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South Carolina's Industrial Timber Products Output, 1977-1981

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ABSTRACT

The output of industrial timber products from South Carolina's forests amounted to 506.9 million cubic feet in 1981, 5 percent less than in 1977. An increase in output from softwood roundwood of almost 2.8 million cubic feet was more than offset by a decrease in hardwood roundwood output of more than 5.8 million cubic feet. Pulpwood was the leading roundwood product in the State throughout the period, followed by saw logs and then veneer logs. The trend toward complete utilization of plant byproducts continued, with the volume of unused plant residues dropping from over 7.5 million cubic feet in 1977 to only 1.3 million cubic feet in 1981.

Keywords: Roundwood receipts, roundwood output, plant byproducts, residues, wood movement.

In 1978 the USDA Forest Service completed its fifth evaluation of South Carolina's forest resources. This evaluation provided an estimate of the total timber removals and net growth for 1977 and a measure of the growing-stock inventory as of January 1978 (table 1). Since the previous inventory in 1968, growing-stock volume had increased over 29 percent, net annual growth had increased 47 percent, and annual removals had increased 12 percent.[1] Growth and removal statistics are indicators of future opportunities and problems with the forest resource. Knowledge of the growth-removal relationship is crucial to forest industries when examining current situations and analyzing potential procurement areas. Between detailed timber surveys, which are made at approximately 10-year intervals in Southeastern States, removal data can be supplemented by annual timber drain data to give a better picture of current activity. One of the easiest ways to collect such State information is to conduct periodic canvasses of primary wood-using plants to determine the amount and source of their receipts. Since 1972, such studies have been conducted annually in South Carolina by the South Carolina State Commission of Forestry and the Cooperative Extension Service at Clemson University to determine the volume and source of all industrial timber products produced by region and county (fig. 1). Through these studies, along with a yearly pulpwood production study, annual changes in timber products output can be monitored. This Resource Bulletin reports results of canvasses in South Carolina for 1977 through 1981. The data presented here have significance beyond indications of changes

Table 1.--Results of the 1978 Forest Inventory and Analysis Survey of South Carolina

Item	Softwood	Hardwood
	Million cubic feet	
1978 Growing-stock inventory	8,927.1	8,253.3
1977 Growing-stock net growth	617.7	345.6
1977 Growing-stock removals:		
Industrial products output	315.8	75.4
Fuelwood	.6	15.3
Logging residues	25.3	23.2
Other removals[a]	18.8	21.5
Total removals	360.5	135.4

[a]Includes land clearing and timber stand improvement.

[1]Knight, Herbert A.; McClure, Joe P. South Carolina's forests. Resour. Bull. SE-51. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1979. 66 p.

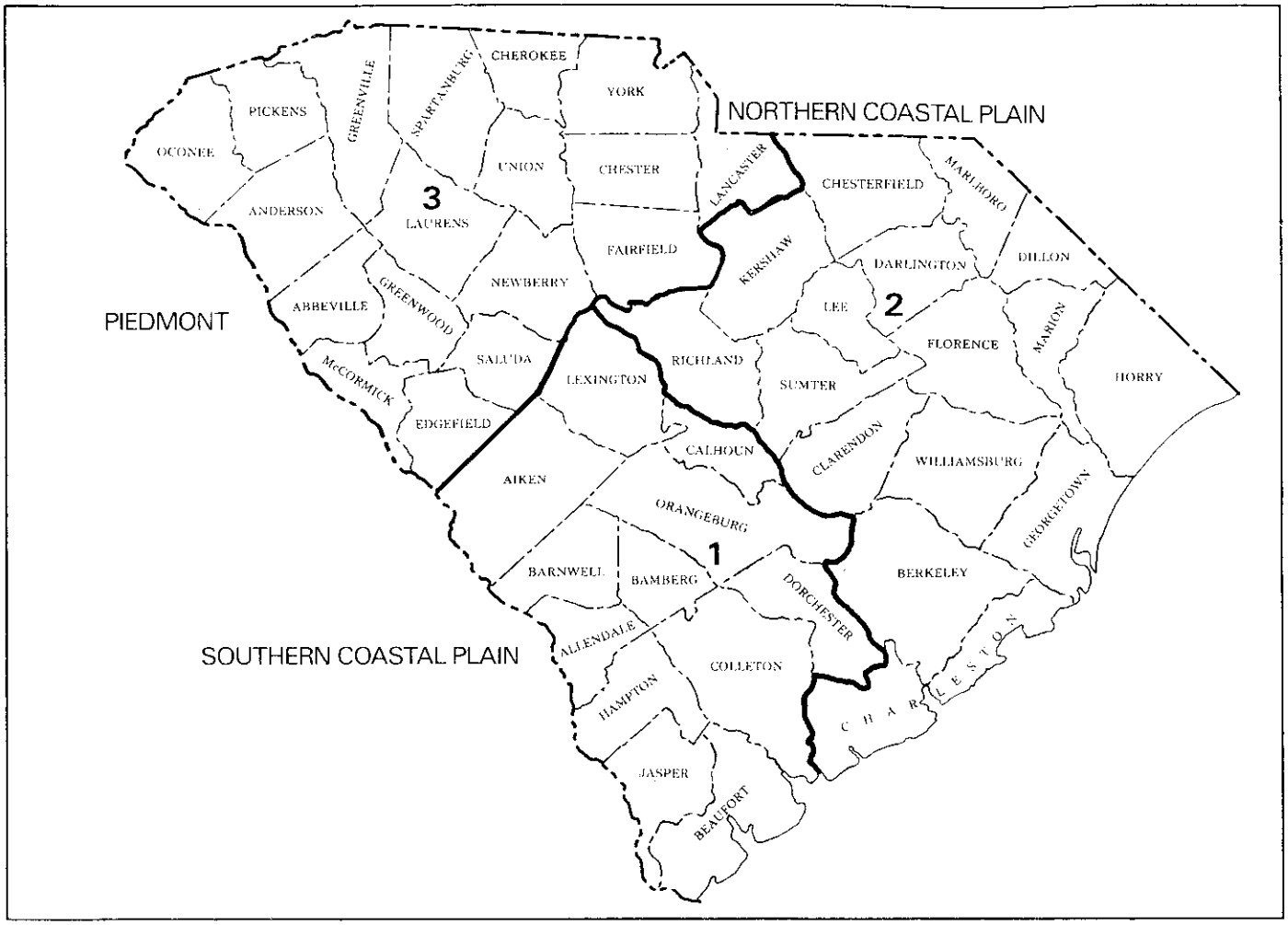

Figure 1.—Forest survey regions in South Carolina.

in timber drain from the State's forests because of the period covered. During this time the economy experienced a major recession, with the homebuilding industry being particularly hard hit. As a result, long-term trends in the output of some timber products were temporarily altered.

Numbers of Mills

Throughout the South, numbers of sawmills have been declining for many years. Many small mills have closed and been replaced by fewer mills with larger capacities. Between 1967 and 1976, the number of sawmills in South Carolina declined by 107.[2] That long-term trend appears to have ended. In 1981, there were 117 mills operating in the State, only two less than in 1977, despite soft markets for construction lumber (table 2). Between 1977 and 1981, annual softwood saw-log receipts increased by 2.2 million cubic feet to 122.0 million cubic feet, while annual hardwood saw-log receipts declined from 41.5 to 34.8 million cubic feet (table 3).

Between 1967 and 1976, two new pulpmills were constructed in South Carolina. No new mills were added between then and 1981, and daily pulping capacity declined by slightly less than 3 percent to 7,700 tons per day.[3]

[2]Welch, Richard L.; Bellamy, Thomas R. A 10-year analysis of South Carolina's industrial timber products output. Resour. Bull. SE-48. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1979. 23 p.

[3]Hutchins, Cecil C., Jr. Southern pulpwood production, 1981. Resour. Bull. SE-66. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1982. 24 p.

The number of veneer mills also changed little after 1976. Twenty-three veneer mills were operating in South Carolina in 1977, 25 in 1980, and 22 in 1981. Softwood veneer receipts peaked in 1978 at 39.9 million cubic feet and then declined to 33.9 million cubic feet in 1981. Hardwood receipts also peaked in 1978 at 10.7 million cubic feet and reached a low of 6.7 million cubic feet in 1981.

Table 2.--Number of primary wood-using plants, by industry, 1977-1981, South Carolina

Industry	1977	1978	1979	1980	1981
	- - - - Number of plants - - -				
Sawmills	119	121	128	126	117
Veneer mills	23	25	24	25	22
Pulpmills	7	7	7	7	7
Other miscellaneous	5	5	4	4	6
All plants	154	158	163	162	152

Changes in Timber Use

A trend toward total-tree utilization continued. An increasing volume of harvested material that could not be used for a primary product due to defect or size limitations was converted directly into a byproduct--mainly pulpwood chips. The volume of roundwood chips used for fiber peaked in 1977 at 51.3 million cubic feet (table 9), more than double the volume of 1976. The volume of roundwood chips declined after 1977 to a low of 34.4 million cubic feet in 1980 but increased again in 1981 to 44.8 million cubic feet.

Between 1967 and 1977, the volume of growing-stock removals utilized for industrial products increased 19 percent. During the same period, the output of industrial timber products from roundwood increased 28 percent, suggesting improved timber utilization and greater use of timber not included in the growing-stock inventory. In 1967, cull trees, dead trees, tops, limbs, saplings, and material cut outside the commercial forests provided only 21.0 million cubic feet, or 6 percent of the industrial product output. In 1977, this same material provided 58 million cubic feet, or 13 percent of the industrial product output (see footnote 1). Use of this type material for timber products extends the supplies of growing stock.

Industrial Timber Products Output

During the study period the largest output of industrial timber products from South Carolina's forests occurred in 1979, when over 566.5 million cubic feet were produced (tables 4 and 8). By 1981 this volume had dropped to 506.9 million cubic feet, 5 percent below the 1977 output.

Softwood roundwood output reached a high of 358.5 million cubic feet in 1981; however, output from plant byproducts was only 50.0 million cubic feet, making the total output of 408.5 million cubic feet the lowest of the period.

Hardwood roundwood output was highest in 1978, with the production of over 106.2 million cubic feet of industrial timber products. It declined in 1981 to a low of 88.1 million cubic feet. Output from hardwood plant byproducts was greatest in 1980, when 15.3 million cubic feet were utilized as industrial timber products, and lowest in 1981, when 10.3 million cubic feet were utilized.

Pulpwood accounted for an average of 55 percent of the State's product output during the period. Production of pulpwood peaked in 1979 at around 304.5 million cubic feet, and declined thereafter, reaching a low of 284.8 million cubic feet in 1981. The percentage of pulpwood from plant byproducts increased from 22 percent in 1977 to 27 percent, or 83.6 million cubic feet, in 1979. Softwoods contributed around 80 percent to the annual pulpwood production throughout the period.

Sawn product output was also greatest in 1979--194.6 million cubic feet--and decreased to 163.7 million cubic feet in 1981. Roundwood output showed a net gain of 3.2 million cubic feet between 1977 and 1981, but this gain was offset by a decrease of 5.1 million cubic feet in the volume of sawn products produced from residues. In 1978, the volume of sawn industrial products manufactured from residues peaked at 10.0 million cubic feet but steadily decreased until 1981, when it reached zero. During the period, the volume of both softwood and hardwood sawn products contributed around 33 percent of the total industrial product output, not varying by more than 2 percent in any year.

The output of veneer logs was greatest in 1978, when 53.9 million cubic feet

were produced. Veneer-log output was lowest in 1980, when 42.1 million cubic feet were produced. Between 1977 and 1981, the output of veneer logs declined by 8 percent for softwoods and 2 percent for hardwoods. During the study period, veneer-log production contributed an average of 9 percent of the total volume of industrial product output.

The output of other industrial products, which include poles, pilings, fenceposts, and raw material for the particleboard industry, was greatest in 1977 at 23 million cubic feet and gradually declined to a low of 13 million cubic feet in 1981. Softwoods made up 99 percent of the output in 1977 and 96 percent in 1981. Residues accounted for more than half of the total miscellaneous product output throughout the period.

Residue Use

The volume of unused plant residues continued to decline in South Carolina due to increased use as fuelwood and for miscellaneous industrial products (table 12). In 1977, the total volume of residues (including bark) produced in the manufacture of primary timber products equaled 152.6 million cubic feet. Of this volume, 83.6 million cubic feet were utilized in the further manufacture of industrial timber products; this volume represented 16 percent of the total industrial timber products output for the year. An additional 56.7 million cubic feet were utilized for fuel, 4.7 million cubic feet were used as other products such as mulching, and 7.5 million cubic feet, or about 5 percent of the total residues produced, were unused. Fifty-two percent of these unutilized residues consisted of shavings and sawdust, 43 percent consisted of bark, and only 5 percent consisted of coarse materials such as slabs, edgings, and veneer cores. Over 97 percent came from the manufacture of lumber, and 3 percent from veneer and other miscellaneous industrial products (table 13). In 1981 the total volume of residues produced was 133.9 million cubic feet, including bark. Of this volume, 60.4 million cubic feet, or 12 percent of the total industrial timber products output, were utilized in the further manufacture of industrial timber products. An additonal 66.2 million cubic feet were utilized as fuel and 6.0 million cubic feet were used as other products. Only 1.3 million cubic feet, less than 1 percent of the total residues produced, were not utilized. Fifty-three percent of these unutilized residues consisted of shavings and sawdust, 31 percent consisted of bark, and 16 percent consisted of coarse materials. About two-thirds of the unused residues came from the manufacture of lumber, and the remaining one-third from the manufacture of veneer.

Regional Trends

Southern Coastal Plain. Between 1977 and 1981, roundwood output in the 12 counties of South Carolina's Southern Coastal Plain increased from 119 million cubic feet to 134 million cubic feet, or by 13 percent (table 5). Increases were seen in the output of all products except miscellaneous industrial products. Output of saw logs and veneer logs peaked in 1979, while pulpwood production peaked in 1981. In both 1977 and 1981, pulpwood contributed 47 percent to the region's industrial product output, while saw logs contributed 43 percent. Veneer-log output fluctuated little, contributing 8 percent to the region's total in 1977 and 9 percent in 1981. Other miscellaneous industrial products contributed 2 percent in 1977 and 1 percent in 1981. Almost 78 percent of the 1981 roundwood output was softwood.

The Southern Coastal Plain produced 27 percent of the State's round pulpwood, 35 percent of the saw logs, 26 percent of the veneer logs, and 38 percent of the roundwood used for other industrial products in 1981.

Northern Coastal Plain. Between 1977 and 1981, roundwood output in the 16 counties of South Carolina's Northern Coastal Plain decreased by 9 percent from 165 million cubic feet to 150 million cubic feet (table 6). A slight increase in saw-log output was more than offset by losses in outputs of veneer logs, pulpwood, and other miscellaneous industrial products. Saw-log output was greatest in 1979, while veneer and pulpwood outputs were greatest in 1978. The output of miscellaneous industrial products was greatest in 1977. The region contributed 37 percent to the State's roundwood output in 1977 and 34 percent in 1981. Approximately 78 percent of the 1981 roundwood

output was softwood, with pulpwood comprising 47 percent of the total, saw logs 39 percent, veneer logs 12 percent, and other industrial products 2 percent.

Although five of South Carolina's seven pulpmills (fig. 2) are located in the Northern Coastal Plain, only 30 percent of the State's round pulpwood was cut here. The region also provided 41 percent of South Carolina's veneer logs, 36 percent of its saw logs, and almost 58 percent of the roundwood used for other industrial products in 1981. The Northern Coastal Plain contained 12 of the State's 22 veneer mills, 32 percent of its sawmills, and two-thirds of its miscellaneous product mills.

Piedmont. Between 1977 and 1981, roundwood output in the 18 counties of South Carolina's Piedmont region decreased by less than 2 percent from 166 million cubic feet (the largest volume produced during the period) to 163 million cubic feet (table 7). Although softwood output increased by over 3 percent, hardwood output decreased by over 23 percent. Softwoods made up between 81 percent (in 1977) and 85 percent (in 1981) of the total output throughout the period. Both saw-log and pulpwood output decreased slightly, while veneer-log and other miscellaneous product output increased, reaching a high for the period in 1981. Saw-log output was greatest in 1978 and pulpwood output greatest in 1977. In 1977, the region contributed 37 percent to the State's total roundwood output. In 1981 this figure had decreased slightly to 36 percent.

In 1981, pulpwood accounted for 62 percent of the region's industrial product output, while saw logs contributed 29 percent, and veneer logs 9 percent. Other industrial products contributed less than 1 percent. These percentages were very similar to those of 1977.

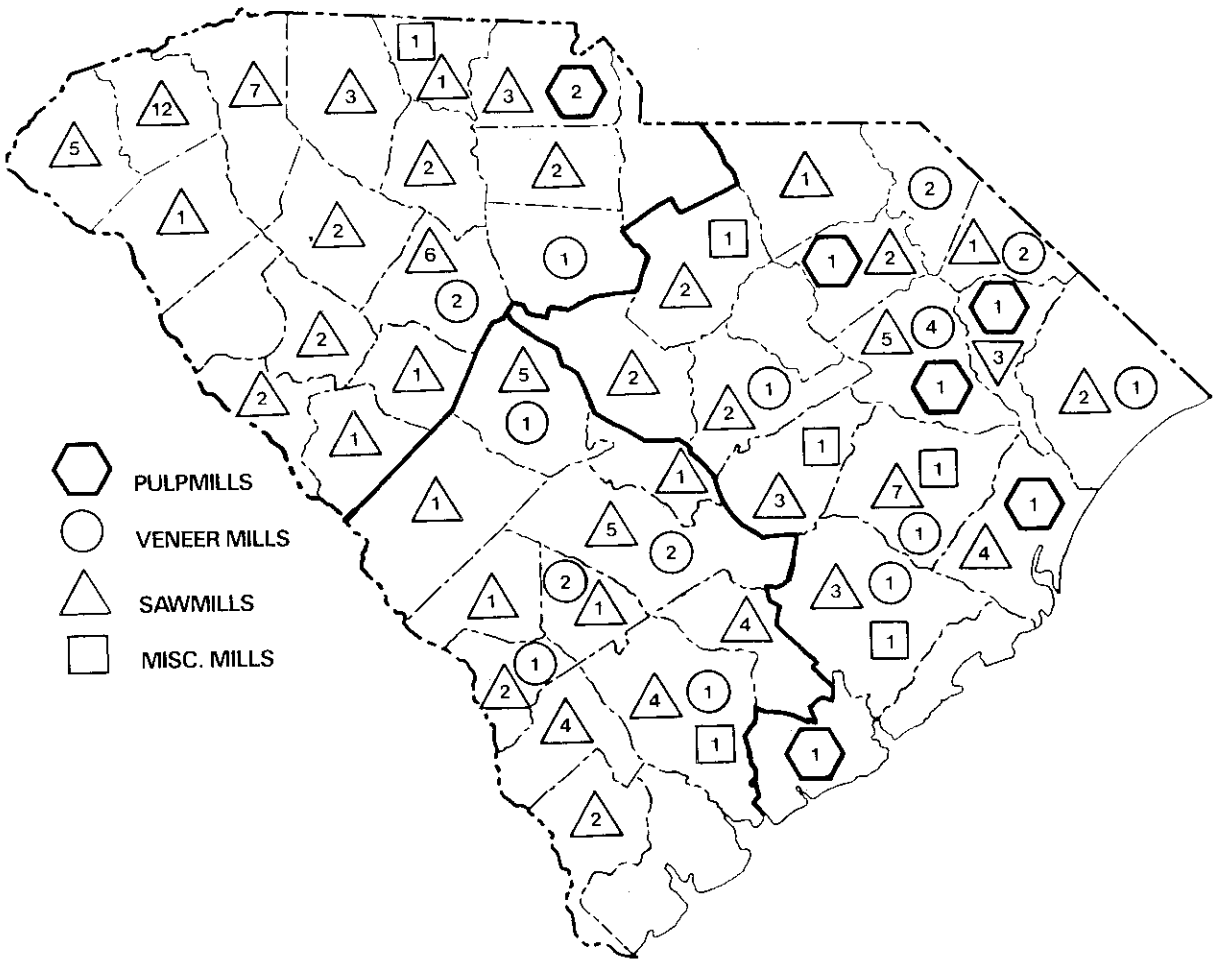

Figure 2.—Location of primary wood-using industries in South Carolina, 1981.

More than 43 percent of the State's round pulpwood output was produced in the Piedmont, where two of the State's seven pulpmills are located. About one-third of the State's veneer logs were produced here and 29 percent of its saw logs.

Roundwood Movement in 1981

South Carolina continued to be a net exporter of industrial roundwood in 1981. South Carolina's forests exceeded roundwood receipts at primary wood-using plants by over 40 million cubic feet, or 10 percent (table 10). Exports accounted for almost 20 percent of 1981's product output. Of the 2.9 million cubic feet of softwood roundwood exported, 59 percent went to Georgia, 41 percent went to North Carolina, and less than 1 percent went to Florida. Pulpwood accounted for 67 percent of softwood roundwood exports, saw logs another 21 percent, and veneer logs 11 percent. Of the 25.7 million cubic feet of hardwood roundwood exported, 65 percent went to Georgia and 35 percent to North Carolina. Pulpwood accounted for 90 percent of hardwood exports, with saw logs and veneer making up the balance. Imports from other States accounted for just under 12 percent of the receipts at South Carolina's mills.

The Northern Coastal Plain, as in years past, was the only region in the State where mill receipts exceeded roundwood output. Pulpwood delivered to the 5 pulpmills in this region accounted for 76 percent of the regions receipts. Exports in the region accounted for only 11 percent of the output, well below the State average, while imports accounted for over 17 percent of the receipts, 5 percent more than the State average. Pulpwood accounted for 89 percent of all imports.

The output of industrial roundwood in the Southern Coastal Plain of South Carolina amounted to 134.1 million cubic feet, 26 percent more than receipts at primary processing plants. Exports equaled almost 30.0 million cubic feet. Imports contributed only 1.9 million cubic feet, or 2 percent to the region's mill receipts.

In the Piedmont, only 74 percent of the roundwood output was retained. Exports amounted to 42.5 million cubic feet, the largest volume exported from any of the regions.

Definitions of Terms

Growing-stock trees. Live sawtimber-size trees of commercial species containing at least a 12-foot log, or two noncontiguous saw logs each 8 feet or longer meeting minimum grade requirements (hardwoods must qualify as either a log grade 3 or 4; softwoods must qualify as a log grade 3) with at least one-third of the gross board-foot volume (International 1/4-inch rule) between a 1-foot stump and the minimum saw-log top being sound, or a live tree below sawtimber size that will prospectively qualify under the above standards.

Growing-stock volume. Volume (cubic feet) of solid wood in growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum 4.0-inch top diameter, outside bark, on the central stem. Volume of solid wood in primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Hardwoods. Angiosperms; dicotyledonous trees (including all palm species which are monocotyledonous), usually broadleaf and deciduous.

Soft hardwoods. Soft-textured hardwoods such as boxelder, red and silver maples, hackberry, loblolly-bay, sweetgum, yellow-poplar, magnolia, sweetbay, water tupelo, blackgum, sycamore, cottonwood, black cherry, willow, basswood, and elm.

Hard hardwoods. Hard-textured hardwoods such as sugar maple, birch, hickory, dogwood, persimmon (forest grown), black locust, beech, ash, honeylocust, holly, black walnut, mulberry, and all commercial oaks.

Industrial timber products. All timber products manufactured from either roundwood or plant byproducts, except firewood.

Net annual growth. The net change in merchantable volume for a specific year (gross growth minus mortality for that specified year.)

Plant residues. Wood material generated in the production of timber products at primary manufacturing plants.

Coarse residues. Suitable for chipping such as slabs, edgings, trim, veneer cores, and ends.

Fine residues. Not suitable for chipping such as sawdust, shavings, and veneer chippings.

Plant byproducts. Residues (coarse or fine) utilized in the further manufacture of industrial products or for consumer use, or utilized as fuel.

Unused plant residues. Residues (coarse or fine) which are not used for any product, including fuel.

Primary wood-using plants (industries). Those plants or industries that utilize roundwood products in the manufacture of their principal products. (Plants that utilize only plant byproducts as a substitute for roundwood are included.)

Roundwood (roundwood logs). Logs, bolts, or other round sections cut from trees for industrial or consumer uses.

Roundwood chipped. Any timber cut primarily for pulpwood, delivered to non-pulpmills, chipped, and then sold to pulpmills as residues, including chipped tops, jump sections, whole trees, and pulpwood sticks.

Roundwood products. Any primary product such as lumber, poles, pilings, pulp, or fuelwood which is produced from roundwood.

Softwoods. Gymnosperms; in the order Coniferales, usually evergreen (includes the genus Taxodium which is deciduous), having needles or scalelike leaves.

Pines. Yellow pine species which include loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, sand, spruce, and Table Mountain pines.

Other softwoods. Cypress, eastern redcedar, white cedar, eastern white pine, eastern hemlock, spruce, and fir.

Timber removals. The merchantable volume of trees removed from the inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use.

Table 3.--Roundwood receipts by product and species group, 1977-1981, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Saw logs:					
Softwood	119,766	126,492	138,714	130,027	122,011
Hardwood	41,486	51,709	56,347	44,442	34,749
Total	161,252	178,201	195,061	174,469	154,760
Veneer logs:					
Softwood	34,082	39,877	38,783	29,043	33,934
Hardwood	7,018	10,688	10,287	8,192	6,742
Total	41,100	50,565	49,070	37,235	40,676
Pulpwood:[a]					
Softwood	171,182	148,799	145,542	153,412	175,688
Hardwood	35,530	37,112	40,965	33,110	29,635
Total	206,712	185,911	186,507	186,522	205,323
Other industrial:					
Softwood	7,831	3,133	2,542	4,572	3,749
Hardwood	--	--	--	--	--
Total	7,831	3,133	2,542	4,572	3,749
All industrial:					
Softwood	332,861	318,301	325,581	317,054	335,382
Hardwood	84,034	99,509	107,599	85,744	71,126
Total	416,895	417,810	433,180	402,798	406,508

[a]Includes roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills.

Table 4.--Volume of roundwood output of industrial timber products, by product and species group, 1977-1981, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Saw logs:					
Softwood	126,865	130,770	147,213	137,496	129,091
Hardwood	33,714	41,716	40,323	37,202	34,642
Total	160,579	172,486	187,536	174,698	163,733
Veneer logs:					
Softwood	41,687	43,847	40,741	33,828	38,541
Hardwood	6,944	10,041	10,416	8,266	6,790
Total	48,631	53,888	51,157	42,094	45,331
Pulpwood:[a]					
Softwood	177,786	163,314	166,766	171,679	186,830
Hardwood	53,221	54,422	54,188	48,077	46,629
Total	231,007	217,736	220,954	219,756	233,459
Other industrial:					
Softwood	9,340	3,906	3,318	4,841	4,008
Hardwood	24	24	--	--	--
Total	9,364	3,930	3,318	4,841	4,008
All industrial:					
Softwood	355,678	341,837	358,038	347,844	358,470
Hardwood	93,903	106,203	104,927	93,545	88,061
Total	449,581	448,040	462,965	441,389	446,531

[a]Includes roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills:

	Softwood	Hardwood
1977	45,679	5,622
1978	33,135	5,110
1979	25,334	10,496
1980	27,990	6,393
1981	39,997	4,815

Table 5.--Volume of roundwood output of industrial timber products, by product and species group, 1977-1981, Southern Coastal Plain, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Sawlogs:					
Softwood	43,659	44,273	48,620	47,777	49,184
Hardwood	7,969	11,583	11,665	9,527	8,829
Total	51,628	55,856	60,285	57,304	58,013
Veneer logs:					
Softwood	6,728	9,322	9,781	4,840	9,107
Hardwood	2,531	3,227	3,438	2,921	2,712
Total	9,259	12,549	13,219	7,761	11,819
Pulpwood:[a]					
Softwood	39,921	33,502	40,239	40,877	44,298
Hardwood	15,461	11,917	17,553	15,197	18,456
Total	55,382	45,419	57,792	56,074	62,754
Other industrial:					
Softwood	2,509	1,687	2,001	1,956	1,531
Hardwood	6	6	--	--	--
Total	2,515	1,693	2,001	1,956	1,531
All industrial:					
Softwood	92,817	88,784	100,641	95,450	104,120
Hardwood	25,967	26,733	32,656	27,645	29,997
Total	118,784	115,517	133,297	123,095	134,117

[a]Includes roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills.

Table 6.--Volume of roundwood output of industrial timber products, by product and species group, 1977-1981, Northern Coastal Plain, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Sawlogs:					
Softwood	42,737	45,466	59,192	51,683	41,186
Hardwood	15,163	17,190	17,612	18,948	17,353
Total	57,900	62,656	76,804	70,631	58,539
Veneer logs:					
Softwood	21,787	22,027	18,547	17,040	15,246
Hardwood	3,902	6,157	6,508	4,802	3,449
Total	25,689	28,184	25,055	21,842	18,695
Pulpwood:[a]					
Softwood	57,766	60,574	49,849	49,073	57,652
Hardwood	16,787	21,097	19,148	17,467	12,583
Total	74,553	81,671	68,997	66,540	70,235
Other industrial:					
Softwood	6,831	2,219	1,317	2,861	2,310
Hardwood	6	6	--	--	--
Total	6,837	2,225	1,317	2,861	2,310
All industrial:					
Softwood	129,121	130,286	128,905	120,657	116,394
Hardwood	35,858	44,450	43,268	41,217	33,385
Total	164,979	174,736	172,173	161,874	149,779

[a]Includes roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills.

Table 7.--Volume of roundwood output of industrial timber products, by product and species group, 1977-1981, Piedmont, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Sawlogs:					
Softwood	40,469	41,031	39,401	38,036	38,721
Hardwood	10,582	12,943	11,046	8,727	8,460
Total	51,051	53,974	50,447	46,763	47,181
Veneer logs:					
Softwood	13,172	12,498	12,413	11,948	14,188
Hardwood	511	657	470	543	629
Total	13,683	13,155	12,883	12,491	14,817
Pulpwood:[a]					
Softwood	80,099	69,238	76,678	81,729	84,880
Hardwood	20,973	21,408	17,487	15,413	15,590
Total	101,072	90,646	94,165	97,142	100,470
Other industrial:					
Softwood	--	--	--	24	167
Hardwood	12	12	--	--	--
Total	12	12	--	24	167
All industrial:					
Softwood	133,740	122,767	128,492	131,737	137,956
Hardwood	32,078	35,020	29,003	24,683	24,679
Total	165,818	157,787	157,495	156,420	162,635

[a]Includes roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills.

Table 8.--Volume of industrial timber products from plant byproducts, by product and species group, 1977-1981, South Carolina

Product and species group	1977	1978	1979	1980	1981
	Thousand cubic feet				
Sawn:					
Softwood	5,110	9,992	7,077	--	--
Hardwood	--	14	--	38	--
Total	5,110	10,006	7,077	38	--
Pulpwood:					
Softwood	55,169	57,424	70,321	55,792	41,555
Hardwood	10,179	13,019	13,269	14,559	9,798
Total	65,348	70,443	83,590	70,351	51,353
Other industrial:[a]					
Softwood	12,970	9,003	11,658	13,049	8,500
Hardwood	190	559	1,169	715	540
Total	13,160	9,562	12,827	13,764	9,040
All industrial:					
Softwood	73,249	76,419	89,056	68,841	50,055
Hardwood	10,369	13,592	14,438	15,312	10,338
Total	83,618	90,011	103,494	84,153	60,393

[a]Charcoal and particleboard products.

Table 9.--Roundwood chipped for fiber, by source and species group, 1977-1981, South Carolina

Year and source[a]	Softwood	Hardwood	All species
	- - Thousand cubic feet - -		
1977			
Saw log	43,852	5,060	48,912
Veneer	1,827	562	2,389
Total	45,679	5,622	51,301
1978			
Saw log	33,135	5,059	38,194
Veneer	--	51	51
Total	33,135	5,110	38,245
1979			
Saw log	25,334	7,767	33,101
Veneer	--	2,729	2,729
Total	25,334	10,496	35,830
1980			
Saw log	25,751	6,201	31,952
Veneer	2,239	192	2,431
Total	27,990	6,393	34,383
1981			
Saw log	34,397	4,815	39,212
Veneer	5,600	--	5,600
Total	39,997	4,815	44,812

[a]Roundwood chipped from products other than saw logs and veneer amounted to less than one-half of 1 percent of the total roundwood chipped in all years.

Table 10.--Industrial roundwood movement, by species group, South Carolina, 1981

Movement	Softwood	Hardwood	All species
	- - Thousand cubic feet - -		
Output	358,470	88,061	446,531
Retained	295,617	62,343	357,960
Exports	62,853	25,718	88,571
Imports	39,765	8,783	48,548
Receipts	335,382	71,126	406,508

Table 11.--Industrial roundwood movement, by species group and region, South Carolina, 1981

Species group	Southern Coastal Plain	Northern Coastal Plain	Piedmont
	- - - - Thousand cubic feet - - - - -		
Softwood:			
Output	104,120	116,394	137,956
Retained	83,039	103,683	108,895
Exports	21,081	12,711	29,061
Imports	753	21,306	17,706
Receipts	83,792	124,989	126,601
Hardwood:			
Output	29,997	33,385	24,679
Retained	21,082	30,014	11,247
Exports	8,915	3,371	13,432
Imports	1,159	6,718	906
Receipts	22,241	36,732	12,153
All species:			
Output	134,117	149,779	162,635
Retained	104,121	133,697	120,142
Exports	29,996	16,082	42,493
Imports	1,912	28,024	18,612
Receipts	106,033	161,721	138,754

Table 12.--Volume of unused plant residues at primary wood-using industries, by species group and type of residue, 1977-1981, South Carolina

Species group and type of residue	1977	1978	1979	1980	1981
	Thousand cubic feet				
Softwood:					
Bark	1,691	1,166	1,183	240	218
Coarse	306	296	413	431	156
Shavings	91	120	25	19	76
Other fine	1,576	946	1,203	192	153
Total	3,664	2,528	2,824	882	603
Hardwood:					
Bark	1,538	955	947	413	173
Coarse	103	157	208	19	47
Shavings	34	40	63	21	16
Other fine	2,201	1,626	1,740	681	412
Total	3,876	2,778	2,958	1,134	648
All species:					
Bark	3,229	2,121	2,130	653	391
Coarse	409	453	621	450	203
Shavings	125	160	88	40	92
Other fine	3,777	2,572	2,943	873	565
Total	7,540	5,306	5,782	2,016	1,251

Table 13.--Volume of unused plant residues[a] at primary wood-using industries, by species group and source, 1977-1981, South Carolina

Species group and source	1977	1978	1979	1980	1981
	Thousand cubic feet				
Softwood:					
Sawn products	1,967	1,361	882	410	385
Veneer	--	--	759	232	--
Other	7	1	--	--	--
Total	1,974	1,362	1,641	642	385
Hardwood:					
Sawn products	2,220	1,736	1,246	480	186
Veneer	118	87	765	241	289
Other	--	--	--	--	--
Total	2,338	1,823	2,001	721	475
All species:					
Sawn products	4,187	3,097	2,128	890	571
Veneer	118	87	1,524	473	289
Other	7	1	--	--	--
Total	4,312	3,185	3,652	1,363	860

[a]Excluding bark.

Table 14.--Softwood-roundwood output of industrial timber products, by region and county, 1977-1981, South Carolina

Region and county	1977	1978	1979	1980	1981
	Thousand cubic feet				
Southern Coastal Plain:					
Aiken	11,690	10,355	11,991	12,221	10,873
Allendale	5,546	4,495	6,005	4,161	6,746
Bamberg	5,685	3,866	4,853	3,758	6,007
Barnwell	6,380	5,628	4,867	4,042	5,622
Beaufort	2,005	2,491	2,565	2,078	3,278
Calhoun	4,092	2,292	3,455	3,649	3,302
Colleton	14,321	17,845	15,446	16,412	16,890
Dorchester	6,114	6,195	11,318	12,153	13,580
Hampton	7,576	9,551	9,491	9,861	8,783
Jasper	11,807	8,852	9,635	9,926	8,349
Lexington	7,003	6,267	8,791	6,479	9,612
Orangeburg	10,598	10,947	12,224	10,710	11,078
Total	92,817	88,784	100,641	95,450	104,120
Northern Coastal Plain:					
Berkeley	15,351	23,364	17,016	16,634	18,246
Charleston	6,316	8,387	6,838	6,051	6,017
Chesterfield	7,212	7,903	6,432	6,381	6,072
Clarendon	10,839	8,044	5,486	4,459	4,639
Darlington	2,966	4,395	3,452	2,400	2,228
Dillon	3,309	2,259	2,556	3,212	3,764
Florence	8,568	10,091	10,455	10,006	9,115
Georgetown	12,227	13,152	13,712	11,620	10,986
Horry	10,942	7,727	14,992	12,360	13,610
Kershaw	8,994	9,457	10,010	12,126	9,304
Lee	1,560	2,570	2,362	1,831	1,163
Marion	4,062	3,923	5,362	5,388	5,532
Marlboro	2,415	3,188	2,153	1,879	2,932
Richland	10,526	8,151	8,890	8,019	6,091
Sumter	6,424	3,636	4,532	5,691	4,394
Williamsburg	17,410	14,039	14,657	12,600	12,301
Total	129,121	130,286	128,905	120,657	116,394

Continued

Table 14.--Softwood-roundwood output of industrial timber products, by region and county, 1977-1981, South Carolina--Continued

Region and county	1977	1978	1979	1980	1981
	Thousand cubic feet				
Piedmont:					
Abbeville	7,044	5,680	5,327	5,851	4,904
Anderson	5,531	5,735	4,460	6,068	4,048
Cherokee	1,344	1,354	1,288	1,953	2,145
Chester	8,567	6,308	7,323	5,953	9,502
Edgefield	12,884	10,338	11,195	10,930	11,161
Fairfield	17,156	17,726	16,992	17,449	16,202
Greenville	1,994	2,231	1,854	1,976	1,184
Greenwood	8,586	10,050	9,398	7,621	9,988
Lancaster	4,358	3,173	3,661	4,849	7,456
Laurens	5,385	4,504	5,562	6,517	10,241
McCormick	11,221	8,860	12,074	10,292	9,027
Newberry	20,539	19,198	18,368	17,996	18,170
Oconee	3,551	3,189	4,367	4,895	3,533
Pickens	2,880	2,482	2,524	2,416	3,396
Saluda	7,150	7,915	9,303	9,311	8,260
Spartanburg	4,581	4,042	3,562	4,742	4,382
Union	6,543	6,228	6,486	6,835	7,210
York	4,426	3,754	4,748	6,083	7,147
Total	133,740	122,767	128,492	131,737	137,956
State total	355,678	341,837	358,038	347,844	358,470

Table 15.--Hardwood-roundwood output of industrial timber products, by region and county, 1977-1981, South Carolina

Region and county	1977	1978	1979	1980	1981
	Thousand cubic feet				
Southern Coastal Plain:					
Aiken	1,316	2,482	3,150	2,304	2,058
Allendale	1,241	2,434	3,533	3,100	2,014
Bamberg	1,462	1,739	2,280	1,439	1,749
Barnwell	1,030	809	1,165	600	591
Beaufort	476	780	1,543	1,180	968
Calhoun	1,051	931	924	1,050	1,136
Colleton	4,909	4,415	5,515	5,331	6,098
Dorchester	2,812	2,676	3,494	4,183	4,165
Hampton	2,418	3,097	3,489	2,435	2,054
Jasper	1,309	1,990	2,459	1,971	2,387
Lexington	821	1,003	1,525	1,238	622
Orangeburg	7,122	4,377	3,579	2,814	6,155
Total	25,967	26,733	32,656	27,645	29,997
Northern Coastal Plain:					
Berkeley	1,348	1,632	2,891	1,588	1,206
Charleston	1,561	1,523	1,955	951	928
Chesterfield	2,101	2,390	2,206	2,716	1,597
Clarendon	1,043	1,706	3,296	3,045	2,056
Darlington	1,827	2,829	2,085	2,285	1,008
Dillon	799	1,382	1,273	1,094	1,331
Florence	3,979	4,189	4,849	3,339	3,069
Georgetown	1,558	2,214	1,731	2,154	1,881
Horry	2,758	3,334	3,353	3,024	3,589
Kershaw	4,215	4,171	2,013	1,660	2,586
Lee	737	632	821	951	1,065
Marion	2,303	3,712	2,347	3,532	2,892
Marlboro	2,516	3,000	2,218	1,901	1,224
Richland	1,908	2,578	5,178	5,041	2,576
Sumter	3,786	3,773	2,627	2,802	2,440
Williamsburg	3,419	5,385	4,425	5,134	3,937
Total	35,858	44,450	43,268	41,217	33,385

Continued

Table 15.--Hardwood-roundwood output of industrial timber products, by region and county, 1977-1981, South Carolina--Continued

Region and county	1977	1978	1979	1980	1981
	Thousand cubic feet				
Piedmont:					
Abbeville	2,413	1,772	1,556	903	1,588
Anderson	2,408	2,522	2,090	2,276	1,475
Cherokee	623	726	544	430	397
Chester	1,291	1,484	1,523	1,001	977
Edgefield	1,340	1,603	1,722	1,811	2,137
Fairfield	2,319	2,020	1,537	1,370	1,773
Greenville	1,178	1,417	1,798	1,035	842
Greenwood	3,402	4,689	1,190	797	771
Lancaster	1,074	1,619	1,920	1,725	841
Laurens	1,957	2,651	2,248	1,661	2,818
McCormick	1,374	1,045	949	1,288	1,166
Newberry	2,948	2,516	2,633	1,889	2,545
Oconee	2,303	2,861	1,485	1,779	1,290
Pickens	1,928	2,378	1,596	1,962	2,993
Saluda	660	953	909	840	385
Spartanburg	1,236	1,305	886	643	528
Union	1,939	2,099	1,896	1,895	1,372
York	1,685	1,360	2,521	1,378	781
Total	32,078	35,020	29,003	24,683	24,679
State total	93,903	106,203	104,927	93,545	88,061

Tansey, John B.
South Carolina's industrial timber products output, 1977-1981. Resour. Bull. SE-71. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station, 1984. 21 p.

Around 446.5 million cubic feet of industrial roundwood products were harvested from South Carolina's forests during 1981. Total industrial product output amounted to 506.9 million cubic feet, 5 percent less than in 1977. Between 1977 and 1981, pulpwood accounted for an average of 55 percent of the State's industrial product output, saw logs another 33 percent, and veneer logs another 9 percent. Industrial byproduct output declined from 83.6 million cubic feet to 60.4 million cubic feet. During the same time, the volume of plant residues used as fuel and for nonindustrial timber products rose from 61.4 million cubic feet to 72.2 million cubic feet. South Carolina's industrial roundwood output of 446.5 million cubic feet in 1981 exceeded receipts by 40 million cubic feet, making the State a net exporter of industrial roundwood. In 1981, exports exceeded imports by 82 percent. A total of 152 primary wood-using plants operated in South Carolina in 1981, only 2 less than in 1977.

KEYWORDS: Roundwood receipts, roundwood output, plant byproducts, residue, wood movement.

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