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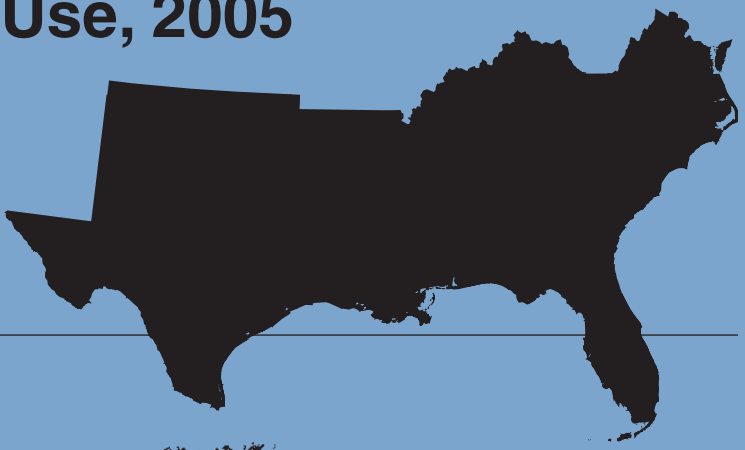
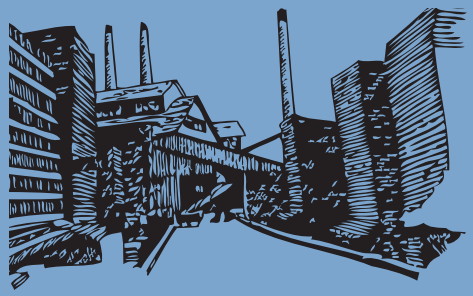
The South's Timber Industry—An Assessment of Timber Product Output and Use, 2005

**Tony G. Johnson,
James W. Bentley,
and Michael Howell**





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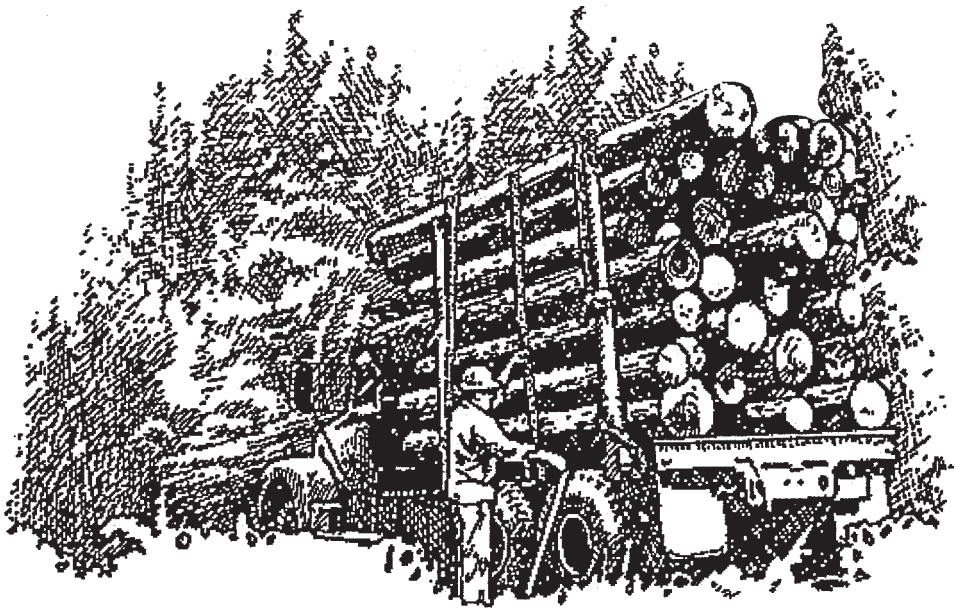

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Foreword

This report contains the findings of a 2005 canvass of primary wood-using plants in the South, and presents changes in product output and residue use from 2002/2003 to 2005. It complements the Forest Inventory and Analysis periodic inventory of volume and removals from southern timberland. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain, by county, in 2005 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 canvass of wood processors in the South was conducted in 2006 to obtain information for 2005. In addition, information about roundwood from out-of-region mills known to be using logs or bolts harvested from southern timberland was incorporated into southern 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 a response was necessary.

In the event of a nonresponse, data collected in previous surveys were updated using current data collected for mills of similar size, product type, and location.

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

Acknowledgments

The authors thank Roger Conner and Fred Allen for review and comments; Carolyn Steppleton for her tireless efforts in processing and ensuring the accuracy of Timber Product Output (TPO) data; Sonja Oswalt and Joe McCollum for the maps; Helen Beresford for TPO Database maintenance and support; Anne Jenkins, Janet Griffin, Sharon Johnson, and Charlene Walker for tables, graphs, and statistical checking; and the Southern Research Station Technical Publications Team for editorial review, styling, and publication of this report.

The Southern Research Station gratefully acknowledges the cooperation and assistance provided by the State Forestry Commissions in collecting mill data. Appreciation is also extended to forest industry and mill managers for providing timber products information.

Timber Product Output Database Retrieval System

The Forest Inventory and Analysis (FIA) Research Work Unit of the USDA Forest Service developed the Timber Product Output (TPO) Database Retrieval System to help customers answer questions about timber harvesting and use in the Southern Region. This system acts as an interface to a standard set of consistently coded TPO data for each State and county in the region and nation. This regional and national set of TPO data consists of 11 variables that describe for each county the roundwood products harvested, logging residues left in the woods, other timber removals (i.e. land clearing and reserved timber removals), and wood and bark residues generated by the county's primary wood-using mills. The system is available through the FIA Web site: http://srsfia2.fs.fed.us/php/tpo2/tpo.php.

The database is well documented and easy to use. The retrieval system allows the user to select the TPO variables of interest and generate a standard set of timber products, removals, and mill residue tables for the specified resource area, State, or region. The system has been logically divided into two sections to assist the user in making specific data requests. In section 1, the user will be asked to define the resource area, and section 2 generates tables for the specified area. In each section, the user is asked to supply specific options that will serve to customize the database retrieval.

There are four options available for defining the geographic area of interest. Each option provides an increasing level of detail. The region, subregion, State, or county defines an area. The user selects the option that best suits the level of detail required. Users who select county as an option should be aware that some counties have been combined due to data sensitivity. These combined counties are identified with asterisks in the output tables.

The TPO contacts are listed for each region to provide additional explanation or clarification.

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Contents

[a] All tables in this report are available in Microsoft® Excel workbook files. Upon request, these files will be supplied in the format the customer requests. The use of trade or firm names in this publication is for reader information and does not imply endorsement by the U.S. Department of Agriculture of any product or service.

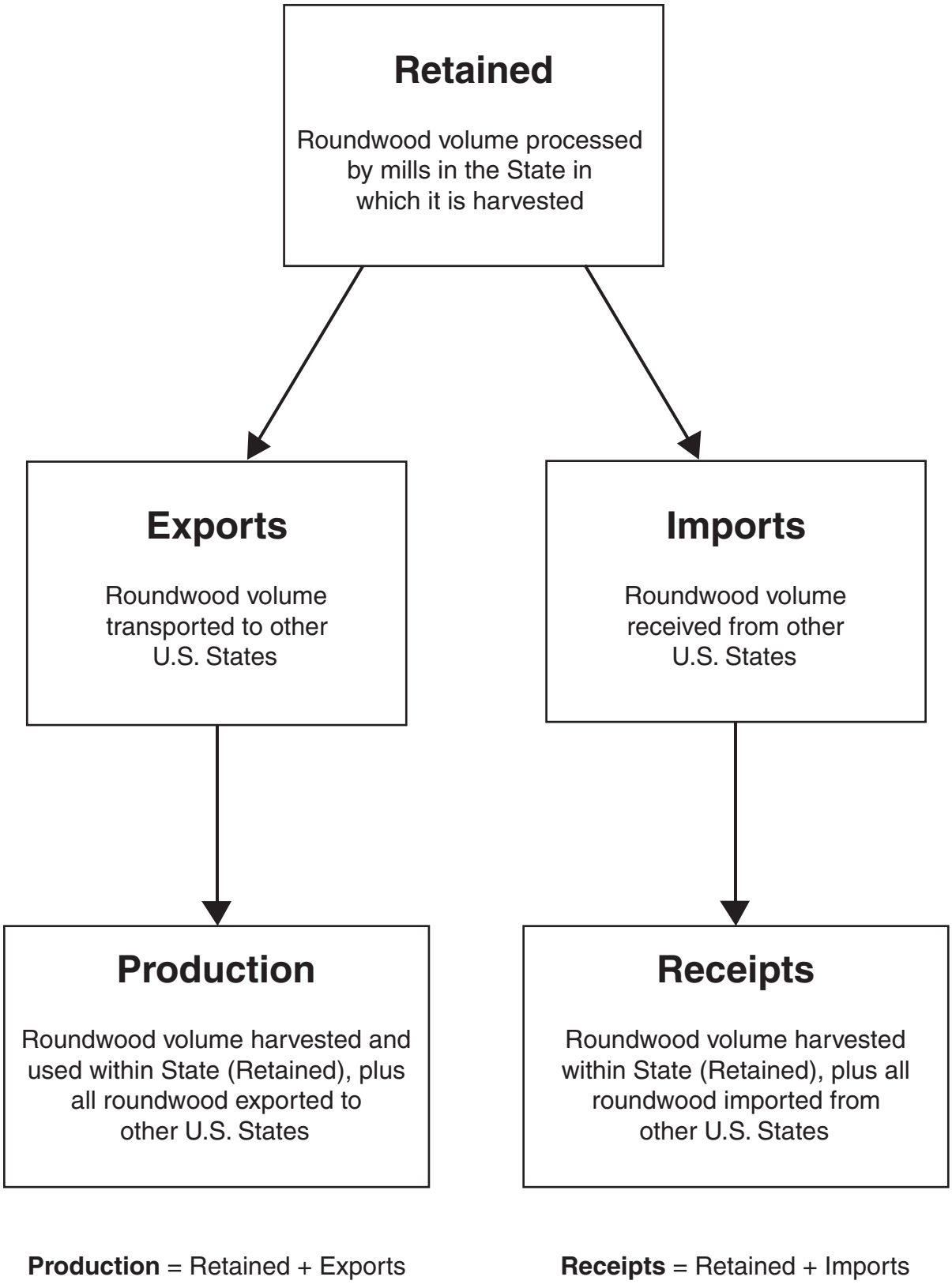

Figure 1—Movement of roundwood exports and imports within the United States.

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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 and relationships unique to the Forest Inventory and Analysis Units across the country that deal with timber product output (TPO) (fig. 1).

All Products

- Between 2003 and 2005, the South's combined industrial TPO from roundwood and plant byproducts increased 4 percent from 11.4 to 11.9 billion cubic feet.
- TPO from roundwood was up 474 million cubic feet, or 6 percent, to 8.7 billion cubic feet, while output of plant byproducts increased 28 million cubic feet, or 1 percent, to 3.2 billion cubic feet.
- Output of softwood roundwood products increased 6 percent, totaling 6.4 billion cubic feet, while output of hardwood roundwood products was up 4 percent to 2.3 billion cubic feet (fig. 2).
- Figures 3 and 4 display softwood and hardwood county-level intensity of roundwood production for all industrial products across the South. The data are depicted in cubic feet produced per acre of timberland area. Counties with the highest production intensity are depicted in the darker shades. For softwoods the darkest shade represents >45 cubic feet of production per acre, while for hardwoods the darkest shade represents >20 cubic feet per acre.

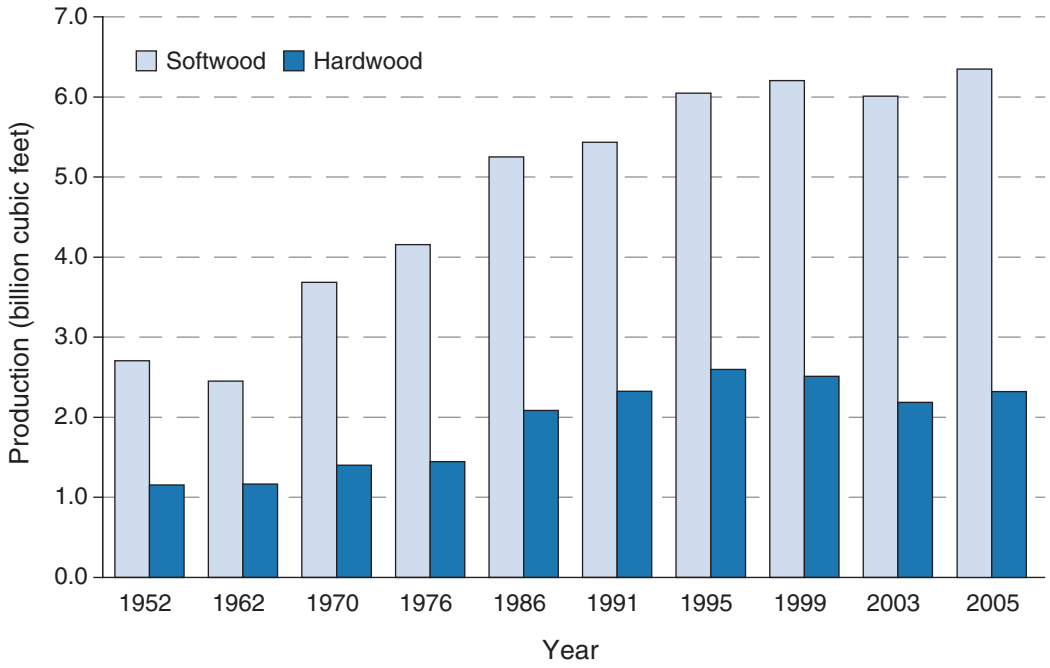

Figure 2—Roundwood production for all products by species group and year (see page 12 for references for individual years).

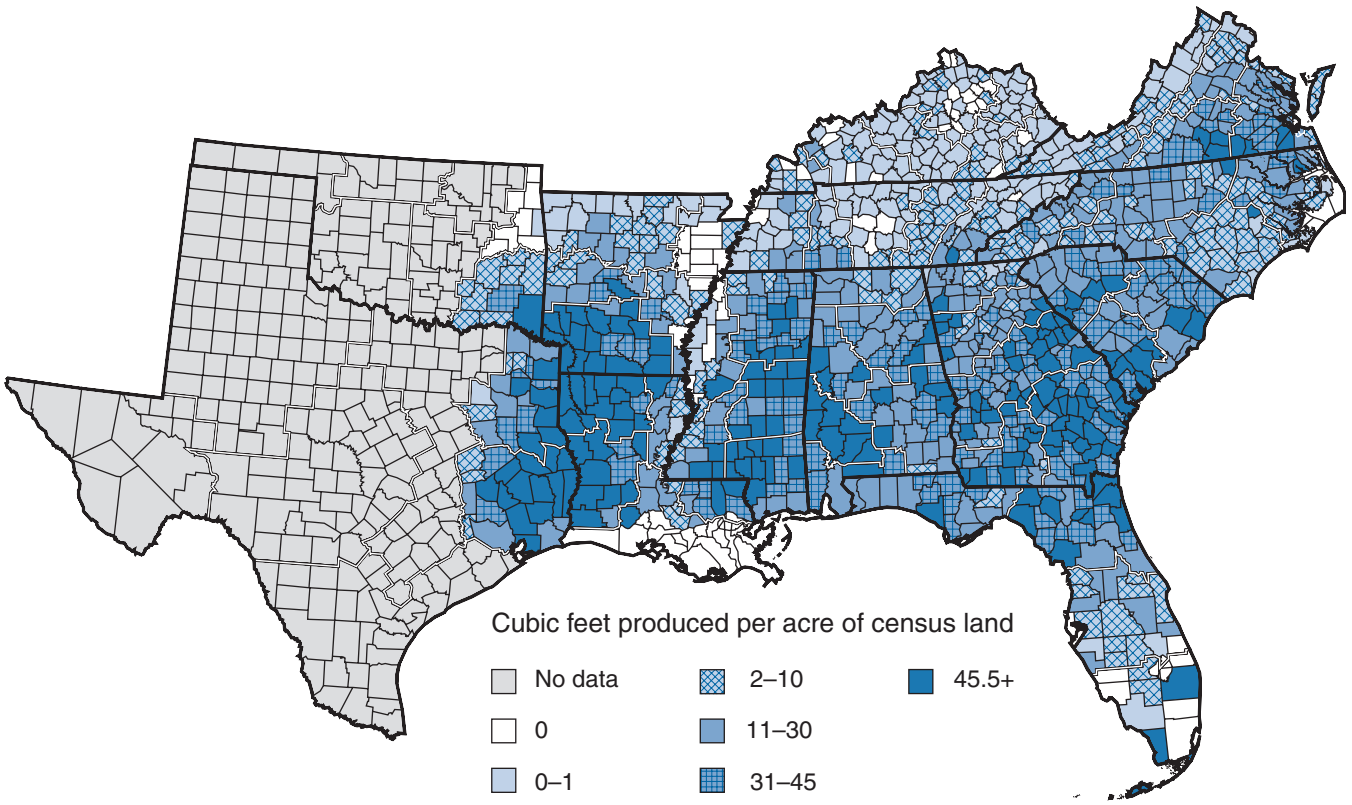

Figure 3—Intensity of roundwood softwood output for all industrial products in the South by county, 2005.

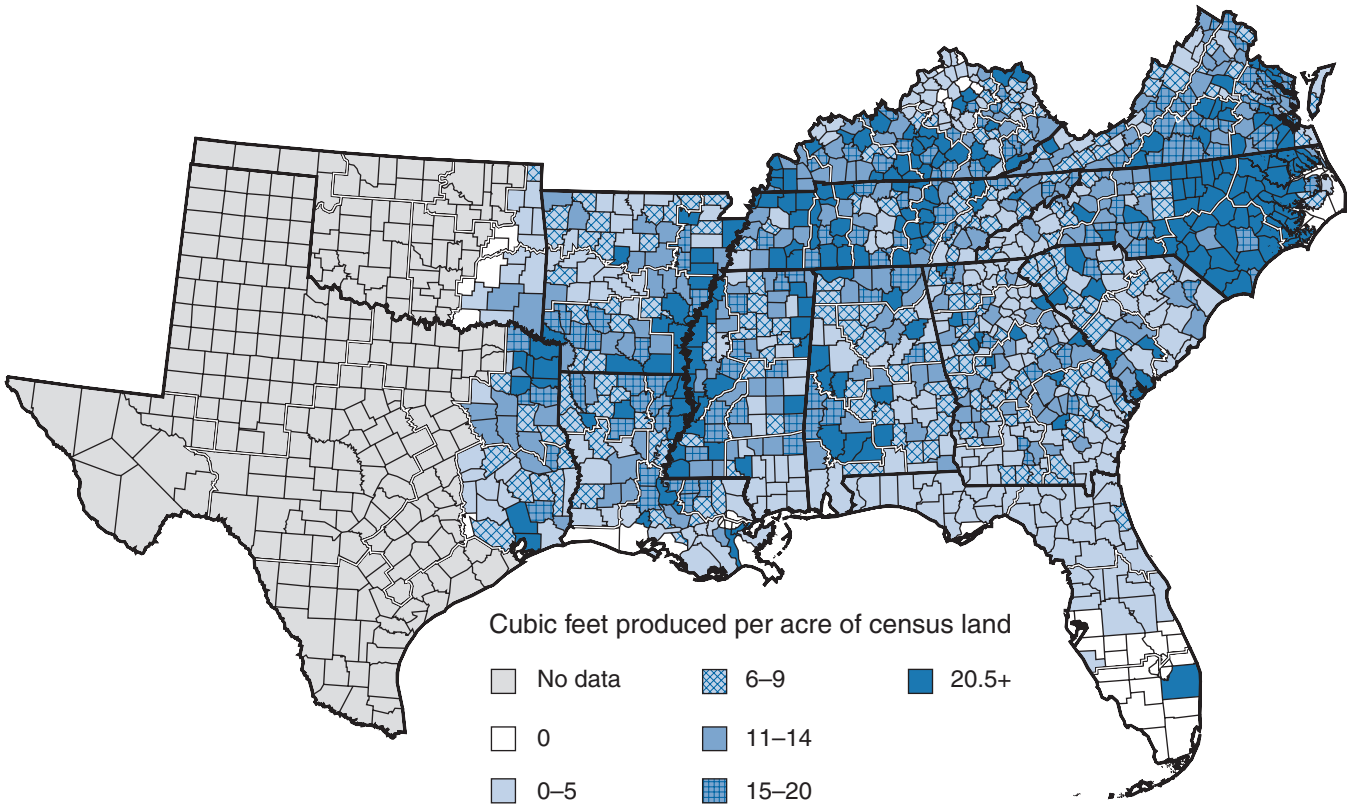

Figure 4—Intensity of roundwood hardwood output for all industrial products in the South by county, 2005.

- Saw logs and pulpwood were the principal roundwood products in 2005. Combined output of these two products totaled 7.3 billion cubic feet and accounted for 85 percent of the South's total industrial roundwood output (fig. 5).
- Total receipts at southern mills, which included roundwood harvested and retained in the South and roundwood imported from other regions, increased 5 percent to 8.7 billion cubic feet. The number of primary roundwood-using plants in the South decreased from 2,281 in 2003 to 2,028 in 2005 (fig. 6: see foldout map, page 5).
- Georgia led the 13 Southern States in total roundwood output (which includes domestic fuelwood) with 1.22 billion cubic feet, while Alabama was a close second with 1.16 billion cubic feet. These two States accounted for 26 percent of the South's total production. Mississippi, Louisiana, and North Carolina followed with 1.0 billion cubic feet, 887, and 841 million cubic feet, respectively (fig. 7).

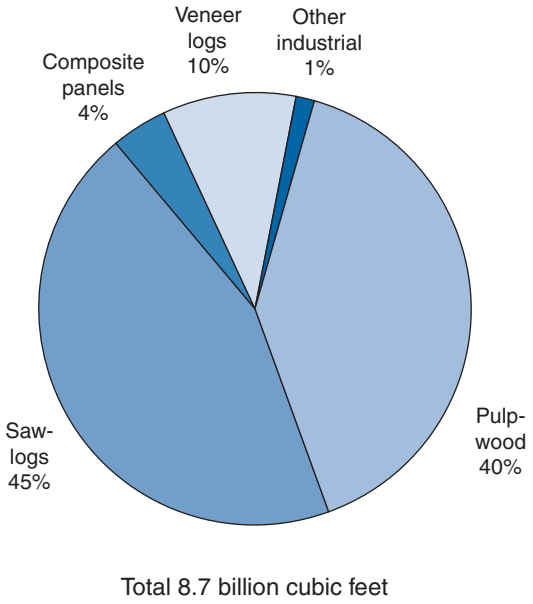

Figure 5—Roundwood production by type of product, 2005.

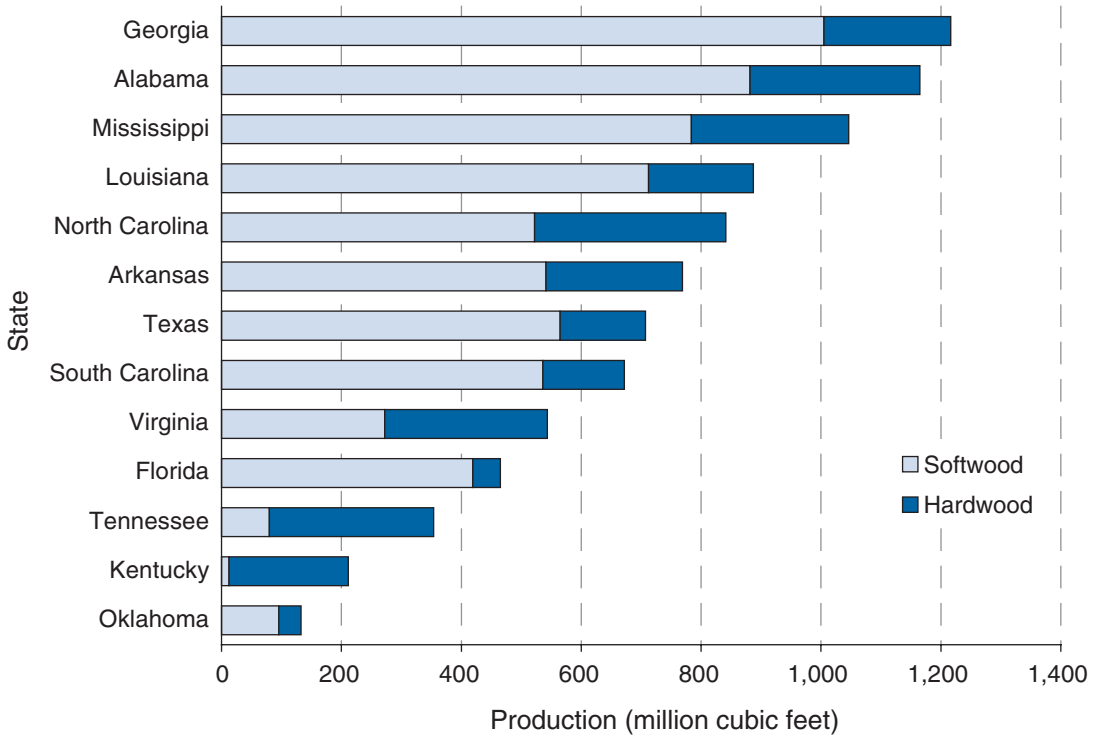

Figure 7—Roundwood production for all products by State and species group, 2005.

Saw Logs

- Saw logs accounted for 45 percent of the South's total roundwood products. Output of softwood saw logs increased 8 percent to 2.89 billion cubic feet (16.0 billion board feet, International ¼-inch rule), while output of hardwood saw logs increased 1 percent to 997 million cubic feet (6.0 billion board feet, International ¼-inch rule) (fig. 8).

- In 2005, the South had 1,669 sawmills, a net loss of 227 mills since 2003. The total number of sawmills does not include a number of one-man sawmills in the Southern Region. Total saw-log receipts were up 246 million cubic feet to 3.9 billion cubic feet. Softwood saw-log receipts increased 9 percent to 2.93 billion cubic feet; hardwood saw-log receipts increased slightly from 992 to 996 million cubic feet. Of the operating mills in 2005, 522, or 31 percent, had receipts of < 1 million board feet, while 397, or 24 percent, had receipts > 10 million board feet and accounted for 85 percent of total saw-log receipts.

- Mississippi led the 13 Southern States in total saw-log production with 543 million cubic feet, while Georgia was second with 458 million cubic feet. Alabama and North Carolina followed with 425 and 400 million cubic feet, respectively (fig. 9). These four States accounted for 47 percent of the South's saw-log production.

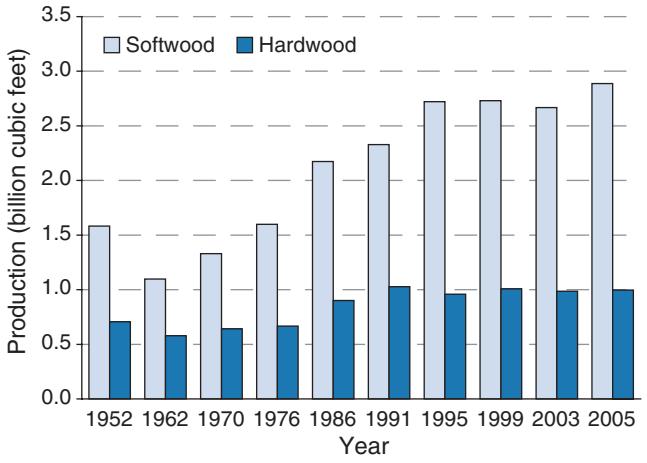

Figure 8—Roundwood saw-log production by species group and year (see page 12 for references for individual years).

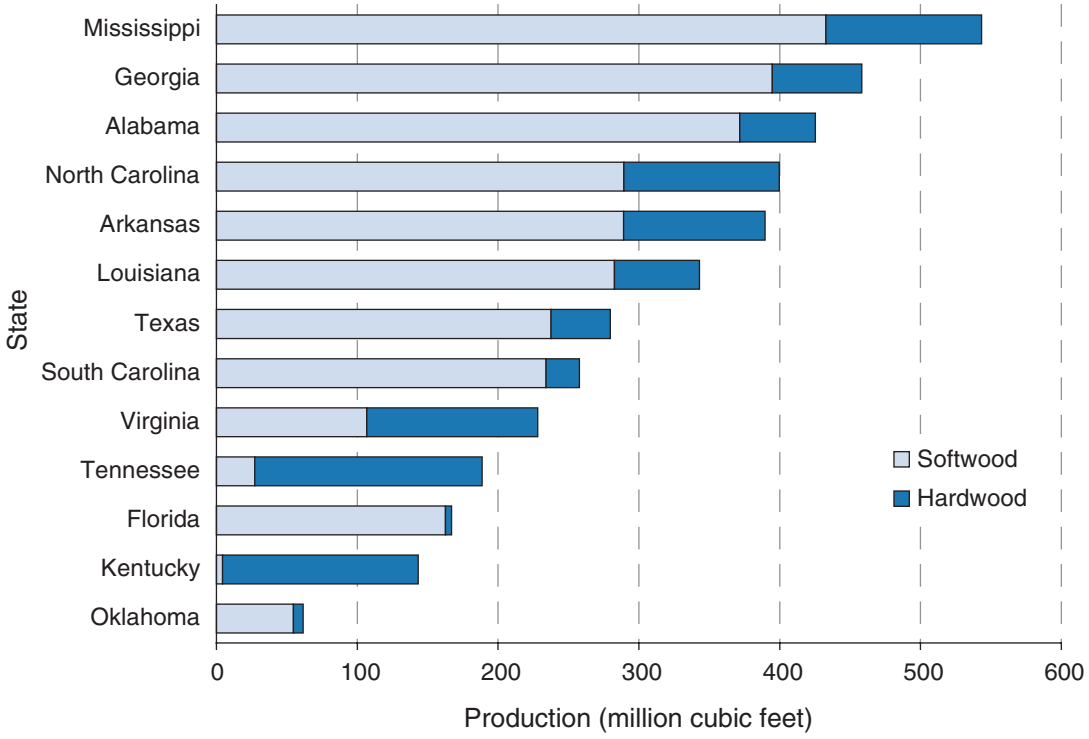

Figure 9—Roundwood saw-log production by State and species group, 2005.

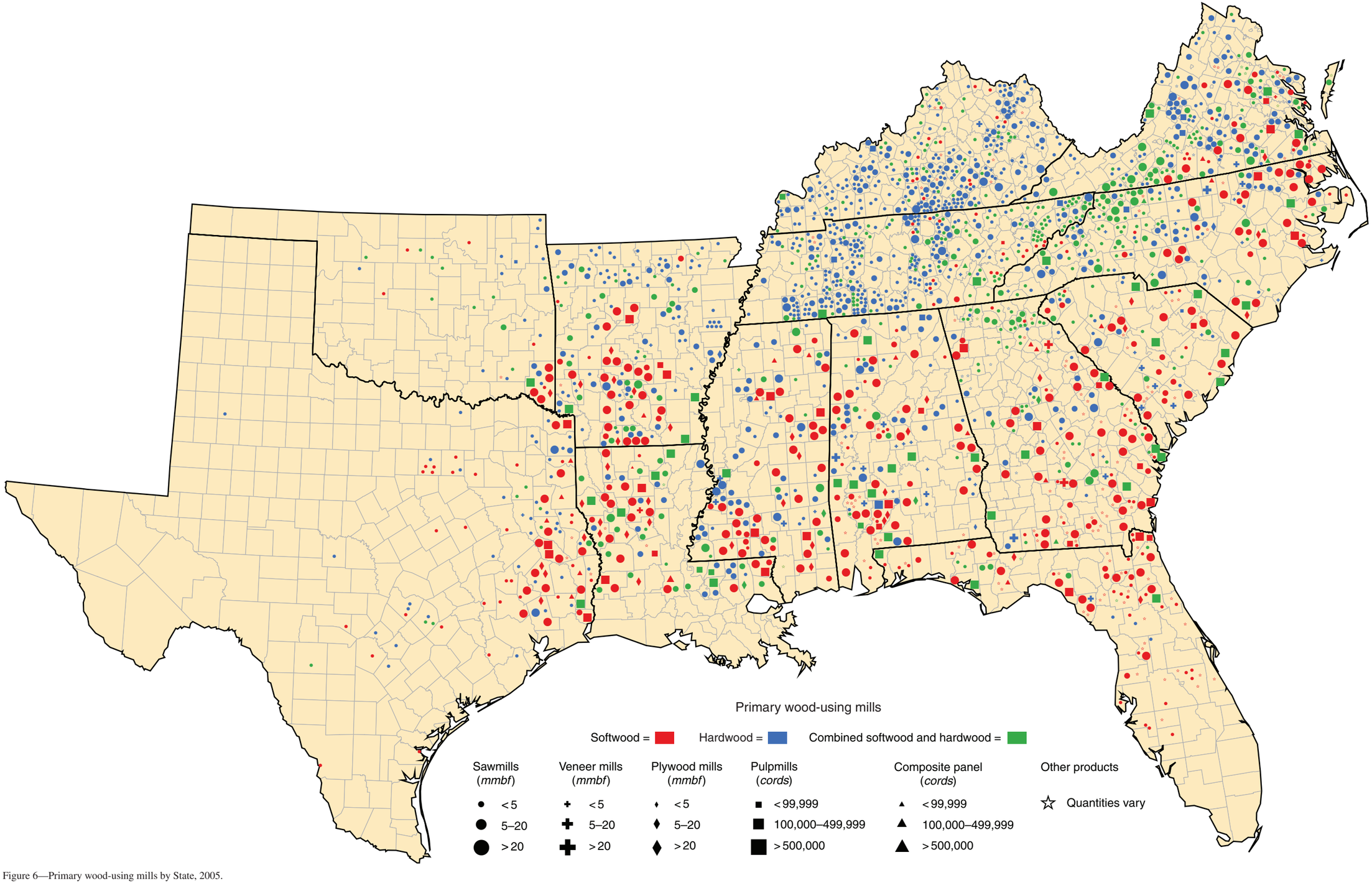

Figure 6—Primary wood-using mills by State, 2005.

Pulpwood

- Total pulpwood production, including chipped roundwood, increased 5 percent to 3.5 billion cubic feet (47.2 million cords) and accounted for 40 percent of the South's total roundwood TPO. Softwood output was up 4 percent to 2.3 billion cubic feet (32.0 million cords); hardwood output increased 9 percent to 1.15 billion cubic feet (15.2 million cords) (fig. 10).
- Eighty-seven pulpmill facilities were operating and receiving roundwood in the South in 2005, four less than in 2003. Total pulpwood receipts for these mills increased 115 million cubic feet to 3.5 billion cubic feet, accounting for 40 percent of total receipts for all mills.
- Alabama led the 13 Southern States in total pulpwood production with 563 million cubic feet. Georgia followed closely with 543 million cubic feet (fig. 11). These two States accounted for 32 percent of the southern pulpwood production.

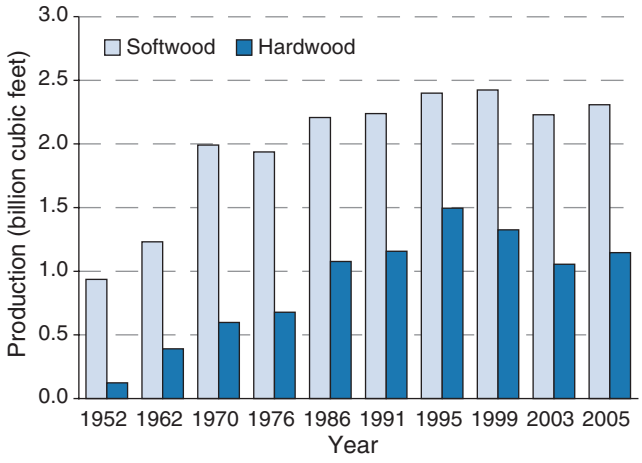

Figure 10—Roundwood pulpwood production by species group and year (see page 12 for references for individual years).

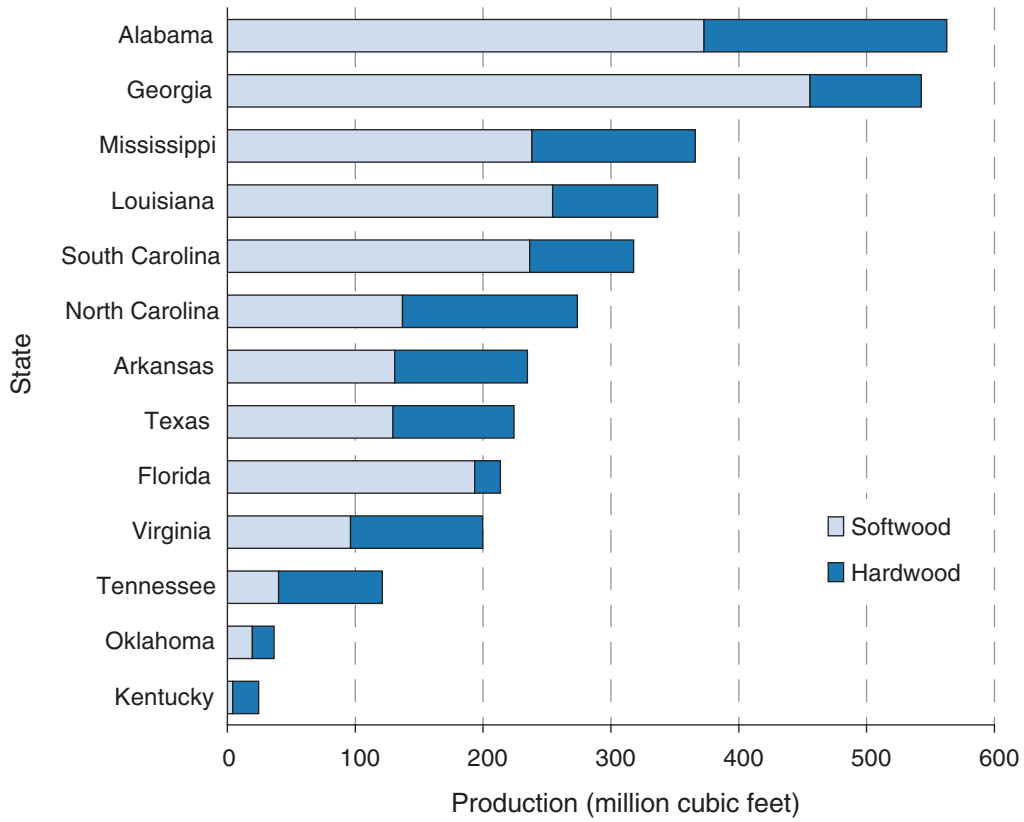

Figure 11—Roundwood pulpwood production by State and species group, 2005.

Veneer Logs

- Output of veneer logs in 2005 totaled 846 million cubic feet and accounted for 10 percent of the South's total roundwood TPO volume. Softwood veneer production increased 3 percent to 766 million cubic feet (4.5 billion board feet, International ¼-inch rule); output of hardwood veneer logs was down 6 percent to 80 million cubic feet (500 million board feet, International ¼-inch rule) (fig. 12).
- The number of veneer mills operating in the South declined from 107 to 99 between 2003 and 2005. Receipts of veneer logs increased 1 percent to 843 million cubic feet. Softwood veneer receipts were up 12 million cubic feet to 760 million cubic feet.
- Texas led the 13 Southern States in total veneer-log production with 195 million cubic feet. Louisiana, Arkansas, and Alabama followed with 146, 95, and 93 million cubic feet, respectively (fig. 13). These four States accounted for 63 percent of the South's veneer-log production.

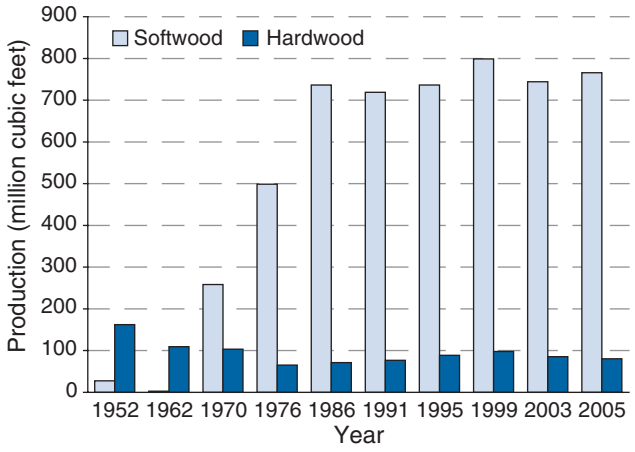

Figure 12—Roundwood veneer-log production by species group and year (see page 12 for references for individual years).

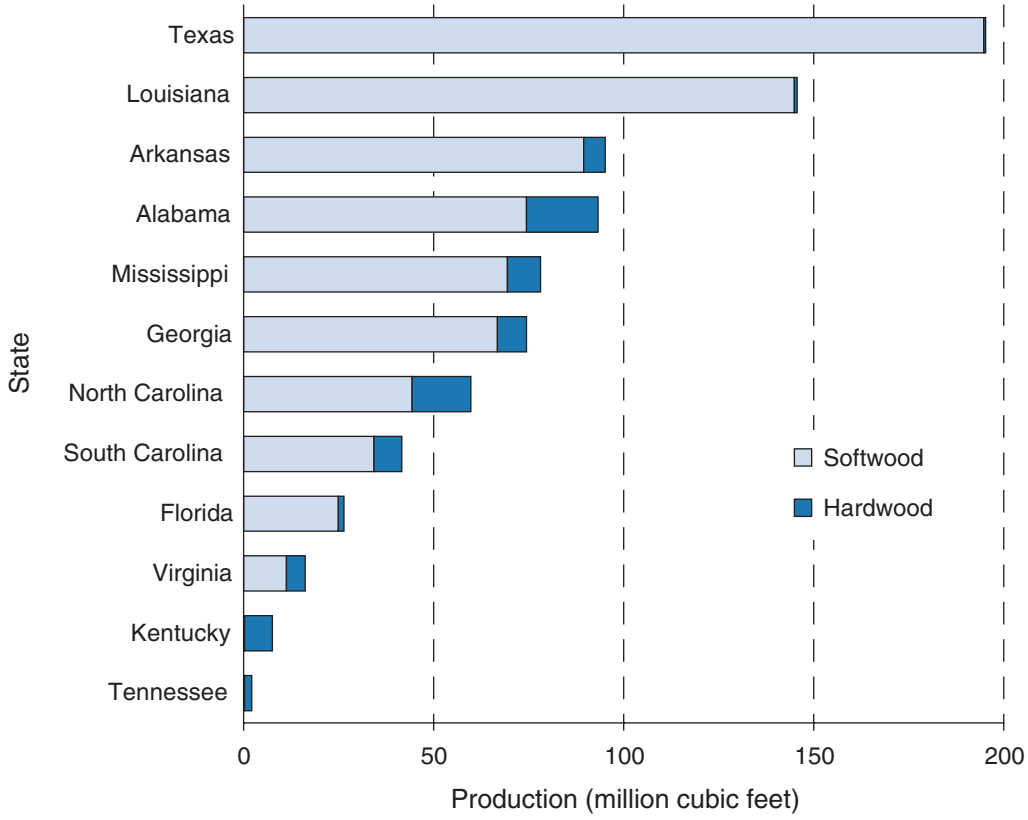

Figure 13—Roundwood veneer-log production by State and species group, 2005.

Composite Panels

- Roundwood harvested from the South's forests for composite panels increased 21 percent and totaled 397 million cubic feet. Softwood output was up 28 percent to 343 million cubic feet (4.6 million cords); hardwood production declined 7 percent to 54 million cubic feet (671,000 cords) (fig. 14).
- Thirty oriented strand board mills were operating in the South in 2005, one more than in 2003. Total receipts for these mills increased 23 percent to 395 million cubic feet, and accounted for 4 percent of the South's total receipts.

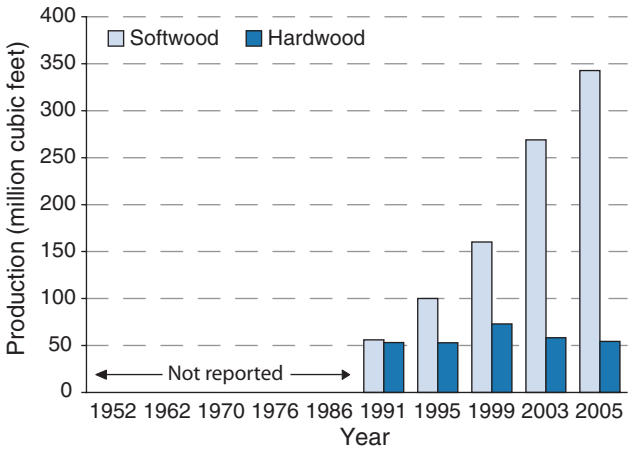

Figure 14—Roundwood production for composite panels by species group and year (see page 12 for references for individual years).

Other Industrial Products

- Roundwood harvested for other industrial uses such as poles, posts, mulch, firewood, logs for log homes, and all other industrial products totaled 87 million cubic feet, a 14-percent decline from 2003. Softwood made up 97 percent of the other industrial products volume (fig. 15).
- The number of plants producing other industrial products declined from 158 in 2003 to 143 in 2005. Combined receipts of other industrial products from softwood and hardwood declined 8 percent to 87 million cubic feet.

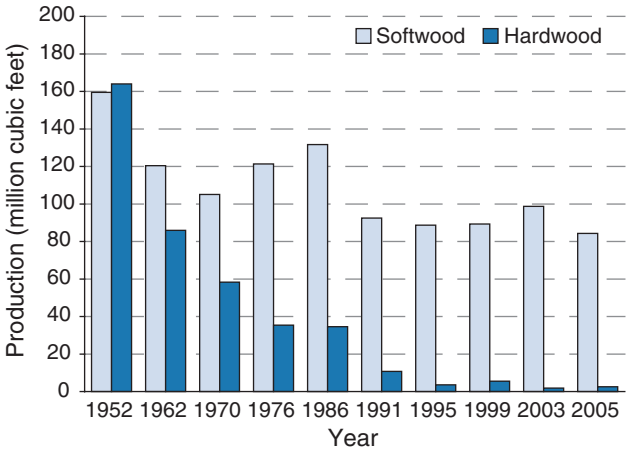

Figure 15—Roundwood production for other industrial products by species group and year (see page 12 for references for individual years).

Plant Byproducts

- In 2005, processing of primary products in southern mills generated 3.2 billion cubic feet of wood and bark residues. Coarse residues from all primary products amounted to 1.28 billion cubic feet, while bark volume totaled 929 million cubic feet. Collectively, sawdust and shavings made up 31 percent of total residues, or 1.0 billion cubic feet (fig. 16).

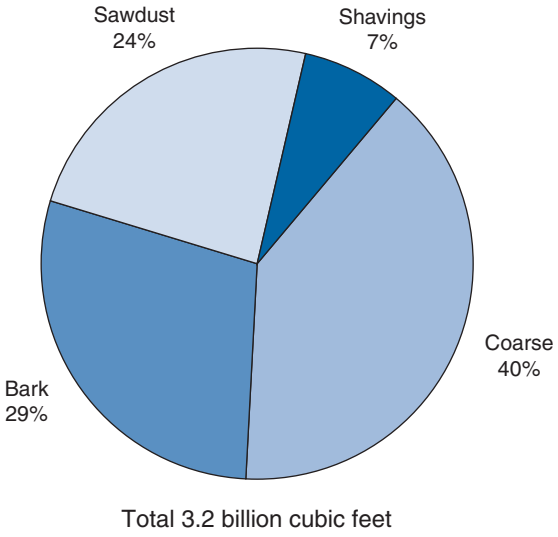

Figure 16—Primary mill residues by residue type, 2005.

- The processing of saw logs generated 2.2 billion cubic feet of mill residues, accounting for 69 percent of the total residues produced (fig. 17).
- More than 3.19 billion cubic feet, or 99 percent, of the wood and bark residues were used for a product. While 1 percent of the residues were not used for a product, 47 percent of the residues were used for industrial fuel, and 34 percent were used for fiber products (fig. 18). In the South, 1.1 billion cubic feet, or 82 percent, of the coarse residues were used for fiber products. Most of the bark was used for industrial fuel or other miscellaneous products, while 69 percent of the sawdust and shavings were used for industrial fuel.

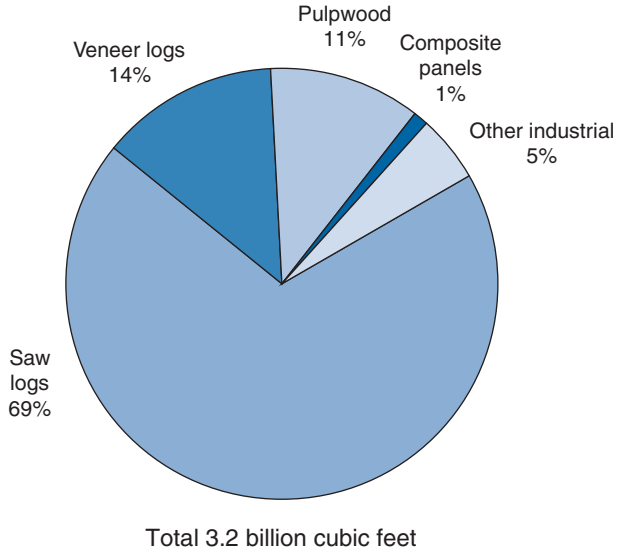

Figure 17—Disposal of residue by product, 2005.

Total Roundwood Output

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

Source

- In addition to the 8.7 billion cubic feet of roundwood output for industrial roundwood, an estimated 340 million cubic feet were harvested for domestic fuelwood, bringing the South's total roundwood output to 9.0 billion cubic feet.

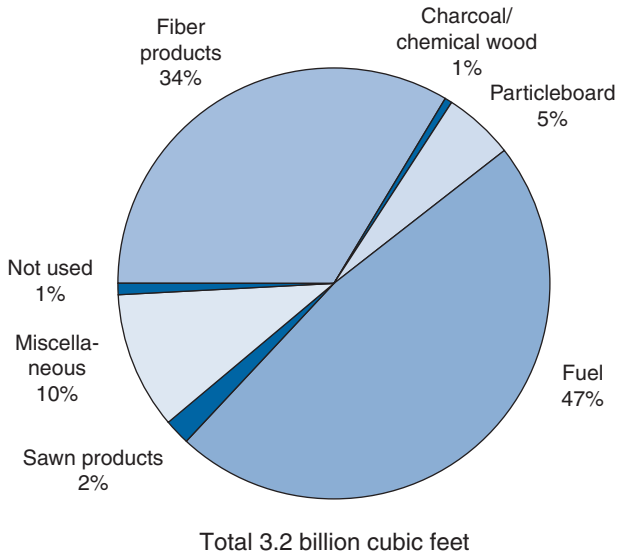

Figure 18—Primary mill residue produced by roundwood type, 2005.

- Ninety-four percent of total roundwood output was considered growing-stock volume (sawtimber and poletimber) from timberland sources. Other sources (such as saplings; stumps, tops, and limbs of trees on timberland; and trees on nonforest land) contributed an estimated 564 million cubic feet, or 6 percent of total roundwood output (fig. 19).

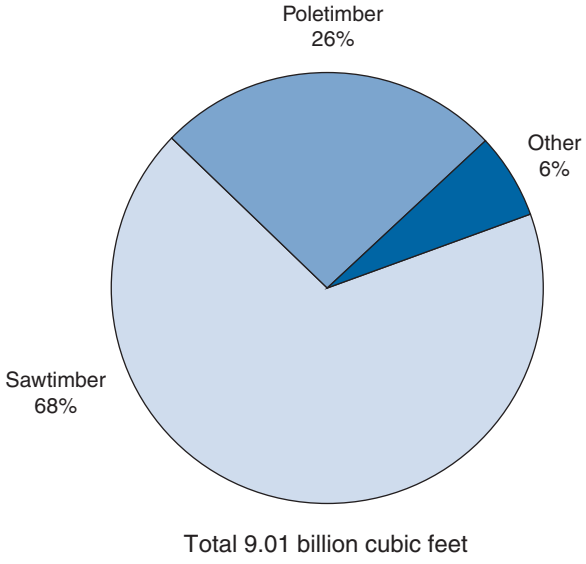

Figure 19—Roundwood output by source, 2005.

Ownership

- An estimated 6.3 billion cubic feet, or 70 percent, of the total roundwood output came from nonindustrial private forest lands. Forest industry lands contributed 2.4 billion cubic feet, or 27 percent of the output. Public lands made up the remaining 3 percent, or 307 million cubic feet (fig. 20).

Species

- The loblolly and shortleaf pine group provided more volume than any other softwood species group, accounting for 78 percent of the total softwood output (fig. 21). The longleaf-slash pine type accounted for 16 percent of the softwood output. In hardwoods, the red oak and white oak groups combined accounted for 1.2 billion cubic feet, or 46 percent of total hardwood output (fig. 22).

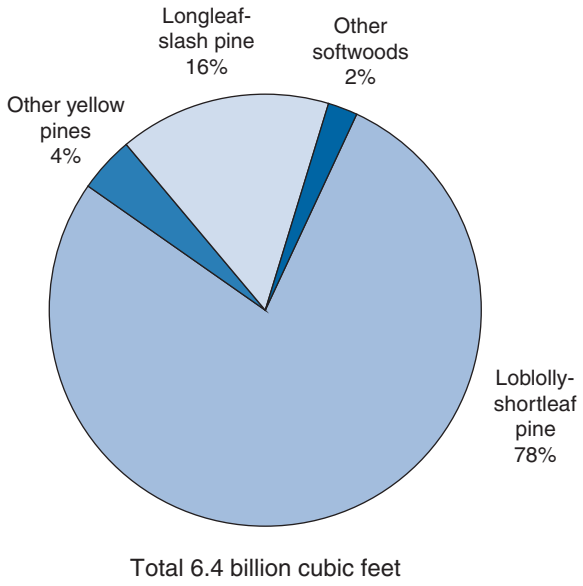

Figure 21—Roundwood output by softwood species group, 2005.

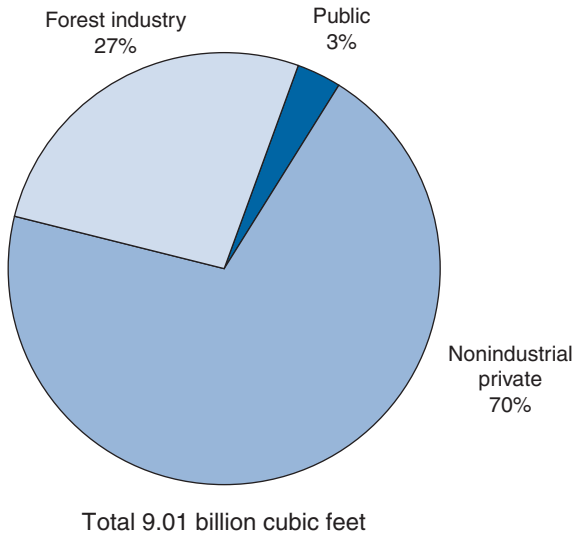

Figure 20—Roundwood output by ownership, 2005.

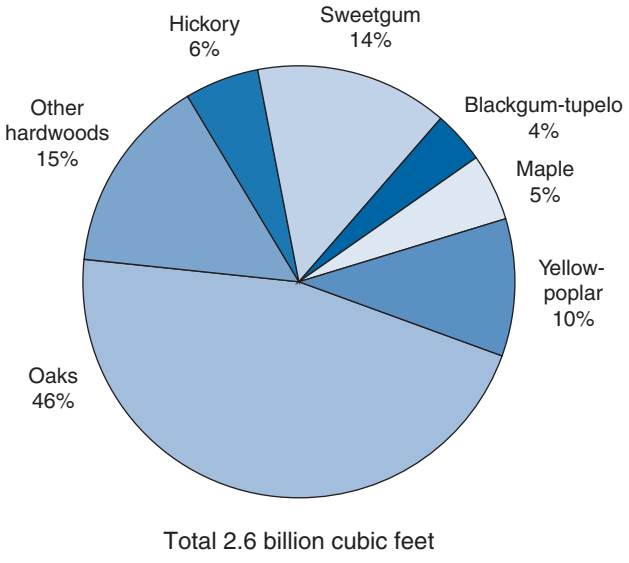

Figure 22—Roundwood output by hardwood species group, 2005.

Regional Trends

- Figure 23 displays the three major physiographic regions in the South. These are the Mountain, Piedmont, and Coastal Plain regions.
- Output of industrial roundwood products was up in all the major physiographic regions of the South. The Mountain region had the smallest increase at 4 percent. The Coastal Plain produced 52 percent of the South's total industrial roundwood production, while the Piedmont and Mountains produced 42 and 6 percent of the South's total output, respectively (fig. 24).

Mountain Region

- Roundwood output from the Mountain region totaled 504 million cubic feet, up 4 percent since 2003. Plant byproducts contributed an additional 223 million cubic feet of product output.

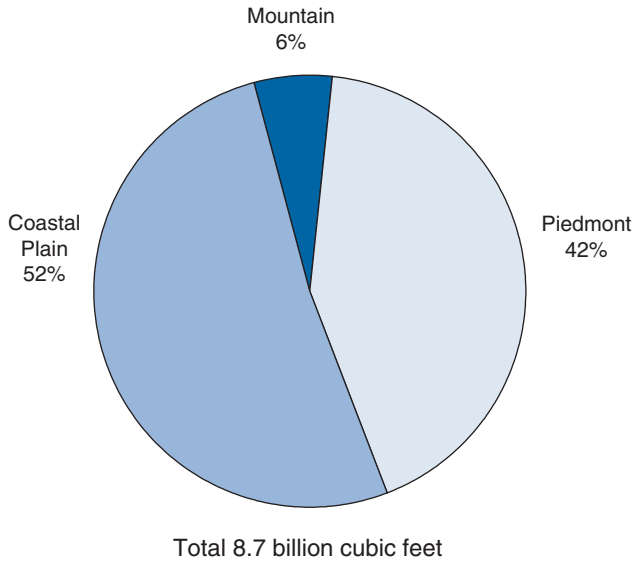

Figure 24—Roundwood production for all products by region, 2005.

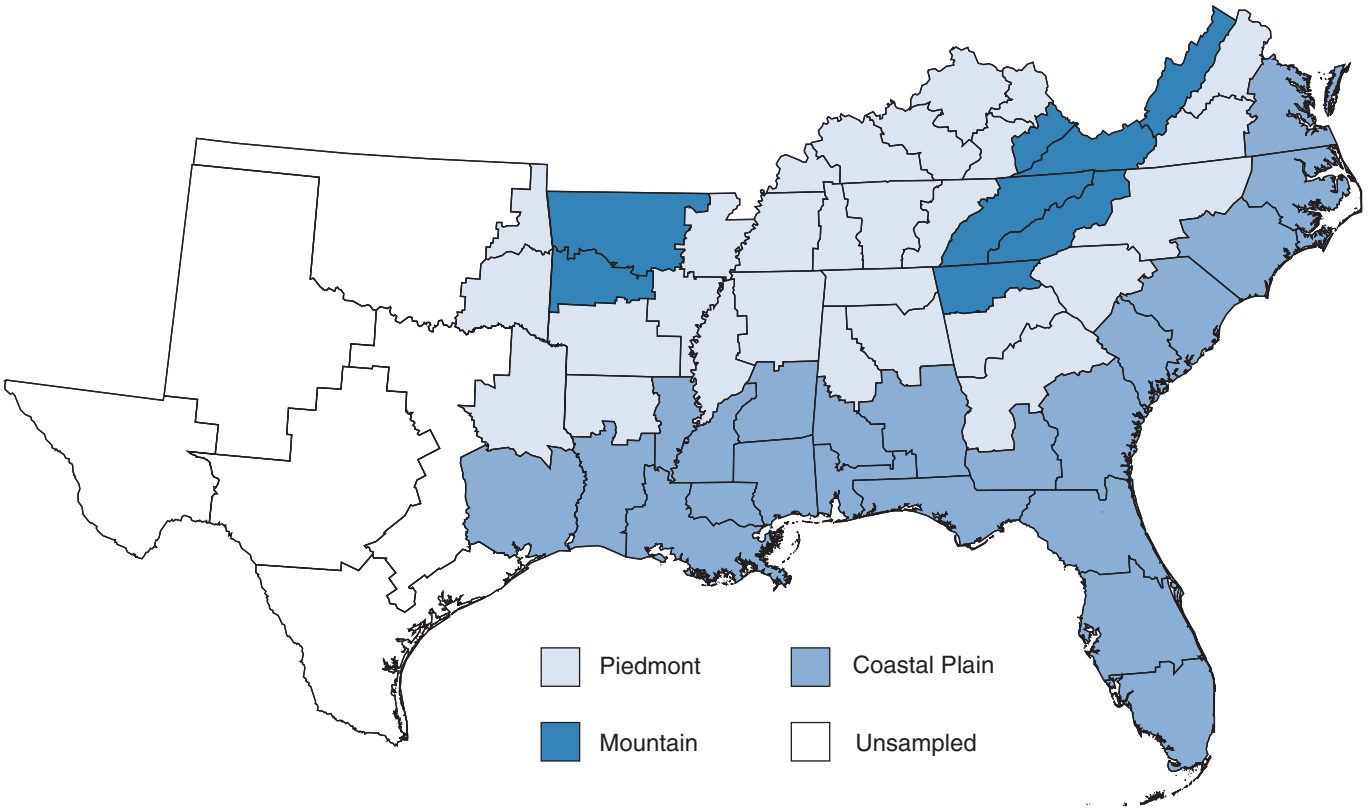

Figure 23—Physiographic regions of the South, 2005.

- Saw logs accounted for 60 percent of the region's TPO and 8 percent of the South's roundwood saw-log output. The 147 million cubic feet of pulpwood accounted for 29 percent of the total roundwood output for the region and 4 percent of the South's total pulpwood output. The 27 million cubic feet of veneer logs accounted for 3 percent of the South's total veneer-log output.

Piedmont Region

- Roundwood output from the Piedmont region totaled 3.7 billion cubic feet, an increase of 7 percent since 2003. Plant byproducts contributed an additional 1.4 billion cubic feet towards total product output.

- Saw-log production of 1.7 billion cubic feet accounted for 46 percent of the region's TPO and 43 percent of the South's total saw-log output. Production of pulpwood increased 10 percent to 1.3 billion cubic feet accounting for 37 percent of the region's total roundwood output and 39 percent of the South's total pulpwood output. The 360 million cubic feet of veneer logs accounted for 10 percent of the region's total output and 43 percent of the South's total veneer log output.

Coastal Plain Region

- Roundwood output from the Coastal Plain region totaled 4.5 billion cubic feet, up 5 percent since 2003. Plant byproducts from the region's mills contributed an additional 1.6 billion cubic feet towards total product output.

- Saw-log production of 1.9 billion cubic feet accounted for 42 percent of the region's total TPO and 49 percent of the South's total saw-log output. Pulpwood production of 2.0 billion cubic feet accounted for another 44 percent of the region's total roundwood output and 57 percent of the South's total pulpwood production. The 459 million cubic feet of veneer logs accounted for 54 percent of the South's total veneer-log output.

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Glossary

Board foot. A unit of measure applied to lumber that is 1-foot long, 1-foot wide, and 1-inch thick (or its equivalent) and also associated with roundwood as to its potential yield of such products.

Byproducts. Primary wood products, e.g., pulp chips, animal bedding, and fuelwood, recycled from mill residues.

Composite panels. Roundwood products manufactured into chips, wafers, strands, flakes, shavings, or sawdust and then reconstituted into a variety of panel and engineered lumber products.

Consumption. The quantity of a commodity, such as pulpwood, utilized by a particular mill or group of mills.

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

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

Fiber products. Byproducts used in the manufacture of pulp, paper, paperboard, and composite products, such as chipboard.

Fuelwood production. The volume of roundwood harvested to produce some form of energy, e.g., heat and steam, in residential, industrial or institutional settings.

Growing-stock removals. The growing-stock volume removed from poletimber and sawtimber trees in the timberland inventory. (Note: Includes volume removed for roundwood products, logging residues, and other removals.)

Growing-stock trees. Living trees of commercial species classified as sawtimber, poletimber, saplings, and seedlings. Growing-stock trees must contain at least one 12-foot or two 8-foot logs in the saw-log portion, currently or potentially (if too small to qualify). The log(s) must meet dimension and merchantability standards and have, currently or potentially, one-third of the gross board-foot volume in sound wood.

Growing-stock volume. The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches d.b.h. from a 1-foot stump to a minimum 4.0-inch top d.o.b. of the central stem.

Hardwoods. Dicotyledonous trees, usually broadleaf and deciduous.

Soft hardwoods. Hardwood species with an average specific gravity of 0.50 or less, such as gums, yellow-poplar, cottonwoods, red maple, basswoods, and willows.

Hard hardwoods. Hardwood species with an average specific gravity >0.50, such as oaks, hard maples, hickories, and beech.

Imports. The volume of domestic 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, pulpwood, veneer logs, intended to be processed into primary wood products such as lumber, wood pulp, sheathing, at primary wood-using mills.

International ¼-inch rule. A log rule or formula for estimating the board-foot volume of logs, allowing ½-inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In the form used by FIA, a ¼-inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

Log. A primary forest product harvested in long, primarily 8-, 12-, and 16-foot lengths.

Logging residues. The unused merchantable portion of growing-stock trees cut or destroyed during logging operations.

Merchantable portion. That portion of live trees 5.0 inches d.b.h. and larger between a 1-foot stump and a minimum 4.0-inch top d.o.b. on the central stem. That portion of primary forks from the point of occurrence to a minimum 4.0-inch top d.o.b. is included.

Merchantable volume. Solid-wood volume in the merchantable portion of live trees.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land. Land that has never supported forests and land formerly forested where timber production is precluded by development for other uses.

Nongrowing-stock sources. The net volume removed from the nongrowing-stock portions of poletimber and sawtimber trees (stumps, tops, limbs, cull sections of central stem) and from any portion of a rough, rotten, sapling, dead, or nonforest tree.

Other forest land. Forest land other than timberland and productive reserved forest land. It includes available and reserved forest land that is incapable of producing annually 20 cubic feet per acre of industrial wood under natural conditions because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other products. A miscellaneous category of roundwood products, e.g., cooperage, excelsior, shingles, and mill residue byproducts (charcoal, bedding, mulch, etc.).

Other removals. The growing-stock volume of trees removed from the inventory by cultural operations such as timber stand improvement, land clearing, and other changes in land use, resulting in the removal of the trees from timberland.

Other sources. (See: Nongrowing-stock sources.)

Ownership. The property owned by one ownership unit, including all parcels of land in the United States.

National forest land. Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

Forest industry land. Land owned by companies or individuals operating primary wood-using plants.

Nonindustrial private forest (NIPF) land. Privately owned land excluding forest industry land.

Corporate. Owned by corporations, including incorporated farm ownerships.

Individual. All lands owned by individuals, including farm operators.

Other public. An ownership class that includes all public lands except national forests.

Miscellaneous Federal land. Federal land other than national forests.

State, county, and municipal land. Land owned by States, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

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

Coarse residues. Material, such as slabs, edgings, trim, veneer cores and ends, which is suitable for chipping.

Fine residues. Material, such as sawdust, shavings, and veneer residue, which is not suitable for chipping.

Plant byproducts. Residues (coarse or fine) used in the further manufacture of industrial products for consumer use, or as fuel.

Unused plant residues. Residues (coarse or fine) that are not used for any product, including fuel.

Poletimber-size trees. Softwoods 5.0 to 8.9 inches d.b.h. and hardwoods 5.0 to 10.9 inches d.b.h.

Posts, poles, and pilings. Roundwood products milled (cut or peeled) into standard sizes (lengths and circumferences) to be put in the ground to provide vertical and lateral support in buildings, foundations, utility lines, and fences. May also include nonindustrial (unmilled) products.

Primary wood-using plants. Industries that convert roundwood products (saw logs, veneer logs, pulpwood, etc.) into primary wood products, such as lumber, veneer or sheathing, wood pulp.

Production. The total volume of known roundwood harvested from land within a State, regardless of where it is consumed. Production is the sum of timber harvested and used within a State, and all roundwood exported to other 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 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.

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

Rotten trees. Live trees of commercial species not containing at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of rot or missing sections, and with less than one-third of the gross board-foot tree volume in sound material.

Rough trees. Live trees of commercial species not containing at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of roughness, poor form, splits, and cracks, and with less than one-third of the gross board-foot tree volume in sound material; and live trees of noncommercial species.

Roundwood (roundwood logs). Logs, bolts, or other round sections cut from trees for industrial manufacture or consumer uses.

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, whole trees, and pulpwood sticks.

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

Roundwood products. Any primary product, such as lumber, veneer, composite panels, poles, pilings, pulp, or fuelwood that is produced from roundwood.

Salvable dead trees. Standing or downed dead trees that were formerly growing stock and considered merchantable. Trees must be at least 5.0 inches d.b.h. to qualify.

Saplings. Live trees 1.0 to 5.0 inches d.b.h.

Saw log. A roundwood product, usually 8 feet in length or longer, processed into a variety of sawn products such as lumber, cants, pallets, railroad ties, and timbers.

Saw-log portion. The part of the bole of sawtimber trees between a 1-foot stump and the saw-log top.

Saw-log top. The point on the bole of sawtimber trees above which a conventional saw log cannot be produced. The minimum saw-log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods for FIA standards.

Sawtimber-size trees. Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger.

Sawtimber volume. Growing-stock volume in the saw-log portion of sawtimber-sized trees in board feet (International ¼-inch rule).

Seedlings. Trees < 1.0 inch d.b.h. and > 1 foot tall for hardwoods, > 6 inches tall for softwoods, and > 0.5 inch in diameter at ground level for longleaf pine.

Select red oaks. A group of several red oak species composed of cherrybark, Shumard, and northern red oaks. Other red oak species are included in the "other red oaks" group.

Select white oaks. A group of several white oak species composed of white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks. Other white oak species are included in the "other white oaks" group.

Softwoods. Coniferous trees, usually evergreen, having leaves that are needles or scale like.

Standard cord. A unit of measure applied to roundwood, usually bolts or split wood. It is a stack of wood 4 feet high, 4 feet wide, and 8 feet long encompassing 128 cubic feet of wood, bark, and air space. This usually translates to approximately 75.0 to 81.0 cubic feet of solid wood for pulpwood, because pulpwood is more uniform.

Standard unit. A unit measure applied to roundwood timber products. Board feet (International ¼-inch rule) is the standard unit used for saw logs and veneer; cords are used for pulpwood, composite panel, and fuelwood; hundred pieces for poles; thousand pieces for posts; and thousand cubic feet for all other miscellaneous forest products.

Timberland. Forest land capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization.

Timber product output. The total volume of roundwood products from all sources plus the volume of byproducts recovered from mill residues (equals roundwood product drain).

Timber products. Roundwood products and byproducts.

Timber removals. The total volume of trees removed from the timberland inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use. (Note: Includes roundwood products, logging residues, and other removals.)

Tree. Woody plants having one erect perennial stem or trunk at least 3 inches d.b.h., a more or less definitely formed crown of foliage, and a height of at least 13 feet (at maturity).

Upper-stem portion. The part of the main stem of saw-timber trees above the saw-log top and the minimum top diameter of 4.0 inches outside bark, or to the point where the main stem breaks into limbs.

Utilization studies. Studies conducted on active logging operations to develop factors for merchantable portions of trees left in the woods (logging residues), logging damage, and utilization of the unmerchantable portion of growing-stock trees and nongrowing-stock trees.

Veneer log. A roundwood product either rotary cut, sliced, stamped, or sawn into a variety of veneer products such as plywood, finished panels, veneer sheets, or sheathing.

Weight. A unit of measure for mill residues, expressed as oven-dry tons (2,000 oven-dry pounds).

Metric Equivalents

1 acre = 4046.86 m^2 or 0.404686 ha
1 cubic foot = 0.028317 m^3
1 inch = 2.54 cm or 0.0254 m
Breast height = 1.4 m above the ground
1 square foot = 929.03 cm^2 or 0.0929 m^2
1 square foot per basal area per acre = 0.229568 m^2/ha
1 pound = 0.454 kg
1 ton = 0.907 MT

Conversion Factors

Alabama Conversion Factors[a]

Saw logs	
Softwood	0.18018 cubic foot = 1 board foot
	5.55 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot
	5.95 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17094 cubic foot = 1 board foot
	5.85 board feet = 1 cubic foot
Hardwood	0.16260 cubic foot = 1 board foot
	6.15 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	71 cubic feet per cord
Hardwood	75 cubic feet per cord

[a] Conversion factors vary with stem size (d.b.h.) and species.
[b] Cubic feet of solid wood per cord.

Arkansas 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.
[b] Cubic feet of solid wood per cord.

Florida Conversion Factors[a]

Saw logs	
Softwood	0.19121 cubic foot = 1 board foot
	5.23 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot
	5.95 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17241 cubic foot = 1 board foot
	5.80 board feet = 1 cubic foot
Hardwood	0.16129 cubic foot = 1 board foot
	6.20 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	71.00 cubic feet per cord
Hardwood	75.00 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 Florida during the latest survey period.
[b] Cubic feet of solid wood per cord.

Georgia Conversion Factors[a]

Saw logs	
Softwood	0.18349 cubic foot = 1 board foot
	5.45 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot
	5.95 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17094 cubic foot = 1 board foot
	5.85 board feet = 1 cubic foot
Hardwood	0.16260 cubic foot = 1 board foot
	6.15 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	72.6 cubic feet per cord
Hardwood	75.0 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 Georgia during the most recent survey period.
[b] Cubic feet of solid wood per cord.

Kentucky Conversion Factors[a]

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
	6.25 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	73.3 cubic feet per cord
Hardwood	76.1 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 Kentucky during the most recent survey period.

[b] Cubic feet of solid wood per cord.

Mississippi Conversion Factors[a]

Saw logs	
Softwood	0.18349 cubic foot = 1 board foot
	5.45 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot
	5.95 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17094 cubic foot = 1 board foot
	5.85 board feet = 1 cubic foot
Hardwood	0.16260 cubic foot = 1 board foot
	6.15 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	72.6 cubic feet per cord
Hardwood	75.0 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 Mississippi during the most recent survey period.

[b] Cubic feet of solid wood per cord.

Louisiana Conversion Factors[a]

Saw logs	
Softwood	0.18349 cubic foot = 1 board foot
	5.45 board feet = 1 cubic foot
Hardwood	0.16807 cubic foot = 1 board foot
	5.95 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17094 cubic foot = 1 board foot
	5.85 board feet = 1 cubic foot
Hardwood	0.16260 cubic foot = 1 board foot
	6.15 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	72.6 cubic feet per cord
Hardwood	75.0 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 Louisiana during the most recent survey period.

[b] Cubic feet of solid wood per cord.

North Carolina 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.

Oklahoma 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.

[b] Cubic feet of solid wood per cord.

Tennessee 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 Tennessee during the most recent survey period.

[b] Cubic feet of solid wood per cord.

South Carolina Conversion Factors[a]

Saw logs	
Softwood	0.18018 cubic foot = 1 board foot 5.55 board feet = 1 cubic foot
Hardwood	0.16750 cubic foot = 1 board foot 5.97 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17601 cubic foot = 1 board foot 5.68 board feet = 1 cubic foot
Hardwood	0.16340 cubic foot = 1 board foot 6.12 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	68.6 cubic feet per cord
Hardwood	70.5 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 South Carolina during the most recent survey period.

[b] Cubic feet of solid wood per cord.

Virginia Conversion Factors[a]

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 6.25 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	73.3 cubic feet per cord
Hardwood	76.1 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 Virginia during the most recent survey period.

[b] Cubic feet of solid wood per cord.

Species List[a]

Common name	Scientific name[b]	Common name	Scientific name[b]
Softwoods		Hardwoods (continued)	
Atlantic white-cedar	*Chamaecyparis thyoides* (L.) B.S.P.	American holly	*Ilex opaca* Ait.
Southern redcedar	*Juniperus silicicola* (Small) Bailey	Black walnut	*Juglans nigra* L.
Eastern redcedar	*J. virginiana* L.	Sweetgum	*Liquidambar styraciflua* L.
Shortleaf pine	*Pinus echinata* Mill.	Yellow-poplar	*Liriodendron tulipifera* L.
Slash pine	*P. elliottii* Engelm.	Osage-orange	*Maclura pomifera* (Raf.) Schneid.
Spruce pine	*P. glabra* Walt.	Cucumbertree	*Magnolia acuminata* L.
Longleaf pine	*P. palustris* Mill.	Southern magnolia	*M. grandiflora* L.
Pond pine	*P. serotina* Michx.	Bigleaf magnolia	*M. macrophylla* Michx.
Eastern white pine	*P. strobus* L.	Sweetbay	*M. virginiana* L.
Loblolly pine	*P. taeda* L.	Apple	*Malus* spp. Mill.
Virginia pine	*P. virginiana* Mill.	Chinaberry	*Melia azedarach* L.
Baldcypress	*Taxodium distichum* (L.) Rich.	White mulberry	*Morus alba* L.
Pondcypress	*T. distichum* var. *nutans*	Red mulberry	*M. rubra* L.
Eastern hemlock	*Tsuga canadensis* (L.) Carr.	Water tupelo	*Nyssa aquatica* L.
		Blackgum	*N. sylvatica* Marsh.
Hardwoods		Swamp tupelo	*N. sylvatica* var. *biflora* (Walt.) Sarg.
Florida maple	*Acer barbatum* Michx.	Eastern hophornbeam	*Ostrya virginiana* (Mill.) K. Koch
Boxelder	*A. negundo* L.	Sourwood	*Oxydendrum arboreum* (L.) DC.
Red maple	*A. rubrum* L.	Redbay	*Persea borbonia* (L.) Spreng.
Silver maple	*A. saccharinum* L.	American sycamore	*Platanus occidentalis* L.
Sugar maple	*A. saccharum* Marsh.	Cottonwood	*Populus* spp. L.
Buckeye	*Aesculus* spp. L.	Black cherry	*Prunus serotina* Ehrh.
Ohio buckeye	*A. glabra* Willd.	White oak	*Quercus* alba L.
Ailanthus	*Ailanthus altissima* (Mill.) Swingle	Scarlet oak	*Q. coccinea* Muenchh.
Tung-oil tree	*Aleurites fordii* Hemsl.	Durand oak	*Q. durandii* Buckl.
Serviceberry	*Amelanchier* spp. Med.	Southern red oak	*Q. falcata* Michx.
River birch	*Betula nigra* L.	Cherrybark oak	*Q. falcata* var. *pagodifolia* Ell.
American hornbeam	*Carpinus caroliniana* Walt.	Bluejack oak	*Q. incana* Bartr.
Hickory	*Carya* spp. Nutt.	Turkey oak	*Q. laevis* Walt.
Water hickory	*C. aquatica* (Michx. f.) Nutt.	Laurel oak	*Q. laurifolia* Michx.
Bitternut hickory	*C. cordiformis* (Wangenh.) K. Koch	Overcup oak	*Q. lyrata* Walt.
Pignut hickory	*C. glabra* (Mill.) Sweet	Swamp chestnut oak	*Q. michauxii* Nutt.
Pecan	*C. illinoensis* (Wangenh.) K. Koch	Chinkapin oak	*Q. muehlenbergii* Engelm.
Shellbark hickory	*C. laciniosa* (Michx. f.) Loud.	Water oak	*Q. nigra* L.
Nutmeg hickory	*C. myristiciformis* (Michx. f.) Nutt.	Nuttall oak	*Q. nuttallii* Palmer
Shagbark hickory	*C. ovata* (Mill.) K. Koch	Pin oak	*Q. palustris* Muenchh.
Black hickory	*C. texana* Buckl.	Willow oak	*Q. phellos* L.
Mockernut hickory	*C. tomentosa* (Poir.) Nutt.	Chestnut oak	*Q. prinus* L.
Allegheny chinkapin	*Castanea pumila* Mill.	Northern red oak	*Q. rubra* L.
Chinkapin	*Castanopsis* (D. Don) Spach	Shumard oak	*Q. shumardii* Buckl.
Catalpa	*Catalpa* spp. Scop.	Post oak	*Q. stellata* Wangenh.
Sugarberry	*Celtis laevigata* Willd.	Black oak	*Q. velutina* Lam.
Hackberry	*C. occidentalis* L.	Live oak	*Q. virginiana* Mill.
Eastern redbud	*Cercis canadensis* L.	Black locust	*Robinia pseudoacacia* L.
Flowering dogwood	*Cornus florida* L.	Willow	*Salix* spp. L.
Hawthorn	*Crataegus* spp. L.	Sassafras	*Sassafras albidum* (Nutt.) Nees
Common persimmon	*Diospyros virginiana* L.	American basswood	*Tilia americana* L.
American beech	*Fagus grandifolia* Ehrh.	White basswood	*T. heterophylla* Vent.
White ash	*Fraxinus americana* L.	Winged elm	*Ulmus alata* Michx.
Pumpkin ash	*F. profunda* (Bush) Bush	American elm	*U. americana* L.
Blue ash	*F. quadrangulata* Michx.	Cedar elm	*U. crassifolia* Nutt.
Waterlocust	*Gleditsia aquatica* Marsh.	Slippery elm	*U. rubra* Muhl.
Honeylocust	*G. triacanthos* L.	September elm	*U. serotina* Sarg.
Kentucky coffeetree	*Gymnocladus dioicus* (L.) K. Koch	Rock elm	*U. thomasii* Sarg.

[a] Scientific and common names of tree species > 1.0 inch in d.b.h. occurring in the FIA sample.

[b] Little (1979).

Appendix

Index of Tables

Table A.1—Output of industrial products by product and species group, Southern Region, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	thousand cubic feet			*percent*
Saw logs				
Softwood	2,667,325	2,887,854	220,529	8.3
Hardwood	985,455	997,509	12,054	1.2
Total	3,652,780	3,885,363	232,583	6.4
Veneer logs				
Softwood	744,141	765,727	21,586	2.9
Hardwood	85,693	80,546	-5,147	-6.0
Total	829,834	846,273	16,439	2.0
Pulpwood[a]				
Softwood	2,229,030	2,308,247	79,217	3.6
Hardwood	1,055,814	1,145,601	89,787	8.5
Total	3,284,844	3,453,848	169,004	5.1
Composite panels				
Softwood	268,858	342,686	73,828	27.5
Hardwood	58,284	54,356	-3,928	-6.7
Total	327,142	397,042	69,900	21.4
Other industrial				
Softwood	98,717	84,340	-14,377	-14.6
Hardwood	1,800	2,535	735	40.8
Total	100,517	86,875	-13,642	-13.6
All industrial				
Softwood	6,008,071	6,388,854	380,783	6.3
Hardwood	2,187,046	2,280,547	93,501	4.3
Total	8,195,117	8,669,401	474,284	5.8
Byproduct output				
Softwood	2,329,943	2,412,312	82,369	3.5
Hardwood	835,517	780,815	-54,702	-6.5
Total	3,165,460	3,193,127	27,667	0.9
Total output				
Softwood	8,338,014	8,801,166	463,152	5.6
Hardwood	3,022,563	3,061,362	38,799	1.3
Total	11,360,577	11,862,528	501,951	4.4

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (60,731,000 cubic feet in 2003 and 58,540,000 cubic feet in 2005).

Table A.2—Roundwood receipts by product and species group, Southern Region, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	2,689,494	2,931,824	242,330	9.0
Hardwood	992,060	996,222	4,162	0.4
Total	3,681,554	3,928,046	246,492	6.7
Veneer logs				
Softwood	747,850	759,641	11,791	1.6
Hardwood	89,262	83,249	-6,013	-6.7
Total	837,112	842,890	5,778	0.7
Pulpwood[a]				
Softwood	2,284,655	2,305,098	20,443	0.9
Hardwood	1,063,763	1,158,379	94,616	8.9
Total	3,348,418	3,463,477	115,059	3.4
Composite panels				
Softwood	268,281	343,918	75,637	28.2
Hardwood	53,622	51,124	-2,498	-4.7
Total	321,903	395,042	73,139	22.7
Other industrial				
Softwood	92,580	84,302	-8,278	-8.9
Hardwood	1,759	2,525	766	43.5
Total	94,339	86,827	-7,512	-8.0
Total output				
Softwood	6,082,860	6,424,783	341,923	5.6
Hardwood	2,200,466	2,291,499	91,033	4.1
Total	8,283,326	8,716,282	432,956	5.2

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (72,845,000 cubic feet in 2003 and 67,975,000 cubic feet in 2005).

Table A.3—Number of primary wood-using plants by industry, Southern Region, 1970 to 2005

Industry	Year								
	1970	1975	1980	1985	1990	1995	1999	2003	2005
	number								
Sawmills	4,289	3,591	3,482	3,086	2,683	2,386	2,165	1,896	1,669
Veneer mills	239	200	192	168	155	139	124	107	99
Pulpmills	109	115	116	107	105	105	97	91	87
Composite panel mills	0	0	0	6	11	21	24	29	30
Other mills	452	358	313	295	235	161	141	158	143
All plants	5,089	4,264	4,103	3,662	3,189	2,812	2,551	2,281	2,028

Table A.4—Roundwood receipts by sawmill size, Southern Region, 2003 and 2005

Sawmill size class[a]	2003			2005		
	Mills	Volume		Mills	Volume	
mmbf	*number*	*mbf*	*percent*	*number*	*mbf*	*percent*
<1.0	649	162,410	1	522	133,944	1
1.0–4.99	587	1,611,924	7	494	1,329,178	6
5.0–9.99	263	1,852,635	9	256	1,782,751	8
10.0–49.99	273	5,822,641	28	266	5,686,938	26
>50	124	11,542,541	55	131	12,725,201	59
Total	1,896	20,992,151	100	1,669	21,658,012	100

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

Table A.5—Roundwood receipts by species and type of mill, Southern Region, 2005

Species	All mills	Type of mill: Sawmills	Veneer mills: Pine plywood	Veneer mills: Other veneer	Veneer mills: OSB and panels	Pulpmills[a]	Other mills
	thousand cubic feet						
Softwood							
Yellow pine	4,035,171	2,871,948	742,888	16,426	339,931	NA	63,978
Eastern white pine	35,793	31,573	278	9	3,788	NA	145
Cedar	7,187	4,483	0	0	199	NA	2,505
Cypress	39,736	22,297	34	6	0	NA	17,399
Other softwood	1,798	1,523	0	0	0	NA	275
Unclassified	2,305,098	0	0	0	0	2,305,098	0
Total softwoods	6,424,783	2,931,824	743,200	16,441	343,918	2,305,098	84,302
Hardwood							
Blackgum and tupelo	27,579	16,828	1,423	4,166	5,160	NA	2
Soft maple	26,247	20,901	72	737	4,523	NA	14
Sweetgum	86,524	56,005	12,050	8,610	9,835	NA	24
Yellow-poplar	243,600	192,976	21,637	12,246	16,652	NA	89
Other soft hardwood	35,742	27,459	890	2,069	5,133	NA	191
Hickory	47,776	44,557	32	2,384	536	NA	267
Red oak	339,272	323,844	588	10,074	4,013	NA	753
White oak	212,176	205,571	262	2,584	3,469	NA	290
Other hard hardwood	114,201	108,081	32	3,390	1,803	NA	895
Unclassified	1,158,379	0	0	0	0	1,158,379	0
Total hardwoods	2,291,496	996,222	36,986	46,260	51,124	1,158,379	2,525
All species	8,716,279	3,928,046	780,186	62,701	395,042	3,463,477	86,827

OSB = oriented strand board; NA = not applicable.

[a] Collected only by softwood and hardwood and includes roundwood chipped.

Table A.6—Primary mill residue volume by roundwood type, species group, and residue type, Southern Region, 2005

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		thousand cubic feet			
Saw logs					
Softwood	1,646,917	233,906	760,826	422,283	229,902
Hardwood	580,932	104,376	271,809	197,058	7,689
Total	2,227,849	338,282	1,032,635	619,341	237,591
Veneer logs					
Softwood	375,669	56,049	190,861	128,759	0
Hardwood	54,598	10,435	24,710	19,453	0
Total	430,267	66,484	215,571	148,212	0
Pulpwood					
Softwood	233,812	233,812	0	0	0
Hardwood	128,816	128,816	0	0	0
Total	362,628	362,628	0	0	0
Composite panels					
Softwood	36,946	36,946	0	0	0
Hardwood	5,038	5,038	0	0	0
Total	41,984	41,984	0	0	0
Other industrial[a]					
Softwood	132,026	93,584	35,144	3,298	0
Hardwood	26,887	25,796	798	293	0
Total	158,913	119,380	35,942	3,591	0
Total					
Softwood	2,425,370	654,297	986,831	554,340	229,902
Hardwood	796,271	274,461	297,317	216,804	7,689
Total	3,221,641	928,758	1,284,148	771,144	237,591

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

Table A.7—Disposal of residue at primary wood-using plants by product, species group, and type of residue, Southern Region, 2003 and 2005

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
	thousand cubic feet									
Fiber products										
Softwood	848,704	866,321	0	0	823,285	843,138	12,103	7,416	13,316	15,767
Hardwood	222,557	214,889	194	29	220,023	213,816	2,340	1,044	0	0
Total	1,071,261	1,081,210	194	29	1,043,308	1,056,954	14,443	8,460	13,316	15,767
Particleboard										
Softwood	137,254	153,489	3	146	9,494	27,993	59,298	38,933	68,459	86,417
Hardwood	15,334	14,977	166	433	12,164	11,909	2,803	2,314	201	321
Total	152,588	168,466	169	579	21,658	39,902	62,101	41,247	68,660	86,738
Charcoal/ chemical wood										
Softwood	3,340	3,412	1	0	13	59	3,322	3,349	4	4
Hardwood	14,396	15,297	1,056	1,300	3,796	4,008	9,455	9,890	89	99
Total	17,736	18,709	1,057	1,300	3,809	4,067	12,777	13,239	93	103
Sawn products										
Softwood	31,521	49,895	1	0	31,520	49,895	0	0	0	0
Hardwood	11,241	4,809	4	0	11,237	4,809	0	0	0	0
Total	42,762	54,704	5	0	42,757	54,704	0	0	0	0
Fuel										
Softwood	1,078,138	1,104,878	540,945	547,120	60,605	40,297	398,063	442,291	78,525	75,170
Hardwood	469,943	431,694	243,641	212,918	41,029	40,246	179,857	172,812	5,416	5,718
Total	1,548,081	1,536,572	784,586	760,038	101,634	80,543	577,920	615,103	83,941	80,888
Miscellaneous										
Softwood	230,986	234,317	108,021	103,642	22,086	23,247	51,022	56,254	49,857	51,174
Hardwood	102,046	99,149	60,204	57,022	13,007	15,045	26,154	25,540	2,681	1,542
Total	333,032	333,466	168,225	160,664	35,093	38,292	77,176	81,794	52,538	52,716
Not used										
Softwood	11,520	13,058	3,622	3,389	3,354	2,202	4,295	6,098	249	1,369
Hardwood	18,442	15,456	3,644	2,759	8,369	7,484	6,356	5,204	73	9
Total	29,962	28,514	7,266	6,148	11,723	9,686	10,651	11,302	322	1,378
All products										
Softwood	2,341,463	2,425,370	652,593	654,297	950,357	986,831	528,103	554,341	210,410	229,901
Hardwood	853,959	796,271	308,909	274,461	309,625	297,317	226,965	216,804	8,460	7,689
Total	3,195,422	3,221,641	961,502	928,758	1,259,982	1,284,148	755,068	771,145	218,870	237,590

Table A.8—Total roundwood output by product, species group, and source of material, Southern Region, 2005

Product and species group	All sources	Growing-stock trees			Other sources
		Total	Sawtimber	Poletimber	
	thousand cubic feet				
Saw logs					
Softwood	2,887,854	2,812,918	2,605,735	207,183	74,936
Hardwood	997,509	957,309	903,906	53,403	40,200
Total	3,885,363	3,770,227	3,509,641	260,586	115,136
Veneer logs and bolts					
Softwood	765,727	747,624	662,675	84,949	18,103
Hardwood	80,546	79,214	78,746	468	1,332
Total	846,273	826,838	741,421	85,417	19,435
Pulpwood					
Softwood	2,308,247	2,101,052	943,145	1,157,907	207,195
Hardwood	1,145,602	1,038,604	480,060	558,544	106,998
Total	3,453,849	3,139,656	1,423,205	1,716,451	314,193
Composite panels					
Softwood	333,631	295,752	119,299	176,453	37,879
Hardwood	50,642	46,045	23,093	22,952	4,597
Total	384,273	341,797	142,392	199,405	42,476
Other miscellaneous					
Softwood	93,395	83,807	68,825	14,982	9,588
Hardwood	6,249	5,788	4,018	1,770	461
Total	99,644	89,595	72,843	16,752	10,049
Total industrial products					
Softwood	6,388,854	6,041,153	4,399,679	1,641,474	347,701
Hardwood	2,280,548	2,126,960	1,489,823	637,137	153,588
Total	8,669,402	8,168,113	5,889,502	2,278,611	501,289
Fuelwood					
Softwood	37,298	29,103	19,878	9,225	8,195
Hardwood	302,366	247,512	189,651	57,861	54,854
Total	339,664	276,615	209,529	67,086	63,049
All products					
Softwood	6,426,152	6,070,256	4,419,557	1,650,699	355,896
Hardwood	2,582,914	2,374,472	1,679,474	694,998	208,442
Total	9,009,066	8,444,728	6,099,031	2,345,697	564,338

Numbers in rows and columns may not add due to rounding.

Table A.9—Total roundwood output by species group, State, and ownership class, Southern Region, 2005

Species group and State	Total	Ownership class		
		Public	Forest industry	Nonindustrial private
		thousand cubic feet		
Softwoods				
Alabama	881,681	22,354	240,689	618,638
Arkansas	541,011	20,988	290,250	229,773
Florida	418,994	31,713	85,531	301,750
Georgia	1,004,844	23,534	309,867	671,443
Kentucky	12,594	29	15	12,550
Louisiana	712,253	12,143	351,038	349,072
Mississippi	783,581	26,033	173,861	583,687
North Carolina	522,369	10,314	103,418	408,637
Oklahoma	95,646	1,755	61,540	32,351
South Carolina	536,057	37,511	131,757	366,789
Tennessee	79,879	2,808	18,824	58,247
Texas	564,817	10,812	246,562	307,443
Virginia	272,425	2,101	26,536	243,788
Total softwoods	6,426,151	202,095	2,039,888	4,184,168
Hardwoods				
Alabama	283,137	16,198	49,308	217,632
Arkansas	228,036	11,625	50,287	166,124
Florida	46,153	5,324	6,783	34,046
Georgia	211,329	6,173	32,780	172,376
Kentucky	199,088	3,073	6,218	189,797
Louisiana	174,818	4,195	56,985	113,638
Mississippi	262,405	5,684	50,400	206,321
North Carolina	318,765	1,339	23,383	294,043
Oklahoma	35,922	946	11,098	23,878
South Carolina	136,031	4,961	11,476	119,594
Tennessee	273,758	28,012	21,914	223,832
Texas	142,207	860	38,150	103,197
Virginia	271,265	16,794	12,129	242,342
Total hardwoods	2,582,914	105,184	370,911	2,106,820
All species	9,009,065	307,279	2,410,799	6,290,988

Numbers in rows and columns may not add due to rounding.

Table A.10—Total roundwood output by species group, detailed species group, and product, Southern Region, 2005

Species group and detailed species group	Total	Product						
		Saw logs	Veneer logs	Pulpwood	Composite panels	Poles and posts	Other miscellaneous	Fuel-wood
		thousand cubic feet						
Softwood								
Cedars	37,868	20,898	2,155	12,177	1,921	155	234	328
Cypress	69,512	33,496	4,584	24,658	1,584	1,172	3,543	475
Hemlock	7,258	3,200	416	1,259	307	4	1,887	185
Loblolly-shortleaf pines	4,994,911	2,267,572	671,003	1,709,811	277,546	34,503	6,805	27,671
Longleaf-slash pines	1,003,906	422,676	72,549	447,832	23,271	17,265	15,604	4,709
White pine	35,669	22,688	1,192	7,628	3,480	99	72	510
Other pines	277,029	117,323	13,830	104,882	25,523	2,453	9,598	3,420
Total softwoods	6,426,153	2,887,853	765,729	2,308,247	333,632	55,651	37,743	37,298
Hardwood								
Ash	54,914	26,899	1,488	19,423	1,432	17	28	5,627
Basswood	6,440	3,599	321	1,234	467	0	1	818
Beech	30,997	16,532	767	9,580	859	3	3	3,253
Yellow birch	1,902	280	11	440	0	0	994	177
Other birch	3,278	1,481	184	1,173	163	0	1	276
Black cherry	27,220	9,606	1,291	12,525	473	4	36	3,285
Cottonwood	18,666	9,459	667	5,717	1,310	1	4	1,508
Elm	57,988	20,669	1,381	28,434	822	7	77	6,598
Hickory	145,173	64,799	3,753	57,796	3,133	15	110	15,567
Hard maples	18,538	10,846	345	4,820	519	1	0	2,007
Soft maples	114,424	39,972	3,766	52,630	2,304	17	170	15,565
Select red oaks	123,943	55,108	2,685	51,013	1,967	36	232	12,902
Other red oaks	609,416	214,925	19,716	291,156	11,158	75	1,461	70,925
Select white oaks	260,645	116,709	5,695	105,219	4,137	45	918	27,922
Other white oaks	193,658	80,476	5,321	81,631	3,279	23	219	22,709
Sweetgum	374,258	112,974	14,477	196,020	6,154	57	414	44,162
Sycamore	25,406	12,777	945	8,639	459	0	6	2,580
Tupelo-blackgum	97,321	26,526	3,969	50,311	2,030	3	171	14,311
Black walnut	14,261	9,596	1,117	1,870	74	1	13	1,590
Yellow-poplar	263,131	115,785	8,046	99,002	6,727	52	500	33,019
Other hardwoods	141,332	48,490	4,600	66,968	3,176	2	533	17,563
Total hardwoods	2,582,911	997,508	80,545	1,145,601	50,643	359	5,891	302,364
All species	9,009,064	3,885,361	846,274	3,453,848	384,275	56,010	43,634	339,662

Numbers in rows and columns may not add due to rounding.

Table A.11—Total roundwood output by species group, detailed species group, and ownership class, Southern Region, 2005

Species group and detailed species group	Total	Ownership class		
		Public	Forest industry	Nonindustrial private
		thousand cubic feet		
Softwood				
Cedars	37,868	695	3,542	33,631
Cypress	69,511	2,306	17,813	49,392
Hemlock	7,257	379	89	6,789
Loblolly-shortleaf pines	4,994,911	136,264	1,654,804	3,203,843
Longleaf-slash pines	1,003,906	49,287	316,183	638,436
White pine	35,668	2,762	255	32,651
Other pines	277,029	10,401	47,203	219,425
Total softwoods	6,426,150	202,094	2,039,889	4,184,167
Hardwood				
Ash	54,914	3,365	7,173	44,376
Basswood	6,439	88	601	5,750
Beech	30,997	908	4,306	25,783
Yellow birch	1,903	44	4	1,855
Other birch	3,278	63	145	3,070
Black cherry	27,219	1,435	3,081	22,703
Cottonwood	18,664	694	2,569	15,401
Elm	57,989	1,930	9,495	46,564
Hickory	145,171	7,638	18,302	119,231
Hard maples	18,539	1,706	2,954	13,879
Soft maples	114,426	5,127	12,147	97,152
Select red oaks	123,942	8,085	16,950	98,907
Other red oaks	609,416	23,332	100,334	485,750
Select white oaks	260,642	10,726	34,837	215,079
Other white oaks	193,658	8,714	32,333	152,611
Sweetgum	374,258	10,807	59,618	303,833
Sycamore	25,408	1,777	5,114	18,517
Tupelo-blackgum	97,322	4,805	18,018	74,499
Black walnut	14,262	365	335	13,562
Yellow-poplar	263,131	7,483	21,953	233,695
Other hardwoods	141,332	6,089	20,640	114,603
Total hardwoods	2,582,910	105,181	370,909	2,106,820
All species	9,009,060	307,275	2,410,798	6,290,987

Numbers in rows and columns may not add due to rounding.

Table A.12—Output of industrial products by product and species group, Southern Mountain, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	124,317	136,358	12,041	9.7
Hardwood	160,522	166,622	6,100	3.8
Total	284,839	302,980	18,141	6.4
Veneer logs				
Softwood	14,481	15,916	1,435	9.9
Hardwood	8,839	11,072	2,233	25.3
Total	23,320	26,988	3,668	15.7
Pulpwood				
Softwood	87,228	80,923	-6,305	-7.2
Hardwood	58,854	66,003	7,149	12.1
Total	146,082	146,926	844	0.6
Composite panels				
Softwood	9,019	7,201	-1,818	-20.2
Hardwood	3,170	7,795	4,625	145.9
Total	12,189	14,996	2,807	23.0
Other industrial				
Softwood	9,180	9,110	-70	-0.8
Hardwood	7,496	3,437	-4,059	-54.1
Total	16,676	12,547	-4,129	-24.8
All industrial				
Softwood	244,225	249,508	5,283	2.2
Hardwood	238,881	254,929	16,048	6.7
Total	483,106	504,437	21,331	4.4
Byproduct output				
Softwood	101,834	104,237	2,403	2.4
Hardwood	106,554	118,562	12,008	11.3
Total	208,388	222,799	14,411	6.9
Total output				
Softwood	346,059	353,745	7,686	2.2
Hardwood	345,435	373,491	28,056	8.1
Total	691,494	727,236	35,742	5.2

Table A.13—Output of industrial products by product and species group, Southern Piedmont, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	1,024,748	1,080,282	55,534	5.4
Hardwood	587,039	604,533	17,494	3.0
Total	1,611,787	1,684,815	73,028	4.5
Veneer logs				
Softwood	312,862	330,913	18,051	5.8
Hardwood	34,820	29,280	-5,540	-15.9
Total	347,682	360,193	12,511	3.6
Pulpwood				
Softwood	706,419	768,717	62,298	8.8
Hardwood	520,923	580,451	59,528	11.4
Total	1,227,342	1,349,168	121,826	9.9
Composite panels				
Softwood	180,691	243,525	62,834	34.8
Hardwood	16,706	21,474	4,768	28.5
Total	197,397	264,999	67,602	34.2
Other industrial				
Softwood	49,537	21,804	-27,733	-56.0
Hardwood	6,415	1,731	-4,684	-73.0
Total	55,952	23,535	-32,417	-57.9
All industrial				
Softwood	2,274,257	2,445,241	170,984	7.5
Hardwood	1,165,903	1,237,469	71,566	6.1
Total	3,440,160	3,682,710	242,550	7.1
Byproduct output				
Softwood	897,045	946,054	49,009	5.5
Hardwood	471,975	439,175	-32,800	-6.9
Total	1,369,020	1,385,229	16,209	1.2
Total output				
Softwood	3,171,302	3,391,295	219,993	6.9
Hardwood	1,637,878	1,676,644	38,766	2.4
Total	4,809,180	5,067,939	258,759	5.4

Table A.14—Output of industrial products by product and species group, Southern Coastal Plain, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	1,518,260	1,671,214	152,954	10.1
Hardwood	237,894	226,354	-11,540	-4.9
Total	1,756,154	1,897,568	141,414	8.1
Veneer logs				
Softwood	416,798	418,898	2,100	0.5
Hardwood	42,034	40,194	-1,840	-4.4
Total	458,832	459,092	260	0.1
Pulpwood				
Softwood	1,435,383	1,458,607	23,224	1.6
Hardwood	476,037	499,147	23,110	4.9
Total	1,911,420	1,957,754	46,334	2.4
Composite panels				
Softwood	42,952	82,905	39,953	93.0
Hardwood	25,354	21,373	-3,981	-15.7
Total	68,306	104,278	35,972	52.7
Other industrial				
Softwood	76,196	62,481	-13,715	-18.0
Hardwood	943	1,081	138	14.6
Total	77,139	63,562	-13,577	-17.6
All industrial				
Softwood	3,489,589	3,694,105	204,516	5.9
Hardwood	782,262	788,149	5,887	0.8
Total	4,271,851	4,482,254	210,403	4.9
Byproduct output				
Softwood	1,331,065	1,362,021	30,956	2.3
Hardwood	256,988	223,078	-33,910	-13.2
Total	1,588,053	1,585,099	-2,954	-0.2
Total output				
Softwood	4,820,654	5,056,126	235,472	4.9
Hardwood	1,039,250	1,011,227	-28,023	-2.7
Total	5,859,904	6,067,353	207,449	3.5

Table A.15—Volume of roundwood products by State, year, species group, and type of product, Southern Region

State, year, and species group	All products	Product						
		Saw logs	Veneer logs	Pulpwood	Composite panels	Poles and posts	Other miscellaneous	Fuel-wood
		thousand cubic feet						
Alabama 2005								
Softwood	881,681	371,660	74,444	372,736	43,760	14,835	1,273	2,973
Hardwood	283,137	53,636	18,824	190,046	1,509	0	60	19,062
Total	1,164,818	425,296	93,268	562,782	45,269	14,835	1,333	22,035
Arkansas 2005								
Softwood	541,011	289,161	89,449	130,774	27,475	1,690	104	2,358
Hardwood	228,036	100,433	5,717	103,848	187	0	0	17,851
Total	769,047	389,594	95,166	234,622	27,662	1,690	104	20,209
Florida 2005								
Softwood	418,994	162,617	24,905	193,390	14,164	7,713	14,007	2,198
Hardwood	46,153	4,415	1,526	20,111	1,418	0	879	17,804
Total	465,147	167,032	26,431	213,501	15,582	7,713	14,886	20,002
Georgia 2005								
Softwood	1,004,844	394,723	66,742	455,654	56,350	14,079	11,847	5,449
Hardwood	211,329	63,480	7,660	87,174	6,658	10	894	45,453
Total	1,216,173	458,203	74,402	542,828	63,008	14,089	12,741	50,902
Kentucky 2005								
Softwood	12,594	4,429	268	4,162	2,038	436	1,203	58
Hardwood	199,087	138,870	7,280	20,389	12,061	44	0	20,443
Total	211,681	143,299	7,548	24,551	14,099	480	1,203	20,501
Louisiana 2005								
Softwood	712,253	282,659	144,915	254,488	26,248	2,327	0	1,616
Hardwood	174,819	60,402	695	82,070	11,730	0	0	19,922
Total	887,072	343,061	145,610	336,558	37,978	2,327	0	21,538
Mississippi 2005								
Softwood	783,581	432,908	69,401	238,166	39,332	1,521	0	2,253
Hardwood	262,405	110,394	8,752	127,761	4,524	0	0	10,974
Total	1,045,986	543,302	78,153	365,927	43,856	1,521	0	13,227
North Carolina 2005								
Softwood	522,369	289,355	44,337	136,936	41,126	1,337	71	9,207
Hardwood	318,765	110,302	15,437	136,726	8,271	0	22	48,007
Total	841,134	399,657	59,774	273,662	49,397	1,337	93	57,214
Oklahoma 2005								
Softwood	95,646	54,691	10,691	19,626	6,313	4,115	0	210
Hardwood	35,921	6,803	13	16,983	0	0	0	12,122
Total	131,567	61,494	10,704	36,609	6,313	4,115	0	12,332

continued

Table A.15—Volume of roundwood products by State, year, species group, and type of product, Southern Region (continued)

State, year, and species group	All products	Product						
		Saw logs	Veneer logs	Pulpwood	Composite panels	Poles and posts	Other miscellaneous	Fuel-wood
		thousand cubic feet						
South Carolina 2005								
Softwood	536,057	233,982	34,299	236,513	23,674	4,183	72	3,334
Hardwood	136,031	23,846	7,324	81,223	108	0	0	23,530
Total	672,088	257,828	41,623	317,736	23,782	4,183	72	26,864
Tennessee 2005								
Softwood	79,879	27,242	239	40,018	0	104	9,136	3,140
Hardwood	273,758	161,502	1,910	81,190	0	234	3,714	25,208
Total	353,637	188,744	2,149	121,208	0	338	12,850	28,348
Texas 2005								
Softwood	564,818	237,699	194,772	129,468	0	2,329	0	550
Hardwood	142,208	41,987	493	94,695	0	0	0	5,033
Total	707,026	279,686	195,265	224,163	0	2,329	0	5,583
Virginia 2003								
Softwood	272,425	106,728	11,265	96,316	53,151	983	30	3,952
Hardwood	271,264	121,439	4,915	103,385	4,176	69	323	36,957
Total	543,689	228,167	16,180	199,701	57,327	1,052	353	40,909
Total States								
Softwood	6,426,152	2,887,854	765,727	2,308,247	333,631	55,652	37,743	37,298
Hardwood	2,582,913	997,509	80,546	1,145,601	50,642	357	5,892	302,366
Total	9,009,065	3,885,363	846,273	3,453,848	384,273	56,009	43,635	339,664

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

Table A.16—Output of industrial products by product and species group, Alabama, 2003 and 2005

Product and species group	Year		Change	Change
	2003	2005		
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	335,571	371,660	36,089	10.8
Hardwood	69,046	53,636	-15,410	-22.3
Total	404,617	425,296	20,679	5.1
Veneer logs				
Softwood	84,767	74,444	-10,323	-12.2
Hardwood	22,595	18,824	-3,771	-16.7
Total	107,362	93,268	-14,094	-13.1
Pulpwood[a]				
Softwood	342,360	372,736	30,376	8.9
Hardwood	178,737	190,046	11,309	6.3
Total	521,097	562,782	41,685	8.0
Composite panels				
Softwood	22,863	43,760	20,897	91.4
Hardwood	1,138	1,509	371	32.6
Total	24,001	45,269	21,268	88.6
Other industrial				
Softwood	20,523	16,108	-4,415	-21.5
Hardwood	0	60	60	—
Total	20,523	16,168	-4,355	-21.2
All industrial				
Softwood	806,084	878,708	72,624	9.0
Hardwood	271,516	264,075	-7,441	-2.7
Total	1,077,600	1,142,783	65,183	6.0
Byproduct output				
Softwood	330,945	356,583	25,638	7.7
Hardwood	78,598	75,016	-3,582	-4.6
Total	409,543	431,599	22,056	5.4
Total output				
Softwood	1,137,029	1,235,291	98,262	8.6
Hardwood	350,114	339,091	-11,023	-3.1
Total	1,487,143	1,574,382	87,239	5.9

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (12,395,000 cubic feet in 2003 and 9,401,000 cubic feet in 2005).

Table A.17—Output of industrial products by product and species group, Arkansas, 2002 and 2005

Product and species group	Year 2002	Year 2005	Change	Change
	thousand cubic feet			*percent*
Saw logs				
Softwood	252,493	289,161	36,668	14.5
Hardwood	89,622	100,433	10,811	12.1
Total	342,115	389,594	47,479	13.9
Veneer logs				
Softwood	89,633	89,449	-184	-0.2
Hardwood	4,859	5,717	858	17.7
Total	94,492	95,166	674	0.7
Pulpwood[a]				
Softwood	134,317	130,774	-3,543	-2.6
Hardwood	78,276	103,848	25,572	32.7
Total	212,593	234,622	22,029	10.4
Composite panels				
Softwood	27,141	27,475	334	1.2
Hardwood	187	187	0	—
Total	27,328	27,662	334	1.2
Other industrial				
Softwood	3,045	1,794	-1,251	-41.1
Hardwood	41	0	-41	-100.0
Total	3,086	1,794	-1,292	-41.9
All industrial				
Softwood	506,629	538,653	32,024	6.3
Hardwood	172,985	210,185	37,200	21.5
Total	679,614	748,838	69,224	10.2
Byproduct output				
Softwood	251,034	268,145	17,111	6.8
Hardwood	75,317	84,753	9,436	12.5
Total	326,351	352,898	26,547	8.1
Total output				
Softwood	757,663	806,798	49,135	6.5
Hardwood	248,302	294,938	46,636	18.8
Total	1,005,965	1,101,736	95,771	9.5

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (3,709,000 cubic feet in 2002 and 2,942,000 cubic feet in 2005).

Table A.18—Output of industrial products by product and species group, Florida, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	166,217	162,617	-3,600	-2.2
Hardwood	4,454	4,415	-39	-0.9
Total	170,671	167,032	-3,639	-2.1
Veneer logs				
Softwood	30,492	24,905	-5,587	-18.3
Hardwood	1,437	1,526	89	6.2
Total	31,929	26,431	-5,498	-17.2
Pulpwood[a]				
Softwood	243,796	193,390	-50,406	-20.7
Hardwood	26,939	20,111	-6,828	-25.3
Total	270,735	213,501	-57,234	-21.1
Composite panels				
Softwood	1,326	14,164	12,838	968.2
Hardwood	6,400	1,418	-4,982	-77.8
Total	7,726	15,582	7,856	101.7
Other industrial				
Softwood	26,746	21,720	-5,026	-18.8
Hardwood	879	879	0	—
Total	27,625	22,599	-5,026	-18.2
All industrial				
Softwood	468,577	416,796	-51,781	-11.1
Hardwood	40,109	28,349	-11,760	-29.3
Total	508,686	445,145	-63,541	-12.5
Byproduct output				
Softwood	141,578	140,921	-657	-0.5
Hardwood	8,968	5,350	-3,618	-40.3
Total	150,546	146,271	-4,275	-2.8
Total output				
Softwood	610,155	557,717	-52,438	-8.6
Hardwood	49,077	33,699	-15,378	-31.3
Total	659,232	591,416	-67,816	-10.3

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (4,787,000 cubic feet in 2003 and 4,102,000 cubic feet in 2005).

Table A.19—Output of industrial products by product and species group, Georgia, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	thousand cubic feet			*percent*
Saw logs				
Softwood	375,705	394,723	19,018	5.1
Hardwood	65,442	63,480	-1,962	-3.0
Total	441,147	458,203	17,056	3.9
Veneer logs				
Softwood	56,986	66,742	9,756	17.1
Hardwood	11,488	7,660	-3,828	-33.3
Total	68,474	74,402	5,928	8.7
Pulpwood[a]				
Softwood	457,619	455,654	-1,965	-0.4
Hardwood	111,277	87,174	-24,103	-21.7
Total	568,896	542,828	-26,068	-4.6
Composite panels				
Softwood	45,373	56,350	10,977	24.2
Hardwood	2,365	6,658	4,293	181.5
Total	47,738	63,008	15,270	32.0
Other industrial				
Softwood	26,264	25,926	-338	-1.3
Hardwood	335	904	569	169.9
Total	26,599	26,830	231	0.9
All industrial				
Softwood	961,947	999,395	37,448	3.9
Hardwood	190,907	165,876	-25,031	-13.1
Total	1,152,854	1,165,271	12,417	1.1
Byproduct output				
Softwood	348,174	369,893	21,719	6.2
Hardwood	68,460	62,876	-5,584	-8.2
Total	416,634	432,769	16,135	3.9
Total output				
Softwood	1,310,121	1,369,288	59,167	4.5
Hardwood	259,367	228,752	-30,615	-11.8
Total	1,569,488	1,598,040	28,552	1.8

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (10,473,000 cubic feet in 2003 and 14,673,000 cubic feet in 2005).

Table A.20—Output of industrial products by product and species group, Kentucky, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	4,642	4,429	-213	-4.6
Hardwood	141,027	138,870	-2,157	-1.5
Total	145,669	143,299	-2,370	-1.6
Veneer logs				
Softwood	88	268	180	204.5
Hardwood	5,310	7,280	1,970	37.1
Total	5,398	7,548	2,150	39.8
Pulpwood[a]				
Softwood	3,143	4,162	1,019	32.4
Hardwood	18,240	20,389	2,149	11.8
Total	21,383	24,551	3,168	14.8
Composite panels				
Softwood	981	2,038	1,057	107.7
Hardwood	11,519	12,061	542	4.7
Total	12,500	14,099	1,599	12.8
Other industrial				
Softwood	1,590	1,639	49	3.1
Hardwood	44	44	0	—
Total	1,634	1,683	49	3.0
All industrial				
Softwood	10,444	12,536	2,092	20.0
Hardwood	176,140	178,644	2,504	1.4
Total	186,584	191,180	4,596	2.5
Byproduct output				
Softwood	2,698	2,788	90	3.3
Hardwood	86,944	88,502	1,558	1.8
Total	89,642	91,290	1,648	1.8
Total output				
Softwood	13,142	15,324	2,182	16.6
Hardwood	263,084	267,146	4,062	1.5
Total	276,226	282,470	6,244	2.3

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (1,980,000 cubic feet in 2003 and 373,000 cubic feet in 2005).

Table A.21—Output of industrial products by product and species group, Louisiana, 2002 and 2005

Product and species group	Year 2002	2005	Change	Change
	thousand cubic feet			*percent*
Saw logs				
Softwood	230,394	282,659	52,265	22.7
Hardwood	42,609	60,402	17,793	41.8
Total	273,003	343,061	70,058	25.7
Veneer logs				
Softwood	136,832	144,915	8,083	5.9
Hardwood	641	695	54	8.4
Total	137,473	145,610	8,137	5.9
Pulpwood[a]				
Softwood	191,096	254,488	63,392	33.2
Hardwood	75,219	82,070	6,851	9.1
Total	266,315	336,558	70,243	26.4
Composite panels				
Softwood	23,863	26,248	2,385	10.0
Hardwood	12,176	11,730	-446	-3.7
Total	36,039	37,978	1,939	5.4
Other industrial				
Softwood	7,506	2,327	-5,179	-69.0
Hardwood	0	0	0	—
Total	7,506	2,327	-5,179	-69.0
All industrial				
Softwood	589,691	710,637	120,946	20.5
Hardwood	130,645	154,897	24,252	18.6
Total	720,336	865,534	145,198	20.2
Byproduct output				
Softwood	238,447	274,350	35,903	15.1
Hardwood	36,235	46,412	10,177	28.1
Total	274,682	320,762	46,080	16.8
Total output				
Softwood	828,138	984,987	156,849	18.9
Hardwood	166,880	201,309	34,429	20.6
Total	995,018	1,186,296	191,278	19.2

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (3,743,000 cubic feet in 2002 and 3,729,000 cubic feet in 2005).

Table A.22—Output of industrial products by product and species group, Mississippi, 2002 and 2005

Product and species group	Year		Change	Change
	2002	2005		
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	419,174	432,908	13,734	3.3
Hardwood	107,028	110,394	3,366	3.1
Total	526,202	543,302	17,100	3.2
Veneer logs				
Softwood	72,261	69,401	-2,860	-4.0
Hardwood	5,865	8,752	2,887	49.2
Total	78,126	78,153	27	0.0
Pulpwood[a]				
Softwood	168,144	238,166	70,022	41.6
Hardwood	118,759	127,761	9,002	7.6
Total	286,903	365,927	79,024	27.5
Composite panels				
Softwood	27,061	39,332	12,271	45.3
Hardwood	7,402	4,524	-2,878	-38.9
Total	34,463	43,856	9,393	27.3
Other industrial				
Softwood	1,595	1,521	-74	-4.6
Hardwood	0	0	0	—
Total	1,595	1,521	-74	-4.6
All industrial				
Softwood	688,235	781,328	93,093	13.5
Hardwood	239,054	251,431	12,377	5.2
Total	927,289	1,032,759	105,470	11.4
Byproduct output				
Softwood	315,985	311,652	-4,333	-1.4
Hardwood	74,540	73,785	-755	-1.0
Total	390,525	385,437	-5,088	-1.3
Total output				
Softwood	1,004,220	1,092,980	88,760	8.8
Hardwood	313,594	325,216	11,622	3.7
Total	1,317,814	1,418,196	100,382	7.6

— = negligible; 0.0 = a value of < 0.0 but > 0.05 for the cell.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,964,000 cubic feet in 2002 and 2,801,000 cubic feet in 2005).

Table A.23—Output of industrial products by product and species group, North Carolina, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - - thousand cubic feet - - - - - -			*percent*
Saw logs				
Softwood	285,904	289,355	3,451	1.2
Hardwood	112,758	110,302	-2,456	-2.2
Total	398,662	399,657	995	0.2
Veneer logs				
Softwood	39,980	44,337	4,357	10.9
Hardwood	16,574	15,437	-1,137	-6.9
Total	56,554	59,774	3,220	5.7
Pulpwood[a]				
Softwood	158,359	136,936	-21,423	-13.5
Hardwood	108,554	136,726	28,172	26.0
Total	266,913	273,662	6,749	2.5
Composite panels				
Softwood	45,444	41,126	-4,318	-9.5
Hardwood	7,519	8,271	752	10.0
Total	52,963	49,397	-3,566	-6.7
Other industrial				
Softwood	929	1,408	479	51.6
Hardwood	22	22	0	—
Total	951	1,430	479	50.4
All industrial				
Softwood	530,616	513,162	-17,454	-3.3
Hardwood	245,427	270,758	25,331	10.3
Total	776,043	783,920	7,877	1.0
Byproduct output				
Softwood	213,304	218,458	5,154	2.4
Hardwood	100,645	87,084	-13,561	-13.5
Total	313,949	305,542	-8,407	-2.7
Total output				
Softwood	743,920	731,620	-12,300	-1.7
Hardwood	346,072	357,842	11,770	3.4
Total	1,089,992	1,089,462	-530	0.0

— = negligible; 0.0 = a value of < 0.0 but > 0.05 for the cell.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (11,934,000 cubic feet in 2003 and 7,051,000 cubic feet in 2005).

Table A.24—Output of industrial products by product and species group, Oklahoma, 2002 and 2005

Product and species group	Year 2002	2005	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	57,304	54,691	-2,613	-4.6
Hardwood	6,653	6,803	150	2.3
Total	63,957	61,494	-2,463	-3.9
Veneer logs and other industrial[a]				
Softwood	12,906	21,119	8,213	63.6
Hardwood	0	13	13	—
Total	12,906	21,132	8,226	63.7
Pulpwood[b]				
Softwood	27,706	19,626	-8,080	-29.2
Hardwood	21,212	16,983	-4,229	-19.9
Total	48,918	36,609	-12,309	-25.2
All industrial				
Softwood	97,916	95,436	-2,480	-2.5
Hardwood	27,865	23,799	-4,066	-14.6
Total	125,781	119,235	-6,546	-5.2
Byproduct output				
Softwood	43,690	46,885	3,195	7.3
Hardwood	6,387	6,838	451	7.1
Total	50,077	53,723	3,646	7.3
Total output				
Softwood	141,606	142,321	721	0.5
Hardwood	34,252	30,637	-3,615	-10.6
Total	175,858	172,958	-2,900	-1.6

— = negligible.

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

[b] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills 3,707,000 cubic feet in 2002 and 3,707,000 cubic feet in 2005).

Table A.25—Output of industrial products by product and species group, South Carolina, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	thousand cubic feet			*percent*
Saw logs				
Softwood	207,536	233,982	26,446	12.7
Hardwood	27,381	23,846	-3,535	-12.9
Total	234,917	257,828	22,911	9.8
Veneer logs				
Softwood	34,781	34,299	-482	-1.4
Hardwood	6,958	7,324	366	5.3
Total	41,739	41,623	-116	-0.3
Pulpwood[a]				
Softwood	205,321	236,513	31,192	15.2
Hardwood	68,303	81,223	12,920	18.9
Total	273,624	317,736	44,112	16.1
Composite panels				
Softwood	17,870	23,674	5,804	32.5
Hardwood	56	108	52	92.9
Total	17,926	23,782	5,856	32.7
Other industrial				
Softwood	3,753	4,255	502	13.4
Hardwood	0	0	0	—
Total	3,753	4,255	502	13.4
All industrial				
Softwood	469,261	532,723	63,462	13.5
Hardwood	102,698	112,501	9,803	9.5
Total	571,959	645,224	73,265	12.8
Byproduct output				
Softwood	142,208	160,354	18,146	12.8
Hardwood	26,109	25,145	-964	-3.7
Total	168,317	185,499	17,182	10.2
Total output				
Softwood	611,469	693,077	81,608	13.3
Hardwood	128,807	137,646	8,839	6.9
Total	740,276	830,723	90,447	12.2

— = negligible.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,257,000 cubic feet in 2003 and 7,104,000 cubic feet in 2005).

Table A.26—Output of industrial products by product and species group, Tennessee, 2001 and 2005

Product and species group	Year 2001	2005	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	30,397	27,242	-3,155	-10.4
Hardwood	151,914	161,502	9,588	6.3
Total	182,311	188,744	6,433	3.5
Veneer logs				
Softwood	271	239	-32	-11.8
Hardwood	1,275	1,910	635	49.8
Total	1,546	2,149	603	39.0
Pulpwood				
Softwood	55,183	40,018	-15,165	-27.5
Hardwood	71,961	81,190	9,229	12.8
Total	127,144	121,208	-5,936	-4.7
Other industrial				
Softwood	13,266	9,240	-4,026	-30.3
Hardwood	449	3,948	3,499	779.3
Total	13,715	13,188	-527	-3.8
All industrial				
Softwood	99,117	76,739	-22,378	-22.6
Hardwood	225,599	248,550	22,951	10.2
Total	324,716	325,289	573	0.2
Byproduct output				
Softwood	20,327	15,046	-5,281	-26.0
Hardwood	92,657	104,073	11,416	12.3
Total	112,984	119,119	6,135	5.4
Total output				
Softwood	119,444	91,785	-27,659	-23.2
Hardwood	318,256	352,623	34,367	10.8
Total	437,700	444,408	6,708	1.5

Table A.27—Output of industrial products by product and species group, Texas, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - - *thousand cubic feet* - - - - -			*percent*
Saw logs				
Softwood	198,832	237,699	38,867	19.5
Hardwood	48,263	41,987	-6,276	-13.0
Total	247,095	279,686	32,591	13.2
Veneer logs				
Softwood	178,935	194,772	15,837	8.9
Hardwood	20	493	473	2,365.0
Total	178,955	195,265	16,310	9.1
Pulpwood[a]				
Softwood	161,940	129,468	-32,472	-20.1
Hardwood	77,836	94,695	16,859	21.7
Total	239,776	224,163	-15,613	-6.5
Composite panels				
Softwood	0	0	0	—
Hardwood	0	0	0	—
Total	0	0	0	—
Other industrial				
Softwood	2,441	2,329	-112	-4.6
Hardwood	0	0	0	—
Total	2,441	2,329	-112	-4.6
All industrial				
Softwood	542,148	564,268	22,120	4.1
Hardwood	126,119	137,175	11,056	8.8
Total	668,267	701,443	33,176	5.0
Byproduct output				
Softwood	198,426	159,115	-39,311	-19.8
Hardwood	93,235	30,020	-63,215	-67.8
Total	291,661	189,135	-102,526	-35.2
Total output				
Softwood	740,574	723,383	-17,191	-2.3
Hardwood	219,354	167,195	-52,159	-23.8
Total	959,928	890,578	-69,350	-7.2

— = negligible.

Table A.28—Output of industrial products by product and species group, Virginia, 2003 and 2005

Product and species group	Year 2003	2005	Change	Change
	- - - - thousand cubic feet - - - -			*percent*
Saw logs				
Softwood	108,085	106,728	-1,357	-1.3
Hardwood	121,180	121,439	259	0.2
Total	229,265	228,167	-1,098	-0.5
Veneer logs				
Softwood	8,401	11,265	2,864	34.1
Hardwood	8,448	4,915	-3,533	-41.8
Total	16,849	16,180	-669	-4.0
Pulpwood[a]				
Softwood	89,198	96,316	7,118	8.0
Hardwood	97,264	103,385	6,121	6.3
Total	186,462	199,701	13,239	7.1
Composite panels				
Softwood	44,584	53,151	8,567	19.2
Hardwood	9,125	4,176	-4,949	-54.2
Total	53,709	57,327	3,618	6.7
Other industrial				
Softwood	1,443	1,013	-430	-29.8
Hardwood	429	392	-37	-8.6
Total	1,872	1,405	-467	-24.9
All industrial				
Softwood	251,711	268,473	16,762	6.7
Hardwood	236,446	234,307	-2,139	-0.9
Total	488,157	502,780	14,623	3.0
Byproduct output				
Softwood	83,135	88,123	4,988	6.0
Hardwood	88,238	90,952	2,714	3.1
Total	171,373	179,075	7,702	4.5
Total output				
Softwood	334,846	356,596	21,750	6.5
Hardwood	324,684	325,259	575	0.2
Total	659,530	681,855	22,325	3.4

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,782,000 cubic feet in 2003 and 2,657,000 cubic feet in 2005).

Johnson, Tony G.; Bentley, James W.; Howell, Michael. 2008. The South's timber industry—an assessment of timber product output and use, 2005. Resour. Bull. SRS–135. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 52 p.

In 2005, industrial roundwood output from the South's forests totaled 8.7 billion cubic feet, 6 percent more than in 2003. Mill byproducts generated from primary manufacturers increased 1 percent to 3.2 billion cubic feet. Almost all plant residues were used primarily for fuel and fiber products. Saw logs were the leading roundwood product at 3.9 billion cubic feet; pulpwood ranked second at 3.5 billion cubic feet; veneer logs were third at 846 million cubic feet. The number of primary processing plants declined from 2,281 in 2003 to 2,028 in 2005. Total receipts increased 5 percent to 8.7 billion cubic feet.

Keywords: FIA, pulpwood, residues, roundwood, saw logs, veneer logs, wood movement.

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