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Changes in Florida's Industrial Roundwood Products Output, 1987-1989

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Highlights

Between 1987 and 1989 Florida's output of roundwood products increased by about 3 million cubic feet to almost 483 million cubic feet. Pulpwood accounted for 61 percent and saw logs for 29 percent of total output in 1989.

Florida's output of softwood saw logs declined by almost 1 percent, and the State's output of veneer logs declined by 28 percent.

The number of primary roundwood-using plants operating in Florida decreased from 143 to 127. The number of mills producing sawn lumber declined from 97 to 85.

The number of plants manufacturing mulch, poles, posts, or miscellaneous industrial timber products decreased from 31 to 28.

Output of byproducts decreased from 170 million cubic feet to 161 million cubic feet. Only 266 thousand cubic feet (less than 1 percent) of residues were not utilized. Residues were used mainly for industrial fuel and in the manufacture of fiber products.

Changes in Florida's Industrial Roundwood Products Output, 1987-1989

1987-1989

Background and Study Methods

FIA (Forest Inventory and Analysis) periodically surveys all primary wood-using plants in Florida to determine the amount and source of wood receipts, timber product drain by county, and interstate movement of industrial roundwood products. Out-of-State mills using Florida's timber are also canvassed. Each mill is canvassed by mail or personal contact. These studies are a cooperative project of the Southeastern Forest Experiment Station in the USDA Forest Service and the Division of Forestry in the Florida Department of Agriculture and Consumer Services. All primary wood-processors in Florida were canvassed in 1987 and again in 1989. This bulletin reports the findings of the 1989 canvass and presents the changes in product output and residue use between 1987 and 1989.

Because the surveys are conducted to determine the volume of roundwood timber products removed from the State's timberland only primary wood-using mills are canvassed. Primary wood-using mills are those that process roundwood or chips received from the forest. Industrial roundwood products include saw logs, pulpwood, veneer logs, poles, and cooperage logs. Plants that utilize processed products, such as lumber, in the manufacture of secondary wood products, such as furniture, are not canvassed. They are excluded because they have little direct control over the removal of roundwood from timberland and usually do not actively harvest roundwood. The total quantity of wood used by primary processing plants is referred to as "industrial roundwood production." All primary mills are canvassed for volume of roundwood receipts and source by counties of origin.

For inventory and reporting purposes, FIA divides Florida into survey units: Northwest, Northeast, Central, and South (fig. 1). Because output of industrial roundwood products from the Southern unit is much smaller than output from the other units, the Central and Southern units were combined for reporting purposes in this bulletin and are referred to as "Central-South Florida."

Output of Industrial Roundwood Products

Output of industrial roundwood products in 1989 was almost 483 million cubic feet, up nearly 3 million cubic feet from 1987 (table 1). Softwood roundwood output for 1989 totaled 450 million cubic feet, down almost 1 percent, but still accounted for 93 percent of total output. Output of hardwood roundwood products totaled almost 33 million cubic feet, 23 percent more than in 1987.

Pulpwood and saw logs were the principal roundwood products, accounting for 61 percent and 29 percent of the roundwood products produced in 1989. Collectively, output of these two products including both softwood and hardwood totaled nearly 438 million cubic feet, up almost 2 percent from 1987.

saw Logs

Saw-log output in 1989 totaled nearly 142 million cubic feet (table 1). Output of hardwood saw logs was almost 4 million cubic feet, up 14 percent from 1987. Output of softwood saw logs decreased by almost, 1 percent, to 138 million cubic feet. Softwood accounted for 97 percent of the total saw-log production. The State is a net

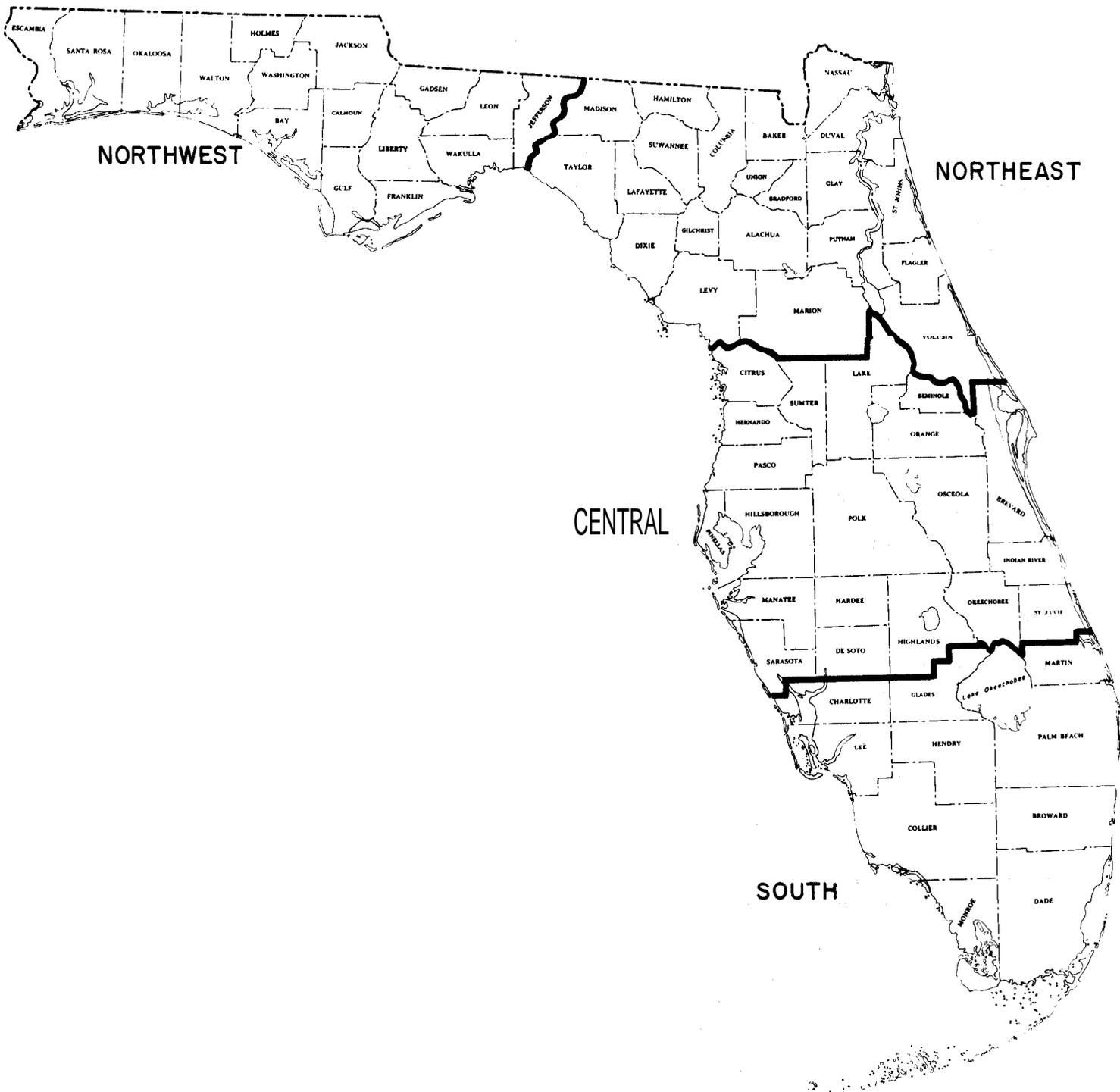


Figure 1-Forest survey regions in Florida.

importer of saw logs (table 2). In 1989, total imports of saw logs amounted to almost 13 million cubic feet. Georgia contributed 84 percent of these imports, and Alabama 16 percent. Saw-log receipts exceeded output by almost 4 percent (table 3).

Veneer Logs

Output, of veneer logs in 1989 totaled almost 22 million cubic feet, down 26 percent from 1987 (table 1). Output of softwood veneer logs dropped by 28 percent to less than 20 million cubic feet, while output of hardwood veneer logs rose by 22 percent, to almost 2 million cubic feet. The veneer industry in Florida continues to be dominated by softwood, with pine plywood the principal product. Florida is a net importer of veneer logs (table 4). Veneer-log receipts exceeded output by 36 percent pulp increased by 19 percent, from 21 million cubic feet in 1987 to almost 26 million cubic feet in 1989. Roundwood delivered to locations other than pulpmills, chipped, and sold to pulpmills accounted for almost 5 percent of total pulpwood production in 1989. In 1987, roundwood chipped accounted for almost 6 percent of total pulpwood production in Florida.

Florida is a net importer of roundwood pulpwood (table 6). Total receipts exceeded production by almost 15 percent in 1989 (table 3). In 1989, almost 76 million cubic feet of roundwood pulpwood was imported, and 69 percent of this was softwood. About 62 percent of the imports came from Georgia, 36 percent from South Carolina, and 2 percent, from Alabama.

Miscellaneous Industrial Products

Florida's other industrial roundwood products include poles, commercial posts, charcoal, mulch, and logs used in the manufacture of reconstituted panels. Production of industrial and domestic fuelwood is not discussed in this report because it cannot be estimated reliably. From 1987 to 1989, output of miscellaneous industrial timber products increased 10 percent, to 22.1 million cubic feet. This is about 5 percent of the total output of industrial timber products (table 1). Mulch was the principal miscellaneous product. Softwoods accounted for 96 percent of all miscellaneous products.

Number of Mills and Receipts

Between 1987 and 1989, the number of primary wood-using plants decreased from 143 to 127 (table 7). The number of sawmills decreased from 97 to 85, and the number of other mills decreased from 31 to 28. When lumber demand and lumber prices fall, small mills close. Increased competition resulting from in 1989 (table 3). In 1989, Florida mills imported almost 9 million cubic feet of veneer, 99 percent from Georgia and the remainder from Alabama. No mills producing structural panels were operating in Florida in 1989, but more than a million cubic feet of industrial roundwood was exported from Florida to Georgia for use in manufacturing structural boards (table 5).

Pulpwood

Output of pulpwood (including roundwood chipped) increased nearly 3 percent, from 288 million cubic feet in 1987 to 296 million cubic feet in 1989 (table 1). Pulpwood remains the leading roundwood product in Florida, as in most of the Southeast. In 1989, pulpwood accounted for 61 percent of total roundwood output. Softwoods accounted for 91 percent of pulpwood output. The amount of hardwood used to make renovation, expansion, and modernization has reduced the number of sawmills operating in Florida, but average mill production has increased. In 1987, 97 sawmills had receipts of 151 million cubic feet, and in 1989, 85 sawmills had receipts of 147 million cubic feet. Thus, receipts declined by only 3 percent while number of mills decreased by 12 percent (table 3). A much greater share of production was concentrated at fewer mills in 1989 than in 1987. Eleven veneer and sawmills, each with annual receipts in excess of 40 million board feet, accounted for 68 percent of total saw-log and veneer-log receipts in 1989. Although the number of mills manufacturing miscellaneous products such as posts, poles, and mulch decreased from 1987 to 1989, receipts at such mills increased by 30 percent, (tables 3 and 7).

Nineteen mulch mills had receipts totaling more than 17 million cubic feet in 1989, whereas 18 mulch mills had receipts totaling more than 13 million cubic feet in 1987.

Nine pulpmills were in operation in Florida in 1989, one less than in 1987. Still, pulpwood production rose from 288 million cubic feet in 1987 to 296 million cubic feet in 1989, an increase of almost 3 percent (table 1). Production of roundwood that was delivered to locations other than pulpmills, chipped, and then sold to pulpmills was 16 million cubic feet in 1987 and 14 million cubic feet in 1989. Total pulpwood receipts increased by almost 1 percent, to 340 million cubic feet (table 3). Of these receipts, 16 million cubic feet was roundwood that was delivered to nonpulpmills, chipped, and then sold to pulpmills. Six of the nine pulpmills operating in Florida in 1989 were in the Northeast region; the other three were in the Northwest region (fig. 2).

In 1989, as in 1987, there were five veneer and plywood mills in operation in Florida. Mill receipts of roundwood for use in the manufacture of softwood and hardwood plywood and other veneer products decreased from 30 million cubic feet in 1987 to 29 million cubic feet in 1989 (table 3).

Yellow pine accounted for 88 percent of the 147 million cubic feet of saw-log receipts in 1989; cypress made up 9 percent, (table 8). Yellow pine made up 99 percent of the 19 million cubic feet of roundwood used in making plywood and 91 percent of the 10 million cubic feet of roundwood used to make other veneer products. Cypress accounted for 69 percent of roundwood receipts at mills producing miscellaneous items, while yellow pine accounted for 28 percent. Pulpwood data, is collected by softwood and hardwood only.

Roundwood Movement

Florida continues to be a net importer of industrial roundwood (table 9). In 1989, softwood receipts were 492 million cubic feet and softwood production was 450 million cubic feet. Hardwood receipts were 49 million cubic feet, and hardwood production was almost 33 million cubic feet. Receipts of all species and products combined exceeded production by 12 percent. Between 1987 and 1989, imports of softwood veneer logs increased by a greater percentage than did imports of any other industrial roundwood product. Imports of softwood veneer logs exceeded production by almost 20 million cubic feet in 1989 (table 5).

Imports of roundwood pulpwood, both softwood and hardwood, were greater than exports in 1989. Softwood receipts were more than 296 million cubic feet, and production was almost 271 million cubic feet. Hardwood

receipts were 43 million cubic feet and production was nearly 26 million cubic feet. In 1989, almost 41 million cubic feet, or more than 8 percent of the State's roundwood output, was shipped to Georgia. Almost 99 million cubic feet of roundwood was imported from Georgia and Alabama.

Plant Byproduct Use

In 1989, wood-using mills in Florida generated 160.9 million cubic feet of residues during the processing of primary timber products, 5 percent less than in 1987 (tables 10 and 11). Almost 49 percent of the residues generated (including bark, coarse, and fine) were used as a roundwood substitute in the manufacture of a primary product. More than 46.1 million cubic feet of residues were used in the manufacture of fiber products. These residues made up about 13 percent of the total input, of roundwood and residues used in fiber products (tables 1 and 11).

More than 31.9 million cubic feet of residues were used in the manufacture of other industrial products such as particleboard. About 276 thousand cubic feet of residues (primarily veneer-log cores) were substituted for roundwood in the manufacture of landscape timbers and other sawn products. Fifty-one percent of all residues (82.3 million cubic feet) were used as industrial or domestic fuel. Sawmills produced 89.3 million cubic feet, or 55 percent, of residues in 1989 (table 10). Pulpmills produced 36.4 million cubic feet of bark, which made up about 23 percent of residues. More than 99 percent, of the mill residues generated in each class (coarse, fine, and bark) during 1989 were utilized. Bark residue is used primarily for industrial fuel, but nearly 17 percent of softwood bark residue was used for landscape nuggets and mulch (table 11).

In 1989, 76 percent of all coarse residues were used in the manufacture of fiber products. Almost 16 percent of coarse residues were used in the manufacture of miscellaneous products such as reconstituted boards and mulch. Seven percent of coarse residues were used for fuel. Less than 1 percent of veneer cores, cypress slabs, or other coarse residues were sawn into speciality products such as landscape timbers or plaques. Fine residues (sawdust and shavings) are used principally as industrial fuel (70 percent). Thirteen percent of shavings were used for fiber, while almost 18 percent were used in the manufacture of particleboard. Almost 9 million cubic feet, or 20 percent, of all fine residues were used in the manufacture of other miscellaneous products.

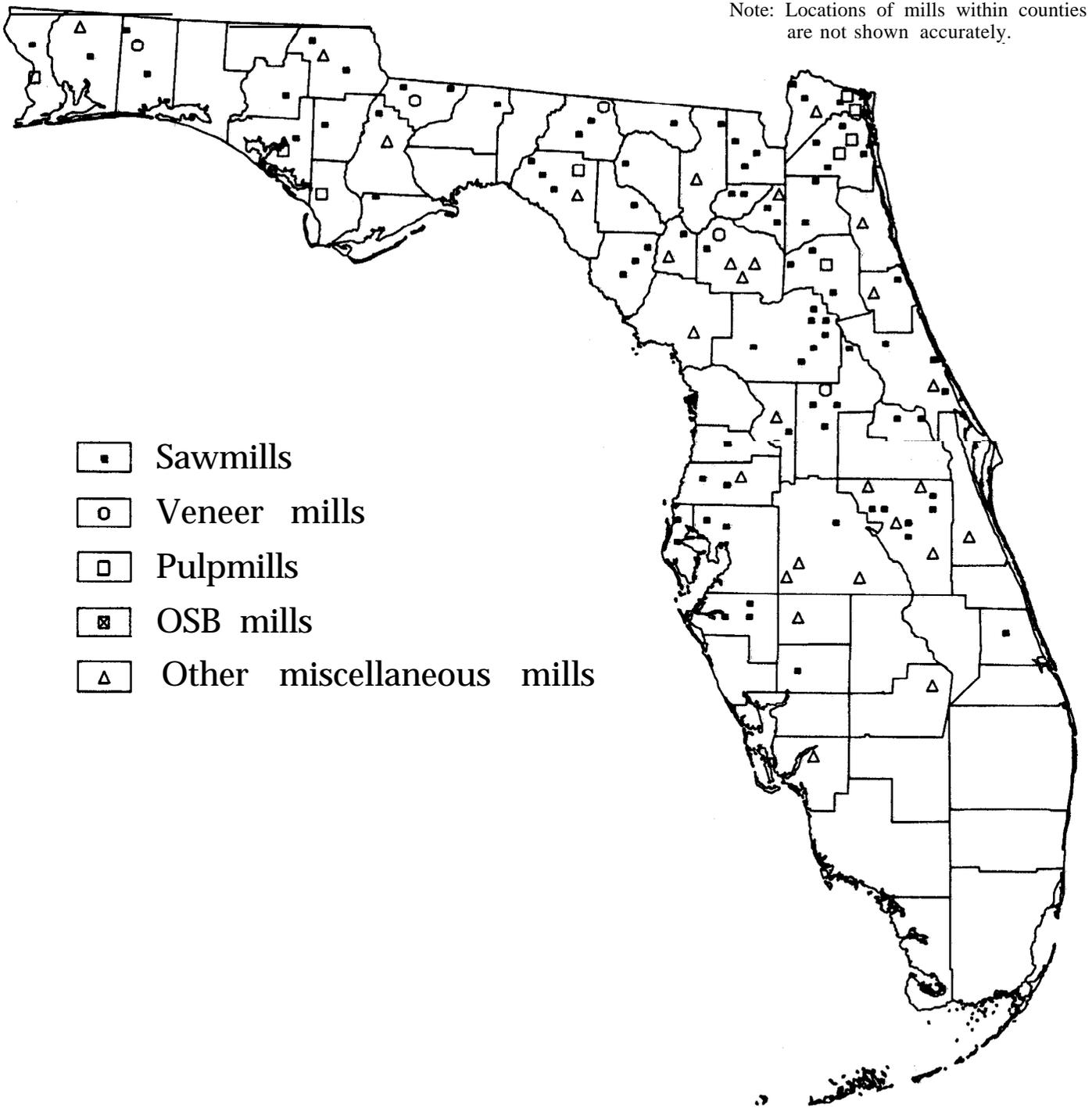


Figure 2-Location of primary wood-using plants in Florida, 1989.

Regional Trends

Northeast Region

Rohndwood output totaled almost 295 million cubic feet in Northeast Florida in 1989, 1 percent less than in 1987 (table 12). Reductions in the production of veneer logs accounted for most of the decline. Output of veneer logs fell from 21 to 16 million cubic feet. Softwood saw-log output decreased from 87 to 82 million cubic feet. Output of other industrial softwood dropped by almost 16 percent to 6 million cubic feet. Although the region's total output decreased from 1987 to 1989, output of some products and species increased. Output of hardwood saw logs increased almost 30 percent to over 2 million cubic feet. Output of other industrial hardwood increased almost 14 percent to 140 thousand cubic feet, while that of all pulpwood increased almost 3 percent to almost 187 million cubic feet.

Pulpwood accounted for 63 percent of the total industrial, output of the Northeast region and for 63 percent of the State's total roundwood pulpwood output. Saw logs accounted for almost 29 percent of the region's total roundwood output and almost 60 percent of the State's total saw-log output. Seventy-six percent of the 21.6 million cubic feet of veneer logs harvested in Florida during 1989 came from this region. Sixty-four primary wood-using plants operated in Northeast Florida during 1989, 4 fewer than in 1987. Sixty-one percent of the State's total roundwood output for 1989 was harvested from this 21-county region (fig. 1).

Northwest Region

As in the Northeast region, volume of industrial roundwood output of all timber products decreased in Northwest Florida (table 13). Output decreased from 153 million cubic feet in 1987 to less than 148 million cubic feet in 1989. The largest decrease was in output of softwood veneer logs, which fell from 7 million cubic feet, in 1987 to almost 4 million cubic feet in 1989. Output of hardwood saw logs declined almost 2 percent, and output of softwood pulpwood declined almost 6 percent. However, output of hardwood veneer logs increased by 89 percent, to 851 thousand cubic feet, and output of hardwood pulpwood increased almost 5 percent to over 10 million cubic feet in 1989. Production of softwood saw logs increased about 3 percent, to over 46 million

cubic feet, and output of other industrial products increased 9 percent to well over 2 million cubic feet. Softwoods accounted for 91 percent of total output in the Northwest region in 1989, 1 percent less than in 1987. Almost 31 percent of the State's total roundwood output in 1989 came from this 16-county region (fig. 1). In 1989, pulpwood accounted for almost 63 percent of the region's total output and 31 percent of the State's total pulpwood output. Roundwood that was delivered to non-pulpmills, chipped, and then sold to pulpmills for fiber made up 3 percent, or 3 million cubic feet, of the region's pulpwood production in 1989. Saw logs accounted for 32 percent of the region's total roundwood output and almost 34 percent of the State's total output of saw logs. Twenty-one percent of the 21.6 million cubic feet of veneer logs harvested in Florida during 1989 came from the Northwest region. Twenty-two primary wood-using plants operated in the region in 1989, 3 fewer than in 1987.

Central-South Region

This 30-county region includes all of Southern Florida from Key West to a northern boundary comprised of Citrus, Sumter, Lake, and Seminole Counties (fig. 1). In the past, timber production has been less significant here than in the two northern regions; cropland, pasture land, tourism, and recreation still dominate land use. Although timberland in the Central-South region decreased 10 percent between 1980 and 1988 and the number of mills decreased to 41 in 1989, this region's output of timber products increased by 44 percent between 1987 and 1989 (table 14). Output of industrial timber products totaled over 40 million cubic feet in 1989, and accounted for 8 percent of the total for the State. Outputs of all products other than hardwood saw logs increased. Production of hardwood saw logs declined by almost 23 percent. However, output of hardwood pulpwood increased 822 percent between 1987 and 1989, to almost 4 million cubic feet, and accounted for more than 15 percent of the State's hardwood pulpwood output in 1989. As in the two Northern regions, pulpwood dominated industrial output in the Central-South. However, output of other industrial products accounted for more than 13 million cubic feet, or 33 percent, of the region's total production in 1989. Most of this miscellaneous output was produced by the 10 mulch mills operating in the Central-South in 1989.

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 6 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^a

Saw Logs

Softwood 0.19305 cubic feet = 1 board foot
5.18 board feet = 1 cubic foot

Hardwood 0.17094 cubic feet = 1 board foot
5.85 board feet = 1 cubic foot

Veneer Logs

Softwood 0.19608 cubic feet = 1 board foot
5.10 board feet = 1 cubic foot

Hardwood 0.16806 cubic feet = 1 board foot
5.95 board feet = 1 cubic foot

Pulpwood^b

Softwood 74.00 cubic feet/cord
Hardwood 79.00 cubic feet/cord

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

^bCubic feet of solid wood per cord.

Tables

Table 1--Roundwood timber products output, by product and species group, Florida, 1987 and 1989

| Product and species group | Year | | Change |
|-----------------------------|----------------------------|---------|----------------|
| | 1987 | 1989 | |
| | <u>Thousand cubic feet</u> | | <u>Percent</u> |
| Saw logs | | | |
| Softwood | 139,079 | 137,978 | -0.8 |
| Hardwood | 3,205 | 3,653 | +14.0 |
| Total | 142,284 | 141,631 | -0.5 |
| Veneer logs | | | |
| Softwood | 27,734 | 19,868 | -28.4 |
| Hardwood | 1,450 | 1,763 | +21.6 |
| Total | 29,184 | 21,631 | -25.9 |
| Pulpwood^a | | | |
| Softwood | 267,032 | 270,713 | +1.4 |
| Hardwood | 21,438 | 25,600 | +19.4 |
| Total | 288,470 | 296,313 | +2.7 |
| Structural boards | | | |
| Softwood | 0 | 291 | N/A |
| Hardwood | 0 | 776 | N/A |
| Total | 0 | 1,067 | N/A |
| Other industrial | | | |
| Softwood | 19,698 | 21,245 | +7.9 |
| Hardwood | 322 | 811 | +151.9 |
| Total | 20,020 | 22,056 | +10.2 |
| All industrial | | | |
| Softwood | 453,543 | 450,095 | -0.8 |
| Hardwood | 26,415 | 32,603 | +23.4 |
| Total | 479,958 | 482,698 | +0.6 |

^aIncludes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (16,079 thousand cubic feet in 1987 and 14,329 thousand cubic feet in 1989).

Table 2--Saw-log volume by destination, source, and species group, Florida, 1989

| Destination and source | Species group | | |
|---------------------------|----------------------------|----------|----------|
| | All species | Softwood | Hardwood |
| | <u>Thousand cubic feet</u> | | |
| Florida (retained) | 134,726 | 131,395 | 3,331 |
| Exports to: | | | |
| Georgia | 6,905 | 6,583 | 322 |
| Imports from: | | | |
| Georgia | 10,571 | 10,250 | 321 |
| Alabama | 1,988 | 1,988 | 0 |

Table 3--Roundwood receipts, by product and species group, Florida, 1987 and 1989

| Product and species group | Year | | Change |
|-----------------------------|---------------------|---------|---------|
| | 1987 | 1989 | |
| | Thousand cubic feet | | Percent |
| Saw logs | | | |
| Softwood | 147,880 | 143,633 | -2.9 |
| Hardwood | 3,342 | 3,652 | +9.3 |
| Total | 151,222 | 147,285 | -2.6 |
| Veneer logs | | | |
| Softwood | 29,133 | 28,295 | -2.9 |
| Hardwood | 1,289 | 1,148 | -10.9 |
| Total | 30,422 | 29,443 | -3.2 |
| Pulpwood^a | | | |
| Softwood | 294,343 | 296,726 | +0.8 |
| Hardwood | 43,163 | 43,313 | +0.3 |
| Total | 337,506 | 340,039 | +0.8 |
| Structural boards | | | |
| Softwood | 0 | 0 | 0 |
| Hardwood | 0 | 0 | 0 |
| Total | 0 | 0 | 0 |
| Other industrial | | | |
| Softwood | 18,020 | 23,018 | +27.7 |
| Hardwood | 323 | 811 | +151.1 |
| Total | 18,343 | 23,829 | +29.9 |
| All industrial | | | |
| Softwood | 489,376 | 491,672 | +0.5 |
| Hardwood | 48,117 | 48,924 | +1.7 |
| Total | 537,493 | 540,596 | +0.6 |

^aIncludes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (18,125 thousand cubic feet in 1987 and 16,132 thousand cubic feet in 1989).

Table 4--Veneer volume by destination, source, and species group,
Florida, 1989

| Destination and source | Species group | | |
|---------------------------|----------------------------|----------|----------|
| | All species | Softwood | Hardwood |
| | <u>Thousand cubic feet</u> | | |
| Florida (retained) | 20,800 | 19,868 | 932 |
| Exports to: | | | |
| Georgia | 831 | 0 | 831 |
| Imports from: | | | |
| Georgia | 8,548 | 8,427 | 121 |
| Alabama | 95 | 0 | 95 |

Table S--Industrial roundwood movement by product and species group, Florida, 1989

| Product | Species group | | | | |
|-----------------------------|----------------------------|---------|----------|---------|----------|
| | Production | Exports | Retained | Imports | Receipts |
| | <u>Thousand cubic feet</u> | | | | |
| Saw logs | | | | | |
| Softwood | 137,978 | 6,583 | 131,395 | 12,238 | 143,633 |
| Hardwood | 3,653 | 322 | 3,331 | 321 | 3,652 |
| Total | 141,631 | 6,905 | 134,726 | 12,559 | 147,285 |
| Veneer logs | | | | | |
| Softwood | 19,868 | 0 | 19,868 | a,427 | 28,295 |
| Hardwood | 1,763 | a31 | 932 | 216 | 1,148 |
| Total | 21,631 | a31 | 20,800 | 8,643 | 29,443 |
| Pulpwood^a | | | | | |
| Softwood | 270,713 | 26,503 | 244,210 | 52,516 | 296,726 |
| Hardwood | 25,600 | 5,393 | 20,207 | 23,106 | 43,313 |
| Total | 296,313 | 31,896 | 264,417 | 75,622 | 340,039 |
| Structural boards | | | | | |
| Softwood | 291 | 291 | 0 | 0 | 0 |
| Hardwood | 776 | 776 | 0 | 0 | 0 |
| Total | 1,067 | 1,067 | 0 | 0 | 0 |
| Other | | | | | |
| Softwood | 21,245 | 282 | 20,963 | 2,055 | 23,018 |
| Hardwood | all | 0 | all | 0 | all |
| Total | 22,056 | 282 | 21,774 | 2,055 | 23,829 |
| All products | | | | | |
| Softwood | 450,095 | 33,659 | 416,436 | 75,236 | 491,672 |
| Hardwood | 32,603 | 7,322 | 25,281 | 23,643 | 48,924 |
| Total | 482,698 | 40,981 | 441,717 | 98,879 | 540,596 |

^aIncludes roundwood chipped.

Table 6--Pulpwood^a volume by destination, source, and species group, Florida, 1989

| Destination and source | Species group | | |
|---------------------------|----------------------------|----------|----------|
| | All species | Softwood | Hardwood |
| | <u>Thousand cubic feet</u> | | |
| Florida (retained) | 264,417 | 244,210 | 20,207 |
| Exports to: | | | |
| Georgia | 30,054 | 25,369 | 4,685 |
| Alabama | 1,842 | 1,134 | 708 |
| Imports from: | | | |
| Georgia | 46,599 | 39,035 | 7,564 |
| Alabama | 1,863 | 1,859 | 4 |
| South Carolina | 27,160 | 11,622 | 15,538 |

^aIncludes roundwood chipped.

Table 7--Number of primary wood-using plants, by industry, Florida, 1987 and 1989

| Industry | Year | | Change |
|--------------|---------------|------|----------------|
| | 1987 | 1989 | |
| | <u>Number</u> | | <u>Percent</u> |
| Sawmills | 97 | 85 | -12.4 |
| Veneer mills | 5 | 5 | 0 |
| Pulpmills | 10 | 9 | -10.0 |
| Other | 31 | 28 | -9.7 |
| All plants | 143 | 127 | -11.2 |

Table 8--Roundwood receipts by species and type of mill, Florida, 1989

| Species | Type of mill | | | | | | |
|----------------------------|----------------|----------------|------------------------------|---------------|----------------|----------------------------|---------------|
| | All mills | Sawmills | Veneer mills Pine plywood | Other veneer | OSB and panels | Pulpmills | Other mills |
| <u>Thousand cubic feet</u> | | | | | | | |
| Softwood | | | | | | | |
| Yellow pine | 164,911 | 130,061 | 18,988 | 9,307 | 0 | 0 | 6,555 |
| Cedar | 51 | 51 | 0 | 0 | 0 | 0 | 0 |
| Cypress | 29,984 | 13,521 | 0 | 0 | 0 | 0 | 16,463 |
| Unclassified | 296,726 | 0 | 0 | 0 | 0 | 296,726 | 0 |
| Total softwoods | <u>491,672</u> | <u>143,633</u> | <u>18,988</u> | <u>9,307</u> | <u>0</u> | <u>296,726^a</u> | <u>23,018</u> |
| Hardwood | | | | | | | |
| Soft hardwoods | 3,668 | 1,849 | 266 | 882 | 0 | 0 | 671 |
| Hard hardwoods | 1,943 | 1,803 | 0 | 0 | 0 | 0 | 140 |
| Unclassified | 43,313 | 0 | 0 | 0 | 0 | 43,313 | 0 |
| Total hardwoods | <u>48,924</u> | <u>3,652</u> | <u>266</u> | <u>882</u> | <u>0</u> | <u>43,313^a</u> | <u>811</u> |
| All species | <u>540,596</u> | <u>141,285</u> | <u>19,254</u> | <u>10,189</u> | <u>0</u> | <u>340,039</u> | <u>23,829</u> |

^aOnly collected by softwood and hardwood.

Table g--Industrial roundwood movement, by year and species group, Florida, 1987 and 1989

| Year | Production | Exports | Retained | Imports | Receipts |
|----------------------------|------------|---------|----------|---------|----------|
| <u>Thousand cubic feet</u> | | | | | |
| SOFTWOOD | | | | | |
| 1987 | 453,543 | 38,356 | 415,187 | 74,189 | 489,376 |
| 1989 | 450,095 | 33,659 | 416,436 | 75,236 | 491,672 |
| HARDWOOD | | | | | |
| 1987 | 26,415 | 4,804 | 21,611 | 26,506 | 48,117 |
| 1989 | 32,603 | 7,322 | 25,281 | 23,643 | 48,924 |
| ALL SPECIES | | | | | |
| 1987 | 479,958 | 43,160 | 436,798 | 100,695 | 537,493 |
| 1989 | 482,698 | 40,981 | 441,717 | 98,879 | 540,596 |

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

| Roundwood type and species group | Residue type | | | | |
|--|--------------|--------|-----------------|--------------|-------------|
| | All types | Bark | Coarse | Sawdust | Shavings |
| | | | | | |
| | | | <u>Thousand</u> | <u>cubic</u> | <u>feet</u> |
| saw logs | | | | | |
| Softwood | 86,894 | 12,805 | 41,151 | 21,310 | 11,628 |
| Hardwood | 2,445 | 433 | 1,172 | 796 | 44 |
| Total | 89,339 | 13,238 | 42,323 | 22,106 | 11,672 |
| Veneer logs | | | | | |
| Softwood | 16,220 | 2,404 | 6,966 | 6,770 | 0 |
| Hardwood | 793 | 139 | 296 | 358 | 0 |
| Total | 17,013 | 2,623 | 7,262 | 7,128 | 0 |
| Pulpwood | | | | | |
| Softwood | 30,771 | 30,771 | 0 | 0 | 0 |
| Hardwood | 5,646 | 5,646 | 0 | 0 | 0 |
| Total | 36,417 | 36,417 | 0 | 0 | 0 |
| Structural boards | | | | | |
| Softwood | 0 | 0 | 0 | 0 | 0 |
| Hardwood | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |
| Other industrial^a | | | | | |
| Softwood | 17,655 | 6,881 | 8,698 | 2,076 | 0 |
| Hardwood | 479 | 106 | 268 | 105 | 0 |
| Total | 18,134 | 6,987 | 8,966 | 2,181 | 0 |
| Total | | | | | |
| Softwood | 151,540 | 52,941 | 56,815 | 30,156 | 11,628 |
| Hardwood | 9,363 | 6,324 | 1,736 | 1,259 | 44 |
| Total | 160,903 | 59,265 | 58,551 | 31,415 | 11,672 |

^aIncludes poles, pilings, posts, and other industrial products.

Table 11--Disposal of residue at primary wood-using plants, by product, species group, and type of residue, Florida, 1987 and 1989

| Product and species | and group | All types | | Bark | | Coarse | | Sawdust | | Shavings | |
|----------------------------|-----------|-----------|---------|--------|--------|--------|--------|---------|--------|----------|--------|
| | | 1987 | 1989 | 1987 | 1989 | 1987 | 1989 | 1987 | 1989 | 1987 | 1989 |
| <u>Thousand cubic feet</u> | | | | | | | | | | | |
| Fiber products | | | | | | | | | | | |
| Softwood | | 48,693 | 45,645 | 0 | 0 | 47,595 | 44,107 | 0 | 0 | 1,098 | 1,538 |
| Hardwood | | 402 | 521 | 0 | 0 | 402 | 521 | 0 | 0 | 0 | 0 |
| Total | | 49,095 | 46,166 | 0 | 0 | 47,997 | 44,628 | 0 | 0 | 1,098 | 1,538 |
| Particleboard | | | | | | | | | | | |
| Softwood | | 2,431 | 2,299 | 0 | 0 | 123 | 0 | 35 | 223 | 2,273 | 2,076 |
| Hardwood | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 2,431 | 2,299 | 0 | 0 | 123 | 0 | 35 | 223 | 2,273 | 2,076 |
| Strand-wafer board | | | | | | | | | | | |
| Softwood | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hardwood | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sawn products | | | | | | | | | | | |
| Softwood | | 4,025 | 276 | 0 | 6 | 4,025 | 270 | 0 | 0 | 0 | 0 |
| Hardwood | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 4,025 | 276 | 0 | 6 | 4,025 | 270 | 0 | 0 | 0 | 0 |
| Fuel | | | | | | | | | | | |
| Softwood | | 85,927 | 76,518 | 48,726 | 42,882 | 3,957 | 3,913 | 25,751 | 23,493 | 7,493 | 6,230 |
| Hardwood | | 6,708 | 5,779 | 5,970 | 4,736 | 346 | 457 | 375 | 550 | 17 | 36 |
| Total | | 92,635 | 82,297 | 54,696 | 47,618 | 4,303 | 4,370 | 26,126 | 24,043 | 7,510 | 6,266 |
| Miscellaneous | | | | | | | | | | | |
| Softwood | | 20,047 | 26,624 | 5,056 | 9,978 | 7,269 | 8,503 | 5,877 | 6,359 | 1,845 | 1,784 |
| Hardwood | | 1,086 | 2,975 | 156 | 1,588 | 417 | 758 | 509 | 621 | 4 | 8 |
| Total | | 21,133 | 29,599 | 5,212 | 11,566 | 7,686 | 9,261 | 6,386 | 6,980 | 1,849 | 1,792 |
| Not used | | | | | | | | | | | |
| Softwood | | 272 | 178 | 84 | 75 | 141 | 22 | 38 | 81 | 9 | 0 |
| Hardwood | | 15 | 88 | 0 | 0 | 0 | 0 | 15 | 88 | 0 | 0 |
| Total | | 287 | 266 | 84 | 75 | 141 | 22 | 53 | 169 | 9 | 0 |
| All products | | | | | | | | | | | |
| Softwood | | 161,395 | 151,540 | 53,866 | 52,941 | 63,110 | 56,815 | 31,701 | 30,156 | 12,718 | 11,628 |
| Hardwood | | 8,211 | 9,363 | 6,126 | 6,324 | 1,165 | 1,736 | 899 | 1,259 | 21 | 44 |
| Total | | 169,606 | 160,903 | 59,992 | 59,265 | 64,275 | 58,551 | 32,600 | 31,415 | 12,739 | 11,672 |

Table 12--Output of industrial roundwood products, by product and species group, Northeast Florida, 1987 and 1989

| Product and species group | Year | | Change |
|-----------------------------|----------------------------|---------|----------------|
| | 1987 | 1989 | |
| | <u>Thousand cubic feet</u> | | <u>Percent</u> |
| Saw logs | | | |
| Softwood | 86,575 | 82,426 | -4.8 |
| Hardwood | 1,660 | 2,157 | +29.9 |
| Total | 88,235 | 84,583 | -4.1 |
| Veneer logs | | | |
| Softwood | 20,605 | 16,152 | -21.6 |
| Hardwood | 503 | 292 | -41.9 |
| Total | 21,108 | 16,444 | -22.1 |
| Pulpwood^a | | | |
| Softwood | 170,816 | 175,510 | +2.7 |
| Hardwood | 11,202 | 11,435 | +2.1 |
| Total | 182,018 | 186,945 | +2.7 |
| Structural boards | | | |
| Softwood | 0 | 192 | N/A |
| Hardwood | 0 | 512 | N/A |
| Total | 0 | 704 | N/A |
| Other industrial | | | |
| Softwood | 7,287 | 6,152 | -15.6 |
| Hardwood | 123 | 140 | +13.8 |
| Total | 7,410 | 6,292 | -15.1 |
| All industrial | | | |
| Softwood | 285,283 | 280,432 | -1.7 |
| Hardwood | 13,488 | 14,536 | +7.8 |
| Total | 298,771 | 294,968 | -1.3 |

^aIncludes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (11,977 thousand cubic feet in 1987 and 10,925 thousand cubic feet in 1989).

Table 13--Output of industrial roundwood products, by product and species group, Northwest Florida, 1987 and 1989

| Product and species group | Year | | Change |
|---------------------------|---------------------|---------|---------|
| | 1987 | 1989 | |
| | Thousand cubic feet | | Percent |
| Saw logs | | | |
| Softwood | 44,945 | 46,076 | +2.5 |
| Hardwood | 1,449 | 1,422 | -1.9 |
| Total | 46,394 | 47,498 | +2.4 |
| Veneer logs | | | |
| Softwood | 7,129 | 3,707 | -48.0 |
| Hardwood | 450 | 851 | +89.1 |
| Total | 7,579 | 4,558 | -39.9 |
| Pulpwood ^a | | | |
| Softwood | 87,308 | 82,405 | -5.6 |
| Hardwood | 9,812 | 10,255 | +4.5 |
| Total | 97,120 | 92,660 | -4.6 |
| Structural boards | | | |
| Softwood | 0 | 99 | N/A |
| Hardwood | 0 | 264 | N/A |
| Total | 0 | 363 | N/A |
| Other industrial | | | |
| Softwood | 2,288 | 2,494 | +9.0 |
| Hardwood | 0 | 0 | 0 |
| Total | 2,288 | 2,494 | +9.0 |
| All industrial | | | |
| Softwood | 141,670 | 134,781 | -4.9 |
| Hardwood | 11,711 | 12,792 | +9.2 |
| Total | 153,381 | 147,573 | -3.8 |

^aIncludes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (4,097 thousand cubic feet in 1987 and 3,099 thousand cubic feet in 1989).

Table 14--Output of industrial roundwood products, by product and species group, Central-South Florida, 1987 and 1989

| Product and species group | Year | | Change |
|-----------------------------|---------------------|--------|---------|
| | 1987 | 1989 | |
| | Thousand cubic feet | | Percent |
| Saw logs | | | |
| Softwood | 7,559 | 9,476 | +25.4 |
| Hardwood | 96 | 74 | -22.9 |
| Total | 7,655 | 9,550 | +24.8 |
| Veneer logs | | | |
| Softwood | 0 | 9 | N/A |
| Hardwood | 497 | 620 | +24.7 |
| Total | 497 | 629 | +26.6 |
| Pulpwood^a | | | |
| Softwood | 8,908 | 12,798 | +43.7 |
| Hardwood | 424 | 3,910 | +822.2 |
| Total | 9,332 | 16,708 | +79.0 |
| Structural boards | | | |
| Softwood | 0 | 0 | 0 |
| Hardwood | 0 | 0 | 0 |
| Total | 0 | 0 | 0 |
| Other industrial | | | |
| Softwood | 10,123 | 12,599 | +24.5 |
| Hardwood | 199 | 671 | +237.2 |
| Total | 10,322 | 13,270 | +28.6 |
| All industrial | | | |
| Softwood | 26,590 | 34,882 | +31.2 |
| Hardwood | 1,216 | 5,275 | +333.8 |
| Total | 27,806 | 40,157 | +44.4 |

^aIncludes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (5 thousand cubic feet in 1987 and 305 thousand cubic feet in 1989).

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Davenport, Edgar L. 1991. Changes in Florida's Industrial Roundwood Products Output, 1987-1989. Resour. Bull. SB-125. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. 21pp.

Nearly 483 million cubic feet of industrial roundwood products were harvested from Florida's forests during 1989, approximately 3 million cubic feet **more** than in 1987. Pulpwood accounted for 61 percent and saw logs 29 percent of the total **roundwood** production. Output of byproducts dropped from 170 million cubic feet in 1987 to 161 million cubic feet in 1989. **Only** 266,000 cubic feet of residues, less than 1 percent of the total produced, were not used. A total of 127 primary wood-using plants operated in the State during 1989. Mill receipts of more than 540 million cubic feet exceeded drain **from** the State's forests by 12 percent in 1989. The State was a net **importer** of industrial roundwood.

Keywords : Saw logs, pulpwood, veneer logs, mill residues.

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