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The Southeast's Timber Industry: An Assessment of Timber Product Output and Use, 1992

Tony G. Johnson



The Author:

Tony G. Johnson is a Resource Forester
with the Forest Inventory and Analysis group,
Southeastern Forest Experiment Station, Asheville, NC.

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Southeastern Forest Experiment Station
P.O. Box 2680
Asheville, North Carolina 28802

Foreword

This report contains the findings of a 1992 canvass of all primary wood-using plants in the Southeast and presents changes in product output and residue use since 1989. It complements the Forest Inventory and Analysis periodic inventory of volume and removals from the timberland in Southeastern States. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain by county in 1992 and to determine interstate and cross-regional movement of industrial roundwood. Only primary wood-using mills were canvassed. Primary mills are those that process roundwood in log or bolt form or as chipped roundwood. Examples of industrial roundwood products are saw logs, pulpwood, veneer logs, poles, and logs used for composite board products. Mills producing products from residues generated at primary and secondary processors were not canvassed. Trees chipped in the woods were included in the estimate of timber drain only if they were delivered to a primary domestic manufacturer.

A 100-percent canvass of all wood-processors in Georgia, North Carolina, South Carolina, and Virginia was conducted in 1993 for the year 1992. A canvass of Florida wood-processors was conducted in 1992 for the year 1991 and added to these for Southeastern-wide totals. Mills known to be using logs or bolts harvested from the Southeast region were also contacted. Each mill was canvassed by mail or through

personal contact at plant locations. Telephone contacts followed mailed questionnaire responses when additional information or clarification of response was necessary. In the event of a nonresponse, data collected in previous surveys were updated by current data collected for mills of similar size, product type, and location.

Pulpwood production data were taken from an annual canvass of all southeastern pulpmills, conducted annually in cooperation with the American Pulpwood Association. Medium density fiberboard, insulating board, and hardboard plants were included in this survey.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by all of the state forestry agencies, and the Cooperative Extension Services in collecting mill data and to forest industry and mill managers for providing timber products information. The information in this report is based on responses from 92 percent of mills operating in 1991 and 1992: 47 of 48 pulpmills, 70 of 71 veneer mills, 11 composite panel mills, 92 of the 104 mills manufacturing other industrial products, and 828 of the 910 sawmills. They accounted for 95 percent of the 1992 mill receipts.



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Output of Industrial Timber Products

Timber production and the wood products industry form a major part of the Southeast region's economy. According to the U.S. Department of Commerce, the forest industry in the Southeast included more than 8,200 primary and secondary manufacturers of wood products, provided jobs to nearly 350,000 employees, and had an annual payroll in excess of \$6.7 billion. Between 1989 and 1992, the combined output of industrial roundwood timber products and plant byproducts increased 7 percent to 4.9 billion cubic feet. Timber product output (TPO) from roundwood was up 199 million cubic feet to 3.6 billion cubic feet. Output from plant byproducts increased 123 million cubic feet to 1.3 billion cubic feet, and accounted for more than one-fourth of total output (table 1). Output of softwood roundwood products increased 8 percent to 2.7 billion cubic feet, three-fourths of the Southeast's total roundwood output (fig. 1). Hardwood roundwood production was down 2 percent to 843 million cubic feet.

Pulpwood and saw logs were the principal roundwood products in 1992. Combined output for these two products amounted to 3.2 billion cubic feet, 88 percent of the region's total roundwood output (fig. 2).

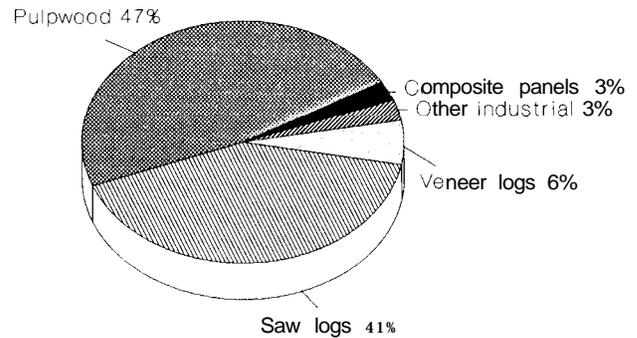


Figure 2--Southeast roundwood production, by type of product, 1992.

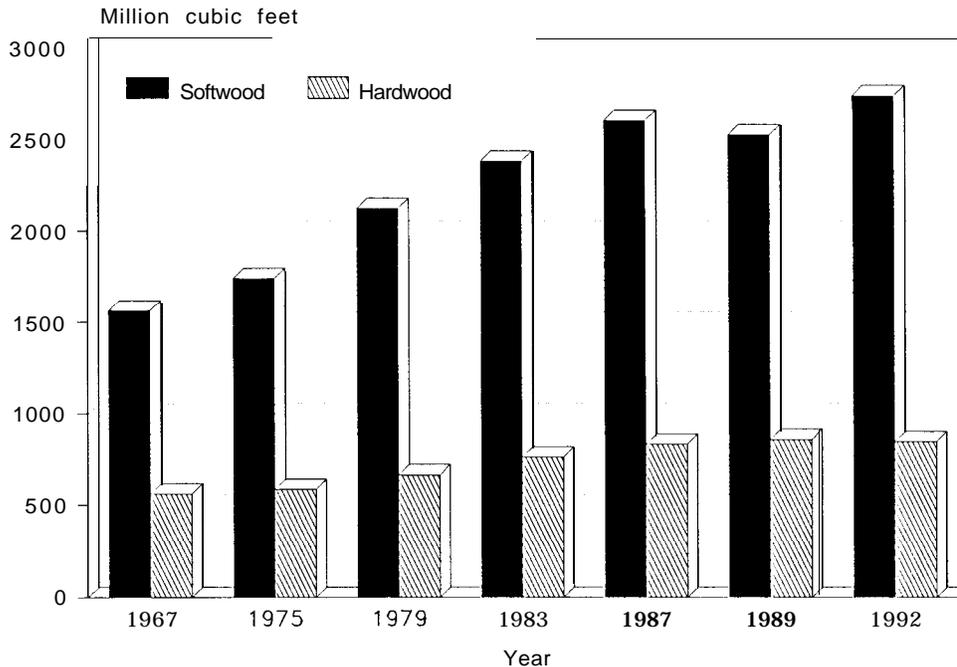


Figure 1 --Roundwood production for all products, by species group and year.

Saw Logs

Saw-log production accounted for 41 percent of the Southeast's total roundwood products output in 1992. Since 1989, combined output of softwood and hardwood saw-log production was up nearly 5 percent and totaled 1.5 billion cubic feet, or about 8.2 billion board feet. This production is equivalent to the volume of lumber needed to construct about 820,000 single-family homes. Output of softwood saw logs increased 10 percent since 1989 and totaled 1.2 billion cubic feet (6.4 billion board feet). In contrast, hardwood saw-log production was down 11 percent to 303 million cubic feet (1.8 billion board feet). Between 1975 and 1992, hardwood saw-log production peaked in 1987 at nearly 357 million cubic feet, accounting for nearly one-quarter of the saw-log production that year. In 1992, however, hardwoods accounted for about 21 percent of the saw-log production (fig. 3). Southern yellow pine accounted for about 97 percent of the softwood saw logs harvested in the Southeast in 1992, while hard hardwoods (mostly oaks and hickory) made up more than 60 percent of the hardwood saw-log output.

Pulpwood

Pulpwood was the leading roundwood product for the region, as it has been since the early 1960's, accounting for 47 percent of the Southeast's total roundwood output. Output of pulpwood (including chipped round-

wood) increased from 1.6 billion cubic feet (21.6 million cords) in 1989 to 1.7 billion cubic feet (23.1 million cords) in 1992. Both softwood and hardwood output increased between 1989 and 1992. Softwood output increased by 6 percent to 1.3 billion cubic feet, while hardwood output was up 6 percent to 447 million cubic feet. Since 1983, hardwood has provided about one-fourth of total pulpwood production in the Southeast (fig. 4). Softwoods accounted for 74 percent of the region's pulpwood production in 1992, the same as in 1989.

The volume of whole trees cut or trees chipped in the woods and delivered to chip facilities for export overseas is not included in the estimate of roundwood production. Most of this volume is hardwood chips destined for wood fiber companies in Japan, Korea, and Taiwan. The result is an underestimate of hardwood volume produced from the Southeast. The volume of hardwood chips exported from Southern U.S. ports in 1992 was more than 3.0 million green metric tons, or about 89 million cubic feet (West 1993, compared with 1 million green metric tons in 1990 (Colquitt 1991). Resource analysts and dealers familiar with the export market in the Southeast have indicated that roundwood from the region contributed at least 1.2 million green metric tons (40.0 million cubic feet) to the 1992 total, equivalent to about 5 percent of total hardwood production.

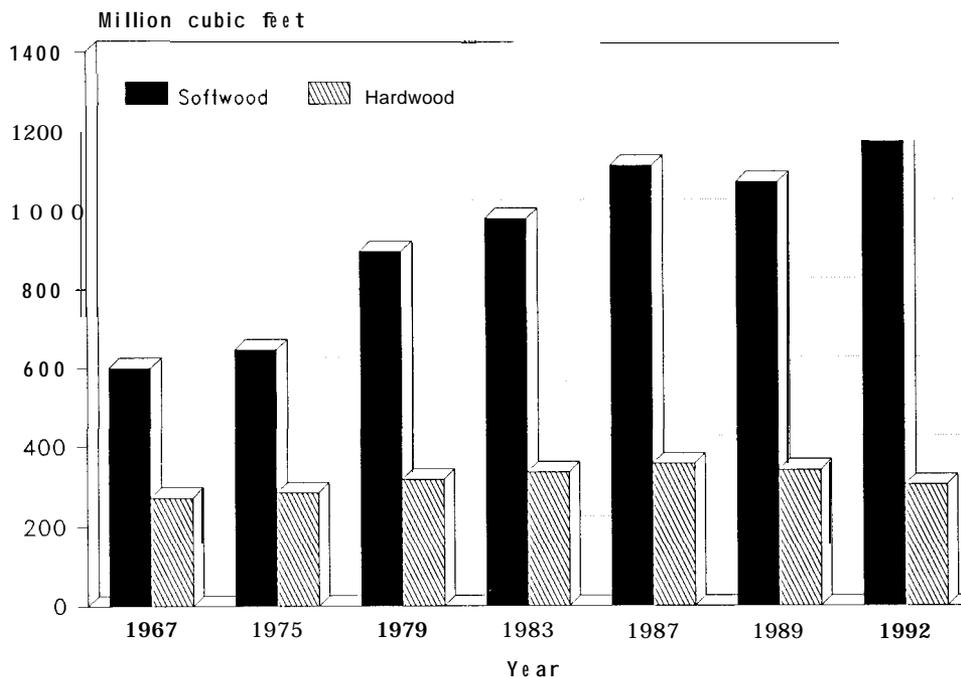


Figure 3-Roundwood saw-log production, by species group and year.

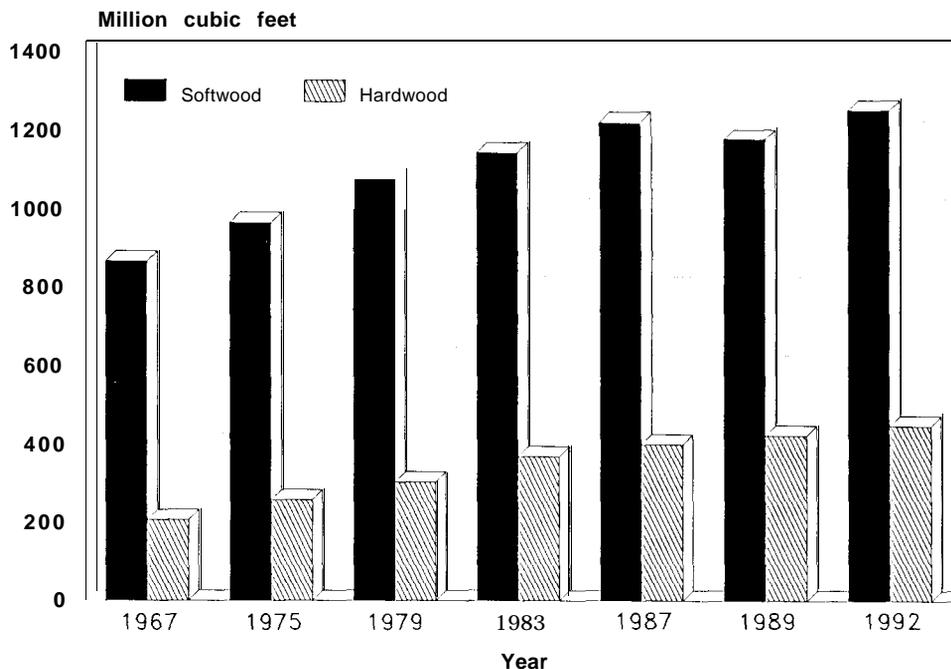


Figure 4-Roundwood pulpwood production, by species group and year.

Veneer Logs

Output of veneer logs in 1992 totaled 210 million cubic feet, a 15-percent decline since 1989. Veneer production accounted for about 6 percent of the region's total roundwood TPO in 1992. Output of softwood veneer logs dropped 17 percent to 158 million cubic feet (922 million board feet). In 1967, softwood veneer production amounted to about 43 million cubic feet or 40 percent of total veneer production. By 1987, however, softwood veneer production had peaked at

nearly 209 million cubic feet and accounted for 80 percent of the region's total veneer production (fig. 5). In 1992, softwoods accounted for three-fourths of the Southeast's veneer production. Output of hardwood veneer logs dropped 6 percent to 52 million cubic feet (324 million board feet). Southern yellow pine accounted for nearly all of the softwood roundwood harvested for veneer, while soft hardwoods (mostly yellow-poplar and sweetgum) accounted for 87 percent of the hardwood roundwood harvested for veneer.

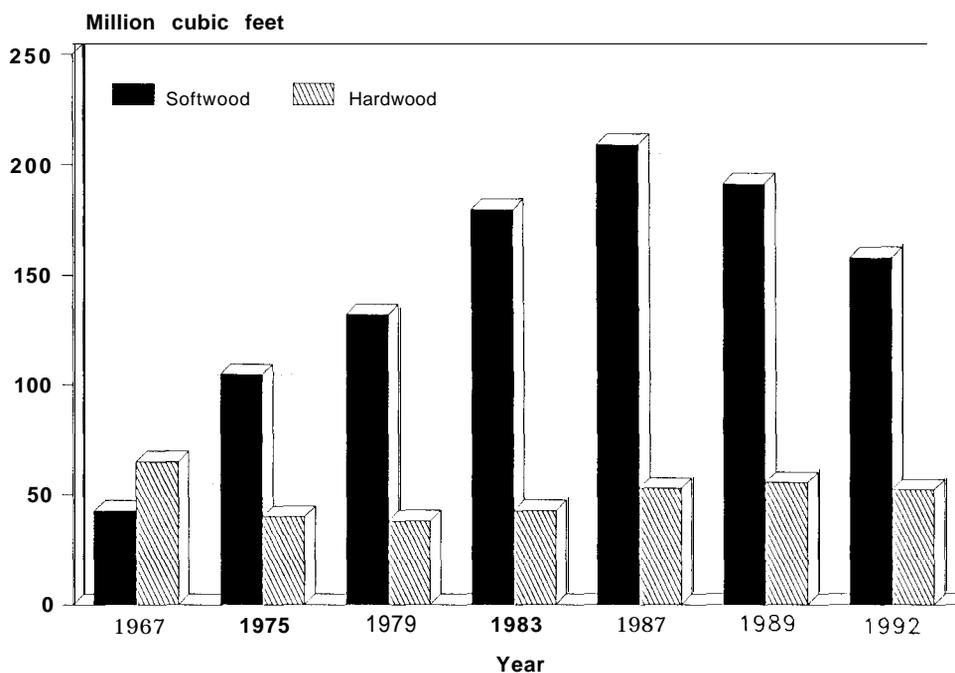


Figure 5-Roundwood veneer-log production, by species group and year.

Composite Panels

Between 1989 and 1992, roundwood harvested from Southeastern forests for composite panels increased 29 percent and totaled more than 97 million cubic feet. Nearly 85 percent of this volume was used in the production of oriented strand board (OSB) in Southeastern mills. Composite panel production made up 3 percent of the region's total roundwood TPO volume in 1992. Softwood output increased nearly 48 percent to 63 million cubic feet and accounted for nearly two-thirds of the composite panel production. Hardwood production increased 5 percent to more than 34 million cubic feet. Yellow pine accounted for all of the softwood volume used in composite panels.

Other Industrial Products

Roundwood harvested for other industrial uses such as poles, posts, mulch, firewood, and all other industrial products totaled nearly 100 million cubic feet in 1992, almost double that of 1989 (fig.6). This large increase reflects a boost in production of poles and posts throughout the Southeast. Softwoods made up 94 percent of the other industrial product volume. Roundwood used for other industrial products accounted for about 3 percent of the Southeast's total TPO in 1992.

Number of Mills and Receipts

Total receipts at Southeastern mills, which include roundwood harvested and retained in the region and roundwood imported from other States, increased 7 percent to 3.7 billion cubic feet (table 2). At the same time, the number of primary roundwood-using plants in the Southeast declined from 1,210 in 1989 to 1,144 in 1992, a 5-percent decline (table 3). Since 1969, the number of primary manufacturers has dropped by more than half, while receipts have increased more than 68 percent.

Sawmills. Throughout the Southeast, the number of sawmills have been declining for many years. Numerous smaller mills have closed or have become specialty mills; the remaining mills are larger, more modern, or more efficient. Between 1989 and 1992, the number of sawmills operating in the Southeast dropped from 975 to 910, with sawmill closings accounting for most of the decline in primary processing plants. Over the same period, total saw-log receipts increased 87 million cubic feet to 1.5 billion cubic feet, a 6-percent increase since 1989. In 1992, sawmill receipts accounted for 41 percent of total receipts. Softwood saw-log receipts

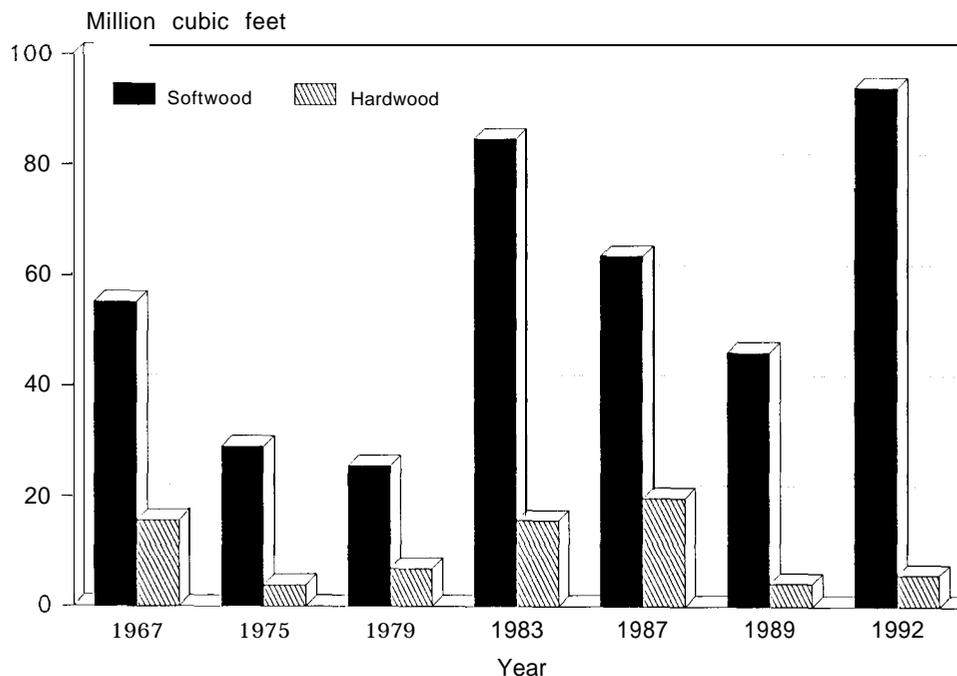


Figure 6-Roundwood production for other industrial, by species group and year.

increased 12 percent to 1.2 billion cubic feet, while hardwood receipts declined 11 percent to 311 million cubic feet. Two-thirds of the 910 mills operating in 1992 had receipts of less than 5 million board feet and accounted for 11 percent of total receipts. Whereas, only 18 percent of the mills had receipts greater than 10 million board feet, these mills accounted for 77 percent of total receipts (table 4). Yellow pine accounted for 96 percent of the region's total softwood saw-log receipts (table 5).

Pulpmills. Forty-eight pulpmills were operating and receiving roundwood in 1992, the same as in 1989. The Southeast's total pulpwood receipts increased by 6 percent to 1.7 billion cubic feet, while the 24-hour pulping capacity for these mills increased from 57,998 tons to 62,737 tons (Hutchins 1991; Miller 1994). Softwood and hardwood pulpwood receipts increased between 1989 and 1992. Softwood receipts were up 7 percent to 1.3 billion cubic feet, while hardwood receipts increased 4 percent to 462 million cubic feet. Softwoods accounted for nearly three-fourths of the pulpwood receipts. In 1992, round pulpwood receipts accounted for 47 percent of total receipts for all mills.

Veneer Mills. Between 1989 and 1992, the number of veneer mills operating in the Southeast dropped from 80 to 71. At the same time, total veneer receipts across the region dropped 34 million cubic feet, or about 14 percent, to 220 million cubic feet. Both softwood and hardwood receipts were down in 1992. Receipts of softwood veneer logs dropped 15 percent to 165 million cubic feet, while hardwood veneer receipts declined 10 percent to 55 million cubic feet. Most of the softwood veneer-log receipts were southern yellow pine. Soft hardwoods (yellow-poplar and sweetgum) made up the bulk of hardwood veneer receipts. Veneer accounted for 6 percent of the Southeast's total receipts for all products.

Composite Panel Mills. Eleven composite panel mills were operating in the Southeast in 1992, the same as in 1989. Total receipts for these mills were 99 million cubic feet, or 3 percent of the region's total receipts. Softwood receipts for composite panels totaled 63 million cubic feet, or about 63 percent of the composite panel receipts. Hardwood receipts totaled 36 million cubic feet.

Other Industrial Mills. Since 1989, the number of plants producing other industrial products increased from 96 to 104. Receipts at these mills have more than doubled since 1989 and now total nearly 104 million cubic feet. Current facilities include 40 pole mills, 19 post mills, 23 mulch mills, and 22 mills

producing various other industrial products such as charcoal, excelsior, logs for log homes, shavings, and firewood processors.

Plant Byproducts

In 1992, processing of primary products in Southeastern mills generated 1.3 billion cubic feet of wood and bark residues (table 6). Coarse residues from all primary products amounted to 530 million cubic feet, while bark volume totaled 420 million cubic feet. Collectively, sawdust and shavings totaled 392 million cubic feet, or 29 percent of total residues (fig. 7). Of the mill residues generated, 79 percent was from processing softwoods and the remaining 21 percent from processing hardwoods. About 99 percent of the residues generated, both softwood and hardwood, became products or industrial fuel (fig. 8). Nearly 421 million cubic feet, or 79 percent of the coarse residues, were used for fiber products, while 54 million cubic feet were used for industrial fuel (table 7). The remainder was used for sawn products, particleboard, and other miscellaneous products. Most of the bark was used for industrial fuel or other miscellaneous products such as mulch. More than 64 percent of the sawdust and shavings was used for industrial fuel, 17 percent was used in the manufacture of particleboard, 14 percent was used for other miscellaneous products, and 3 percent was used for fiber products.

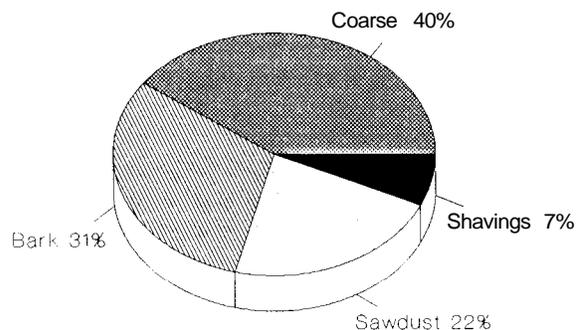


Figure 7-Primary mill residue, by residue type.

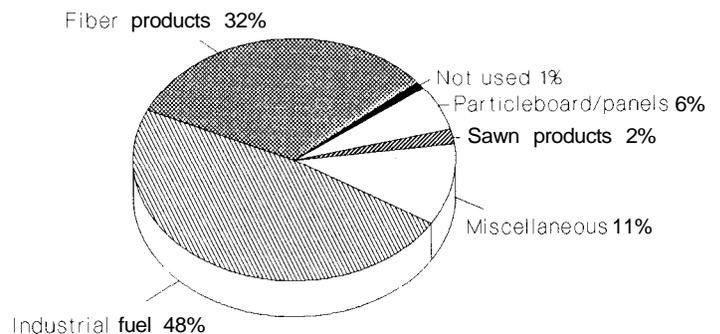


Figure 8-Disposal of residue, by product.

Saw Logs. In 1992, sawmills generated nearly 904 million cubic feet of mill residues accounting for 67 percent of the total residues produced (fig. 9). Ninety percent of the 423 million cubic feet of coarse residues from saw logs was used for fiber products. Bark and sawdust generated amounted to nearly 383 million cubic feet and were used mostly for industrial fuel and miscellaneous products. Shavings from dressed lumber totaled 97 million cubic feet; 44 percent of which was used in the production of particleboard.

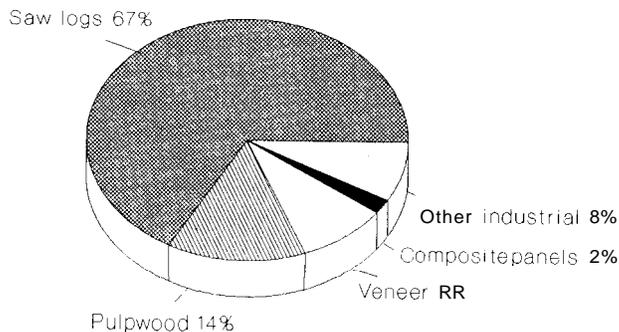


Figure 9 -Primary mill residue, by process.

Veneer Logs. Veneer mills generated 123 million cubic feet of residues in 1992, 9 percent of the Southeast's total primary mill residue volume. More than 90 percent of the 62 million cubic feet of coarse veneer residues was used for fiber products and sawn products. Sawdust and bark, totaling 61 million cubic feet, were used mostly for industrial fuel.

Pulpwood and Composite Panels. Bark was the only residue associated with roundwood pulpwood or composite panel mills. Bark volumes reported from the 48 pulpmills and 11 composite panel mills in the Southeast totaled 202 million cubic feet. Most bark was used for fuel by the same mills that produced it. Bark from roundwood pulpwood and composite panel mills accounted for nearly half of the total bark volume at all primary mills and 15 percent of the region's total residues produced.

Other Industrial. Residues of all types from other industrial products totaled 13 million cubic feet, 8 percent of the Southeast's total mill residue volume. Coarse residues of 44 million cubic feet were used mainly for mulch, industrial fuel, and fiber products. Sawdust and bark residues, totaling 69 million cubic feet, were used mostly for industrial fuel and miscellaneous uses, such as mulch and animal bedding.

Regional Trends

Between 1989 and 1992, total output of industrial roundwood products increased in all States, except South Carolina; Georgia and Florida had the largest increase of 10 percent. Output for all softwood products increased substantially in all States, while output for all hardwood products was down in Virginia and South Carolina. Changes in output varied considerably by product and by State; however, softwood accounted for two-thirds or more of industrial roundwood products in all States, except Virginia where softwoods accounted for only about half of total production (tables 8-1 2).

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Definitions

Board feet. Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, 1 foot wide, and 1 inch thick (or its equivalent).

Composite panels. Consists of structural panels (oriented strand board or waferboard), particleboard (industrial underlayment, thin panelboard).

Consumption. The quantity of a commodity, such as pulpwood, utilized.

Drain. The volume of roundwood removed from any geographic area where timber is grown.

Exports. The volume of roundwood utilized by mills outside the State where timber was cut.

Industrial roundwood products. Any primary use of the main stem of a tree, such as saw logs, poles, pilings, veneer logs, pulpwood, posts, or cooperage logs.

Industrial fuelwood. A roundwood product, with or without bark, used to generate energy at a manufacturing facility such as a wood-using mill.

Imports. The volume of roundwood delivered to a mill or group of mills in a specific State but harvested from outside that particular area.

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 clippings.

Log. A primary forest product harvested in long, primarily 8-foot lengths.

Primary wood-using plants. Industries that receive roundwood or chips from roundwood for the manufacture of products such as veneer, pulp, and lumber.

Production. The total volume of roundwood harvested from land within the specified State, regardless of where consumed. Production is the sum of timber harvested and used within the State, plus all roundwood exported to other U.S. States.

Pulpwood. A roundwood product that will be reduced to individual wood fibers by chemical or mechanical means. The fibers are used to make a broad generic group of pulp products that includes paper products as well as chipboard, fiberboard, insulating board, and paperboard.

Receipts. The quantity or volume of industrial roundwood received at a mill or by a group of mills in a State, regardless of the geographic source. Volume of roundwood receipts is equal to the volume of roundwood retained in a State plus roundwood imported from other U.S. States.

Retained. Roundwood volume harvested from and processed by mills within the same State.

Roundwood. Logs, bolts, or other round sections cut from trees for industrial manufacture or consumer use.

Roundwood chipped. Any timber cut primarily for industrial manufacture, delivered to non-pulpmills, chipped, and then sold to pulpmills for use as fiber. Includes tops, jump sections, and whole trees.

Roundwood product drain. That portion of total drain used for a product.

Saw log. A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with minimum diameter inside bark of 6 inches for softwoods and 8 inches for hardwoods.

Standard cord. A unit measure applied to roundwood, usually bolts or split wood. It relates to a stack of wood 4 feet high, 4 feet wide, and 8 feet long-encompassing 128 cubic feet of wood, bark, and air space. In the Southeast this usually translates to 74.9 cubic feet of solid wood for pulpwood, since pulpwood is more uniform.

Timber products output. Roundwood production in an area's forests (equals roundwood product drain).

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

Veneer log. Logs to be used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.

Florida Conversion Factors

Saw Logs

Softwood	0.19305 cubic foot = 1 board foot 5.18 board feet = 1 cubic foot
Hardwood	0.17094 cubic foot = 1 board foot 5.85 board feet = 1 cubic foot

Veneer Logs

Softwood	0.19608 cubic foot = 1 board foot 5.10 board feet = 1 cubic foot
Hardwood	0.16806 cubic foot = 1 board foot 5.95 board feet = 1 cubic foot

Pulpwood^b

Softwood	74.0 cubic feet/cord
Hardwood	79.0 cubic feet/cord

Georgia Conversion Factors

Saw Logs

Softwood	0.18393 cubic foot = 1 board foot 5.44 board feet = 1 cubic foot
Hardwood	0.17597 cubic foot = 1 board foot 5.68 board feet = 1 cubic foot

Veneer Logs

Softwood	0.16260 cubic foot = 1 board foot 6.15 board feet = 1 cubic foot
Hardwood	0.16394 cubic foot = 1 board foot 6.10 board feet = 1 cubic foot

Pulpwood^b

Softwood	72.6 cubic feet/cord
Hardwood	76.4 cubic feet/cord

North Carolina Conversion Factors

Saw Logs

Softwood	0.18018 cubic foot = 1 board foot 5.55 board feet = 1 cubic foot
Hardwood	0.16556 cubic foot = 1 board foot 6.04 board feet = 1 cubic foot

Veneer Logs

Softwood	0.17391 cubic foot = 1 board foot 5.75 board feet = 1 cubic foot
Hardwood	0.15873 cubic foot = 1 board foot 6.30 board feet = 1 cubic foot

Pulpwood^b

Softwood	72.5 cubic feet/cord
Hardwood	76.6 cubic feet/cord

South Carolina Conversion Factors

Saw Logs

Softwood	0.18018 cubic foot = 1 board foot 5.55 board feet = 1 cubic foot
Hardwood	0.16531 cubic foot = 1 board foot 6.05 board feet = 1 cubic foot

Veneer Logs

Softwood	0.17493 cubic foot = 1 board foot 5.72 board feet = 1 cubic foot
Hardwood	0.16050 cubic foot = 1 board foot 6.23 board feet = 1 cubic foot

Pulpwood^b

Softwood	70.5 cubic feet/cord
Hardwood	70.5 cubic feet/cord

^a Conversion factors vary with stem (d.b.h.) and species. The factors shown are for trees of average diameters removed in the Southeast during the latest survey period.

^b Cubic feet of solid wood per cord.

Virginia Conversion Factors

Saw Logs

Softwood	0.18282 cubic foot = 1 board foot 5.47 board feet = 1 cubic foot
Hardwood	0.16393 cubic foot = 1 board foot 6.10 board feet = 1 cubic foot

Veneer Logs

Softwood	0.16129 cubic foot = 1 board foot 6.20 board feet = 1 cubic foot
Hardwood	0.16000 cubic foot = 1 board foot 6.25 board feet = 1 cubic foot

Pulpwood^a

Softwood	73.3 cubic feet/cord
Hardwood	76.1 cubic feet/cord

^a Conversion factors vary with stem (**d.b.h.**) and species. The factors shown are for trees of average diameters removed in the Southeast during the latest survey period.

^b Cubic feet of solid wood per cord.

Table 1 --Output of industrial timber products, by product, and species group, Southeast, 1989 and 1992

Product and species group	Year		Change	Percent change
	1989	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	1,069,486	1,170,558	+101,072	+9.5
Hardwood	340,728	303,497	-37,231	-10.9
Total	1,410,214	1,474,055	+63,841	+4.5
Veneer logs				
Softwood	191,182	158,031	-33,151	-17.3
Hardwood	55,404	52,195	-3,209	-5.8
Total	246,586	210,226	-36,360	-14.7
Pulpwood^a				
Softwood	1,176,662	1,252,245	+75,583	+6.4
Hardwood	423,111	447,495	+24,384	+5.8
Total	1,599,773	1,699,740	+99,967	+6.2
Composite panels				
Softwood	42,694	62,981	+20,287	+47.5
Hardwood	32,629	34,317	+1,688	+5.2
Total	75,323	97,298	+21,975	+29.2
Other industrial				
Softwood	45,953	94,009	+48,056	+104.6
Hardwood	3,988	5,564	+1,576	+39.5
Total	49,941	99,573	+49,632	+99.4
All industrial				
Softwood	2,525,977	2,737,824	+211,847	+8.4
Hardwood	855,860	843,068	-12,792	-1.5
Total	3,381,837	3,580,892	+199,055	+5.9
Byproduct output				
Softwood	924,501	1,048,965	+124,464	+13.5
Hardwood	280,323	279,185	-1,138	-0.4
Total	1,204,824	1,328,150	+123,326	+10.2
Total output				
Softwood	3,450,478	3,786,789	+336,311	+9.7
Hardwood	1,136,183	1,122,253	-13,930	-1.2
Total	4,586,661	4,909,042	+322,381	+7.0

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (106,129,000 cubic feet in 1989 and 77,229,000 cubic feet in 1992).

Table 2--Roundwood receipts, by product and species group, Southeast, 1989 and 1992

Product and species group	Year		Change	Percent change
	1989	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	1,067,203	1,191,813	+124,610	+11.7
Hardwood	348,818	311,415	-37,403	-10.7
Total	1,416,021	1,503,228	+87,207	+6.2
Veneer logs				
Softwood	193,485	165,174	-28,311	-14.6
Hardwood	61,130	55,085	-6,045	-9.9
Total	254,615	220,259	-34,356	-13.5
Pulpwood^a				
Softwood	1,196,351	1,282,866	+86,515	+7.2
Hardwood	446,511	462,239	+15,728	+3.5
Total	1,642,862	1,745,105	+102,243	+6.2
Composite panels				
Softwood	44,230	63,121	+18,891	+42.7
Hardwood	35,406	36,326	+920	+2.6
Total	79,636	99,447	+19,811	+24.9
Other industrial				
Softwood	47,412	98,363	+50,951	+107.5
Hardwood	3,594	5,569	+1,975	+55.0
Total	51,006	103,932	+52,926	+103.8
All industrial				
Softwood	2,548,681	2,801,337	+252,656	+9.9
Hardwood	895,459	870,634	-24,825	-2.8
Total	3,444,140	3,671,971	+227,831	+6.6

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (115,672,000 cubic feet in 1989 and 79,702,000 cubic feet in 1992).

Table 3--Number of primary wood-using plants, by type of mill, Southeast, 1969-1992

Type of Mill	Year					
	1969	1975	1981	1987	1989	1992
Sawmills	2,109	1,380	1,365	1,152	975	910
Veneer mills	133	101	101	84	80	71
Pulpmills	46	49	49	50	48	48
Composite panel mills	0	0	0	6	11	11
Other mills	101	72	88	102	96	104
All plants	2,389	1,602	1,603	1,394	1,210	1,144

Table 4--Roundwood receipts, by sawmill size, Southeast, 1989 and 1992

Sawmill size class ^a (million board feet)	1989			1992		
	Number of mills	Thousand board feet	Percent of volume	Number of mills	Thousand board feet	Percent of volume
< 1.0	296	91,338	1.2	290	92,429	1.1
1.0 - 4.99	353	878,976	11.5	304	819,808	9.8
5.0 - 9.99	154	1,066,871	13.9	148	1,023,865	12.3
10.0 - 49.9	134	2,758,252	36.1	120	2,366,631	28.3
> 50	38	2,854,302	37.3	48	4,056,464	48.5
Total	975	7,649,739	100.0	910	8,359,197	100.0

^a Based on volume received as opposed to actual capacity.

Table 5— Roundwood receipts, by species and type of mill, Southeast, 1992

Species	Type of mill						
	All mills	Sawmills	Veneer mills		OSB and panels ^a	Pulpmills ^b	Other mills
			Pine plywood	Other veneer			
<i>Thousand cubic feet</i>							
Softwood							
Yellow pine	1,456,196	1,151,261	121,286	43,827	62,054	NA	77,768
Other softwood	62,275	40,552	0	61	1,067	NA	20,595
Unclassified	1,282,866	0	0	0	0	1,282,866	0
Total softwoods	2,801,337	1,191,813	121,286	43,888	63,121	1,282,866	98,363
Hardwood							
Soft hardwoods	199,306	117,869	28,963	18,957	33,262	NA	255
Hard hardwoods	209,079	193,546	207	6,948	3,064	NA	5,314
Unclassified	462,249	0	0	10	0	462,239	0
Total hardwoods	870,634	311,415	29,170	25,915	36,326	462,239	5,569
All species	3,671,971	1,503,228	150,456	69,803	99,447	1,745,105	103,932

NA = not applicable.

^a OSB = oriented strand board.

^b Only collected by softwood and hardwood and includes roundwood chipped.

Table 6--Primary mill residue volume, by roundwood type, species group, and residue type, Southeast, 1992

Roundwood type and species group	Residue type				
	All types	Bark	Coarse	Sawdust	Shavings
<i>Thousand cubic feet</i>					
Saw logs					
Softwood	708,019	98,366	329,186	184,841	95,627
Hardwood	195,706	34,635	94,248	65,028	1,795
Total	903,725	133,001	423,434	249,869	97,422
Veneer logs					
Softwood	96,465	13,392	50,993	32,080	0
Hardwood	26,602	5,705	11,403	9,494	0
Total	123,067	19,097	62,396	41,574	0
Pulpwood					
Softwood	127,653	127,653	0	0	0
Hardwood	54,378	54,378	0	0	0
Total	182,031	182,031	0	0	0
Composite panels					
Softwood	12,472	12,472	0	0	0
Hardwood	7,596	7,596	0	0	0
Total	20,068	20,068	0	0	0
Other industrial^a					
Softwood	110,947	65,369	42,982	2,595	0
Hardwood	2,229	513	1,239	477	0
Total	113,176	65,882	44,221	3,072	0
Total					
Softwood	1,055,556	317,252	423,161	219,516	95,627
Hardwood	286,511	102,827	106,890	74,999	1,795
Total	1,342,067	420,079	530,051	294,515	97,422

^a Includes poles, pilings, posts, and other industrial products,

Table 7-- Disposal of residue at primary wood-using plants, by product, species group, and type of residue, Southeast, 1989 and 1992

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	1989	1992	1989	1992	1989	1992	1989	1992	1989	1992
<i>Thousand cubic feet</i>										
Fiber products										
Softwood	328,897	359,016	107	3,091	323,535	345,457	315	7,479	4,940	2,989
Hardwood	82,260	77,861	0	1,871	81,120	75,383	986	596	154	11
Total	411,157	436,877	107	4,962	404,655	420,840	1,301	8,075	5,094	3,000
Particleboard										
Softwood	49,403	69,211	0	79	1,427	3,968	13,238	22,846	34,738	42,318
Hardwood	6,812	6,988	0	17	3,682	4,054	2,499	2,394	631	523
Total	56,215	76,199	0	96	5,109	8,022	15,737	25,240	35,369	42,841
Composite panels										
Softwood	582	145	0	0	582	25	0	114	0	6
Hardwood	744	4,617	0	0	744	4,483	0	133	0	1
Total	1,326	4,762	0	0	1,326	4,508	0	247	0	7
Sawn products										
Softwood	24,074	20,088	6	30	24,068	19,899	0	159	0	0
Hardwood	4,930	4,082	0	23	4,930	3,991	0	68	0	0
Total	29,004	24,170	6	53	28,998	23,890	0	227	0	0
Fuel										
Softwood	429,772	487,727	210,818	256,863	19,176	39,719	172,372	161,075	27,406	30,070
Hardwood	155,996	153,008	78,005	77,145	15,974	14,292	60,418	60,778	1,599	793
Total	585,768	640,735	288,823	334,008	35,150	54,011	232,790	221,853	29,005	30,863
Miscellaneous										
Softwood	91,773	112,778	41,553	54,599	9,928	11,498	22,564	26,472	17,728	20,209
Hardwood	29,581	32,629	17,984	21,805	2,213	2,917	8,775	7,469	609	438
Total	121,354	145,407	59,537	76,404	12,141	14,415	31,339	33,941	18,337	20,647
Not used										
softwood	6,588	6,591	2,444	2,590	2,086	2,595	2,056	1,371	2	35
Hardwood	9,290	7,326	2,540	1,966	2,320	1,770	4,429	3,561	1	29
Total	15,878	13,917	4,984	4,556	4,406	4,365	6,485	4,932	3	64
All products										
softwood	931,089	1,055,556	254,928	317,252	380,802	423,161	210,545	219,516	84,814	95,627
Hardwood	289,613	286,511	98,529	102,827	110,983	106,890	77,107	74,999	2,994	1,795
Total	1,220,702	1,342,067	353,457	420,079	491,785	530,051	287,652	294,515	87,808	97,422

Table 8--Output of industrial timber products, by product, and species group, Florida, 1989 and 1991

Product and species group	Year		Change	Percent change
	1989	1991		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	137,978	153,825	+15,847	+11.5
Hardwood	3,653	2,312	-1,341	-36.7
Total	141,631	156,137	+14,506	+10.2
Veneer logs				
Softwood	19,868	19,698	-170	-0.9
Hardwood	1,763	1,616	-147	-8.3
Total	21,631	21,314	-317	-1.5
Pulpwood^a				
Softwood	270,713	298,454	+27,741	+10.3
Hardwood	25,600	30,936	+5,336	+20.8
Total	296,313	329,390	+33,077	+11.2
Composite panels				
Softwood	291	291	0	0
Hardwood	776	776	0	0
Total	1,067	1,067	0	0
Other industrial				
Softwood	21,245	24,609	+3,364	+15.8
Hardwood	811	395	-416	-51.3
Total	22,056	25,004	+2,948	+13.4
All industrial				
Softwood	450,095	496,877	+46,782	+10.4
Hardwood	32,603	36,035	+3,432	+10.5
Total	482,698	532,912	+50,214	+10.4
Byproduct output				
Softwood	151,362	165,607	+14,245	+9.4
Hardwood	9,275	8,139	-1,136	-12.2
Total	160,637	173,746	+13,109	+8.2
Total output				
Softwood	601,457	662,484	+61,027	+10.1
Hardwood	41,878	44,174	+2,296	+5.5
Total	643,335	706,656	+63,323	+9.8

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (14,329,000 cubic feet in 1989 and 12,040,000 cubic feet in 1991).

Table 9--Output of industrial timber products, by product, and species group, Georgia, 1989 and 1992

Product and species group	Year		Change	Percent change
	1989	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	408,489	444,044	+35,555	+8.7
Hardwood	65,678	62,341	-3,337	-5.1
Total	474,167	506,385	+32,218	+6.8
Veneer logs				
Softwood	69,077	54,849	-14,228	-20.6
Hardwood	12,863	17,756	+4,893	+38.0
Total	81,940	72,605	-9,335	-11.4
Pulpwood^a				
Softwood	407,876	427,816	+ 19,940	+4.9
Hardwood	107,987	120,039	+ 12,052	+11.2
Total	515,863	547,855	+31,992	+6.2
Composite panels				
Softwood	19,672	38,360	+18,688	+95.0
Hardwood	6,880	6,588	-292	-4.2
Total	26,552	44,948	+18,396	+69.3
Other industrial				
Softwood	15,061	57,239	+42,178	+280.0
Hardwood	11	889	+878	+7,981.8
Total	15,072	58,128	+43,056	+285.7
All industrial				
Softwood	920,175	1,022,308	+102,133	+11.1
Hardwood	193,419	207,613	+14,194	+7.3
Total	1,113,594	1,229,921	+116,327	+10.4
Byproduct output				
Softwood	347,853	456,324	+108,471	+31.2
Hardwood	59,209	66,499	+7,290	+12.3
Total	407,082	522,823	+115,761	+28.4
Total output				
Softwood	1,268,028	1,478,632	+210,604	+16.6
Hardwood	252,628	274,112	+21,484	+8.5
Total	1,520,656	1,752,744	+232,088	+15.3

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (50,716,000 cubic feet in 1989 and 30,898,000 cubic feet in 1992).

Table 10--Output of industrial products, by product, and species group, North Carolina, 1990 and 1992

Product and species group	Year		Change	Percent change
	1990	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	223,254	248,599	+25,345	+11.4
Hardwood	103,440	100,322	-3,118	-3.0
Total	326,694	348,921	+22,227	+6.8
Veneer logs				
Softwood	44,100	40,990	-3,110	-7.1
Hardwood	26,038	21,531	-4,507	-17.3
Total	70,138	62,521	-7,617	-10.9
Pulpwood^a				
Softwood	203,651	215,327	+11,676	+5.7
Hardwood	127,084	133,503	+6,416	+5.1
Total	330,735	348,827	+ 18,092	+5.5
Composite panels				
Softwood	18,159	17,784	-375	-2.1
Hardwood	16,362	17,665	+ 1,303	+8.0
Total	34,521	35,449	+928	+2.7
Other industrial				
Softwood	2,047	3,453	+ 1,406	+68.7
Hardwood	37	32	- 5	-13.5
Total	2,084	3,485	+1,401	+67.2
All industrial				
Softwood	491,211	526,153	+34,942	+7.1
Hardwood	272,961	273,050	+89	- -
Total	764,172	799,203	+35,031	+4.6
Byproduct output				
Softwood	199,395	189,598	-9,797	-4.9
Hardwood	90,564	85,192	-5,372	-5.9
Total	289,959	274,790	-15,169	-5.2
Total output				
Softwood	690,636	715,751	+25,145	+3.6
Hardwood	363,525	358,242	-5,283	-1.5
Total	1,054,131	1,073,993	+19,862	+1.9

-- = negligible.

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (11,760,000 cubic feet in 1990 and 13,410,000 cubic feet in 1992).

Table 11 --Output of industrial timber products, by product, and species group, South Carolina, 1989 and 1992

Product and species group	Year		Change	Percent change
	1989	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	207,730	231,533	+23,808	+11.5
Hardwood	37,398	25,519	-11,879	-31.8
Total	245,128	257,057	+11,929	+4.9
Veneer logs				
Softwood	46,941	29,643	-17,298	-36.9
Hardwood	10,292	6,238	-4,054	-39.4
Total	57,233	35,881	-21,352	-37.3
Pulpwood^a				
Softwood	200,144	205,596	+5,452	+2.7
Hardwood	78,885	78,661	-224	-0.3
Total	279,029	284,257	+5,228	+1.9
Composite panels				
Softwood	0	0	0	0
Hardwood	0	0	0	0
Total	0	0	0	0
Other industrial				
Softwood	4,179	5,267	+ 1,088	+26.0
Hardwood	127	0	-127	-100.0
Total	4,306	5,267	+961	+22.3
All industrial				
Softwood	458,994	472,044	+13,050	+2.8
Hardwood	126,702	110,418	-16,284	-12.9
Total	585,696	582,462	-3,234	-0.6
Byproduct output				
Softwood	157,952	165,240	+7,288	+4.6
Hardwood	36,877	28,992	-7,885	-21.4
Total	194,829	194,232	-597	-0.3
Total output				
Softwood	616,946	637,284	+20,338	+3.3
Hardwood	163,579	139,410	-24,169	-14.8
Total	780,525	776,694	-3,831	-0.5

^a Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (17,195,000 cubic feet in 1989 and 10,850,000 cubic feet in 1992).

Table 12--Output of industrial timber products, by product, and species group, Virginia, 1989 and 1992

Product and species group	Year		Change	Percent change
	1989	1992		
<i>Thousand cubic feet</i>				
Saw logs				
Softwood	92,035	92,552	+517	+0.6
Hardwood	130,559	113,003	-17,556	-13.4
Total	222,594	205,555	-17,039	-7.7
Veneer logs				
Softwood	11,196	12,851	+1,655	+14.8
Hardwood	4,448	5,054	+606	+13.6
Total	15,644	17,905	+2,261	+14.5
Pulpwood^a				
Softwood	94,278	105,052	+10,774	+11.4
Hardwood	83,555	84,359	+804	+1.0
Total	177,833	189,411	+11,578	+6.5
Composite panels				
Softwood	4,572	6,546	+ 1,974	+43.2
Hardwood	8,611	9,288	+677	+7.9
Total	13,183	15,834	+2,651	+20.1
Other industrial				
Softwood	3,421	3,441	+20	+0.6
Hardwood	3,002	4,248	+1,246	+41.5
Total	6,423	7,689	+1,266	+19.7
All industrial				
Softwood	205,502	220,442	+14,940	+7.3
Hardwood	230,175	215,952	-14,223	-6.2
Total	435,677	436,394	+717	+0.2
Byproduct output				
Softwood	67,939	72,196	+4,257	+6.3
Hardwood	84,398	90,363	+5,965	+7.1
Total	152,337	162,559	+10,222	+6.7
Total output				
Softwood	273,441	292,638	+19,197	+7.0
Hardwood	314,573	306,315	-8,258	-2.6
Total	588,014	598,953	+10,939	+1.9

^a includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (12,129,000 cubic feet in 1989 and 10,031,000 cubic feet in 1992).

Johnson, Tony G. 1994. The Southeast's timber industry: an assessment of timber product output and use, 1992. Resour. Bull. SE-149. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. 20 pp.

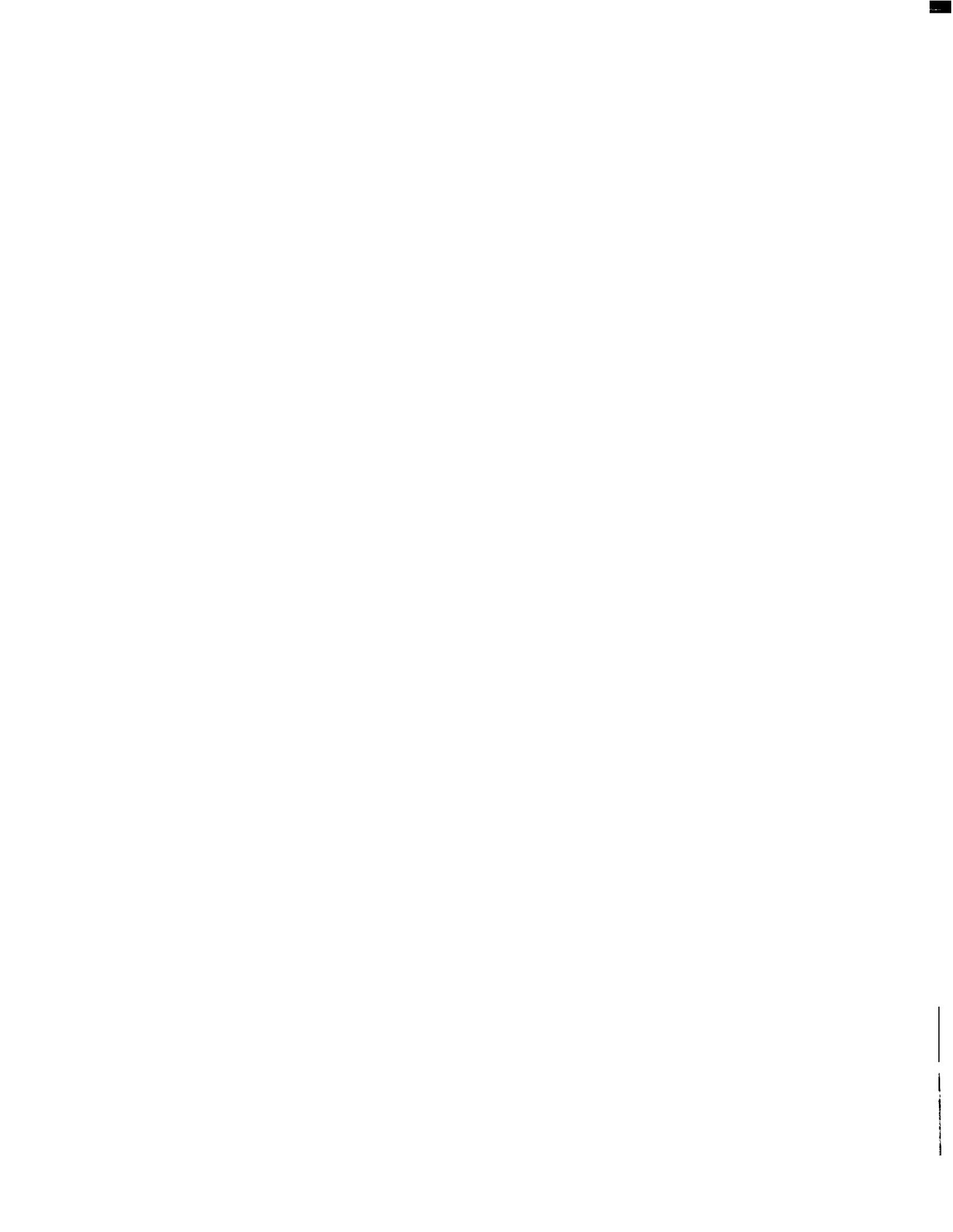
In 1992, volume of roundwood products removed from Southeastern forests totaled 3.6 billion cubic feet-6 percent more than in 1989. Mill byproducts generated from primary manufacturers increased 10 percent to 1.3 billion cubic feet. Almost all of the plant residues were used, mostly for fuel and fiber products. Pulpwood was the leading roundwood product at 1.7 billion cubic feet: saw logs ranked second at 1.5 billion cubic feet; veneer logs were third with 210 million cubic feet. The number of primary processing plants declined from 1,210 in 1989 to 1,144 in 1992. Total receipts increased 7 percent to 3.7 billion cubic feet.

KEYWORDS: Roundwood, residues, pulpwood, saw logs, veneer logs, wood movement.

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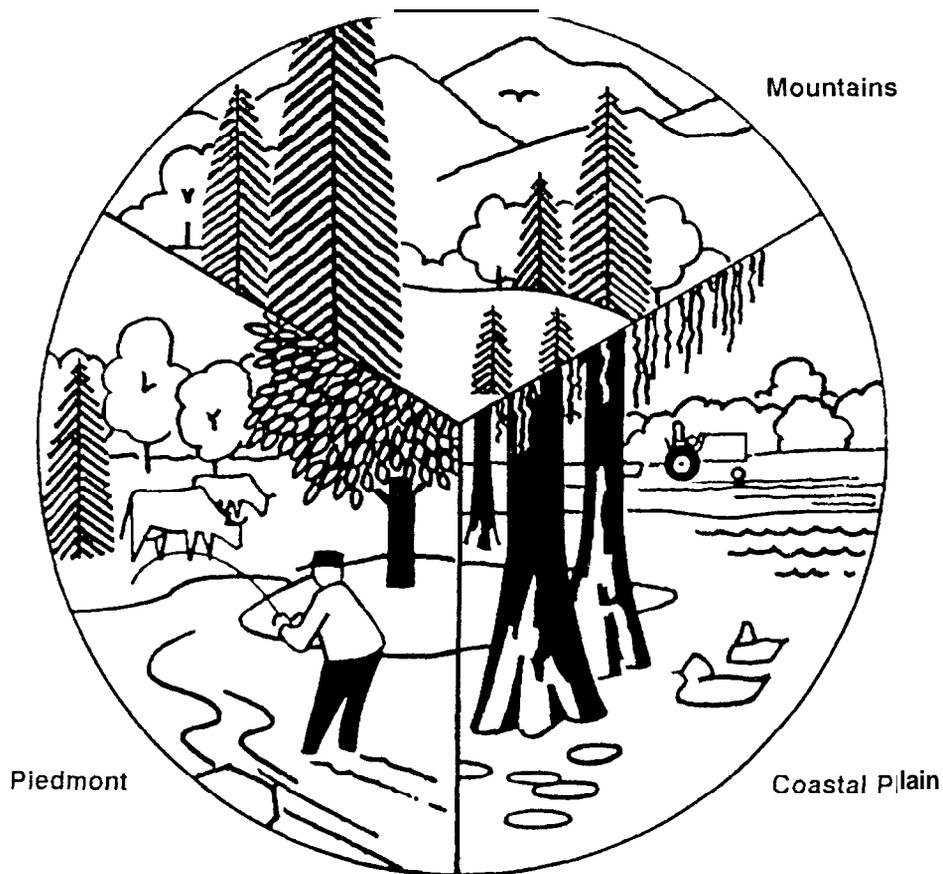
KEYWORDS: Roundwood, residues, pulpwood, saw logs, veneer logs, wood movement.





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Southeastern Forest Experiment Station

Established 1921

The Southeastern Forest Experiment Station, headquartered in Asheville, North Carolina, is one of the eight regional Experiment Stations, and the Forest Products Laboratory, that make up the Forest Service research organization.

RESEARCH MISSION:

To acquire the knowledge, develop the technology, and disseminate the research findings required to manage the Southeast's forest resources in ways that satisfy demands of goods and services while maintaining a quality environment.

RESEARCH LOCATIONS:

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 Research Triangle Park, NC
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