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Foreword

This report contains the findings of a 1992 canvass of all primary wood-using plants in Virginia and presents changes in product output and residue use since 1989. It complements the Forest Inventory and Analysis 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 1992 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 Virginia was conducted in 1993 for 1992. Out-of-State mills known to be using logs or bolts harvested from Virginia timberland were also contacted. 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 1986 and are currently conducted every 3 years.

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

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the Virginia Department of Forestry in collecting mill data and to forest industry and mill managers for providing timber products information. The information in this report is based on responses from 88 percent of mills operating in 1992: 9 pulpmills, 9 veneer mills, 3 composite panel mills, 11 of the 14 mills manufacturing other industrial products, and 247 of the 278 sawmills. They accounted for 90 percent of the 1992 mill receipts.
Virginia’s Timber Industry: 
An Assessment of Timber Product Output and Use, 1992

Output of Industrial Timber Products

Between 1989 and 1992, the combined output of industrial roundwood timber products and plant byproducts increased nearly 2 percent from 588 to 599 million cubic feet. Timber product output (TPO) from roundwood was up 7,17 thousand cubic feet to 436 million cubic feet. Output from plant byproducts increased more than 10 million cubic feet to 163 million cubic feet, 27 percent of total output (table 1). Output of softwood roundwood products increased 7 percent to 220 million cubic feet. Softwoods accounted for 51 percent of Virginia’s total output of roundwood products. Hardwood roundwood production was down by 6 percent to 216 million cubic feet.

Pulpwood and saw logs were the principal roundwood products in 1992. Combined output for these two products amounted to nearly 395 million cubic feet, 90 percent of the State’s total roundwood output.

Saw Logs

Saw-log production remains the leading roundwood product in Virginia, accounting for 47 percent of the State’s total roundwood products output in 1992. Combined output of softwood and hardwood saw-log production in 1992 totaled 206 million cubic feet, down 8 percent since 1989. Output of softwood saw logs increased nearly 1 percent since 1989 and totaled 93 million cubic feet (506 million board feet). In contrast, hardwood saw-log production dropped 13 percent to 113 million cubic feet (689 million board feet). Hardwoods accounted for 58 percent of the saw-log production in 1976, 59 percent in 1989, and 55 percent in 1992 (fig. 1). Southern yellow pine accounted for 89 percent of the softwood saw logs harvested in the State in 1992, while hard hardwoods (mostly oaks) made up almost two-thirds of the hardwood saw-log output.

Figure 1 - Roundwood saw-log production, by species group and year.
Pulpwood

Pulpwood production was close behind saw logs in roundwood production. Output of pulpwood (including chipped roundwood) increased from 178 million cubic feet (2.4 million cords) in 1989 to 189 million cubic feet (2.5 million cords) in 1992. Pulpwood production accounted for 43 percent of the State’s total roundwood output. Both softwood and hardwood output increased between 1989 and 1992. Softwood output increased by 11 percent to 105 million cubic feet, while hardwood output was up 1 percent to 84 million cubic feet. Hardwood continues to provide a fairly equal share of total pulpwood production in Virginia compared with other Southeastern States (fig. 2). In 1976, hardwood accounted for 50 percent of the State’s pulpwood production, compared with 45 percent in 1992. Softwoods accounted for 55 percent of Virginia’s pulpwood production in 1992, up 2 percent from 1989.

Other Industrial Products

Roundwood harvested for other industrial uses such as poles, posts, mulch, firewood, and all other industrial products totaled 8 million cubic feet in 1992, almost a 20-percent increase since 1989. This large increase reflects a boost in production of posts in the State. Between 1989 and 1992, post production increased from 694,000 cubic feet to 5 million cubic feet.

Softwoods made up 45 percent of the other industrial product volume. Hardwood volume used for other industrial products increased nearly 42 percent from 3 to more than 4 million cubic feet. Roundwood used for other industrial products accounted for less than 2 percent of Virginia’s total TPO in 1992.

Veneer Logs

Output of veneer logs in 1992 totaled 18 million cubic feet, a 14-percent increase since 1989. Still, veneer production accounted for only 4 percent of the State’s total roundwood TPO in 1992. Softwoods continued to dominate the veneer industry in Virginia, with pine plywood the principal product. Output of softwood veneer logs increased 15 percent to 13 million cubic feet (80 million board feet). Softwoods accounted for 72 percent of the State’s veneer production, about the same as in 1989. Softwood veneer production has remained relatively stable since 1984 (fig. 3). Output of hardwood veneer logs increased 14 percent to 5 million cubic feet (32 million board feet). Southern yellow pine accounted for nearly all of the softwood roundwood harvested for veneer.

Composite Panels

Between 1989 and 1992, roundwood harvested from Virginia’s forests for composite panels increased 20 percent and totaled nearly 18 million cubic feet. Eighty percent of this volume was used in the production of oriented strand board (OSB) in Virginia mills and made up 4 percent of the State’s total roundwood TPO volume in 1992. Softwood output was up 43 percent to 7 million cubic feet and accounted for 41 percent of composite panel production. Hardwood production increased 8 percent to 9 million cubic feet. Yellow pine accounted for all of the softwood volume used in composite panels.

Number of Mills and Receipts

Total receipts at Virginia mills, which include roundwood harvested and retained in the State and roundwood imported from other States, declined by 2 percent to 470 million cubic feet (table 2). The number of primary roundwood-using plants in Virginia dropped from 369 in 1989 to 311 in 1992, a 16-percent decline (table 3). This continues a general downward trend since 1984.

Sawmills. Virginia had a net loss of 47 sawmills between 1989 and 1992. However, this decline masks many changes in the industry over the past 3 years: the startup of 29 sawmills with combined receipts of more than 50 million board feet and the closing of 76 sawmills with total receipts of 153 million board feet. Total saw-log receipts declined 17 million cubic feet to 210 million cubic feet, an 8-percent loss since 1989. In 1992, sawmill receipts accounted for 45 percent of total receipts. Softwood saw-log receipts remained stable at 93 million cubic feet, while those of hardwoods declined 13 percent to 117 million cubic feet. Yellow pine accounted for 89 percent of the State’s total softwood saw-log receipts. For the 276 mills currently operating, 7 out of 10 mills had receipts of less than 10 million board feet, while only 5 percent of the mills had receipts greater than 10 million board feet. These mills accounted for 38 percent of total receipts (table 4).
Figure 2—Roundwood pulpwood production, by species group end year.

Figure 3—Roundwood veneer-log production, by species group end year.
Roundwood Movement

Pulpmills. Nine pulpmills were operating and receiving roundwood in 1992, the same as in 1989. At the same time, the State’s total pulpwood receipts were up by 1 percent to 208 million cubic feet, and the 24-hour pulping capacity for these mills increased from 8,475 tons to 8,790 tons (Miller 1994). Receipts of round pulpwood in 1992 accounted for 44 percent of total receipts for all mills (table 5). Softwood receipts were up 6 percent to 98 million cubic feet, while hardwood receipts declined 2 percent to 110 million cubic feet. Hardwoods accounted for 53 percent of the pulpwood receipts.

Veneer Mills. The number of veneer mills operating in Virginia dropped from 10 to 9 between 1989 and 1992. Receipts at the remaining mills across the State increased nearly 2 million cubic feet, or about 11 percent, to 19 million cubic feet. All of the increase was in receipts of softwood veneer logs, which was up 18 percent to 16 million cubic feet. In contrast, hardwood veneer receipts were down 15 percent to 3 million cubic feet. All of the softwood veneer-log receipts were Southern yellow pine used to manufacture plywood. Veneer accounted for 4 percent of Virginia’s total receipts for all products.

Composite Panels Mills. Three composite panel mills were operating in Virginia in 1992, the same as in 1989. Total receipts for these mills were 24 million cubic feet, or 5 percent of the State’s total receipts. Softwood receipts for composite panel totaled 9 million cubic feet and hardwood receipts totaled 15 million cubic feet. Hardwoods accounted for 63 percent of the composite panel receipts.

Other Industrial Mills. The number of plants producing other industrial products declined from 24 to 14 since 1989. At the same time, receipts at the remaining mills totaled 8 million cubic feet, up nearly 2 million cubic feet since 1989. Current facilities include four pole mills, five post mills, four firewood processors, and one charcoal plant.

Note: To follow the logic of this section, the reader must understand that certain terms—namely, production, retained, export, import, and receipts—have specialized meanings and relationships unique to the Forest Inventory and Analysis Units across the country dealing with timber products output (fig. 4).

Virginia continues to be a net importer of industrial roundwood. In 1992, the State retained 384 million cubic feet, or 88 percent of its production (table 6). Imports from other States totaled 85 million cubic feet, a 4-percent increase from 1989. Exports to mills outside Virginia amounted to 52 million cubic feet, up 33 percent. Imports of all softwood products were nearly in balance with exports at 33 million cubic feet, while hardwood imports were more than 52 million cubic feet, exceeding exports by 34 million cubic feet.

The volume of whole trees cut or trees chipped in the woods and delivered to chip facilities for export overseas is not included in the estimate of export volume or roundwood production. Most of this volume is hardwood chips destined for wood fiber companies in Japan, Korea, and Taiwan. The result is an under-estimate of hardwood volume produced or exported from Virginia. The volume of hardwood chips exported from Southern U.S. ports in 1992 was more than 3.0 million green metric tons, or about 89 million cubic feet (West 19931, compared with 1 million green metric tons in 1990 (Colquitt 1991). Dealers active in the export market have indicated that roundwood from Virginia contributed at least 200,000 green metric tons (5.7 million cubic feet) to the 1992 total, equivalent to less than 3 percent of total hardwood production.

Roundwood pulpwood accounted for 57 percent of total known exports as well as 57 percent of total imports (table 7). Round pulpwood imports amounted to nearly 49 million cubic feet, or 19 million cubic feet more than was exported. Saw logs accounted for the next largest share, 24 percent, of the import total and accounted for 31 percent of the export total.

Saw Logs. Virginia retained 92 percent of its saw-log production for domestic manufacture (table 8), about the same proportion reported in 1989. However, the State remains a net importer of saw logs. About 21 million cubic feet of saw logs were imported, with softwoods making up 57 percent of the imports. Virginia mills received saw logs from North Carolina (73 percent), West Virginia (16 percent), Tennessee (6 percent), Kentucky (3 percent), Maryland (2 percent), and Delaware (negligible). Saw-log exports
Production = Retained + Exports
Receipts = Retained + Imports

Figure 4--Movement of roundwood exports and imports within the United States.
of more than 16 million cubic feet came entirely from North Carolina. Softwoods accounted for nearly 70 percent of the saw log exports.

Veneer Logs. Virginia retained 84 percent of its veneer-log production for processing at domestic veneer mills (table 9). Imports amounted to more than 4 million cubic feet, while exports totaled about 3 million cubic feet, making the State a net importer of roundwood veneer logs. Sources of the imports were North Carolina (91 percent), Pennsylvania (5 percent), and Maryland (4 percent), and a negligible portion coming from both West Virginia and foreign sources. Hardwoods accounted for most of the State’s veneer-log movement into other States; North Carolina was the recipient of all of this volume.

Pulpwood. Eighty-four percent of roundwood cut for pulpwood was retained for processing at Virginia pulp-mills (table 10). Imports of nearly 49 million cubic feet exceeded exports by 64 percent, making the State a net importer of pulpwood. Imports came primarily from North Carolina (67 percent), West Virginia (22 percent), Maryland (8 percent), Delaware (3 percent), and a negligible amount from Kentucky and Tennessee. Exports totaling 30 million cubic feet went to North Carolina (47 percent), Tennessee (20 percent), Maryland (18 percent), Pennsylvania (13 percent), and Georgia (2 percent).

Composite Panels. Almost 80 percent of the roundwood production harvested for composite panel was retained for processing at Virginia composite panel mills (table 11). Imports of almost 12 million cubic feet nearly doubled receipts and was nearly four times the amount exported out of State. Imports came primarily from North Carolina (98 percent), and Kentucky and Tennessee (1 percent each). Exports amounting to more than 3 million cubic feet went entirely to North Carolina.

Other Industrial. Virginia was also a net importer of roundwood used for other industrial products but only by a small margin (table 12). All of the roundwood harvested for other industrial products was retained for processing within the State and only 378,000 cubic feet was imported by Virginia mills. Most of the imports were hardwood and came from North Carolina.

Plant Byproducts

In 1992, processing of primary products in Virginia mills generated nearly 168 million cubic feet of wood and bark residues (table 13). Coarse residues from all primary products amounted to more than 69 million cubic feet, while bark volume totaled 49 million cubic feet. Collectively, sawdust and shavings made up 30 percent of total residues, or 50 million cubic feet. Of the mill residues generated, 56 percent was from the processing of hardwoods and 44 percent from softwoods. About 97 percent of the residues generated, both softwood and hardwood, became products or industrial fuel (table 14). Nearly 53 million cubic feet, or 77 percent of the coarse residues, were used for fiber products, while 5 million cubic feet were used for industrial fuel. The remainder were used for composite panels, saw products, particleboard, and other miscellaneous products. Most of the bark was used for industrial fuel or other miscellaneous products. Almost 61 percent of the sawdust and shavings was used for industrial fuel, 19 percent was used in the manufacture of particleboard, 12 percent for other miscellaneous products, and 2 percent for fiber products and composite panels.

Saw Logs. In 1992, sawmills generated more than 129 million cubic feet of mill residues accounting for 77 percent of the total residues produced. Most of the 62 million cubic feet of coarse residues from saw logs was used for fiber products. Bark and sawdust generated was 61 million cubic feet and was used mostly for industrial fuel and miscellaneous products. Shavings from dressed lumber totaled 6 million cubic feet.

Veneer Logs. Veneer mills generated nearly 10 million cubic feet of residues in 1992, about 6 percent of the State’s total primary mill residue volume. Nearly half of the 8 million cubic feet of coarse veneer residues was veneer cores, which were sawn into framing studs or landscape timbers. The slabs from these cores, along with other coarse residues, were chipped for use in fiber products. Sawdust and bark, totaling 4 million cubic feet, were used mostly for industrial fuel.

Pulpwood and Composite Panels. Bark was the only residue associated with roundwood pulpwood or composite panel mills. Bark volumes reported from the nine pulpmills and three composite panel mills in Virginia totaled 26 million cubic feet. Most was converted to fuel by the same mills that produced it. Bark from roundwood pulpwood and composite panel accounted for 54 percent of the total bark volume at all primary mills.

Other Industrial. Residues of all types from other industrial products totaled 3 million cubic feet, about 1 percent of Virginia’s total mill residue volume. Coarse residues of nearly 1 million cubic feet were used mainly for mulch, fuel, and fiber products. Sawdust and bark, totaling 2 million cubic feet, were used mostly for industrial fuel and mulch.
Regional Trends

Between 1989 and 1992, total output of industrial roundwood products increased or remained stable in the Coastal Plain and Southern and Northern Piedmont Regions of Virginia, while declining in the Mountain Regions. Output for all hardwood products declined substantially in all regions except the Southern Piedmont Region. Changes in output varied considerably by product and by region; however, for four of the five regions, hardwoods accounted for more than half of the total TPO.

Coastal Plain Region

Roundwood output from the 34 counties of the Coastal Plain Region totaled 175 million cubic feet in 1992, a 1-percent increase since 1989 (table 15). A 5-percent decline in hardwood output was totally offset by a 7-percent increase in softwood production. Output of hardwood saw logs dropped 14 percent to 31 million cubic feet, and hardwood veneer dropped 8 percent to slightly more than 1 million cubic feet. Nearly two-thirds of the total roundwood TPO was softwood; the largest proportion of any region in Virginia. Saw logs are still the leading product in the Coastal Plain Region, accounting for 46 percent of the region’s total TPO and for 39 percent of the State’s total roundwood saw-log output. Pulpwood production of 75 million cubic feet accounted for 43 percent of the region’s total roundwood output; this figure represents 39 percent of the State’s total pulpwood output. Sixty percent of the veneer logs harvested in Virginia during 1992 came from the Coastal Plain Region; however, only 17 percent of the State’s other industrial products came from this region. Of the 34 counties in this area, 1 had production greater than 20 million cubic feet, 3 had production between 10 and 20 million cubic feet, 10 had production between 5 and 10 million cubic feet, and 20 had production less than 5 million cubic feet (table 16). About two-thirds of the softwood production and half of the hardwood production came from the counties south of the James River. The Coastal Plain Region had 65 primary wood-using plants operating during 1992, 19 less than in 1989: 5 pulpmills, 50 sawmills, 3 veneer or plywood mills, 1 OSB mill, 5 pole or post mills, and 1 other miscellaneous mill (fig. 5). These mills processed 40 percent of the State’s total roundwood output.

Southern Piedmont Region

In 1992, more than 141 million cubic feet of roundwood were produced in the 17 counties making up the Southern Piedmont Region of Virginia. This total reflects an increase of nearly 3 percent between 1989 and 1992 (table 17). The region ranks second in the State in the production of roundwood products, with 32 percent of the total output. Softwood production increased 3 percent and accounted for 48 percent of the total roundwood output. Hardwood output for all products increased 2 percent, with the largest increases in composite panel and pulpwood production.

Pulpwood production of nearly 71 million cubic feet accounted for half of the total roundwood production for this area. The Southern Piedmont Region was the only region where pulpwood production exceeded saw-log production. Production of saw logs fell by 4 percent and accounted for 40 percent of the region’s total roundwood output. This region produced 27 percent of the State’s saw logs, 23 percent of the veneer logs, 37 percent of the pulpwood, 40 percent of the composite panel production, and 48 percent of the roundwood used for other industrial products. Six counties in the 17-county area had production greater than 10 million cubic feet, 7 counties had production between 5 and 10 million cubic feet, and 4 counties had production less than 5 million cubic feet (table 18).

Northern Piedmont Region

In 1992, roundwood output from the 18 counties making up the Northern Piedmont Region totaled 55 million cubic feet, up more than 4 percent from 1989 (table 19). The region ranks third in the State in roundwood production, with 13 percent of the total roundwood TPO. Softwood production increased almost 26 percent, and accounted for half of the total roundwood output for the area. Hardwood output for all products declined nearly 11 percent. Most of the decline was in the output of hardwood saw logs, down 22 percent, or more than 4 million cubic feet.

Saw-log production was down 7 percent to 27 million cubic feet. Still, saw logs were the leading product in the Northern Piedmont Region, accounting for nearly half of the region’s total roundwood output. Pulpwood accounted for another 45 percent of the total TPO. Pulpwood production increased by 10 percent from 22 to 25 million cubic feet. This region produced
Figure 5—Primary wood-using mills by regions.
13 percent of the State’s saw logs and pulpwood, and more than a third of the roundwood used for other industrial products. Of the 18 counties in the area, only 1 had production greater than 10 million cubic feet, 2 had production between 5 and 10 million cubic feet, and 15 had production less than 5 million cubic feet (table 20). The 49 mills operating in the Northern Piedmont Region in 1992 included 43 sawmills, 1 pulpmill, 3 post mills, and 2 other miscellaneous mills.

Northern Mountain Region

In 1992, roundwood output from the 14 counties making up the Northern Mountain Region declined 4 percent to 25 million cubic feet (table 21). The region produced 6 percent of the State’s total roundwood TPO. Softwood production was up 4 percent to 4 million cubic feet, accounting for only 15 percent of the total roundwood output. Total hardwood output was down nearly 6 percent, with declines recorded for all products except hardwood veneer.

Saw-log production dropped 7 percent to 13 million cubic feet, accounting for 52 percent of the total roundwood production for this area. Production of pulpwood remained stable at 12 million cubic feet and accounted for 47 percent of the region’s total roundwood output. This region produced 6 percent of the State’s saw logs and pulpwood and about 2 percent of the veneer logs. All of the 14 counties in this area had production less than 5 million cubic feet (table 22). The Northern Mountain Region had 38 primary wood-using plants operating in 1992, 6 less than in 1989: 35 sawmills, 1 veneer or plywood plant, 1 pulpmill, and 1 other miscellaneous mill.

Southern Mountain Region

Roundwood output from the 17 counties making up the Southern Mountain Region declined nearly 13 percent to 41 million cubic feet (table 23). The region produced 9 percent of the State’s total roundwood TPO. Total hardwood output dropped 14 percent, with the largest absolute declines in hardwood saw logs and composite panels. Hardwood production accounted for 81 percent of the total roundwood output. Softwood production declined 6 percent to 8 million cubic feet. Saw-log production fell by 16 percent to 29 million cubic feet but still accounted for 71 percent of the total roundwood production for this area. Production of pulpwood was up by 7 percent to more than 7 million cubic feet. All of this was due to an increase in hardwood output. Pulpwood accounted for another 18 percent of the region’s total roundwood output. This region produced 14 percent of the State’s saw logs, 4 percent of the pulpwood, and 13 percent of the veneer and composite panel production. Only 1 of the 17 counties in this area had production greater than 5 million cubic feet (table 24). The Southern Mountain Region had 59 primary wood-using plants operating in 1992, 11 less than in 1989: 57 sawmills, 1 veneer mill, and 1 composite panel mill.

Literature Cited


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), 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.

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

Imports. The volume of roundwood delivered to a mill or group of mills in a State 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.

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

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.

Pulplwood. 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 U.S. 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 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 minimum diameter inside bark of 8 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 Virginia this usually translates to 74.9 cubic feet of solid wood for pulpwood, since 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. Logs to be used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.
Conversion Factors

| Saw Logs | Softwood | 0.18282 cubic foot = 1 board foot |
|          |         | 5.47 board feet = 1 cubic foot   |
|          | Hardwood | 0.16393 cubic foot = 1 board foot |
|          |         | 6.10 board feet = 1 cubic foot   |

| Veneer Logs | Softwood | 0.16129 cubic foot = 1 board foot |
|             |         | 6.20 board feet = 1 cubic foot   |
|             | Hardwood | 0.16000 cubic foot = 1 board foot |
|             |         | 6.26 board feet = 1 cubic foot   |

| Pulpwood | Softwood | 73.3 cubic feet/cord |
|          | Hardwood | 76.1 cubic feet/cord |

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

*Cubic feet of solid wood per cord.
Table 1 -- Output of industrial timber products, by product, and species group, Virginia, 1989 and 1992

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<td>Hardwood</td>
<td>230,175</td>
<td>215,952</td>
<td>-14,223</td>
<td>-6.2</td>
</tr>
<tr>
<td>Total</td>
<td>435,677</td>
<td>436,394</td>
<td>717</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Byproduct output</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>67,939</td>
<td>72,196</td>
<td>4,257</td>
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<tr>
<td>Hardwood</td>
<td>64,396</td>
<td>90,363</td>
<td>5,967</td>
<td>8.1</td>
</tr>
<tr>
<td>Total</td>
<td>152,335</td>
<td>162,559</td>
<td>10,224</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total output</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>273,441</td>
<td>292,638</td>
<td>19,197</td>
<td>7.0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>314,573</td>
<td>306,315</td>
<td>-8,258</td>
<td>-2.6</td>
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<tr>
<td>Total</td>
<td>566,014</td>
<td>596,953</td>
<td>30,939</td>
<td>5.4</td>
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*Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (12,129,000 cubic feet in 1969 and 10,031,000 cubic feet in 1992).
<table>
<thead>
<tr>
<th>Product and species group</th>
<th>1989</th>
<th>1992</th>
<th>Change</th>
<th>Percent change</th>
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<tr>
<td><strong>Saw logs</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>92,998</td>
<td>92,844</td>
<td>-154</td>
<td>-0.2</td>
</tr>
<tr>
<td>Hardwood</td>
<td>134,332</td>
<td>117,042</td>
<td>-17,290</td>
<td>-12.9</td>
</tr>
<tr>
<td>Total</td>
<td>227,330</td>
<td>209,888</td>
<td>-17,444</td>
<td>-7.8</td>
</tr>
<tr>
<td><strong>Veneer logs</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>13,894</td>
<td>18,100</td>
<td>+2,406</td>
<td>+17.6</td>
</tr>
<tr>
<td>Hardwood</td>
<td>3,559</td>
<td>3,011</td>
<td>-548</td>
<td>-15.4</td>
</tr>
<tr>
<td>Total</td>
<td>17,253</td>
<td>19,111</td>
<td>+1,858</td>
<td>+10.8</td>
</tr>
<tr>
<td><strong>Pulpwood</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>92,740</td>
<td>98,198</td>
<td>+5,458</td>
<td>+5.9</td>
</tr>
<tr>
<td>Hardwood</td>
<td>112,895</td>
<td>110,148</td>
<td>-2,750</td>
<td>-2.4</td>
</tr>
<tr>
<td>Total</td>
<td>205,838</td>
<td>208,344</td>
<td>+2,708</td>
<td>+1.3</td>
</tr>
<tr>
<td><strong>Composite panels</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>8,326</td>
<td>9,024</td>
<td>+698</td>
<td>+8.4</td>
</tr>
<tr>
<td>Hardwood</td>
<td>14,830</td>
<td>15,405</td>
<td>+775</td>
<td>+5.3</td>
</tr>
<tr>
<td>Total</td>
<td>22,958</td>
<td>24,429</td>
<td>+1,473</td>
<td>+6.4</td>
</tr>
<tr>
<td><strong>Other industrial</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>3,357</td>
<td>3,814</td>
<td>+457</td>
<td>+13.6</td>
</tr>
<tr>
<td>Hardwood</td>
<td>2,738</td>
<td>4,253</td>
<td>+1,517</td>
<td>+55.4</td>
</tr>
<tr>
<td>Total</td>
<td>8,093</td>
<td>8,087</td>
<td>+1,974</td>
<td>+32.4</td>
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<tr>
<td><strong>All industrial</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>211,115</td>
<td>219,980</td>
<td>+8,865</td>
<td>+4.2</td>
</tr>
<tr>
<td>Hardwood</td>
<td>288,153</td>
<td>249,857</td>
<td>-18,298</td>
<td>-8.8</td>
</tr>
<tr>
<td>Total</td>
<td>479,288</td>
<td>489,837</td>
<td>-9,431</td>
<td>-2.0</td>
</tr>
</tbody>
</table>

*Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (14,374,000 cubic feet in 1989 and 11,201,000 cubic feet in 1992).
Table 3—Number of primary wood-using plants, by industry, Virginia, 1976—1992

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of primary wood-use plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sawmills</td>
<td>451</td>
<td>324</td>
<td>392</td>
<td>419</td>
<td>355</td>
<td>323</td>
<td>276</td>
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<tr>
<td>Veneer mills</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Pulp mills</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Composite panel mills</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other mills</td>
<td>15</td>
<td>16</td>
<td>24</td>
<td>22</td>
<td>19</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>All plants</td>
<td>465</td>
<td>362</td>
<td>437</td>
<td>462</td>
<td>394</td>
<td>369</td>
<td>311</td>
</tr>
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</table>

Table 4—Roundwood receipts, by sawmill size, Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Sawmill size class (million board feet)</th>
<th>1969</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of mills</td>
<td>Thousand board feet</td>
</tr>
<tr>
<td>&lt;1.0</td>
<td>100</td>
<td>26,479</td>
</tr>
<tr>
<td>1.0—4.99</td>
<td>144</td>
<td>363,666</td>
</tr>
<tr>
<td>5.0—9.99</td>
<td>55</td>
<td>375,165</td>
</tr>
<tr>
<td>&gt; 10</td>
<td>24</td>
<td>432,670</td>
</tr>
<tr>
<td>Total</td>
<td>323</td>
<td>1,200,222</td>
</tr>
</tbody>
</table>

*Based on volume received as opposed to actual capacity.*
Table 5.--Roundwood receipts, by species and type of mill, Virginia, 1992

<table>
<thead>
<tr>
<th>Type of mill</th>
<th>All mills</th>
<th>Veneer mills</th>
<th>OSB and panels*</th>
<th>Pulpmillsb</th>
<th>Other mills</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Species</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow pine</td>
<td>109,396</td>
<td>82,603</td>
<td>16,048</td>
<td>9,024</td>
<td>NA</td>
</tr>
<tr>
<td>Other softwood</td>
<td>12,386</td>
<td>10,241</td>
<td>0</td>
<td>31</td>
<td>NA</td>
</tr>
<tr>
<td>Unclassified</td>
<td>98,198</td>
<td>0</td>
<td>0</td>
<td>98,198</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>219,966</td>
<td>92,844</td>
<td>16,648</td>
<td>9,024</td>
<td>98,198</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard hardwoods</td>
<td>55,418</td>
<td>39,976</td>
<td>493</td>
<td>552</td>
<td>14,397</td>
</tr>
<tr>
<td>Soft hardwoods</td>
<td>84,283</td>
<td>77,066</td>
<td>0</td>
<td>1,956</td>
<td>1,008</td>
</tr>
<tr>
<td>Unclassified</td>
<td>110,156</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>110,146</td>
</tr>
<tr>
<td>Total</td>
<td>249,857</td>
<td>117,042</td>
<td>493</td>
<td>2,518</td>
<td>15,405</td>
</tr>
<tr>
<td>All species</td>
<td>469,837</td>
<td>209,886</td>
<td>16,541</td>
<td>2,570</td>
<td>24,429</td>
</tr>
</tbody>
</table>

NA = not applicable.

*OSB = oriented strand board.

bOnly collected by softwood and hardwood and includes roundwood chipped.
Table 6—Industri al roundwood movement, by year and species group, Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Exported to other States</th>
<th>Retained</th>
<th>Imported from other States</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousand cubic feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOFTWOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>205,502</td>
<td>22,170</td>
<td>163,332</td>
<td>27,763</td>
<td>211,115</td>
</tr>
<tr>
<td>1992</td>
<td>220,442</td>
<td>33,599</td>
<td>166,643</td>
<td>33,137</td>
<td>219,960</td>
</tr>
<tr>
<td></td>
<td>HARDWOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>230,175</td>
<td>16,790</td>
<td>213,365</td>
<td>54,768</td>
<td>266,153</td>
</tr>
<tr>
<td>1992</td>
<td>215,952</td>
<td>16,412</td>
<td>197,540</td>
<td>52,317</td>
<td>249,857</td>
</tr>
<tr>
<td></td>
<td>AU SPECIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>435,677</td>
<td>36,960</td>
<td>396,717</td>
<td>62,551</td>
<td>479,266</td>
</tr>
<tr>
<td>1992</td>
<td>436,394</td>
<td>52,011</td>
<td>384,383</td>
<td>65,454</td>
<td>469,837</td>
</tr>
</tbody>
</table>
Table 7—Industrial roundwood movement, by product and species group, Virginia, 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>Production</th>
<th>Exported to other States</th>
<th>Retained</th>
<th>Imported from other States</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousand cubic feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Saw logs</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Softwood</td>
<td>92,552</td>
<td>11,394</td>
<td>01,158</td>
<td>11,686</td>
<td>92,844</td>
</tr>
<tr>
<td>Hardwood</td>
<td>113,003</td>
<td>4,919</td>
<td>108,084</td>
<td>0,950</td>
<td>117,042</td>
</tr>
<tr>
<td>Total</td>
<td>205,555</td>
<td>16,313</td>
<td>189,242</td>
<td>20,644</td>
<td>209,886</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>12,851</td>
<td>6</td>
<td>12,845</td>
<td>3,255</td>
<td>16,100</td>
</tr>
<tr>
<td>Hardwood</td>
<td>5,054</td>
<td>2,905</td>
<td>2,149</td>
<td>662</td>
<td>3,011</td>
</tr>
<tr>
<td>Total</td>
<td>17,905</td>
<td>2,911</td>
<td>14,994</td>
<td>4,117</td>
<td>19,111</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>105,052</td>
<td>20,610</td>
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<td>13,756</td>
<td>98,198</td>
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<td>8,999</td>
<td>75,360</td>
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<td>110,146</td>
</tr>
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<td>Total</td>
<td>189,411</td>
<td>29,609</td>
<td>159,802</td>
<td>48,542</td>
<td>208,344</td>
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<td>Composite panels</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>6,546</td>
<td>1,569</td>
<td>4,957</td>
<td>4,067</td>
<td>9,024</td>
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<tr>
<td>Hardwood</td>
<td>9,288</td>
<td>1,589</td>
<td>7,699</td>
<td>7,706</td>
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</tr>
<tr>
<td>Total</td>
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<td>3,178</td>
<td>12,656</td>
<td>11,773</td>
<td>24,429</td>
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<td>Other industrial</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>3,441</td>
<td>373</td>
<td>3,614</td>
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<tr>
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<td>4,253</td>
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<tr>
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<td>7,689</td>
<td>370</td>
<td>8,067</td>
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<td>All products</td>
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</tr>
<tr>
<td>Softwood</td>
<td>220,442</td>
<td>33,599</td>
<td>186,843</td>
<td>33,137</td>
<td>219,980</td>
</tr>
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<td>Hardwood</td>
<td>215,952</td>
<td>18,412</td>
<td>197,540</td>
<td>52,317</td>
<td>249,857</td>
</tr>
<tr>
<td>Total</td>
<td>436,394</td>
<td>52,011</td>
<td>384,383</td>
<td>65,454</td>
<td>469,837</td>
</tr>
</tbody>
</table>

*Includes roundwood chipped.
### Table 8—Saw-log volume, by destination, source, and species group, Virginia, 1992

<table>
<thead>
<tr>
<th>Species group</th>
<th>All species</th>
<th>Softwood</th>
<th>Hardwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thousand cubic feet</td>
<td>169,242</td>
<td>81,158</td>
<td>108,084</td>
</tr>
</tbody>
</table>

**Exports to:**

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina</td>
<td>16,313</td>
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<tr>
<td></td>
<td>11,394</td>
</tr>
<tr>
<td></td>
<td>4,919</td>
</tr>
</tbody>
</table>

**Imports from:**

<table>
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<th>Thousand cubic feet</th>
</tr>
</thead>
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<td>Delaware</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>30</td>
</tr>
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<td>Kentucky</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>542</td>
</tr>
<tr>
<td>Maryland</td>
<td>351</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
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<td></td>
<td>351</td>
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<td>North Carolina</td>
<td>15,183</td>
</tr>
<tr>
<td></td>
<td>11,347</td>
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<td>3,838</td>
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<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td></td>
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</tr>
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<td>West Virginia</td>
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<tr>
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<td>279</td>
</tr>
<tr>
<td></td>
<td>2,964</td>
</tr>
<tr>
<td>Total</td>
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</tr>
<tr>
<td></td>
<td>11,686</td>
</tr>
<tr>
<td></td>
<td>8,958</td>
</tr>
</tbody>
</table>

### Table 9—Veneer volume, by destination, source, and species group, Virginia, 1992

<table>
<thead>
<tr>
<th>Species group</th>
<th>All species</th>
<th>Softwood</th>
<th>Hardwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thousand cubic feet</td>
<td>14,994</td>
<td>12,845</td>
<td>2,149</td>
</tr>
</tbody>
</table>

**Exports to:**

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina</td>
<td>2,911</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2,905</td>
</tr>
</tbody>
</table>

**Imports from:**

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maryland</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>152</td>
</tr>
<tr>
<td>North Carolina</td>
<td>3,742</td>
</tr>
<tr>
<td></td>
<td>2,245</td>
</tr>
<tr>
<td></td>
<td>497</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>203</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>193</td>
</tr>
<tr>
<td>We&amp;Virginia</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Foreign</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>4,117</td>
</tr>
<tr>
<td></td>
<td>3,255</td>
</tr>
<tr>
<td></td>
<td>882</td>
</tr>
</tbody>
</table>
Table 10 -- Pulpwood volume, by destination, source, and species group, Virginia, 1992*

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>All species</th>
<th>Softwood</th>
<th>Hardwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia (retained)</td>
<td>159,502</td>
<td>94,442</td>
<td>75,380</td>
</tr>
</tbody>
</table>

**Exports to:**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Hardwood</th>
<th>Softwood</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>619</td>
<td>0</td>
<td>619</td>
</tr>
<tr>
<td>Maryland</td>
<td>5,285</td>
<td>4,210</td>
<td>1,075</td>
</tr>
<tr>
<td>North Carolina</td>
<td>14,065</td>
<td>12,700</td>
<td>1,365</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>3,853</td>
<td>3,700</td>
<td>153</td>
</tr>
<tr>
<td>Tennessee</td>
<td>5,787</td>
<td>0</td>
<td>5,707</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29,609</td>
<td>20,610</td>
<td>8,999</td>
</tr>
</tbody>
</table>

**Imports from:**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Softwood</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>1,336</td>
<td>412</td>
</tr>
<tr>
<td>Maryland</td>
<td>2,313</td>
<td>1,525</td>
</tr>
<tr>
<td>Kentucky</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>North Caroline</td>
<td>9,484</td>
<td>22,941</td>
</tr>
<tr>
<td>Tennessee</td>
<td>172</td>
<td>0</td>
</tr>
<tr>
<td>West Virginia</td>
<td>613</td>
<td>9,901</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>13,755</td>
<td>34,786</td>
</tr>
</tbody>
</table>

*Includes roundwood chipped that was delivered to non-pulpmills and then chipped and sold to pulpmills.

Table 11 -- Composite panel volume, by destination, source, and species group, Virginia, 1992

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>All species</th>
<th>Softwood</th>
<th>Hardwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia (retained)</td>
<td>12,656</td>
<td>4,957</td>
<td>7,699</td>
</tr>
</tbody>
</table>

**Exports to:**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Softwood</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina</td>
<td>3,178</td>
<td>1,589</td>
</tr>
</tbody>
</table>

**Imports from:**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Thousand cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky</td>
<td>172</td>
</tr>
<tr>
<td>North Carolina</td>
<td>4,067</td>
</tr>
<tr>
<td>Tennessee</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11,773</td>
</tr>
</tbody>
</table>

19
Table 12-- Other industrial volume, by destination, source, and species group, Virginia, 1992

<table>
<thead>
<tr>
<th>Destination and source</th>
<th>Species group</th>
<th>All species</th>
<th>Softwood</th>
<th>Hardwood</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousand cubic feet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia (retained)</td>
<td>7,669</td>
<td>3,441</td>
<td>4,246</td>
<td></td>
</tr>
<tr>
<td>Exports to:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Imports from:</td>
<td>376</td>
<td>373</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* includes poles, posts, mulch, firewood, log homes, charcoal, and all other industrial mills.
Table 13—Primary mill residue volume, by roundwood type, specks group, and residue type, Virginia, 1992

<table>
<thead>
<tr>
<th>Roundwood type and species group</th>
<th>All residue types</th>
<th>Bark</th>
<th>Coarse</th>
<th>Sawdust</th>
<th>Shavings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousand cubic feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saw logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>52,043</td>
<td>6,164</td>
<td>24,396</td>
<td>16,450</td>
<td>5,013</td>
</tr>
<tr>
<td>Hardwood</td>
<td>76,497</td>
<td>13,397</td>
<td>37,517</td>
<td>25,091</td>
<td>492</td>
</tr>
<tr>
<td>Total</td>
<td>126,540</td>
<td>19,561</td>
<td>61,914</td>
<td>41,541</td>
<td>5,505</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>9,070</td>
<td>1,219</td>
<td>5,637</td>
<td>2,020</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>674</td>
<td>254</td>
<td>410</td>
<td>210</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>9,950</td>
<td>1,473</td>
<td>6,247</td>
<td>2,230</td>
<td>0</td>
</tr>
<tr>
<td>Pulpwood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>9,359</td>
<td>9,359</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>13,504</td>
<td>13,504</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>22,863</td>
<td>22,863</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>1,502</td>
<td>1,502</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>2,327</td>
<td>2,327</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>3,829</td>
<td>3,829</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other industrial'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>1,175</td>
<td>982</td>
<td>193</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>1,448</td>
<td>345</td>
<td>792</td>
<td>311</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2,623</td>
<td>1,327</td>
<td>985</td>
<td>311</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>73,155</td>
<td>19,246</td>
<td>30,426</td>
<td>16,470</td>
<td>5,013</td>
</tr>
<tr>
<td>Hardwood</td>
<td>94,650</td>
<td>29,827</td>
<td>36,719</td>
<td>25,612</td>
<td>492</td>
</tr>
<tr>
<td>Total</td>
<td>167,605</td>
<td>49,073</td>
<td>69,145</td>
<td>44,082</td>
<td>5,505</td>
</tr>
</tbody>
</table>

* 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, Virginä, 1999 and 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>All types</th>
<th>Bark</th>
<th>Coarse</th>
<th>Sawdust</th>
<th>Shavings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>25,661</td>
<td>25,722</td>
<td>0</td>
<td>0</td>
<td>24,521</td>
</tr>
<tr>
<td>Hardwood</td>
<td>30,144</td>
<td>28,118</td>
<td>0</td>
<td>0</td>
<td>29,222</td>
</tr>
<tr>
<td>Total</td>
<td>55,805</td>
<td>53,840</td>
<td>0</td>
<td>0</td>
<td>53,743</td>
</tr>
<tr>
<td>Particleboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>5,674</td>
<td>8,743</td>
<td>0</td>
<td>0</td>
<td>402</td>
</tr>
<tr>
<td>Hardwood</td>
<td>1,963</td>
<td>1,907</td>
<td>0</td>
<td>0</td>
<td>576</td>
</tr>
<tr>
<td>Total</td>
<td>7,637</td>
<td>10,650</td>
<td>0</td>
<td>0</td>
<td>461</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>120</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>0</td>
<td>1,621</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>3,741</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sawn products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>2,192</td>
<td>3,101</td>
<td>0</td>
<td>29</td>
<td>2,182</td>
</tr>
<tr>
<td>Hardwood</td>
<td>0</td>
<td>95</td>
<td>0</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2,192</td>
<td>3,196</td>
<td>0</td>
<td>52</td>
<td>2,192</td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>24,388</td>
<td>24,531</td>
<td>10,527</td>
<td>11,305</td>
<td>939</td>
</tr>
<tr>
<td>Hardwood</td>
<td>37,450</td>
<td>39,832</td>
<td>17,098</td>
<td>17,524</td>
<td>4,223</td>
</tr>
<tr>
<td>Total</td>
<td>61,828</td>
<td>64,363</td>
<td>27,625</td>
<td>28,929</td>
<td>5,162</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>16,013</td>
<td>9,979</td>
<td>7,058</td>
<td>7,582</td>
<td>19</td>
</tr>
<tr>
<td>Hardwood</td>
<td>14,871</td>
<td>16,790</td>
<td>10,190</td>
<td>11,354</td>
<td>956</td>
</tr>
<tr>
<td>Total</td>
<td>24,884</td>
<td>26,769</td>
<td>17,248</td>
<td>18,936</td>
<td>975</td>
</tr>
<tr>
<td>Not used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>1,401</td>
<td>959</td>
<td>2%</td>
<td>250</td>
<td>577</td>
</tr>
<tr>
<td>Hardwood</td>
<td>5,447</td>
<td>4,287</td>
<td>1,029</td>
<td>926</td>
<td>1,526</td>
</tr>
<tr>
<td>Total</td>
<td>6,848</td>
<td>5,246</td>
<td>1,295</td>
<td>1,176</td>
<td>2,103</td>
</tr>
<tr>
<td>All products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>69,340</td>
<td>73,153</td>
<td>17,851</td>
<td>19,248</td>
<td>28,403</td>
</tr>
<tr>
<td>Hardwood</td>
<td>86,865</td>
<td>94,650</td>
<td>28,317</td>
<td>29,027</td>
<td>36,590</td>
</tr>
<tr>
<td>Total</td>
<td>159,205</td>
<td>167,805</td>
<td>46,168</td>
<td>48,275</td>
<td>64,996</td>
</tr>
</tbody>
</table>

Thousand cubic feet
## Roundwood timber products output, by product and species group, Coastal Plain of Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>Year</th>
<th>1989</th>
<th>1992</th>
<th>Change</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>saw logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>softwood</td>
<td></td>
<td>50,474</td>
<td>49,110</td>
<td>-1,364</td>
<td>-2.7</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>38,881</td>
<td>31,474</td>
<td>-7,407</td>
<td>-14.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>87,155</td>
<td>80,584</td>
<td>-6,571</td>
<td>-7.5</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>softwood</td>
<td></td>
<td>8,453</td>
<td>9,828</td>
<td>+1,375</td>
<td>+13.9</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>1,211</td>
<td>1,118</td>
<td>-93</td>
<td>-7.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9,664</td>
<td>10,946</td>
<td>+1,282</td>
<td>+13.2</td>
</tr>
<tr>
<td>Pulpwood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td>41,333</td>
<td>50,486</td>
<td>+9,153</td>
<td>+22.1</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>25,432</td>
<td>24,228</td>
<td>-1,204</td>
<td>-4.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>66,765</td>
<td>74,714</td>
<td>+7,949</td>
<td>+11.9</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>softwood</td>
<td></td>
<td>3,409</td>
<td>3,596</td>
<td>+187</td>
<td>+5.4</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>3,118</td>
<td>3,542</td>
<td>+424</td>
<td>+13.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6,525</td>
<td>7,138</td>
<td>+613</td>
<td>+9.3</td>
</tr>
<tr>
<td>Other industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td>2,099</td>
<td>475</td>
<td>-1,624</td>
<td>-77.4</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>707</td>
<td>831</td>
<td>+124</td>
<td>+17.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2,806</td>
<td>1,306</td>
<td>-1,500</td>
<td>-53.5</td>
</tr>
<tr>
<td>All industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td>105,788</td>
<td>113,399</td>
<td>+7,611</td>
<td>+7.2</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td>67,147</td>
<td>61,191</td>
<td>-5,956</td>
<td>-8.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>172,935</td>
<td>174,584</td>
<td>+1,649</td>
<td>+1.0</td>
</tr>
</tbody>
</table>

*Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (8,290,000 cubic feet in 1989 and 5,889,000 cubic feet in 1992).*
Table 16 -- Roundwood timber products output, by county, product and species group, Coastal Plain of Virginia, 1992

<table>
<thead>
<tr>
<th>County</th>
<th>All products</th>
<th>Saw logs</th>
<th>Veneer logs</th>
<th>Composite board</th>
<th>Pulpwood</th>
<th>Other industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
</tr>
<tr>
<td>Accomack</td>
<td>1,967</td>
<td>450</td>
<td>990</td>
<td>218</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brunswick</td>
<td>16,760</td>
<td>6,534</td>
<td>4,557</td>
<td>2,606</td>
<td>1,284</td>
<td>49</td>
</tr>
<tr>
<td>Caroline</td>
<td>5,082</td>
<td>3,233</td>
<td>4,217</td>
<td>2,848</td>
<td>0</td>
<td>81</td>
</tr>
<tr>
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<td>2,345</td>
<td>1,568</td>
<td>919</td>
<td>706</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>1,015</td>
<td>960</td>
<td>421</td>
<td>180</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>6,002</td>
<td>2,047</td>
<td>3,062</td>
<td>1,330</td>
<td>802</td>
<td>43</td>
</tr>
<tr>
<td>Dinwiddie</td>
<td>9,002</td>
<td>3,904</td>
<td>2,684</td>
<td>2,076</td>
<td>802</td>
<td>55</td>
</tr>
<tr>
<td>Essex</td>
<td>2,715</td>
<td>2,259</td>
<td>1,207</td>
<td>1,300</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gloucester</td>
<td>2,283</td>
<td>1,305</td>
<td>795</td>
<td>783</td>
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<td>0</td>
</tr>
<tr>
<td>Greenville</td>
<td>5,123</td>
<td>3,455</td>
<td>2,439</td>
<td>1,235</td>
<td>1,284</td>
<td>239</td>
</tr>
<tr>
<td>Hampton</td>
<td>72</td>
<td>0</td>
<td>65</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hanover</td>
<td>2,970</td>
<td>2,150</td>
<td>1,600</td>
<td>1,211</td>
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<td>87</td>
</tr>
<tr>
<td>Henrico</td>
<td>704</td>
<td>340</td>
<td>342</td>
<td>198</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Isle of Wight</td>
<td>4,055</td>
<td>2,095</td>
<td>1,981</td>
<td>752</td>
<td>652</td>
<td>43</td>
</tr>
<tr>
<td>James City</td>
<td>303</td>
<td>514</td>
<td>140</td>
<td>187</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>King and Queen</td>
<td>4,247</td>
<td>2,247</td>
<td>1,831</td>
<td>921</td>
<td>0</td>
<td>63</td>
</tr>
<tr>
<td>King George</td>
<td>200</td>
<td>1,724</td>
<td>1,155</td>
<td>1,683</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>King William</td>
<td>2,037</td>
<td>1,445</td>
<td>891</td>
<td>1,226</td>
<td>0</td>
<td>120</td>
</tr>
<tr>
<td>Lancaster</td>
<td>734</td>
<td>825</td>
<td>415</td>
<td>310</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mathews</td>
<td>765</td>
<td>177</td>
<td>702</td>
<td>132</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middlesex</td>
<td>692</td>
<td>864</td>
<td>376</td>
<td>359</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Kent</td>
<td>2,988</td>
<td>2,962</td>
<td>810</td>
<td>1,244</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>Newport News</td>
<td>330</td>
<td>50</td>
<td>175</td>
<td>49</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Northampton</td>
<td>366</td>
<td>280</td>
<td>240</td>
<td>275</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Northumberland</td>
<td>653</td>
<td>785</td>
<td>464</td>
<td>534</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Prince George</td>
<td>5,299</td>
<td>2,483</td>
<td>1,525</td>
<td>1,145</td>
<td>602</td>
<td>30</td>
</tr>
<tr>
<td>Richmond</td>
<td>2,690</td>
<td>1,082</td>
<td>814</td>
<td>301</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Southampton</td>
<td>10,549</td>
<td>6,565</td>
<td>5,202</td>
<td>2,936</td>
<td>1,284</td>
<td>120</td>
</tr>
<tr>
<td>Suffolk</td>
<td>4,703</td>
<td>2,017</td>
<td>2,483</td>
<td>488</td>
<td>802</td>
<td>24</td>
</tr>
<tr>
<td>Surry</td>
<td>6,220</td>
<td>3,148</td>
<td>3,073</td>
<td>1,399</td>
<td>802</td>
<td>24</td>
</tr>
<tr>
<td>Sussex</td>
<td>8,223</td>
<td>3,178</td>
<td>1,824</td>
<td>1,458</td>
<td>962</td>
<td>49</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>314</td>
<td>107</td>
<td>208</td>
<td>33</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Westmoreland</td>
<td>1,766</td>
<td>1,634</td>
<td>1,034</td>
<td>1,258</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>York</td>
<td>111</td>
<td>103</td>
<td>85</td>
<td>84</td>
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<td>0</td>
</tr>
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</table>

All counties 113,399 81,191 49,110 31,474 9,028 1,118 3,696 3,542 50,488 24,228 475 831

*Includes roundwood that was delivered to non—pulp mills and then chipped and sold to pulp mills (5,889,000 cubic feet in 1992).
Table 17—Roundwood timber products output, by product and species group, Southern Piedmont of Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>Year</th>
<th>Percent change</th>
<th>1989</th>
<th>1992</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thousand cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saw logs</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>24,185</td>
<td>24,299</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>33,868</td>
<td>31,701</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>58,053</td>
<td>56,000</td>
<td>-2,053</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>2,743</td>
<td>3,220</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>930</td>
<td>856</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>3,873</td>
<td>4,078</td>
<td>+403</td>
</tr>
<tr>
<td>Pulpwood*</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>37,040</td>
<td>36,081</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>33,039</td>
<td>34,847</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>70,079</td>
<td>70,928</td>
<td>+849</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>1,163</td>
<td>2,346</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>1,799</td>
<td>4,055</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>2,962</td>
<td>6,401</td>
<td>+3,439</td>
</tr>
<tr>
<td>Other industrial</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>923</td>
<td>2,187</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>1,755</td>
<td>1,508</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>2,878</td>
<td>3,695</td>
<td>+817</td>
</tr>
<tr>
<td>All industrial</td>
<td></td>
<td></td>
<td>Softwood</td>
<td>66,054</td>
<td>68,133</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hardwood</td>
<td>71,391</td>
<td>72,967</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>137,445</td>
<td>141,190</td>
<td>+3,755</td>
</tr>
</tbody>
</table>

*Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (2,355,000 cubic feet in 1989 and 2,793,000 cubic feet in 1992).
Table 18—Roundwood timber products output, by county, product and species group, Southern Piedmont of Virginia, 1992

<table>
<thead>
<tr>
<th>County</th>
<th>All products</th>
<th>Saw logs</th>
<th>Veneer logs</th>
<th>Composite board</th>
<th>Pulpwood</th>
<th>Other Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
</tr>
<tr>
<td>Amelia</td>
<td>6,350</td>
<td>6,741</td>
<td>3,370</td>
<td>2,463</td>
<td>802</td>
<td>50</td>
</tr>
<tr>
<td>Appomattox</td>
<td>4,896</td>
<td>3,877</td>
<td>758</td>
<td>1,056</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Bedford</td>
<td>1,665</td>
<td>6,061</td>
<td>859</td>
<td>535</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Buckingham</td>
<td>9,132</td>
<td>5,375</td>
<td>1,866</td>
<td>1,694</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Campbell</td>
<td>6,762</td>
<td>3,458</td>
<td>2,119</td>
<td>1,059</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
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<td>2,772</td>
<td>6,049</td>
<td>999</td>
<td>3,406</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Cumberland</td>
<td>2,419</td>
<td>2,970</td>
<td>95</td>
<td>747</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
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<td>2,219</td>
<td>4,784</td>
<td>602</td>
<td>2,321</td>
<td>0</td>
<td>1%</td>
</tr>
<tr>
<td>Halifax</td>
<td>4,882</td>
<td>5,959</td>
<td>3,743</td>
<td>2,751</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Henry</td>
<td>1,066</td>
<td>2,081</td>
<td>539</td>
<td>1,566</td>
<td>0</td>
<td>73</td>
</tr>
<tr>
<td>Lunenburg</td>
<td>3,876</td>
<td>4,174</td>
<td>1,098</td>
<td>1,719</td>
<td>802</td>
<td>30</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>5,976</td>
<td>4,700</td>
<td>2,874</td>
<td>1,807</td>
<td>813</td>
<td>30</td>
</tr>
<tr>
<td>Nottoway</td>
<td>5,099</td>
<td>2,603</td>
<td>2,246</td>
<td>988</td>
<td>802</td>
<td>50</td>
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<td>Patrick</td>
<td>951</td>
<td>9,331</td>
<td>557</td>
<td>2,645</td>
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<td>244</td>
</tr>
<tr>
<td>Pittsylvania</td>
<td>5,249</td>
<td>6,658</td>
<td>2,375</td>
<td>2,085</td>
<td>0</td>
<td>48</td>
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<td>948</td>
<td>282</td>
<td>555</td>
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<td>89</td>
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<td>1,800</td>
<td>117</td>
<td>611</td>
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<td>6</td>
</tr>
<tr>
<td>All counties</td>
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<td>72,967</td>
<td>24.2%</td>
<td>31,701</td>
<td>3,220</td>
<td>856</td>
</tr>
</tbody>
</table>

- Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulp mills (2,783,000 cubic feet in 1992).
<table>
<thead>
<tr>
<th>Product and species group</th>
<th>Year</th>
<th>Percent change</th>
<th>1989</th>
<th>1992</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saw logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td></td>
<td>8,014</td>
<td>10,528</td>
<td>+2,512</td>
</tr>
<tr>
<td>Hardwood</td>
<td></td>
<td></td>
<td>20,833</td>
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<td>-4,472</td>
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<tr>
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<td></td>
<td></td>
<td>28,847</td>
<td>28,887</td>
<td>-1,960</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td></td>
<td>0</td>
<td>3</td>
<td>+3</td>
</tr>
<tr>
<td>Hardwood</td>
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<td>558</td>
<td>433</td>
<td>-123</td>
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<td>Total</td>
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<td></td>
<td>558</td>
<td>438</td>
<td>-120</td>
</tr>
<tr>
<td>Pulpwood</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
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<td></td>
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<td>8,752</td>
<td>-220</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>22,289</td>
<td>24,814</td>
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</tr>
<tr>
<td>Composite panels</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
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<td></td>
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<td>83</td>
<td>+83</td>
</tr>
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<td>45</td>
<td>+45</td>
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<td>Total</td>
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</tr>
<tr>
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<td>348</td>
<td>1,882</td>
<td>+1,534</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>881</td>
<td>2,841</td>
<td>+1,960</td>
</tr>
<tr>
<td>All industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td></td>
<td></td>
<td>21,828</td>
<td>27,233</td>
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<tr>
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<td>54,688</td>
<td>+2,155</td>
</tr>
</tbody>
</table>

--- negligible.

*Includes roundwood that was delivered to non-pulpmill and then chipped and sold to pulpmills (909,000 cubic feet in 1989 and 499,000 cubic feet in 1992).
Table 20—Roundwood timber products output, by county, product and species group, Northern Piedmont of Virginia, 1992

<table>
<thead>
<tr>
<th>County</th>
<th>All products</th>
<th>Saw logs</th>
<th>Veneer logs</th>
<th>Composite board</th>
<th>Pulpwood$^a$</th>
<th>Other Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
</tr>
<tr>
<td>Albermarle</td>
<td>2,333</td>
<td>2,379</td>
<td>1,324</td>
<td>1,364</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Amherst</td>
<td>1,614</td>
<td>4,365</td>
<td>883</td>
<td>3,119</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Arlington</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Culpeper</td>
<td>885</td>
<td>1,439</td>
<td>1%</td>
<td>1,209</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Fairfax</td>
<td>431</td>
<td>205</td>
<td>0</td>
<td>70</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fauquier</td>
<td>3%</td>
<td>1,030</td>
<td>60</td>
<td>889</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Fluvanna</td>
<td>3,483</td>
<td>1,491</td>
<td>1.2%</td>
<td>1,967</td>
<td>0</td>
<td>73</td>
</tr>
<tr>
<td>Goochland</td>
<td>1,590</td>
<td>900</td>
<td>485</td>
<td>454</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Greene</td>
<td>282</td>
<td>441</td>
<td>65</td>
<td>437</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loudoun</td>
<td>107</td>
<td>1,050</td>
<td>24</td>
<td>970</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>Louisa</td>
<td>9,089</td>
<td>4,223</td>
<td>4,258</td>
<td>1,973</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Madison</td>
<td>492</td>
<td>1,334</td>
<td>46</td>
<td>1,252</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Nelson</td>
<td>1,846</td>
<td>4,076</td>
<td>219</td>
<td>1,277</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>Orange</td>
<td>1,336</td>
<td>1,358</td>
<td>795</td>
<td>954</td>
<td>0</td>
<td>69</td>
</tr>
<tr>
<td>Prince William</td>
<td>277</td>
<td>304</td>
<td>109</td>
<td>116</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rapheenhock</td>
<td>27</td>
<td>1,114</td>
<td>27</td>
<td>1,080</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Spotsylvania</td>
<td>2,320</td>
<td>920</td>
<td>616</td>
<td>4%</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Stafford</td>
<td>734</td>
<td>788</td>
<td>300</td>
<td>392</td>
<td>0</td>
<td>12</td>
</tr>
</tbody>
</table>

All counties 27,233 27,453 10,526 16,361 3 433 63 45 15,862 8,752 779 1,862

$^a$ Includes roundwood that was delivered to non-pulp mills and then chipped and sold to pulp mills (489,000 cubic feet in 1992).
Table 21 — Roundwood timber products output, by product and species group, Northern Mountains of Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>Year</th>
<th>Change (thousand cubic feet)</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1989</td>
<td>1992</td>
<td></td>
</tr>
<tr>
<td>Saw logs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>1,273</td>
<td>1,366</td>
<td>+95</td>
</tr>
<tr>
<td>Hardwood</td>
<td>12,995</td>
<td>11,846</td>
<td>-1,149</td>
</tr>
<tr>
<td>Total</td>
<td>14,268</td>
<td>13,214</td>
<td>-1,054</td>
</tr>
<tr>
<td>Veneer fogs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>2</td>
<td>+2</td>
</tr>
<tr>
<td>Hardwood</td>
<td>226</td>
<td>283</td>
<td>+57</td>
</tr>
<tr>
<td>Total</td>
<td>226</td>
<td>205</td>
<td>+59</td>
</tr>
<tr>
<td>Pulpwood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>2,519</td>
<td>2,572</td>
<td>+53</td>
</tr>
<tr>
<td>Hardwood</td>
<td>9,347</td>
<td>9,247</td>
<td>-100</td>
</tr>
<tr>
<td>Total</td>
<td>11,866</td>
<td>11,819</td>
<td>-47</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other industrial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>102</td>
<td>47</td>
<td>-55</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>47</td>
<td>-55</td>
</tr>
<tr>
<td>All industrial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>3,792</td>
<td>3,942</td>
<td>+150</td>
</tr>
<tr>
<td>Hardwood</td>
<td>22,670</td>
<td>21,423</td>
<td>-1,247</td>
</tr>
<tr>
<td>Total</td>
<td>26,462</td>
<td>25,365</td>
<td>-1,097</td>
</tr>
</tbody>
</table>

* = negligible.

* Includes roundwood that was delivered to non-pulpmill and then chipped and sold to pulpmills (395,000 cubic feet in 1989 and 438,000 cubic feet in 1992).
## Table 22—Roundwood timber products output, by county, product and species group, Northern Mountains of Virginia, 1992

<table>
<thead>
<tr>
<th>County</th>
<th>All products</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
<td>Hardwood</td>
<td>Softwood</td>
</tr>
<tr>
<td>Alleghany</td>
<td>500</td>
<td>2,845</td>
<td>241</td>
<td>1,077</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>259</td>
</tr>
<tr>
<td>Augusta</td>
<td>414</td>
<td>3,399</td>
<td>255</td>
<td>2,696</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>159</td>
</tr>
<tr>
<td>Bath</td>
<td>169</td>
<td>1,738</td>
<td>93</td>
<td>754</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>Botetourt</td>
<td>553</td>
<td>2,886</td>
<td>131</td>
<td>1,060</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>552</td>
</tr>
<tr>
<td>Clarke</td>
<td>0</td>
<td>98</td>
<td>0</td>
<td>98</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Craig</td>
<td>309</td>
<td>1,416</td>
<td>145</td>
<td>557</td>
<td>0</td>
<td>210</td>
<td>0</td>
<td>0</td>
<td>154</td>
</tr>
<tr>
<td>Frederick</td>
<td>510</td>
<td>900</td>
<td>0</td>
<td>590</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>510</td>
</tr>
<tr>
<td>Highland</td>
<td>38</td>
<td>1,442</td>
<td>7</td>
<td>1,028</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>32</td>
</tr>
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<td>4</td>
<td>126</td>
<td>4</td>
<td>127</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Roanoke</td>
<td>52</td>
<td>508</td>
<td>52</td>
<td>95</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Rockbridge</td>
<td>557</td>
<td>3,552</td>
<td>313</td>
<td>2,286</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>307</td>
</tr>
<tr>
<td>Rockingham</td>
<td>575</td>
<td>1,147</td>
<td>113</td>
<td>555</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>255</td>
</tr>
<tr>
<td>Shenandoah</td>
<td>163</td>
<td>915</td>
<td>19</td>
<td>790</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>144</td>
</tr>
<tr>
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<td>457</td>
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<td>396</td>
<td>0</td>
<td>59</td>
<td>0</td>
<td>0</td>
<td>64</td>
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<td>21,425</td>
<td>1,358</td>
<td>11,546</td>
<td>2</td>
<td>253</td>
<td>0</td>
<td>0</td>
<td>2,572</td>
</tr>
</tbody>
</table>

*Includes roundwood that was delivered to non-pulp mills and then chipped and sold to pulp mills (498,000 cubic feet in 1992).
Table 23—Roundwood timber products output, by product and species group, Southern Mountains of Virginia, 1989 and 1992

<table>
<thead>
<tr>
<th>Product and species group</th>
<th>1989 Year</th>
<th>1992 Year</th>
<th>Change</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saw logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>8,089</td>
<td>7,249</td>
<td>-840</td>
<td>-10.4</td>
</tr>
<tr>
<td>Hardwood</td>
<td>28,182</td>
<td>21,821</td>
<td>-6,361</td>
<td>-22.6</td>
</tr>
<tr>
<td>Total</td>
<td>34,271</td>
<td>28,870</td>
<td>-5,401</td>
<td>-15.8</td>
</tr>
<tr>
<td>Veneer logs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Hardwood</td>
<td>1,525</td>
<td>2,388</td>
<td>+863</td>
<td>+56.7</td>
</tr>
<tr>
<td>Total</td>
<td>1,525</td>
<td>2,388</td>
<td>+863</td>
<td>+56.7</td>
</tr>
<tr>
<td>Pulpwood*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>89</td>
<td>51</td>
<td>-38</td>
<td>-42.7</td>
</tr>
<tr>
<td>Hardwood</td>
<td>8,785</td>
<td>7,285</td>
<td>+500</td>
<td>+7.7</td>
</tr>
<tr>
<td>Total</td>
<td>8,854</td>
<td>7,338</td>
<td>+516</td>
<td>+7.0</td>
</tr>
<tr>
<td>Composite panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>0</td>
<td>441</td>
<td>+441</td>
<td>--</td>
</tr>
<tr>
<td>Hardwood</td>
<td>3,696</td>
<td>1,848</td>
<td>-2,848</td>
<td>-55.5</td>
</tr>
<tr>
<td>Total</td>
<td>3,696</td>
<td>2,087</td>
<td>-1,609</td>
<td>-46.9</td>
</tr>
<tr>
<td>Other industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>84</td>
<td>0</td>
<td>-84</td>
<td>-100.0</td>
</tr>
<tr>
<td>Hardwood</td>
<td>92</td>
<td>0</td>
<td>-92</td>
<td>-100.0</td>
</tr>
<tr>
<td>Total</td>
<td>178</td>
<td>0</td>
<td>-178</td>
<td>-100.0</td>
</tr>
<tr>
<td>All industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softwood</td>
<td>8,282</td>
<td>7,741</td>
<td>-521</td>
<td>-6.8</td>
</tr>
<tr>
<td>Hardwood</td>
<td>38,280</td>
<td>32,918</td>
<td>-5,362</td>
<td>-14.0</td>
</tr>
<tr>
<td>Total</td>
<td>48,522</td>
<td>40,659</td>
<td>-7,863</td>
<td>-16.4</td>
</tr>
</tbody>
</table>

-- = negligible.

* Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (180,000 cubic feet in 1989 and 412,000 cubic feet in 1992).
| County       | All products | Saw logs | Veneer logs | Composite board | Pulwood* | Other Industrial |
|--------------|--------------|----------|-------------|-----------------|----------|-----------------
|              | Softwood     | Hardwood | Softwood    | Hardwood        | Softwood | Hardwood        | Softwood | Hardwood        | Softwood | Hardwood |
| Bland        | 467          | 1,002    | 397         | 830             | 0        | 0               | 83       | 59              | 7        | 113      | 0        | 0        |
| Buchanan     | 0            | 1,047    | 0           | 715             | 0        | 0               | 244      | 85              | 0        | 0        | 0        | 0        |
| Carroll      | 2,730        | 3,744    | 2,654       | 2,680           | 0        | 222             | 83       | 36              | 13       | 808      | 0        | 0        |
| Dickerson    | 0            | 1,778    | 0           | 1,534           | 0        | 0               | 0        | 85              | 0        | 159      | 0        | 0        |
| Floyd        | 1,741        | 3,484    | 1,726       | 3,054           | 0        | 0               | 389      | 0               | 0        | 15       | 21       | 0        |
| Giles        | 139          | 1,047    | 123         | 829             | 0        | 0               | 0        | 0               | 0        | 18       | 216      | 0        |
| Grayson      | 1,858        | 1,811    | 1,795       | 1,961           | 0        | 222             | 83       | 45              | 0        | 183      | 0        | 0        |
| Lee          | 0            | 2,411    | 0           | 1,347           | 0        | 0               | 0        | 154             | 0        | 910      | 0        | 0        |
| Montgomery   | 921          | 839      | 258         | 810             | 0        | 0               | 0        | 0               | 0        | 0        | 29       | 0        |
| Pulaski      | 88           | 451      | 256         | 210             | 0        | 178             | 83       | 0               | 0        | 0        | 71       | 0        |
| Russell      | 0            | 2,358    | 0           | 1,675           | 0        | 178             | 0        | 0               | 0        | 488      | 0        | 0        |
| Scott        | 88           | 2,434    | 0           | 1,274           | 0        | 178             | 0        | 548             | 0        | 1,454     | 0        | 0        |
| Smyth        | 109          | 1,005    | 48          | 448             | 0        | 178             | 63       | 59              | 0        | 322      | 0        | 0        |
| Tazewell     | 28           | 1,241    | 0           | 1,105           | 0        | 0               | 0        | 0               | 0        | 91       | 0        | 0        |
| Washington   | 28           | 2,591    | 28          | 927             | 0        | 345             | 0        | 308             | 0        | 941      | 0        | 0        |
| Wise         | 0            | 2,823    | 0           | 1,997           | 0        | 0               | 0        | 188             | 0        | 1,238     | 0        | 0        |
| Wythe        | 260          | 1,992    | 197         | 1,390           | 0        | 222             | 83       | 82              | 0        | 258      | 0        | 0        |

| All counties | 7,741        | 32,918   | 7,249       | 21,621          | 0        | 2,366           | 441      | 1,646           | 61       | 7,285     | 0        | 0        |

- *Includes roundwood that was delivered to non-pulpmills and then chipped and sold to pulpmills (412,000 cubic feet in 1992).*
In 1992, volume of roundwood products removed from Virginia’s forests totaled 436 million cubic feet—about the same as in 1989. Mill byproducts generated from primary manufacturers increased 5 percent to 168 million cubic feet. Almost all of the plant residues were used, mostly for fuel and fiber products. Saw logs was the leading roundwood product at 206 million cubic feet; pulpwood ranked second at 189 million cubic feet; veneer logs were third with 18 million cubic feet. The number of primary processing plants declined from 369 in 1989 to 311 in 1992. Total receipts declined 2 percent to nearly 470 million cubic feet.

**KEYWORDS:** Roundwood, residues, pulpwood, saw logs, veneer logs, wood movement.
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