2	12.4	336.2	390.5
Rhode Island	—	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
Vermont	—	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
All states	778.2	190.8	198.7	1,167.7	684.8	332.8	243.7	1,261.3	2,429.0

[a]Includes sawmill slabs and edgings, sawdust, veneer cores, and post and pole trimmings.
[b]States with no pulpmills are omitted.
[c]Less than 50 cords.
(D) Withheld to avoid disclosure of data from individual mills.

Table 7.—Pulpwood production from roundwood received from states outside the Northeast, by state (or province) of origin and softwood and hardwood, 1978

(In thousands of standard cords)

Receiving state[a]	State or province of origin	Total softwood	Total hardwood	All species
Kentucky	Illinois	6.3	12.7	19.0
	Indiana	—	9.8	9.8
	Mississippi	117.7	56.7	174.4
	Missouri	.4	7.7	8.1
	Tennessee	9.7	24.4	34.1
Maine	New Brunswick	122.4	77.2	199.6
	Quebec	12.4	1.1	13.5
Maryland	Virginia	41.3	7.6	48.9
New Hampshire	Quebec	—	.2	.2
New York	Ontario	.2	.1	.3
	Quebec	—	.1	.1
Ohio	Indiana	—	7.1	7.1
	Tennessee	—	2.4	2.4
Pennsylvania	Virginia	63.2	8.6	71.8
All states		373.6	215.7	589.3

[a]States with no extraregional receipts are omitted.

Table 8.—Pulpwood chip receipts from wood-using manufacturing plants outside the Northeast, by state (or province) of origin and softwood and hardwood, 1978[a]

(In thousands of standard-cord equivalents)

Receiving state[b]	State or province of origin	Softwood	Hardwood	All species
Kentucky	Alabama	—	4.1	4.1
	Arkansas	—	14.4	14.4
	Illinois	1.6	25.7	27.3
	Indiana	—	57.6	57.6
	Mississippi	43.0	13.8	56.8
	Missouri	2.7	38.0	39.7
	Tennessee	—	48.5	48.5
Maine	New Brunswick	3.9	—	3.9
	Quebec	118.5	1.8	120.3
Maryland	Virginia	17.8	6.9	24.7
New Hampshire	Quebec	.4	2.4	2.8
New York	Ontario	—	17.3	17.3
	Quebec	—	.1	.1
Ohio	Alabama	.7	—	.7
	North Carolina	.8	—	.8
	Tennessee	.2	.7	.9
	Virginia	3.2	—	3.2
Pennsylvania	Virginia	5.9	12.4	18.3
All states		198.7	243.7	442.4

[a]Includes sawmill slabs and edgings, sawdust, veneer cores, and post and pole trimmings.
[b]States with no extraregional receipts are omitted.

Table 9.—Pulpwood production from roundwood in the Northeast, by state and selected species, 1978

(In thousands of standard cords)

State	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Connecticut	—	—	4.4	4.4	—	0.2	0.4	0.6	5.0
Delaware	—	—	27.8	27.8	—	3.8	5.7	9.5	37.3
Kentucky	—	—	6.1	6.1	2.7	29.4	12.6	44.7	50.8
Maine	1,720.0	232.0	206.2	2,158.4	60.7	24.4	941.3	1,026.4	3,184.8
Maryland	—	0.8	114.1	114.9	—	31.0	40.1	71.1	186.0
Massachusetts	[a]	—	4.1	4.1	—	.2	.3	.5	4.6
New Hampshire	97.5	11.4	19.7	128.6	13.9	3.2	178.5	195.6	324.1
New Jersey	—	—	27.8	27.8	[a]	.1	1.2	1.3	29.1
New York	55.4	34.5	87.3	177.2	39.5	57.2	375.8	472.5	649.7
Ohio	—	—	4.4	4.4	1.7	149.0	96.7	247.4	251.8
Pennsylvania	—	3.9	30.0	33.9	42.6	257.8	340.8	640.8	674.7
Rhode Island	—	—	.4	.4	—	.3	.3	.6	1.0
Vermont	83.3	5.3	7.4	96.0	9.6	3.5	103.0	116.1	212.1
West Virginia	—	2.5	29.7	32.2	—	55.8	70.5	126.3	158.5
All states	1,956.4	290.4	569.4	2,816.2	170.7	615.9	2,166.8	2,953.4	5,769.6

[a] Less than 50 cords.

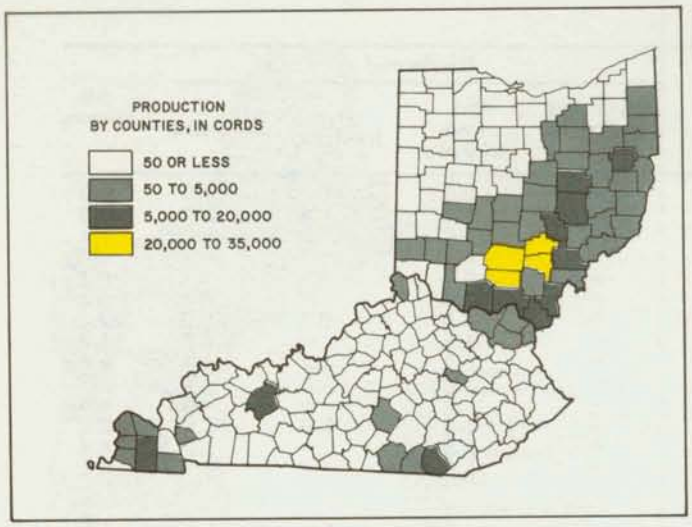


Figure 3.—Geographical pattern of pulpwood production from roundwood in Kentucky and Ohio, by county, 1978.

Table 10.—Pulpwood production from roundwood in Kentucky and Ohio, by state, county, and selected species, 1978

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
					KENTUCKY				
Ballard	—	—	—	—	0.6	1.5	1.1	3.2	3.2
Boone	—	—	—	—	.5	.8	—	1.3	1.3
Boyd	—	—	—	—	—	.3	.5	.8	.8
Calloway	—	—	—	—	.1	.2	.2	.5	.5
Carlisle	—	—	—	—	.4	1.0	.7	2.1	2.1
Carter	—	—	—	—	—	.7	1.2	1.9	1.9
Casey	—	—	—	—	—	3.3	—	3.3	3.3
Flaming	—	—	b	b	—	—	—	—	b
Floyd	—	—	—	—	—	b	b	b	b
Graves	—	—	—	—	.3	3.9	3.7	7.9	7.9
Greenup	—	—	—	—	—	1.3	1.7	3.0	3.0
Hickman	—	—	—	—	.2	.2	.3	.7	.7
Lewis	—	—	—	—	—	.6	1.0	1.6	1.6
Lyon	—	—	—	—	—	.1	—	.1	.1
McCracken	—	—	—	—	.3	.6	.4	1.3	1.3
McCreary	—	—	2.4	2.4	—	.6	.7	1.3	3.7
Ohio	—	—	—	—	—	11.2	—	11.2	11.2
Rowan	—	—	—	—	.3	.7	.4	1.4	1.4
Wayne	—	—	.1	.1	—	—	—	—	.1
Whitley	—	—	3.6	3.6	—	2.4	.7	3.1	6.7
Total	—	—	6.1	6.1	2.7	29.4	12.6	44.7	50.8
					OHIO				
Adams	—	—	b	b	—	3.6	5.8	9.4	9.4
Ashland	—	—	—	—	—	.8	—	.8	.8
Athens	—	—	0.4	0.4	—	8.5	7.5	16.0	16.4
Belmont	—	—	—	—	—	1.5	—	1.5	1.5
Brown	—	—	—	—	—	.1	b	.1	.1
Butler	—	—	—	—	—	—	.1	.1	.1
Carroll	—	—	—	—	—	5.4	—	5.4	5.4
Clark	—	—	—	—	0.3	.4	—	.7	.7
Clinton	—	—	—	—	.1	.2	.1	.4	.4
Columbiana	—	—	—	—	—	.4	—	.4	.4
Coshocton	—	—	—	—	—	15.9	—	15.9	15.9
Erie	—	—	—	—	—	—	b	b	b

Continued

Table 10—Continued

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Fairfield	—	—	—	—	—	2.5	1.5	4.0	4.0
Fayette	—	—	—	—	—	1.3	1.9	3.2	3.2
Franklin	—	—	—	—	—	.8	.3	1.1	1.1
Gallia	—	—	.6	.6	—	3.7	5.1	8.8	9.4
Guernsey	—	—	—	—	—	3.2	—	3.2	3.2
Harrison	—	—	—	—	—	3.8	—	3.8	3.8
Hocking	—	—	—	—	—	12.6	9.7	22.3	22.3
Holmes	—	—	—	—	—	4.3	—	4.3	4.3
Jackson	—	—	—	b	—	3.3	1.1	4.4	4.4
Jefferson	—	—	—	—	—	.1	.1	.2	.2
Knox	—	—	—	—	—	.6	—	.6	.6
Lawrence	—	—	.4	.4	—	4.6	7.0	11.6	12.0
Licking	—	—	—	—	—	1.8	—	1.8	1.8
Madison	—	—	—	—	—	1.6	.5	2.1	2.1
Mahoning	—	—	2.2	2.2	—	—	—	—	2.2
Medina	—	—	—	—	—	.2	—	.2	.2
Meigs	—	—	.2	.2	—	.7	1.2	1.9	2.1
Miami	—	—	—	—	—	b	b	b	b
Monroe	—	—	—	—	—	1.2	—	1.2	1.2
Morgan	—	—	—	—	—	1.2	—	1.2	1.2
Muskingum	—	—	—	—	—	8.9	—	8.9	8.9
Noble	—	—	—	—	—	1.8	—	1.8	1.8
Perry	—	—	—	—	—	6.3	1.9	8.2	8.2
Pickaway	—	—	—	—	—	.6	.2	.8	.8
Pike	—	—	—	—	.9	11.1	15.7	27.7	27.7
Ross	—	—	—	—	.4	9.4	12.7	22.5	22.5
Scioto	—	—	b	b	—	6.9	11.1	18.0	18.0
Stark	—	—	—	—	—	.9	—	.9	.9
Trumbull	—	—	.6	.6	—	—	—	—	.6
Tuscarawas	—	—	—	—	—	2.3	—	2.3	2.3
Vinton	—	—	—	—	—	12.2	13.1	25.3	25.3
Warren	—	—	—	—	—	—	.1	.1	.1
Washington	—	—	—	—	—	3.9	—	3.9	3.9
Wayne	—	—	—	—	—	.4	—	.4	.4
Total	—	—	4.4	4.4	1.7	149.0	96.7	247.4	251.8

[a]Counties with no production are omitted.
[b]Less than 50 cords.

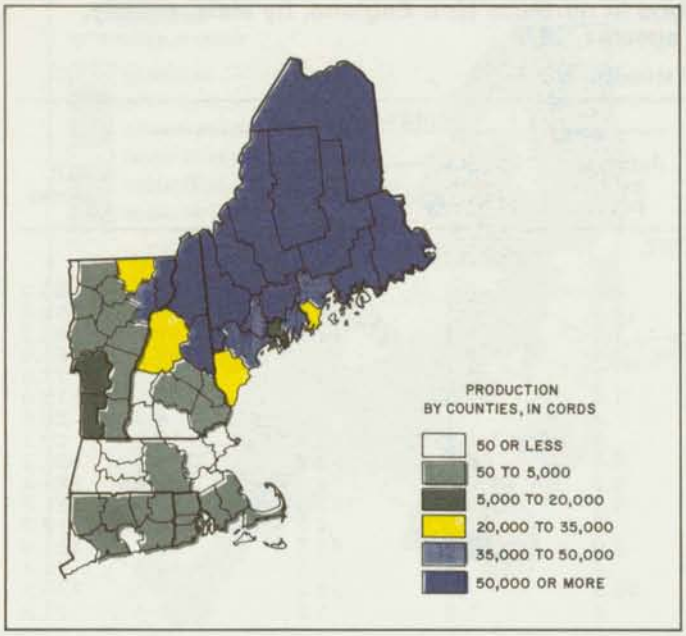


Figure 4.—Geographical pattern of pulpwood production from roundwood in the New England States, by county, 1978

Table 11.—Pulpwood production from roundwood in southern New England, by state, county, and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
CONNECTICUT									
Hartford	—	—	1.7	1.7	—	—	—	—	1.7
Litchfield	—	—	1.1	1.1	—	b	0.1	0.1	1.2
New Haven	—	—	1.0	1.0	—	—	—	—	1.0
New London	—	—	.1	.1	—	b	.1	.1	.2
Tolland	—	—	.1	.1	—	b	b	b	.1
Windham	—	—	.4	.4	—	0.2	.2	.4	.8
Total	—	—	4.4	4.4	—	0.2	0.4	0.6	5.0
MASSACHUSETTS									
Barnstable	—	—	0.3	0.3	—	—	—	—	0.3
Berkshire	b	—	—	b	—	—	—	—	b
Bristol	—	—	.7	.7	—	0.1	0.1	0.2	.9
Plymouth	—	—	2.8	2.8	—	.1	.2	.3	3.1
Worcester	—	—	.3	.3	—	—	—	—	.3
Total	b	—	4.1	4.1	—	0.2	0.3	0.5	4.6
RHODE ISLAND									
Kent	—	—	0.1	0.1	—	0.1	0.2	0.3	0.4
Providence	—	—	.2	.2	—	.1	.1	.2	.4
Washington	—	—	.1	.1	—	.1	b	.1	.2
Total	—	—	0.4	0.4	—	0.3	0.3	0.6	1.0

[a]Counties with no production are omitted
[b]Less than 50 cords.

Table 12.—Pulpwood production from roundwood in northern New England, by state, county, and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
MAINE									
Androscoggin	4.4	4.5	15.4	24.3	0.3	0.8	12.8	13.9	38.2
Aroostook	532.8	16.9	1.6	551.3	10.9	.5	88.6	100.0	651.3
Cumberland	3.0	6.5	18.0	27.5	1.6	3.3	14.8	19.7	47.2
Franklin	45.1	8.6	7.3	61.0	2.4	2.8	92.4	97.6	158.6
Hancock	40.0	3.6	2.0	45.6	.5	.1	26.6	27.2	72.8
Kennebec	18.6	25.3	28.5	72.4	1.4	1.0	37.2	39.6	112.0
Knox	6.2	5.0	7.4	18.6	.4	.4	7.2	8.0	26.6
Lincoln	7.7	9.0	19.8	36.5	.8	.7	11.1	12.6	49.1
Oxford	55.5	19.6	27.0	102.1	6.6	6.3	172.2	185.1	287.2
Penobscot	147.1	44.2	11.2	202.5	3.2	1.5	78.3	83.0	285.5
Piscataquis	401.0	31.3	10.5	442.8	3.1	2.3	133.6	139.0	581.8
Sagadahoc	2.9	1.9	9.4	14.2	.7	.3	4.0	5.0	19.2
Somerset	324.2	21.8	18.5	364.5	2.0	2.0	85.7	89.7	454.2
Waldo	19.0	6.4	6.7	32.1	.4	.5	12.4	13.3	45.4
Washington	112.0	24.8	8.6	145.4	25.9	.4	159.1	185.4	330.8
York	.7	2.6	14.3	17.6	.5	1.5	5.3	7.3	24.9
Total	1,720.2	232.0	206.0	2,158.4	60.7	24.4	941.3	1,026.4	3,184.8
NEW HAMPSHIRE									
Belknap	[b]	0.2	0.3	0.5	—	—	0.3	0.3	0.8
Carroll	24.9	7.2	8.4	40.5	0.8	0.1	33.6	34.5	75.0
Cheshire	—	—	—	—	—	—	[b]	[b]	[b]
Coos	68.6	2.6	2.5	73.7	11.1	2.5	128.9	142.5	216.2
Grafton	4.0	1.4	5.5	10.9	2.0	.6	16.9	16.9	27 8
Hillsborough	—	—	[b]	[b]	—	[b]	[b]	[b]	[b]
Merrimack	—	[b]	2.2	2.2	—	—	1.2	1.2	3.4
Rockingham	—	—	.3	.3	—	[b]	[b]	[b]	.3
Stratford	—	[b]	.5	.5	—	[b]	.2	.2	.7
Sullivan	—	—	—	—	—	[b]	[b]	[b]	[b]
Total	97.5	11.4	19.7	128.6	13.9	3.2	178.5	195.6	324.2
VERMONT									
Addison	0.3	0.1	[b]	0.4	—	0.1	1.1	1.2	1.6
Bennington	—	.2	0.2	.4	0.1	.4	5.0	5.5	5.9
Caledonia	20.1	1.3	2.2	23.6	1.2	.3	10.0	11.5	35.1
Chittenden	.4	—	.3	.7	—	—	[b]	[b]	.7
Essex	41.9	1.3	1.3	44.5	5.0	1.3	66.0	72.3	116.8
Franklin	.2	—	—	.2	—	—	—	—	.2
Lamoille	1.1	.1	.7	1.9	[b]	.1	.7	.8	2.7
Orange	.7	[b]	.2	.3	—	[b]	.1	.1	1.1
Orleans	15.2	1.4	.7	17.3	1.5	.4	11.3	13.2	30.5
Rutland	1.9	.1	1.4	3.4	.8	.3	3.4	4.5	7.9
Washington	.6	[b]	.1	.7	—	—	.1	.1	.8
Windham	—	.2	—	.2	[b]	.4	4.0	4.4	4.6
Windsor	.9	.5	.4	1.8	.9	.1	1.4	2.4	4.2
Total	83.3	5.3	7.4	96.0	9.6	3.5	103.0	116.1	212.1

[a] Counties with no production are omitted.
[b] Less than 50 cords.

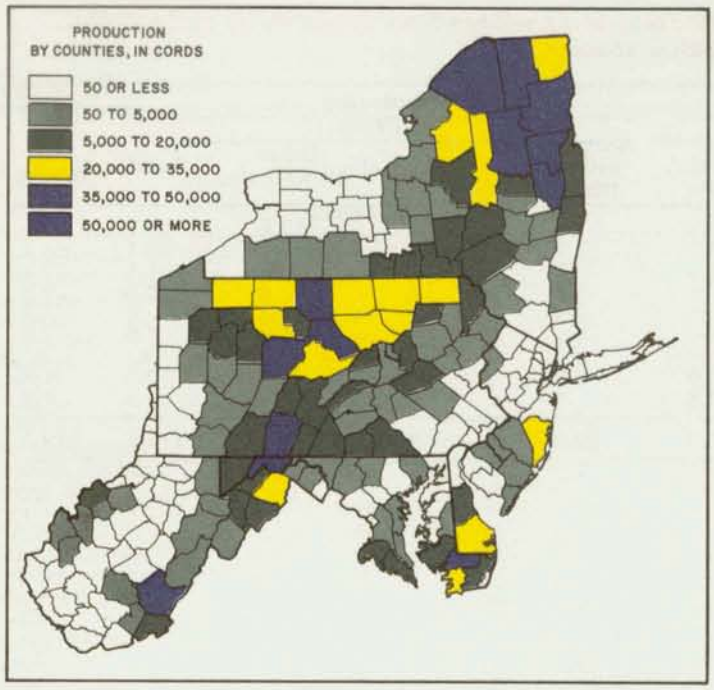


Figure 5.—Geographical pattern of pulpwood production from roundwood in the Middle Atlantic States, by county, 1978.

Table 13.—Pulpwood production from roundwood in New York, by county and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Albany	0.7	—	2.7	3.4	—	—	—	—	3.4
Allegheny	—	—	—	—	0.3	—	0.4	0.7	.7
Broome	—	—	.1	.1	1.8	5.4	8.9	15.8	15.9
Cattaraugus	—	—	.5	.5	—	1.4	.2	1.6	2.1
Cayuga	.1	—	—	.1	.1	—	—	.1	.2
Chemung	—	—	—	—	1.1	1.2	4.3	6.6	6.6
Chenango	3.7	—	b	3.7	.2	.4	2.6	3.2	6.9
Clinton	2.7	0.8	9.1	12.6	2.7	6.0	11.5	20.2	32.8
Cortland	1.0	—	—	1.0	.4	—	—	.4	1.4
Delaware	1.3	—	—	1.3	.3	.9	4.9	6.1	7.4
Dutchess	—	—	—	—	—	—	1.9	1.9	1.9
Essex	3.0	6.0	5.3	14.3	6.9	2.3	61.0	70.2	84.5
Franklin	12.5	.5	22.1	35.1	1.0	18.5	30.0	49.5	84.6
Fulton	.3	1.4	1.7	3.4	.3	b	8.1	8.4	11.8
Greene	—	.1	b	.1	—	—	.3	.3	.4
Hamilton	6.6	5.2	1.0	12.8	3.4	2.9	56.0	62.3	75.1
Herkimer	5.3	.5	1.9	7.7	.3	.6	12.5	13.4	21.1
Jefferson	.7	—	.5	1.2	1.4	b	.8	2.2	3.4
Lewis	8.9	—	3.6	12.5	3.8	b	17.4	21.2	33.7
Madison	.9	—	.1	1.0	b	—	—	b	1.0
Montgomery	.1	—	.3	.4	.1	b	.1	.2	.6
Oneida	1.3	.1	2.1	3.5	.1	.1	4.2	4.4	7.9
Onondaga	—	—	—	—	b	—	.2	.2	.2
Oswego	b	—	.8	.8	.2	—	.7	.9	1.7
Otsego	.2	—	4.6	4.8	2.9	.3	.7	3.9	8.7
Rensselaer	—	1.3	.2	1.5	.6	.3	10.5	11.4	12.9

Continued

Table 13—Continued

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
St. Lawrence	5.8	.2	14.8	20.8	.6	12.2	17.9	30.7	51.5
Saratoga	.3	7.2	7.8	15.3	4.1	.6	44.4	49.1	64.4
Schoharie	—	—	2.3	2.3	.2	.1	.8	1.1	3.4
Steuben	—	—	—	—	1.3	.5	.8	2.6	2.6
Sullivan	—	—	—	—	—	—	.3	.3	.3
Tioga	—	—	—	—	—	2.7	5.2	7.9	7.9
Ulster	—	—	—	—	—	—	b	b	b
Warren	—	9.9	4.4	14.0	5.0	.6	64.6	70.2	84.2
Washington	—	1.3	1.5	2.8	.4	.5	4.6	5.5	8.3
Total	55.4	34.5	87.3	177.2	39.5	57.2	375.8	472.5	649.7

[a]Counties with no production are omitted.

[b]Less than 50 cords.

Table 14.—Pulpwood production from roundwood in Pennsylvania, by county and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Adams	—	—	—	0.7	—	5.0	2.0	7.0	7.7
Armstrong	—	—	—	—	—	.1	.1	.2	.2
Bedford	—	—	4.4	4.4	—	12.4	22.2	34.6	39.0
Berks	—	—	—	—	—	.7	.4	1.1	1.1
Blair	—	—	.6	.6	7.1	2.7	6.1	8.8	9.4
Bradford	—	—	—	—	—	6.2	16.8	30.1	30.1
Bucks	—	—	—	—	—	—	b	b	b
Butler	—	—	—	—	—	.2	.3	.5	.5
Cambria	—	b	.8	.8	—	—	1.3	1.3	2.1
Cameron	—	—	—	—	—	6.4	6.7	13.1	13.1
Carbon	—	—	b	—	.2	1.0	1.3	2.5	2.5
Centre	—	1.1	.1	1.2	.6	18.9	4.6	24.1	25.3
Clarion	—	—	—	—	—	3.0	2.3	5.3	5.3
Clearfield	—	2.3	2.9	5.2	.8	19.8	14.6	35.2	40.4
Clinton	—	.5	1.8	2.3	3.2	30.5	10.2	43.9	46.2
Columbia	—	—	—	—	.6	2.4	3.1	6.1	6.1
Crawford	—	—	—	—	—	—	.5	.5	.5
Cumberland	—	—	.2	.2	—	1.0	.5	1.5	1.7
Dauphin	—	—	b	b	.1	.3	.4	.8	.8
Elk	—	—	—	—	—	6.9	22.0	28.9	28.9
Erie	—	—	b	b	—	—	2.1	2.1	2.1
Fayette	—	—	.5	.5	—	—	1.0	1.0	1.5
Forest	—	—	—	—	—	9.5	9.4	18.9	18.9
Franklin	—	—	.3	.3	—	6.7	3.5	10.2	10.5
Fulton	—	—	3.4	3.4	—	3.1	3.1	6.2	9.6
Huntingdon	—	—	2.6	2.6	.3	7.7	5.9	13.9	16.5
Indiana	—	—	.1	.1	—	—	.7	.7	.7
Jefferson	—	—	—	—	—	4.2	9.0	13.2	13.2
Juniata	—	—	.9	.9	—	3.2	1.6	4.8	5.7

Continued

Table 14—Continued

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Lackawanna	—	—	.2	.2	.4	1.5	2.2	4.1	4.3
Lancaster	—	—	—	—	—	—	b	b	b
Lebanon	—	—	—	—	b	.7	.4	1.1	1.1
Luzerne	—	—	b	b	.4	1.6	1.9	3.9	3.9
Lycoming	—	—	—	—	3.6	17.8	5.4	26.8	26.8
McKean	—	—	—	—	—	—	33.3	33.3	33.3
Mifflin	—	—	b	b	—	1.6	1.5	3.1	3.1
Monroe	—	—	.6	.6	b	1.5	.6	2.1	2.7
Montour	—	—	—	—	.2	.6	.8	1.6	1.6
Northampton	—	—	—	—	—	b	b	b	b
Northumberland	—	—	—	—	.1	.2	.3	.6	.6
Perry	—	—	.6	.6	b	1.3	.7	2 0	2.6
Pike	—	—	—	—	.3	3.1	.6	4.0	4.0
Potter	—	—	—	—	5.3	4.4	38.2	47.9	47.9
Schuylkill	—	—	.5	.5	.2	9.0	4.5	13.7	14.2
Snyder	—	—	b	b	—	.2	.1	.3	.3
Somerset	—	—	.1	.1	—	1.5	5.5	7.0	7.1
Sullivan	—	—	—	—	6.2	4.6	15.4	26.2	26.2
Susquehanna	—	—	—	—	4.1	5.4	23.9	33.4	33.4
Tioga	—	—	1.2	1.2	6.2	8.5	15.5	30.2	31.4
Union	—	—	.1	.1	.1	6.5	2.8	9.4	9.5
Venango	—	—	b	b	—	6.2	.5	6.7	6.7
Warren	—	—	—	—	—	14.2	16.0	30.6	30.6
Wayne	—	—	4.2	4.2	1.0	4.2	7.0	12.2	16.4
Westmoreland	—	—	—	—	—	—	.3	.3	.3
Wyoming	—	—	.1	.1	1.6	4.8	8.2	14.6	14.7
York	—	—	3.1	3.1	—	6.1	3.1	9.2	12.3
Total	—	3.9	30.0	33.9	42.6	257.8	340.4	640.8	674.7

[a] Counties with no production are omitted.
[b] Less than 50 cords.

Table 15.—Pulpwood production from roundwood in Delaware, Maryland, and New Jersey, by county and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
DELAWARE									
Kent	—	—	4.6	4.6	—	0.2	2.0	2.2	6.8
Sussex	—	—	23.2	23.2	—	3.6	3.7	7.3	30.5
Total	—	—	27.8	27.8	—	3.8	5.7	9.5	37.3
MARYLAND									
Allegany	—	0.3	3.1	3.4	—	15.2	22.1	37.3	40.7
Anne Arundel	—	—	.8	.8	—	—	2.9	2.9	3.7
Baltimore	—	—	—	—	—	—	b	b	b
Calvert	—	—	1.7	1.7	—	—	—	—	1.7
Caroline	—	—	.3	.3	—	b	b	b	0.3
Carroll	—	—	2.8	2.8	—	.3	1.3	1.6	4.4
Charles	—	—	9.2	9.2	—	.2	4.0	4.2	13.4
Dorchester	—	—	8.1	8.1	—	b	b	b	8.1
Frederick	—	—	—	—	—	.3	.2	.5	.5
Garrett	—	.5	.7	1.2	—	8.0	6.5	14.5	15.7
Harford	—	—	.1	.1	—	1.2	—	1.2	1.3
Montgomery	—	—	b	b	—	—	b	b	b
Prince Georges	—	—	2.6	2.6	—	—	—	—	2.6
St. Marys	—	—	10.9	10.9	—	2.3	.4	2.7	13.6
Somerset	—	—	21.2	21.2	—	.3	.1	.4	21.6
Talbot	—	—	b	b	—	—	—	—	b
Washington	—	—	.7	.7	—	.4	1.2	1.6	2.3
Wicomico	—	—	39.1	39.1	—	2.8	1.3	4.1	43.2
Worcester	—	—	12.8	12.8	—	b	.1	.1	12.9
Total	—	0.8	114.1	114.9	—	31.0	40.1	71.1	186.0
NEW JERSEY									
Atlantic	—	—	0.8	0.8	—	—	0.2	0.2	1.0
Burlington	—	—	1.9	1.9	—	—	—	—	1.9
Camden	—	—	1.8	1.8	—	—	—	—	1.8
Cape May	—	—	1.6	1.6	—	—	.4	.4	2.0
Gloucester	—	—	1.6	1.6	—	—	.5	.5	2.1
Ocean	—	—	20.1	20.1	—	—	—	—	20.1
Warren	—	—	—	—	b	0.1	.1	.2	.2
Total	—	—	27.8	27.8	b	0.1	1.2	1.3	29.1

[a]Counties with no production are omitted.
[b]Less than 50 cords.

Table 16.—Pulpwood production from roundwood in West Virginia, by county and selected species, 1978

(In thousands of standard cords)

County[a]	Softwood				Hardwood				All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods	Total	
Barbour	—	—	—	—	—	—	b	b	b
Berkeley	—	0.3	0.6	0.9	—	0.1	0.4	0.5	1.4
Boone	—	—	—	—	—	—	b	b	b
Braxton	—	—	—	—	—	—	b	b	b
Brooke	—	—	—	—	—	—	b	b	b
Cabell	—	—	.4	.4	—	—	b	b	b
Calhoun	—	—	b	b	—	—	—	—	—
Fayette	—	—	—	—	—	.8	.8	1.6	1.6
Grant	—	.2	1.2	1.4	—	4.0	14.1	18.1	19 5
Greenbrier	—	—	1.8	1.8	—	22.4	22.4	45.2	47.0
Hampshire	—	1.2	13.7	14.9	—	9.1	9.0	18.1	33.0
Hardy	—	.6	2.4	3.0	—	2.0	3.2	5.2	8.2
Harrison	—	—	b	b	—	—	b	b	b
Jackson	—	—	.5	.5	—	—	b	b	.5
Jefferson	—	—	b	b	—	—	b	b	b
Kanawha	—	—	b	b	—	—	—	—	b
Lewis	—	—	—	—	—	—	b	b	b
Lincoln	—	—	b	b	—	—	b	b	b
Mason	—	—	.4	.4	—	—	b	b	.4
Mineral	—	—	.7	.7	—	3.5	4.3	7.8	8.5
Mingo	—	—	—	—	—	—	b	b	b
Monroe	—	—	1.1	1.1	—	3.4	3.4	6.8	7.9
Morgan	—	.2	1.9	2.1	—	.2	.5	.7	2.8
Pendleton	—	—	.4	.4	—	1.0	1.5	2.5	2.9
Pleasants	—	—	—	—	—	—	b	b	b
Pocahontas	—	—	.4	.7	—	1.0	2.5	3.5	3.9
Preston	—	—	b	b	—	—	.7	.7	.7
Putnam	—	—	.7	.7	—	—	.2	.2	.9
Raleigh	—	—	b	b	—	b	b	b	b
Randolph	—	—	.5	.5	—	.6	1.4	2.0	2.5
Ritchie	—	—	.1	.1	—	—	b	b	.1
Roane	—	—	—	—	—	b	b	b	b
Summers	—	—	.1	.1	—	.1	.1	.2	.3
Taylor	—	—	—	—	—	—	b	b	b
Tucker	—	—	b	b	—	—	.7	.7	.7
Upshur	—	—	—	—	—	b	b	b	b
Wayne	—	—	b	b	—	—	b	b	b
Webster	—	—	b	b	—	—	—	—	b
Wirt	—	—	.1	.1	—	—	1.0	1.0	1.1
Wood	—	—	2.7	2.7	—	7.6	3.9	11.5	14.2
Total	—	2.5	29.5	32.2	—	55.8	70.5	126.3	158.5

[a]Counties with no production are omitted.
[b]Less than 50 cords.

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