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Southern Pulpwood Production, 1986

Dennis M. May

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and

Southeastern Forest Experiment Station
Asheville, North Carolina

of the

Forest Service, U.S. Department of Agriculture

in cooperation with the

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Figure 1.--The 12 Southern States and the counties in each.

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INTRODUCTION

In this publication are presented the findings of a 100-percent canvass of all wood-using pulpmills drawing roundwood or wood residues from 12 Southern States (fig. 1). Canvass data are compiled annually and analyzed on an alternating basis by personnel of the Forest Inventory and Analysis Units of the Southern and Southeastern Forest Experiment Stations. All production figures are reported in standard cords. When necessary, pulpwood production data for mills reporting in nonstandard units are converted to standard cords using regional conversion factors.

PULPWOOD

Fueled by increased competitiveness, the result of a devalued American dollar, lower interest rates, and recent mill improvements, domestic pulp and paper products experienced a resurgence in demand in 1986. As expected, this resurgence had consequential effects on the demand for pulping fiber. In the South, pulpwood production climbed 6 percent above the 1985 level to top 60 million cords for the first time (table 1). Both regions in the South, Midsouth and Southeast, experienced a recovery in pulpwood production with respective gains of 9 and 4 percent in 1986. However, the Midsouth contributed 7 percent more to the 1986 production than did the Southeast (table 2). The State of Georgia was the leading producer of pulpwood in 1986. Alabama ranked a close second, and Mississippi, with a major increase in production, ranked third. Collectively, these three States supplied over 40 percent of the total production.

Softwoods continued to be the major source of pulpwood, comprising 70 percent of the total production in 1986. The production of softwood was split equally between the Midsouth and Southeast regions. In contrast, the

Table 1.--Pulpwood production in the South during 1986, and change since 1985

State	Pulpwood	Change
	Thousand cords	Percent
Alabama	9,584.4	6
Arkansas	4,477.9	8
Florida	4,109.7	4
Georgia	10,212.9	4
Louisiana	5,430.8	9
Mississippi	7,129.0	26
North Carolina	5,369.5	8
Oklahoma	586.3	-9
South Carolina	4,814.7	0
Tennessee	1,478.8	19
Texas	3,770.5	-9
Virginia	3,625.4	2
All States	60,589.8[1]	6

[1] Column data may not add due to rounding.

Table 2.--Pulpwood production in the Southeast and Midsouth, 1986

Region and source of wood	All species	Softwood	Hardwood
	Standard cords		
Southeast[1]			
Roundwood	19,467,269	14,064,687	5,402,582
Residues	8,664,839	7,141,875	1,522,964
Total	28,132,108	21,206,562	6,925,546
Midsouth[2]			
Roundwood	20,972,574	13,050,381	7,922,193
Residues	11,485,081	8,425,839	3,059,242
Total	32,457,655	21,476,220	10,981,435
Entire South			
Roundwood	40,439,843	27,115,068	13,324,775
Residues	20,149,920	15,567,714	4,582,206
Total	60,589,763	42,682,782	17,906,981

[1] States of Florida, Georgia, North Carolina, South Carolina, and Virginia.

[2] States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

Table 3.--Roundwood production in the South, by State and species' group, 1986 and 1985

State	Change from 1985	1986 All species	1986 Softwood	1986 Hardwood	1985 All species	1985 Softwood	1985 Hardwood
	Percent	Thousand cords					
Alabama	6	7,137.0	4,137.3	2,999.7	6,759.7	4,046.9	2,712.8
Arkansas	8	1,766.2	871.8	894.4	1,637.9	847.7	790.2
Florida	9	3,039.9	2,823.8	216.1	2,781.0	2,551.6	229.3
Georgia	9	7,125.5	5,883.7	1,241.8	6,529.3	5,443.4	1,085.8
Louisiana	5	3,731.6	2,773.5	958.0	3,567.1	2,686.1	881.0
Mississippi	29	4,935.6	2,979.4	1,956.2	3,839.0	2,236.4	1,602.6
North Carolina	11	3,655.1	2,105.6	1,549.5	3,294.8	1,915.2	1,379.5
Oklahoma	-56	104.3	55.5	48.8	238.6	72.0	166.6
South Carolina	-2	3,211.7	2,175.5	1,036.2	3,280.1	2,289.1	991.0
Tennessee	39	1,227.8	788.9	438.9	882.0	506.0	376.0
Texas	-3	2,070.2	1,444.0	626.2	2,129.3	1,573.3	556.0
Virginia	7	2,435.0	1,076.0	1,359.0	2,278.9	1,062.9	1,216.0
All States[1]	9	40,439.9	27,115.1	13,324.8	37,217.9	25,230.8	11,987.0

[1] Row and column data may not add due to rounding.

Midsouth was the major supplier of hardwood pulpwood, furnishing over 60 percent of the total hardwood production. Both roundwood and wood residues contributed to the 1986 pulpwood production record. Roundwood, however, was the leading form of pulping fiber, outproducing wood residues by 2 to 1.

Roundwood

In line with the increase in pulpwood production, Southern roundwood production increased 9 percent in 1986 (table 3). This gain in roundwood accounted for 89 percent of the increase in pulpwood production in 1986. Roundwood harvests in the Midsouth and Southeast increased by 10 and 7 percent, respectively, in response to the heightened demand for pulpwood. However, the Midsouth still supplied the majority of the roundwood harvest (table 2).

The top three roundwood producing States were Alabama, Georgia, and Mississippi, in this order (table 4). Together, these three States supplied almost half the total roundwood harvest in 1986. The top three roundwood producing States also contained over half the 114 counties in the South that harvested in excess of 100,000 cords of roundwood each (Appendix tables A1-A12, Appendix figures A1-A6). Once again, Florida's Taylor county was the leading

Table 4.--Roundwood production in the South, by State and species' group, 1986

State	All species	Softwood	Hardwood
	Thousand cords		
Alabama	7,137.0	4,137.3	2,999.7
Arkansas	1,766.2	871.8	894.4
Florida	3,039.9	2,823.8	216.1
Georgia	7,125.5	5,883.7	1,241.8
Louisiana	3,731.6	2,773.5	958.0
Mississippi	4,935.6	2,979.4	1,956.2
North Carolina	3,655.1	2,105.6	1,549.5
Oklahoma	104.3	55.5	48.8
South Carolina	3,211.7	2,175.5	1,036.2
Tennessee	1,227.8	788.9	438.9
Texas	2,070.2	1,444.0	626.2
Virginia	2,435.0	1,076.0	1,359.0
All States[1]	40,439.9	27,115.1	13,324.8

[1] Column data may not add due to rounding.

producer of roundwood, with a harvest in excess of 335,000 cords.

Softwoods were also the major source of roundwood, comprising two-thirds of the total roundwood harvest in 1986. However, as a result of the increased acceptance of hardwoods as a source of pulping fiber, hardwood harvests increased more than softwood harvests in 1986. The hardwood harvest increased by 11 percent, while that of softwoods only increased by 7 percent. This allowed hardwoods to account for over 40 percent of the total increase in roundwood in 1986. The Southeast was the leading supplier of softwood roundwood, while the Midsouth supplied most of the hardwood roundwood. At the State level, Georgia harvested the most softwood roundwood and Alabama harvested the most hardwood roundwood.

Wood Residues

In contrast to the 9 percent rise in roundwood, wood residue production only increased 2 percent in 1986 (table 5). This relatively small increase can be attributed to a 3-percent decline in Southeast wood residue production. Wood residue production increased 6 percent in the Midsouth in 1986. The Midsouth was also responsible for the majority of the wood residue production in 1986 (table 2). The three leading States, ranked in the order of production, were Georgia, Arkansas, and Alabama. These three States collectively accounted for 41 percent of all residue production.

As with roundwood production, softwoods comprised the predominant proportion of the wood residue production, accounting for three-quarters of the 1986 production. However, as with roundwood, the hardwoods have been seeing increased acceptance. In 1986, hardwood residue production increased 5 percent, in comparison to the 1-percent increase for softwood residues. As a result, hardwood residues accounted for 60 percent of the increase in wood residues in 1986. The Midsouth continued to be the leading producer of hardwood, furnishing twice the amount of

Table 5.--Southern output of wood residues for pulp manufacture, by State and species' group, 1986 and 1985

State	Change from 1985	1986 All species	1986 Softwood	1986 Hardwood	1985 All species	1985 Softwood	1985 Hardwood
	Percent	Thousand cords					
Alabama	7	2,447.4	1,881.3	566.1	2,297.0	1,811.4	485.5
Arkansas	9	2,711.7	1,960.8	750.9	2,492.9	1,851.3	641.6
Florida	-8	1,069.9	1,025.6	44.2	1,165.0	1,136.8	28.1
Georgia	-7	3,087.4	2,819.0	268.4	3,309.5	2,956.9	352.5
Louisiana	18	1,699.3	1,324.8	374.4	1,435.8	1,124.2	311.6
Mississippi	20	2,193.4	1,522.7	670.7	1,835.2	1,359.0	476.2
North Carolina	3	1,714.3	1,205.0	509.3	1,671.8	1,115.3	556.4
Oklahoma	20	482.0	373.3	108.7	403.3	382.6	20.6
South Carolina	5	1,603.0	1,427.9	175.0	1,526.9	1,297.5	229.4
Tennessee	-30	250.9	47.6	203.4	357.8	39.8	317.9
Texas	-15	1,700.3	1,315.3	385.0	2,006.3	1,630.3	376.0
Virginia	-5	1,190.3	664.3	526.0	1,258.4	709.7	548.6
All States[1]	2	20,149.9	15,567.7	4,582.2	19,759.9	15,415.2	4,344.7

[1] Row and column data may not add due to rounding.

Table 6.--Southern output of wood residues for pulp manufacture, by State and type of residue, 1986

State	All types	Chips			Other residues[1]		
		All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Thousand cords						
Alabama	2,447.4	2,384.1	1,827.5	556.6	63.3	53.7	9.6
Arkansas	2,711.7	2,666.2	1,915.3	750.9	45.5	45.5	0.0
Florida	1,069.9	1,069.9	1,025.6	44.2	0.0	0.0	0.0
Georgia	3,087.4	3,066.9	2,798.5	268.4	20.5	20.5	0.0
Louisiana	1,699.3	1,699.3	1,324.8	374.4	0.0	0.0	0.0
Mississippi	2,193.4	2,136.0	1,496.6	639.4	57.4	26.1	31.3
North Carolina	1,714.3	1,694.6	1,195.1	499.5	19.7	9.9	9.8
Oklahoma	482.0	452.6	343.9	108.7	29.4	29.4	0.0
South Carolina	1,603.0	1,595.8	1,420.8	175.0	7.1	7.1	0.0
Tennessee	250.9	250.9	47.6	203.4	0.0	0.0	0.0
Texas	1,700.3	1,690.3	1,305.3	385.0	10.1	10.1	0.0
Virginia	1,190.3	1,163.0	652.4	510.6	27.4	12.0	15.4
All States[2]	20,149.9	19,869.5	15,353.4	4,516.1	280.4	214.3	66.1

[1] Veneer cores, pole and piling trim, cull material, sawdust, and secondary residues.

[2] Row and column data may not add due to rounding.

hardwood residues as the Southeast. The Midsouth also produced the majority of the softwood residues. Arkansas was the leading producer of hardwood residues, while Georgia led in softwood residue production.

Chips continued to be the predominant form of wood residues produced, accounting for 99 percent of the total wood residue production in 1986 (table 6). The dominance of chips was enhanced by a 3-percent increase in chip production and a 36-percent decline in the production of other residues in 1986. Softwood chips accounted for three-quarters of the 1986 chip production.

MILLS

In 1986, 105 Southern pulpmills were operating and drawing wood from the 12 Southern States (fig. 2). Although the number of mills has remained the same as in 1985, pulping capacity fell to 119,825 tons per day (table 7). Alabama and Georgia led the South in the number of mills operating, with 15 mills each. However, Georgia led in pulping capacity by an 11 percent margin over Alabama. In addition, five pulpmills from outside the Southern region were also drawing wood from the South (table 8).

TRENDS

In the 10-year period from 1977 to 1986, pulping capacity in the South increased from 100,894 to 119,825 tons per day. In the same time period, the number of pulpmills decreased from 113 to 105. This simultaneous rise in capacity and drop in mills is a testimony to the increasing efficiency of existing mills as a result of recent mill improvements and modernization. To meet the new demand created by the 19-percent increase in pulping capacity, Southern pulpwood production climbed 24 percent in the 10-year period (fig. 3).

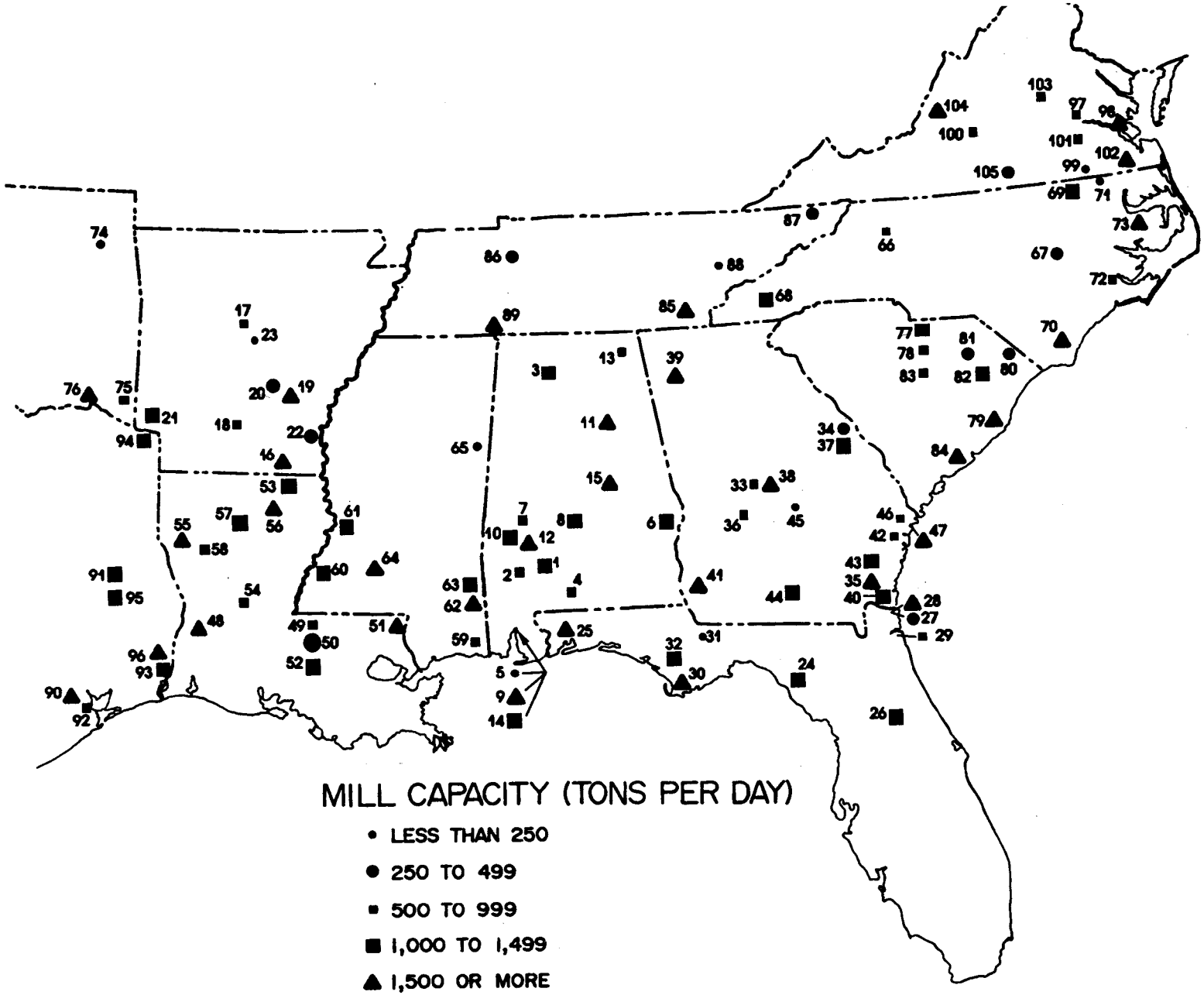

Figure 2.--1986 capacity of Southern pulpmills operating and drawing wood from the 12 Southern States. Numerals are coded to table 7.

Table 7.--Southern pulpmills, by process and capacity, 1986

Location	Map code[1]	Company	Pulping capacity, 24 hours[2] All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
			Tons				
ALABAMA							
Claiborne	(1)	Alabama River Pulp Company	1,000	1,000	--	--	--
Jackson	(2)	Boise Cascade Paper Group	600	600	--	--	--
Courtland	(3)	Champion International Corporation	1,350	1,350	--	--	--
Brewton	(4)	Container Corporation of America	800	800	--	--	--
Mobile	(5)	GAF Corporation	50	--	50	--	--
Mahrt	(6)	Georgia Kraft Company, Alabama Div.	1,100	1,100	--	--	--
Demopolis	(7)	Gulf States Paper Corporation	525	525	--	--	--
Selma	(8)	Hammermill Paper Company	1,225	1,225	--	--	--
Mobile	(9)	International Paper Company	1,500	1,200	300	--	--
Naheola	(10)	James River Corporation	1,250	1,250	--	--	--
Coosa Pines	(11)	Kimberly-Clark Corporation	2,040	1,100	940	--	--
Pine Hill	(12)	McMillan Bloedel, Inc.	1,684	1,100	--	584	--
Stevenson	(13)	Mead Paperboard	900	--	--	900	--
Mobile	(14)	Scott Paper Company	1,450	1,450	--	--	--
Montgomery	(15)	Union Camp Corporation	2,300	2,300	--	--	--
		Total	17,774	15,000	1,290	1,484	--
ARKANSAS							
Crossett	(16)	Georgia Pacific Corporation	1,500	1,500	--	--	--
Morrilton	(17)	Green Bay Packaging, Inc.	800	800	--	--	--
Camden	(18)	International Paper Company	750	750	--	--	--
Pine Bluff	(19)	International Paper Company	1,700	1,300	400	--	--
Pine Bluff	(20)	Mid-America Packaging, Inc.	300	300	--	--	--
Ashdown	(21)	Nekoosa Papers, Inc.	1,355	1,355	--	--	--
McGehee	(22)	Potlatch Corporation	450	450	--	--	--
Little Rock	(23)	Superwood Corporation	140	--	140	--	--
		Total	6,995	6,455	540	--	--
FLORIDA							
Foley	(24)	The Buckeye Cellulose Corporation	1,000	1,000	--	--	--
Cantoment	(25)	Champion International Corporation	1,560	1,560	--	--	--
Palatka	(26)	Georgia Pacific Corporation	1,350	1,350	--	--	--
Fernandina Beach	(27)	Itt Rayonier, Inc.	450	--	--	--	450
Fernandina Beach	(28)	Jefferson Smurfit Corporation	1,900	1,900	--	--	--
Jacksonville	(29)	Jefferson Smurfit Corporation	760	760	--	--	--
Port St. Joe	(30)	St. Joe Paper Company	1,700	1,700	--	--	--
Blountstown	(31)	Southeastern Fiber Board	50	--	50	--	--
Panama City	(32)	Southwest Forest Industries, Inc.	1,465	1,465	--	--	--
		Total	10,235	9,735	50	--	450
GEORGIA							
Macon	(33)	Armstrong World Industries	927	--	927	--	--
Augusta	(34)	Augusta Newsprint Company	1,200	--	1,200	--	--
Brunswick	(35)	Brunswick Pulp and Paper	1,820	1,820	--	--	--
Oglethorpe	(36)	The Buckeye Cellulose Corporation	860	860	--	--	--
Augusta	(37)	Federal Paper Board Company	1,000	600	400	--	--
Macon	(38)	Georgia Kraft Company, Mead Div.	1,500	1,500	--	--	--
Rome	(39)	Georgia Kraft Company, Krannert Div.	2,100	2,100	--	--	--

Table 7.--Southern pulpmills, by process and capacity, 1986--Continued

Location	Map code[1]	Company	Pulping capacity, 24 hours[2] All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
			Tons				
St. Marys	(40)	Gilman Paper Co., St. Marys Kraft Div.	1,200	1,200	--	--	--
Cedar Springs	(41)	Great Southern Paper Company	2,500	2,000	--	500	--
Riceboro	(42)	InterState Paper Corporation	550	550	--	--	--
Jesup	(43)	I.T.T. Rayonier, Inc.	1,400	1,400	--	--	--
Valdosta	(44)	Owens-Illinois, Forest Products Div.	1,015	1,015	--	--	--
Dublin	(45)	Southeast Paper Mfg. Company	50	--	50	--	--
Port Wentworth	(46)	Stone Container	800	800	--	--	--
Savannah	(47)	Union Camp Corporation	2,800	2,800	--	--	--
		Total	19,722	16,645	2,577	500	--
LOUISIANA							
DeRidder	(48)	Boise Cascade Corporation	2,160	1,260	900	--	--
St. Francisville	(49)	Crown Zellerbach Corporation	550	550	--	--	--
St. Francisville	(50)	Crown Zellerbach Corporation	255	--	255	--	--
Bogalusa	(51)	Gaylord Container Corporation	1,600	1,300	--	300	--
Port Hudson	(52)	Georgia-Pacific Corporation	1,300	1,300	--	--	--
Bastrop	(53)	International Paper Company	1,100	1,100	--	--	--
Pineville	(54)	International Paper Company	985	985	--	--	--
Mansfield	(55)	International Paper Company	1,900	1,400	--	500	--
West Monroe	(56)	Manville Forest Products Corporation	1,700	1,450	--	250	--
Hodge	(57)	Stone Container Corporation	1,300	1,300	--	--	--
Campti	(58)	Willamette Industries, Inc.	800	800	--	--	--
		Total	13,650	11,445	1,155	1,050	--
MISSISSIPPI							
Moss Point	(59)	International Paper Company	700	700	--	--	--
Natchez	(60)	International Paper Company	1,100	1,100	--	--	--
Vicksburg	(61)	International Paper Company	1,180	1,180	--	--	--
Monticello	(62)	Georgia Pacific Corporation	1,620	1,620	--	--	--
New Augusta	(63)	Leaf River Forest Products	1,050	1,050	--	--	--
Laurel	(64)	Masonite Corporation	3,380	--	3,380	--	--
Columbus	(65)	Weyerhaeuser Company	220	--	--	220	--
		Total	9,250	5,650	3,380	220	--
NORTH CAROLINA							
Roaring River	(66)	Abitibi--Price Corporation	500	--	500	--	--
Goldsboro	(67)	Celotex Corporation	300	--	300	--	--
Canton	(68)	Champion International Corporation	1,440	1,440	--	--	--
Roanoke Rapids	(69)	Champion International Corporation	1,100	1,100	--	--	--
Riegelwood	(70)	Federal Paper Board Company, Inc.	2,100	2,100	--	--	--
Conway	(71)	Georgia-Pacific Corporation	200	--	200	--	--
New Bern	(72)	Weyerhaeuser Company	740	740	--	--	--
Plymouth	(73)	Weyerhaeuser Company	1,680	1,450	--	230	--
		Total	8,060	6,830	1,000	230	--
OKLAHOMA							
Pryor	(74)	Georgia Pacific Corporation	200	--	200	--	--
Broken Bow	(75)	Weyerhaeuser Company	920	--	920	--	--
Valliant	(76)	Weyerhaeuser Company	2,000	1,500	--	500	--
		Total	3,120	1,500	1,120	500	--

Table 7.--Southern pulpmills, by process and capacity, 1986--Continued

Location	Map code[1]	Company	Pulping capacity, 24 hours[1]				
			All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
			Tons				
SOUTH CAROLINA							
Catawba	(77)	Bowaters Carolina Corporation	1,335	1,125	210	--	--
Catawba	(78)	Catawba Newsprint Company	500	--	500	--	--
Georgetown	(79)	International Paper Company	1,713	1,613	--	100	--
Marion	(80)	Masonite Corporation	450	--	450	--	--
Hartsville	(81)	Sonoco Products Company	280	--	--	280	--
Florence	(82)	Stone Container Corporation	1,400	1,400	--	--	--
Eastover	(83)	Union Camp Corporation	600	600	--	--	--
Charleston	(84)	Westvaco Corporation	2,200	2,200	--	--	--
		Total	8,478	6,938	1,160	380	--
TENNESSEE							
Calhoun	(85)	Bowaters Southern Paper Corporation	2,590	690	1,900	--	--
New Johnsonville	(86)	Inland Container Corporation	400	--	--	400	--
Kingsport	(87)	Mead Paper	325	--	--	--	325
Knoxville	(88)	Tamko Asphalt Products, Inc.	180	--	180	--	--
Counce	(89)	Tennessee River Pulp and Paper Company	1,700	1,700	--	--	--
		Total	5,195	2,390	2,080	400	325
TEXAS							
Houston	(90)	Champion International Corporation	1,850	650	1,200	--	--
Lufkin	(91)	Champion International Corporation	1,200	400	800	--	--
Pasadena	(92)	Champion Internationl Corporation	600	600	--	--	--
Orange	(93)	Inland Container Corporation	1,200	1,200	--	--	--
Texarkana	(94)	International Paper Company	1,200	1,200	--	--	--
Diboll	(95)	Temple-EasTex, Inc.	1,430	--	1,430	--	--
Evadale	(96)	Temple-EasTex, Inc.	1,500	1,500	--	--	--
		Total	8,980	5,550	3,430	--	--
VIRGINIA							
Ashland	(97)	Bear Island Paper Company	600	--	600	--	--
West Point	(98)	Chesapeake Corporation	1,505	1,505	--	--	--
Jarratt	(99)	Georgia Pacific Corporation	240	--	240	--	--
Big Island	(100)	Owens-Illinois, Forest Products Div.	575	--	--	575	--
Hopewell	(101)	Stone Container Corporation	970	970	--	--	--
Franklin	(102)	Union Camp Corporation	1,950	1,950	--	--	--
Riverville	(103)	Virginia Fiber Corporation	600	--	--	600	--
Covington	(104)	Westvaco Corporation	1,626	1,376	--	250	--
Danville	(105)	Wood Fiber Industries	300	--	300	--	--
		Total	8,366	5,801	1,140	1,425	--
		Total South	119,825	93,939	18,922	6,189	775

1 Corresponds to numbers at locations on mill capacity map, fig 2.

2 Southern Pulp and Paper Directory, Vol. 49, No. 11 (October 1986); and other sources.

Table 8.--Other mills using southern pulpwood in 1986, by process and capacity

Location	Company	Pulping capacity, 24 hours[1]				
		All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
		Tons				
KENTUCKY						
Wickliffe	Westvaco Corporation	700	700	--	--	--
Hawesville	Willamette Industries	1010	--	--	1010	--
MARYLAND						
Luke	Westvaco Corporation	907	907	--	--	--
PENNSYLVANIA						
Roaring Springs	Appleton Papers, Inc.	180	180	--	--	--
Spring Grove	P.H. Glatfelter Company	550	550	--	--	--

[1] Southern Pulp and Paper Directory, Vol. 49, No. 11 (October 1986); and other sources.

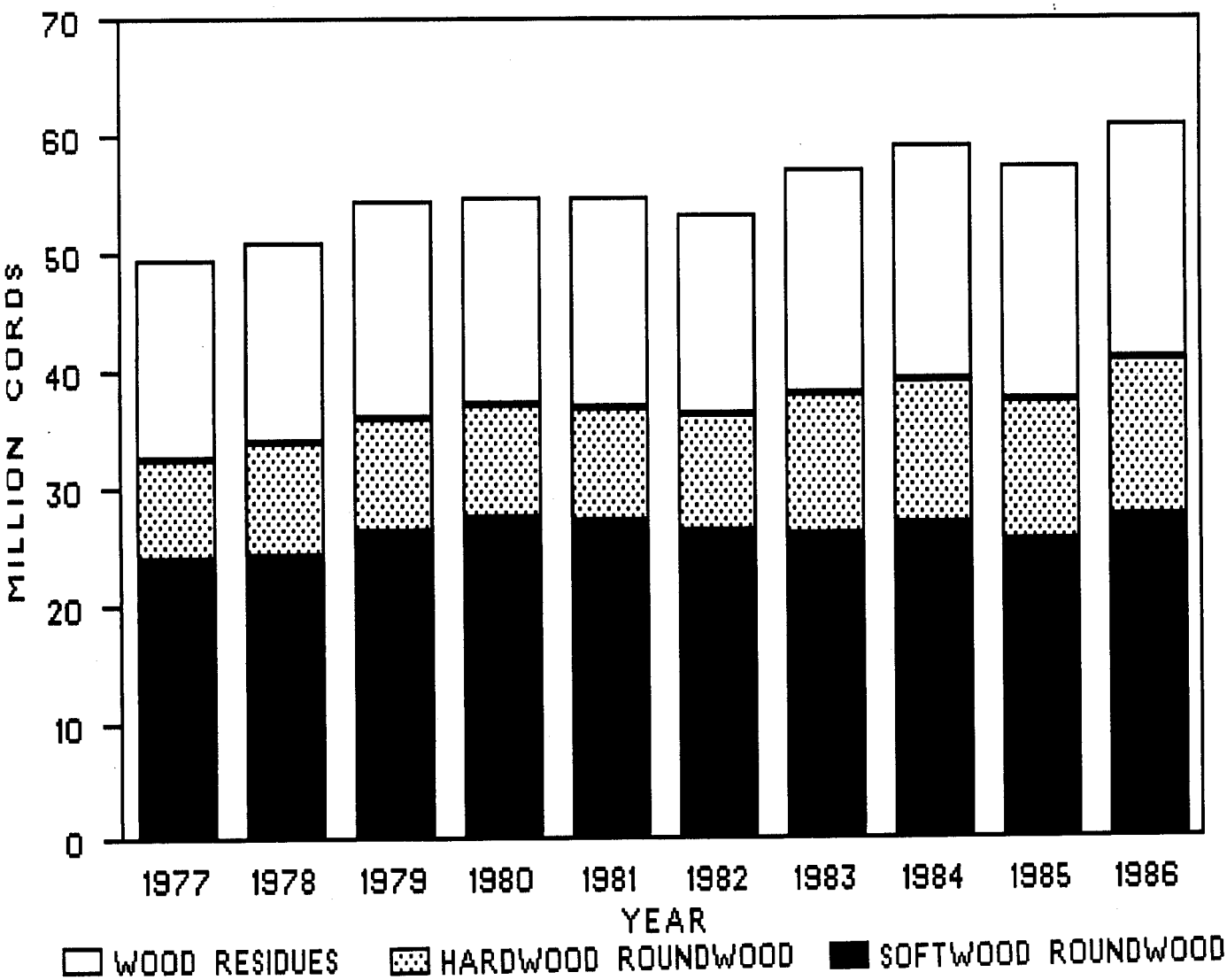

Figure 3.--1977-86 Southern pulpwood production.

In response to the increased demand for pulpwood, roundwood harvests climbed 26 percent and accounted for 70 percent of the total increase in pulpwood production over the 10-year period. Wood residues, which increased 20 percent over this period, supplied the remainder. However, since 1983, wood residue production has stabilized at approximately 20 million cords (fig. 3). This leveling off in the utilization of wood residues is expected because wood residue supplies are not unlimited. Wood residue supplies are fixed by the level of activity in the primary wood processing industry in any given year.

Over the 1977-86 period, softwoods have been the predominant source of Southern pulpwood (fig. 4). However, the proportion of softwoods to total production has fallen from 77 percent in 1977 to 70 percent in 1986. The availability of hardwood fiber and advances in pulping technology have

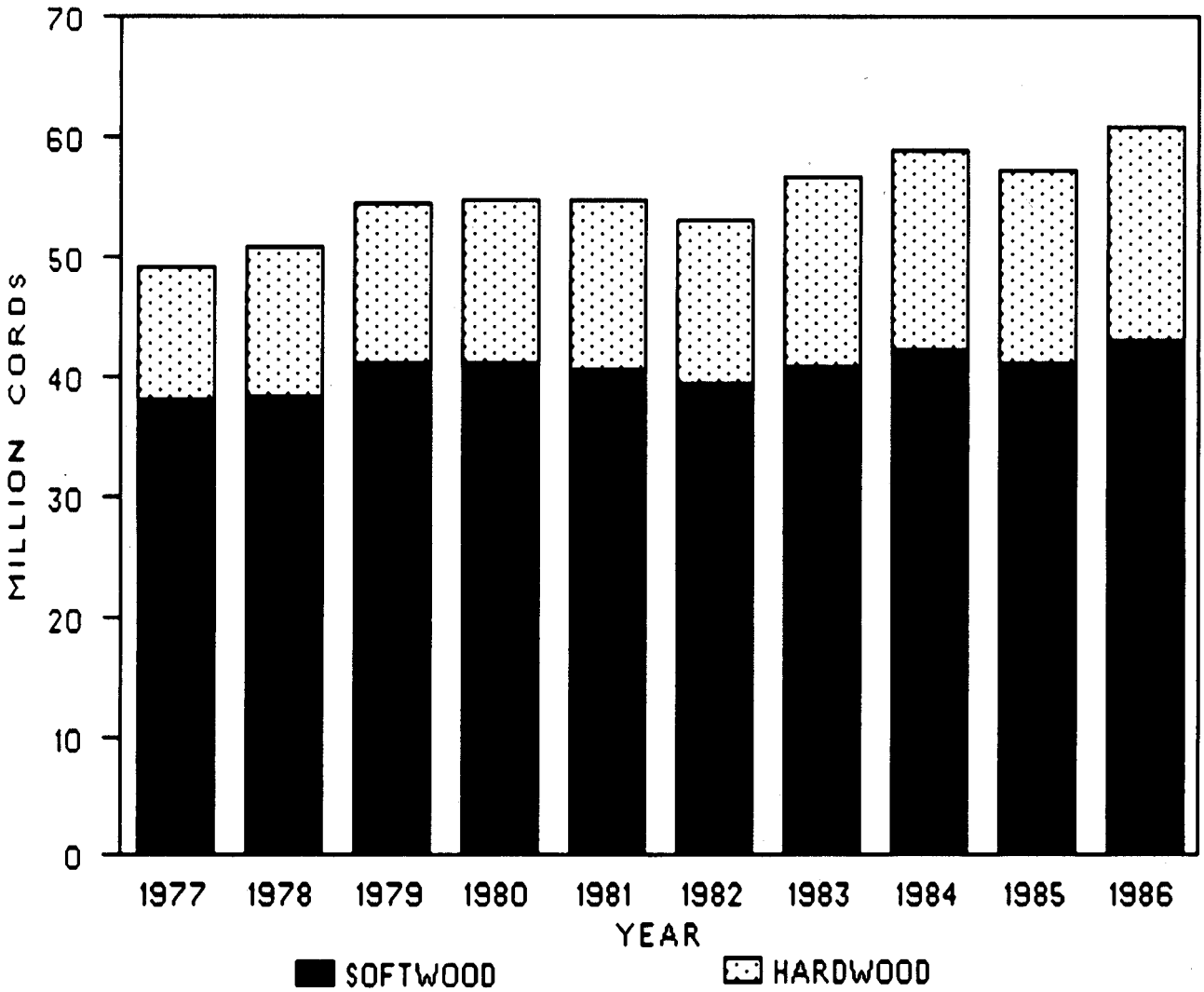

Figure 4.--1977-86 Southern pulpwood production by species group.

resulted in increasing acceptance of hardwoods as a source of pulping fiber. As a result, hardwoods have been capturing increasingly larger proportions of the total pulpwood harvest. Over the 10-year period, hardwood production increased by 60 percent, more than four times the increase experienced by softwoods. As a consequence, the increased hardwood harvest was responsible for 57 percent of the total increase in pulpwood production.

If these trends hold, any future increases in Southern pulping capacity will likely be met by increased production of roundwood, because wood residue production is limited. Additionally, hardwoods should continue to command a larger share of the total pulpwood furnish as long as the hardwood resource remains in abundant supply and technology continues to make headway into improved hardwood utilization.

Appendix

Table A-1.--Round pulpwood production in Alabama, 1986

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Autauga	144,380	82,914	61,466
Baldwin	218,431	126,536	91,895
Barbour	86,115	57,078	29,037
Bibb	112,665	79,566	33,098
Blount	55,761	38,431	17,330
Bullock	64,115	42,287	21,828
Butler	235,523	107,843	127,680
Calhoun	39,029	34,765	4,264
Chambers	83,472	57,082	26,390
Cherokee	24,109	19,186	4,923
Chilton	79,939	43,501	36,438
Choctaw	270,100	113,502	156,598
Clarke	293,831	126,539	167,292
Clay	81,976	59,704	22,272
Cleburne	50,768	42,667	8,101
Coffee	75,339	44,046	31,294
Colbert	65,845	31,923	33,921
Conecuh	150,333	78,833	71,500
Coosa	97,558	58,175	39,382
Covington	66,673	38,576	28,097
Crenshaw	75,871	34,273	41,598
Cullman	96,888	73,394	23,494

Table A-1.--Round pulpwood production in Alabama, 1986--Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Dale	60,814	28,326	32,488
Dallas	142,031	52,973	89,058
De Kalb	34,824	19,566	15,258
Elmore	55,394	33,319	22,075
Escambia	125,666	81,603	44,064
Etowah	31,656	24,349	7,308
Fayette	133,827	73,131	60,697
Franklin	210,480	136,198	74,281
Geneva	29,262	14,238	15,024
Greene	101,556	37,531	64,025
Hale	63,171	21,332	41,839
Henry	72,569	38,947	33,622
Houston	55,826	38,097	17,729
Jackson	36,271	10,540	25,730
Jefferson	133,362	105,359	28,003
Lamar	59,091	43,878	15,213
Lauderdale	37,626	16,069	21,557
Lawrence	22,839	10,585	12,254
Lee	67,114	49,181	17,934
Limestone	7,597	4,375	3,222
Lowndes	113,206	48,312	64,894
Macon	55,882	30,332	25,550
Madison	1,768	1,434	335
Marengo	176,404	81,657	94,746
Marion	271,315	199,313	72,002
Marshall	24,004	16,090	7,914
Mobile	114,523	50,615	63,908
Monroe	228,041	107,719	120,322
Montgomery	80,971	46,425	34,546
Morgan	24,586	15,528	9,057
Perry	109,452	35,538	73,914
Pickens	181,042	82,816	98,226
Pike	139,977	58,650	81,327
Randolph	94,506	66,624	27,883
Russell	56,887	45,852	11,035
St. Clair	59,078	53,342	5,736
Shelby	94,850	71,302	23,547
Sumter	106,552	55,388	51,164

Table A-1.--Round pulpwood production in Alabama, 1986--Continued

[1] County	All species	Softwood	Hardwood
	Standard cords		
Talladega	153,603	130,381	23,222
Tallapoosa	115,409	72,279	43,130
Tuscaloosa	117,700	69,235	48,466
Walker	278,235	225,037	53,197
Washington	184,364	92,174	92,191
Wilcox	204,762	91,083	113,678
Winston	200,139	159,754	40,385
All counties	7,136,955	4,137,299	2,999,655

[1] Counties with no pulpwood production are omitted.

Table A-2.--Round pulpwood production in Arkansas, 1986

[1] County	All species	Softwood	Hardwood
	Standard cords		
Arkansas	302	3	300
Ashley	119,505	52,948	66,556
Baxter	3	3	0
Benton	4	4	0
Boone	5	5	0
Bradley	134,682	26,533	108,149
Calhoun	57,354	43,924	13,430
Carroll	28	28	0
Chicot	3,968	11	3,957
Clark	39,346	21,476	17,870
Clay	10	10	0
Cleburne	10,004	7,293	2,711
Cleveland	47,151	23,536	23,614
Columbia	105,454	77,749	27,705
Conway	9,272	5,756	3,516
Craighead	5	5	0
Crawford	2	2	0
Cross	11	11	0
Dallas	57,566	24,702	32,864
Desha	46	46	0
Drew	125,470	34,992	90,477
Faulkner	2,072	74	1,998
Franklin	2,465	1,790	675
Fulton	20	9	12
Garland	304	11	293
Grant	51,207	23,371	27,836
Greene	11	11	0

Table A-2.--Round pulpwood production in Arkansas, 1986--Continued

County [1]	All species	Softwood	Hardwood
	Standard cords		
Hempstead	47,638	27,239	20,399
Hot Spring	36,230	16,499	19,731
Howard	25,754	8,840	16,914
Independence	2	2	0
Jackson	7	0	7
Jefferson	43,459	17,123	26,336
Johnson	8,316	5,817	2,499
Lafayette	57,793	34,629	23,164
Lincoln	5,033	1,874	3,159
Little River	84,172	40,307	43,865
Logan	12,386	9,673	2,713
Lonoke	1,666	0	1,666
Miller	60,716	32,016	28,700
Montgomery	14,923	7,176	7,747
Nevada	66,328	48,198	18,130
Newton	11	4	8
Ouachita	90,441	65,720	24,721
Perry	12,228	4,252	7,976
Phillips	5	5	0
Pike	21,718	13,444	8,274
Poinsett	40	20	20
Polk	18,002	8,579	9,423
Pope	10,811	7,586	3,226
Prairie	791	0	791
Pulaski	17,262	1,914	15,348
St. Francis	9	0	9
Saline	36,732	20,262	16,471
Scott	18,076	8,407	9,669
Sebastian	104	65	39
Sevier	50,471	15,658	34,813
Union	221,418	112,804	108,614
Van Buren	19,219	8,735	10,484
Washington	9	6	4
White	3,776	2,791	985
Woodruff	10	10	0
Yell	14,358	7,821	6,537
All counties	1,766,184	871,779	894,406

[1] Counties with no pulpwood production are omitted.

Table A-3.--Round pulpwood production in Florida, 1986

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Alachua	80,108	61,867	18,241
Baker	35,609	35,553	56
Bay	84,821	84,561	260
Bradford	59,913	58,455	1,458
Brevard	2,852	2,852	0
Calhoun	173,061	171,811	1,250
Citrus	6,521	5,182	1,339
Clay	46,299	43,374	2,925
Columbia	79,790	76,942	2,848
Dixie	66,056	45,788	20,268
Duval	44,734	43,217	1,517
Escambia	63,881	55,986	7,895
Flagler	63,483	61,590	1,893
Franklin	21,364	21,276	88
Gadsden	68,801	51,198	17,603
Gilchrist	47,375	46,032	1,343
Glades	2,500	2,500	0
Gulf	44,552	44,447	105
Hamilton	63,696	62,540	1,156
Hendry	39,435	39,435	0
Hernando	992	278	714
Holmes	41,044	34,271	6,773
Indian River	2,407	2,407	0
Jackson	105,855	81,244	24,611
Jefferson	42,417	41,906	511
Lafayette	65,038	65,038	0
Lake	5,264	4,907	357
Leon	33,435	32,553	882
Levy	126,305	106,037	20,268
Liberty	66,865	66,720	145
Madison	51,435	32,616	18,819
Manatee	13,475	13,475	0
Marion	106,928	98,714	8,214
Nassau	188,995	171,556	17,439
Okaloosa	19,021	12,707	6,314
Okeechobee	2,500	2,500	0
Orange	2,407	2,407	0
Osceola	2,500	2,500	0

Table A-3.--Round pulpwood production in Florida, 1986--Continued

County[1]	All species	Softwood	Hardwood
	Standard cords		
Pasco	11,966	11,966	0
Polk	2,500	2,500	0
Putnam	58,932	53,575	5,357
St. Johns	96,270	91,505	4,765
St. Lucie	2,407	2,407	0
Santa Rosa	45,611	44,528	1,083
Sumter	9,488	9,488	0
Suwannee	83,781	83,259	522
Taylor	335,292	334,667	625
Union	40,879	39,419	1,460
Volusia	105,731	102,468	3,263
Wakulla	74,851	74,237	614
Walton	129,008	119,816	9,192
Washington	71,433	67,484	3,949
All counties	3,039,883	2,823,761	216,122

[1] Counties with no pulpwood production are omitted.

Table A-4.--Round pulpwood production in Georgia, 1986

County[1]	All species	Softwood	Hardwood
	Standard cords		
Appling	165,575	146,607	18,968
Atkinson	121,850	118,597	3,253
Bacon	93,123	89,913	3,210
Baker	13,877	11,943	1,934
Baldwin	45,812	33,549	12,263
Banks	32,140	29,872	2,268
Barrow	21,660	19,421	2,239
Bartow	51,742	51,177	565
Ben Hill	93,389	62,191	31,198
Berrien	19,335	19,243	92
Bibb	10,734	10,730	4
Bleckley	5,850	329	5,521
Brantley	68,768	56,157	12,611

Table A-4.--Round pulpwood production in Georgia, 1986--Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Brooks	23,181	22,853	328
Bryan	117,261	83,372	33,889
Bulloch	123,548	110,840	12,708
Burke	105,456	47,579	57,877
Butts	29,885	28,669	1,216
Calhoun	46,118	34,161	11,957
Camden	178,720	169,149	9,571
Candler	27,551	18,523	9,028
Carroll	84,384	77,730	6,654
Catoosa	5,830	5,830	0
Charlton	161,036	148,364	12,672
Chatham	46,493	36,419	10,074
Chattahoochee	3,244	2,569	675
Chattooga	47,489	31,935	15,554
Cherokee	48,666	46,899	1,767
Clarke	5,259	2,836	2,423
Clay	21,641	16,457	5,184
Clinch	175,571	166,843	8,728
Cobb	22,997	22,397	600
Coffee	102,006	86,259	15,747
Colquitt	64,153	62,755	1,398
Columbia	19,690	1,370	18,320
Cook	16,761	14,738	2,023
Coweta	20,896	20,276	620
Crawford	77,880	74,126	3,754
Crisp	24,365	21,339	3,026
Dade	12,069	1,724	10,345
Dawson	8,742	8,526	216
Decatur	62,721	42,773	19,948
De Kalb	4,453	4,453	0
Dodge	81,543	69,029	12,514
Dooly	10,650	10,484	166
Dougherty	16,455	11,773	4,682
Douglas	30,136	29,836	300
Early	59,996	48,459	11,537
Echols	36,825	34,559	2,266
Effingham	146,129	106,725	39,404
Elbert	14,036	8,961	5,075
Emanuel	86,647	63,530	23,117
Evans	89,944	68,233	21,711
Fannin	5,584	4,317	1,267
Fayette	10,032	9,941	91
Floyd	86,361	82,356	4,005
Forsyth	14,293	14,035	258
Franklin	48,231	35,475	12,756
Fulton	29,302	27,976	1,326

Table A-4.--Round pulpwood production in Georgia, 1986--Continued

1 County	All species	Softwood	Hardwood
	Standard cords		
Gilmer	4,741	4,693	48
Glascock	7,508	10	7,498
Glynn	167,991	127,841	40,150
Gordon	51,139	50,294	845
Grady	42,663	38,094	4,569
Greene	20,713	11,420	9,293
Gwinnett	30,774	28,534	2,240
Habersham	59,113	54,059	5,054
Hall	33,263	30,996	2,267
Hancock	79,440	50,531	28,909
Haralson	31,431	28,644	2,787
Harris	3,904	3,354	550
Hart	19,141	14,742	4,399
Heard	50,365	46,798	3,567
Henry	66,223	60,918	5,305
Houston	29,136	25,480	3,656
Irwin	839	796	43
Jackson	28,610	21,871	6,739
Jasper	25,924	25,924	0
Jeff Davis	43,368	40,076	3,292
Jefferson	66,528	48,073	18,455
Jenkins	35,834	15,898	19,936
Johnson	24,513	20,168	4,345
Jones	36,379	34,048	2,331
Lamar	13,708	13,708	0
Lanier	30,063	28,029	2,034
Laurens	81,080	58,567	22,513
Lee	17,228	14,942	2,286
Liberty	86,037	62,088	23,949
Lincoln	37,039	23,808	13,231
Long	162,537	136,754	25,783
Lowndes	33,541	30,724	2,817
Lumpkin	11,874	10,962	912
McDuffie	16,988	14,519	2,469
McIntosh	147,672	131,357	16,315
Macon	42,420	41,958	462
Madison	16,202	13,934	2,268
Marion	16,116	12,310	3,806
Meriwether	49,455	38,346	11,109
Miller	16,367	11,557	4,810
Mitchell	34,604	31,458	3,146
Monroe	77,124	77,124	0
Montgomery	23,423	16,366	7,057
Morgan	19,089	15,481	3,608

Table A-4.--Round pulpwood production in Georgia, 1986--Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Murray	47,694	47,382	312
Muscogee	1,272	1,208	64
Newton	4,057	4,057	0
Oconee	19,126	13,995	5,131
Oglethorpe	72,731	61,939	10,792
Paulding	15,667	15,247	420
Peach	4,190	4,190	0
Pickens	25,232	24,992	240
Pierce	32,563	25,954	6,609
Pike	36,529	32,305	4,224
Polk	22,841	20,054	2,787
Pulaski	29,378	26,900	2,478
Putnam	18,656	16,997	1,659
Quitman	42,515	32,896	9,619
Rabun	1,908	154	1,754
Randolph	65,214	55,371	9,843
Richmond	23,738	17,049	6,689
Schley	29,531	21,726	7,805
Screven	51,276	30,679	20,597
Seminole	4,772	4,713	59
Spalding	14,471	14,471	0
Stephens	10,920	10,057	863
Stewart	61,037	51,813	9,224
Sumter	43,488	39,906	3,582
Talbot	8,785	6,927	1,858
Taliaferro	22,417	16,930	5,487
Tattnall	77,702	58,955	18,747
Taylor	20,373	19,943	430
Telfair	45,735	39,432	6,303
Terrell	17,225	14,719	2,506
Thomas	54,845	44,008	10,837
Tift	15,156	14,199	957
Toombs	55,556	39,678	15,878
Towns	2,453	2,453	0
Treutlen	14,059	10,031	4,028
Troup	63,704	59,352	4,352
Turner	2,085	2,085	0
Twiggs	44,628	31,476	13,152
Union	6,295	6,181	114
Upson	40,133	39,809	324

Table A-4.--Round pulpwood production in Georgia, 1986--Continued

County[1]	All species	Softwood	Hardwood
	Standard cords		
Walker	28,380	27,191	1,189
Walton	3,728	297	3,431
Ware	107,482	104,879	2,603
Warren	64,409	31,952	32,457
Washington	65,464	23,503	41,961
Wayne	161,662	133,215	28,447
Webster	17,454	15,370	2,084
Wheeler	46,743	36,477	10,266
White	24,398	22,131	2,267
Whitfield	63,239	40,604	22,635
Wilcox	23,731	21,687	2,044
Wilkes	144,564	100,955	43,609
Wilkinson	49,286	26,239	23,047
Worth	64,825	64,568	257
All counties	7,125,514	5,883,737	1,241,777

[1] Counties with no pulpwood production are omitted.

Table A-5.--Round pulpwood production in Louisiana, 1986

Parish[1]	All species	Softwood	Hardwood
	Standard cords		
Acadia	3,704	3,689	15
Allen	84,015	79,748	4,267
Ascension	2,298	675	1,623
Avoyelles	16,174	1,435	14,739
Beauregard	256,236	250,385	5,851
Bienville	218,441	168,751	49,691
Bossier	89,155	62,471	26,684
Caddo	59,602	38,839	20,764
Calcasieu	43,125	42,883	242
Caldwell	92,927	47,115	45,812
Cameron	29	19	11
Catahoula	33,865	11,268	22,597
Claiborne	153,570	126,805	26,764
Concordia	25,381	10	25,370
De Soto	173,221	120,305	52,916
East Baton Rouge	3,510	1,718	1,792
East Carroll	10,291	0	10,291
East Feliciana	18,712	9,147	9,565
Evangeline	29,015	27,255	1,760
Franklin	7,523	466	7,057
Grant	99,014	79,089	19,926

Table A-5.--Round pulpwood production in Louisiana, 1986--Continued

Parish [1]	All species	Softwood	Hardwood
	Standard cords		
Iberia	10	0	10
Iberville	3,623	17	3,606
Jackson	178,949	141,540	37,409
Jefferson	9	4	5
Jefferson Davis	3,464	3,461	4
Lafayette	4,146	3,545	600
La Salle	138,666	121,343	17,324
Lincoln	114,232	88,190	26,042
Livingston	19,727	10,666	9,061
Madison	24,953	15	24,938
Morehouse	53,000	18,852	34,148
Natchitoches	186,021	138,759	47,261
Ouachita	105,577	56,301	49,277
Pointe Coupee	1,102	0	1,102
Rapides	174,042	163,385	10,657
Red River	54,568	39,688	14,881
Richland	2,202	97	2,105
Sabine	224,589	173,568	51,021
St. Charles	81	0	81
St. Helena	39,215	25,921	13,294
St. James	102	0	102
St. Landry	400	50	350
St. Martin	1,035	0	1,035
St. Tammany	31,160	30,018	1,143
Tangipahoa	27,200	18,696	8,504
Tensas	40,887	118	40,769
Union	255,059	147,322	107,737
Vermilion	2	2	0
Vernon	274,447	254,959	19,487
Washington	85,282	79,175	6,107
Webster	64,082	42,940	21,143
West Baton Rouge	2,977	222	2,754
West Carroll	761	177	584
West Feliciana	7,556	636	6,920
Winn	192,621	141,771	50,849
All parishes	3,731,555	2,773,511	958,044

[1] Parishes with no pulpwood production are omitted.

Table A-6.--Round pulpwood production in Mississippi, 1986

County[1]	All species	Softwood	Hardwood
	Standard cords		
Adams	55,508	6,055	49,454
Alcorn	73,971	60,926	13,045
Amite	55,072	35,157	19,916
Attala	227,376	149,321	78,055
Benton	79,957	71,129	8,829
Bolivar	6	6	0
Calhoun	22,522	12,360	10,162
Carroll	49,334	25,620	23,713
Chickasaw	86,542	77,978	8,564
Choctaw	38,442	33,311	5,132
Claiborne	62,550	23,689	38,861
Clarke	136,236	53,514	82,722
Clay	29,664	24,619	5,045
Coahoma	11	0	11
Copiah	128,067	49,391	78,675
Covington	82,322	30,017	52,305
De Soto	8	0	8
Forrest	101,175	62,670	38,505
Franklin	82,360	34,259	48,101
George	54,725	25,630	29,096
Greene	138,100	80,893	57,206
Grenada	20,467	12,872	7,594
Hancock	28,995	22,312	6,683
Harrison	42,308	38,056	4,252
Hinds	48,026	19,039	28,986
Holmes	79,776	43,972	35,803
Humphreys	82	11	72
Issaquena	3,091	25	3,066
Itawamba	217,914	170,098	47,815
Jackson	65,625	44,277	21,348
Jasper	98,617	29,564	69,053
Jefferson	81,651	30,176	51,475
Jefferson Davis	43,573	28,028	15,545
Jones	91,824	35,538	56,286
Kemper	68,914	27,694	41,220
Lafayette	20,368	10,134	10,234
Lamar	58,389	46,098	12,291
Lauderdale	171,092	80,248	90,844
Lawrence	65,554	45,955	19,599
Leake	127,195	84,257	42,937

Table A-6.--Round pulpwood production in Mississippi, 1986--Continued

[1] County	All species	Softwood	Hardwood
	Standard cords		
Lee	39,992	32,944	7,047
Leflore	2,981	1,036	1,945
Lincoln	69,777	38,927	30,850
Lowndes	7,055	2,591	4,464
Madison	30,594	22,321	8,273
Marion	56,664	36,470	20,195
Marshall	42,512	39,488	3,024
Monroe	35,112	32,600	2,512
Montgomery	29,471	10,520	18,951
Neshoba	49,776	18,117	31,659
Newton	103,680	43,722	59,958
Noxubee	50,778	24,878	25,900
Oktibbeha	49,389	39,843	9,546
Panola	1,283	729	553
Pearl River	91,163	82,165	8,998
Perry	86,840	60,876	25,964
Pike	45,925	28,334	17,592
Pontotoc	19,897	18,489	1,408
Prentiss	132,525	90,897	41,628
Quitman	46	17	30
Rankin	129,819	77,598	52,221
Scott	91,063	65,114	25,949
Sharkey	1,078	255	822
Simpson	77,042	43,399	33,643
Smith	81,710	29,382	52,328
Stone	50,785	37,858	12,928
Sunflower	12	9	3
Tallahatchie	1,911	1,000	911
Tate	45	25	20
Tippah	122,841	108,722	14,118
Tishomingo	165,587	116,948	48,639
Tunica	45	9	36
Union	40,871	33,899	6,972
Walthall	28,559	18,869	9,691
Warren	21,194	1,179	20,015
Washington	1,104	11	1,093
Wayne	141,481	72,774	68,708
Webster	36,669	32,010	4,659
Wilkinson	59,713	25,219	34,494
Winston	63,043	43,874	19,169
Yalobusha	27,244	15,856	11,388
Yazoo	10,906	5,480	5,426
All counties	4,935,592	2,979,353	1,956,238

[1] Counties with no pulpwood production are omitted.

Table A-7.--Round pulpwood production in North Carolina, 1986

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Alamance	2,537	363	2,174
Alexander	4,982	4,406	576
Alleghany	80	0	80
Anson	96,764	63,642	33,122
Beaufort	227,533	170,018	57,515
Bertie	255,920	84,613	171,307
Bladen	148,005	57,463	90,542
Brunswick	77,634	47,978	29,656
Buncombe	1,049	360	689
Burke	113,660	61,080	52,580
Cabarrus	9,497	8,937	560
Caldwell	14,289	4,019	10,270
Camden	20,434	9,268	11,166
Carteret	63,437	53,177	10,260
Caswell	4,679	9	4,670
Catawba	5,602	5,366	236
Chatham	27,976	11,862	16,114
Cherokee	14,712	12,933	1,779
Chowan	20,157	6,050	14,107
Clay	1,582	1,342	240
Cleveland	30,299	25,647	4,652
Columbus	146,553	85,172	61,381
Craven	262,399	206,127	56,272
Cumberland	80,324	36,859	43,465
Currituck	16,951	6,577	10,374
Dare	508	508	0
Davidson	4,111	3,084	1,027
Davie	1,451	1,238	213
Duplin	62,397	40,195	22,202
Durham	21,657	6,319	15,338
Edgecombe	47,589	15,822	31,767
Forsyth	5,802	2,480	3,322
Franklin	37,737	19,797	17,940
Gaston	4,932	4,766	166
Gates	52,656	23,819	28,837
Graham	73	16	57
Granville	30,786	12,995	17,791
Greene	21,200	8,914	12,286
Guilford	12,050	5,394	6,656
Halifax	123,345	69,772	53,573
Harnett	18,589	9,869	8,720
Haywood	92,783	37,224	55,559
Henderson	3,109	1,350	1,759

Table A-7.--Round pulpwood production in North Carolina, 1986 --Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Hertford	43,087	18,242	24,845
Hoke	11,781	7,917	3,864
Hyde	61,328	35,880	25,448
Iredell	10,129	9,079	1,050
Jackson	240	188	52
Johnston	36,151	12,127	24,024
Jones	36,039	24,614	11,425
Lee	18,574	8,089	10,485
Lenoir	59,887	41,375	18,512
Lincoln	7,778	7,423	355
McDowell	23,948	11,364	12,584
Macon	192	0	192
Madison	2,880	417	2,463
Martin	58,078	44,081	13,997
Mecklenburg	10,724	9,263	1,461
Mitchell	2,438	45	2,393
Montgomery	35,598	14,891	20,707
Moore	51,256	31,126	20,130
Nash	28,049	11,061	16,988
New Hanover	31,166	26,298	4,868
Northampton	38,952	11,475	27,477
Onslow	78,399	70,629	7,770
Orange	7,114	1,094	6,020
Pamlico	66,497	42,543	23,954
Pasquotank	10,074	4,358	5,716
Pender	92,195	64,859	27,336
Perquimans	27,958	17,025	10,933
Person	6,935	35	6,900
Pitt	65,328	40,935	24,393
Polk	19,781	13,507	6,274
Randolph	1,601	637	964
Richmond	45,266	24,727	20,539
Robeson	89,605	56,298	33,307
Rockingham	4,807	2,698	2,109
Rowan	9,692	9,279	413
Rutherford	42,324	27,627	14,697
Sampson	90,279	60,592	29,687
Scotland	19,000	13,153	5,847
Stanly	8,113	2,712	5,401

Table A-7.--Round pulpwood production in North Carolina, 1986 --Continued

County[1]	All species	Softwood	Hardwood
	Standard cords		
Stokes	2,481	464	2,017
Surry	4,219	944	3,275
Swain	702	491	211
Transylvania	4,607	235	4,372
Tyrrell	8,439	7,595	844
Union	7,960	7,900	60
Vance	25,327	7,126	18,201
Wake	40,485	26,813	13,672
Warren	36,680	19,906	16,774
Washington	16,401	6,470	9,931
Wayne	28,031	10,028	18,003
Wilkes	5,931	1,094	4,837
Wilson	30,203	11,492	18,711
Yadkin	1,791	568	1,223
Yancey	817	14	803
All counties	3,655,147	2,105,633	1,549,514

[1] Counties with no pulpwood production are omitted.

Table A-8.--Round pulpwood production in Oklahoma, 1986

County[1]	All species	Softwood	Hardwood
	Standard cords		
Choctaw	13,015	4,277	8,738
Latimer	4,709	2,513	2,196
Le Flore	12,750	6,984	5,766
McCurtain	36,482	21,710	14,772
Pushmataha	37,305	20,016	17,289
All counties	104,261	55,501	48,761

[1] Counties with no pulpwood production are omitted.

Table A-9.--Round pulpwood production in South Carolina, 1986

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Abbeville	50,963	29,757	21,206
Aiken	32,417	14,881	17,536
Allendale	31,786	15,636	16,150
Anderson	30,510	19,898	10,612
Bamberg	17,846	5,421	12,425
Barnwell	18,019	5,856	12,163
Beaufort	41,365	34,599	6,766
Berkeley	149,703	130,389	19,314
Calhoun	15,911	6,462	9,449
Charleston	43,027	29,239	13,788
Cherokee	38,757	37,114	1,643
Chester	89,610	74,530	15,080
Chesterfield	85,168	66,254	18,914
Clarendon	38,218	21,499	16,719
Colleton	137,106	82,290	54,816
Darlington	55,529	25,065	30,464
Dillon	28,445	17,190	11,255
Dorchester	115,149	71,109	44,040
Edgefield	76,201	44,596	31,605
Fairfield	145,772	108,728	37,044
Florence	56,249	39,785	16,464
Georgetown	192,465	147,920	44,545
Greenville	26,277	18,753	7,524
Greenwood	68,280	38,397	29,883
Hampton	90,753	51,339	39,414
Horry	118,549	81,921	36,628
Jasper	110,691	68,684	42,007
Kershaw	130,373	102,877	27,496
Lancaster	97,588	70,484	27,104
Laurens	95,201	65,411	29,790
Lee	13,788	10,193	3,595
Lexington	27,107	13,669	13,438
McCormick	80,311	58,910	21,401

Table A-9.--Round pulpwood production in South Carolina, 1986--Continued

County[1]	All species	Softwood	Hardwood
	Standard cords		
Marion	48,212	19,749	28,463
Marlboro	50,068	24,259	25,809
Newberry	174,592	127,464	47,128
Oconee	13,968	11,620	2,348
Orangeburg	79,761	28,951	50,810
Pickens	38,733	25,345	13,388
Richland	61,737	39,215	22,522
Saluda	53,735	26,149	27,586
Spartanburg	43,954	37,539	6,415
Sumter	69,225	43,606	25,619
Union	59,616	50,256	9,360
Williamsburg	112,070	77,240	34,830
York	56,892	55,257	1,635
All counties	3,211,697	2,175,506	1,036,191

[1] Counties with no pulpwood production are omitted.

Table A-10.--Round pulpwood production in Tennessee, 1986

County[1]	All species	Softwood	Hardwood
	Standard cords		
Anderson	9,732	9,732	0
Benton	26,900	9,953	16,947
Bledsoe	27,687	9,315	18,372
Blount	16,228	15,793	435
Bradley	46,564	46,102	463
Carroll	5,731	1,753	3,978
Carter	8,294	0	8,294
Chester	3,744	2,945	799
Claiborne	99	99	0
Clay	1,265	0	1,265
Cocke	7,819	4,200	3,619
Coffee	3,465	3,465	0
Cumberland	13,170	12,752	418

Table A-10.--Round pulpwood production in Tennessee, 1986--Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Decatur	37,798	17,534	20,264
Fayette	407	407	0
Fentress	8,926	8,926	0
Franklin	7,687	0	7,687
Giles	2,644	2,360	284
Grainger	3,102	1,356	1,746
Greene	1,702	1,060	643
Grundy	28,091	7,880	20,212
Hamblen	9,914	9,434	480
Hamilton	24,296	19,093	5,203
Hancock	6,712	1,049	5,664
Hardeman	8,163	5,041	3,121
Hardin	102,463	89,066	13,396
Hawkins	10,256	0	10,256
Haywood	43	43	0
Henderson	3,776	3,776	0
Henry	4,821	1,675	3,147
Hickman	54,069	19,029	35,040
Houston	1,732	1,652	79
Humphreys	39,286	505	38,781
Jackson	5,850	5,850	0
Jefferson	1,269	1,269	0
Johnson	2,323	0	2,323
Knox	3,028	3,028	0
Lawrence	23,969	14,495	9,474
Lewis	9,227	4,779	4,448
Loudon	10,782	10,545	237
McMinn	39,915	39,161	754
McNairy	74,911	61,431	13,480
Madison	18,008	17,689	320
Marion	25,931	12,161	13,770
Marshall	51	51	0
Maury	1,074	1,074	0
Meigs	24,764	24,186	578
Monroe	29,827	29,633	195
Montgomery	1,142	1,142	0
Morgan	11,768	11,734	34
Overton	3,500	3,500	0
Perry	23,262	23,226	36
Polk	43,357	42,907	450
Putnam	11,194	11,194	0

Table A-10.--Round pulpwood production in Tennessee, 1986--Continued

[1] County	All species	Softwood	Hardwood
	Standard cords		
Rhea	41,036	40,678	358
Roane	20,498	20,232	266
Scott	16,287	15,447	839
Sequatchie	11,477	11,331	146
Sevier	1,071	1,071	0
Shelby	6,832	2,457	4,375
Stewart	30,572	20,131	10,440
Sullivan	4,020	0	4,020
Unicoi	1,988	192	1,796
Van Buren	3,389	2,039	1,350
Warren	2,039	2,039	0
Washington	500	18	482
Wayne	191,862	45,825	146,037
Weakley	1,693	148	1,544
White	2,830	2,289	540
All counties	1,227,831	788,945	438,885

[1] Counties with no pulpwood production are omitted.

Table A-11.--Round pulpwood production in Texas, 1986

[1] County	All species	Softwood	Hardwood
	Standard cords		
Anderson	4,070	2,190	1,881
Angelina	56,494	49,625	6,870
Bowie	40,545	24,066	16,478
Camp	10,432	7,841	2,591
Cass	219,557	134,758	84,798
Chambers	362	362	0
Cherokee	49,433	46,213	3,220
Gregg	2,717	1,572	1,144
Grimes	1,015	0	1,015
Hardin	125,218	88,085	37,133
Harris	2,106	11	2,095

Table A-11.--Round pulpwood production in Texas, 1986--Continued

[1] County	All species	Softwood	Hardwood
	Standard cords		
Harrison	91,315	51,763	39,552
Henderson	21	0	21
Houston	35,936	19,632	16,304
Jasper	164,366	97,711	66,655
Jefferson	7,483	4,018	3,465
Liberty	32,448	12,995	19,453
Llano	472	419	53
Marion	86,455	56,719	29,735
Montgomery	7,567	139	7,428
Morris	40,223	22,391	17,831
Nacogdoches	37,162	33,942	3,221
Newton	153,132	114,503	38,629
Orange	28,675	20,589	8,086
Panola	71,716	52,447	19,269
Polk	279,449	226,549	52,901
Red River	997	589	408
Rusk	47,931	28,973	18,958
Sabine	29,058	12,700	16,358
San Augustine	31,844	6,873	24,971
San Jacinto	87,514	73,772	13,742
Shelby	41,009	27,835	13,174
Smith	10,060	4,035	6,025
Titus	11,188	7,212	3,976
Trinity	173,531	170,146	3,385
Tyler	50,165	25,780	24,385
Upshur	19,964	12,805	7,159
Walker	18,567	4,732	13,835
All counties	2,070,196	1,443,992	626,204

[1] Counties with no pulpwood production are omitted.

Table A-12.--Round pulpwood production in Virginia, 1986

1 County	All species	Softwood	Hardwood
	Standard cords		
Accomack	15,163	15,163	0
Albemarle	59,834	16,446	43,388
Alleghany	47,629	8,795	38,834
Amelia	32,777	18,434	14,343
Amherst	26,972	12,296	14,676
Appomattox	47,678	33,066	14,612
Augusta	17,480	3,785	13,695
Bath	52,175	4,918	47,257
Bedford	99,055	22,850	76,205
Bland	6,638	544	6,094
Botetourt	57,699	8,081	49,618
Brunswick	68,114	41,296	26,818
Buchanan	2,419	0	2,419
Buckingham	198,653	98,283	100,370
Campbell	86,452	34,334	52,118
Caroline	35,318	23,128	12,190
Carroll	752	191	561
Charles City	18,194	13,975	4,219
Charlotte	71,086	46,969	24,117
Chesapeake	3,497	934	2,563
Chesterfield	11,071	6,248	4,823
Craig	20,167	4,100	16,067
Culpeper	14,793	9,645	5,148
Cumberland	53,134	27,867	25,267
Dinwiddie	39,568	15,381	24,187
Essex	22,891	15,611	7,280
Fairfax	1,775	937	838
Fauquier	16,919	10,390	6,529
Floyd	74	0	74
Fluvanna	32,514	18,932	13,582
Franklin	116,433	34,673	81,760
Frederick	7,120	4,706	2,414
Giles	22	0	22
Gloucester	22,247	16,838	5,409
Goochland	19,842	16,572	3,270
Greensville	33,512	11,091	22,421
Halifax	59,758	26,611	33,147
Hanover	16,521	14,360	2,161
Henrico	4,145	2,244	1,901
Henry	25,416	5,287	20,129
Highland	22,071	2,346	19,725

Table A-12.--Round pulpwood production in Virginia, 1986 --Continued

1 County	All species	Softwood	Hardwood
	----------Standard cords----------		
Isle of Wight	24,785	5,781	19,004
James City	2,106	846	1,260
King and Queen	54,513	36,908	17,605
King George	2,485	2,160	325
King William	21,203	15,803	5,400
Lancaster	8,606	6,227	2,379
Lee	17,321	0	17,321
Loudoun	497	454	43
Louisa	20,640	18,366	2,274
Lunenburg	23,796	8,531	15,265
Madison	850	733	117
Mathews	1,895	1,380	515
Mecklenburg	49,451	31,993	17,458
Middlesex	10,333	5,738	4,595
Nelson	64,414	19,664	44,750
New Kent	24,006	15,867	8,139
Newport News	90	56	34
Northampton	3,564	1,411	2,153
Northumberland	8,008	3,457	4,551
Nottoway	23,141	14,699	8,442
Orange	50,552	32,905	17,647
Page	105	99	6
Patrick	265	7	258
Pittsylvania	111,665	43,863	67,802
Powhatan	18,133	12,330	5,803
Prince Edward	42,388	25,143	17,245
Prince George	11,081	5,495	5,586
Prince William	3,109	2,172	937
Pulaski	711	78	633
Rappahannock	1,859	1,472	387
Richmond	12,859	10,633	2,226
Roanoke	409	326	83
Rockbridge	63,280	12,556	50,724
Rockingham	1,265	540	725
Russell	2,461	0	2,461

Table A-12.--Round pulpwood production in Virginia, 1986--Continued

County[1]	All species	Softwood	Hardwood
	Standard cords		
Scott	29,019	0	29,019
Shenandoah	3,129	1,718	1,411
Smyth	5,158	0	5,158
Southampton	74,549	14,330	60,219
Spotsylvania	43,220	37,016	6,204
Stafford	7,103	6,050	1,053
Suffolk	24,345	9,088	15,257
Surry	21,033	5,784	15,249
Sussex	32,389	9,438	22,951
Tazewell	7	0	7
Virginia Beach	1,499	1,132	367
Warren	1,701	567	1,134
Washington	2,332	0	2,332
Westmoreland	6,574	4,906	1,668
Wise	10,682	0	10,682
Wythe	962	0	962
York	1,899	997	902
All counties	2,435,025	1,076,046	1,358,979

[1] Counties with no pulpwood production are omitted.

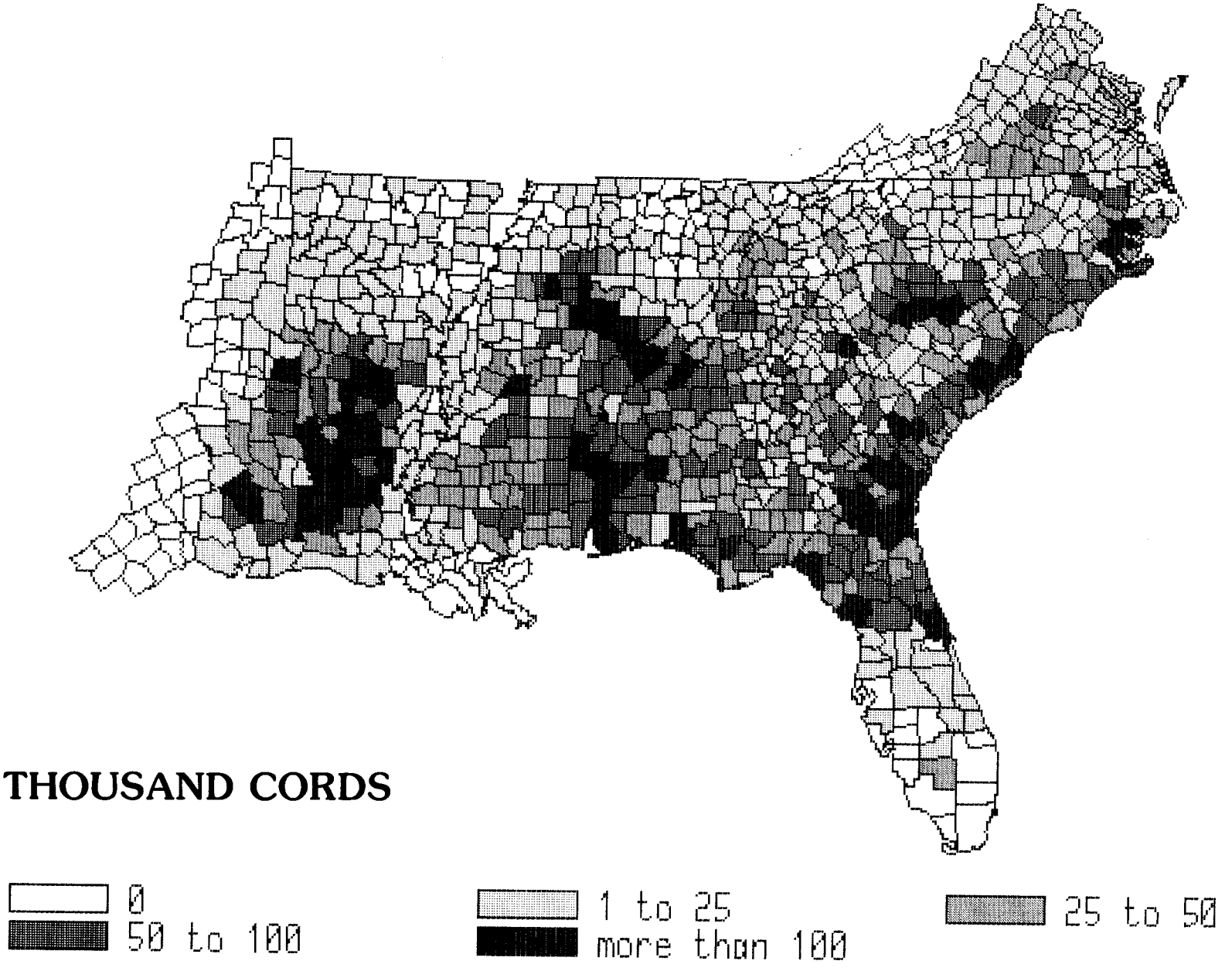

Figure A-1.--1986 softwood roundwood production by county.

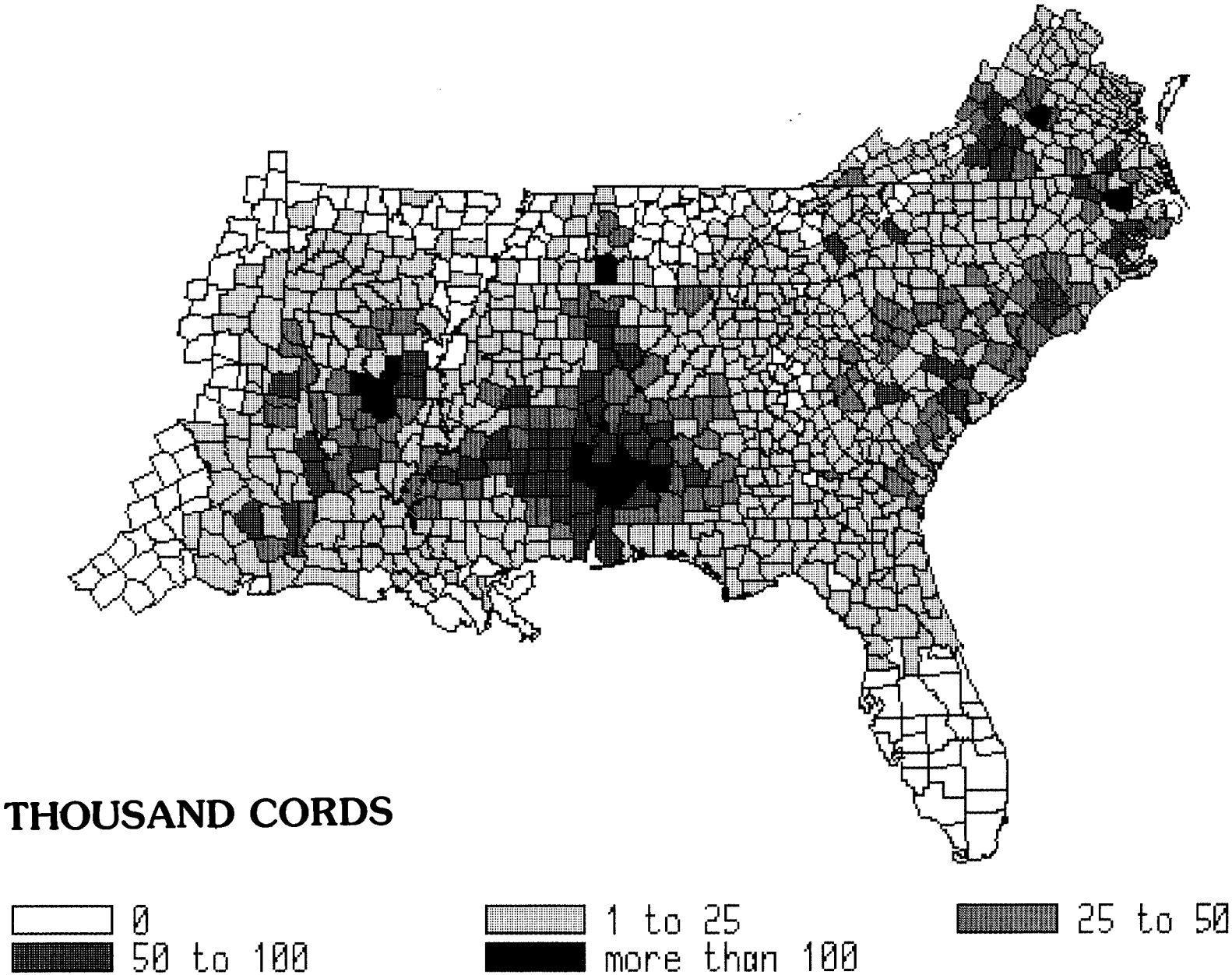

Figure A-2.--1986 hardwood roundwood production by county.

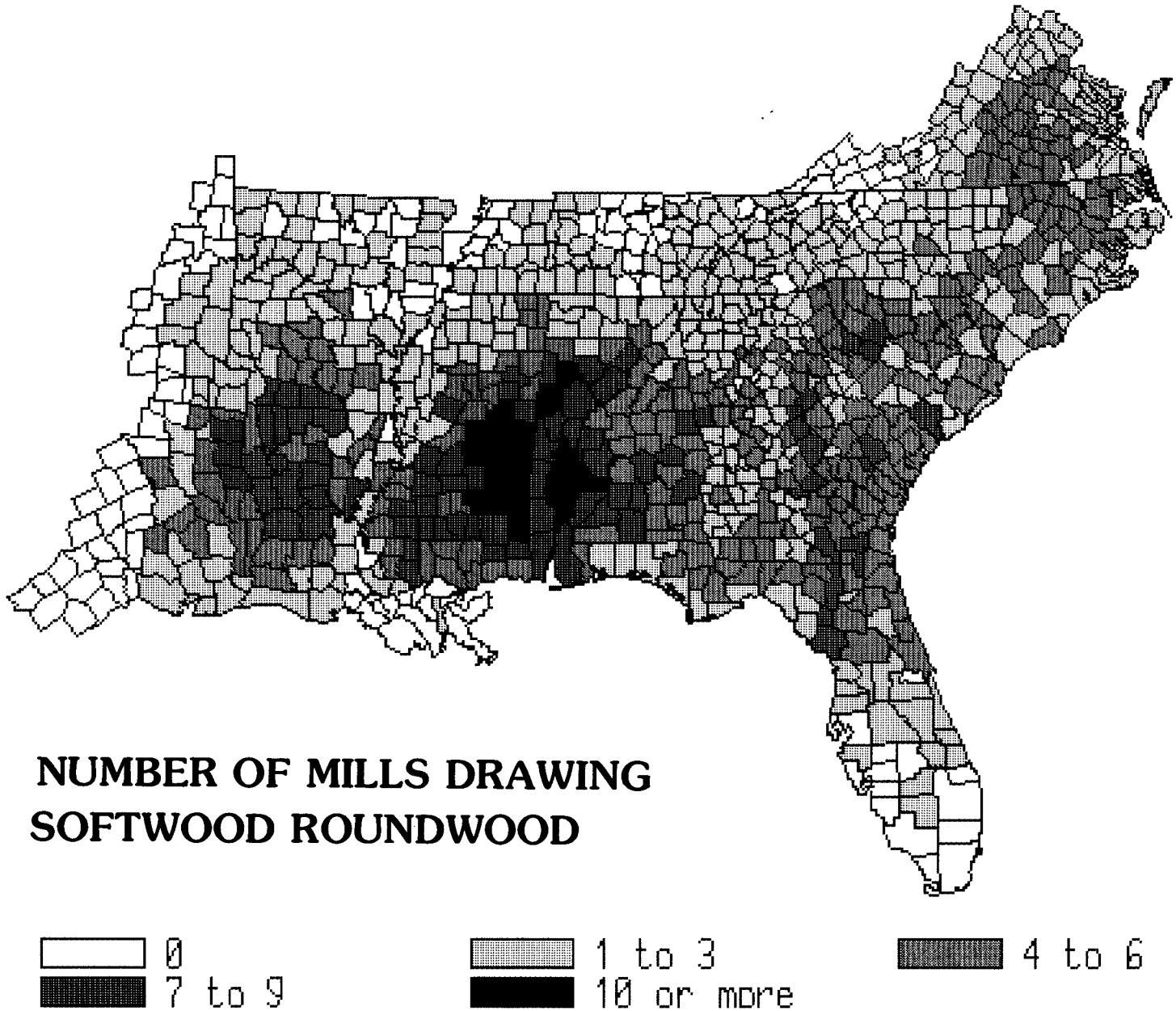

Figure A-3.--1986 competition among mills for softwood roundwood.

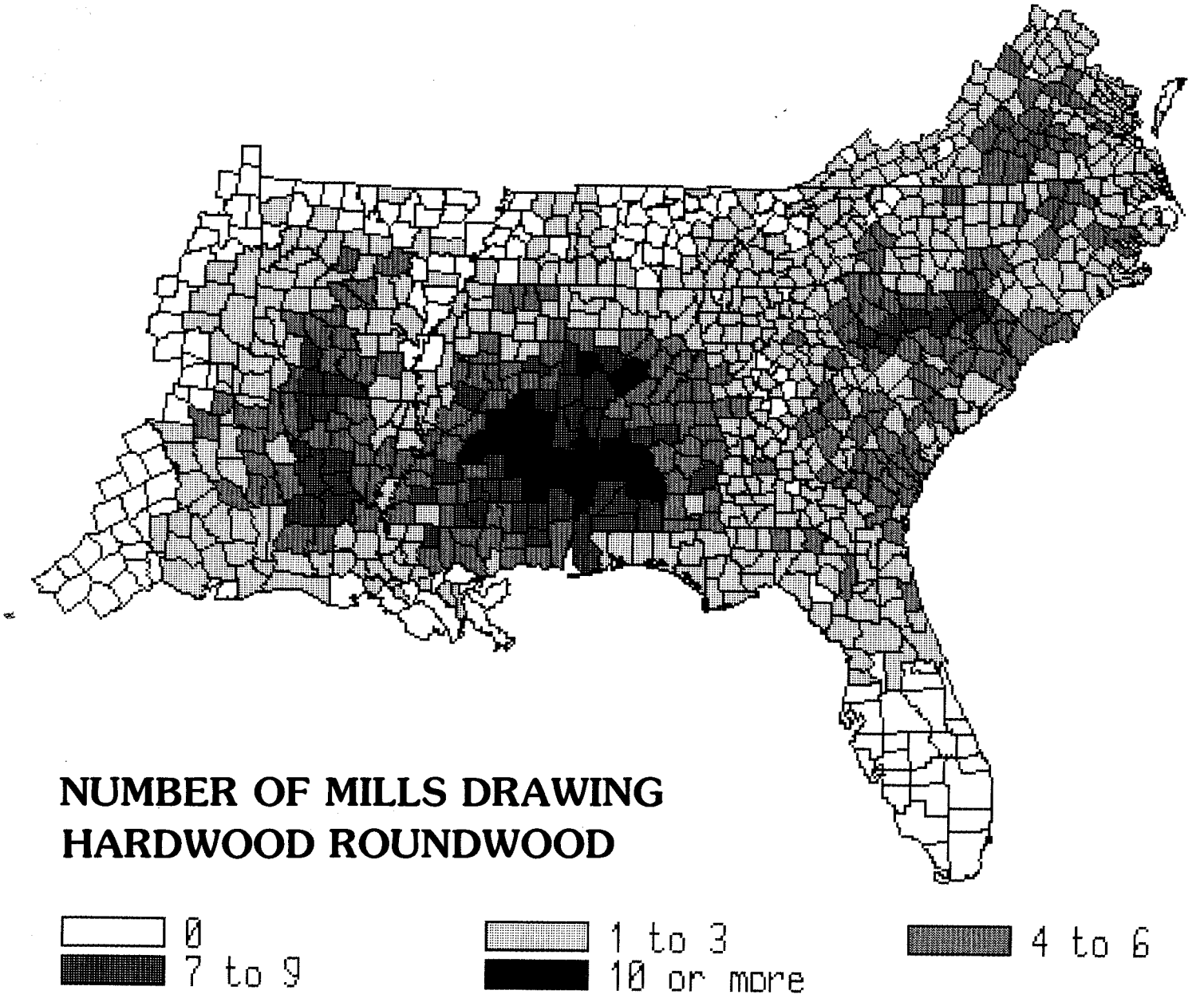

Figure A-4.--1986 competition among mills for hardwood roundwood.

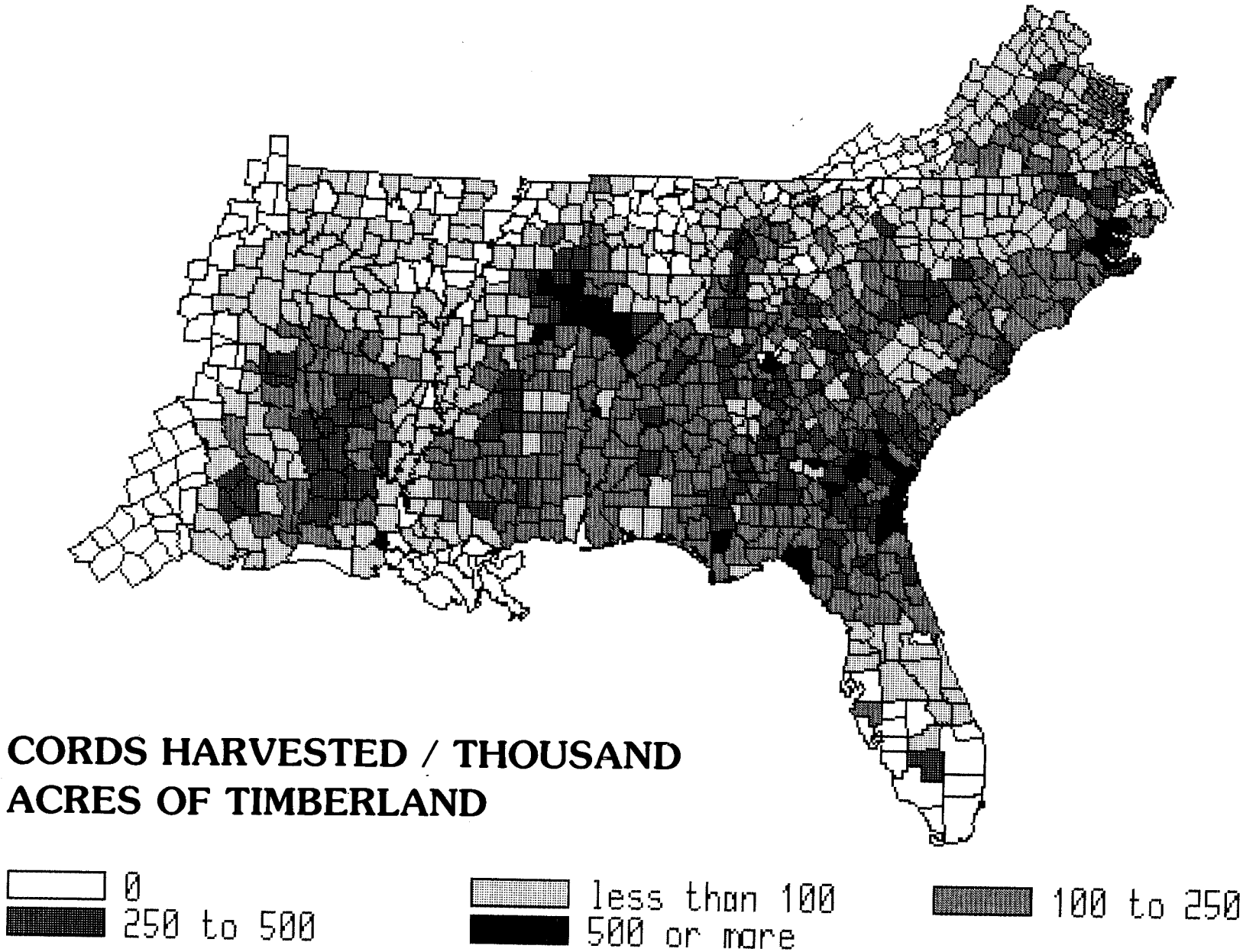

Figure A-5.--1986 softwood roundwood harvesting intensity.

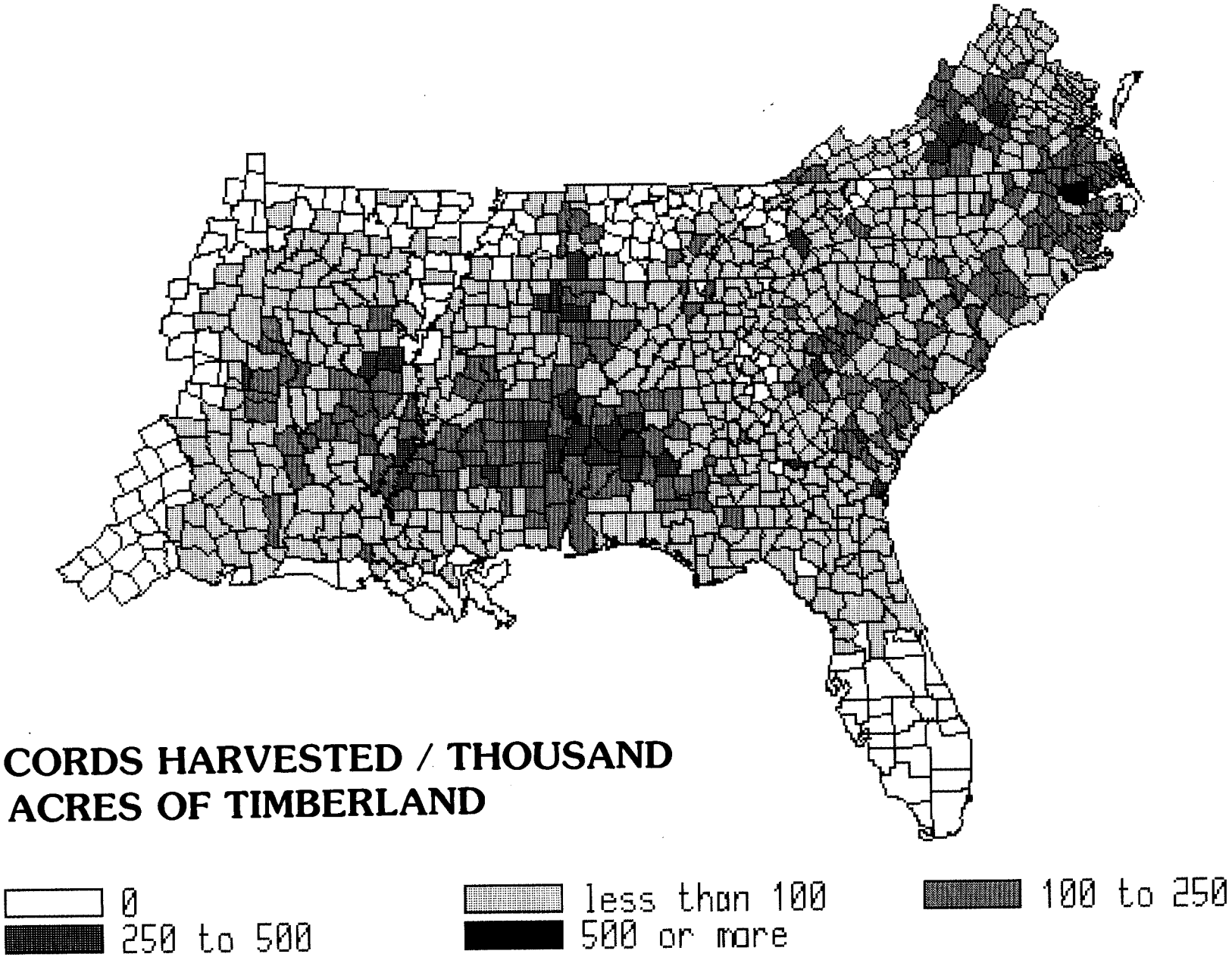

Figure A-6.--1986 hardwood roundwood harvesting intensity.

May, Dennis M. Southern pulpwood production, 1986. Resour. Bull. SO-138. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station, 1988. 40 p.

In 1986, Southern pulpwood production increased 6 percent, to 60.6 million cords; roundwood production increased 9 percent, to 40.4 million cords; and wood residue production increased 2 percent, to 20.1 million cords. Since 1977, roundwood production has been increasing while wood residue production has leveled off. Hardwoods have been capturing a larger proportion of the total pulpwood production since 1977. Pulping capacity of the 105 pulpmills operating in 1986 totaled 119,825 tons per day.

Additional key words: pulpmills, roundwood, wood residues.

* GOVERNMENT PRINTING OFFICE: 1988 - 566019 / 85007