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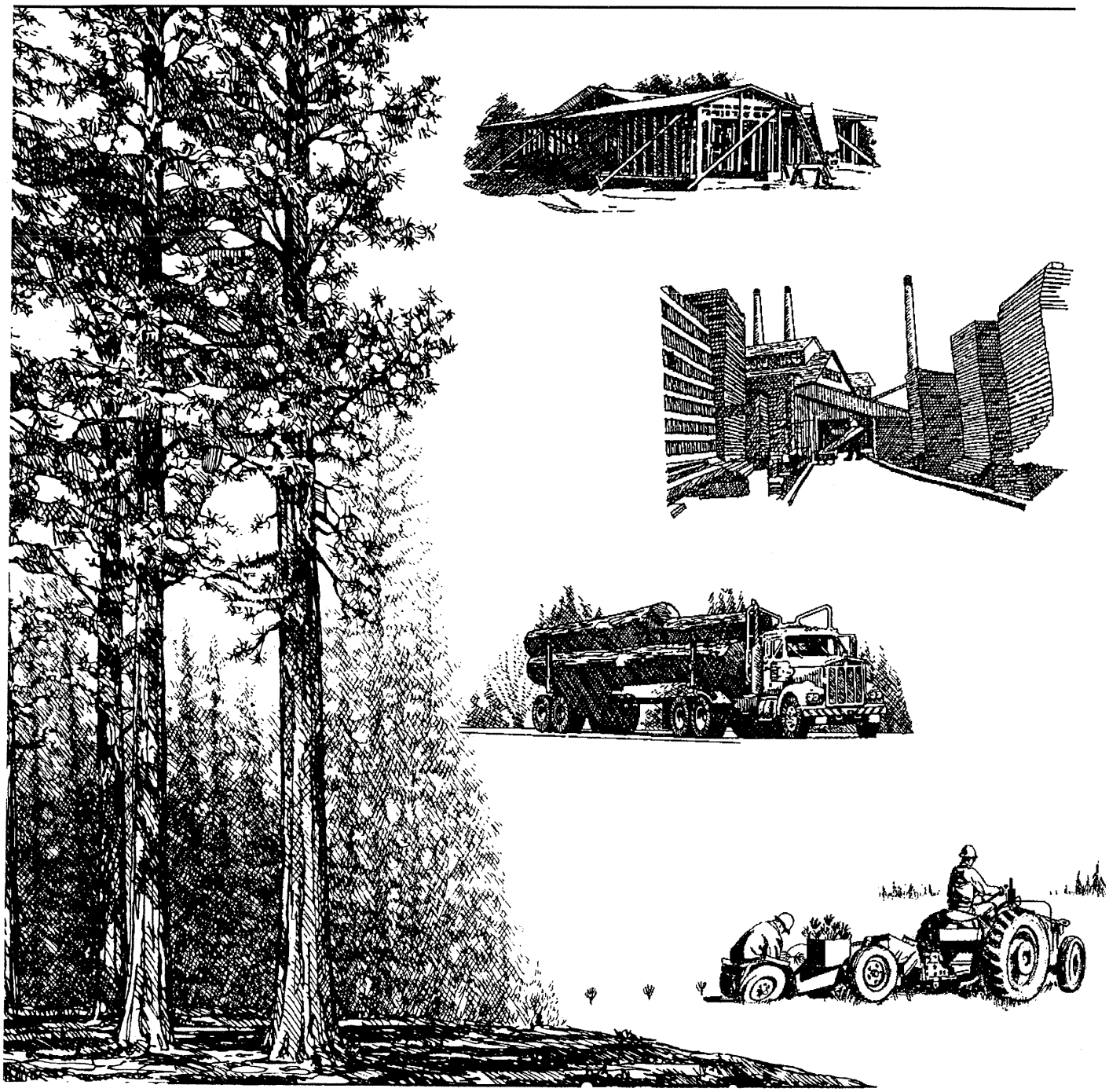
North Carolina's Timber Industry—An Assessment of Timber Product Output and Use, 1997

Tony G. Johnson and
David R. Brown



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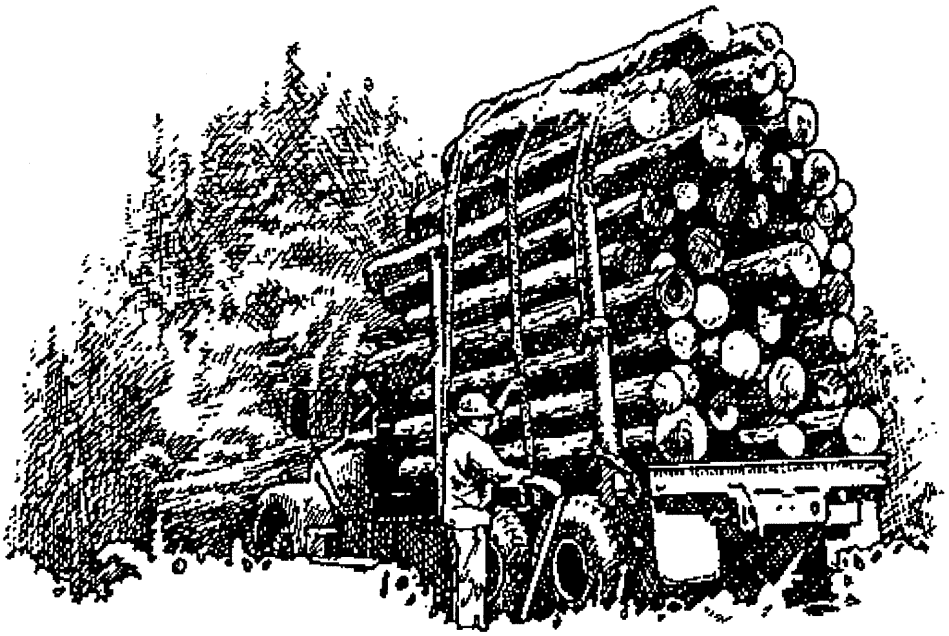

June 1999

Southern Research Station
P.O. Box 2680
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Foreword

This report contains the findings of a 1997 canvass of all primary wood-using plants in North Carolina and presents changes in product output and residue use since 1995. It complements the Forest Inventory and Monitoring (FIM) periodic inventory of volume and removals from the State's timberland. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain by county in 1997 and to determine interstate and cross-regional movement of industrial roundwood. Only primary wood-using mills were canvassed. Primary mills are those that process roundwood in log or bolt form or as chipped roundwood. Examples of industrial roundwood products are saw logs, pulpwood, veneer logs, poles, and logs used for composite board products. Mills producing products from residues generated at primary and secondary processors were not canvassed. Trees chipped in the woods were included in the estimate of timber drain only if they were delivered to a primary domestic manufacturer.

A 100-percent canvass of all wood processors in North Carolina was conducted in 1998 to obtain information for 1997. In addition, roundwood from out-of-State mills known to be using logs or bolts harvested from North Carolina timberland was incorporated into North Carolina production estimates. Each mill was canvassed by mail or through personal contact at plant locations. Telephone contacts followed mailed questionnaire responses when additional information or clarification of response was necessary. In the event of a nonresponse, data collected in previous surveys were updated by current data collected for mills of similar size, product type, and location. Surveys for all timber products other than pulpwood began in 1964, and are currently conducted every 2 years.

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

The Southern Research Station gratefully acknowledges the cooperation and assistance provided by the North Carolina Department of Environment, Health, and Natural Resources, Division of Forest Resources in collecting mill data. Appreciation is also extended to forest industry and mill managers for providing timber products information.
The information in this report is based on responses from 96 percent of mills operating in 1997: 7 pulpmills, 22 of the 23 veneer mills, 2 of the 3 composite panel mills, 4 of the 4 mills manufacturing other industrial products, and 232 of the 243 sawmills. These mills accounted for 92 percent of the 1997 mill receipts.

Dear Customer:

In addition to the timber product assessment reports generated for each of the 13 Southern States, the Timber Product Output (TPO) Database Retrieval System is available through the Starkville, MS, web site. That address is:

http://wvw.srsfia.usfs.msstate.edu/rpa/tpo

The database is well documented and very user friendly. This retrieval system allows you, the user, to select the TPO variables of interest and generate a standard set of timber removals and mill residue tables for the specified resource area or areas. The system has been logically divided into four sections to assist you in developing a database retrieval. In section one you will be asked to define the resource area, section two customizes the removals data for the area, section three customizes the mill residue data, and in section four you will generate the tables for the resource area you have defined. In each section you will be asked to supply specific inputs that will serve to customize your database retrieval.

There are four options available for defining the geographic area of interest. Each option provides an increasing level of detail. The area can be defined by region, subregion, State, or county level. Select the option that best suits the level of detail required to meet your needs. If you select "county" as your option, be aware that some counties may have been combined due to data sensitivity.

If additional explanation or clarification is needed, feel free to contact:

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

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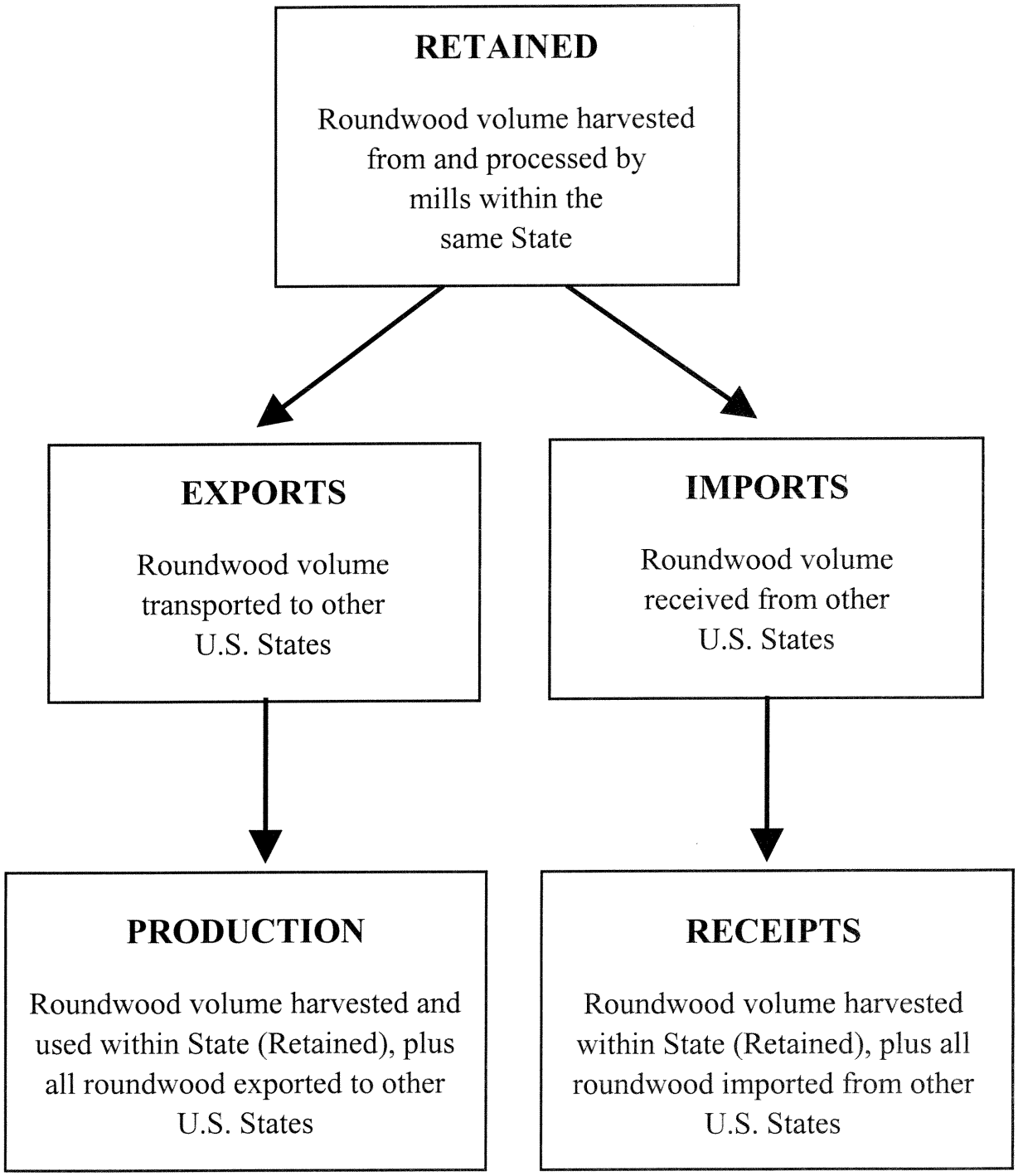

Production = Retained + Exports

Receipts = Retained + Imports

Figure 1—Movement of roundwood exports and imports within the United States.

North Carolina's Timber Industry—An Assessment of Timber Product Output and Use, 1997

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Output of Industrial Timber Products

Note: Certain terms used in this report—retained, export, import, production, and receipts—have specialized meanings unique to the Forest Inventory and Monitoring Units across the country that deal with timber products output (fig. 1).

- Between 1995 and 1997, the combined industrial timber products output (TPO) from roundwood and plant byproducts increased 4 percent, from 1.13 to 1.18 billion cubic feet.
- TPO from roundwood was up 38 million cubic feet, or 5 percent, to 870 million cubic feet, while output of plant byproducts was up 10 million cubic feet to 309 million cubic feet.
- Output of softwood roundwood products increased 1 percent to 561 million cubic feet, while output of hardwood roundwood products was up 11 percent to 309 million cubic feet (fig. 2).
- Saw logs and pulpwood were the principal roundwood products in 1997. Combined output of these products totaled 777 million cubic feet and accounted for 89 percent of the State's total roundwood output (fig. 3).
- Total receipts at North Carolina mills, which included roundwood harvested and retained in the State as well as roundwood imported from other States, increased by 4 percent to 771 million cubic feet. At the same time, the number of primary roundwood-using plants in North Carolina was down from 320 in 1995 to 280 in 1997.

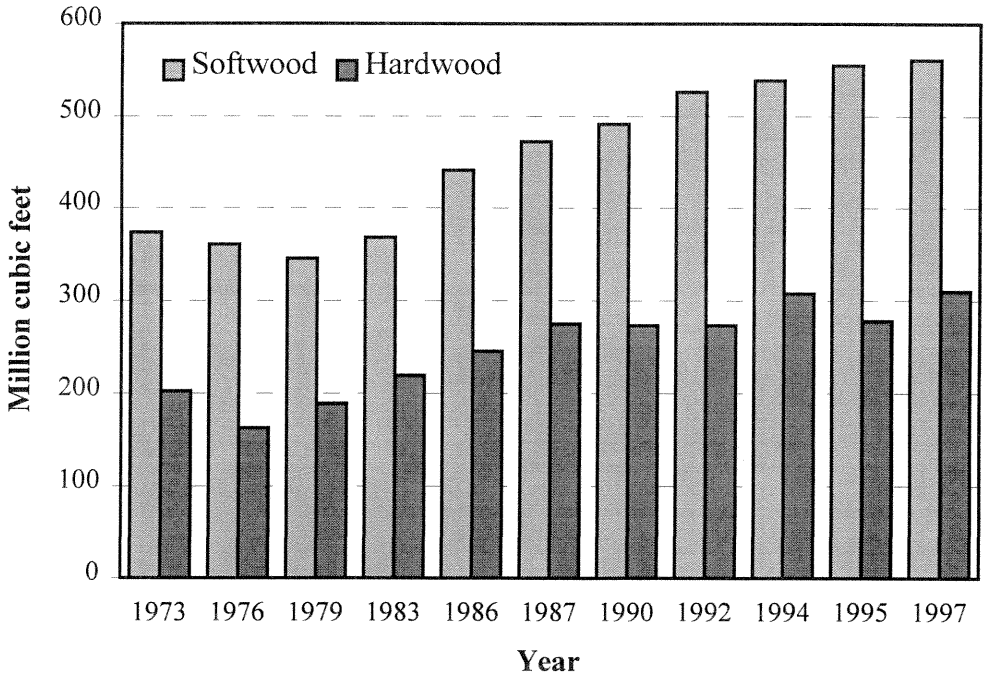
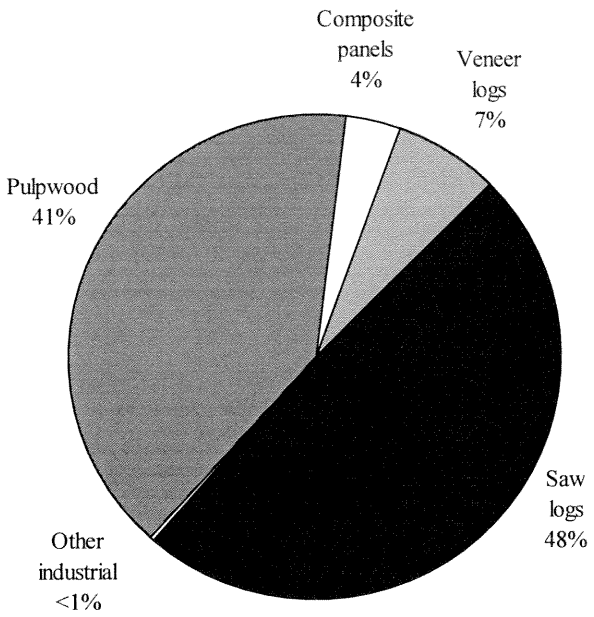


Figure 2—Roundwood production for all products by species group and year (see page 8 for references for individual years).



Total 870 million cubic feet

Figure 3—Roundwood production by type of product, 1997.

Saw Logs

- Saw logs accounted for 48 percent of the State's total roundwood products. Output of softwood saw logs increased 3 percent to 299 million cubic feet (1.7 billion board feet), while that of hardwood saw logs was up 14 percent to 123 million cubic feet (743 million board feet) (fig. 4).

- North Carolina currently has 243 sawmills, a net loss of 30 mills since 1995. Total saw-log receipts were up 21 million cubic feet to 416 million cubic feet. Softwood saw-log receipts were up 2 percent to 283 million cubic feet, while hardwood receipts increased 15 percent to 133 million cubic feet. Of the mills currently operating, 29 percent had receipts less than 1 million board feet, while 26 percent had receipts greater than 10 million board feet. These 64 mills accounted for 81 percent of saw-log receipts.

- North Carolina retained 92 percent of its saw-log production for domestic manufacture, and saw-log exports exceeded imports by 7 million cubic feet in 1997.

Pulpwood

- Pulpwood production, including chipped roundwood, increased 23 million cubic feet to 355 million cubic feet (4.8 million cords) and accounted for 41 percent of the State's total roundwood TPO. Softwood output was up 4 percent to 201 million cubic feet, while hardwood output increased 11 percent to 154 million cubic feet (fig. 5).

- Seven pulpmill facilities were operating and receiving roundwood in North Carolina in 1997, one less than in 1995. Total pulpwood receipts for these mills was up 16 million cubic feet to 265 million cubic feet, accounting for 34 percent of total receipts for all mills.

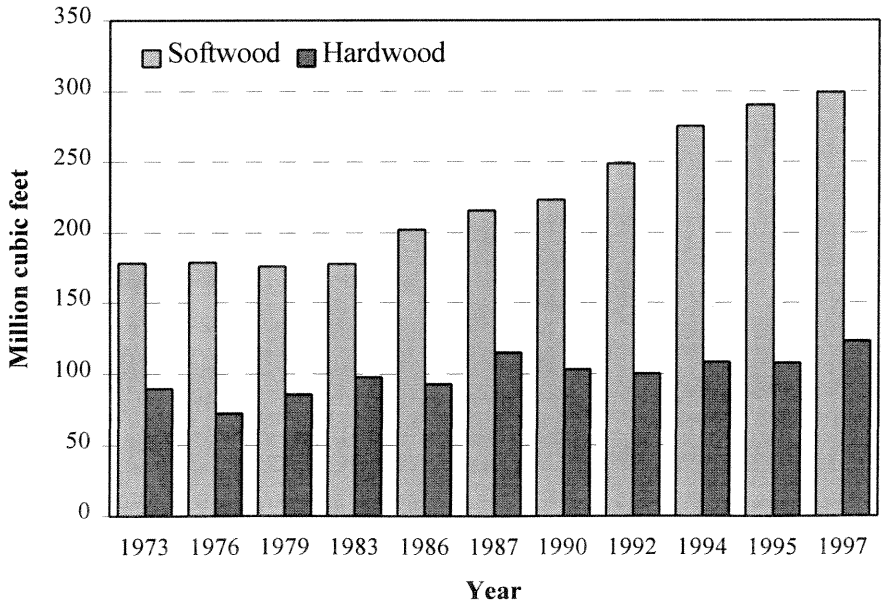


Figure 4—Roundwood saw-log production by species group and year (see page 8 for references for individual years).

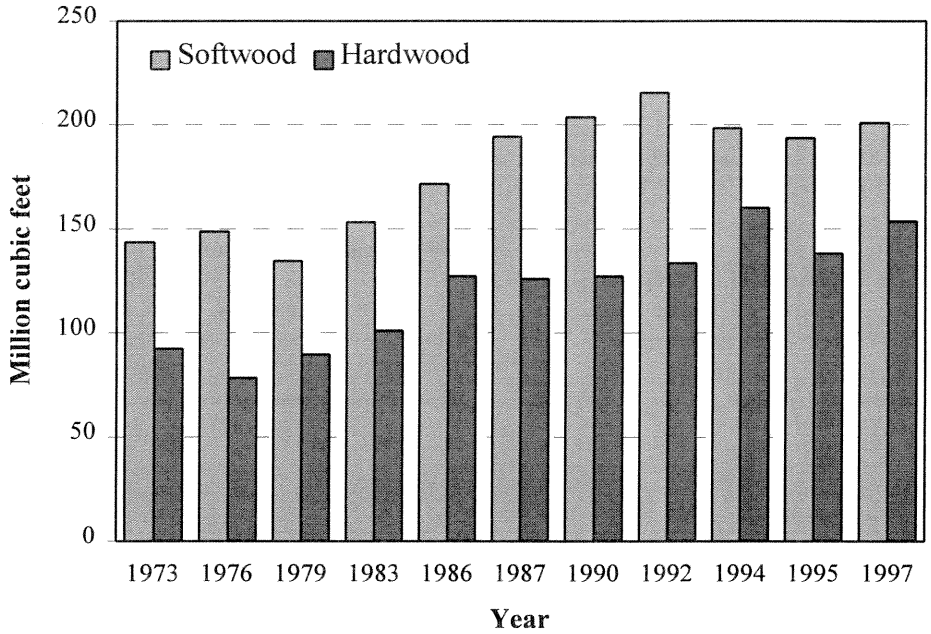


Figure 5—Roundwood pulpwood production by species group and year (see page 8 for references for individual years).

- Sixty-one percent of roundwood cut for pulpwood was retained for processing by North Carolina pulpmills. Roundwood pulpwood accounted for 74 percent of total known exports and 56 percent of total imports. Roundwood pulpwood exports amounted to 140 million cubic feet, or 89 million cubic feet more than was imported.

Veneer Logs

- Output of veneer logs in 1997 totaled 60 million cubic feet and accounted for 7 percent of the State's total roundwood TPO volume. Softwood veneer production declined 14 percent to 41 million cubic feet (237 million board feet), while output of hardwood veneer logs was up 1 percent to 19 million cubic feet (119 million board feet) (fig. 6).

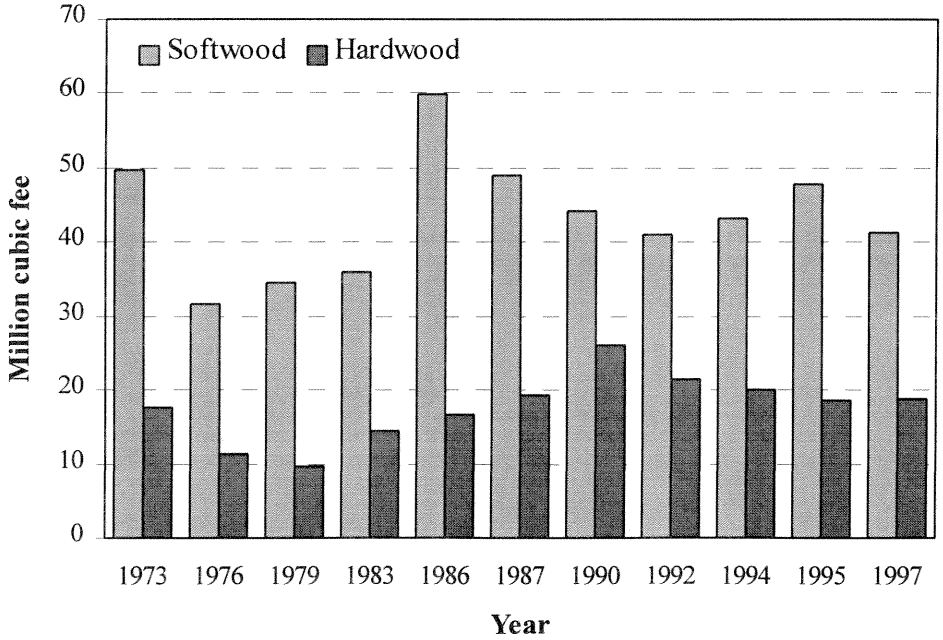


Figure 6—Roundwood veneer-log production by species group and year (see page 8 for references for individual years).

- The number of veneer mills operating in North Carolina declined from 27 in 1995 to 23 in 1997. Receipts of veneer logs declined 6 percent to 63 million cubic feet. Softwood veneer receipts were down 5 million cubic feet to 40 million cubic feet. Hardwood veneer receipts were up 4 percent to 23 million cubic feet.

- North Carolina retained 92 percent of its veneer-log production for processing at domestic veneer mills. Imports amounted to 8 million cubic feet, while exports totaled 5 million cubic feet, making the State a net importer of roundwood veneer logs.

Composite Panels

- Roundwood harvested from North Carolina's forests for composite panels declined 10 percent and totaled 31 million cubic feet. Softwood output was down 19 percent to 17 million cubic feet, while hardwood out- put was up 6 percent to 14 million cubic feet (fig. 7).

- Three composite panel mills were operating in North Carolina in 1997, one less than in 1995. Total receipts for these mills were down 17 percent to 25 million cubic feet.

- Sixty-seven percent of the composite panel production was retained for processing by North Carolina mills. Exports amounted to 10 million cubic feet, while imports totaled 4 million cubic feet, making the State a net exporter of roundwood used for composite panels.

Other Industrial Products

- Roundwood harvested for other industrial uses, e.g., poles, posts, mulch, firewood, logs for log homes, and all other industrial products, totaled 2.5 million cubic feet. Softwood made up all of the other industrial product volume.

- The number of plants producing other industrial products dropped from eight in 1995 to four in 1997. Receipts of other industrial products totaled 2.3 million cubic feet.

- North Carolina was a net exporter of roundwood used for other industrial products; all of the 445 thousand cubic feet exported and the 217 thousand cubic feet imported were softwood.

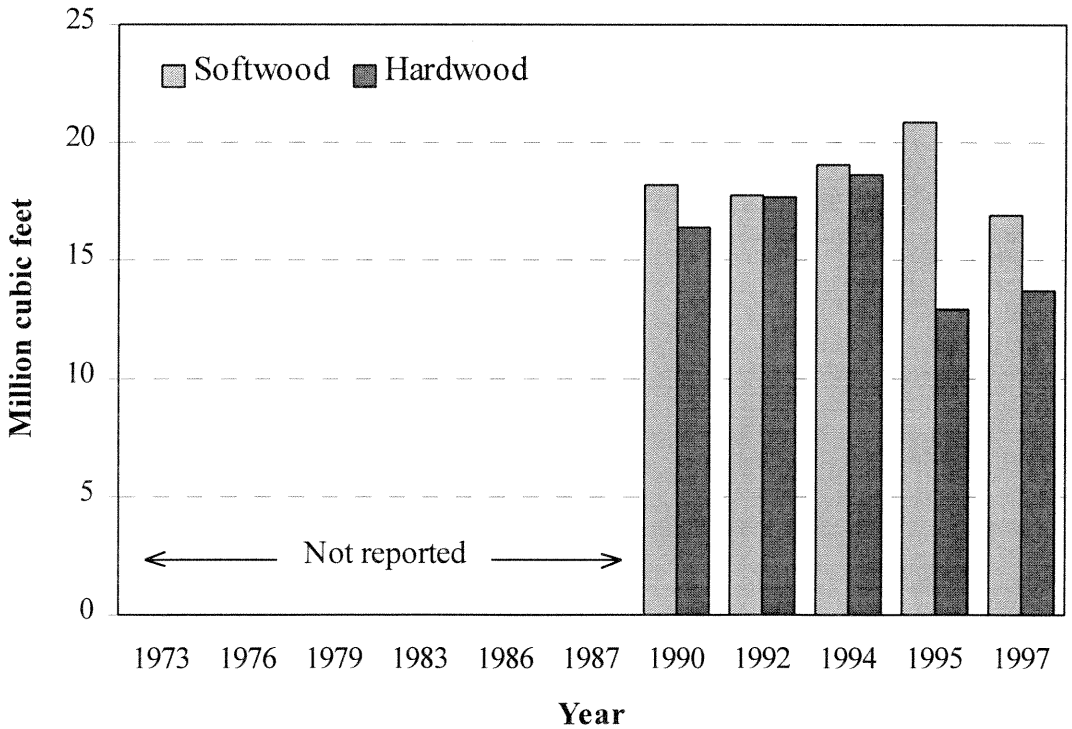
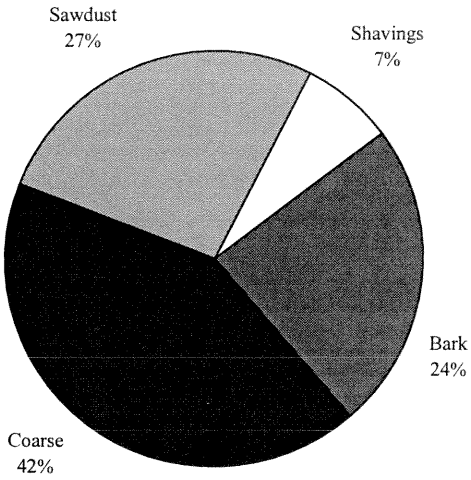


Figure 7—Roundwood production for composite panels by species group and year (see page 8 for references for individual years).

Plant Byproducts

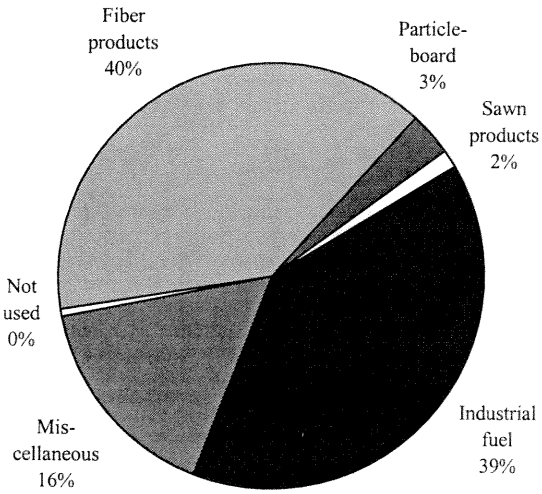
- In 1997, processing of primary products in North Carolina mills generated 310 million cubic feet of wood and bark residues. Coarse residues from all primary products amounted to 131 million cubic feet, while bark volume totaled 74 million cubic feet. Sawdust and shavings made up 34 percent of total residues, or 105 million cubic feet (fig. 8).



Total 310 million cubic feet

Figure 8—Primary mill residue by residue type, 1997.

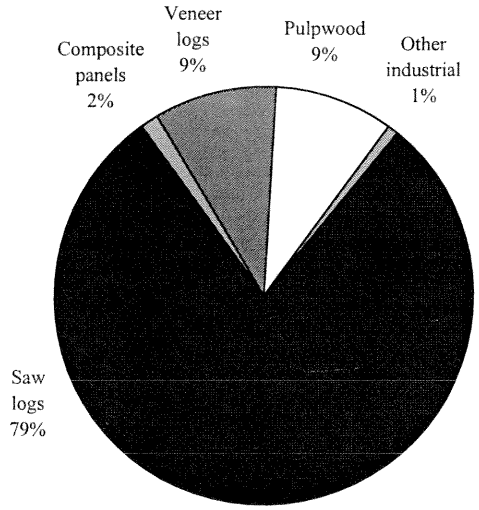
- Less than 1 percent of the wood and bark residues were not used for product manufacture, but 39 percent of the residues were used for industrial fuel (fig. 9). More than 116 million cubic feet, or 89 percent, of the coarse residues were used to manufacture fiber products. Most of the bark was used for industrial fuel or other miscellaneous products, while 81 percent of the sawdust and 17 percent of the shavings were used for industrial fuel.



Total 310 million cubic feet

Figure 9—Disposal of residue by product, 1997.

- Sawmills generated 246 million cubic feet of mill residues, or 79 percent of the total residues produced (fig. 10).



Total 310 million cubic feet

Figure 10—Primary mill residue produced by mill type, 1997.

Regional Trends

- Output of industrial roundwood products increased across all regions of North Carolina, except the Northern Coastal Plain, which had a 10-percent decline. The Piedmont had the largest increase at 20 percent.

Southern Coastal Plain Region

- Roundwood output from the Southern Coastal Plain region totaled 289 million cubic feet, up 6 percent. Softwood output increased 4 percent to 214 million cubic feet, while hardwood output increased 11 percent to 75 million cubic feet.

- Pulpwood production of 132 million cubic feet accounted for 46 percent of the region's TPO and 37 percent of the State's roundwood pulpwood output. Saw-log production of 116 million cubic feet accounted for 40 percent of the total roundwood output for the region.

- In the Southern Coastal Plain region, 38 primary wood-using plants were operating during 1997: 30 sawmills, 5 veneer or plywood mills, 1 pulpmill, 1 composite panel mill, and 1 other miscellaneous mill (fig. 11). These mills processed 33 percent of the State's total roundwood output.

Northern Coastal Plain Region

- The Northern Coastal Plain region had a 10-percent decline in roundwood output. Production was down from 269 million cubic feet in 1995 to 243 million cubic feet in 1997.

- Production of pulpwood was down 4 percent, accounting for 46 percent of the region's total roundwood output and 31 percent of the State's total roundwood pulpwood output. Saw-log production of 108 million cubic feet accounted for 44 percent of the region's total roundwood output and 26 percent of the State's total saw-log output.

- The 46 mills operating in the Northern Coastal Plain region in 1997 included: 36 sawmills, 5 veneer or plywood mills, 4 pulpmills, and 1 composite panel mill. These mills processed 28 percent of the State's total roundwood output.

Piedmont Region

- Roundwood output from the Piedmont region of North Carolina totaled 261 million cubic feet, an increase of 20 percent. Roundwood production accounted for 30 percent of the total roundwood TPO for the State.

- Saw-log production of 144 million cubic feet accounted for 55 percent of the region's total roundwood output. Pulpwood production was up by 33 percent to 96 million cubic feet, accounting for 37 percent of the region's total TPO.

- The 116 primary wood-using plants operating in the Piedmont region included: 103 sawmills, 9 veneer or plywood mills, 1 composite panel mill, and 3 other miscellaneous mills.

Mountain Region

- Roundwood output from the Mountain region totaled 78 million cubic feet, up 7 percent since 1995.

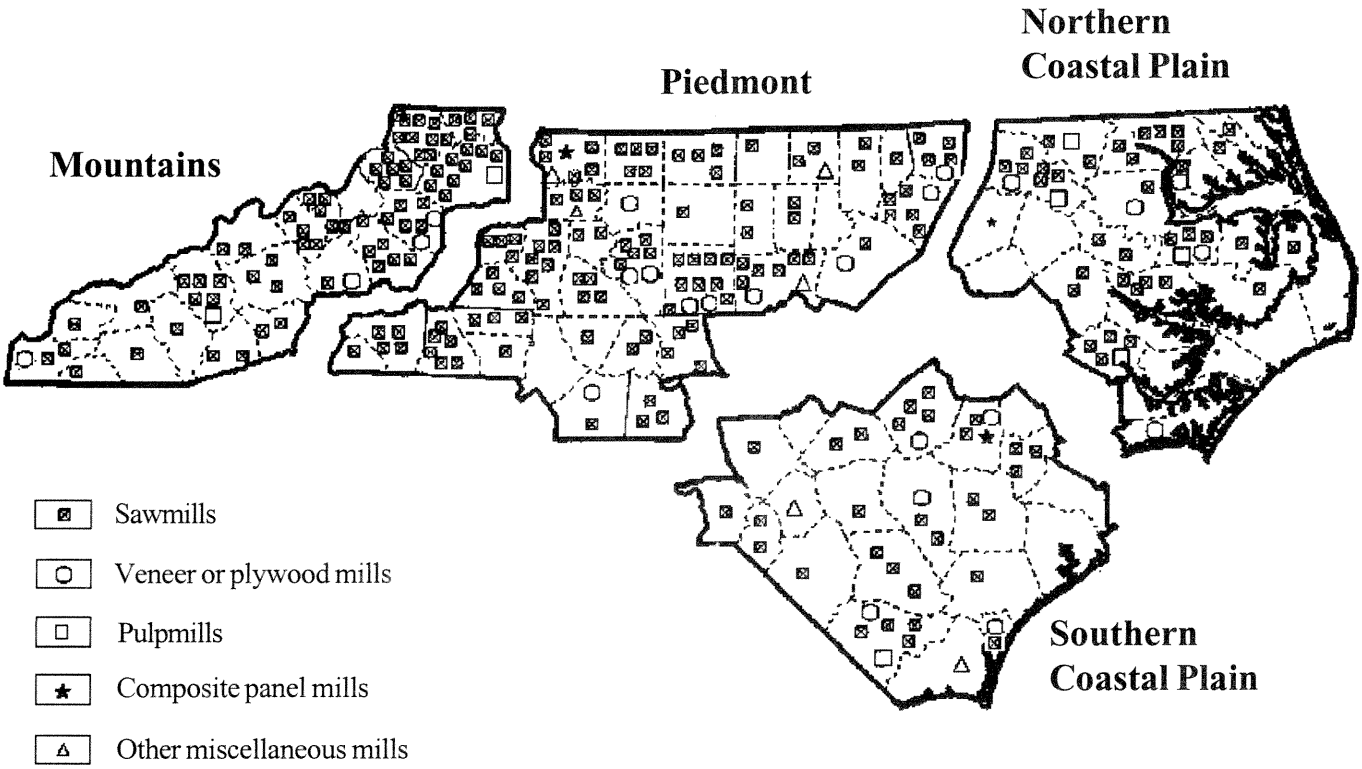


Figure 11—Primary wood-using mills by region, 1997.

- Saw-log production increased 19 percent to 55 million cubic feet and accounted for 70 percent of the region's total roundwood output. Pulpwood production was down 5 million cubic feet and accounted for 21 percent of the region's total TPO.

- In the Mountain region, 80 primary wood-using plants were operating during 1997: 74 sawmills, 4 veneer or plywood mills, and 2 pulpmills.

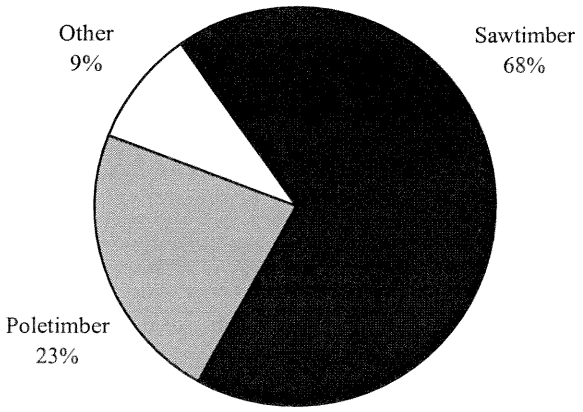
Total Roundwood Output

- Using the most recent inventory data for North Carolina, product output by source, ownership, and detailed species group was estimated.

Source

- In addition to the 870 million cubic feet of industrial roundwood output, an estimated 116 million cubic feet was harvested for domestic fuelwood bringing North Carolina's total roundwood output to 986 million cubic feet.

- Ninety-one percent of total roundwood output was considered growing-stock volume from timberland sources. Other sources contributed an estimated 92 million cubic feet, or 9 percent of total roundwood output (fig. 12).

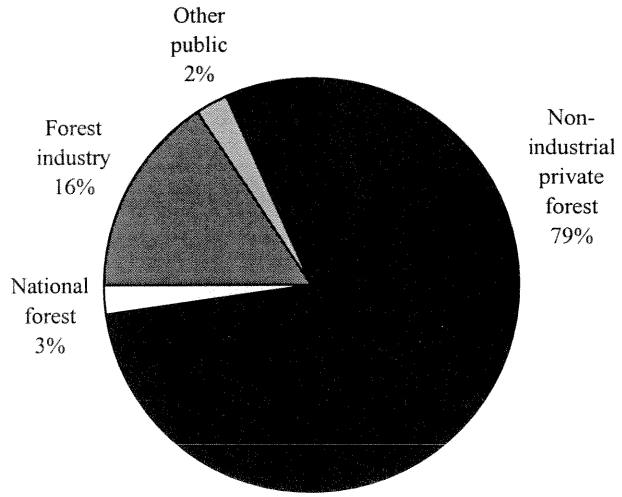


Total 986 million cubic feet

Figure 12—Roundwood output by source, 1997.

Ownership

- An estimated 783 million cubic feet, or 79 percent, of the total roundwood output came from nonindustrial private forest (NIPF) lands. Forest industry lands contributed 157 million cubic feet, or 16 percent of the output. Public lands made up the remaining 5 percent, or 46 million cubic feet (fig. 13).

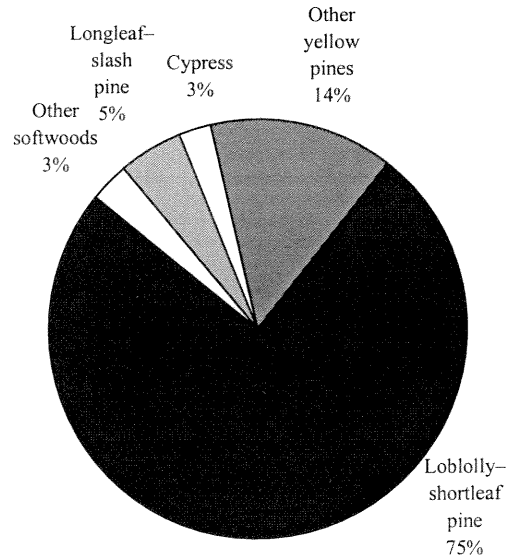


Total 986 million cubic feet

Figure 13—Roundwood output by ownership, 1997.

Species

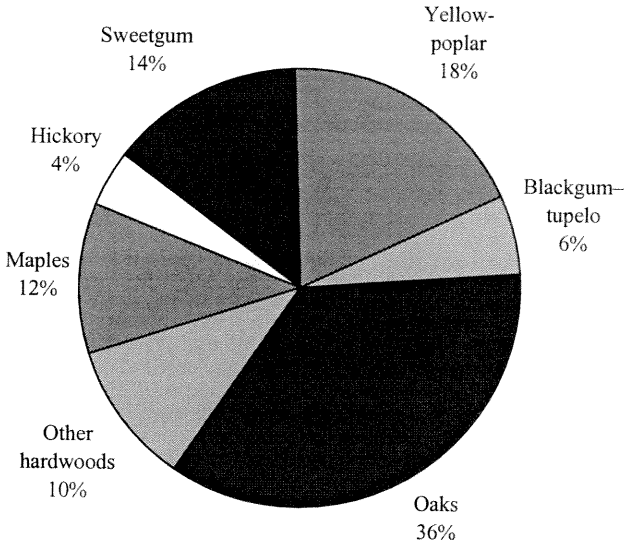
- The loblolly and shortleaf pine group provided the most volume of any softwood species group; at 433 million cubic feet, it accounted for 75 percent of the total softwood output (fig. 14). Other yellow



Total 574 million cubic feet

Figure 14—Roundwood output by softwood species group, 1997.

pine types accounted for another 14 percent of softwood output. The red oak and white oak groups combined accounted for 146 million cubic feet, or 36 percent of total hardwood output (fig. 15).



Total 412 million cubic feet

Figure 15—Roundwood output by hardwood species group, 1997.

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Definitions

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

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

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

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

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

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

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

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

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

Plant residues. Wood material generated in the production of timber products at primary manufacturing plants.

Coarse residues. Suitable for chipping such as slabs, edgings, trim, veneer cores, and ends.

Fine residues. Not suitable for chipping such as sawdust, shavings, and veneer clippings.

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

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

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

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

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

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

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

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

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

Standard cord. A unit measure applied to roundwood, usually bolts or split wood. It relates to a stack of wood 4 feet high, 4 feet wide, and 8 feet long encompassing 128 cubic feet of wood, bark, and air space. In the South, this usually translates to approximately 75.0 cubic feet of solid wood for pulpwood, because pulpwood is more uniform.

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

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

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

Conversion Factors[a]

Saw logs	
Softwood	0.18018 cubic foot = 1 board foot 5.55 board feet = 1 cubic foot
Hardwood	0.16556 cubic foot = 1 board foot 6.04 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17391 cubic foot = 1 board foot 5.75 board feet = 1 cubic foot
Hardwood	0.15873 cubic foot = 1 board foot 6.30 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	72.5 cubic feet per cord
Hardwood	76.6 cubic feet per cord

[a] Conversion factors vary with stem size (d.b.h.) and species. The factors shown are for trees of average diameters removed in North Carolina during the most recent survey period.

[b] Cubic feet of solid wood per cord.

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Table 1—Output of industrial products by product and species group, North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	290,523	299,278	8,755	3.0
Hardwood	107,960	123,306	15,346	14.2
Total	398,483	422,584	24,101	6.0
Veneer logs				
Softwood	47,740	41,163	-6,577	-13.8
Hardwood	18,682	18,907	225	1.2
Total	66,422	60,070	-6,352	-9.6
Pulpwood[a]				
Softwood	193,572	200,833	7,261	3.8
Hardwood	138,299	153,735	15,436	11.2
Total	331,871	354,568	22,697	6.8
Composite panels				
Softwood	20,869	16,909	-3,960	-19.0
Hardwood	12,959	13,704	745	5.7
Total	33,828	30,613	-3,215	-9.5
Other industrial				
Softwood	2,205	2,534	329	14.9
Hardwood	32	0	-32	-100.0
Total	2,237	2,534	297	13.3
All industrial				
Softwood	554,909	560,717	5,808	1.0
Hardwood	277,932	309,652	31,720	11.4
Total	832,841	870,369	37,528	4.5
Byproduct output				
Softwood	206,974	205,991	-983	-0.5
Hardwood	92,405	103,369	10,964	11.9
Total	299,379	309,360	9,981	3.3
Total output				
Softwood	761,883	766,708	4,825	0.6
Hardwood	370,337	413,021	42,684	11.5
Total	1,132,220	1,179,729	47,509	4.2

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (11,599,000 cubic feet in 1995 and 9,642,000 cubic feet in 1997).

Table 2—Roundwood receipts by product and species group, North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	278,621	282,949	4,328	1.6
Hardwood	116,186	133,012	16,826	14.5
Total	394,807	415,961	21,154	5.4
Veneer logs				
Softwood	45,111	40,001	-5,110	-11.3
Hardwood	22,265	23,151	886	4.0
Total	67,376	63,152	-4,224	-6.3
Pulpwood[a]				
Softwood	153,258	155,512	2,254	1.5
Hardwood	95,829	109,662	13,833	14.4
Total	249,087	265,174	16,087	6.5
Composite panels				
Softwood	18,836	13,577	-5,259	-27.9
Hardwood	10,752	10,951	199	1.9
Total	29,588	24,528	-5,060	-17.1
Other industrial				
Softwood	1,937	2,306	369	19.1
Hardwood	32	0	-32	-100.0
Total	1,969	2,306	337	17.1
Total output				
Softwood	497,763	494,345	-3,418	-0.7
Hardwood	245,064	276,776	31,712	12.9
Total	742,827	771,121	28,294	3.8

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (12,674,000 cubic feet in 1995 and 10,110,000 cubic feet in 1997).

Table 3—Number of primary wood-using plants by industry, North Carolina, 1976-1997

Industry	Year									
	1976	1979	1983	1986	1987	1990	1992	1994	1995	1997
Sawmills	403	478	429	336	362	308	306	275	273	243
Veneer mills	32	31	33	32	31	32	29	27	27	23
Pulpmills	8	8	8	8	8	8	8	8	8	7
Composite panel mills	0	0	0	4	4	5	4	4	4	3
Other mills	9	13	14	15	17	13	10	8	8	4
All plants	452	530	484	395	422	366	357	322	320	280

Table 4—Roundwood receipts by sawmill size, North Carolina, 1995 and 1997

Sawmill size class[a]	1995			1997		
	Number of mills	Thousand board feet	Percent of volume	Number of mills	Thousand board feet	Percent of volume
Million board feet						
< 1.0	84	29,757	1	70	23,447	1
1.0 - 4.99	91	243,298	11	76	206,186	9
5.0 - 9.99	40	280,993	13	33	210,080	9
10.0 - 49.99	49	918,808	41	54	1,126,742	47
> 50	9	774,950	34	10	806,704	34
Total	273	2,247,806	100	243	2,373,159	100

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

Table 5—Roundwood receipts by species and type of mill, North Carolina, 1997

Species	All mills	Type of mill: Sawmills	Veneer mills: Pine plywood	Veneer mills: Other veneer	OSB[a] and panels	Pulpmills[b]	Other mills
	Thousand cubic feet						
Softwood							
Yellow pine	312,251	257,074	39,805	196	12,870	NA	2,306
White pine	23,628	22,921	0	0	707	NA	0
Cedar	64	64	0	0	0	NA	0
Cypress	1,949	1,949	0	0	0	NA	0
Other softwood	941	941	0	0	0	NA	0
Unclassified	155,512	0	0	0	0	155,512	0
Total softwoods	494,345	282,949	39,805	196	13,577	155,512	2,306
Hardwood							
Blackgum and tupelo	5,620	4,012	814	411	383	NA	0
Soft maple	8,848	6,917	518	0	1,413	NA	0
Sweetgum	19,026	11,326	3,368	1,865	2,467	NA	0
Yellow-poplar	60,428	41,899	10,596	2,763	5,170	NA	0
Other soft hardwood	3,381	1,944	1,258	30	149	NA	0
Hickory	3,865	3,802	0	10	53	NA	0
Red oak	33,512	32,502	155	304	551	NA	0
White oak	24,852	23,775	140	252	685	NA	0
Other hard hardwood	7,582	6,835	0	667	80	NA	0
Unclassified	109,662	0	0	0	0	109,662	0
Total hardwoods	276,776	133,012	16,849	6,302	10,951	109,662	0
All species	771,121	415,961	56,654	6,498	24,528	265,174	2,306

NA = not applicable.

[a] OSB = oriented strand board.

[b] Only collected by softwood and hardwood and includes roundwood chipped.

Table 6—Industrial roundwood movement by year and species group, North Carolina, 1995 and 1997

Year	Production	Exported to other States	Retained	Imported from other States	Receipts
	Thousand cubic feet				
			Softwood		
1995	554,909	110,196	444,713	53,050	497,763
1997	560,717	119,115	441,602	52,743	494,345
			Hardwood		
1995	277,932	68,367	209,565	35,499	245,064
1997	309,652	70,182	239,470	37,306	276,776
			All species		
1995	832,841	178,563	654,278	88,549	742,827
1997	870,369	189,297	681,072	90,049	771,121

Table 7—Industrial roundwood movement by product and species group, North Carolina, 1997

Product and species group	Production	Exported to other States	Retained	Imported from other States	Receipts
			Thousand cubic feet		
Saw logs					
Softwood	299,278	28,517	270,761	12,188	282,949
Hardwood	123,306	5,487	117,819	15,193	133,012
Total	422,584	34,004	388,580	27,381	415,961
Veneer logs					
Softwood	41,163	4,399	36,764	3,237	40,001
Hardwood	18,907	656	18,251	4,900	23,151
Total	60,070	5,055	55,015	8,137	63,152
Pulpwood[a]					
Softwood	200,833	80,360	120,473	35,039	155,512
Hardwood	153,735	59,425	94,310	15,352	109,662
Total	354,568	139,785	214,783	50,391	265,174
Composite panels					
Softwood	16,909	5,394	11,515	2,062	13,577
Hardwood	13,704	4,614	9,090	1,861	10,951
Total	30,613	10,008	20,605	3,923	24,528
Other industrial					
Softwood	2,534	445	2,089	217	2,306
Hardwood	0	0	0	0	0
Total	2,534	445	2,089	217	2,306
All products					
Softwood	560,717	119,115	441,602	52,743	494,345
Hardwood	309,652	70,182	239,470	37,306	276,776
Total	870,369	189,297	681,072	90,049	771,121

[a] Includes roundwood chipped.

Table 8—Saw-log volume by destination, source, and species group, North Carolina, 1997

Destination and source	All species	Species group: Softwood	Species group: Hardwood
	Thousand cubic feet		
North Carolina (retained)	388,580	270,761	117,819
Exports to:			
Florida	132	102	30
Georgia	251	248	3
South Carolina	16,497	16,169	328
Tennessee	1,640	845	795
Virginia	15,484	11,153	4,331
Total	34,004	28,517	5,487
Imports from:			
Florida	37	37	0
Georgia	2,407	192	2,215
South Carolina	11,886	4,861	7,025
Tennessee	1,011	297	714
Virginia	12,040	6,801	5,239
Total	27,381	12,188	15,193

Table 9—Veneer volume by destination, source, and species group, North Carolina, 1997

Destination and source	All species	Species group: Softwood	Species group: Hardwood
	Thousand cubic feet		
North Carolina (retained)	55,015	36,764	18,251
Exports to:			
Georgia	204	0	204
Kentucky	4	0	4
South Carolina	1,080	660	420
Virginia	3,767	3,739	28
Total	5,055	4,399	656
Imports from:			
Georgia	46	0	46
Indiania	48	0	48
Kentucky	1,028	0	1,028
Maryland	84	0	84
Ohio	204	0	204
Pennsylvania	443	0	443
South Carolina	3,410	3,005	405
Tennessee	393	12	381
Virginia	2,277	220	2,057
West Virginia	204	0	204
Total	8,137	3,237	4,900

Table 10—Pulpwood volume by destination, source, and species group, North Carolina, 1997[a]

Destination and source	All species	Species group	
		Softwood	Hardwood
	Thousand cubic feet		
North Carolina (retained)	214,783	120,473	94,310
Exports to:			
Florida	54	54	0
Georgia	928	731	197
Louisiana	1	1	0
Mississippi	436	0	436
South Carolina	104,041	68,999	35,042
Tennessee	683	599	84
Virginia	33,642	9,976	23,666
Total	139,785	80,360	59,425
Imports from:			
Georgia	1,173	293	880
Kentucky	35	0	35
South Carolina	26,873	21,666	5,207
Tennessee	4,960	293	4,667
Virginia	17,350	12,787	4,563
Total	50,391	35,039	15,352

[a] Includes roundwood chipped that was delivered to nonpulpmills and then chipped and sold to pulpmills.

Table 11—Composite panel volume by destination, source, and species group, North Carolina, 1997

Destination and source	All species	Species group: Softwood	Species group: Hardwood
	Thousand cubic feet		
North Carolina (retained)	20,605	11,515	9,090
Exports to:			
Tennessee	867	597	270
Virginia	9,141	4,797	4,344
Total	10,008	5,394	4,614
Imports from:			
Virginia	3,923	2,062	1,861
Total	3,923	2,062	1,861

Table 12—Other industrial volume by destination, source, and species group, North Carolina, 1997[a]

Destination and source	All species	Species group: Softwood	Species group: Hardwood
	Thousand cubic feet		
North Carolina (retained)	2,089	2,089	0
Exports to:			
Florida	19	19	0
South Carolina	142	142	0
Virginia	284	284	0
Total	445	445	0
Imports from:			
South Carolina	217	217	0
Total	217	217	0

[a] Includes poles, posts, mulch, firewood, log homes, charcoal, and all other industrial mills.

Table 13—Primary mill residue volume by roundwood type, species group, and residue type, North Carolina, 1997

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		Thousand cubic feet			
Saw logs					
Softwood	167,804	18,992	77,328	49,864	21,620
Hardwood	77,783	13,788	36,901	26,149	945
Total	245,587	32,780	114,229	76,013	22,565
Veneer logs					
Softwood	18,491	2,777	11,112	4,602	0
Hardwood	10,162	2,505	5,587	2,070	0
Total	28,653	5,282	16,699	6,672	0
Pulpwood					
Softwood	15,216	15,216	0	0	0
Hardwood	13,632	13,632	0	0	0
Total	28,848	28,848	0	0	0
Composite panels					
Softwood	2,260	2,260	0	0	0
Hardwood	2,461	2,461	0	0	0
Total	4,721	4,721	0	0	0
Other industrial[a]					
Softwood	2,681	2,232	449	0	0
Hardwood	0	0	0	0	0
Total	2,681	2,232	449	0	0
Total					
Softwood	206,452	41,477	88,889	54,466	21,620
Hardwood	104,038	32,386	42,488	28,219	945
Total	310,490	73,863	131,377	82,685	22,565

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

Table 14—Disposal of residue at primary wood-using plants by product, species group, and type of residue, North Carolina, 1995 and 1997

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	1995	1997	1995	1997	1995	1997	1995	1997	1995	1997
	Thousand cubic feet									
Fiber products										
Softwood	77,545	84,209	0	0	76,975	80,070	292	1,486	278	2,653
Hardwood	28,748	37,465	0	62	28,508	36,269	240	1,067	0	67
Total	106,293	121,674	0	62	105,483	116,339	532	2,553	278	2,720
Particleboard										
Softwood	12,352	8,476	0	0	2,079	2,188	6,281	1,118	3,992	5,170
Hardwood	3,192	1,698	96	46	2,135	770	734	602	227	280
Total	15,544	10,174	96	46	4,214	2,958	7,015	1,720	4,219	5,450
Composite panels										
Softwood	3,156	0	0	0	98	0	2,995	0	63	0
Hardwood	786	0	0	0	615	0	171	0	0	0
Total	3,942	0	0	0	713	0	3,166	0	63	0
Sawn products										
Softwood	5,617	4,316	0	0	5,617	4,316	0	0	0	0
Hardwood	627	647	0	0	627	647	0	0	0	0
Total	6,244	4,963	0	0	6,244	4,963	0	0	0	0
Fuel										
Softwood	72,604	73,234	30,023	26,202	4,307	1,449	35,634	42,028	2,640	3,555
Hardwood	48,910	49,221	20,448	20,346	6,474	4,006	21,846	24,537	142	332
Total	121,514	122,455	50,471	46,548	10,781	5,455	57,480	66,565	2,782	3,887
Miscellaneous										
Softwood	35,700	35,756	11,853	15,183	658	622	9,236	9,709	13,953	10,242
Hardwood	10,142	14,338	7,683	11,781	96	541	1,957	1,750	406	266
Total	45,842	50,094	19,536	26,964	754	1,163	11,193	11,459	14,359	10,508
Not used										
Softwood	611	461	108	92	339	244	164	125	0	0
Hardwood	1,360	669	258	151	669	255	432	263	1	0
Total	1,971	1,130	366	243	1,008	499	596	388	1	0
All products										
Softwood	207,585	206,452	41,984	41,477	90,073	88,889	54,602	54,466	20,926	21,620
Hardwood	93,765	104,038	28,485	32,386	39,124	42,488	25,380	28,219	776	945
Total	301,350	310,490	70,469	73,863	129,197	131,377	79,982	82,685	21,702	22,565

Table 15—Roundwood timber products output by product and species group, Southern Coastal Plain of North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	90,764	96,415	5,651	6.2
Hardwood	16,869	19,618	2,749	16.3
Total	107,633	116,033	8,400	7.8
Veneer logs				
Softwood	26,865	27,310	445	1.7
Hardwood	6,475	6,082	-393	-6.1
Total	33,340	33,392	52	0.2
Pulpwood[a]				
Softwood	80,792	84,594	3,802	4.7
Hardwood	41,928	47,014	5,086	12.1
Total	122,720	131,608	8,888	7.2
Composite panels				
Softwood	5,203	4,065	-1,138	-21.9
Hardwood	1,818	1,842	24	1.3
Total	7,021	5,907	-1,114	-15.9
Other industrial				
Softwood	1,493	1,643	150	10.0
Hardwood	0	0	0	--
Total	1,493	1,643	150	10.0
All industrial				
Softwood	205,117	214,027	8,910	4.3
Hardwood	67,090	74,556	7,466	11.1
Total	272,207	288,583	16,376	6.0

-- = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (4,023,000 cubic feet in 1995 and 3,806,000 cubic feet in 1997).

Table 16—Roundwood timber products output by county, product, and species group, Southern Coastal Plain of North Carolina, 1997

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	Thousand cubic feet											
Bladen	14,754	3,493	5,737	1,826	3,626	337	4,996	1,216	254	114	141	0
Brunswick	12,912	1,488	4,248	48	1,755	82	6,768	1,358	0	0	141	0
Columbus	25,086	5,642	11,516	865	2,633	227	10,679	4,550	0	0	258	0
Cumberland	8,116	2,790	3,177	714	1,404	79	3,422	1,997	0	0	113	0
Duplin	18,086	10,987	4,346	1,079	1,323	564	11,909	9,114	508	230	0	0
Greene	2,676	11,061	1,085	442	992	160	243	10,298	356	161	0	0
Harnett	5,728	1,828	3,250	587	1,137	729	1,257	456	84	56	0	0
Hoke	5,449	851	2,539	478	1,053	0	1,696	373	0	0	161	0
Johnston	11,682	8,779	6,189	2,259	1,323	962	3,662	5,320	508	238	0	0
Jones	8,801	1,328	3,084	320	1,087	160	4,376	734	254	114	0	0
Lee	4,299	1,686	1,971	1,240	144	222	2,000	224	0	0	184	0
Lenoir	4,847	1,851	1,864	509	1,158	186	1,418	972	407	184	0	0
Moore	15,190	3,201	9,102	1,570	1,149	218	4,444	1,357	169	56	326	0
New Hanover	1,072	128	254	0	0	0	818	128	0	0	0	0
Onslow	10,696	2,024	3,550	246	1,087	242	5,805	1,422	254	114	0	0
Pender	19,341	4,533	8,463	1,139	1,053	280	9,684	3,114	0	0	141	0
Richmond	10,772	1,837	6,362	1,445	0	0	4,410	392	0	0	0	0
Robeson	13,076	2,394	8,419	1,301	2,106	114	2,486	979	0	0	65	0
Sampson	10,161	3,179	5,605	1,477	1,654	377	2,281	1,095	508	230	113	0
Scotland	4,637	1,100	2,664	560	877	0	1,096	540	0	0	0	0
Wayne	6,646	4,376	2,990	1,513	1,749	1,143	1,144	1,375	763	345	0	0
All counties	214,027	74,556	96,415	19,618	27,310	6,082	84,594	47,014	4,065	1,842	1,643	0

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (3,806,000 cubic feet in 1997).

Table 17—Roundwood timber products output by product and species group, Northern Coastal Plain of North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	103,261	88,182	-15,079	-14.6
Hardwood	21,554	19,758	-1,796	-8.3
Total	124,815	107,940	-16,875	-13.5
Veneer logs				
Softwood	15,861	10,499	-5,362	-33.8
Hardwood	5,192	5,470	278	5.4
Total	21,053	15,969	-5,084	-24.1
Pulpwood[a]				
Softwood	66,401	67,381	980	1.5
Hardwood	48,773	43,196	-5,577	-11.4
Total	115,174	110,577	-4,597	-4.0
Composite panels				
Softwood	3,923	3,923	0	--
Hardwood	4,218	4,040	-178	-4.2
Total	8,141	7,963	-178	-2.2
Other industrial				
Softwood	206	206	0	--
Hardwood	0	0	0	--
Total	206	206	0	--
All industrial				
Softwood	189,652	170,191	-19,461	-10.3
Hardwood	79,737	72,464	-7,273	-9.1
Total	269,389	242,655	-26,734	-9.9

-- = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (1,117,000 cubic feet in 1995 and 1,340,000 cubic feet in 1997).

Table 18—Roundwood timber products output by county, product, and species group, Northern Coastal Plain of North Carolina, 1997

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	Thousand cubic feet											
Beaufort	20,892	4,809	8,676	947	901	140	11,315	3,722	0	0	0	0
Bertie	16,912	6,563	8,120	2,234	683	581	7,637	3,311	449	437	23	0
Camden	1,283	1,607	869	15	94	226	320	1,366	0	0	0	0
Carteret	6,217	80	3,237	6	94	6	2,886	68	0	0	0	0
Chowan	1,692	1,763	902	556	0	246	790	961	0	0	0	0
Craven	15,000	1,703	5,608	507	922	138	8,216	944	254	114	0	0
Currituck	1,552	1,674	1,058	213	94	233	400	1,228	0	0	0	0
Dare	201	24	51	0	0	0	150	24	0	0	0	0
Edgecombe	6,364	4,138	3,923	1,405	1,182	185	1,259	2,495	0	53	0	0
Gates	8,281	5,388	5,020	575	484	270	2,300	4,106	449	437	28	0
Halifax	15,232	9,840	7,757	3,543	570	635	6,229	4,677	653	985	23	0
Hertford	9,519	4,910	5,340	1,766	547	187	3,155	2,520	449	437	28	0
Hyde	5,294	1,161	1,879	304	237	0	3,178	857	0	0	0	0
Martin	8,611	3,432	5,723	836	426	553	2,462	2,043	0	0	0	0
Nash	9,560	4,890	5,122	1,944	1,182	544	3,002	1,966	254	436	0	0
Northampton	9,313	7,478	4,045	1,985	767	187	3,820	4,616	653	690	28	0
Pamlico	7,326	1,442	4,692	95	94	0	2,540	1,347	0	0	0	0
Pasquotank	2,399	2,258	1,550	468	142	171	707	1,619	0	0	0	0
Perquimans	4,806	1,563	3,712	247	237	163	857	1,153	0	0	0	0
Pitt	7,931	2,656	4,379	846	827	133	2,446	1,563	254	114	25	0
Tyrrell	2,070	1,431	1,415	222	0	83	655	1,126	0	0	0	0
Washington	5,206	1,315	3,232	385	0	115	1,946	815	0	0	28	0
Wilson	4,530	2,339	1,872	659	1,016	674	1,111	669	508	337	23	0
All counties	170,191	72,464	88,182	19,758	10,499	5,470	67,381	43,196	3,923	4,040	206	0

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (1,340,000 cubic feet in 1997).

Table 19—Roundwood timber products output by product and species group, Piedmont of North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	77,387	89,814	12,427	16.1
Hardwood	42,677	53,982	11,305	26.5
Total	120,064	143,796	23,732	19.8
Veneer logs				
Softwood	4,927	3,338	-1,589	-32.3
Hardwood	4,439	4,214	-225	-5.1
Total	9,366	7,552	-1,814	-19.4
Pulpwood[a]				
Softwood	38,364	43,622	5,258	13.7
Hardwood	33,736	52,075	18,339	54.4
Total	72,100	95,697	23,597	32.7
Composite panels				
Softwood	10,482	7,196	-3,286	-31.3
Hardwood	6,207	6,576	369	5.9
Total	16,689	13,772	-2,917	-17.5
Other industrial				
Softwood	404	525	121	30.0
Hardwood	32	0	-32	--
Total	436	525	89	20.4
All industrial				
Softwood	131,564	144,495	12,931	9.8
Hardwood	87,091	116,847	29,756	34.2
Total	218,655	261,342	42,687	19.5

-- = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (5,875,000 cubic feet in 1995 and 4,345,000 cubic feet in 1997).

Table 20—Roundwood timber products output by county, product, and species group, Piedmont of North Carolina, 1997

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	Thousand cubic feet											
Alamance	2,403	2,418	2,091	1,714	96	343	132	302	84	59	0	0
Alexander	2,015	1,185	1,241	1,009	0	79	774	97	0	0	0	0
Anson	13,035	2,538	7,395	876	425	0	5,215	1,662	0	0	0	0
Cabarrus	1,553	620	1,107	524	0	0	446	96	0	0	0	0
Caswell	2,225	1,925	1,916	1,257	0	0	66	609	243	59	0	0
Catawba	1,889	655	1,708	606	0	8	181	41	0	0	0	0
Chatham	8,557	3,313	7,361	2,346	96	498	945	186	84	283	71	0
Cleveland	2,910	1,650	914	810	0	58	1,912	726	84	56	0	0
Davidson	2,444	3,258	1,319	2,470	0	29	956	419	169	340	0	0
Davie	600	1,025	377	804	0	29	50	136	169	56	4	0
Durham	3,157	1,158	2,774	391	96	247	203	464	84	56	0	0
Forsyth	541	1,620	268	1,182	0	18	104	298	169	122	0	0
Franklin	10,474	5,172	6,439	1,113	446	313	3,055	2,582	534	1,164	0	0
Gaston	983	452	631	163	0	11	268	222	84	56	0	0
Granville	6,243	2,233	4,527	489	0	90	1,632	1,437	84	217	0	0
Guilford	1,887	3,432	1,326	2,595	0	18	137	643	424	176	0	0
Iredell	3,763	4,077	1,864	1,035	0	81	1,728	2,905	169	56	2	0
Lincoln	1,494	1,628	1,077	326	0	77	417	1,225	0	0	0	0
Mecklenburg	925	1,332	622	903	0	0	303	429	0	0	0	0
Montgomery	11,336	7,302	8,278	3,549	0	3	3,058	3,748	0	2	0	0
Orange	4,115	2,599	3,698	1,236	96	294	152	729	169	340	0	0
Person	3,015	1,731	2,344	524	0	11	486	1,196	185	0	0	0
Polk	3,226	3,256	766	801	0	58	2,460	2,397	0	0	0	0
Randolph	4,743	5,192	3,471	4,526	0	144	1,018	466	254	56	0	0
Rockingham	2,398	4,623	731	3,585	0	1	972	792	695	245	0	0
Rowan	2,928	4,196	1,613	2,288	0	30	1,061	1,822	254	56	0	0
Rutherford	4,664	4,210	1,649	1,277	0	58	2,931	2,819	84	56	0	0
Stanly	1,218	1,809	650	343	0	0	568	1,466	0	0	0	0
Stokes	2,154	3,521	871	2,793	0	0	1	251	1,177	477	105	0
Surry	2,858	4,443	1,803	3,325	13	0	97	599	679	519	266	0
Union	2,267	5,054	1,253	477	312	4	702	4,573	0	0	0	0
Vance	4,082	2,018	2,743	631	350	307	540	482	449	598	0	0
Wake	12,140	11,035	6,218	1,776	760	774	4,993	8,124	169	361	0	0
Warren	14,759	13,271	7,497	3,767	648	631	6,058	7,766	531	1,107	25	0
Yadkin	1,494	2,896	1,272	2,471	0	0	1	366	169	59	52	0
All counties	144,495	116,847	89,814	53,982	3,338	4,214	43,622	52,075	7,196	6,576	525	0

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (4,345,000 cubic feet in 1997).

Table 21—Roundwood timber products output by product and species group, Mountains of North Carolina, 1995 and 1997

Product and species group	Year 1995	Year 1997	Change	Percent change
	Thousand cubic feet			
Saw logs				
Softwood	19,111	24,867	5,756	30.1
Hardwood	26,860	29,948	3,088	11.5
Total	45,971	54,815	8,844	19.2
Veneer logs				
Softwood	87	16	-71	-81.6
Hardwood	2,576	3,141	565	21.9
Total	2,663	3,157	494	18.6
Pulpwood[a]				
Softwood	8,015	5,236	-2,779	-34.7
Hardwood	13,862	11,450	-2,412	-17.4
Total	21,877	16,686	-5,191	-23.7
Composite panels				
Softwood	1,261	1,725	464	36.8
Hardwood	716	1,246	530	74.0
Total	1,977	2,971	994	50.3
Other industrial				
Softwood	102	160	58	56.9
Hardwood	0	0	0	--
Total	102	160	58	56.9
All industrial				
Softwood	28,576	32,004	3,428	12.0
Hardwood	44,014	45,785	1,771	4.0
Total	72,590	77,789	5,199	7.2

-- = negligible.

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (584,000 cubic feet in 1995 and 151,000 cubic feet in 1997).

Table 22—Roundwood timber products output by county, product, and species group, Mountains of North Carolina, 1997

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	Thousand cubic feet											
Alleghany	1,977	934	1,775	762	0	0	60	122	88	50	54	0
Ashe	2,913	2,646	2,746	2,351	0	72	79	222	88	1	0	0
Avery	327	926	222	453	5	216	100	257	0	0	0	0
Buncombe	1,588	4,131	428	1,247	0	54	1,160	2,830	0	0	0	0
Burke	3,876	1,746	2,585	1,193	0	155	938	350	353	48	0	0
Caldwell	2,660	2,741	1,963	1,660	0	155	432	878	265	48	0	0
Cherokee	1,378	1,038	213	665	0	65	1,165	308	0	0	0	0
Clay	126	571	13	287	0	39	113	245	0	0	0	0
Graham	350	1,289	247	610	0	378	103	301	0	0	0	0
Haywood	1,565	4,442	405	1,563	0	49	1,160	2,830	0	0	0	0
Henderson	747	1,036	487	631	27	138	233	267	0	0	0	0
Jackson	435	1,760	133	925	0	89	302	746	0	0	0	0
McDowell	1,179	1,106	1,039	704	28	135	112	267	0	0	0	0
Macon	418	2,120	99	1,153	0	221	319	746	0	0	0	0
Madison	913	3,242	611	2,266	0	196	302	780	0	0	0	0
Mitchell	770	1,657	670	1,212	0	77	100	368	0	0	0	0
Swain	420	1,819	118	1,084	0	0	302	735	0	0	0	0
Transylvania	241	892	114	547	27	89	100	256	0	0	0	0
Watauga	1,112	1,581	1,023	1,331	0	199	1	51	88	0	0	0
Wilkes	5,024	6,827	3,763	5,137	0	96	834	1,025	379	569	48	0
Yancey	557	1,510	457	1,079	0	153	100	278	0	0	0	0
All counties	28,576	44,014	19,111	26,860	87	2,576	8,015	13,862	1,261	716	102	0

[a] Includes roundwood that was delivered to nonpulpmills and then chipped and sold to pulpmills (151,000 cubic feet in 1997).

Table 23—Total roundwood output by product, species group, and source of material, North Carolina, 1997

Product and species group	All sources	Total	Growing-stock trees		Other sources
			Sawtimber	Poletimber	
	Thousand cubic feet				
Saw logs					
Softwood	299,278	294,170	288,474	5,696	5,108
Hardwood	123,306	116,043	112,562	3,482	7,263
Total	422,584	410,213	401,035	9,178	12,371
Veneer logs and bolts					
Softwood	41,163	40,377	39,162	1,215	786
Hardwood	18,907	18,702	18,702	0	205
Total	60,070	59,079	57,863	1,215	991
Pulpwood					
Softwood	200,833	181,357	81,611	99,746	19,476
Hardwood	153,735	136,943	54,777	82,166	16,792
Total	354,568	318,300	136,388	181,912	36,268
Composite panels					
Softwood	16,909	15,269	6,871	8,398	1,640
Hardwood	13,704	12,207	4,883	7,324	1,497
Total	30,613	27,476	11,754	15,722	3,137
Poles and posts					
Softwood	2,515	1,869	1,003	866	646
Hardwood	0	0	0	0	0
Total	2,515	1,869	1,003	866	646
Other miscellaneous					
Softwood	19	19	15	4	0
Hardwood	0	0	0	0	0
Total	19	19	15	4	0
Total industrial products					
Softwood	560,717	533,061	417,136	115,925	27,656
Hardwood	309,652	283,895	190,923	92,972	25,757
Total	870,369	816,956	608,059	208,897	53,413
Fuelwood					
Softwood	13,554	9,520	7,743	1,777	4,034
Hardwood	102,287	67,625	53,359	14,266	34,662
Total	115,841	77,145	61,102	16,043	38,696
All products					
Softwood	574,271	542,581	424,879	117,702	31,690
Hardwood	411,939	351,520	244,283	107,238	60,419
Total	986,210	894,101	669,161	224,940	92,109

Numbers in rows and columns may not sum to totals due to rounding.

Table 24—Total roundwood output by species group, survey unit, and ownership, North Carolina, 1997

Species group and survey unit	Total	National forest	Other public	Forest industry	Nonindustrial private
			Thousand cubic feet		
Softwoods					
Southern Coastal Plain	219,200	137	6,505	52,977	159,581
Northern Coastal Plain	174,305	2,997	695	58,966	111,648
Piedmont	147,989	398	7,515	10,770	129,306
Mountains	32,777	1,503	803	2,248	28,223
Total softwoods	574,271	5,035	15,517	124,961	428,758
Hardwoods					
Southern Coastal Plain	99,184	0	689	8,054	90,441
Northern Coastal Plain	96,401	128	2,450	13,605	80,217
Piedmont	155,447	596	2,600	6,914	145,337
Mountains	60,907	17,797	1,607	3,733	37,770
Total hardwoods	411,939	18,522	7,346	32,306	353,765
All species	986,210	23,557	22,862	157,267	782,523

Numbers in rows and columns may not sum to totals due to rounding.

Table 25—Total roundwood output by species group, detailed species group, and product, North Carolina, 1997

Species group and detailed species group	Total	Product						
		Saw log	Veneer	Pulpwood	Composite panel	Fuelwood	Poles and post	Other miscellaneous
		Thousand cubic feet						
Softwood								
Cedar	3,297	2,059	102	942	107	78	9	0
Longleaf-slash pine	29,063	12,850	3,092	11,901	351	686	183	0
White pine	13,019	10,514	6	1,282	718	308	191	0
Loblolly-shortleaf pine	432,457	224,970	32,800	151,932	10,893	10,206	1,637	18
Other yellow pines	80,870	40,930	3,798	29,475	4,299	1,909	459	1
Cypress	14,115	6,735	1,362	5,128	521	333	36	0
Hemlock	1,449	1,219	3	173	20	34	0	0
Total softwoods	574,271	299,278	41,163	200,833	16,909	13,554	2,515	19
Hardwood								
Soft maple	47,162	13,134	2,180	18,656	1,480	11,711	0	0
Hard maple	419	156	17	121	21	104	0	0
Other birch	4,986	2,449	419	811	69	1,238	0	0
Yellow birch	68	39	3	10		17	0	0
Hickory	16,249	5,577	538	5,585	514	4,034	0	0
Beech	3,718	1,320	288	1,130	56	923	0	0
Ash	7,244	1,647	367	3,192	239	1,799	0	0
Black walnut	898	455	66	136	18	223	0	0
Sweetgum	59,032	12,564	2,761	27,105	1,943	14,658	0	0
Yellow-poplar	75,478	27,524	3,297	23,103	2,812	18,742	0	0
Blackgum-tupelo	25,296	5,703	1,483	11,011	818	6,281	0	0
Sycamore	1,204	556	68	258	23	299	0	0
Cottonwood	103	26	7	39	5	25	0	0
Black cherry	1,960	776	163	465	69	487	0	0
Select white oaks	47,722	14,756	1,876	17,234	2,006	11,850	0	0
Other white oaks	15,758	5,539	770	5,087	450	3,912	0	0
Select red oaks	18,135	6,438	819	5,906	470	4,503	0	0
Other red oaks	64,062	17,101	2,838	26,135	2,082	15,907	0	0
Basswood	125	72	17	6		31	0	0
Elm	3,999	1,153	206	1,441	206	993	0	0
Other Eastern hardwoods	18,321	6,321	725	6,304	422	4,549	0	0
Total hardwoods	411,939	123,306	18,907	153,735	13,704	102,287	0	0
All species	986,210	422,584	60,070	354,568	30,613	115,841	2,515	19

Numbers in rows and columns may not sum to totals due to rounding.

Table 26—Total roundwood output by species group, detailed species group, and ownership, North Carolina, 1997

Species group and detailed species group	Total	Ownership: National forest	Other public	Forest industry	Nonindustrial private
		Thousand cubic feet			
Softwood					
Cedar	3,297	10	92	343	2,852
Longleaf-slash pine	29,063	84	1,112	8,734	19,133
White pine	13,019	228	172	1,775	10,844
Loblolly-shortleaf pine	432,457	3,316	12,261	99,305	317,576
Other yellow pines	80,870	1,359	1,749	12,066	65,695
Cypress	14,115	11	130	2,738	11,235
Hemlock	1,449	27	0	0	1,423
Total softwoods	574,271	5,035	15,517	124,961	428,758
Hardwood					
Soft maple	47,162	2,073	957	4,298	39,833
Hard maple	419	0	0	0	419
Other birch	4,986	893	82	56	3,955
Yellow birch	68	27	33	0	8
Hickory	16,249	440	188	595	15,026
Beech	3,718	830	109	318	2,462
Ash	7,244	111	106	829	6,199
Black walnut	898	158	5	22	713
Sweetgum	59,032	119	678	5,268	52,968
Yellow-poplar	75,478	2,536	955	5,910	66,077
Blackgum-tupelo	25,296	152	490	2,966	21,688
Sycamore	1,204	0	5	2	1,198
Cottonwood	103	0	25	20	57
Black cherry	1,960	206	157	148	1,449
Select white oaks	47,722	1,333	1,054	3,017	42,319
Other white oaks	15,758	2,055	256	1,545	11,901
Select red oaks	18,135	3,254	256	873	13,752
Other red oaks	64,062	3,011	1,204	5,120	54,727
Basswood	125	23	0	0	102
Elm	3,999	0	43	315	3,640
Other Eastern hardwoods	18,321	1,302	742	1,006	15,271
Total hardwoods	411,939	18,522	7,346	32,306	353,765
All species	986,210	23,557	22,862	157,267	782,523

Numbers in rows and columns may not sum to totals due to rounding.

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In 1997, industrial roundwood output from North Carolina's forests totaled 870 million cubic feet, 5 percent more than in 1995. Mill byproducts generated from primary manufacturers increased 3 percent to 309 million cubic feet. Almost all plant residues were used primarily for fuel and fiber products. Saw logs were the leading roundwood product at 423 million cubic feet; pulpwood ranked second at 355 million cubic feet; veneer logs were third at 60 million cubic feet. The number of primary processing plants declined from 320 in 1995 to 280 in 1997. Total receipts increased 4 percent to almost 771 million cubic feet.

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

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