

United States
Department of
Agriculture

Forest Service



Southeastern Forest
Experiment Station

Resource Bulletin
SE-1 25

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

Edgar L. Davenport

The Author

Edgar L. Davenport is a Resource Technician, Forest Inventory and Analysis, Southeastern Forest Experiment Station, Asheville, NC.

December 1991

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

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

Edgar L. Davenport

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

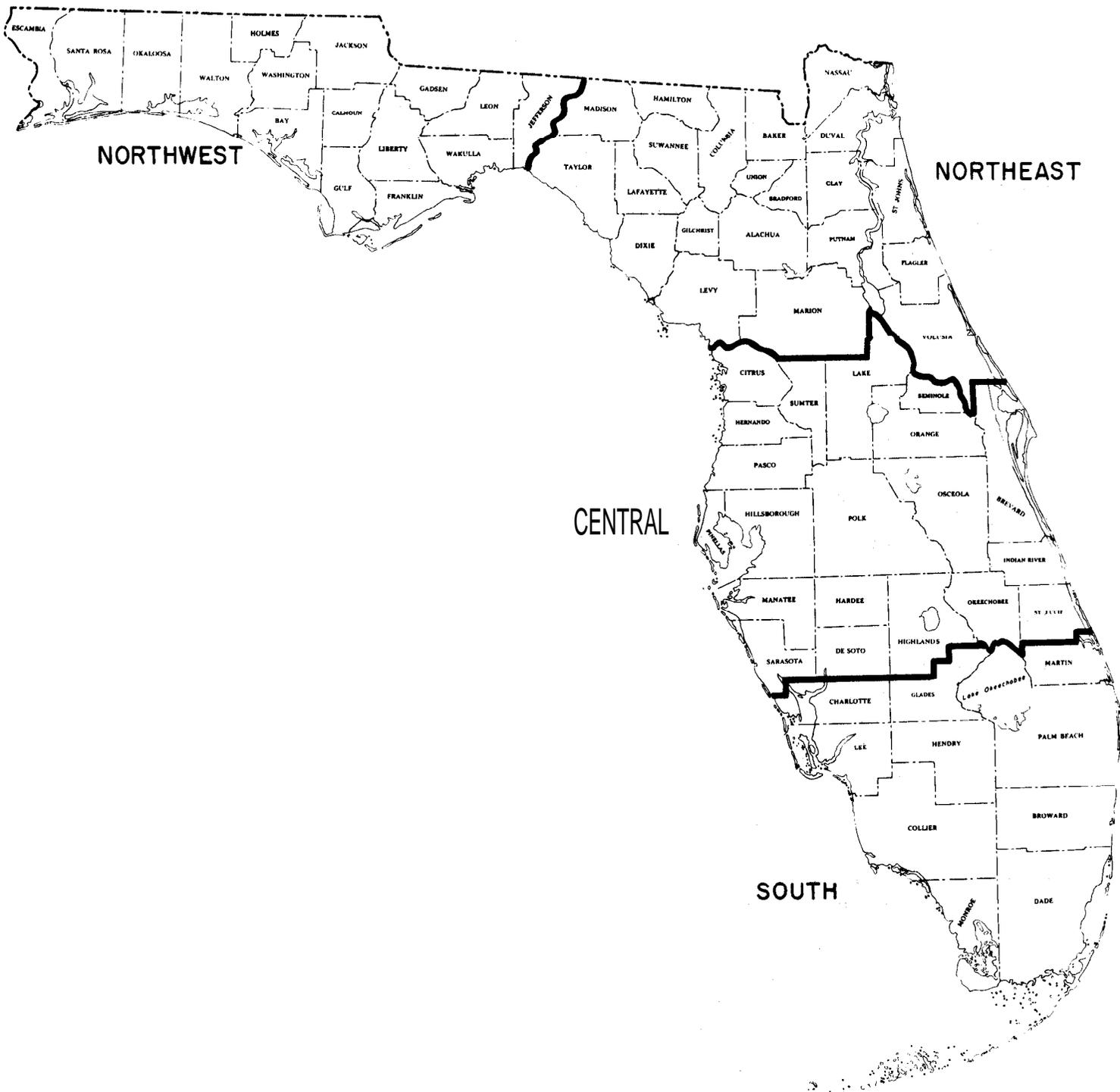


Figure 1-Forest survey regions in Florida.

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.

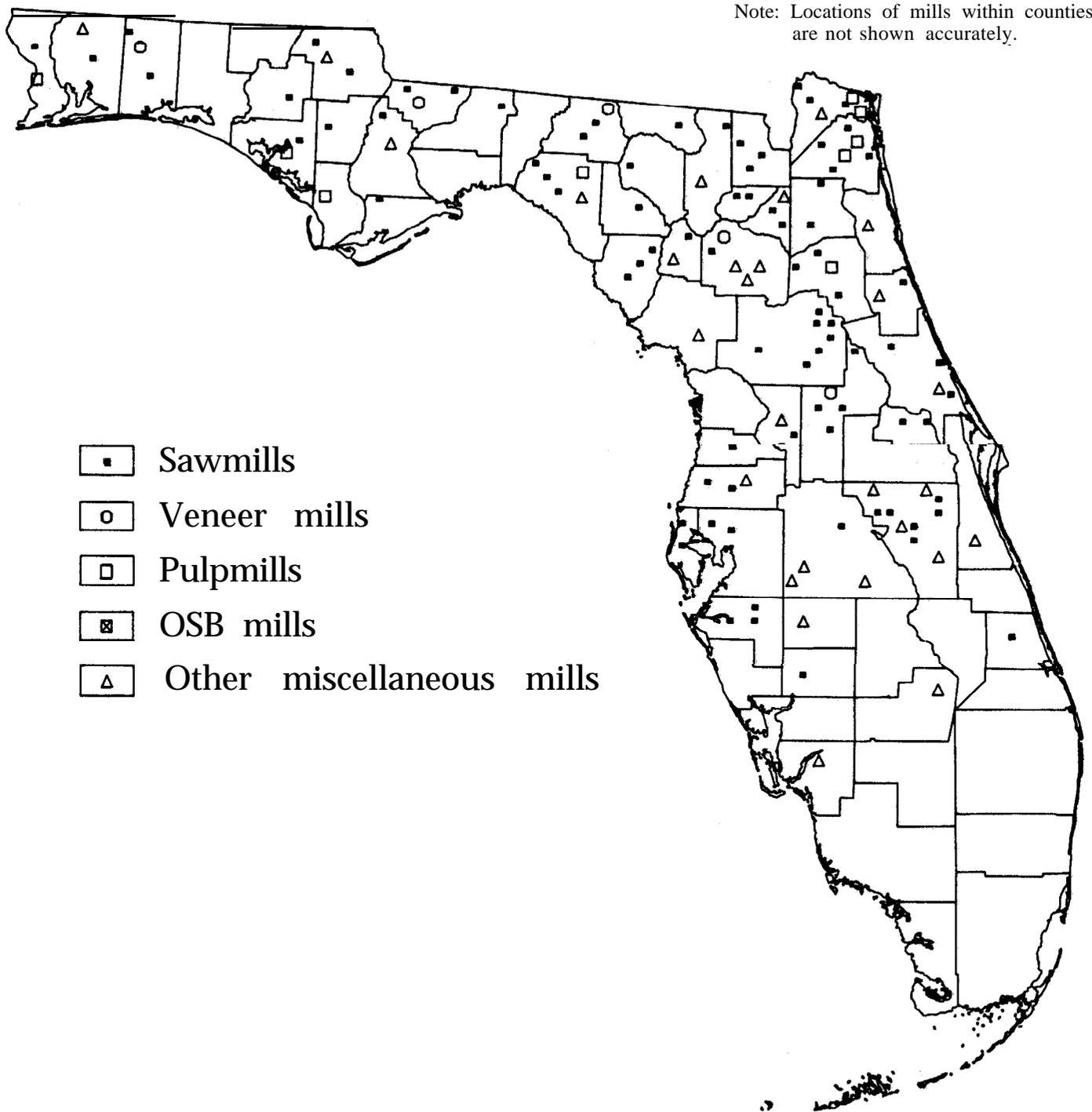


Figure 2-Location of primary wood-using plants in Florida, 1989.

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).

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.

USDA policy prohibits discrimination because of race, color, national origin, sex, age, religion, or handicapping condition. Any person who believes he or she has been discriminated against in any USDA-related activii should immediately contact the Secretary of Agriculture, Washington, DC 20250.

Davenport, Edgar L. 1991. Changes in Florida's Industrial Roundwood Products Output, 1987-1989. Reswr. 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.

Davenport, **Edgar** L. 1991. Changes in **Florida's** Industrial Roundwood Products Output. 1987-1989. **Resour.** Bull. SX-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.