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# Georgia's Timber Industry— An Assessment of Timber Product Output and Use, 1989

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## Foreword

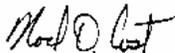
This report presents the findings of a 1989 canvass of wood-using plants in Georgia. To complement Forest Inventory and Analysis' periodic inventory of volume and removals from southeastern timberland, all primary wood-using plants in Southeastern States are routinely canvassed. This is done to determine the amount and source of wood receipts and annual timber product drain by county for a specific year. In addition, interstate and cross-regional movement of industrial roundwood are determined. Only primary wood-using mills are 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 structural panel products (OSB, waferboard) or reconstituted lumber products (parallel strand lumber, laminated veneer lumber). Mills producing products from residues generated at primary processors and secondary processors are not canvassed. Volume of whole trees chipped in the woods is not included in the estimate of timber drain.

A 100-percent canvass of all primary wood-processors in Georgia was conducted in 1989. Out-of-State mills known to be using logs or bolts harvested from Georgia timberland were also contacted. Each mill was canvassed by mail or through personal contact at plant locations. Telephone contact was made as a follow-up to mailed questionnaire responses when additional information or clarification of response was necessary. In the event of a non-response, receipt data collected in previous surveys

was updated based on current data collected for mills of similar size, product type, and location. These studies are a cooperative project involving the Southeastern Forest Experiment Station and the Georgia Forestry Commission.

Pulpwood production data is taken from an annual canvass of all eastern pulpmills that use wood from Southeastern timberland. Medium density fiberboard and hardboard plants are included in this survey. The pulpwood production survey is conducted annually in cooperation with the American Pulpwood Association. Previous surveys for other timber products have been conducted every three years since 1971. This Bulletin reports the findings of the 1989 primary wood users canvass and pulpwood production study in Georgia, and presents changes in product output and residue use that have occurred since 1988.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the Georgia Forestry Commission in collecting mill data. Appreciation is also expressed to forest industry and mill managers for providing timber products information. The information presented in this report is based on responses from 98 percent of mills operating in 1989. These mills accounted for about 97 percent of the 1989 mill receipts. Fourteen pulpmills, 16 veneer mills, 25 mills manufacturing other industrial products, and 166 of the 172 sawmills in operation in 1989 provided current mill data.



NOEL D. COST  
Project Leader, FIA

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# Georgia's Timber Industry— An Assessment of Timber Product Output and Use, 1989

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## Industrial Roundwood Product Output

Total industrial roundwood product output is the volume of roundwood harvested from Georgia timberland for production of wood products. This volume is referred to as timber products output (TPO). User-cut firewood for domestic use is not included. Between 1986 and 1989, TPO declined by more than 7 percent, from 1.2 to 1.1 billion cubic feet. Still, Georgia ranks third nationwide in the production of industrial timber products, behind Oregon and Washington. Softwood TPO declined by 9 percent to 920 million cubic feet between 1986 and 1989, while hardwood TPO increased by 3 percent to 193.4 million cubic feet. Despite the decline in softwood and the increase in hardwood output, softwoods continue to account for about 83 percent of total TPO, only slightly less than in 1986. While the increase in hardwood output is a continuation of past trends, the decline in softwood output in 1989 is the first measured reversal in a long trend of increasing output. This may be seen as a temporary fluctuation in response to the economic situation and downturn in new-home construction during 1987.

In 1989, softwood saw logs took over as the leading roundwood product; softwood pulpwood dropped to second as a greater portion of pulpwood furnish came from hardwoods. Softwood pulpwood and softwood saw logs together still account for almost three-fourths of the total TPO.

## Pulpwood

Output of roundwood pulpwood, including roundwood delivered to primary processors, chipped, and then sold as furnish to pulpmills, totaled 515.9 million cubic feet (6.9 million cords) in 1989. This is 12 percent less than in 1986 (table 1). Total roundwood pulpwood output increased by almost 38 percent between 1971 and 1986, from 426.8 million cubic feet to 588.4 million cubic feet

(fig. 1). The recent decline is a reversal of a long-term upward trend in production. All of the recent decline is attributed to a dropoff in softwood output. Output of softwood pulpwood increased by 29 percent between 1971 and 1986 (fig. 1), but declined by 17 percent since then. Softwood pulpwood output accounted for 79 percent of the total 1989 output, 4 percent less than in 1986.

Hardwood output continues an upward trend, although at a slower rate than in recent years, and accounts for a larger share of the total production. Hardwoods will probably continue to account for a larger proportion of pulp furnish, as several mills using Georgia wood have increased capacity and made shifts to greater utilization of hardwood. In the future, use of recycled newsprint and other paper will have an impact on the amount and species mix of roundwood cut for pulp furnish. Hardwood may continue to contribute a larger share of total production as softwood output declines slightly. Roundwood chipped material amounted to 50.7 million cubic feet, about 10 percent of the roundwood delivered for pulpwood. Georgia's production of roundwood pulpwood is second only to Alabama's.

## Saw Logs

Saw log output in 1989 totaled 474.2 million cubic feet (2.4 billion board feet), 9 percent less than in 1986 (table 1). As with pulpwood, this is the first measured decline in production since before 1971 (fig. 2). Both softwood and hardwood output dropped, softwood from 443.2 million cubic feet in 1986 to 408.5 million cubic feet and hardwoods from 75.3 to 65.7 million cubic feet. As mentioned, this decline is probably in response to depressed home construction in 1987, with saw-log drain being slow to respond to a somewhat better economy in 1988 and 1989. Southern yellow pine made up more than 98 percent of the softwood saw logs harvested in Georgia in 1989. Eastern white pine and cypress together account for most of the softwood remainder. Oaks account for about 45 percent of the

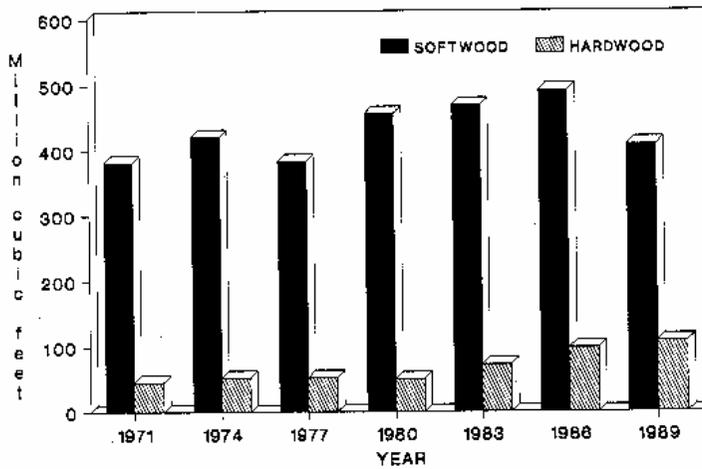


Figure 1.-Roundwood pulpwood production, by species group and year.

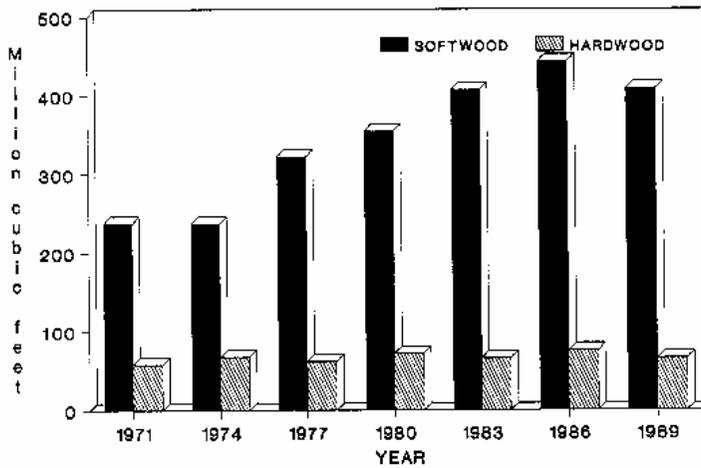


Figure 2.-Roundwood saw-log production, by species group and year.

hardwood saw-log output, yellow-poplar 19 percent, and gums 19 percent. Georgia ranks fourth behind Oregon, Washington, and California in the production of roundwood used as saw logs.

### Veneer Logs

Output of veneer logs for 1989 totaled \$1.9 million cubic feet, up about 5 percent (table 1). Veneer-log output has exhibited a generally upward trend since 1971 (fig. 3), when production of both softwood and hardwood logs totaled only 40.3 million cubic feet. Production declined temporarily in 1980. Softwood veneer-log output accounts for all of the net production between 1971 and the present; hardwood production has remained fairly stable. Softwood veneer-log output increased about 8 percent from 1986, to 69.1 million cubic feet (390.5 million board feet). Gains in softwood levels accounted for all of the net increase in output. Yellow pine accounts for all of softwood roundwood cut for veneer. Hardwood veneer-log output was down 10 percent from 1986 to 12.9 million cubic feet (75.0 million board feet). Sixty percent of the hardwood veneer-log volume was yellow-poplar and 11 percent was sweetgum. About 35 percent of the hardwood cut was used as interior plys in pine plywood. More than 4.5 million cubic feet of yellow-poplar, 702 thousand cubic feet of oak, and 486 thousand cubic feet of other soft-textured hardwoods were used for hardwood plywood, paneling, and other miscellaneous veneer products.

### Structural Board Products

Roundwood cut for structural board (non-veneer products) totaled 26.6 million cubic feet in 1989 (table 1). All of this volume was harvested for oriented strand board (OSB) production in Georgia or mills in other SE States. Yellow pine accounted for about three-fourths of the volume cut. White pine accounted for less than 1 percent and hardwoods made up about 26 percent. Sweetgum accounted for 55 percent of the hardwood volume cut for OSB and yellow-poplar accounted for 26 percent.

### Other Industrial Products

Other industrial products cut in Georgia include poles, posts, logs for log homes, excelsior, and other reconstituted wood products. In 1989, combined output of roundwood used for these products totaled 15.1 million cubic feet, down almost 13 percent since 1986 (table 1). Almost all of this roundwood was southern yellow pine. A small amount of hardwood was harvested, mostly oaks and hickory. Roundwood used for miscellaneous products accounts for only 1 percent of Georgia's total TPO, but will likely make up a greater portion of total product output in the future with greater use of reconstituted wood products.

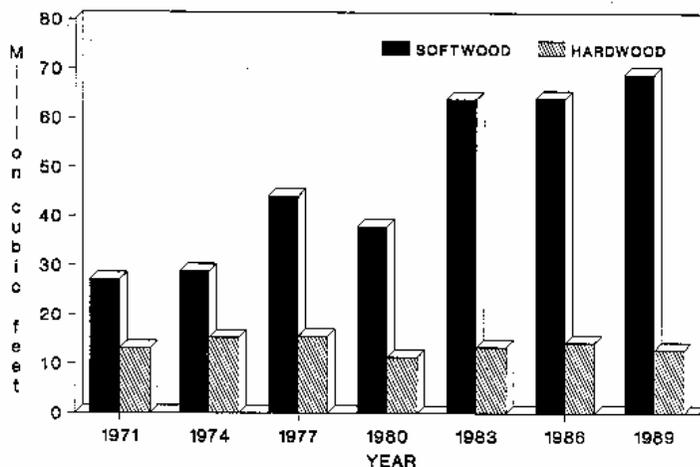


Figure 3.-Roundwood veneer-log production, by species group and year.

## Number of Mills and Receipts

The number of primary wood-using mills dropped from 301 in 1986 to 231 in 1989, a 23 percent decline (table 2). Almost all of the decline was in small sawmills. At the same time, receipts of roundwood for all products declined by 8 percent, from 1.2 million cubic feet to 1.1 million cubic feet (table 3).

Fifteen pulpmills were in operation and receiving roundwood in 1986. Since that time, one facility has converted from the use of roundwood and is now totally dependent on recycled material. For the fourteen remaining mills, 24-hour pulping capacity increased from 19,672 tons to 19,965 tons. During the same time, receipts of round pulpwood declined by 12 percent, from 807.2 million cubic feet, or about 8.0 million cords, to 534.8 million cubic feet (7.2 million cords). Receipts of softwood roundwood declined by 17 percent to 409.4 million cubic feet, while hardwood receipts were up to 125.4 million cubic feet, a 9 percent increase.

The number of sawmills dropped from 239 to 172 in 1989. Small sawmills are the first to close in response to slow markets, and some mills probably ceased production prior to 1989. About 80 operations with combined receipts totaling 65.3 million cubic feet (about 337.7 million board feet) closed. Many of these had past annual receipts of less than 2 million board feet. Receipts at Georgia's remaining sawmills totaled 479.4 million cubic feet, 9 percent less than in 1986. Softwood receipts declined by 8 percent and hardwood receipts were down 14 percent. Ten sawmills reopened or began operation in 1989.

The number of veneer mills operating in Georgia declined from 18 to 16. One plywood plant and one mill producing container veneer closed. Receipts at remaining mills declined by 2 percent, from 79.5 million cubic feet to 78.1 million cubic feet. Receipts of softwood roundwood changed little. Volume of hardwood roundwood was down by 5 percent. More than 81 percent of receipts were southern yellow pine used in the manufacture of pine plywood (table 4). About 19 percent was hardwood used for hardwood plywood, paneling, and containers. Hardwood species received include yellow-poplar (54 percent), sweetgum and blackgum (37 percent), and oaks (6 percent). Several other species made up the remaining three percent.

Three OSB mills that did not operate in 1986 were in operation in 1989. One mill was in operation for only a short portion of the year. In order to avoid revealing individual mill information, we include receipt data for structural board products with data for other industrial products.

Twenty-nine mills producing OSB, parallel strand lumber, logs for log homes, poles, posts, and excelsior operated during 1989. Three OSB mills, 1 parallel strand lumber, 2 post, and 2 pole facilities have begun operation since 1986. Eight post or pole operations closed. Receipts at current mills totaled 42.9 million cubic feet. Southern yellow pine accounted for 81 percent of total receipts, gums 10 percent, yellow-poplar 4 percent, and other soft hardwoods 3 percent.

## Roundwood Movement

Georgia is a net importer of industrial roundwood. In 1989, production of roundwood from Georgia timberland totaled 1.1 billion cubic feet, with about 90 percent being retained for processing by mills within the State (table 5). Imports from other States amounted to 136.1 million cubic feet, a decline of about 7 percent since 1986. Exports of roundwood to mills outside Georgia totaled 114.3 million cubic feet, about the same as in 1986. Imports exceeded exports by 31.6 thousand cubic feet, or 28 percent, in 1986, and by 21.7 thousand cubic feet, or 19 percent, in 1989. The volume of whole trees cut, chipped in the woods, and delivered to chip facilities for export overseas is not included in the estimate of roundwood harvested or exported. Forest Inventory and Analysis does not have the means to monitor this volume or to differentiate at export facilities between the volume of chips generated at chip facilities and the volume processed at woods sites. The latter volume is growing, making the estimate of volume exported out of Georgia reported here low, especially for hardwoods. Japan is very active in capacity expansion and has increased demand for hardwood chips used in high-grade specialty papers. The volume of hardwood chips exported from the southern U.S. has grown in recent years, from 25,000 tons in 1987 to more than one million tons in 1990. Japanese, Korean, and Taiwanese wood fiber companies are the primary purchasers<sup>2</sup>.

Softwood pulpwood accounts for 64 percent of all known exports and 55 percent of imports. Hardwood pulpwood and softwood saw logs each account for about 14 percent of exports. Hardwood pulpwood accounts for 25 percent of all imports and softwood saw logs account for 16 percent of imports (table 6).

Ninety-six percent of Georgia's saw-log production is retained in the State (table 7). Principal States receiving saw-log exports include Florida (10.9 million cubic feet or 58 percent), South Carolina (5.2 million cubic feet or 28 percent), and North Carolina (2.6 million cubic feet or 14 percent). About 89 percent of

<sup>2</sup>Colquitt, John. 1991. APA Technical Release 91-R-65. August.

saw log exports were softwood. Saw-log imports to Georgia mills came from South Carolina (47 percent), Florida (30 percent), Alabama (20 percent), and Tennessee (3 percent).

Ninety-two percent of the veneer logs cut in Georgia are retained for processing at mills within the State (table 8). The remaining 8 percent, 6.3 million cubic feet, is exported to South Carolina (49 percent), Florida (49 percent), and North Carolina (2 percent). Imports totaling 2.5 million cubic feet come from Alabama (66 percent) and Florida (34 percent).

About 83 percent of roundwood cut for pulpwood from Georgia timberland is retained for processing at Georgia pulpmills (table 9). Exports, not including oversea shipment of chips, totals 89.0 million cubic feet (1.2 million cords). Fifty percent of exports are to Florida, 25 percent to Alabama, 16 percent to Tennessee, and 9 percent to North Carolina. Imports of 108.0 million cubic feet (1.4 million cords) exceed exports by 21 percent. Imports are from South Carolina, Alabama, and Florida.

## Plant Byproduct Use

Processing of primary products at Georgia mills in 1989 generated 410.1 million cubic feet of wood and bark residues. About 85 percent of all residue was softwood; almost 30 percent was coarse residue generated in the processing of softwood saw logs (table 10). Twenty-eight percent of the softwood residue generated and 39 percent of the total hardwood residue was bark. Nearly all of the bark generated—about 120 million cubic feet—was used. Less than 1 percent went unused (table 11). Almost 107.5 million cubic feet, or 90 percent, was used as industrial fuel for steam generation or drying. About 9 percent was used for gardening products such as mulch and landscape nuggets.

About 165 million cubic feet of coarse residues such as slabs and edgings was generated during the processing of primary products; 82 percent was generated during the processing of saw logs and another 15 percent during the processing of veneer. About 99 percent of the coarse residue produced was used. More than 87 percent—144 million cubic feet—was utilized for fiber manufacture. Other uses of coarse residue include fuel and resawn products such as landscape timbers cut from veneer cores.

Over 125 million cubic feet of sawdust and planer shavings was generated in 1989; 83 percent was generated at sawmills, and 16 percent was sawdust from veneer trimming. Shavings used for particleboard accounted for 19 percent of the total, industrial fuel 76 percent, and miscellaneous uses 4 percent. Less than 1 percent was not used.

## Regional Trends

Output of softwood timber products declined between 1986 and 1989 in all regions of Georgia. Hardwood output declined in the North Central and Northern regions (fig. 4), but increased in Southeast, Southwest, and Central Georgia. For all regions, softwoods accounted for more than 75 percent of the total timber products output. Changes in output by product varied by region.

### Southeast Region

Volume of pulpwood declined by 20 percent between 1986 and 1989 in Southeast Georgia; volume of softwood pulpwood declined by 23 percent. Softwood pulpwood accounted for 47 percent of total TPO in 1986 but only 40 percent in 1989. Although output of softwood saw logs declined slightly, these saw logs were the leading product in 1989, accounting for 43 percent of all industrial products. Output of hardwood saw logs remained about the same. Output of hardwood pulpwood was also stable, but accounts for a larger share of total pulpwood in 1989 due to the reduction in softwood output (table 12). By far the greatest volume of pulpwood and saw logs cut statewide is from Southeast Georgia timberland. Pulpwood cut here accounts for 41 percent of State production and saw logs account for 42 percent of production.

### Southwest Region

Output of both saw logs and veneer logs declined in Southwest Georgia, while pulpwood output increased. Output of softwood pulpwood was up by 15 percent; hardwood output was up 21 percent. Pulpwood accounted for 45 percent of total TPO and saw logs another 43 percent (table 13).

### Central Region

Hardwood TPO was up by 11 percent here, while softwood output declined by 4 percent. Most of the increased production of hardwood was used for pulp. Hardwood roundwood cut for pulp increased by 25 percent, from 35.5 to 44.4 million cubic feet (table 14). About 45 percent of the roundwood cut for veneer is from Central Georgia, although veneer-log output

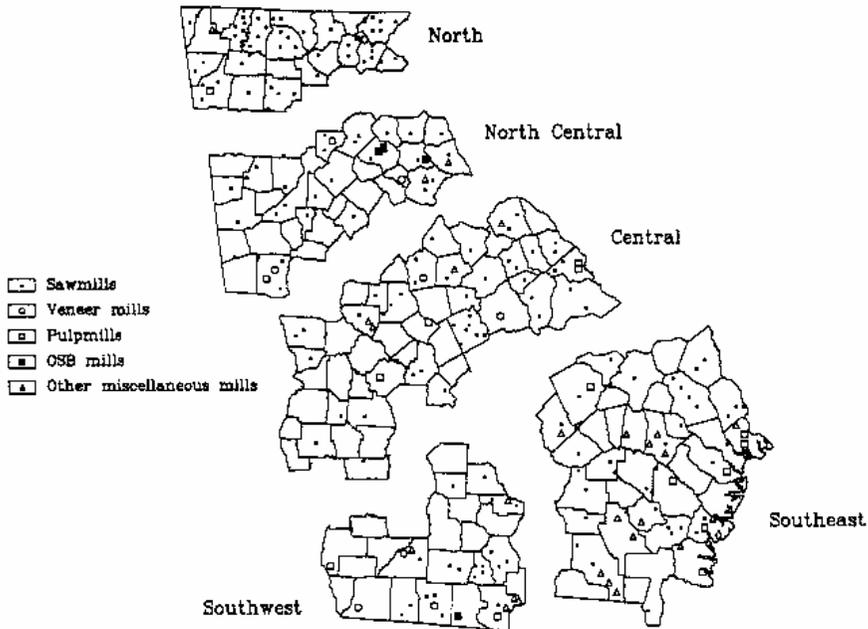


Figure 4.-Primary wood-using mills by regions.

declined by 3 percent. Output of other industrial timber products was up significantly due to the addition of several new mills producing structural board products.

#### North Central Region

Roundwood cut in North Central Georgia accounts for 13 percent of the State's TPO (table 15). TPO declined between 1986 and 1989 by 13 percent to 145.7 million cubic feet. Pulpwood output was down 22 percent to 59.2 million cubic feet and saw-log output was down 32 percent to 45.7 million cubic feet. Veneer-log output increased by 12 percent to 25.9 million cubic feet, 32 percent of the State total and more than the output of any other region. Output of other industrial products increased to 14.9 million cubic feet, partly because of logs cut for OSB.

#### Northern Region

TPO in North Georgia was down almost 17 percent (table 16) to 71.4 million cubic feet. Harvest of total pulpwood and softwood and hardwood saw logs was down. Output of softwood veneer logs was also down. Only hardwood veneer output and output of logs for other miscellaneous products increased. North Georgia timberland accounts for only 6 percent of the State's total TPO.

## Definitions of Terms

**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 geographic area 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 timber products.** All timber products manufactured from either roundwood or plant byproducts, except firewood.

**Imports.** The volume of roundwood delivered to a mill or group of mills in a specific geographic area 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.

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

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

**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 a minimum diameter inside bark of 8 inches for softwoods and 8 inches for hardwoods.

**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.

### Conversion Factors<sup>a</sup>

<b>Saw logs</b>	
Softwood	0.19797 cubic foot = 1 board foot 5.05 board feet = 1 cubic foot
Hardwood	0.18866 cubic foot = 1 board foot 5.30 board feet = 1 cubic foot
<b>Veneer logs</b>	
Softwood	0.17693 cubic foot = 1 board foot 5.65 board feet = 1 cubic foot
Hardwood	0.17142 cubic foot = 1 board foot 5.83 board feet = 1 cubic foot
<b>Pulpwood<sup>b</sup></b>	
Softwood	74.5 cubic feet/cord
Hardwood	75.5 cubic feet/cord

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<sup>a</sup>Conversion factors vary with stem size (d.b.h.) and species. The factors shown are for the average diameters of trees removed in Georgia during the latest survey period.

<sup>b</sup>Cubic feet of solid wood per cord.

Table 1--Roundwood timber products output, by product and species group, Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	443,204	408,489	-7.8
Hardwood	75,338	65,678	-12.8
Total	518,542	474,167	-8.6
<b>Veneer logs</b>			
Softwood	64,093	69,077	+7.8
Hardwood	14,296	12,863	-10.0
Total	78,389	81,940	+4.5
<b>Pulpwood<sup>a</sup></b>			
Softwood	490,845	407,876	-16.9
Hardwood	97,515	107,987	+10.7
Total	588,360	515,863	-12.3
<b>Structural boards</b>			
Softwood	0	19,672	N/A
Hardwood	0	6,880	N/A
Total	0	26,552	N/A
<b>Other industrial</b>			
Softwood	17,293	15,061	-12.9
Hardwood	0	11	N/A
Total	17,293	15,072	-12.8
<b>All industrial</b>			
Softwood	1,015,435	920,175	-9.4
Hardwood	187,149	193,419	+3.4
Total	1,202,584	1,113,594	-7.4

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulp mills (56,296 thousand cubic feet in 1986 and 50,716 thousand cubic feet in 1989).

Table 2--Number of primary wood-using plants, by industry, Georgia, 1986 and 1989

Industry	Year		Change
	1986	1989	
	<u>Number</u>		<u>Percent</u>
Sawmills	239	172	-28.0
Veneer mills	18	16	-11.1
Pulpmills	15	14	-6.7
Other	29	29	0
All plants	301	231	-23.3

Table 3--Roundwood receipts, by product and species group, Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	451,776	414,217	-8.3
Hardwood	75,589	65,215	-13.7
Total	527,365	479,432	-9.1
<b>Veneer logs</b>			
Softwood	64,044	63,488	-0.9
Hardwood	15,487	14,655	-5.4
Total	79,531	78,143	-1.7
<b>Pulpwood<sup>a</sup></b>			
Softwood	492,512	409,419	-16.9
Hardwood	114,737	125,420	+9.3
Total	607,249	534,839	-11.9
<b>Other industrial</b>			
Softwood	20,064	35,152	+75.2
Hardwood	0	7,769	N/A
Total	20,064	42,921	+113.9
<b>All industrial</b>			
Softwood	1,028,396	922,276	-10.3
Hardwood	205,813	213,059	+3.5
Total	1,234,209	1,135,335	-8.0

N/A=Not applicable.

<sup>a</sup> Includes roundwood that was delivered to nonpulp mills and then chipped and sold to pulpmills (59,370 thousand cubic feet in 1986 and 54,127 thousand cubic feet in 1989).



Table 5--Industrial roundwood movement, by year and species group, Georgia, 1986 and 1989

Year	Production	Exports	Retained	Imports	Receipts
<u>Thousand cubic feet</u>					
<b>SOFTWOOD</b>					
1986	1,015,435	101,712	913,723	114,671	1,028,394
1989	920,175	95,162	825,013	97,263	922,276
<b>HARDWOOD</b>					
1986	187,149	12,289	174,860	30,938	205,798
1989	193,419	19,165	174,254	38,805	213,059
<b>ALL SPECIES</b>					
1986	1,202,584	114,001	1,088,583	145,609	1,234,192
1989	1,113,594	114,327	999,267	136,068	1,135,335

Table 6--Industrial roundwood movement by product and species group, Georgia, 1989

Product	Species group				
	Production	Exports	Retained	Imports	Receipts
	Thousand cubic feet				
<b>Saw logs</b>					
Softwood	408,489	16,708	391,781	22,436	414,217
Hardwood	65,678	2,118	63,560	1,655	65,215
Total	474,167	18,826	455,341	24,091	479,432
<b>Veneer logs</b>					
Softwood	69,077	5,624	63,453	35	63,488
Hardwood	12,863	686	12,177	2,478	14,655
Total	81,940	6,310	75,630	2,513	78,143
<b>Pulpwood<sup>a</sup></b>					
Softwood	407,876	72,615	335,261	74,158	409,419
Hardwood	107,987	16,361	91,626	33,794	125,420
Total	515,863	88,976	426,887	107,952	534,839
<b>Other</b>					
Softwood	34,733	215	34,518	634	35,152
Hardwood	6,891	0	6,891	878	7,769
Total	41,624	215	41,409	1,512	42,921
<b>All products</b>					
Softwood	920,175	95,162	825,013	97,263	922,276
Hardwood	193,419	19,165	174,254	38,805	213,059
Total	1,113,594	114,327	999,267	136,068	1,135,335

<sup>a</sup>Includes roundwood chipped.

Table 7--Saw log volume by destination, source, and species group, Georgia, 1989

Destination and source	Species group		
	All species	Softwood	Hardwood
	<u>Thousand cubic feet</u>		
Georgia (retained)	455,341	391,781	63,560
Exports to:			
Florida	10,989	10,702	287
North Carolina	2,649	1,292	1,357
South Carolina	5,188	4,714	474
Imports from:			
Alabama	4,885	3,943	942
Florida	7,145	6,773	372
South Carolina	11,228	11,070	158
Tennessee	833	650	183

Table 8--Veneer volume by destination, source, and species group, Georgia, 1989

Destination and source	Species group		
	All species	Softwood	Hardwood
	<u>Thousand cubic feet</u>		
Georgia (retained)	75,630	63,453	12,177
Exports to:			
Florida	3,075	2,982	93
North Carolina	129	0	129
South Carolina	3,106	2,642	464
Imports from:			
Alabama	1,652	35	1,617
Florida	861	0	861

Table 9--Pulpwood<sup>a</sup> volume by destination, source, and species group, Georgia, 1989

Destination and source	Species group		
	All species	Softwood	Hardwood
	<u>Thousand cubic feet</u>		
Georgia (retained)	426,887	335,261	91,626
<b>Exports to:</b>			
Alabama	22,351	14,944	7,407
Florida	44,773	37,535	7,228
North Carolina	7,301	5,577	1,724
Tennessee	14,561	14,559	2
<b>Imports from:</b>			
Alabama	36,945	29,201	7,744
Florida	31,420	26,868	4,552
South Carolina	39,587	18,089	21,498

<sup>a</sup>Includes roundwood chipped.

Table 10--Primary mill residue by roundwood type, species group, and residue type, Georgia, 1989

Roundwood type and species group	Residue type				
	All types	Bark	Coarse	Sawdust	Shavings
	<u>Thousand cubic feet</u>				
<b>Saw logs</b>					
Softwood	246,588	34,829	120,306	57,963	33,490
Hardwood	35,294	6,656	15,746	12,224	668
Total	281,882	41,485	136,052	70,187	34,158
<b>Veneer logs</b>					
Softwood	42,800	5,971	20,555	16,274	0
Hardwood	9,993	1,645	4,097	4,251	0
Total	52,793	7,616	24,652	20,525	0
<b>Pulpwood</b>					
Softwood	41,738	41,738	0	0	0
Hardwood	14,263	14,263	0	0	0
Total	56,001	56,001	0	0	0
<b>Structural boards</b>					
Softwood	1,768	1,680	88	0	0
Hardwood	792	792	0	0	0
Total	2,560	2,472	88	0	0
<b>Other industrial<sup>a</sup></b>					
Softwood	16,842	12,301	4,263	278	0
Hardwood	5	1	3	1	0
Total	16,847	12,302	4,266	279	0
<b>Total</b>					
Softwood	349,736	96,519	145,212	74,515	33,490
Hardwood	60,347	23,357	19,846	16,476	668
Total	410,083	119,876	165,058	90,991	34,158

<sup>a</sup>Includes poles, piling, posts, and other industrial products.

Table 11--Disposition of residue at primary wood-using plants, by product, species group, and type of residue, Georgia, 1986 and 1989

Product and species group	All Types				Bark		Coarse		Sawdust		Shavings	
	1986	1989	1986	1989	1986	1989	1986	1989	1986	1989	1986	1989
	Thousand cubic feet											
<b>Fiber products</b>												
Softwood	206,870	177,602	0	107	198,236	127,460	2,988	0	2,988	0	5,596	35
Hardwood	19,580	16,544	0	0	19,561	16,544	0	0	0	0	19	0
<b>Total</b>	226,450	194,146	0	107	217,797	144,004	2,988	0	2,988	0	5,615	35
<b>Particleboard</b>												
Softwood	17,600	24,218	14	0	950	17	3,098	5,467	13,538	18,734	30	0
Hardwood	245	30	0	0	166	0	0	0	0	79	0	0
<b>Total</b>	17,845	24,248	14	0	1,116	17	3,098	5,467	13,617	18,764	30	0
<b>Strand-wafer board</b>												
Softwood	0	0	0	0	0	0	0	0	0	0	0	0
Hardwood	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Sawn products</b>												
Softwood	12,453	8,703	0	0	12,453	8,703	0	0	0	0	0	0
Hardwood	870	425	0	0	870	425	0	0	0	0	0	0
<b>Total</b>	13,323	9,128	0	0	13,323	9,128	0	0	0	0	0	0
<b>Fuel</b>												
Softwood	192,157	171,151	90,487	85,098	22,372	7,225	62,257	67,123	16,561	11,705	537	0
Hardwood	43,137	40,881	18,510	22,375	7,131	2,722	16,556	15,247	1,040	537	0	0
<b>Total</b>	235,294	212,032	109,297	107,473	29,503	9,947	78,813	82,370	17,581	12,242	537	0
<b>Miscellaneous</b>												
Softwood	24,273	16,179	8,816	10,703	936	917	10,546	1,544	3,975	3,015	108	0
Hardwood	2,462	1,329	454	510	75	33	1,825	685	108	101	2	0
<b>Total</b>	26,735	17,508	9,270	11,213	1,011	950	12,371	2,229	4,083	3,116	110	0
<b>Not used</b>												
Softwood	1,694	1,882	1,044	611	370	891	269	380	11	0	0	0
Hardwood	1,200	1,141	706	473	187	123	305	545	2	0	0	0
<b>Total</b>	2,894	3,023	1,750	1,084	557	1,014	574	925	13	0	0	0
<b>All products</b>												
Softwood	454,997	349,735	100,661	96,519	235,517	145,213	79,158	74,514	39,661	33,489	668	0
Hardwood	67,494	60,350	19,870	23,358	27,990	19,867	18,586	16,477	1,248	668	0	0
<b>Total</b>	522,491	410,085	120,531	119,877	263,507	165,060	97,744	90,991	40,909	34,157	668	0

Table 12--Output of industrial roundwood products, by product and species group, Southeast Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	187,150	185,665	-0.8
Hardwood	12,388	12,938	+4.4
<b>Total</b>	<b>199,538</b>	<b>198,603</b>	<b>- .5</b>
<b>Veneer logs</b>			
Softwood	2,394	6,507	+171.8
Hardwood	2,101	2,507	+19.3
<b>Total</b>	<b>4,495</b>	<b>9,014</b>	<b>+100.5</b>
<b>Pulpwood<sup>a</sup></b>			
Softwood	223,138	171,051	-23.3
Hardwood	40,639	40,287	-.9
<b>Total</b>	<b>263,777</b>	<b>211,338</b>	<b>-19.9</b>
<b>Other industrial</b>			
Softwood	11,409	10,653	-6.6
Hardwood	0	572	N/A
<b>Total</b>	<b>11,409</b>	<b>11,225</b>	<b>-1.6</b>
<b>All industrial</b>			
Softwood	424,091	373,876	-11.8
Hardwood	55,128	56,304	+2.1
<b>Total</b>	<b>479,219</b>	<b>430,180</b>	<b>-10.2</b>

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (25,749 thousand cubic feet in 1986 and 28,317 thousand cubic feet in 1989).

Table 13--Output of industrial roundwood products, by product and species group, Southwest Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	71,693	59,782	-16.6
Hardwood	7,151	5,606	-21.6
Total	78,844	65,388	-17.1
<b>Veneer logs</b>			
Softwood	7,103	8,676	+22.1
Hardwood	4,272	928	-78.3
Total	11,375	9,604	-15.6
<b>Pulpwood<sup>a</sup></b>			
Softwood	51,588	59,151	+14.7
Hardwood	7,965	9,645	+21.1
Total	59,553	68,796	+15.5
<b>Other industrial</b>			
Softwood	3,470	3,291	-5.2
Hardwood	0	4,292	N/A
Total	3,470	7,583	+118.5
<b>All industrial</b>			
Softwood	133,854	130,900	-2.2
Hardwood	19,388	20,471	+5.6
Total	153,242	151,371	-1.2

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (6,421 thousand cubic feet in 1986 and 8,966 thousand cubic feet in 1989).

Table 14--Output of industrial roundwood products, by product and species group, Central Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	100,448	100,297	-0.2
Hardwood	35,253	32,907	-6.7
Total	135,701	133,204	-1.8
<b>Veneer logs</b>			
Softwood	33,771	31,652	-6.3
Hardwood	4,246	5,170	+21.8
Total	38,017	36,822	-3.1
<b>Pulpwood<sup>a</sup></b>			
Softwood	106,810	95,318	-10.8
Hardwood	35,488	44,442	+25.2
Total	142,298	139,760	-1.8
<b>Other industrial</b>			
Softwood	1,411	4,717	+234.3
Hardwood	0	432	N/A
Total	1,411	5,149	+264.9
<b>All industrial</b>			
Softwood	242,440	231,984	-4.3
Hardwood	74,987	82,951	+10.6
Total	317,427	314,935	-.8

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (12,056 thousand cubic feet in 1986 and 6,689 thousand cubic feet in 1989).

Table 15--Output of industrial roundwood products, by product and species group, North Central Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	Thousand cubic feet		Percent
<b>Saw logs</b>			
Softwood	56,033	38,712	-31.0
Hardwood	11,402	7,005	-38.6
Total	67,435	45,717	-32.2
<b>Veneer logs</b>			
Softwood	19,728	22,242	+12.7
Hardwood	3,366	3,658	+8.7
Total	23,094	25,900	+12.2
<b>Pulpwood<sup>a</sup></b>			
Softwood	67,923	50,993	-24.9
Hardwood	8,016	8,165	+1.9
Total	75,939	59,158	-22.1
<b>Other industrial</b>			
Softwood	489	13,421	+2,644.6
Hardwood	0	1,493	N/A
Total	489	14,914	+2,949.9
<b>All industrial</b>			
Softwood	144,173	125,368	-13.0
Hardwood	22,784	20,321	-10.8
Total	166,957	145,689	-12.7

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (10,317 thousand cubic feet in 1986 and 4,731 thousand cubic feet in 1989).

Table 16--Output of industrial roundwood products, by product and species group, North Georgia, 1986 and 1989

Product and species group	Year		Change
	1986	1989	
	<u>Thousand cubic feet</u>		<u>Percent</u>
<b>Saw logs</b>			
Softwood	27,880	24,033	-13.8
Hardwood	9,144	7,222	-21.0
Total	37,024	31,255	-15.6
<b>Veneer logs</b>			
Softwood	1,097	0	N/A
Hardwood	311	600	+92.9
Total	1,408	600	-57.4
<b>Pulpwood<sup>a</sup></b>			
Softwood	41,386	31,363	-24.2
Hardwood	5,407	5,448	+ .8
Total	46,793	36,811	-21.3
<b>Other industrial</b>			
Softwood	514	2,651	+415.8
Hardwood	0	102	N/A
Total	514	2,753	+435.6
<b>All industrial</b>			
Softwood	70,877	58,047	-18.1
Hardwood	14,862	13,372	-10.0
Total	85,739	71,419	-16.7

N/A=Not applicable.

<sup>a</sup>Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (1,753 thousand cubic feet in 1986 and 2,013 thousand cubic feet in 1989).

Tansey, John B.; Steppleton, Carolyn B. 1991. Georgia's Timber Industry--An Assessment of Timber Product Output and Use, 1989. Resour. Bull. SE-126. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. 23pp.

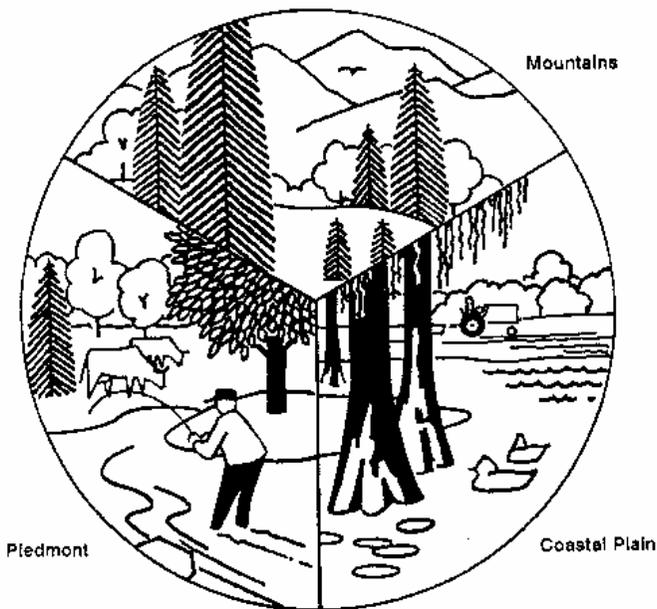
In 1989, roundwood output from Georgia's forests totaled 1.1 billion cubic feet, down 7 percent from 1986. Output of pulpwood, the leading roundwood product, was 515.9 million cubic feet. Output of saw logs was 474.2 million cubic feet and output of veneer logs was 81.9 million cubic feet. Two hundred and thirty-one mills were in operation, 70 fewer than in 1986. Receipts at these mills totaled 1.1 billion cubic feet. Georgia mills produced 410.1 cubic feet of wood residues, and less than 1 percent of residues went unused.

Keywords: Roundwood, pulpwood, saw logs, veneer logs, drain, wood movement, mills.

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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.

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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.

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