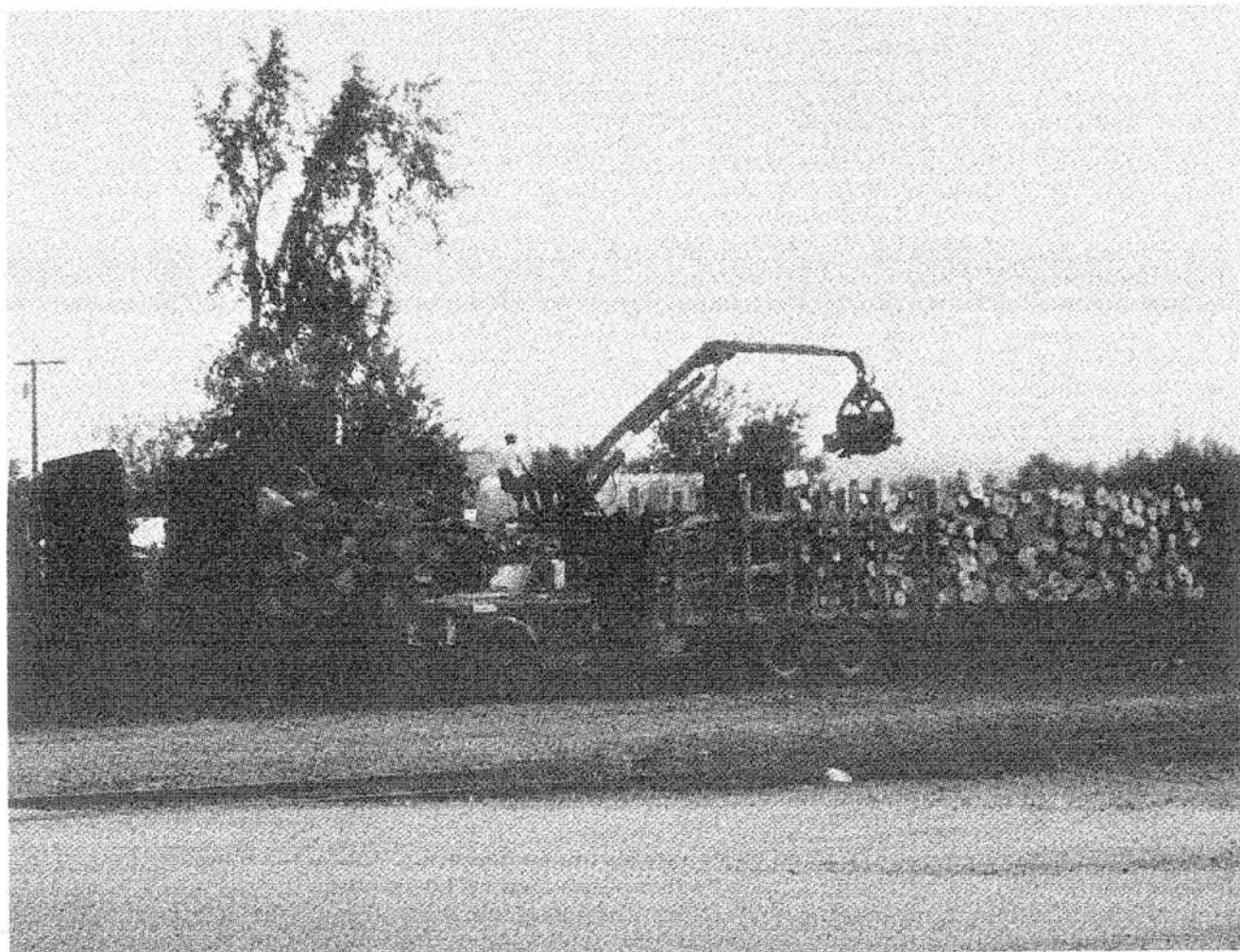


by Robert L. Nevel, Jr. and David R. Dickson

NORTHEASTERN PULPWOOD, 1977— AN ANNUAL ASSESSMENT OF REGIONAL TIMBER OUTPUT



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Cover Photo

Although rail operations like this one in South Central Maine are common throughout the Northeast, the proportion of roundwood pulpwood delivered by rail is declining. Despite increased production of both roundwood and wood chips and the cessation of stream-driving, the volume of roundwood shipments by rail have remained relatively constant over the last 5 years. Projection of these trends means more pulpwood will be delivered by truck.

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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 hard-board products. The report includes a discussion and tabular data on roundwood and chips from plant residues produced in and received by 14 northeastern states in 1977: pulpwood production by state, county, and species group; pulpwood receipts from roundwood by state and species group; pulpwood chip receipts by state and species group; and production of total-tree chips. From 1976 to 1977, pulpwood production increased by 10 percent; roundwood production rose by 4 percent; and chipped residue production jumped by 29 percent. Current record levels are discussed and trends in pulpwood production for the past 15 years are illustrated. A list of the woodpulp mills that received northeastern pulpwood during 1977 is included.

BACKGROUND

THIS ANNUAL REPORT is based on a canvass of all pulp mills in the Northeast that use roundwood or wood residue as a basic raw material for paper, insulation, and hard-board products. Cross-boundary shipments are traced by exchanging information with neighboring experiment stations that conduct similar canvasses.

The statistics for production from roundwood are based on mill receipts, which are subject to year-to-year fluctuations in wood inventory. Most plant residues are received at the pulpmill in chip form. 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 the residue was produced. Some of the logs from which the residue came were

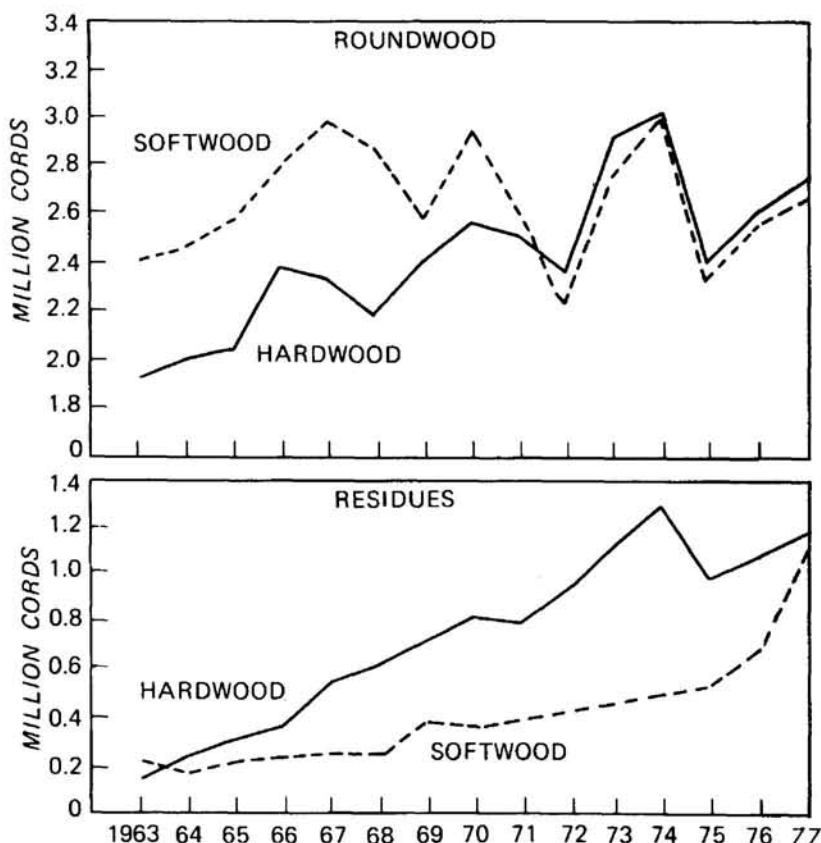
probably harvested in states other than the one in which they were processed.

PULPWOOD PRODUCTION CONTINUES TO RISE

During 1977, pulpwood production in 14 northeastern states (Connecticut, Delaware, Kentucky, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia) rose 10 percent above the previous year's total, from 6,946,900 cords to the 7,668,200 cords shown in Table 1. This increase was a continuation of the recovery that began in 1976 after the decline of 1975 (Fig. 1). Total production for 1977 was only slightly less than the record high 7,760,600 cords reported in 1974.

This was the result of increased production of hardwood and softwood roundwood and

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



chips from plant residues. As in 1976, softwood chip production from manufacturing residues increased more than the other components of total production; and the 59-percent rise was responsible for most of the increase in both total chip production and total pulpwood production. Chipped hardwood residue rose by 10 percent; and hardwood, softwood, and total roundwood production each increased by about 4 percent since 1976.

As in 1976, woodyard inventories declined during the first half of the year; pulpmills operated at relatively constant near-capacity rates; pulpwood consumption exceeded receipts; and year-end inventories were at their lowest levels in 3 years. High pulpwood consumption continued throughout the year and inventories rose somewhat during the last half of the year, although erratically, as receipts generally exceeded consumption.

For the sixth consecutive year, hardwood roundwood production was greater than softwood, but by only 93,200 cords. Each accounted for about 35 percent of the total pulpwood production. For the first time in over 10 years, chipped residue production was divided almost equally between hardwood and softwood. Total production of chips from plant residue increased 518,100 cords and softwood residue increased 408,900 cords over 1976 production. In 1977, softwood chip production was only 85,000 cords less than that from hardwood residue. Since both roundwood and chip production were about equally divided between hardwoods and softwoods, so was total production. Hardwoods accounted for 51 percent of all pulpwood produced in 1977, down by 2 percent from 1976.

Thus, while production of pulpwood rose by 10 percent, receipts of pulpwood at wood-pulp mills in the Northeast totaled 8,417,800 cords in 1977, up by 12 percent over the previous year. Despite these increases, the pulpwood receipts were 44,900 cords less than the record high reported in 1974. The 1977 receipts include wood harvested in the Northeast and pulpwood imported from other regions. For the first time since 1970, softwood receipts exceeded hardwood. Softwood receipts increased by 19 percent over 1976 to exceed those for hardwoods by 119,000 cords.

Total receipts exceeded total production by 749,600 cords (Table 2).

Six of the 14 northeastern 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 of their production was shipped to other states. Vermont and Connecticut each had one operating pulpmill. Pulpwood production decreased in only four of the northeastern states:

Delaware	- 14%
Kentucky	- 10%
Pennsylvania	- 5%
West Virginia	- 5%

Although slight, this was the fourth straight decline in production for West Virginia. After a slight decline in 1976, production in New Hampshire increased by 52 percent to a record high the following year. Production also increased significantly (36 percent) in Vermont for a record high in this state also, but remained constant in Rhode Island. Total pulpwood receipts increased in all but two states, Rhode Island and Vermont, where the decrease was less than 10 percent. Receipts increased by more than 10 percent in only three states:

Maine	+ 11%
New Hampshire	+ 82%
Ohio	+ 20%

The increase in receipts for New Hampshire was brought about by increases in both softwood and hardwood pulpwood shipped into the state. Softwood receipts almost tripled from 56,800 to 155,300 cords, while hardwood rose to 402,800 cords, 62 percent over 1976. About half of the softwood receipts were from plant residue; almost all of the hardwood receipts were roundwood.

In recent years, there has been a decrease in the use of Canadian softwood and an increase in the use of pulpwood from areas outside the Northeast. In 1977, 1,104,900 cords of pulpwood came into the Northeast, an increase of 87,700 cords, or about 10 percent over 1976. This volume represents 12 percent of the region's total receipts for each of these 2 years. Only 31 percent of the pulpwood

shipped into the Northeast came from Canada; 49 percent came from southern states; and 20 percent came from the north-central states:

<i>Region</i>	<i>Round-wood</i>	<i>Residues</i>	<i>All pulpwood</i>
Canada	36%	26%	31%
Southern U.S.	55%	42%	49%
North-Central U.S.	9%	32%	20%

For the first time, southern roundwood made up over half of the roundwood imported into the Northeast; up from 44 percent in 1976. The volume of softwood imports increased and the volume of hardwood decreased. The proportion of softwood roundwood to hardwood roundwood imports almost doubled to 3.4 to 1. Although the volume of hardwood chip imports in 1977 still exceeded that for softwoods, the ratio decreased slightly to 1.5:1 as more softwood chipped residue was imported into the region.

PRODUCTION FROM ROUNDWOOD UP BY 4 PERCENT

The production of pulpwood from roundwood increased only 203,200 cords—or 4 percent—from 1976. The 5,377,000 cords of roundwood produced in 1977 represents a continuance of the incremental climb that began in 1972 and was interrupted by the economic slowdown in 1975. Annual roundwood production has exceeded 5 million cords for the ninth time beginning in 1966.

From 1976 to 1977, pulpwood production from roundwood increased in 8 of the 14 states. Roundwood production rose by more than 25 percent to record levels in New Hampshire (+87 percent or 350,400 cords) and in Vermont (+28 percent or 219,400 cords). These large increases in roundwood production account for most of the increase in total pulpwood production for these states.

Roundwood production was essentially unchanged for Maine, where just over one-half of all the northeast's roundwood was harvested. Pulpwood production from roundwood was down from 1976 in four states:

Delaware	-19%
Kentucky	-10%
Pennsylvania	-9%
West Virginia	-13%

In West Virginia the decline in roundwood production has continued since 1975, with a record low of 185,900 cords produced for the state.

NINETEEN COUNTIES TOP 50-THOUSAND-CORD MARK

More than 50,000 cords of roundwood pulpwood were produced in each of 19 counties in 6 states in 1977, 1 county less than for 1976. Almost 3.5 million cords of roundwood were harvested from these counties, representing 65 percent of the total roundwood production for the Northeast.

For the first time since 1973, production did not exceed 50,000 cords in any county in West Virginia as a result of the continued decline in the state's harvest. Production in one county in Ohio exceeded 50,000 cords for the first time. Production in New Hampshire exceeded 50,000 cords in two counties for the first time, which was about one and a half times the production for the entire state the preceding year. New York was also represented by an additional county, for a total of six. Bedford County, Pennsylvania, was added to the list, while Lycoming was dropped. Maine continued to dominate the high-producer list with eight counties, three less than in 1976. For the first time, production in Oxford County, Maine, was greater than in Penobscot County, where the annual harvest has decreased since 1974. Counties that produced more than 50,000 cords of roundwood pulpwood in 1977 and their production totals are:

County	Production (thousand cords)		1976 (thousand cords)	1977 (thousand cords)	Change (percent)
Aroostook Co., Maine	626.1	New Jersey	0.6	0	- 100
Piscataquis Co., Maine	493.6	New York	11.6	18.4	+ 59
Somerset Co., Maine	439.9	Ohio	147.6	132.4	- 10
Washington Co., Maine	287.6	Pennsylvania	35.1	6.6	- 81
Oxford Co., Maine	255.5	Vermont	30.8	34.9	+ 13
Penobscot Co., Maine	231.0	West Virginia	23.5	9.0	- 62
Coos Co., New Hampshire	217.1	Total	472.4	450.4	- 5
Franklin Co., Maine	142.3				
Essex Co., Vermont	115.8				
Essex Co., New York	93.5				
Carroll Co., New Hampshire	84.4				
Franklin Co., New York	71.6				
Saratoga Co., New York	67.7				
Hamilton Co., New York	66.1				
Kennebec Co., Maine	63.5				
Warren Co., New York	59.7				
St. Lawrence Co., New York	56.6				
Vinton Co., Ohio	56.5				
Bedford Co., Pennsylvania	50.3				

^aNo output in 1976.

^bGreater than 100 percent change.

^cIncludes all forms of brown, unbarked chips, such as hole- and tree-length material.

TOTAL-TREE UTILIZATION

Harvesting and chipping the entire above-ground portion of the tree continue to be acceptable practices in portions of the Northeast. This system, which utilizes unbarked bolewood and topwood and leaves, produces brown chips. As the costs of labor and pulpwood continue to rise, the system is an attractive alternative to conventional methods where the use of brown chips is acceptable. Most total- or whole-tree chips produced in the region are used to produce kraft pulp from hardwoods.

The output of total-tree chips declined in the Northeast from 1976 to 1977:

	1976 (thousand cords)	1977 (thousand cords)	Change (percent)
Kentucky	0	3.2	^a
Maine	179.3	142.5 ^c	- 21
Maryland	8.3	5.7	- 31
New Hampshire	35.6	97.8	^b

In 1977, the total-tree chip output decreased by 5 percent from 1976 after doubling between 1974 and 1976, which indicates that output may have leveled off. Since 1976, output increased in three states and decreased in six. Nine of the 10 states listed produced total-tree chips in 1977—the same number as in 1976. Kentucky was added to the list and New Jersey showed no output for 1977. In Ohio and Maine, where the use of total-tree chips for woodpulp was pioneered, production decreased. Although the output for Ohio decreased by 10 percent in 1977, the 132,400 cords comprised almost half of the total roundwood production and almost one-third of the total pulpwood production in Ohio—more than that for any other state. In Maine 142,500 cords were produced, but this represents only 5 percent of the total roundwood harvest for that State. Production from total-tree chips exceeded 5 percent of the total roundwood in Vermont and New Hampshire. Production of 34,900 cords in Vermont accounted for 16 percent of the total roundwood harvest for the state. In New Hampshire, production increased almost threefold within a year to 97,800 cords, which accounted for 28 percent of the State's total roundwood harvest in 1977.

ROUNDWOOD HARVEST RELATED TO GROWING-STOCK INVENTORY

While Figures 3, 4, and 5 show the total roundwood harvest by production class and county in the Northeast, they do not relate the volume harvested to the growing-stock volume. Growing-stock volume is the net volume in cubic feet of sound live trees of commercial species 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. To determine harvesting intensity, growing-stock volumes were taken from the 1977 Forest Statistics of the United States.

Harvesting intensities for softwoods and hardwoods in thousand cubic feet of growing stock present for each cord of pulpwood harvested in 1977 were:

Softwoods

Delaware	5.4
Maryland	6.6
Maine	8.3
New Jersey	10.0

Average	12.3
---------	------

New York	17.9
Vermont	19.5
West Virginia	28.5
Ohio	30.6
New Hampshire	34.7
Pennsylvania	63.9
Connecticut	92.4
Kentucky	115.9
Rhode Island	134.9
Massachusetts	159.9

Hardwoods

Maine	7.8
New Hampshire	15.1
Ohio	16.2
New York	23.0
Vermont	25.2

Average	30.8
---------	------

Pennsylvania	41.9
Maryland	46.3
West Virginia	88.5
Delaware	120.0
Rhode Island	160.0
Kentucky	201.3
New Jersey	1,282.1
Connecticut	1,316.1
Massachusetts	1,636.2

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. 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.

On the average, in 1977 there were 12,300 cubic feet of softwood growing stock and 30,800 cubic feet of hardwood growing stock for each cord of pulpwood harvested in the Northeast. 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, New Hampshire, Ohio, New York, and Vermont. Harvesting intensity was relatively low in the urbanized states and in those states that had no pulpmill or that had a single mill operating.

WOOD CHIP PRODUCTION ROSE BY 29 PERCENT TO RECORD HIGH

During 1977, the production of wood chips and sawdust from plant residues for use as pulpwood rose by 29 percent, from 1,733,100 to a record-high 2,291,200 cord equivalents. This increase resulted from the continuation of the upturn in primary wood manufacturing that began in late 1975, and from the increased demand for residues for pulp chips throughout the Northeast.

Chip production in 1977 constituted 30 percent of the total pulpwood production, up by 4 points from 1976. Hardwood chip production increased by 9 percent, but the 59-percent rise in chipped softwood residues was responsible for most of the increase in total chip production. The production of 1,103,100 cords of pulpwood chips from softwood residues was the largest ever recorded.

Since 1976, pulpwood chip production increased in 10 of the 14 northeastern states and decreased in 3:

	1976 (thousand cord equivalents)	1977 (thousand cord equivalents)	Change (percent)
Connecticut	2.4	3.5	+46
Delaware	12.6	13.2	+ 5
Kentucky	238.0	215.5	-10
Maine	484.1	900.0	+86
Maryland	108.3	106.1	- 2
Massachusetts	32.1	34.1	+ 6
New Hampshire	140.1	147.7	+ 5
New Jersey	7.5	5.4	-28
New York	156.5	158.9	+ 2
Ohio	112.7	175.6	+56
Pennsylvania	284.3	299.5	+ 5
Rhode Island	^a	^a	^b
Vermont	44.6	73.6	+65
West Virginia	149.9	158.1	+ 5
Total	1,773.1	2,291.2	+29

^aLess than 50 cord equivalents.

^bLess than 0.5 percent change.

New records were set again in Maine where chip production of 900,000 cords represents an absolute volume gain of 415,900 cords and an 86 percent gain. The total chip production and the volume gain were all-time highs for both Maine and the region as well. All-time highs in production of chips were also recorded in Connecticut, Delaware, Massachusetts, New Hampshire, Ohio, and Vermont.

APPENDIX

Definition of terms

Commercial species. Tree species suitable for industrial wood products at present or in the future.

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 residues. Wood materials, such as sawmill slabs and edgings, sawdust, veneer clippings and cores, post and pole trimming, and pulp screening generated from 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 with needles or scalelike leaves.

Standard cord. A unit of measure for stacked bolts of wood, encompassing 128 cubic feet of wood, bark, and air space. In the Northeast,

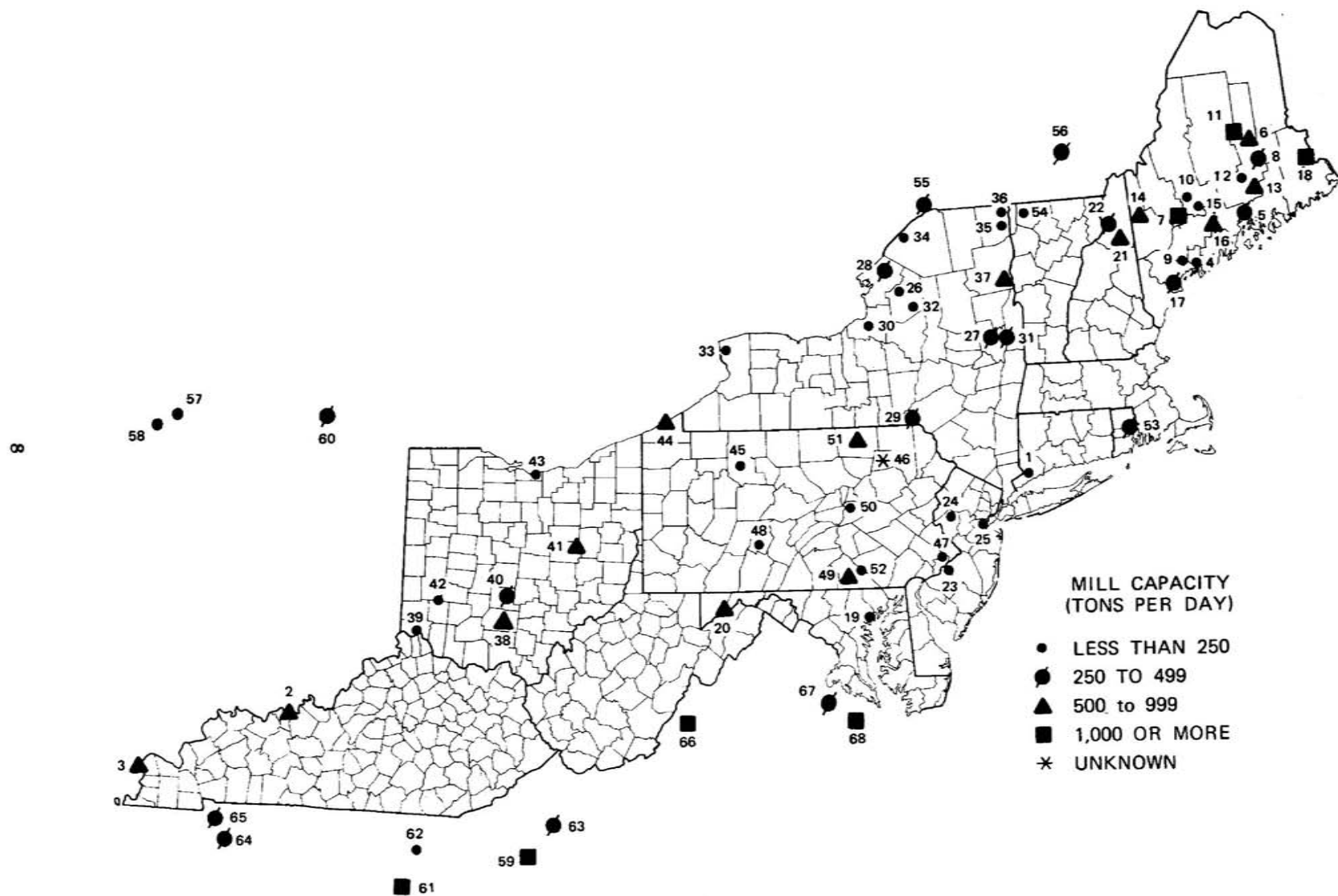
the measure refers to a stack of wood containing 85 cubic feet, or 2.41 cubic meters, of solid wood.

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 1977.



**Woodpulp mills using northeastern pulpwood by location, type of pulp produced,
and oven-dry capacity in tons per 24 hours, 1977**

Location	Company name	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 ^b	620	320	—	300	—	—
3. Wickliffe	Westvaco Corp.	600	600	—	—	—	—
Total (3 mills)		1,220	920	—	300	—	—
Maine							
4. Brunswick	Pejepscot Paper Co.	150	—	150	—	—	—
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	Myllykoski O.P.	140	—	140	—	—	—
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)		8,440	4,580	3,110	—	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 name	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.	650	—	—	650	—	—
42. Franklin	Bird & Son, Inc.	80	—	—	—	—	80
43. Milan	Certain-Teed Corp.	90	—	—	—	—	90
Total (6 mills)		1,820	600	—	950	—	270
Pennsylvania							
44. Erie	Hammermill Paper Co.	700	—	—	700	—	—
45. Johnsonburg	Penntech Papers, Inc.	190	190	—	—	—	—
46. Mehoopany	Proctor & Gamble Co.	c	—	—	—	c	—
47. Philadelphia	Jim Walter Corp.	160	—	—	—	—	160
48. Roaring Spring	Appleton Papers, Inc.	180	180	—	—	—	—
49. Spring Grove	The P. H. Glatfelter Co.	525	525	—	—	—	—
50. Sunbury	Jim Walter Corp.	240	—	—	240	—	—
51. Towanda	Masonite Corp.	500	—	—	—	—	500
52. York	Certain-Teed Products Corp.	50	—	—	—	—	50
Total (9 mills)		2,545	895	—	940	c	710
Rhode Island							
53. Phillipsdale	Bird and Son, Inc.	275	—	—	—	—	275
Total (1 mill)		275	—	—	—	—	275

Vermont							
54.	Sheldon Springs	Saxon Industries	50	—	50	—	—
Total (1 mill)			50	—	50	—	—
All northeast states (62 mills)			19,007	9,009	4,030	2,860	820
							2,288
OUTSIDE THE NORTHEAST							
Canada							
55.	Cornwall	Domtar Woodlands, Ltd.	400	400	—	—	—
56.	Windsor	Domtar Woodlands, Ltd.	480	480	—	—	—
Total (2 mills)			880	880	—	—	—
Illinois							
57.	Chicago	Bird and Son, Inc.	40	—	40	—	—
58.	Joliet	GAF Corp.	100	—	100	—	—
Total (2 mills)			140	—	140	—	—
North Carolina							
59.	Canton	Champion International Corp.	1,385	1,385	—	—	—
Total (1 mill)			1,385	1,385	—	—	—
Michigan							
60.	Otsego	The Menasha Corp.	250	—	—	250	—
Total (1 mill)			250	—	—	250	—
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	525
Virginia							
66.	Covington	Westvaco Corp. ^b	1,260	1,100	—	160	—
67.	Doswell	Weyerhaeuser Corp.	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			8,275	5,065	1,365	1,050	270
Total all states			27,282	14,074	5,395	3,910	1,090
							2,813

^aRoofing, insulation board, and hardboard plants.

^bMore than one pulpmill operating.

^cCapacity unknown.

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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, 1977
(In thousands of standard cords)^a

State	Source		
	Round-wood	Plant residues	All sources
Connecticut	6.3	3.5	9.8
Delaware	35.2	13.2	48.4
Kentucky	62.8	215.5	278.3
Maine	2,810.2	900.0	3,710.2
Maryland	179.2	106.1	285.3
Massachusetts	10.5	34.1	44.6
New Hampshire	350.4	147.7	498.1
New Jersey	26.2	5.4	31.6
New York	634.2	158.9	793.1
Ohio	286.7	175.6	462.3
Pennsylvania	567.3	299.5	866.8
Rhode Island	2.7	b	2.7
Vermont	219.4	73.6	283.0
West Virginia	185.9	158.1	344.0
All states	5,377.0	2,291.2	7,668.2

^aRough wood basis, equivalent to 85 ft³ solid wood.

^bLess than 50 cord equivalents.

Table 2.—Total production and receipts of pulpwood in the Northeast, by state and softwood and hardwood, 1977
(In thousands of standard cords)

State	Production		Receipts		Production surplus (+) or deficit (-)
	Softwood	Hardwood	Softwood	Hardwood	
Connecticut	6.7	3.1	(D)	(D)	+ (D)
Delaware	38.0	10.4	—	—	+ 48.4
Kentucky	15.5	262.8	220.5	461.3	- 403.5
Maine	2,753.6	956.6	3,073.4	997.1	- 360.3
Maryland	180.9	104.4	154.9	284.9	- 154.5
Massachusetts	28.5	16.1	—	—	+ 44.6
New Hampshire	219.3	278.8	155.3	402.8	- 60.0
New Jersey	28.9	2.7	39.8	10.4	- 18.6
New York	253.6	539.5	329.7	459.6	+ 3.8
Ohio	7.1	455.2	29.3	568.3	- 135.3
Pennsylvania	43.1	823.7	234.1	959.2	- 326.5
Rhode Island	.8	1.9	(D)	(D)	- (D)
Vermont	124.8	168.2	(D)	(D)	+ (D)
West Virginia	44.2	299.8	—	—	+ 344.0
All states	3,745.0	3,923.2	4,268.4	4,149.4	- 749.6

(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, 1977
(In thousands of standard cords)

State	Softwood				Hardwood				Total production
	Cut and retained in state	Shipped to other states		Total Softwood	Cut and retained in state	Shipped to other states		Total hardwood	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	3.5	1.1	—	4.6	—	1.7	—	1.7	6.3
Delaware	—	12.8	18.6	31.4	—	3.8	—	3.8	35.2
Kentucky	—	—	7.9	7.9	25.0	21.1	8.8	54.9	62.8
Maine	1,945.1	27.7	—	1,972.8	766.8	70.6	—	837.4	2,810.2
Maryland	25.6	40.2	55.1	120.9	50.6	7.7	—	58.3	179.2
Massachusetts	—	9.0	—	9.0	—	1.5	—	1.5	10.5
New Hampshire	36.8	64.8	—	101.6	196.5	52.3	—	248.8	350.4
New Jersey	25.2	—	—	25.2	1.0	—	—	1.0	26.2
New York	194.6	7.2	—	201.8	319.3	20.3	92.8	432.4	634.2
Ohio	—	5.0	—	5.0	281.7	—	—	281.7	286.7
Pennsylvania	18.2	10.7	—	28.9	495.5	42.9	—	538.4	567.3
Rhode Island	.8	—	—	.8	1.9	—	—	1.9	2.7
Vermont	18.1	75.6	—	93.7	—	125.7	—	125.7	219.4
West Virginia	—	35.8	2.5	38.3	—	99.7	47.9	147.6	185.9
Total	2,267.9	289.9	84.1	2,641.9	2,138.3	447.3	149.5	2,735.1	5,377.0

Table 4.—Pulpwood chip production from manufacturing residues in the Northeast, by state, softwood and hardwood, and destination of shipments, 1977^a
(In thousands of standard-cord equivalents)

State	Softwood				Hardwood				Total production
	Cut and retained in state	Shipped to other states		Total Softwood	Cut and retained in state	Shipped to other states		Total hardwood	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	—	2.1	—	2.1	—	1.4	—	1.4	3.5
Delaware	—	6.6	—	6.6	—	6.6	—	6.6	13.2
Kentucky	—	6.2	1.4	7.6	145.5	32.9	29.5	207.9	215.5
Maine	779.9	.9	—	780.8	112.0	7.2	—	119.2	900.0
Maryland	6.9	53.1	—	60.0	12.8	33.3	—	46.1	106.1
Massachusetts	—	19.5	—	19.5	—	14.6	—	14.6	34.1
New Hampshire	59.6	58.1	—	117.7	19.3	10.7	—	30.0	147.7
New Jersey	—	3.7	—	3.7	—	1.7	—	1.7	5.4
New York	28.2	23.6	—	51.8	48.0	59.0	.1	107.1	158.9
Ohio	1.0	.4	.7	2.1	173.2	.3	—	173.5	175.6
Pennsylvania	12.3	1.9	—	14.2	238.4	46.9	—	285.3	299.5
Rhode Island	—	—	—	—	—	b	—	b	b
Vermont	—	31.1	b	31.1	—	42.5	—	42.5	73.6
West Virginia	—	5.9	—	5.9	—	152.2	—	152.2	158.1
All states	887.9	213.1	2.1	1,103.1	749.2		29.6	1,188.1	2,291.2

^aIncludes sawmill slabs and edgings, sawdust, veneer cords, and post and pole trimmings.

^bLess than 50 cords.

Table 5.—Pulpwood receipts from roundwood in the Northeast, by state and softwood and hardwood, 1977
(In thousands of standard cords)

State ^a	Softwood				Hardwood				Total receipts
	Cut and retained in state	Receipts from other states		Total Softwood	Cut and retained in state	Receipts from other states		Total hardwood	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	3.5	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Kentucky	—	—	168.2	168.2	25.0	—	60.1	85.1	253.3
Maine	1,945.1	45.0	144.4	2,134.5	766.8	52.8	49.9	869.5	3,004.0
Maryland	25.6	45.7	47.9	119.2	50.6	126.3	5.4	182.3	301.5
New Hampshire	36.8	46.2	b	83.0	196.5	166.6	2.5	365.6	448.6
New Jersey	25.2	3.0	—	28.2	1.0	.5	—	1.5	29.7
New York	194.6	77.8	.3	272.7	319.3	30.8	—	350.1	622.8
Ohio	—	—	—	—	281.7	32.4	4.0	318.1	318.1
Pennsylvania	18.2	63.2	60.9	142.3	495.5	34.0	1.8	531.3	673.6
Rhode Island	.8	(D)	(D)	(D)	1.9	(D)	(D)	(D)	(D)
Vermont	18.1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
All states	2,267.9	289.9	421.7	2,979.5	2,138.3	447.3	123.7	2,709.3	5,688.8

^aStates with no pulp mills are omitted.

^bLess than 50 cord equivalents.

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

Table 6.—Pulpwood chip receipts from plant residues in the Northeast, by state and softwood and hardwood, 1977^a
(In thousands of standard-cord equivalents)

State ^b	Softwood				Hardwood				Total receipts
	Cut and retained in state	Receipts from other states		Total Softwood	Cut and retained in state	Receipts from other states		Total hardwood	
		In Northeast	Outside Northeast			In Northeast	Outside Northeast		
Connecticut	—	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
Kentucky	—	—	52.3	52.3	145.5	—	230.7	376.2	428.5
Maine	779.9	64.9	94.1	938.9	112.0	10.6	5.0	127.6	1,066.5
Maryland	6.9	3.4	25.4	35.7	12.8	82.1	7.7	102.6	138.3
New Hampshire	59.6	9.0	3.7	72.3	19.3	16.1	1.8	37.2	109.5
New Jersey	—	11.6	—	11.6	—	8.9	—	8.9	20.5
New York	28.2	28.8	—	57.0	48.0	45.9	15.6	109.5	166.5
Ohio	1.0	21.7	6.6	29.3	173.2	73.4	3.6	250.2	279.5
Pennsylvania	12.3	73.7	5.8	91.8	238.4	172.3	17.2	427.9	519.7
Rhode Island	—	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
Vermont	—	(D)	(D)	(D)	—	(D)	(D)	(D)	(D)
All states	887.9	213.1	187.9	1,288.9	749.2	409.3	281.6	1,440.1	2,729.0

^aIncludes sawmill slabs and edgings, sawdust, veneer cords, and post and pole trimmings.

^bStates with no pulp mills are omitted.

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

Table 7.—Pulpwood from roundwood received from states outside the Northeast, by state (or province) of origin and softwood and hardwood, 1977
(In thousands of standard cords)

Receiving state ^a	State or province of origin	Total softwood	Total hardwood	All species
Kentucky	Illinois	6.1	11.4	17.5
	Indiana	—	18.4	18.4
	Mississippi	149.5	10.1	159.6
	Missouri	—	7.6	7.6
	Tennessee	12.6	12.6	25.2
Maine	New Brunswick	144.4	49.9	194.3
Maryland	Virginia	47.9	5.4	53.3
New Hampshire	Quebec	b	2.5	2.5
New York	Ontario	.3	—	.3
Ohio	Indiana	—	4.0	4.0
Pennsylvania	Virginia	60.9	1.8	62.7
All states		421.7	123.7	545.4

^aStates with no extraregional receipts are omitted.

^bLess than 50 cord equivalents.

Table 8.—Pulpwood chip receipts from wood-using plants outside the Northeast, by state (or province) of origin and softwood and hardwood, 1977^a
(In thousands of standard-cord equivalents)

Receiving state ^b	State or province of origin	Total softwood	Total hardwood	All species
Kentucky	Alabama	—	5.8	5.8
	Arkansas	—	5.7	5.7
	Illinois	1.9	32.6	34.5
	Indiana	—	55.6	55.6
	Mississippi	47.2	18.1	65.3
	Missouri	3.2	56.0	59.2
	Tennessee	—	56.9	56.9
Maine	New Brunswick	29.6	4.7	34.3
	Quebec	64.5	.3	64.8
Maryland	Virginia	25.4	7.7	33.1
New Hampshire	Quebec	3.7	1.8	5.5
New York	Ontario	—	13.8	13.8
	Quebec	—	1.8	1.8
Ohio	Indiana	—	2.9	2.9
	South Carolina	.3	—	.3
	Texas	.2	—	.2
	Virginia	6.1	.7	6.8
Pennsylvania	Virginia	5.8	17.2	23.0
All states		187.9	281.6	469.5

^aIncludes sawmill slabs and edgings, sawdust, veneer cores, and post and pole trimmings.

^bStates with no extraregional receipts are omitted.

Table 9.—Pulpwood production from roundwood in the Northeast, by state and selected species, 1977
(In thousands of standard cords)

State	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
Connecticut	—	—	4.6	4.6	—	0.8	0.9	1.7	6.3
Delaware	—	—	31.4	31.4	—	1.9	1.9	3.8	35.2
Kentucky	—	—	7.9	7.9	2.8	44.9	7.2	54.9	62.8
Maine	1,588.3	204.0	180.5	1,972.8	92.2	16.2	729.0	837.4	2,810.2
Maryland	—	.8	120.1	120.9	—	34.4	23.9	58.3	179.2
Massachusetts	1.2	—	7.8	9.0	—	.7	.8	1.5	10.5
New Hampshire	54.6	11.0	36.0	101.6	17.4	15.5	215.9	248.8	350.4
New Jersey	—	—	25.2	25.2	—	a	1.0	1.0	26.2
New York	68.3	57.8	75.7	201.8	62.9	67.0	302.5	432.4	634.2
Ohio	—	—	5.0	5.0	—	206.9	74.8	281.7	286.7
Pennsylvania	—	5.2	23.7	28.9	41.4	209.1	287.9	538.4	567.3
Rhode Island	—	—	.8	.8	—	.9	1.0	1.9	2.7
Vermont	76.4	8.2	9.1	93.7	9.2	2.8	113.7	125.7	219.4
West Virginia	.2	1.7	36.4	38.3	—	58.2	89.4	147.6	185.9
All states	1,789.0	288.7	564.2	2,641.9	225.9	659.3	1,849.9	2,735.1	5,377.0

^aLess than 50 cords.

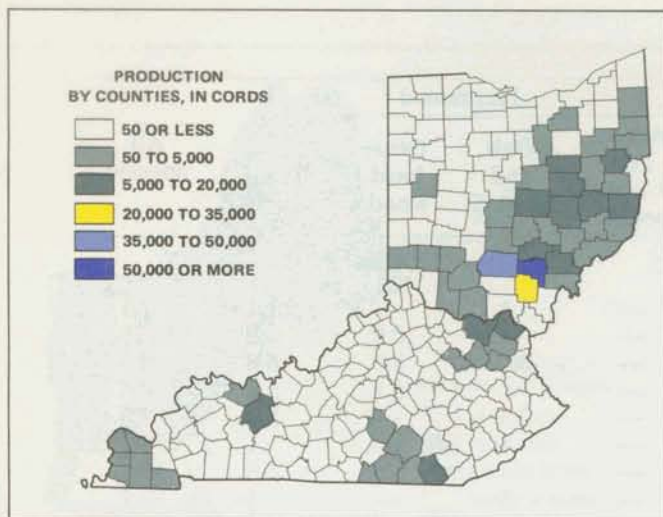


Figure 3.—Geographical pattern of pulpwood production from roundwood in Kentucky and Ohio, by county, 1977.

Table 10.—Pulpwood production from roundwood in Kentucky and Ohio, by state, county, and selected species, 1977
(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	
KENTUCKY									
Ballard	—	—	—	—	0.9	1.9	1.4	4.2	4.2
Bath	—	—	—	—	—	.4	—	.4	.4
Calloway	—	—	—	—	.1	.3	.3	.7	.7
Carlisle	—	—	—	—	.6	1.4	1.1	3.1	3.1
Carter	—	—	—	—	—	1.6	—	1.6	1.6
Casey	—	—	—	—	—	2.3	b	2.3	2.3
Clinton	—	—	—	—	—	1.5	.4	1.9	1.9
Daviess	—	—	—	—	—	.5	—	.5	.5
Elliott	—	—	—	—	—	.4	—	.4	.4
Graves	—	—	—	—	.6	1.7	1.4	3.7	3.7
Greenup	—	—	—	—	—	12.7	—	12.7	12.7
Harlan	—	—	—	—	—	—	b	b	b
Hickman	—	—	—	—	.2	.5	.4	1.1	1.1
Lewis	—	—	—	—	—	5.0	—	5.0	5.0
McCracken	—	—	—	—	.4	.9	.7	2.0	2.0
McCreary	—	—	2.8	2.8	—	.8	.5	1.3	4.1
Ohio	—	—	—	—	—	8.5	—	8.5	8.5
Pulaski	—	—	—	—	—	.1	b	.1	.1
Rowan	—	—	—	—	—	1.1	—	1.1	1.1
Wayne	—	—	.2	.2	—	.8	.2	1.0	1.2
Whitley	—	—	4.9	4.9	—	2.5	.8	3.3	8.2
Total	—	—	7.9	7.9	2.8	44.9	7.2	54.9	62.8

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	
OHIO									
Adams	—	—	—	—	—	1.1	—	1.1	1.1
Ashland	—	—	—	—	—	—	0.2	.2	.2
Athens	—	—	0.3	0.3	—	3.6	3.0	6.6	6.9
Belmont	—	—	b	b	—	—	5.4	5.4	5.4
Brown	—	—	—	—	—	2.3	—	2.3	2.3
Butler	—	—	—	—	—	.1	—	.1	.1
Carroll	—	—	—	—	—	—	5.8	5.8	5.8
Clinton	—	—	—	—	—	.1	—	.1	.1
Columbiana	—	—	—	—	—	—	.4	.4	.4
Coshocton	—	—	—	—	—	—	11.5	11.5	11.5
Fairfield	—	—	b	b	—	3.3	1.1	4.4	4.4
Franklin	—	—	—	—	—	.3	—	.3	.3
Gallia	—	—	.6	.6	—	13.1	—	13.1	13.7
Guernsey	—	—	—	—	—	—	6.1	6.1	6.1
Harrison	—	—	—	—	—	—	3.8	3.8	3.8
Highland	—	—	—	—	—	3.6	—	3.6	3.6
Hocking	—	—	—	—	—	10.8	2.9	13.7	13.7
Holmes	—	—	—	—	—	—	7.3	7.3	7.3
Jackson	—	—	.1	.1	—	23.1	—	23.1	23.2
Jefferson	—	—	b	b	—	—	—	—	b
Knox	—	—	—	—	—	—	.4	.4	.4
Lawrence	—	—	.5	.5	—	7.5	.7	8.2	8.7
Licking	—	—	—	—	—	6.6	3.6	10.2	10.2
Mahoning	—	—	1.8	1.8	—	—	.8	.8	2.6
Medina	—	—	—	—	—	—	.1	.1	.1
Meigs	—	—	.5	.5	—	2.6	—	2.6	3.1
Monroe	—	—	—	—	—	—	.4	.4	.4
Morgan	—	—	—	—	—	—	.8	.8	.8
Muskingum	—	—	—	—	—	—	11.1	11.1	11.1
Noble	—	—	—	—	—	—	2.7	2.7	2.7
Perry	—	—	—	—	—	1.4	1.3	2.7	2.7
Pickaway	—	—	—	—	—	2.9	1.0	3.9	3.9
Pike	—	—	—	—	—	17.9	—	17.9	17.9
Ross	—	—	—	—	—	35.2	—	35.2	35.2
Scioto	—	—	b	b	—	15.0	—	15.0	15.0
Shelby	—	—	—	—	—	.7	.2	.9	.9
Stark	—	—	—	—	—	—	1.1	1.1	1.1
Trumbull	—	—	.6	.6	—	—	—	—	.6
Tuscarawas	—	—	—	—	—	—	2.3	2.3	2.3
Vinton	—	—	.6	.6	—	55.5	.4	55.9	56.5
Warren	—	—	—	—	—	.2	—	.2	.2
Washington	—	—	—	—	—	—	.4	.4	.4
Total	—	—	5.0	5.0	—	206.9	74.8	281.7	286.7

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

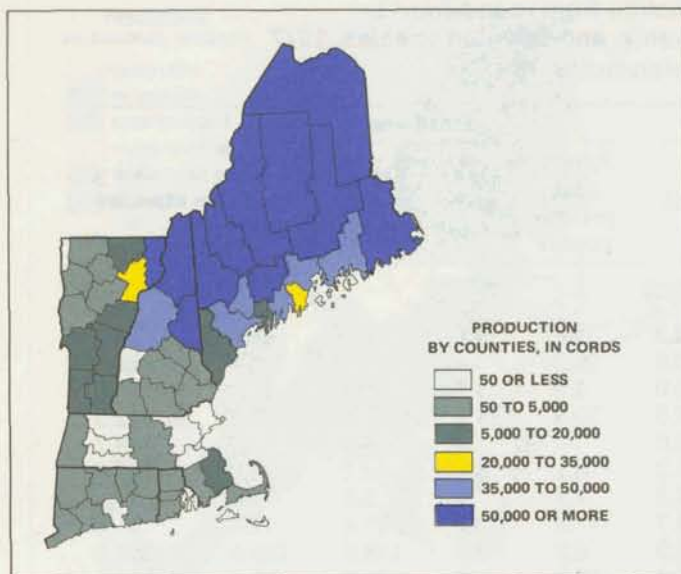


Figure 4.—Geographical pattern of pulpwood production from roundwood in the New England States, 1977.

Table 11.—Pulpwood production from roundwood in southern New England, by state, county, and selected species, 1977
(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									
Fairfield	—	—	0.8	0.8	—	—	—	—	0.8
Hartford	—	—	.6	.6	—	—	—	—	.6
Litchfield	—	—	.4	.4	—	—	—	—	.4
Middlesex	—	—	b	b	—	—	—	—	b
New Haven	—	—	1.7	1.7	—	—	—	—	1.7
New London	—	—	.2	.2	—	0.1	0.1	0.2	.4
Tolland	—	—	.1	.1	—	.1	.1	.2	.3
Windham	—	—	.8	.8	—	.6	.7	1.3	2.1
Total	—	—	4.6	4.6	—	0.8	0.9	1.7	6.3
MASSACHUSETTS									
Barnstable	—	—	0.6	0.6	—	—	—	—	0.6
Berkshire	1.2	—	.1	1.3	—	—	—	—	1.3
Bristol	—	—	1.3	1.3	—	0.3	0.4	0.7	2.0
Plymouth	—	—	5.3	5.3	—	.4	.4	.8	6.1
Worcester	—	—	.5	.5	—	—	—	—	.5
Total	1.2	—	7.8	9.0	—	0.7	0.8	1.5	10.5
RHODE ISLAND									
Kent	—	—	0.2	0.2	—	0.5	0.5	1.0	1.2
Providence	—	—	.4	.4	—	.2	.3	.5	.9
Washington	—	—	.2	.2	—	.2	.2	.4	.6
Total	—	—	0.8	0.8	—	0.9	1.0	1.9	2.7

^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, 1977**
(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	2.3	4.2	15.7	22.2	2.8	1.6	10.1	14.5	36.7
Aroostook	503.2	12.3	5.1	520.6	29.0	—	76.5	105.5	626.1
Cumberland	3.4	3.9	17.7	25.0	1.8	1.6	12.1	15.5	40.5
Franklin	34.6	8.5	5.4	48.5	10.8	1.8	81.2	93.8	142.3
Hancock	23.5	5.2	3.3	32.0	—	.4	16.3	16.7	48.7
Kennebec	7.7	9.1	18.4	35.2	3.1	1.1	24.1	28.3	63.5
Knox	5.3	3.6	7.6	16.5	1.4	.9	5.3	7.6	24.1
Lincoln	5.0	5.5	18.2	28.7	.6	.5	11.4	12.5	41.2
Oxford	53.2	20.8	21.9	95.9	6.3	5.3	148.0	159.6	255.5
Penobscot	109.4	44.9	6.1	160.4	12.8	.3	57.5	70.6	231.0
Piscataquis	346.6	19.1	8.0	373.7	3.6	b	116.3	119.9	493.6
Sagadahoc	1.9	1.7	8.2	11.8	—	.6	4.2	4.8	16.6
Somerset	346.4	24.0	18.2	388.6	4.4	.4	46.5	51.3	439.9
Waldo	17.4	5.6	8.2	31.2	.6	.6	12.5	13.7	44.9
Washington	128.8	33.0	9.2	170.4	14.7	.1	102.4	117.2	287.6
York	.2	2.6	9.3	12.1	.3	1.0	4.6	5.9	18.0
Total	1,588.3	204.0	180.5	1,972.8	92.2	16.2	729.0	837.4	2,810.2
NEW HAMPSHIRE									
Belknap	b	b	b	b	b	b	0.1	0.1	0.1
Carroll	2.3	6.6	26.5	35.4	2.7	9.4	36.9	49.0	84.4
Cheshire	.1	—	—	.1	—	—	—	—	.1
Coos	49.0	3.4	4.6	56.9	9.9	.7	149.6	160.2	217.1
Grafton	3.2	.8	3.7	7.7	4.6	4.2	26.9	35.7	43.4
Hillsborough	b	b	b	b	—	.1	.1	.2	.2
Merrimack	b	b	.1	.1	.2	1.0	2.0	3.2	3.3
Rockingham	b	b	.5	.5	—	b	b	b	.5
Strafford	b	.2	.7	.9	b	.1	.3	.4	1.3
Total	54.6	11.0	36.0	101.6	17.4	15.5	215.9	248.8	350.4
VERMONT									
Addison	b	b	b	b	—	0.1	1.3	1.4	1.4
Bennington	.2	.5	.2	.9	0.2	0.4	4.7	5.3	6.2
Caledonia	15.4	1.4	2.2	19.0	1.3	.6	12.2	14.1	33.1
Chittenden	.5	.1	.1	.7	b	b	.7	.7	1.4
Essex	37.4	1.4	2.2	41.0	4.5	.3	70.0	74.8	115.8
Franklin	.7	—	.1	.8	—	—	—	—	.8
Lamoille	2.0	b	.1	2.1	—	—	b	b	2.1
Orange	5.5	1.2	.8	7.5	1.2	.6	8.5	10.3	17.8
Orleans	7.7	1.6	.3	9.6	.2	b	7.1	7.3	16.9
Rutland	1.4	.5	2.2	4.1	1.2	.3	3.6	5.1	9.2
Washington	.2	.1	—	.3	b	—	.1	.1	.4
Windham	2.7	.8	.1	3.6	.4	.3	2.7	3.4	7.0
Windsor	2.7	.6	.8	4.1	.2	.2	2.8	3.2	7.3
Total	76.4	8.2	9.1	93.7	9.2	2.8	113.7	125.7	219.4

^a Counties with no production are omitted.

^b Less than 50 cords.

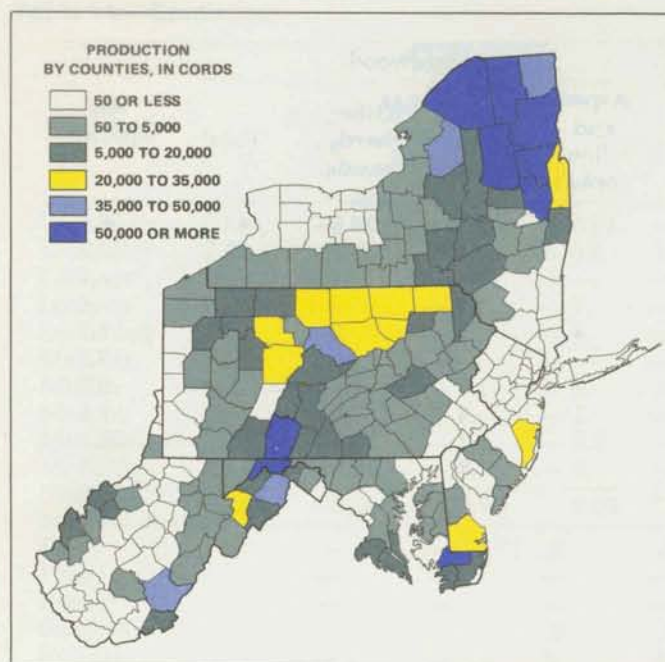


Figure 5.—Geographical pattern of pulpwood production from roundwood in the Middle Atlantic States, 1977.

Table 13.—Pulpwood production from roundwood in New York, by county and selected species, 1977
(In thousands of standard cords)

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
Albany	1.1	—	2.6	3.7	b	—	—	b	3.7
Allegany	—	—	—	—	—	—	0.2	0.2	0.2
Broome	b	—	b	b	0.5	2.4	4.5	7.4	7.4
Cattaraugus	—	—	2.0	2.0	—	1.5	—	1.5	3.5
Cayuga	.6	—	—	.6	.1	—	—	.1	.7
Chautauqua	—	—	—	—	—	—	1.6	1.6	1.6
Chemung	—	—	—	—	.4	.4	1.5	2.3	2.3
Chenango	7.6	—	b	7.6	.4	.6	2.9	3.9	11.5
Clinton	4.2	1.0	4.8	10.0	9.4	10.5	12.1	32.0	42.0
Cortland	.6	—	—	.6	.1	—	—	.1	.7
Delaware	3.2	—	1.2	4.4	.2	2.5	2.4	5.1	9.5
Essex	1.7	12.1	11.2	25.0	6.2	19.0	43.3	68.5	93.5
Franklin	12.7	1.0	4.3	18.0	12.1	10.8	30.7	53.6	71.6
Fulton	—	2.4	1.7	4.1	.7	—	7.0	7.7	11.8
Green	—	b	—	b	—	—	.2	.2	.2
Hamilton	5.4	9.5	1.1	16.0	2.7	2.1	45.3	50.1	66.1
Herkimer	3.8	.7	.7	5.2	.2	.5	9.1	9.8	15.0
Jefferson	1.3	—	1.0	2.3	1.4	—	b	1.4	3.7
Lewis	8.2	—	3.1	11.3	2.8	.1	25.0	27.9	39.2
Madison	.8	—	.3	1.1	b	—	—	b	1.1
Montgomery	—	—	.3	.3	b	b	.3	.3	.6
Oneida	1.7	.5	0.3	5.2	.2	.2	3.8	4.2	9.4
Onondaga	—	—	—	—	.1	—	.1	.2	.2
Oswego	.6	—	.8	1.4	.1	—	.4	.5	1.9
Otsego	1.3	—	4.7	6.0	.2	.1	.4	.7	6.7
Rensselaer	.4	2.4	4.0	6.8	.3	.1	8.5	8.9	15.7

CONTINUED

Table 13—Continued

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
St. Lawrence	10.5	.1	2.8	13.4	15.5	13.2	14.5	43.2	56.6
Saratoga	1.9	12.0	10.7	24.6	4.6	.4	38.1	43.1	67.7
Schoharie	.1	—	.6	.7	—	—	—	—	.7
Schuyler	—	—	—	—	.1	.2	.3	.6	.6
Steuben	—	—	—	—	.4	.5	.8	1.7	1.7
Sullivan	—	—	3.8	3.8	—	—	—	—	3.8
Tioga	—	—	—	—	.4	1.1	.5	2.0	2.0
Tompkins	.1	—	—	.1	.1	.4	.5	1.0	1.1
Warren	.5	11.8	9.0	21.3	2.8	.1	35.5	38.4	59.7
Washington	b	4.3	2.0	6.3	.9	.3	13.0	14.2	20.5
Total	68.3	57.8	75.7	201.8	62.9	67.0	302.5	432.4	634.2

^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, 1977
(In thousands of standard cords)

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
Adams	—	—	0.5	0.5	—	6.2	3.1	9.3	9.8
Armstrong	—	—	—	—	—	.2	—	.2	.2
Bedford	—	0.5	7.2	7.7	—	14.5	28.1	42.6	50.3
Berks	—	—	—	—	—	.2	—	.2	.2
Blair	—	—	1.3	1.3	0.8	2.8	3.2	6.8	8.1
Bradford	—	—	3.1	3.1	7.6	6.7	14.8	29.1	32.2
Butler	—	—	—	—	—	1.4	.7	2.1	2.1
Cambria	—	b	b	b	—	—	b	b	b
Cameron	—	—	—	—	—	4.0	—	4.0	4.0
Carbon	—	—	b	b	.1	.4	.5	1.0	1.0
Centre	—	.8	b	.8	2.0	8.2	6.9	17.1	17.9
Clarion	—	—	—	—	—	1.1	2.3	3.4	3.4
Clearfield	—	2.0	1.5	3.5	1.8	18.7	8.2	28.7	32.2
Clinton	—	.4	.1	.5	2.7	24.8	13.3	40.8	41.3
Columbia	—	—	—	—	.4	1.2	1.7	3.3	3.3
Crawford	—	—	—	—	—	.7	.6	1.3	1.3
Cumberland	—	—	.1	.1	—	1.0	.5	1.5	1.6
Dauphin	—	—	—	—	.1	.2	.3	.6	.6
Elk	—	—	—	—	—	4.1	16.7	20.8	20.8
Erie	—	—	—	—	—	—	2.2	2.2	2.2
Fayette	—	—	.4	.4	—	.2	.6	.8	1.2
Forest	—	—	—	—	—	2.3	8.8	11.1	11.1
Franklin	—	—	.8	.8	—	7.0	3.9	10.9	11.7
Fulton	—	.3	1.6	1.9	—	3.2	3.0	6.2	8.1
Huntingdon	—	—	2.2	2.2	.1	7.6	5.4	13.1	15.3
Indiana	—	1.2	—	1.2	—	b	b	b	1.2
Jefferson	—	—	.1	.1	—	2.0	11.3	13.3	13.4
Juniata	—	—	.7	.7	—	2.4	1.5	3.9	4.6

(CONTINUED)

Table 14—Continued

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
Lackawanna	—	—	—	—	.3	1.2	1.6	3.1	3.1
Lancaster	—	—	b	b	—	.4	.2	.6	.6
Lebanon	—	—	—	—	b	.1	.1	.2	.2
Luzerne	—	—	—	—	.2	.8	1.0	2.0	2.0
Lycoming	—	—	—	—	4.4	16.2	13.8	34.4	34.4
McKean	—	—	—	—	—	—	19.7	19.7	19.7
Mifflin	—	—	b	b	—	.3	.2	.5	.5
Monroe	—	—	—	—	.3	1.0	1.4	2.7	2.7
Montgomery	—	—	—	—	—	b	—	b	b
Montour	—	—	—	—	.1	.5	.7	1.3	1.3
Northampton	—	—	—	—	b	.1	.1	.2	.2
Northumberland	—	—	—	—	b	b	.1	.1	.1
Perry	—	—	.3	.3	—	1.9	1.0	2.9	3.2
Pike	—	—	—	—	.4	1.4	1.9	3.7	3.7
Potter	—	—	—	—	2.4	1.8	27.0	31.2	31.2
Schuylkill	—	—	.9	.9	.2	10.2	2.4	12.8	13.7
Snyder	—	—	b	b	—	0.1	0.1	0.2	0.2
Somerset	—	b	0.2	0.2	—	4.5	3.9	8.4	8.6
Sullivan	—	—	—	—	6.0	3.4	10.9	20.3	20.3
Susquehanna	—	—	—	—	4.3	11.1	17.5	32.9	32.9
Tioga	—	—	.2	.2	4.4	6.4	19.8	30.6	30.8
Union	—	—	.1	.1	.2	1.7	1.4	3.3	3.4
Venango	—	—	—	—	—	9.5	3.8	13.3	13.3
Warren	—	—	—	—	—	5.5	11.0	16.5	16.5
Wayne	—	—	—	—	1.1	4.6	6.1	11.8	11.8
Westmoreland	—	—	b	b	—	.3	.5	.8	.8
Wyoming	—	—	b	b	1.5	2.8	4.1	8.4	8.4
York	—	—	2.4	2.4	—	2.2	—	2.2	4.6
Total	—	5.2	23.7	28.9	41.4	209.1	287.9	538.4	567.3

^aCounties with no production are omitted.^bLess than 50 cords.

Table 15.—Pulpwood production from roundwood in Delaware, Maryland, and New Jersey, by state, county, and selected species, 1977
(In thousands of standard cords)

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
DELAWARE									
Kent	—	—	0.6	0.6	—	0.1	0.2	0.3	0.9
Sussex	—	—	30.8	30.8	—	1.8	1.7	3.5	34.3
Total	—	—	31.4	31.4	—	1.9	1.9	3.8	35.2
MARYLAND									
Allegany	—	0.6	2.9	3.5	—	19.2	14.4	33.6	37.1
Anne Arundel	—	—	3.3	3.3	—	—	—	—	3.3
Baltimore	—	—	1.7	1.7	—	.1	b	.1	1.8
Calvert	—	—	1.4	1.4	—	9.0	7.8	16.8	18.2
Caroline	—	—	3.3	3.3	—	.2	.1	.3	3.6
Carroll	—	—	2.0	2.0	—	.6	.1	.7	2.7
Charles	—	—	11.2	11.2	—	.4	.2	.6	11.8
Dorchester	—	—	5.6	5.6	—	—	.2	.2	5.8
Frederick	—	—	.2	.2	—	.9	.4	1.3	1.5
Garrett	—	.2	.9	1.1	—	—	—	—	1.1
Kent	—	—	.9	.9	—	.1	—	.1	1.0
Prince Georges	—	—	4.3	4.3	—	—	—	—	4.3
Queen Annes	—	—	.1	.1	—	—	—	—	.1
St. Marys	—	—	8.8	8.8	—	2.8	—	2.8	11.6
Somerset	—	—	12.8	12.8	—	—	—	—	12.8
Talbot	—	—	.1	.1	—	—	—	—	.1
Washington	—	—	1.4	1.4	—	1.0	.7	1.7	3.1
Wicomico	—	—	40.7	40.7	—	.1	—	.1	40.8
Worcester	—	—	18.5	18.5	—	—	—	—	18.5
Total	—	0.8	120.1	120.9	—	34.4	23.9	58.3	179.2
NEW JERSEY									
Atlantic	—	—	0.8	0.8	—	—	0.2	0.2	1.0
Cape May	—	—	1.5	1.5	—	—	.4	.4	1.9
Gloucester	—	—	1.5	1.5	—	b	.4	.4	1.9
Ocean	—	—	21.4	21.4	—	—	—	—	21.4
Total	—	—	25.2	25.2	—	b	1.0	1.0	26.2

^aCounties with no production are omitted.

^bLess than 50 cords.

**Table 16.—Pulpwood production from roundwood in West Virginia,
by county and selected species, 1977**
(In thousands of standard cords)

County ^a	Softwood				Hardwood			Total	All species
	Spruce and fir	Hemlock and tamarack	Pine	Total	Aspen and yellow-poplar	Oak and hickory	Other hardwoods		
Barbour	—	—	b	b	—	0.4	0.1	0.5	0.5
Berkeley	—	0.1	1.4	1.5	—	.4	.6	1.0	2.5
Boone	—	—	—	b	—	—	—	—	b
Cabell	—	—	.4	.4	—	—	—	—	.4
Fayette	—	—	—	—	—	—	.8	.8	.8
Grant	—	.3	2.9	3.2	—	18.0	9.8	27.8	31.0
Greenbrier	—	—	.9	.9	—	—	35.9	35.9	36.8
Hampshire	—	.6	13.8	14.4	—	16.2	9.3	25.5	39.9
Hardy	—	.3	2.8	3.1	—	3.0	2.8	5.8	8.9
Harrison	—	—	—	—	—	—	b	b	b
Jackson	—	.1	.8	.9	—	—	b	b	.9
Kanawha	—	—	b	b	—	—	—	—	b
Lincoln	—	—	b	b	—	—	—	—	b
Marion	—	—	b	b	—	—	—	—	b
Marshall	—	—	—	—	—	—	.2	.2	.2
Mason	—	.1	1.1	1.2	—	4.1	b	4.1	5.3
Mineral	—	.1	1.9	2.0	—	5.0	3.7	8.7	10.7
Monroe	—	—	1.5	1.5	—	—	10.7	10.7	12.2
Morgan	—	.1	2.6	2.7	—	1.6	1.2	2.8	5.5
Ohio	—	—	—	—	—	—	b	b	b
Pendleton	0.1	—	.2	.3	—	2.5	2.0	4.5	4.8
Pocahontas	.1	—	.2	.3	—	.9	1.3	2.2	2.5
Preston	—	—	.2	.2	—	—	.2	.2	.4
Putnam	—	—	.8	.8	—	—	—	—	.8
Raleigh	—	—	—	—	—	—	b	b	b
Randolph	—	—	.4	.4	—	.8	1.0	1.8	2.2
Ritchie	—	—	b	b	—	—	1.2	1.2	1.2
Summers	—	—	—	—	—	—	b	b	b
Taylor	—	—	b	b	—	—	—	—	b
Tucker	—	—	b	b	—	.3	.4	.7	.7
Upshur	—	—	—	—	—	—	b	b	b
Wayne	—	—	b	b	—	—	—	—	b
Wirt	—	—	2.3	2.3	—	2.5	1.1	3.6	5.9
Wood	—	—	2.2	2.2	—	2.5	7.1	9.6	11.8
Total	0.2	1.7	36.4	38.3	—	58.2	89.4	147.6	185.9

^aCounties with no production are omitted.

^bLess than 50 cords.

Headquarters of the Northeastern Forest Experiment Station are in Broomall, Pa. Field laboratories and research units are maintained at:

- Beltsville, Maryland.
 - Berea, Kentucky, in cooperation with Berea College.
 - Burlington, Vermont, in cooperation with the University of Vermont.
 - Delaware, Ohio.
 - Durham, New Hampshire, in cooperation with the University of New Hampshire.
 - Hamden, Connecticut, in cooperation with Yale University.
 - Kingston, Pennsylvania.
 - Morgantown, West Virginia, in cooperation with West Virginia University, Morgantown.
 - Orono, Maine, in cooperation with the University of Maine, Orono.
 - Parsons, West Virginia.
 - Princeton, West Virginia.
 - Syracuse, New York, in cooperation with the State University of New York College of Environmental Sciences and Forestry at Syracuse University. Syracuse.
 - University Park, Pennsylvania.
 - Warren, Pennsylvania.
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