United States
Department of
Agriculture

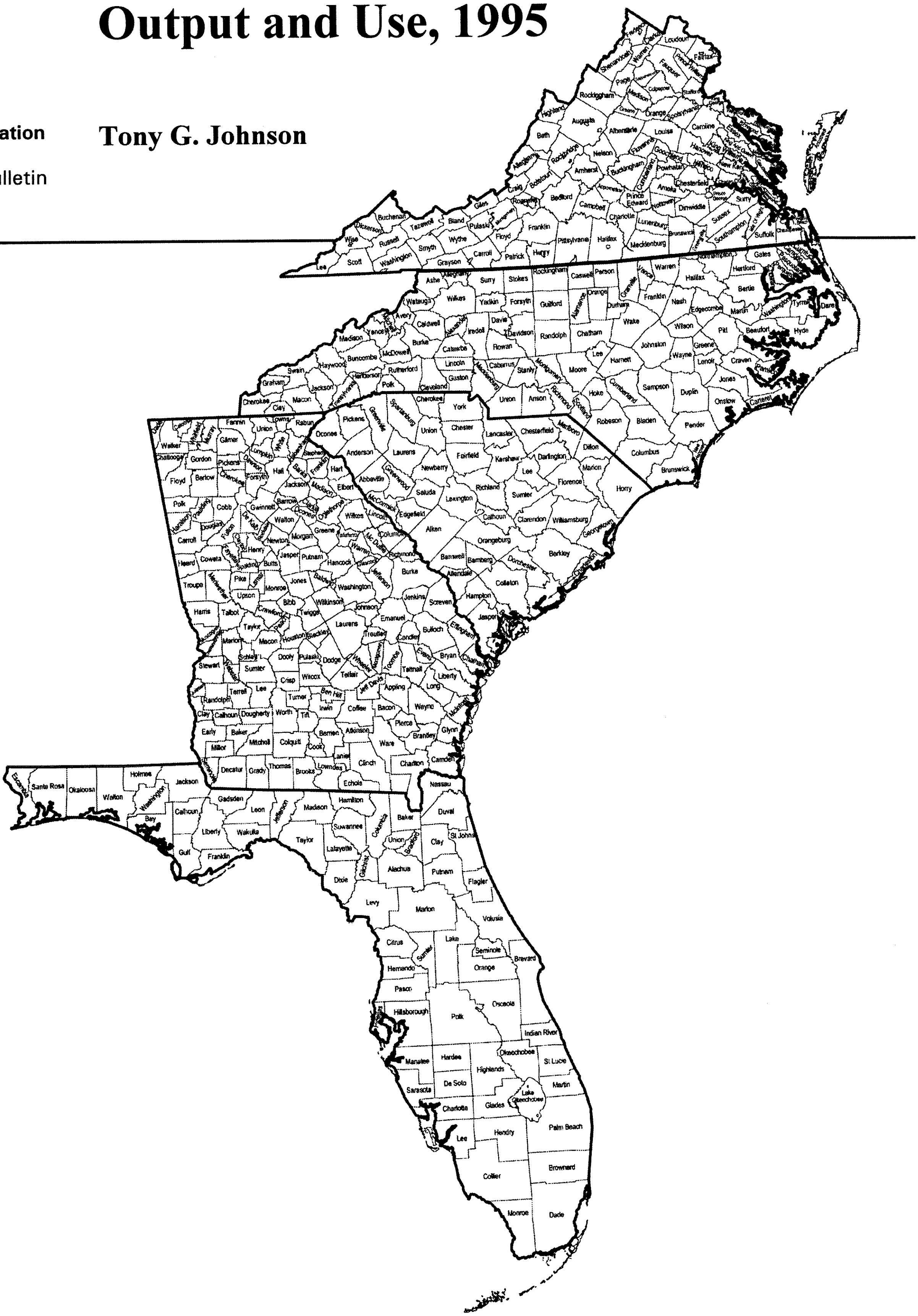
Forest Service

**Southern
Research Station**

Resource Bulletin
SRS-24

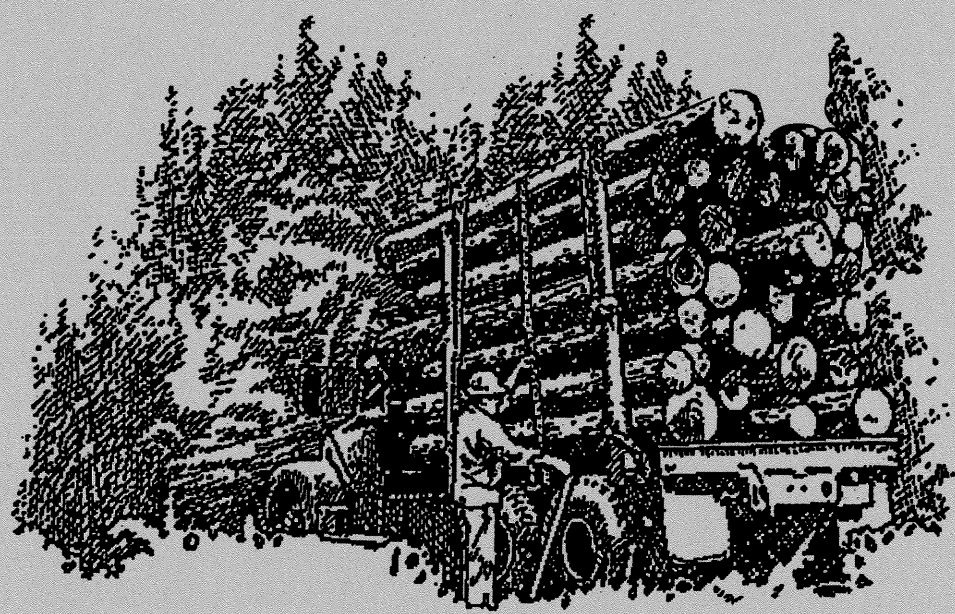
The Southeast's Timber Industry — An Assessment of Timber Product Output and Use, 1995

Tony G. Johnson



The Author:

Tony G. Johnson is a Resource Analyst with the Forest Inventory and Analysis Research Work Unit, Southern Research Station, U.S. Department of Agriculture, Forest Service, Asheville, NC 28802.



January 1998

Southern Research Station
P.O. Box 2680
Asheville, NC 28802

Foreword

This report contains the findings of a 1995 canvass of all primary wood-using plants in the Southeast and presents changes in product output and residue use since 1992. 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 1995 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 Florida, Georgia, North Carolina, South Carolina, and Virginia was conducted in 1996 for the year 1995. In addition, roundwood from mills outside the region known to be using logs or bolts harvested from the Southeast region was incorporated into each State's production estimates.

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 Southern Research Station gratefully acknowledges the cooperation and assistance provided by all 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 77 percent of mills operating in 1995: 47 pulpmills, 53 of the 66 veneer mills, 11 of the 12 composite panel mills, 83 of the 94 mills manufacturing other industrial products, and 605 of the 809 sawmills. They accounted for 88 percent of the 1995 mill receipts.

Contents

[a] All tables in this report are available in Microsoft® Excel workbook files. Upon request, these files will be supplied on 3½-inch diskettes.

The use of trade or firm names in this publication is for reader information and does not imply endorsement by the U.S. Department of Agriculture of any product or service.

The Southeast's Timber Industry—An Assessment of Timber Product Output and Use, 1995

Tony G. Johnson

Output of Industrial Timber Products

Timber production and the wood products industry form a major part of the Southeast region's economy. Between 1992 and 1995, the combined output of industrial roundwood timber products and plant byproducts increased 3 percent to 5.05 billion cubic feet. Timber products output (TPO) from roundwood was up 168 million cubic feet to 3.7 billion cubic feet. Output from plant byproducts was down 25 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 1 percent to 2.8 billion cubic feet, almost three-fourths of the Southeast's total roundwood output (fig. 1). Hardwood roundwood production was up by 17 percent to 987 million cubic feet.

Pulpwood and saw logs were the principal roundwood products in 1995. Combined output for these two products amounted to 3.4 billion cubic feet, or 90 percent of the region's total roundwood output (fig. 2).

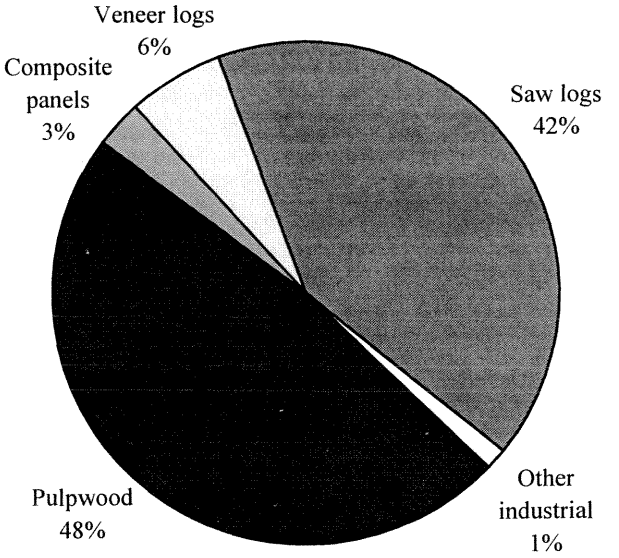


Figure 2—Southeast roundwood production by type of product, 1995.

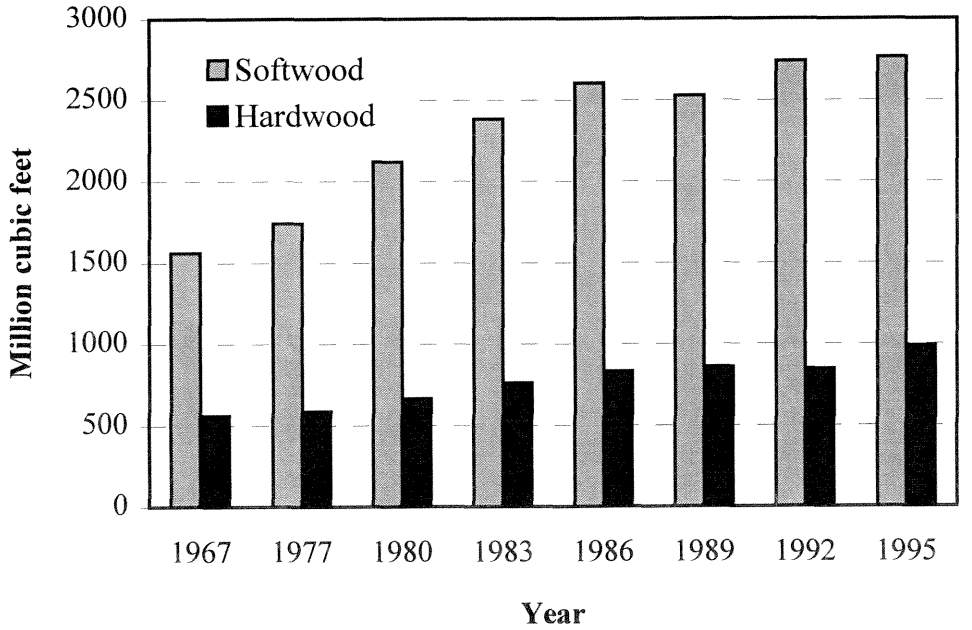


Figure 1—Roundwood production for all products by species group and year.

Saw Logs

Saw-log production accounted for 42 percent of the Southeast's total roundwood products output in 1995. Since 1992, combined output of softwood and hardwood saw-log production was up 6 percent and totaled 1.6 billion cubic feet, or 8.7 billion board feet. This production is equivalent to the volume of lumber needed to construct about 870,000 single-family homes. Output of softwood saw logs increased 6 percent since 1992 and totaled 1.2 billion cubic feet (6.8 billion board feet). Hardwood saw-log production was up 7 percent to 326 million cubic feet (1.9 billion board feet). Between 1975 and 1995, hardwood saw-log production peaked in 1986 at 357 million cubic feet, accounting for one-quarter of the saw-log production that year. In 1995, however, hardwoods accounted for 21 percent of the saw-log production (fig. 3). Southern yellow pine accounted for 96 percent of the softwood saw-log receipts in the Southeast in 1995, while hard hardwoods (mostly oaks and hickory) made up 56 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 48 percent of the Southeast's total roundwood output. Output of pulpwood (including chipped roundwood) increased from 1.7 billion cubic feet (23.1 million cords) in 1992 to 1.8 billion cubic feet (24.8 million cords) in 1995. Softwood output declined by 2 percent to 1.2 billion cubic feet, while hardwood output was up 27 percent to 568 million cubic feet. Since 1983, hardwood has provided one-fourth of total pulpwood production in the Southeast (fig. 4). However, in 1995, hardwoods accounted for 32 percent of the pulpwood production. Softwoods accounted for 68 percent of the region's pulpwood production compared to 74 percent in 1992.

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 in the Southeast. The volume of hardwood chips exported from Southern U.S. ports in 1995 was more than 3.9 million green metric tons, or 111 million cubic feet[1] (West 1996), compared with 3.1 million green metric tons in 1992 (West 1993) and 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 1.4 million green metric tons (38.3 million cubic feet) to the 1995 total, equivalent to 4 percent of total hardwood pulpwood production.

[1]West, Cynthia D. October 30, 1996. Hardwood chip export update. 6 p. Unpublished data on file with: Forestry Sciences Laboratory, Route 2, Box 562-B, Princeton, WV 24740.

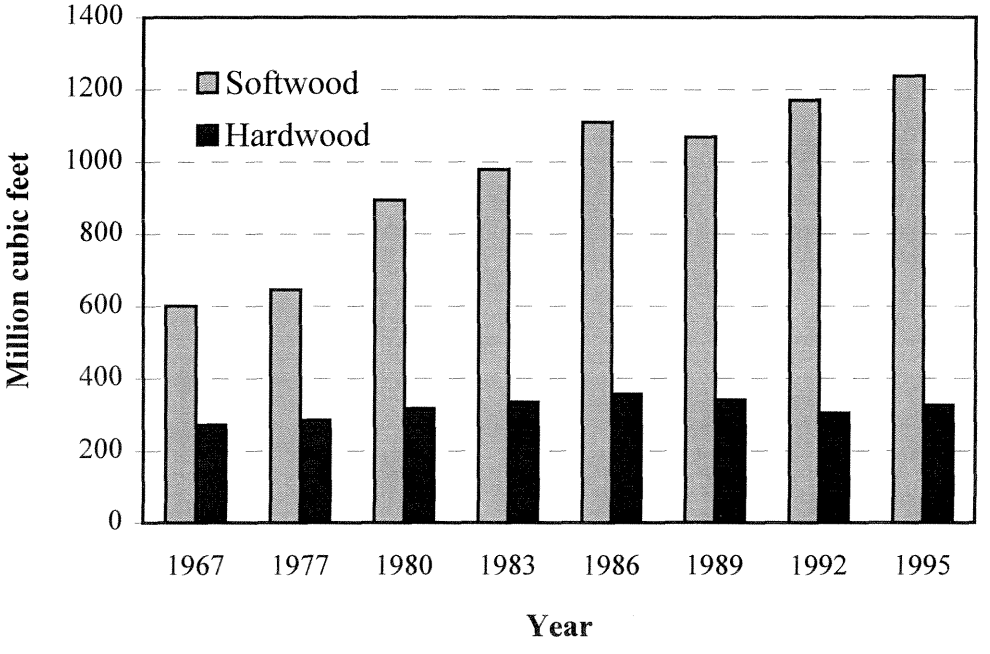


Figure 3—Roundwood saw-log production by species and year.

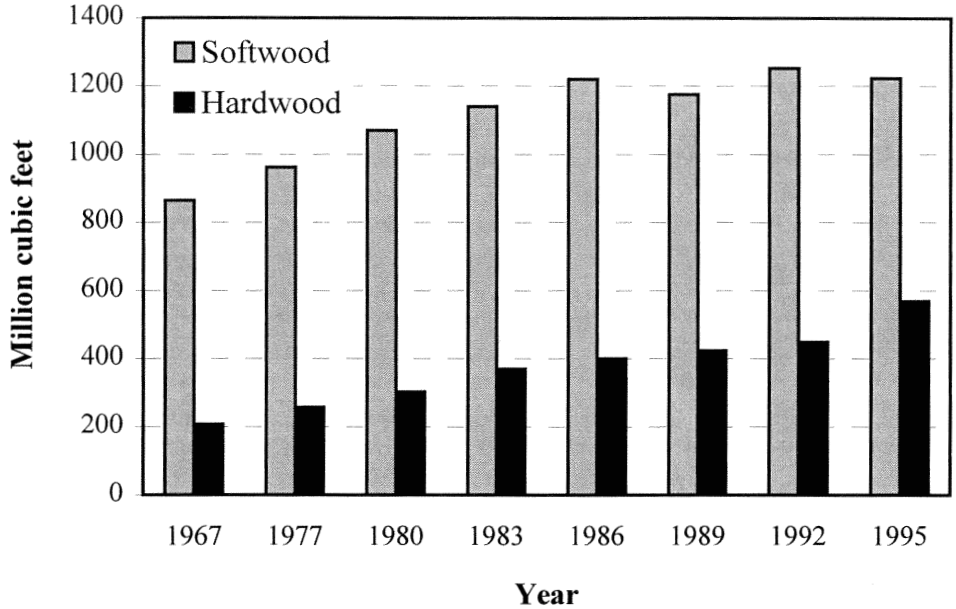


Figure 4—Roundwood pulpwood production by species group and year.

Veneer Logs

Output of veneer logs in 1995 totaled 238 million cubic feet, a 13-percent increase since 1992. Veneer production accounted for 6 percent of the region's total roundwood TPO in 1995. Output of softwood veneer logs was up 18 percent to 186 million cubic feet (1.1 billion board feet). In 1967, softwood veneer production amounted to 43 million cubic feet or 40 percent of total veneer production. By 1986, however, softwood veneer production had peaked at 209 million cubic feet and accounted for 80 percent of the region's total veneer production (fig. 5). In 1995, softwoods accounted for 78 percent of the Southeast's veneer production. Output of hardwood veneer logs dropped less than 1 percent and remained at 52 million cubic feet (321 million board feet). Southern yellow pine accounted for almost all of the softwood roundwood harvested for veneer, while soft hardwoods (mostly yellow-poplar and sweetgum) accounted for 79 percent of the hardwood roundwood harvested for veneer.

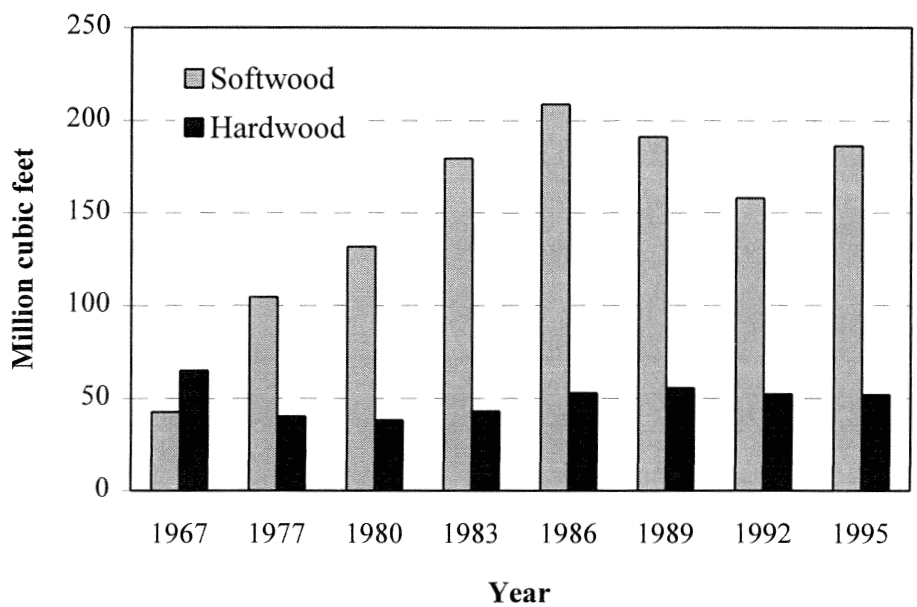


Figure 5—Roundwood veneer-log production by species group and year.

Composite Panels

Between 1992 and 1995, roundwood harvested from southeastern forests for composite panels increased 10 percent and totaled 107 million cubic feet. Eighty-five 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 1995. Softwood output increased 10 percent to 69 million cubic feet and accounted for two-thirds of the composite panel production. Hardwood production increased 10 percent to 38 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 amounted to 49 million cubic feet in 1995 (fig. 6). Softwoods made up 93 percent of the other industrial product volume. Roundwood used for other industrial products accounted for 1 percent of the Southeast's total TPO in 1995.

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 3 percent to 3.8 billion cubic feet (table 2). At the same time, the number of primary roundwood-using plants in the Southeast declined from 1,144 in 1992 to 1,028 in 1995, a 10-percent decline (table 3). Since 1969, the number of primary manufacturers has dropped by more than one-half, while receipts have increased steadily throughout the years.

Sawmills—Throughout the Southeast, the number of sawmills has been declining for many years. Many smaller mills have closed or have become specialty mills, moreover, this survey did not include all one-man sawmills. The remaining mills tend to be either larger, more modern, or more efficient. Between 1992 and 1995, the number of sawmills operating in the Southeast dropped from 910 to 809, with sawmill closings accounting for most of the decline in primary processing plants. Over the same period, total saw-log receipts increased 44 million cubic feet to 1.5 billion cubic feet, a 3-percent increase since 1992. In 1995, sawmill receipts accounted for 41 percent of total receipts. Softwood saw-log receipts increased 3 percent to 1.2 billion cubic feet, while hardwood receipts increased 4 percent to 324 million cubic feet. Sixty percent of the 809 mills operating in 1995 had receipts of less than 5 million board feet and accounted for 9 percent of total receipts. Whereas, only 22 percent of the mills had receipts greater than 10 million board feet; these mills accounted for 79 percent of total receipts (table 4). Yellow pine accounted for 96 percent of the region's total softwood saw-log receipts (table 5).

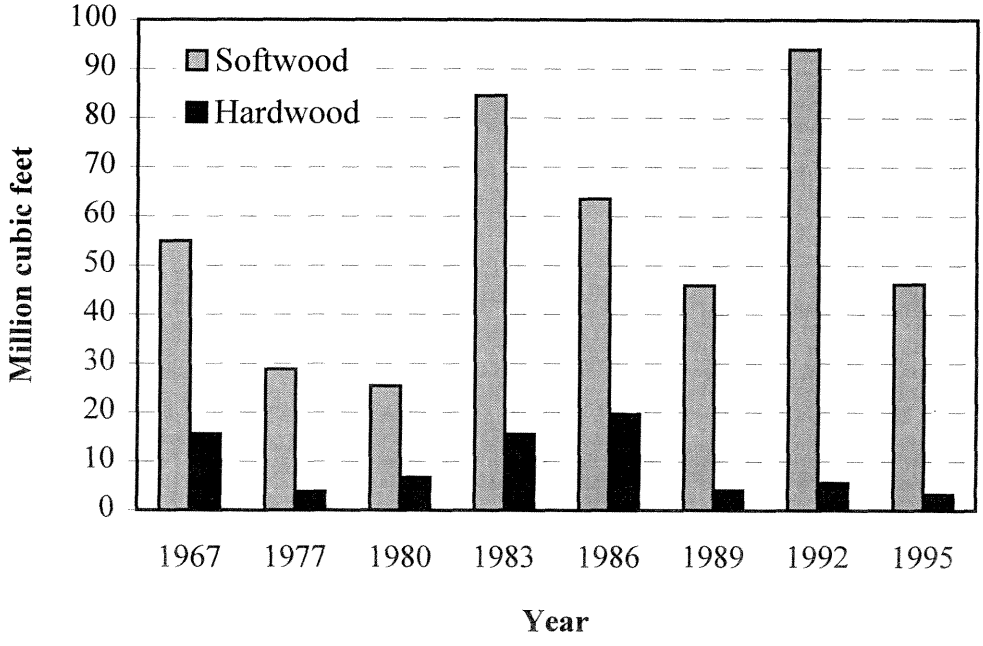


Figure 6—Roundwood production for other industrial by species and year.

Pulpmills—Forty-seven pulpmills were operating and receiving roundwood in 1995, one less than in 1992. The Southeast's total pulpwood receipts increased by 4 percent to 1.8 billion cubic feet, while the 24-hour pulping capacity for these mills increased from 62,737 tons to 63,602 tons (Johnson and Steppleton 1996, Miller 1994). Softwood receipts were down 3 percent to 1.2 billion cubic feet, while hardwood receipts increased 25 percent to 577 million cubic feet. Softwoods accounted for 68 percent of the pulpwood receipts. In 1995, round pulpwood receipts accounted for 48 percent of total receipts for all mills.

Veneer mills—Between 1992 and 1995, the number of veneer mills operating in the Southeast dropped from 71 to 66. At the same time, total veneer receipts across the region increased 20 million cubic feet, or 9 percent, to 240 million cubic feet. All of the increase occurred in softwood veneer receipts. Receipts of softwood veneer logs were up 12 percent to 185 million cubic feet, while hardwood veneer receipts remained unchanged at 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—Twelve composite panel mills were operating in the Southeast in 1995, one more than in 1992. Total receipts for these mills were 109 million cubic feet, or 3 percent of the region's total receipts. Softwood receipts for composite panels totaled 69 million cubic feet, or 64 percent of the composite panel receipts. Hardwood receipts totaled 39 million cubic feet.

Other industrial mills—Since 1992, the number of plants producing other industrial products declined from 104 to 94. Receipts at these mills totaled 49 million cubic feet and account for 1 percent of the region's total receipts. Current facilities include 32 pole mills, 20 post mills, 23 mulch mills, and 19 mills producing various other industrial products such as charcoal, excelsior, logs for log homes, shavings, and firewood processors.

Plant Byproducts

In 1995, 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 516 million cubic feet, while bark volume totaled 394 million cubic feet. Collectively, sawdust and shavings totaled 405 million cubic feet, or 30 percent of total residues (fig. 7). Of the mill residues generated, 77 percent was from processing softwoods and the remaining 23 percent from processing hardwoods.

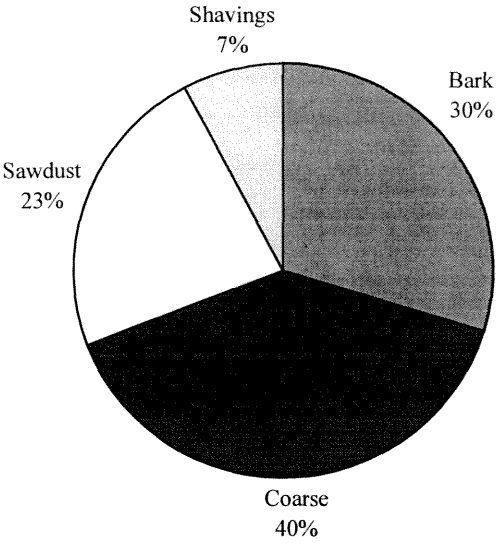


Figure 7—Primary mill residue by residue type.

Ninety-nine percent of the residues generated, both softwood and hardwood, became products or industrial fuel (fig. 8). Eighty-three percent, or 429 million cubic feet, of the coarse residues were used for fiber products, while 39 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. Sixty-three percent of the sawdust and shavings was used for industrial fuel, 19 percent in the manufacture of particleboard, 15 percent for other miscellaneous products, and 2 percent for fiber products. Sawmills generated 907 million cubic feet of mill residues accounting for 69 percent of the total residues

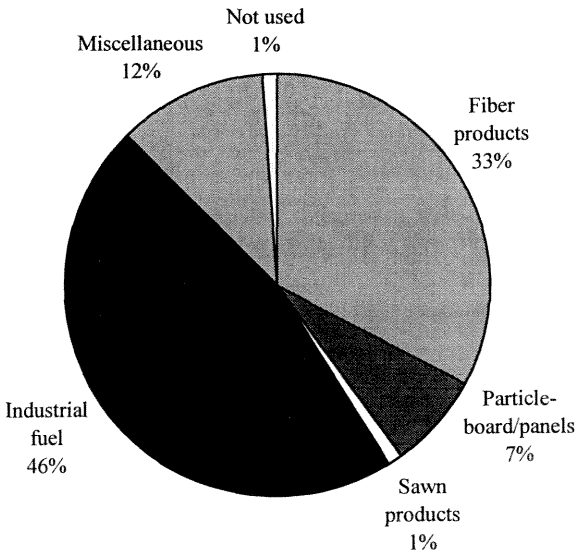


Figure 8—Disposal of residue by product.

produced (fig. 9). Veneer mills generated 147 million cubic feet of residues in 1995, 11 percent of the Southeast's total primary mill residue volume.

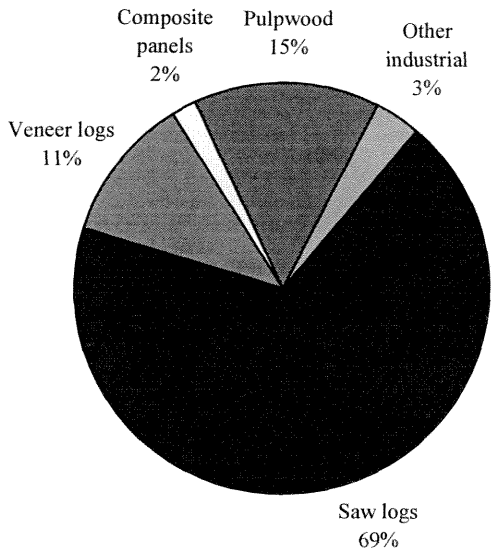


Figure 9—Primary mill residue by process.

Regional Trends

Between 1992 and 1995, total output of industrial roundwood products increased in all States except Florida; North and South Carolina had the largest increases at 5 and 6 percent, respectively. Output for all hardwood products increased substantially in all States, while output for all softwood products was down in Florida and Georgia. 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 one-half of total production (tables 8 through 12).

Total Roundwood Output

Tables 13 through 15 are new to this report. Values presented in these tables combine the latest forest inventory data and the latest TPO survey for the Southeast. Detailed source and ownership data are not collected at the product level from the commodity drain survey forms. Detailed species data are collected for all products except pulpwood; however, identifying the precise species once a tree has been harvested and cut into logs is sometimes impossible. Using the latest inventory data from each State source, species, and ownership in detailed plot level records can be extrapolated to the product level.

Source

In addition to the 3.7 billion cubic feet of roundwood output for industrial roundwood, an estimated 439 million cubic feet was harvested for domestic fuelwood, bringing the Southeast's total roundwood output to 4.2 billion cubic feet (table 13). Of this volume, 89 percent was considered growing-stock volume from timberland sources. Other sources include stumps, limbs and tops, and roundwood resulting from urbanization or creation of pasture. These sources contributed an estimated 458 million cubic feet, or 11 percent of total roundwood output.

Species

Table 14 depicts product output by detailed species group and product. The loblolly-shortleaf pine group accounted for 55 percent of total softwood output in the Southeast. The longleaf-slash pine group accounted for another 32 percent of the softwood output. For hardwoods, the red oak and white oak groups combined accounted for 567 million cubic feet of total output, or 41 percent. Sweetgum provided the most volume for any single species at 210 million cubic feet.

Ownership

Table 15 shows total roundwood output by detailed species group and ownership. From the most recent inventory data, an estimated 2.8 billion cubic feet, or 66 percent, of the total roundwood output came from nonindustrial private forest lands (NIPF). Forest industry lands contributed 1.2 billion cubic feet, or 28 percent of the output. Public lands made up the remaining 6 percent, or 234 million cubic feet.

Literature Cited

Colquitt, John. 1991. APA technical release 91-R-65. August.

Johnson, Tony G.; Steppleton, Carolyn D. 1996. Southern pulpwood production, 1995. Resour. Bull. SRS-8. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 34 p.

Miller, Patrick E. 1994. Southern pulpwood production, 1992. Resour. Bull. SO-187. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 31 p.

West, Cynthia D. 1993. Exports of basic timber resources: who wins and who loses. In: Agriculture's changing horizon: agriculture outlook '93: Proceedings of the 69th annual outlook conference. 1992 December 1-3; Washington, DC. Washington, DC: U.S. Department of Agriculture: 254-262.

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) or 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.

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

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

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.

Log. A primary forest product harvested in long, primarily 8-, 10-, 12-, 14-, and 16-foot, lengths.

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.

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 States in the United 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 nonpulpmills, 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 South, this usually translates to approximately 75.0 cubic feet of solid wood, excluding bark and air space.

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. A log used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.

Florida Conversion Factors[a]

Saw logs

Softwood	0.19121 cubic foot = 1 board foot 5.23 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot 5.95 board feet = 1 cubic foot

Veneer logs

Softwood	0.17241 cubic foot = 1 board foot 5.80 board feet = 1 cubic foot
Hardwood	0.16129 cubic foot = 1 board foot 6.20 board feet = 1 cubic foot

Pulpwood[b]

Softwood	71.00 cubic feet per cord
Hardwood	75.00 cubic feet per cord

Georgia Conversion Factors[a]

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 per cord
Hardwood	76.4 cubic feet per cord

North Carolina Conversion Factors[a]

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 per cord
Hardwood	76.6 cubic feet per cord

South Carolina Conversion Factors[a]

Saw logs

Softwood	0.18018 cubic foot = 1 board foot 5.55 board feet = 1 cubic foot
Hardwood	0.16750 cubic foot = 1 board foot 5.97 board feet = 1 cubic foot

Veneer logs

Softwood	0.17601 cubic foot = 1 board foot 5.68 board feet = 1 cubic foot
Hardwood	0.16340 cubic foot = 1 board foot 6.12 board feet = 1 cubic foot

Pulpwood[b]

Softwood	68.6 cubic feet per cord
Hardwood	70.5 cubic feet per cord

Virginia Conversion Factors[a]

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[b]

Softwood	73.3 cubic feet per cord
Hardwood	76.1 cubic feet per cord

[a] Conversion factors vary with stem size (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.

Index of Tables

Table 1—Output of industrial products by product and species group, Southeast, 1992 and 1995

Product and species group	Year		Change	Percent change
	1992	1995		
	Thousand cubic feet			
Saw logs				
Softwood	1,170,558	1,237,480	66,922	5.7
Hardwood	303,497	326,014	22,517	7.4
Total	1,474,055	1,563,494	89,439	6.1
Veneer logs				
Softwood	158,031	186,231	28,200	17.8
Hardwood	52,195	51,895	-300	-0.6
Total	210,226	238,126	27,900	13.3
Pulpwood[a]				
Softwood	1,252,245	1,222,614	-29,631	-2.4
Hardwood	447,495	568,416	120,921	27.0
Total	1,699,740	1,791,030	91,290	5.4
Composite panels				
Softwood	62,981	69,160	6,179	9.8
Hardwood	34,317	37,757	3,440	10.0
Total	97,298	106,917	9,619	9.9
Other industrial				
Softwood	94,009	46,184	-47,825	-50.9
Hardwood	5,564	3,233	-2,331	-41.9
Total	99,573	49,417	-50,156	-50.4
All industrial				
Softwood	2,737,824	2,761,669	23,845	0.9
Hardwood	843,068	987,315	144,247	17.1
Total	3,580,892	3,748,984	168,092	4.7
Byproduct output				
Softwood	1,048,965	1,001,442	-47,523	-4.5
Hardwood	279,185	302,165	22,980	8.2
Total	1,328,150	1,303,607	-24,543	-1.8
Total output				
Softwood	3,786,789	3,763,111	-23,678	-0.6
Hardwood	1,122,253	1,289,480	167,227	14.9
Total	4,909,042	5,052,591	143,549	2.9

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (77,229,000 cubic feet in 1992 and 54,778,000 cubic feet in 1995).

Table 2—Roundwood receipts by product and species group, Southeast, 1992 and 1995

Product and species group	Year 1992	Year 1995	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	1,191,813	1,222,376	30,563	2.6
Hardwood	311,415	324,420	13,005	4.2
Total	1,503,228	1,546,796	43,568	2.9
Veneer logs				
Softwood	165,174	185,374	20,200	12.2
Hardwood	55,085	55,083	-2	—
Total	220,259	240,457	20,198	9.2
Pulpwood[a]				
Softwood	1,282,866	1,245,567	-37,299	-2.9
Hardwood	462,239	576,673	114,434	24.8
Total	1,745,105	1,822,240	77,135	4.4
Composite panels				
Softwood	63,121	69,140	6,019	9.5
Hardwood	36,326	39,386	3,060	8.4
Total	99,447	108,526	9,079	9.1
Other industrial				
Softwood	98,363	45,650	-52,713	-53.6
Hardwood	5,569	3,233	-2,336	-41.9
Total	103,932	48,883	-55,049	-53.0
Total output				
Softwood	2,801,337	2,768,107	-33,230	-1.2
Hardwood	870,634	998,795	128,161	14.7
Total	3,671,971	3,766,902	94,931	2.6

— = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (79,702,000 cubic feet in 1992 and 60,127,000 cubic feet in 1995).

Table 3—Number of primary wood-using plants by industry, Southeast, 1969-1995

Industry	Year						
	1969	1975	1981	1987	1989	1992	1995
Sawmills	2,109	1,380	1,365	1,152	975	910	809
Veneer or plywood mills	133	101	101	84	80	71	66
Pulpmills	46	49	49	50	48	48	47
Composite panel mills	0	0	0	6	11	11	12
Other mills	101	72	88	102	96	104	94
All plants	2,389	1,602	1,603	1,394	1,210	1,144	1,028

Table 4—Roundwood receipts by sawmill size, Southeast, 1992 and 1995

Sawmill size class[a]	1992			1995		
	Number of mills	Thousand board feet	Percent of volume	Number of mills	Thousand board feet	Percent of volume
Million board feet						
< 1.0	290	92,429	1	228	75,005	1
1.0 - 4.99	304	819,808	10	260	706,419	8
5.0 - 9.99	148	1,023,865	12	144	990,743	12
10.0 - 49.99	120	2,366,631	28	128	2,671,166	31
> 50	48	4,056,464	49	49	4,157,236	48
Total	910	8,359,197	100	809	8,600,569	100

[a] Based on volume received as opposed to actual capacity.

Table 5—Roundwood receipts by species and type of mill, Southeast, 1995

Species	All mills	Type of mill					
		Sawmills	Veneer mills		OSB[a] and panels	Pulpmills[b]	Other mills
			Plywood	Other veneer			
	Thousand cubic feet						
Softwood							
Yellow pine	1,455,705	1,174,897	180,972	4,081	68,145	NA	27,610
White pine	29,866	28,923	0	82	861	NA	0
Cedar	2,255	1,062	0	9	134	NA	1,050
Cypress	32,222	15,234	0	0	0	NA	16,988
Other softwood	631	399	0	230	0	NA	2
Unclassified	1,247,428	1,861	0	0	0	1,245,567	0
Total softwoods	2,768,107	1,222,376	180,972	4,402	69,140	1,245,567	45,650
Hardwood							
Blackgum and tupelo	15,535	8,538	280	1,153	5,564	NA	0
Soft maple	18,195	13,115	3,041	324	1,715	NA	0
Sweetgum	43,772	24,720	7,992	5,384	5,662	NA	14
Yellow-poplar	114,403	75,842	16,294	13,638	8,615	NA	14
Other soft hardwood	39,158	21,519	179	1,315	16,145	NA	0
Hickory	9,098	8,525	0	12	342	NA	219
Red oak	87,746	84,474	76	2,064	829	NA	303
White oak	55,143	52,596	66	1,897	514	NA	70
Other hard hardwood	39,072	35,091	0	1,368	0	NA	2,613
Unclassified	576,673	0	0	0	0	576,673	0
Total hardwoods	998,795	324,420	27,928	27,155	39,386	576,673	3,233
All species	3,766,902	1,546,796	208,900	31,557	108,526	1,822,240	48,883

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, 1995

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		Thousand cubic feet			
Saw logs					
Softwood	711,808	98,355	328,723	188,473	96,257
Hardwood	195,335	34,279	93,906	65,453	1,697
Total	907,143	132,634	422,629	253,926	97,954
Veneer logs					
Softwood	115,776	15,942	61,073	38,761	0
Hardwood	31,110	6,215	13,493	11,402	0
Total	146,886	22,157	74,566	50,163	0
Pulpwood					
Softwood	121,654	121,654	0	0	0
Hardwood	70,402	70,402	0	0	0
Total	192,056	192,056	0	0	0
Composite panels					
Softwood	13,599	13,599	0	0	0
Hardwood	9,266	9,266	0	0	0
Total	22,865	22,865	0	0	0
Other industrial[a]					
Softwood	44,397	24,218	17,957	2,222	0
Hardwood	1,916	466	1,057	393	0
Total	46,313	24,684	19,014	2,615	0
Total					
Softwood	1,007,234	273,768	407,753	229,456	96,257
Hardwood	308,029	120,628	108,456	77,248	1,697
Total	1,315,263	394,396	516,209	306,704	97,954

[a] Includes poles, pilings, posts, and other industrial products.

Table 7—Disposal of residue at primary wood-using plants by product, species group, and residue type, Southeast, 1995

Product and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		Thousand cubic feet			
Fiber products					
Softwood	355,149	0	348,949	4,562	1,638
Hardwood	80,677	0	79,697	980	0
Total	435,826	0	428,646	5,542	1,638
Particleboard					
Softwood	81,845	0	7,665	31,344	42,836
Hardwood	6,821	96	4,576	1,750	399
Total	88,666	96	12,241	33,094	43,235
Composite panels					
Softwood	3,297	0	139	3,089	69
Hardwood	1,407	27	1,149	220	11
Total	4,704	27	1,288	3,309	80
Sawn products					
Softwood	14,356	0	14,356	0	0
Hardwood	1,714	0	1,714	0	0
Total	16,070	0	16,070	0	0
Fuel					
Softwood	427,508	216,895	21,996	161,800	26,817
Hardwood	179,917	97,286	17,236	64,729	666
Total	607,425	314,181	39,232	226,529	27,483
Miscellaneous					
Softwood	119,287	54,833	12,993	26,743	24,718
Hardwood	31,629	21,771	2,232	7,038	588
Total	150,916	76,604	15,225	33,781	25,306
Not used					
Softwood	5,792	2,040	1,655	1,918	179
Hardwood	5,864	1,448	1,852	2,531	33
Total	11,656	3,488	3,507	4,449	212
All products					
Softwood	1,007,234	273,768	407,753	229,456	96,257
Hardwood	308,029	120,628	108,456	77,248	1,697
Total	1,315,263	394,396	516,209	306,704	97,954

Table 8—Output of industrial products by product and species group, Florida, 1991 and 1995

Product and species group	Year		Change	Percent change
	1991	1995		
	Thousand cubic feet			
Saw logs				
Softwood	153,825	146,856	-6,969	-4.5
Hardwood	2,312	6,078	3,766	162.9
Total	156,137	152,934	-3,203	-2.1
Veneer logs				
Softwood	19,698	24,347	4,649	23.6
Hardwood	1,616	1,802	186	11.5
Total	21,314	26,149	4,835	22.7
Pulpwood[a]				
Softwood	298,454	280,917	-17,537	-5.9
Hardwood	30,936	40,094	9,158	29.6
Total	329,390	321,011	-8,379	-2.5
Composite panels				
Softwood	291	0	-291	-100.0
Hardwood	776	3,012	2,236	288.1
Total	1,067	3,012	1,945	182.3
Other industrial				
Softwood	24,609	23,697	-912	-3.7
Hardwood	395	231	-164	-41.5
Total	25,004	23,928	-1,076	-4.3
All industrial				
Softwood	496,877	475,817	-21,060	-4.2
Hardwood	36,035	51,217	15,182	42.1
Total	532,912	527,034	-5,878	-1.1
Byproduct output				
Softwood	165,607	149,683	-15,924	-9.6
Hardwood	8,139	11,879	3,740	46.0
Total	173,746	161,562	-12,184	-7.0
Total output				
Softwood	662,484	625,500	-36,984	-5.6
Hardwood	44,174	63,096	18,922	42.8
Total	706,658	688,596	-18,062	-2.6

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (12,040,000 cubic feet in 1991 and 5,998,000 cubic feet in 1995).

Table 9—Output of industrial products by product and species group, Georgia, 1992 and 1995

Product and species group	Year		Change	Percent change
	1992	1995		
	Thousand cubic feet			
Saw logs				
Softwood	444,044	486,848	42,804	9.6
Hardwood	62,341	65,361	3,020	4.8
Total	506,385	552,209	45,824	9.0
Veneer logs				
Softwood	54,849	58,924	4,075	7.4
Hardwood	17,756	20,367	2,611	14.7
Total	72,605	79,291	6,686	9.2
Pulpwood[a]				
Softwood	427,816	422,807	-5,009	-1.2
Hardwood	120,039	194,458	74,419	62.0
Total	547,855	617,265	69,410	12.7
Composite panels				
Softwood	38,360	36,900	-1,460	-3.8
Hardwood	6,588	10,343	3,755	57.0
Total	44,948	47,243	2,295	5.1
Other industrial				
Softwood	57,239	15,027	-42,212	-73.7
Hardwood	889	472	-417	-46.9
Total	58,128	15,499	-42,629	-73.3
All industrial				
Softwood	1,022,308	1,020,506	-1,802	-0.2
Hardwood	207,613	291,001	83,388	40.2
Total	1,229,921	1,311,507	81,586	6.6
Byproduct output				
Softwood	456,324	394,601	-61,723	-13.5
Hardwood	66,499	78,874	12,375	18.6
Total	522,823	473,475	-49,348	-9.4
Total output				
Softwood	1,478,632	1,415,107	-63,525	-4.3
Hardwood	274,112	369,875	95,763	34.9
Total	1,752,744	1,784,982	32,238	1.8

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (30,898,000 cubic feet in 1992 and 25,574,000 cubic feet in 1995).

Table 10—Output of industrial products by product and species group, North Carolina, 1992 and 1995

Product and species group	Year		Change	Percent change
	1992	1995		
	Thousand cubic feet			
Saw logs				
Softwood	248,599	290,523	41,924	16.9
Hardwood	100,322	107,960	7,638	7.6
Total	348,921	398,483	49,562	14.2
Veneer logs				
Softwood	40,990	47,740	6,750	16.5
Hardwood	21,531	18,682	-2,849	-13.2
Total	62,521	66,422	3,901	6.2
Pulpwood[a]				
Softwood	215,327	193,572	-21,755	-10.1
Hardwood	133,500	138,299	4,799	3.6
Total	348,827	331,871	-16,956	-4.9
Composite panels				
Softwood	17,784	20,869	3,085	17.3
Hardwood	17,665	12,959	-4,706	-26.6
Total	35,449	33,828	-1,621	-4.6
Other industrial				
Softwood	3,453	2,205	-1,248	-36.1
Hardwood	32	32	—	—
Total	3,485	2,237	-1,248	-35.8
All industrial				
Softwood	526,153	554,909	28,756	5.5
Hardwood	273,050	277,932	4,882	1.8
Total	799,203	832,841	33,638	4.2
Byproduct output				
Softwood	189,598	206,974	17,376	9.2
Hardwood	85,192	92,405	7,213	8.5
Total	274,790	299,379	24,589	8.9
Total output				
Softwood	715,751	761,883	46,132	6.4
Hardwood	358,242	370,337	12,095	3.4
Total	1,073,993	1,132,220	58,227	5.4

— = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (13,410,000 cubic feet in 1992 and 11,599,000 cubic feet in 1995).

Table 11—Output of industrial products by product and species group, South Carolina, 1992 and 1995

Product and species group	Year		Change	Percent change
	1992	1995		
	Thousand cubic feet			
Saw logs				
Softwood	231,538	219,484	-12,054	-5.2
Hardwood	25,519	27,615	2,096	8.2
Total	257,057	247,099	-9,958	-3.9
Veneer logs				
Softwood	29,643	42,086	12,443	42.0
Hardwood	6,238	7,881	1,643	26.3
Total	35,881	49,967	14,086	39.3
Pulpwood[a]				
Softwood	205,596	211,577	5,981	2.9
Hardwood	78,661	107,941	29,280	37.2
Total	284,257	319,518	35,261	12.4
Composite panels				
Softwood	0	1,302	1,302	—
Hardwood	0	70	70	—
Total	0	1,372	1,372	—
Other industrial				
Softwood	5,267	4,026	-1,241	-30.8
Hardwood	0	0	—	—
Total	5,267	4,026	-1,241	-23.6
All industrial				
Softwood	472,044	478,475	6,431	1.4
Hardwood	110,418	143,507	33,089	30.0
Total	582,462	621,982	39,520	6.8
Byproduct output				
Softwood	165,240	170,900	5,660	3.4
Hardwood	28,992	31,587	2,595	9.0
Total	194,232	202,487	8,255	4.3
Total output				
Softwood	637,284	649,375	12,091	1.9
Hardwood	139,410	175,094	35,684	25.6
Total	776,694	824,469	47,775	6.2

— = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (10,850,000 cubic feet in 1992 and 7,131,000 cubic feet in 1995).

Table 12—Output of industrial products by product and species group, Virginia, 1992 and 1995

Product and species group	Year		Change	Percent change
	1992	1995		
	Thousand cubic feet			
Saw logs				
Softwood	92,552	93,769	1,217	1.3
Hardwood	113,003	119,000	5,997	5.3
Total	205,555	212,769	7,214	3.5
Veneer logs				
Softwood	12,851	13,134	283	2.2
Hardwood	5,054	3,163	-1,891	-37.4
Total	17,905	16,297	-1,608	-9.0
Pulpwood[a]				
Softwood	105,052	113,741	8,689	8.3
Hardwood	84,359	87,624	3,265	3.9
Total	189,411	201,365	11,954	6.3
Composite panels				
Softwood	6,546	10,089	3,543	54.1
Hardwood	9,288	11,373	2,085	22.4
Total	15,834	21,462	5,628	35.5
Other industrial				
Softwood	3,441	1,229	-2,212	-64.3
Hardwood	4,248	2,498	-1,750	-41.2
Total	7,689	3,727	-3,962	-51.5
All industrial				
Softwood	220,442	231,962	11,520	5.2
Hardwood	215,952	223,658	7,706	3.6
Total	436,394	455,620	19,226	4.4
Byproduct output				
Softwood	72,196	79,284	7,088	9.8
Hardwood	90,363	87,420	-2,943	-3.3
Total	162,559	166,704	4,145	2.5
Total output				
Softwood	292,638	311,246	18,608	6.4
Hardwood	306,315	311,078	4,763	1.6
Total	598,953	622,324	23,371	3.9

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (10,031,000 cubic feet in 1992 and 4,476,000 cubic feet in 1995).

Table 13—Total roundwood output by product, species group, and source of material, Southeast, 1995

Product and species group	All sources	Growing-stock trees			Other
		Total	Sawtimber	Poletimber	
		Thousand cubic feet			
Saw logs					
Softwood	1,237,480	1,207,370	1,175,367	32,003	30,110
Hardwood	326,014	307,741	294,107	13,634	18,273
Total	1,563,494	1,515,111	1,469,474	45,637	48,383
Veneer logs and bolts					
Softwood	186,231	182,101	177,001	5,100	4,130
Hardwood	51,895	51,409	51,280	129	486
Total	238,126	233,510	228,281	5,229	4,616
Pulpwood					
Softwood	1,222,614	1,092,626	438,735	653,891	129,988
Hardwood	568,416	509,666	221,846	287,820	58,750
Total	1,791,030	1,602,292	660,581	941,711	188,738
Composite panel					
Softwood	69,160	60,688	26,077	34,611	8,472
Hardwood	37,757	33,567	14,933	18,634	4,190
Total	106,917	94,255	41,010	53,245	12,662
Poles and posts					
Softwood	27,541	25,123	21,928	3,195	2,418
Hardwood	69	4	2	2	65
Total	27,610	25,127	21,930	3,197	2,483
Other miscellaneous					
Softwood	18,643	14,626	11,589	3,037	4,017
Hardwood	3,164	2,877	1,871	1,006	287
Total	21,807	17,503	13,460	4,043	4,304
Total industrial products					
Softwood	2,761,669	2,582,534	1,850,697	731,837	179,135
Hardwood	987,315	905,264	584,039	321,225	82,051
Total	3,748,984	3,487,798	2,434,736	1,053,062	261,186
Fuelwood					
Softwood	52,892	28,726	21,200	7,526	24,166
Hardwood	385,613	213,379	163,122	50,257	172,234
Total	438,505	242,105	184,322	57,783	196,400
All products					
Softwood	2,814,561	2,611,260	1,871,897	739,363	203,301
Hardwood	1,372,928	1,118,643	747,161	371,482	254,285
Total	4,187,489	3,729,903	2,619,058	1,110,845	457,586

Table 14—Total roundwood output by species group, detailed species group, and product, Southeast, 1995

Species group and detailed species group	Total	Product						
		Saw log	Veneer	Pulpwood	Composite panel	Fuelwood	Poles and posts	Other miscellaneous
		Thousand cubic feet						
Softwood								
Cedar	9,615	3,841	710	4,396	395	209	30	34
Longleaf-slash pine	907,574	373,527	43,852	445,677	4,813	12,134	16,711	10,860
White pine	23,623	17,020	51	4,263	1,558	633	98	0
Loblolly-shortleaf pine	1,560,635	709,653	126,052	629,937	51,606	33,058	7,564	2,765
Other yellow pines	240,941	99,948	11,956	109,929	10,146	5,740	2,237	985
Cypress	67,852	30,641	3,593	27,162	563	993	901	3,999
Hemlock	4,321	2,850	17	1,250	79	125	0	0
Total softwoods	2,814,561	1,237,480	186,231	1,222,614	69,160	52,892	27,541	18,643
Hardwood								
Soft maple	105,982	25,065	4,348	43,131	3,549	29,703	3	183
Hard maple	2,968	894	146	757	309	858	0	4
Other birch	10,007	3,673	311	3,087	118	2,816	1	1
Yellow birch	64	24	2	20	0	18	0	0
Hickory	54,330	15,447	1,958	20,137	1,234	15,278	4	272
Beech	11,023	3,318	380	3,758	373	3,168	0	26
Ash	23,079	5,157	993	10,021	487	6,384	0	37
Black walnut	3,760	1,638	127	823	88	1,082	0	2
Sweetgum	209,961	39,805	9,307	98,216	4,094	58,191	9	339
Yellow-poplar	174,986	54,246	6,304	58,912	5,723	49,432	18	351
Blackgum–tupelo	101,076	13,411	4,288	51,750	3,356	28,223	1	47
Sycamore	6,829	1,972	248	2,483	161	1,902	1	62
Cottonwood	1,225	331	73	464	20	337	0	0
Black cherry	5,901	1,445	251	2,385	150	1,654	1	15
Select white oaks	146,291	39,817	3,739	56,896	3,956	41,220	13	650
Other white oaks	109,435	24,580	4,636	48,840	1,457	29,846	0	76
Select red oaks	55,197	17,605	1,696	18,772	1,432	15,618	2	72
Other red oaks	256,315	56,542	9,187	108,402	8,169	73,141	15	859
Basswood	1,768	721	45	352	123	523	0	4
Elm	17,585	3,259	756	8,442	274	4,827	0	27
Other Eastern hardwoods	75,146	17,064	3,100	30,768	2,684	21,392	1	137
Total hardwoods	1,372,928	326,014	51,895	568,416	37,757	385,613	69	3,164
All species	4,187,489	1,563,494	238,126	1,791,030	106,917	438,505	27,610	21,807

Table 15—Total roundwood output by species group, detailed species group, and ownership class, Southeast, 1995

Species group and detailed species group	Total	Ownership class			
		National forest	Other public	Forest industry	Nonindustrial private
		Thousand cubic feet			
Softwood					
Cedar	9,615	212	312	2,125	6,966
Longleaf-slash pine	907,574	11,095	41,393	392,440	462,646
White pine	23,623	1,146	336	1,773	20,368
Loblolly-shortleaf pine	1,560,635	24,042	55,602	451,509	1,029,482
Other yellow pines	240,941	7,285	9,056	51,214	173,386
Cypress	67,852	289	1,886	23,579	42,098
Hemlock	4,321	809	0	0	3,512
Total softwoods	2,814,561	44,878	108,585	922,640	1,738,458
Hardwood					
Soft maple	105,982	4,539	2,201	19,749	79,493
Hard maple	2,968	10	5	456	2,497
Other birch	10,007	1,460	390	1,131	7,026
Yellow birch	64	25	31	0	8
Hickory	54,330	1,493	1,725	7,629	43,483
Beech	11,023	905	181	1,190	8,747
Ash	23,079	332	693	4,835	17,219
Black walnut	3,760	501	46	429	2,784
Sweetgum	209,961	1,078	5,043	48,578	155,262
Yellow-poplar	174,986	5,199	2,942	27,525	139,320
Blackgum–tupelo	101,076	389	1,667	26,453	72,567
Sycamore	6,829	418	10	1,643	4,758
Cottonwood	1,225	0	63	228	934
Black cherry	5,901	421	337	691	4,452
Select white oaks	146,291	4,718	3,426	22,765	115,382
Other white oaks	109,435	7,325	4,749	18,960	78,401
Select red oaks	55,197	7,585	1,426	7,118	39,068
Other red oaks	256,315	7,231	6,504	52,393	190,187
Basswood	1,768	481	47	106	1,134
Elm	17,585	176	419	3,469	13,521
Other Eastern hardwoods	75,146	2,531	2,291	11,508	58,816
Total hardwoods	1,372,928	46,817	34,196	256,856	1,035,059
All species	4,187,489	91,695	142,781	1,179,496	2,773,517

The Forest Service, U.S. Department of Agriculture, is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

Johnson, Tony G. 1998. The Southeast's timber industry—an assessment of timber product output and use, 1995. Resour. Bull. SRS-24. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 24 p.

In 1995, volume of roundwood products removed from southeastern forests totaled 3.7 billion cubic feet—5 percent more than in 1992. Mill byproducts generated from primary manufacturers was down 2 percent to 1.3 billion cubic feet. Almost all plant residues were used, mostly for fuel and fiber products. Pulpwood was the leading roundwood product at 1.8 billion cubic feet; saw logs ranked second at 1.6 billion cubic feet; veneer logs were third with 238 million cubic feet. The number of primary processing plants declined from 1,144 in 1992 to 1,028 in 1995. Total receipts increased 3 percent to 3.8 billion cubic feet.

Keywords: Pulpwood, residues, roundwood, saw logs, veneer logs, wood movement.

United States
Department of Agriculture

Forest Service

Southern
Research Station
P.O. Box 2680
200 Weaver Blvd.
Asheville, NC 28802

OFFICIAL BUSINESS
Penalty for Private Use $300