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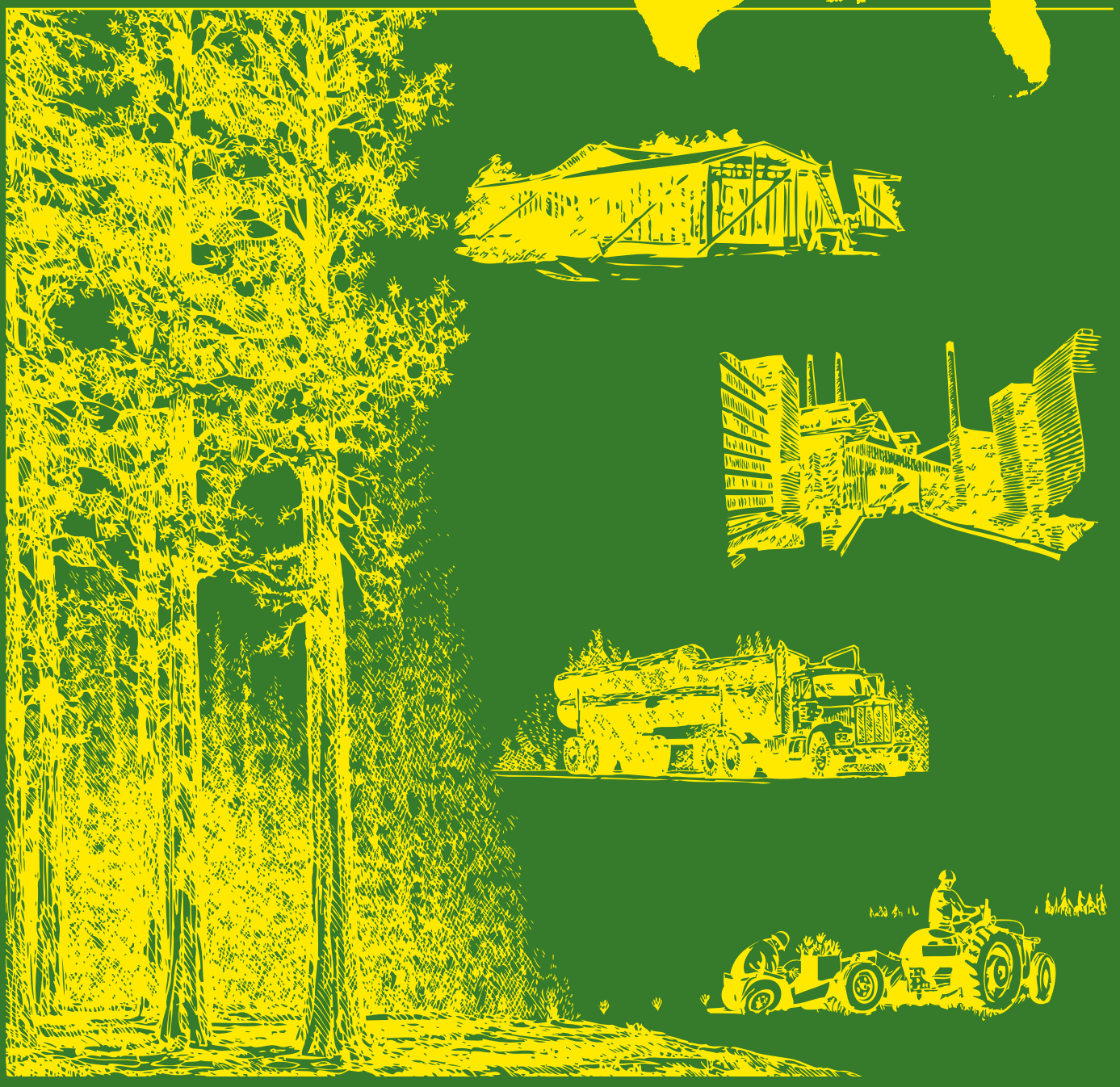
The South's Timber Industry—An Assessment of Timber Product Output and Use, 2009

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



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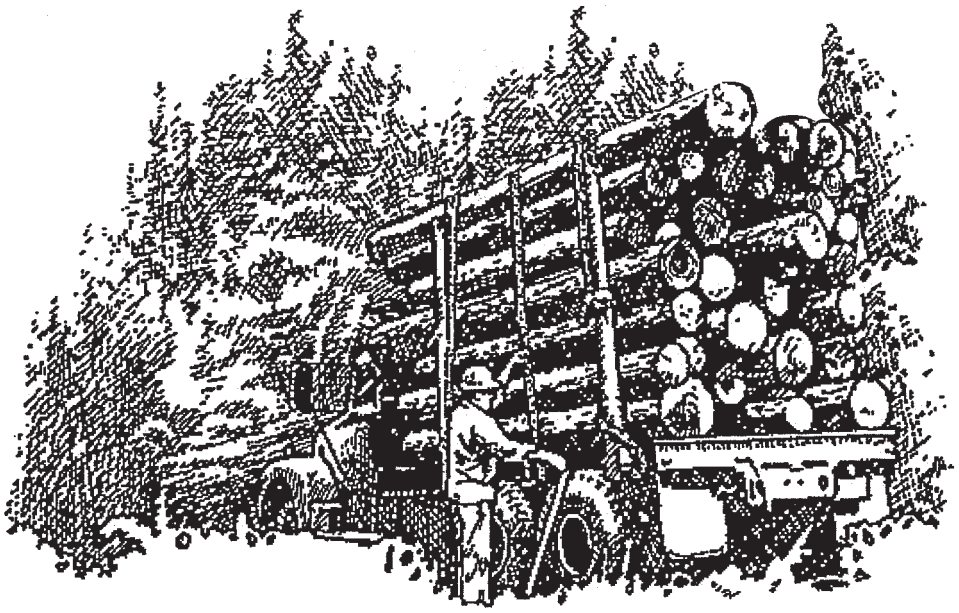

September 2011

Southern Research Station
200 W.T. Weaver Blvd.
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Foreword

This report contains the findings of a 2009 canvass of primary wood-using plants in the South, and presents changes in product output and residue use from 2007 to 2009. 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 2009 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 2010 to obtain information for 2009. 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 southern pulpmills. Medium density fiberboard, insulating board, and hardboard plants were included in this survey.

Acknowledgments

The authors thank Dr. William Luppold, Richard Bohnen, and Dr. Chris Edgar for review and comments; Carolyn Steppleton for her tireless efforts in processing and ensuring the accuracy of Timber Product Output (TPO) data; Joe McCollum for the intensity maps; Sam Lambert for the mill map; Helen Beresford for TPO database maintenance and support; Anne Jenkins, Janet Griffin, Sharon Johnson, and Charlene Walker, for tables, graphs, statistical checking, styling, and layout; and the Southern Research Station (SRS) Technical Publications Team for editorial review and publication of this report.

The SRS 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/.

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.

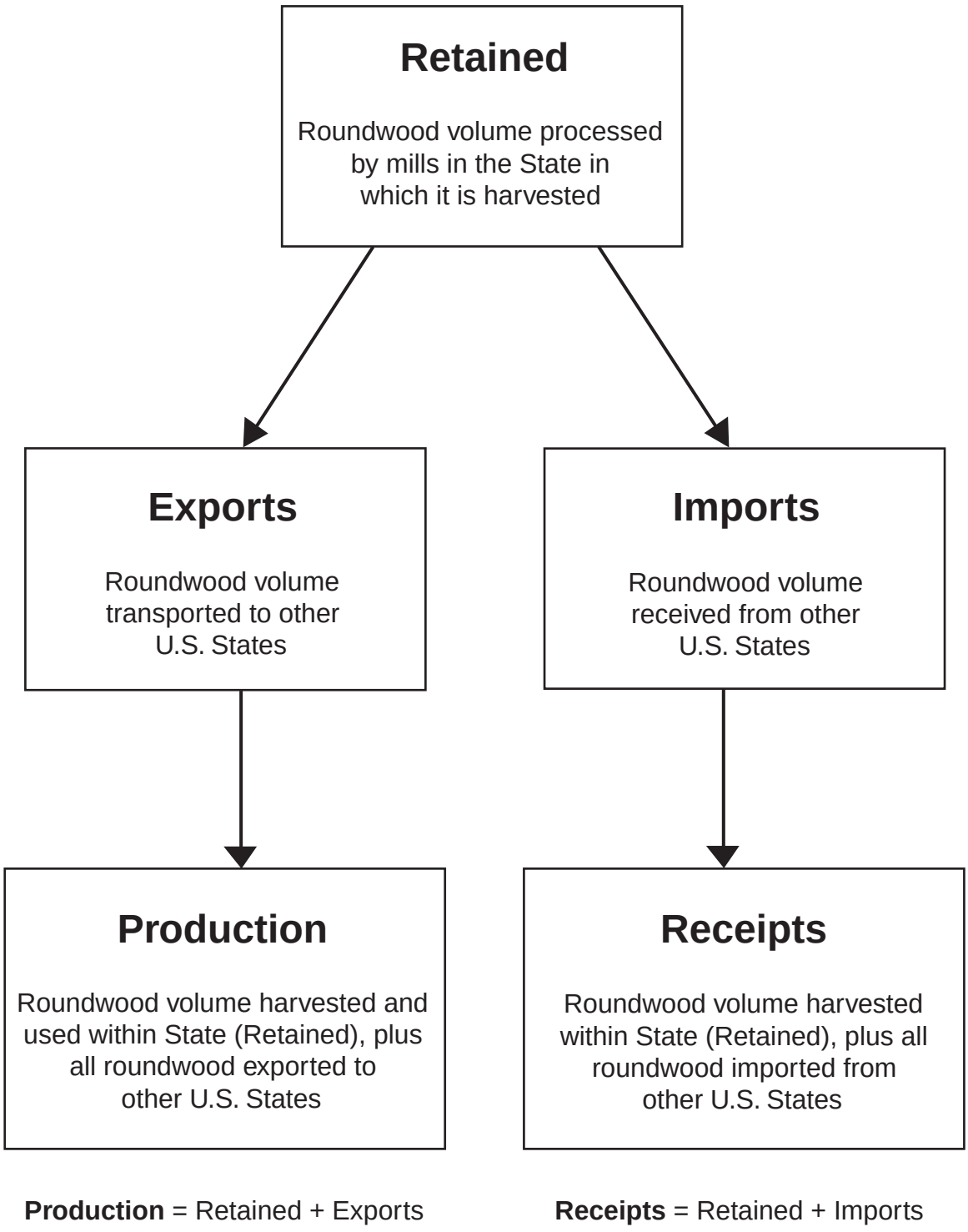

Figure 1—Movement of roundwood exports and imports within the United States.

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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). Unless otherwise indicated, the context for production and receipts comparisons (increases, decreases, or stabilizations) throughout the report is the change from 2007 to 2009.

All Products

- Between 2007 and 2009, the South's industrial TPO from roundwood was down 1.65 billion cubic feet, or 20 percent, to 6.56 billion cubic feet.
- Output of softwood roundwood products declined 18 percent, or 1.11 billion cubic feet, to 4.97 billion cubic feet, while output of hardwood roundwood products was down 25 percent, or 538.3 million cubic feet, to 1.59 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 treated timberland area. Counties with the highest production intensity are depicted in the darker shades. For softwoods the darkest shade represents >2,700 cubic feet of production per acre, while for hardwoods the darkest shade represents >1,800 cubic feet per acre.
- Saw logs and pulpwood were the principal roundwood products in 2009. Combined output of these two products totaled 5.69 billion cubic feet and accounted for 87 percent of the South's total industrial roundwood output (fig. 5).

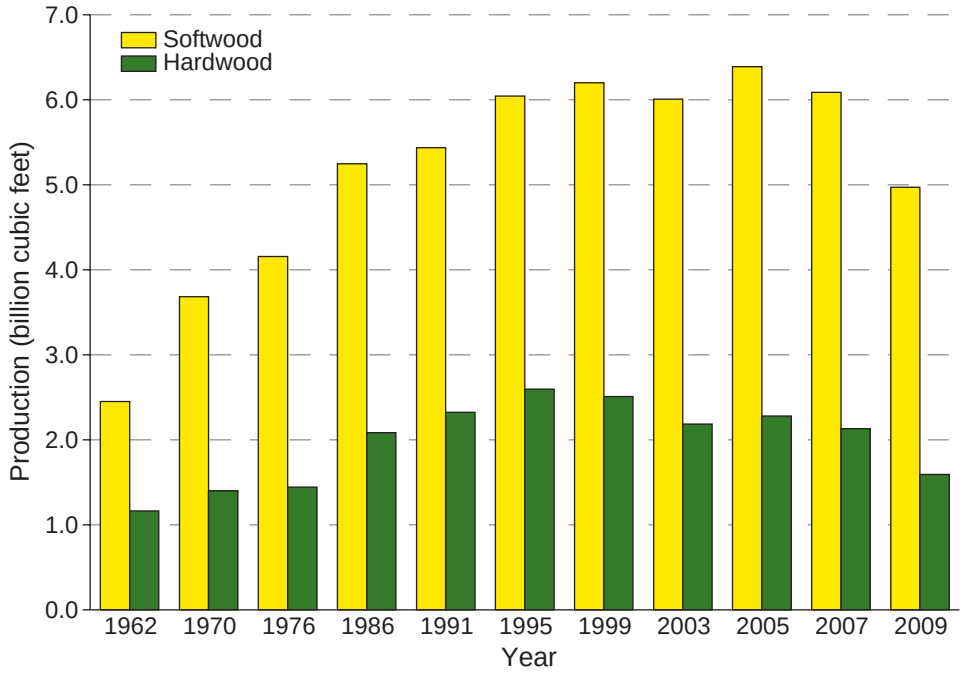

Figure 2—Roundwood production for all products by species group and year (see page 12 for references for individual years) in the South.

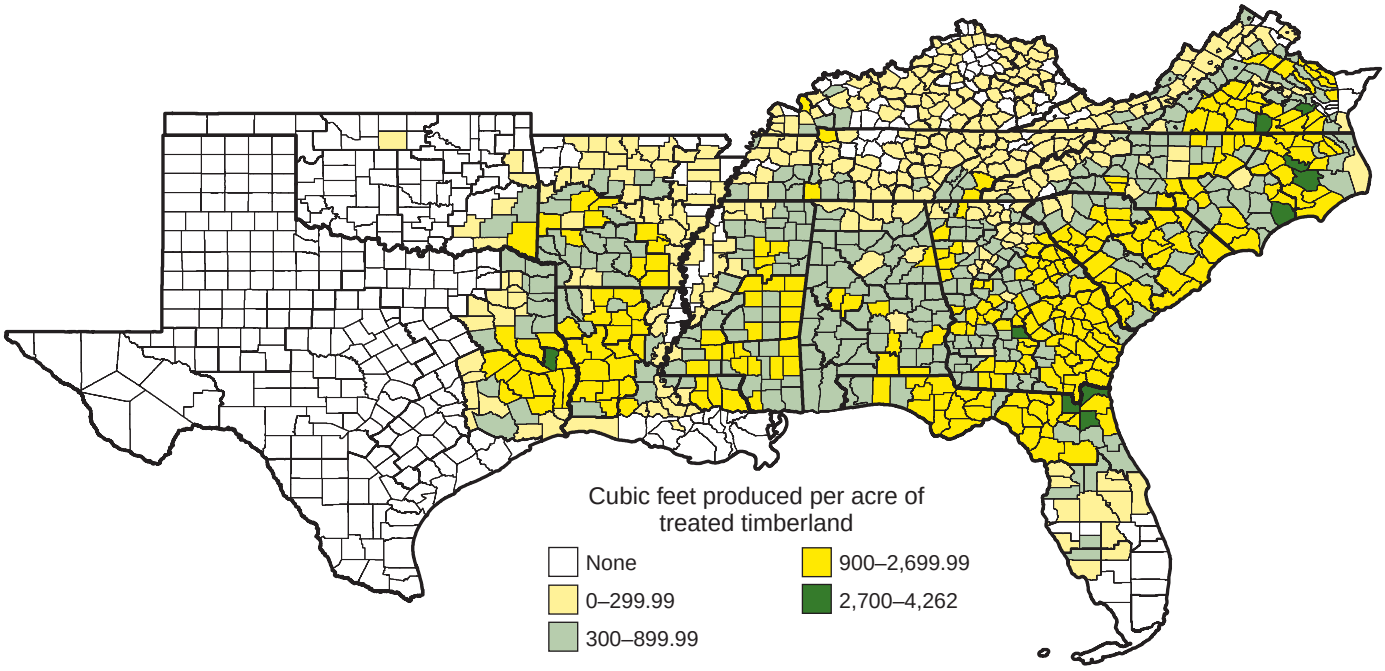

Figure 3—Intensity of roundwood softwood output for all industrial products for treated timberland in the South by county, 2009.

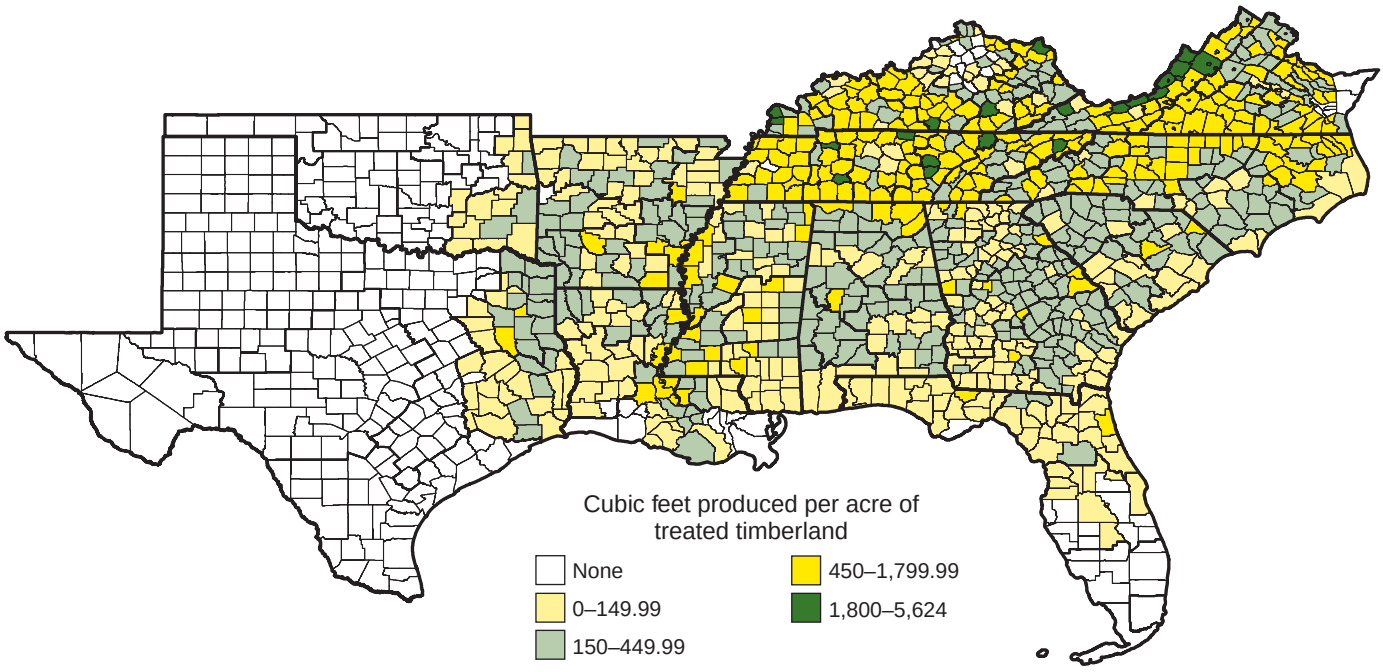

Figure 4—Intensity of roundwood hardwood output for all industrial products for treated timberland in the South by county, 2009.

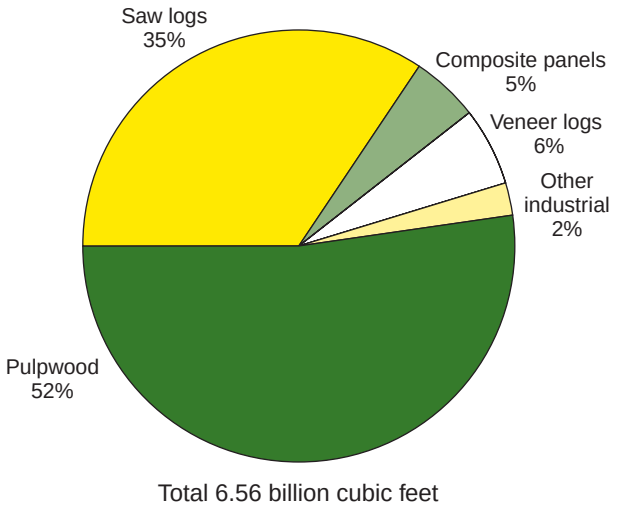

Figure 5—Roundwood production by type of product in the South, 2009.

- Total receipts at southern mills, which included roundwood harvested and retained in the South and roundwood imported from other regions, declined nearly 21 percent to 6.55 billion cubic feet, while output of utilized plant byproducts declined 972.4 million cubic feet, or 33 percent, to 1.96 billion cubic feet.

- The number of primary roundwood-using plants in the South was down 19 percent, or 353 mills, from 1,882 in 2007 to 1,529 in 2009 (fig. 6: see foldout map, page 5).

- Georgia led the 13 Southern States in total roundwood output (which includes residential fuelwood) with 1.11 billion cubic feet, while Alabama was second with 835.9 million cubic feet. Mississippi, North Carolina, and Louisiana followed with 702.9, 649.2, and 626.4 million cubic feet, respectively (fig. 7). Total roundwood output for these five States amounted to 3.92 billion cubic feet and accounted for 56 percent of the South's total production.

Saw Logs

- Total saw-log production declined nearly 35 percent from 3.45 billion cubic feet in 2007 to 2.26 billion cubic feet (12.81 billion board feet, International ¼-inch rule) in 2009. Saw logs accounted for almost 35 percent of the South's total roundwood products.

- Output of softwood saw logs declined 35 percent to 1.64 billion cubic feet (9.10 billion board feet, International ¼-inch rule), while output of hardwood saw logs was down 33 percent to 615.9 million cubic feet (3.71 billion board feet, International ¼-inch rule) (fig. 8).

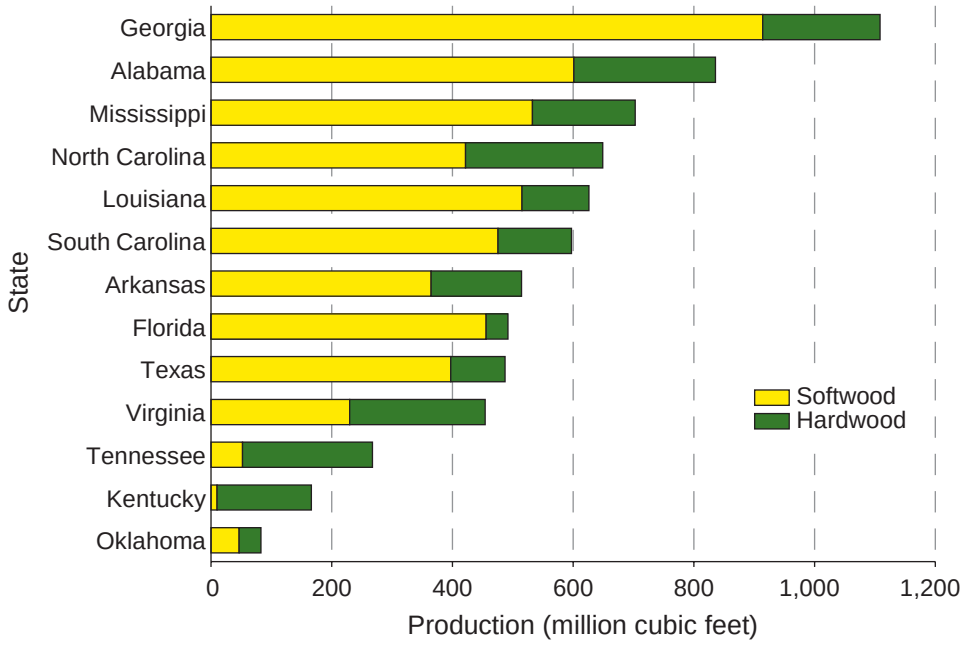

Figure 7—Roundwood production for all products by State and species group in the South, 2009.

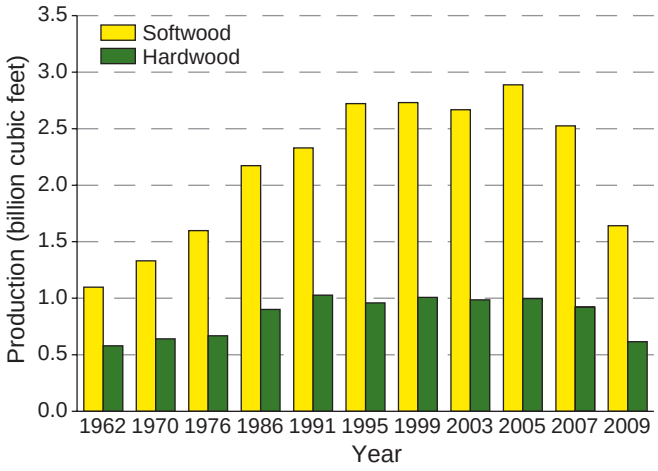

Figure 8—Roundwood saw-log production by species group and year (see page 12 for references of individual years) in the South.

- In 2009, the South had 1,216 sawmills, a net loss of 324 mills since 2007. The total number of sawmills does not include a number of one-person or some small sawmills in the Southern Region. Of the 1,216 sawmills operating, 347 were classified as softwood sawmills, 826 were classified as hardwood sawmills, and the remaining 43 were classified as softwood/hardwood sawmills.

- Total saw-log receipts dropped 1.22 billion cubic feet to 2.23 billion cubic feet. At 1.64 billion cubic feet softwood saw-log receipts declined 35 percent, or 898.3 million cubic feet. Hardwood saw-log receipts were down 36 percent from 916.5 million cubic feet in 2007 to 589.9 million cubic feet in 2009.

- Of the operating sawmills in 2009, 411, or 34 percent, had receipts of < 1 million board feet, while 552 sawmills, or 45 percent, had receipts between 1.0 and 9.99 million board feet. There were 253 sawmills, or 21 percent, with receipts > 10 million board feet. These 253 mills accounted for > 81 percent of total saw-log receipts.

- Georgia led the 13 Southern States in total saw-log production with 309.5 million cubic feet, while North Carolina was second with 254.2 million cubic feet. Alabama, Mississippi, and Arkansas followed with 228.3, 219.6, and 215.2 million cubic feet, respectively (fig. 9). Combined output for these five States totaled 1.23 billion cubic feet and accounted for 54 percent of the South's saw-log production.

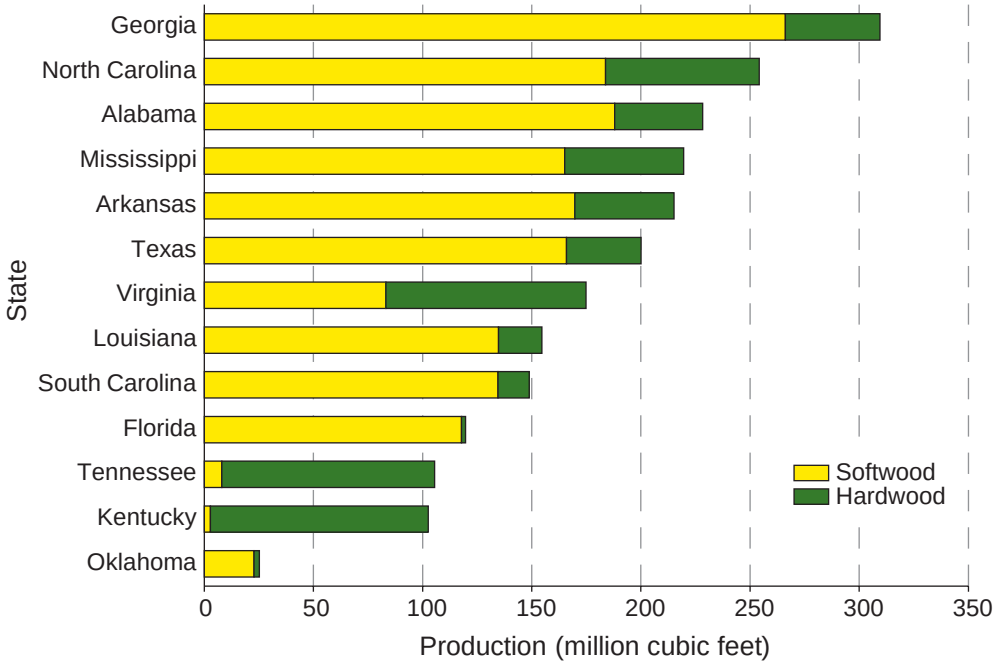

Figure 9—Roundwood saw-log production by State and species group in the South, 2009.

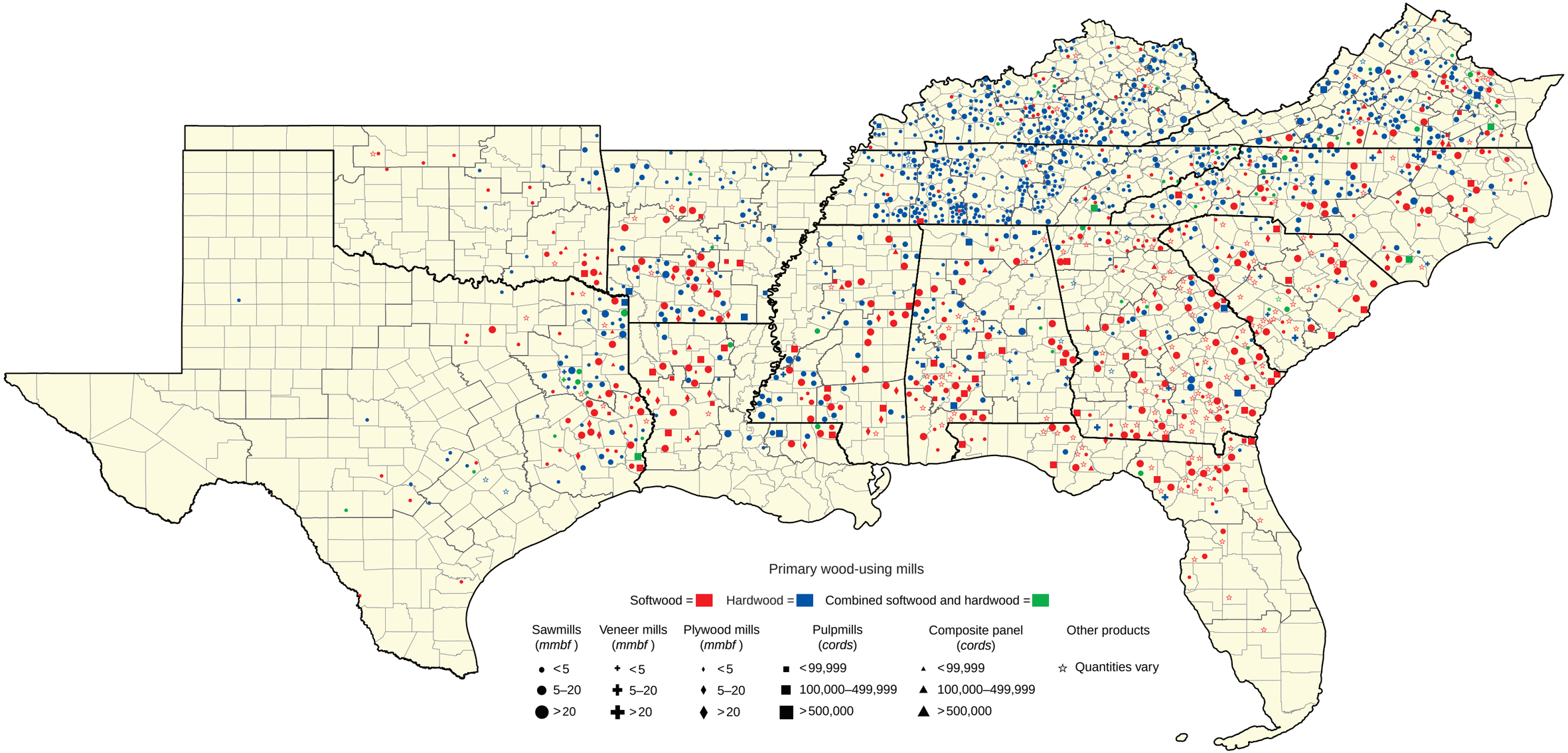

Figure 6—Primary wood-using mills in the South by State, 2009.

Pulpwood

- Total pulpwood production, including chipped roundwood, was down 3 percent to 3.43 billion cubic feet (47.09 million cords). Pulpwood production in 2009 accounted for 52 percent of the South's total roundwood TPO compared to 43 percent in 2007. Softwood output was up 3 percent to 2.52 billion cubic feet (34.98 million cords); hardwood output declined 17 percent to 913.1 million cubic feet (12.11 million cords) (fig. 10).
- Eighty-three pulpmill facilities were operating and receiving roundwood in the South in 2009, four less than in 2007. Of the 83 pulpmills operating, 58 were classified as softwood pulpmills, 21 were classified as hardwood pulpmills, and the remaining four were classified as softwood/hardwood pulpmills.
- Total pulpwood receipts for these mills declined 131.9 million cubic feet to 3.45 billion cubic feet, accounting for 53 percent of total receipts for all mills.
- Georgia led the 13 Southern States in total pulpwood production with 597.4 million cubic feet. Alabama followed with 515.1 million cubic feet. Mississippi, South Carolina, and Louisiana followed with 396.4, 338.1, and 322.5 million cubic feet, respectively (fig. 11). Combined output for these five States totaled 2,169.5 million cubic feet and accounted for 63 percent of the Southern pulpwood production.

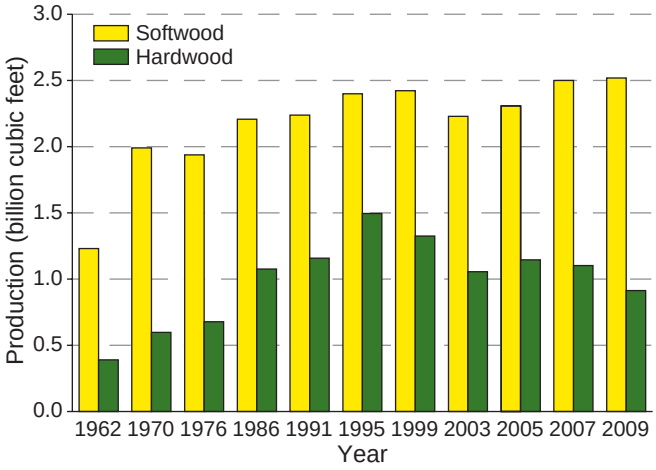

Figure 10—Roundwood pulpwood production by species group and year (see page 12 for references of individual years) in the South.

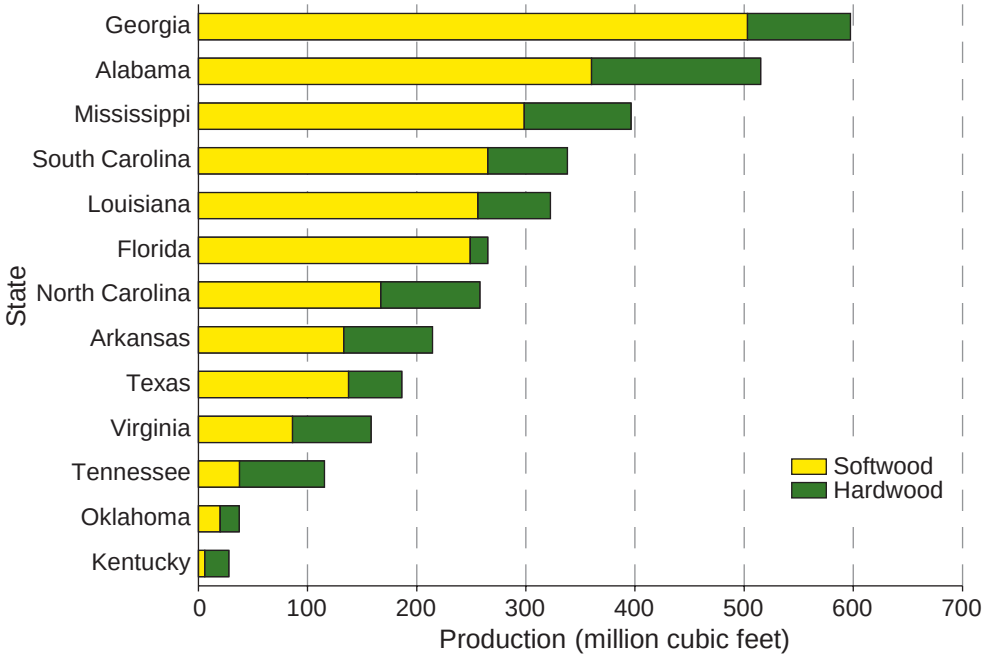

Figure 11—Roundwood pulpwood production by State and species group in the South, 2009.

Veneer Logs

- In 2009 output of veneer logs dropped 39 percent to 384.4 million cubic feet and accounted for 6 percent of the South's total roundwood TPO volume. Softwood veneer production declined 37 percent to nearly 350.1 million cubic feet (2.05 billion board feet, International ¼-inch rule); output of hardwood veneer logs was down 48 percent to 34.3 million cubic feet (213.6 million board feet, International ¼-inch rule) (fig. 12).

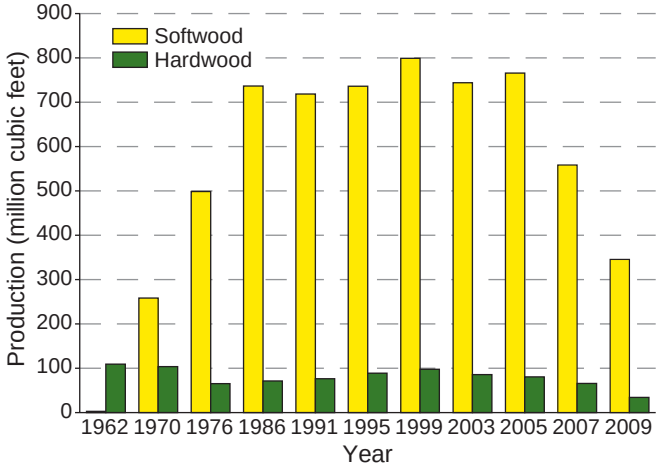

Figure 12—Roundwood veneer-log production by species group and year (see page 12 for references of individual years) in the South.

- The number of veneer mills operating in the South declined from 87 to 66 between 2007 and 2009. Receipts of veneer logs declined 47 percent to 387.7 million cubic feet. Softwood veneer receipts were down 308.0 million cubic feet, or nearly 47 percent, to 354.4 million cubic feet; hardwood veneer receipts fell 52 percent to 33.4 million cubic feet.

- Louisiana led the 13 Southern States in total veneer-log production with 80.5 million cubic feet. Mississippi, Georgia, Arkansas, and North Carolina followed with 46.9, 45.4, 44.3, and 39.0 million cubic feet, respectively (fig. 13). These five States accounted for 67 percent of the South's veneer-log production.

Composite Panels

- Roundwood harvested from the South's forests for composite panels dropped 34 percent and totaled 330.7 million cubic feet. Softwood output was down 31 percent to 322.1 million cubic feet (4.40 million cords); hardwood production declined 72 percent to 8.7 million cubic feet (114,500 cords) (fig. 14).

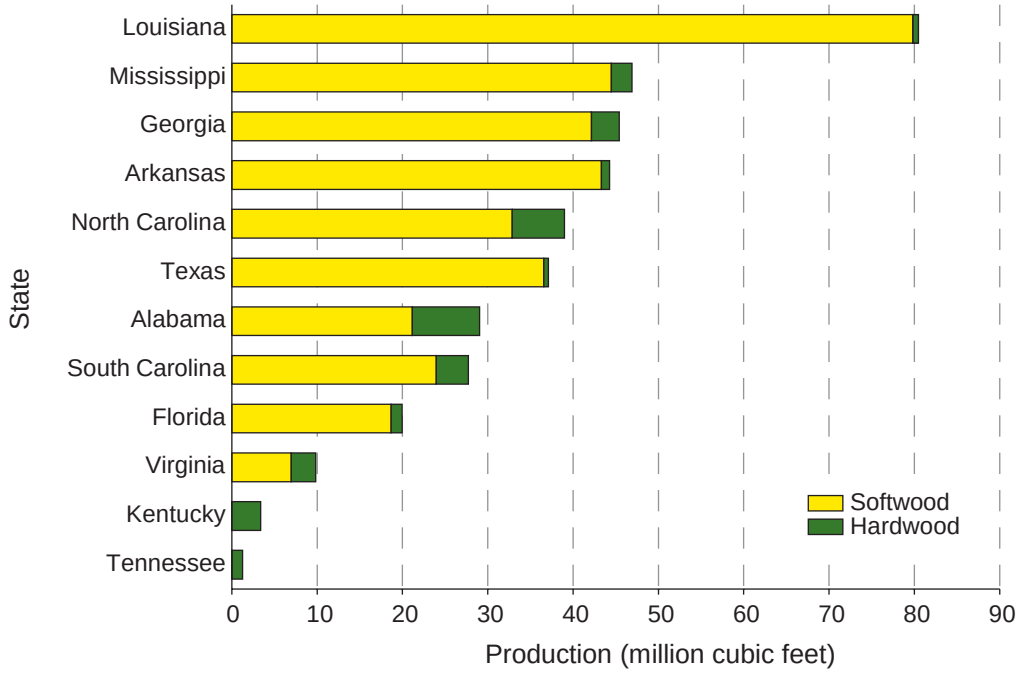

Figure 13—Roundwood veneer-log production by State and species group in the South, 2009.

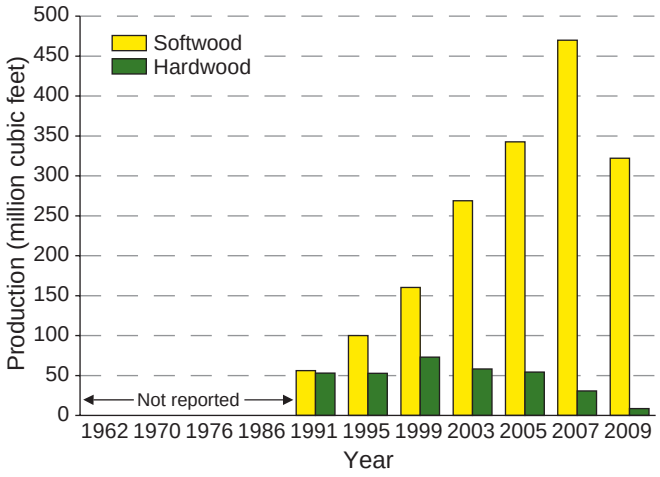

Figure 14—Roundwood production for composite panels by species group and year (see page 12 for references of individual years) in the South.

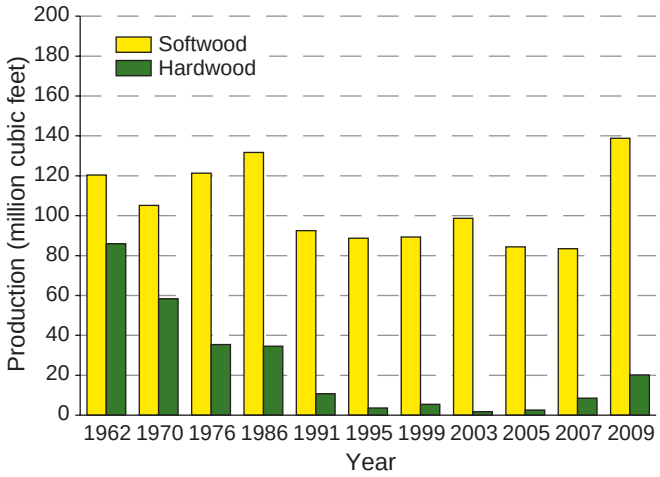

Figure 15—Roundwood production for other industrial products by species group and year (see page 12 for references for individual years) in the South.

- Twenty-four composite panel mills were operating in the South in 2009, three less than in 2007. Total receipts for these mills declined 18 percent to 332.9 million cubic feet, and accounted for 5 percent of the South's total receipts.

Other Industrial Products

- Roundwood harvested for other industrial uses such as poles, posts, mulch, industrial fuelwood, as well as, residential firewood produced from firewood processors, logs for log homes, and all other industrial products totaled 159.0 million cubic feet, a 73-percent increase from 2007.
- Softwood other industrial volume increased 66 percent, or 55.3 million cubic feet, to 138.8 million cubic feet. Softwood made-up 87 percent of the other industrial products volume (fig. 15). Hardwood other industrial volume more than doubled to 20.2 million cubic feet.
- The number of plants producing other industrial products totaled 140 in 2009, 1 less than in 2007. Combined receipts of other industrial products from softwood and hardwood increased 73 percent to 158.2 million cubic feet. Industrial fuel accounted for 75.7 million cubic feet, or 48 percent, of receipt volume for this category.

Plant Byproducts

- In 2009, processing of primary products in southern mills generated 1.97 billion cubic feet of wood and bark residues, a 33-percent decline from 2007. Coarse residues from all primary products amounted to 755.9 million cubic feet, or 39 percent of total residue, while bark volume totaled 637.4 million cubic feet, 32 percent of residue produced. Collectively, sawdust and shavings made-up 29 percent of total residues, or 574.7 million cubic feet (fig. 16).
- The processing of saw logs generated 1.33 billion cubic feet of mill residues, accounting for 67 percent of the total residues produced (fig. 17). Bark generated from pulpwood totaled 371.3 million cubic feet, or 19 percent of mill residue produced.

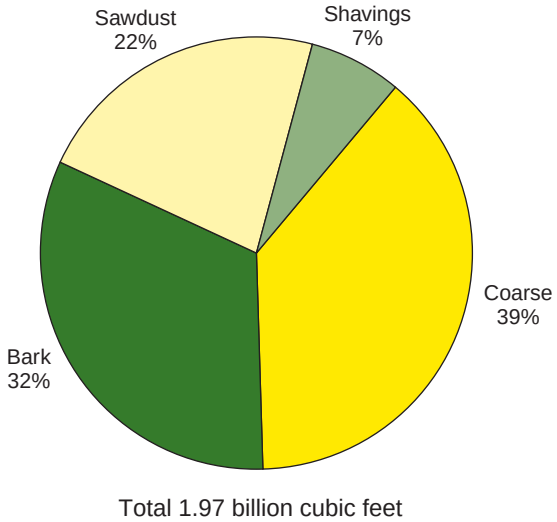

Figure 16—Primary mill residue by residue type in the South, 2009.

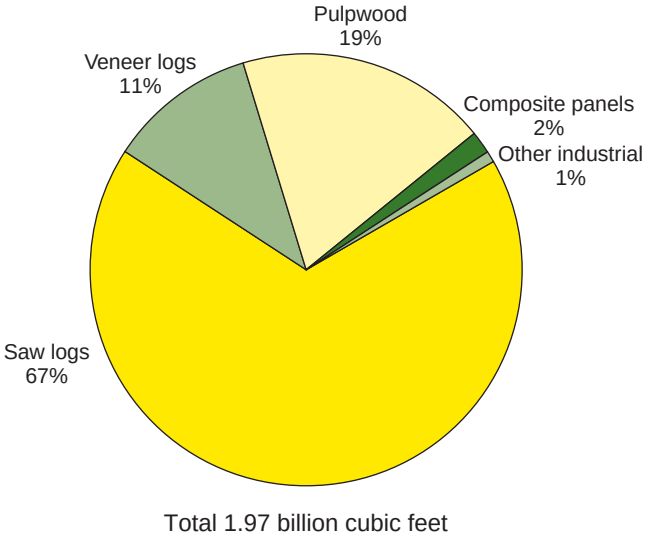

Figure 17—Primary mill residue produced by roundwood type in the South, 2009.

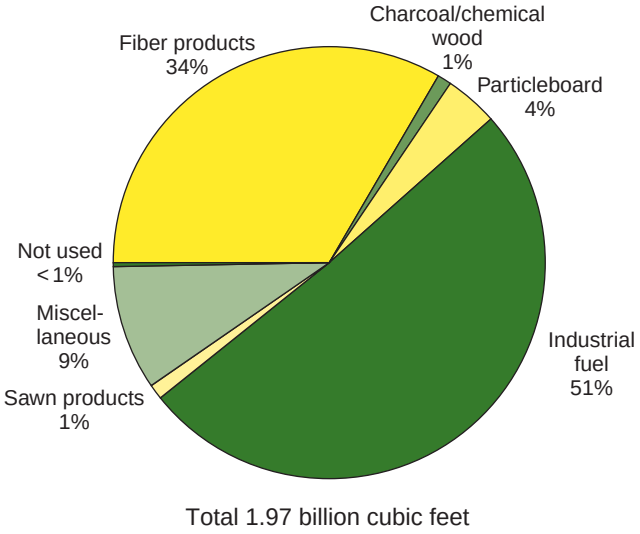

Figure 18—Disposal of residue by product in the South, 2009.

- More than 1.96 billion cubic feet, or nearly 100 percent, of the wood and bark residues were used for a product. Of the utilized mill residue, 51 percent of the residues were used for industrial fuel and 34 percent were used for fiber products. The remaining 15 percent were utilized in miscellaneous products such as particleboard production, mulch, charcoal, or sawn products such as landscape timbers (fig. 18). In the South, 655.0 million cubic feet, or 87 percent, of the coarse residues were used for fiber products. Most of the bark was used for industrial fuel (85 percent) or other miscellaneous products (15 percent), while 73 percent of the sawdust and shavings were used for industrial fuel.

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 6.56 billion cubic feet of roundwood output for industrial roundwood, an estimated 420.1 million cubic feet were harvested for residential fuelwood, bringing the South's total roundwood output to 6.99 billion cubic feet.

- Ninety-two 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 556.2 million cubic feet, or 8 percent of total roundwood output (fig. 19).

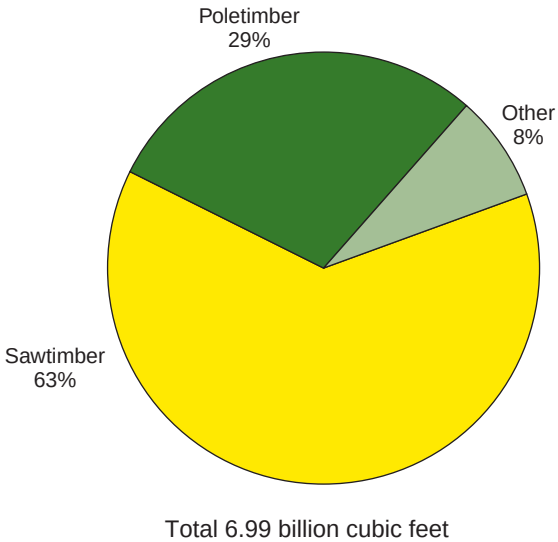

Figure 19—Roundwood output by source in the South, 2009.

Ownership

- An estimated 4.92 billion cubic feet, or 70 percent, of the total roundwood output came from nonindustrial private forest lands. Forest industry lands contributed 1.78 billion cubic feet, or 26 percent of the output. Public lands made-up the remaining 4 percent, or 279.0 million cubic feet (fig. 20).

Species

- At 3.75 billion cubic feet, the loblolly-shortleaf pine group provided more volume than any other softwood species group, accounting for 75 percent of the total softwood output (fig. 21). The longleaf-slash pine type accounted for 19 percent of the softwood output. In hardwoods, the red oak and white oak groups combined accounted for 888.7 million cubic feet, or 45 percent of total hardwood output (fig. 22). Sweetgum and yellow-poplar accounted for 290.2 million cubic feet (15 percent) and 213.1 million cubic feet (11 percent), respectively.

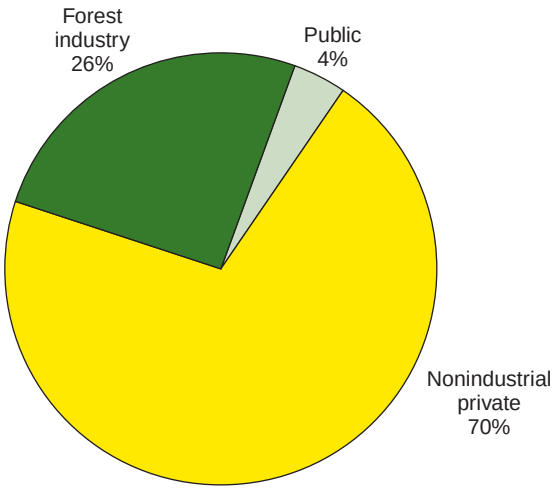

Figure 20—Roundwood output by ownership class in the South, 2009.

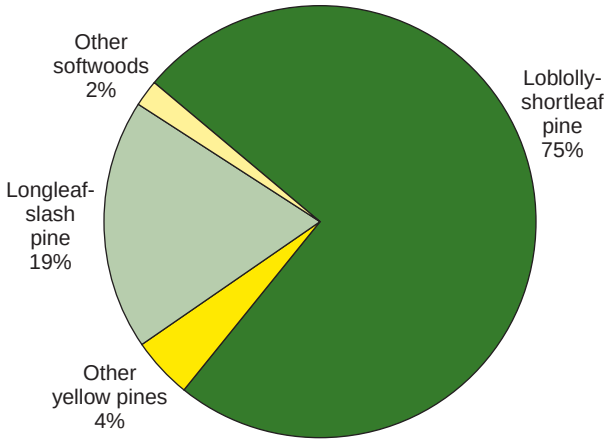

Figure 21—Roundwood output by softwood species group in the South, 2009.

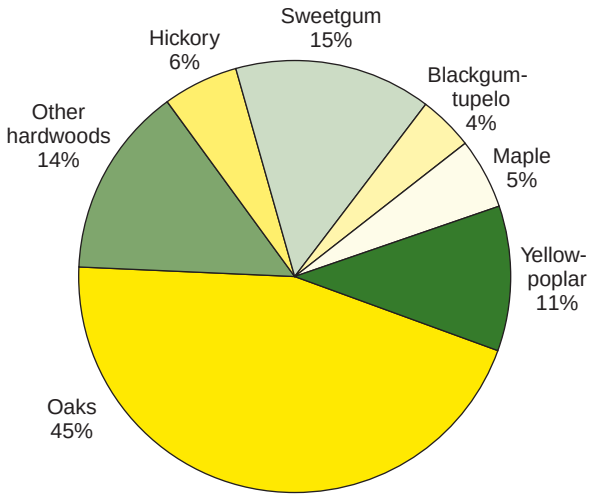

Figure 22—Roundwood output by hardwood species group in the South, 2009.

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 down in all the major physiographic regions of the South. The Coastal Plain region had the smallest decline at 16 percent. The Coastal Plain produced 55 percent of the South's total industrial roundwood production, while the Piedmont and Mountain produced 40 and 5 percent of the South's total output, respectively (fig. 24).

Mountain Region

- Industrial roundwood output from the Mountain region totaled 349.1 million cubic feet, down 23 percent since 2007. Residential fuelwood was up 31 percent in this region and contributed an additional 48.1 million cubic feet of roundwood product output.

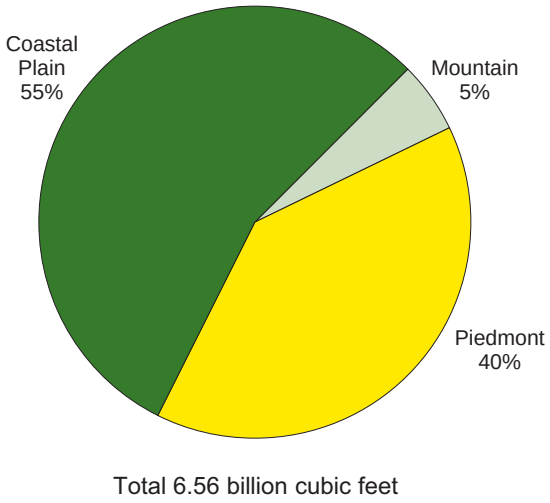

Figure 24—Roundwood production for all products by region in the South, 2009.

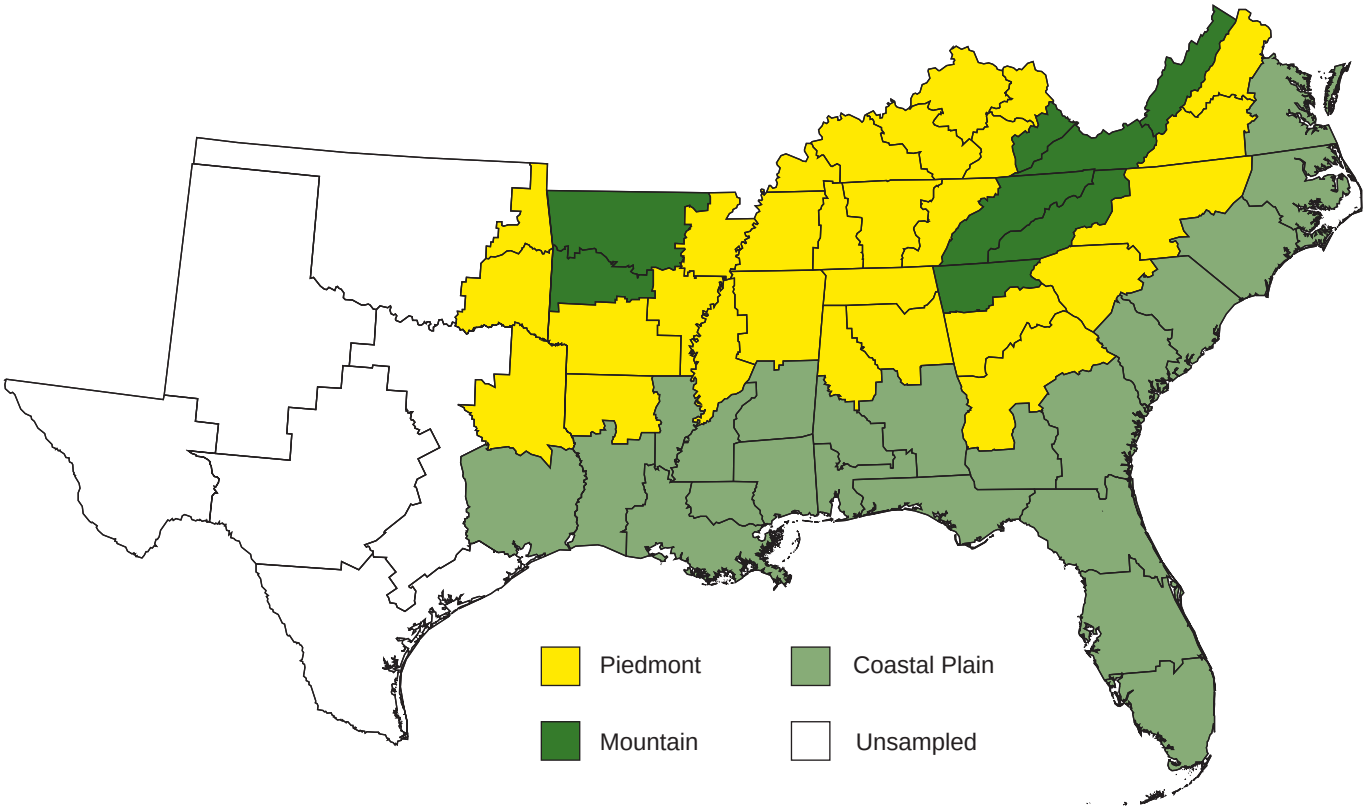

Figure 23—Physiographic regions of the South, 2009.

- At 185.2 million cubic feet saw logs accounted for 53 percent of the region's industrial TPO and 8 percent of the South's roundwood saw-log output. The 148.2 million cubic feet of pulpwood accounted for 42 percent of the total roundwood output for the region and 4 percent of the South's total pulpwood output. The 8.4 million cubic feet of veneer logs accounted for 2 percent of the South's total veneer-log output.

Piedmont Region

- Roundwood output from the Piedmont region totaled 2.60 billion cubic feet, a decline of 25 percent since 2007. Residential fuelwood was up 36 percent in this region and contributed an additional 218.6 million cubic feet towards total product output.

- Saw-log production of 1.01 billion cubic feet accounted for 39 percent of the region's industrial TPO and 45 percent of the South's total saw-log output. Production of pulpwood declined nearly 7 percent to 1.24 billion cubic feet accounting for 48 percent of the region's total roundwood output and 36 percent of the South's total pulpwood output. The 166.3 million cubic feet of veneer logs accounted for 6 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 3.62 billion cubic feet, down 16 percent since 2007. Residential fuelwood from the region contributed an additional 153.5 million cubic feet towards total product output.

- Saw-log production of 1.06 billion cubic feet accounted for 29 percent of the region's total TPO and 47 percent of the South's total saw-log output. Pulpwood production of 2.04 billion cubic feet accounted for another 56 percent of the region's total roundwood output and nearly 60 percent of the South's total pulpwood production. The 209.7 million cubic feet of veneer logs accounted for 55 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.

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, 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 U.S. 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 portion of 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.

Residential fuelwood. The volume of roundwood harvested to produce heat for residential settings.

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).

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	71.0 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 Alabama during the most recent survey period.

[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. The factors shown are for trees of average diameters removed in Arkansas during the most recent survey period.

[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	71.0 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 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. The factors shown are for trees of average diameters removed in Oklahoma during the most recent survey period.
[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]
Softwoods	
Atlantic white-cedar	*Chamaecyparis thyoides* (L.) B.S.P.
Southern redcedar	*Juniperus silicicola* (Small) Bailey
Eastern redcedar	*J. virginiana* L.
Shortleaf pine	*Pinus echinata* Mill.
Slash pine	*P. elliottii* Engelm.
Spruce pine	*P. glabra* Walt.
Longleaf pine	*P. palustris* Mill.
Pond pine	*P. serotina* Michx.
Eastern white pine	*P. strobus* L.
Loblolly pine	*P. taeda* L.
Virginia pine	*P. virginiana* Mill.
Baldcypress	*Taxodium distichum* (L.) Rich.
Pondcypress	*T. distichum* var. *nutans*
Eastern hemlock	*Tsuga canadensis* (L.) Carr.
Hardwoods	
Florida maple	*Acer barbatum* Michx.
Boxelder	*A. negundo* L.
Red maple	*A. rubrum* L.
Silver maple	*A. saccharinum* L.
Sugar maple	*A. saccharum* Marsh.
Buckeye	*Aesculus* spp. L.
Ohio buckeye	*A. glabra* Willd.
Ailanthus	*Ailanthus altissima* (Mill.) Swingle
Tung-oil tree	*Aleurites fordii* Hemsl.
Serviceberry	*Amelanchier* spp. Med.
River birch	*Betula nigra* L.
American hornbeam	*Carpinus caroliniana* Walt.
Hickory	*Carya* spp. Nutt.
Water hickory	*C. aquatica* (Michx. f.) Nutt.
Bitternut hickory	*C. cordiformis* (Wangenh.) K. Koch
Pignut hickory	*C. glabra* (Mill.) Sweet
Pecan	*C. illinoensis* (Wangenh.) K. Koch
Shellbark hickory	*C. laciniosa* (Michx. f.) Loud.
Nutmeg hickory	*C. myristiciformis* (Michx. f.) Nutt.
Shagbark hickory	*C. ovata* (Mill.) K. Koch
Black hickory	*C. texana* Buckl.
Mockernut hickory	*C. tomentosa* (Poir.) Nutt.
Allegheny chinkapin	*Castanea pumila* Mill.
Chinkapin	*Castanopsis* (D. Don) Spach
Catalpa	*Catalpa* spp. Scop.
Sugarberry	*Celtis laevigata* Willd.
Hackberry	*C. occidentalis* L.
Eastern redbud	*Cercis canadensis* L.
Flowering dogwood	*Cornus florida* L.
Hawthorn	*Crataegus* spp. L.
Common persimmon	*Diospyros virginiana* L.
American beech	*Fagus grandifolia* Ehrh.
White ash	*Fraxinus americana* L.
Pumpkin ash	*F. profunda* (Bush) Bush
Blue ash	*F. quadrangulata* Michx.
Waterlocust	*Gleditsia aquatica* Marsh.
Honeylocust	*G. triacanthos* L.
Kentucky coffeetree	*Gymnocladus dioicus* (L.) K. Koch
Hardwoods (continued)	
American holly	*Ilex opaca* Ait.
Black walnut	*Juglans nigra* L.
Sweetgum	*Liquidambar styraciflua* L.
Yellow-poplar	*Liriodendron tulipifera* L.
Osage-orange	*Maclura pomifera* (Raf.) Schneid.
Cucumbertree	*Magnolia acuminata* L.
Southern magnolia	*M. grandiflora* L.
Bigleaf magnolia	*M. macrophylla* Michx.
Sweetbay	*M. virginiana* L.
Apple	*Malus* spp. Mill.
Chinaberry	*Melia azedarach* L.
White mulberry	*Morus alba* L.
Red mulberry	*M. rubra* L.
Water tupelo	*Nyssa aquatica* L.
Blackgum	*N. sylvatica* Marsh.
Swamp tupelo	*N. sylvatica* var. *biflora* (Walt.) Sarg.
Eastern hophornbeam	*Ostrya virginiana* (Mill.) K. Koch
Sourwood	*Oxydendrum arboreum* (L.) DC.
Redbay	*Persea borbonia* (L.) Spreng.
American sycamore	*Platanus occidentalis* L.
Cottonwood	*Populus* spp. L.
Black cherry	*Prunus serotina* Ehrh.
White oak	*Quercus* alba L.
Scarlet oak	*Q. coccinea* Muenchh.
Durand oak	*Q. durandii* Buckl.
Southern red oak	*Q. falcata* Michx.
Cherrybark oak	*Q. falcata* var. *pagodifolia* Ell.
Bluejack oak	*Q. incana* Bartr.
Turkey oak	*Q. laevis* Walt.
Laurel oak	*Q. laurifolia* Michx.
Overcup oak	*Q. lyrata* Walt.
Swamp chestnut oak	*Q. michauxii* Nutt.
Chinkapin oak	*Q. muehlenbergii* Engelm.
Water oak	*Q. nigra* L.
Nuttall oak	*Q. nuttallii* Palmer
Pin oak	*Q. palustris* Muenchh.
Willow oak	*Q. phellos* L.
Chestnut oak	*Q. prinus* L.
Northern red oak	*Q. rubra* L.
Shumard oak	*Q. shumardii* Buckl.
Post oak	*Q. stellata* Wangenh.
Black oak	*Q. velutina* Lam.
Live oak	*Q. virginiana* Mill.
Black locust	*Robinia pseudoacacia* L.
Willow	*Salix* spp. L.
Sassafras	*Sassafras albidum* (Nutt.) Nees
American basswood	*Tilia americana* L.
White basswood	*T. heterophylla* Vent.
Winged elm	*Ulmus alata* Michx.
American elm	*U. americana* L.
Cedar elm	*U. crassifolia* Nutt.
Slippery elm	*U. rubra* Muhl.
September elm	*U. serotina* Sarg.
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, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	2,524,468	1,642,327	-882,141	-34.9
Hardwood	922,992	615,940	-307,052	-33.3
Total	3,447,460	2,258,267	-1,189,193	-34.5
Veneer logs				
Softwood	559,076	350,042	-209,034	-37.4
Hardwood	65,826	34,326	-31,500	-47.9
Total	624,902	384,368	-240,534	-38.5
Pulpwood[a]				
Softwood	2,449,972	2,519,519	69,547	2.8
Hardwood	1,102,558	913,065	-189,493	-17.2
Total	3,552,530	3,432,584	-119,946	-3.4
Composite panels				
Softwood	469,770	322,060	-147,710	-31.4
Hardwood	30,635	8,664	-21,971	-71.7
Total	500,405	330,724	-169,681	-33.9
Other industrial				
Softwood	83,498	138,831	55,333	66.3
Hardwood	8,513	20,213	11,700	137.4
Total	92,011	159,044	67,033	72.9
All industrial				
Softwood	6,086,784	4,972,779	-1,114,005	-18.3
Hardwood	2,130,524	1,592,208	-538,316	-25.3
Total	8,217,308	6,564,987	-1,652,321	-20.1

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (37,604,000 cubic feet in 2007 and 43,983,000 cubic feet in 2009).

Table A.2—Roundwood receipts by product and species group, Southern Region, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	2,537,350	1,639,019	-898,331	-35.4
Hardwood	916,467	589,933	-326,534	-35.6
Total	3,453,817	2,228,952	-1,224,865	-35.5
Veneer logs				
Softwood	662,354	354,375	-307,979	-46.5
Hardwood	68,758	33,359	-35,399	-51.5
Total	731,112	387,734	-343,378	-47.0
Pulpwood[a]				
Softwood	2,447,649	2,502,720	55,071	2.2
Hardwood	1,129,836	942,861	-186,975	-16.5
Total	3,577,485	3,445,581	-131,904	-3.7
Composite panels				
Softwood	374,935	324,159	-50,776	-13.5
Hardwood	29,674	8,692	-20,982	-70.7
Total	404,609	332,851	-71,758	-17.7
Other industrial[b]				
Softwood	82,916	138,150	55,234	66.6
Hardwood	8,489	20,089	11,600	136.6
Total	91,405	158,239	66,834	73.1
Total output				
Softwood	6,105,204	4,958,423	-1,146,781	-18.8
Hardwood	2,153,224	1,594,934	-558,290	-25.9
Total	8,258,428	6,553,357	-1,705,071	-20.6

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (42,695,000 cubic feet in 2007 and 49,325,000 cubic feet in 2009).

[b] Includes 75,698,000 cubic feet used as industrial fuel in 2009.

Table A.3—Number of primary wood-using plants by type of mill, Southern Region, 1970 to 2009

Type of mill	Year										
	1970	1975	1980	1985	1990	1995	1999	2003	2005	2007	2009
	number										
Sawmills	4,289	3,591	3,482	3,086	2,683	2,386	2,165	1,896	1,669	1,540	1,216
Veneer mills	239	200	192	168	155	139	124	107	99	87	66
Pulpmills	109	115	116	107	105	105	97	91	87	87	83
Composite panel mills	0	0	0	6	11	21	24	29	30	27	24
Other mills	452	358	313	295	235	161	141	158	143	141	140
All plants	5,089	4,264	4,103	3,662	3,189	2,812	2,551	2,281	2,028	1,882	1,529

Table A.4—Roundwood receipts by sawmill size, Southern Region, 2007 and 2009

Sawmill size class[a]	2007			2009		
	Mills	Volume		Mills	Volume	
mmbf	*number*	*mbf*	*percent*	*number*	*mbf*	*percent*
< 1.0	483	125,578	1	411	103,487	1
1.0–4.99	471	1,265,540	6	381	1,008,969	8
5.0–9.99	224	1,490,431	8	171	1,201,024	10
10.0–49.99	246	5,816,138	30	176	3,846,158	30
> 50	116	10,831,003	55	77	6,486,373	51
Total	1,540	19,528,690	100	1,216	12,646,011	100

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

Table A.5—Roundwood receipts by species and type of mill, Southern Region, 2009

Species	All mills	Type of mill					
			Veneer mills				
		Sawmills	Pine plywood	Other veneer	OSB and panels	Pulpmills[a]	Other mills[b]
	thousand cubic feet						
Softwood							
Yellow pine	2,392,997	1,600,662	338,150	16,225	323,336	NA	114,624
Eastern white pine	20,588	19,767	0	0	811	NA	10
Cedar	4,105	2,537	0	0	12	NA	1,556
Cypress	27,418	15,230	0	0	0	NA	12,188
Other softwood	10,595	823	0	0	0	NA	9,772
Unclassified	2,502,720	0	0	0	0	2,502,720	0
Total softwoods	4,958,423	1,639,019	338,150	16,225	324,159	2,502,720	138,150
Hardwood							
Blackgum and tupelo	11,653	8,204	440	2,116	466	NA	427
Soft maple	14,776	12,491	203	258	1,231	NA	593
Sweetgum	48,699	39,125	2,365	4,680	1,917	NA	612
Yellow-poplar	139,218	118,987	8,050	5,146	2,247	NA	4,788
Other soft hardwood	23,988	15,712	189	518	2,604	NA	4,965
Hickory	29,056	27,395	0	1,296	40	NA	325
Red oak	189,518	180,568	0	5,079	80	NA	3,791
White oak	127,651	124,373	0	1,452	94	NA	1,732
Other hard hardwood	67,514	63,078	0	1,567	13	NA	2,856
Unclassified	942,861	0	0	0	0	942,861	0
Total hardwoods	1,594,934	589,933	11,247	22,112	8,692	942,861	20,089
All species	6,553,357	2,228,952	349,397	38,337	332,851	3,445,581	158,239

OSB = oriented strand board; NA = not applicable.

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

[b] Includes 75,698,000 cubic feet used as industrial fuel in 2009.

Table A.6—Primary mill residue volume by roundwood type, species group, and residue type, Southern Region, 2009

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		thousand cubic feet			
Saw logs					
Softwood	977,365	129,348	475,757	239,175	133,085
Hardwood	351,724	60,877	169,573	117,866	3,408
Total	1,329,089	190,225	645,330	357,041	136,493
Veneer logs					
Softwood	193,231	29,472	92,367	71,392	0
Hardwood	25,012	4,269	11,029	9,714	0
Total	218,243	33,741	103,396	81,106	0
Pulpwood					
Softwood	255,915	255,915	0	0	0
Hardwood	115,374	115,374	0	0	0
Total	371,289	371,289	0	0	0
Composite panels					
Softwood	31,899	31,616	283	0	0
Hardwood	994	972	22	0	0
Total	32,893	32,588	305	0	0
Other industrial[a]					
Softwood	15,474	8,598	6,846	30	0
Hardwood	953	926	17	10	0
Total	16,427	9,524	6,863	40	0
Total					
Softwood	1,473,884	454,949	575,253	310,597	133,085
Hardwood	494,057	182,418	180,641	127,590	3,408
Total	1,967,941	637,367	755,894	438,187	136,493

[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, 2007 and 2009

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	2007	2009	2007	2009	2007	2009	2007	2009	2007	2009
	thousand cubic feet									
Fiber products										
Softwood	777,160	526,233	0	0	770,503	523,400	2,740	0	3,917	2,833
Hardwood	194,438	131,590	0	0	193,750	131,590	688	0	0	0
Total	971,598	657,823	0	0	964,253	654,990	3,428	0	3,917	2,833
Particleboard										
Softwood	150,266	71,453	50	27	17,200	5,813	39,654	18,834	93,362	46,779
Hardwood	14,720	6,969	102	52	11,894	4,889	2,586	2,003	138	25
Total	164,986	78,422	152	79	29,094	10,702	42,240	20,837	93,500	46,804
Charcoal/ chemical wood										
Softwood	3,023	358	6	7	95	89	2,922	262	0	0
Hardwood	21,602	20,097	2,113	2,892	9,217	9,332	10,271	7,865	1	8
Total	24,625	20,455	2,119	2,899	9,312	9,421	13,193	8,127	1	8
Sawn products										
Softwood	38,925	21,020	14	0	38,911	21,020	0	0	0	0
Hardwood	5,162	1,057	1	0	5,161	1,057	0	0	0	0
Total	44,087	22,077	15	0	44,072	22,077	0	0	0	0
Industrial fuel										
Softwood	1,037,137	733,859	534,570	393,046	36,711	16,652	398,500	267,966	67,356	56,195
Hardwood	390,115	266,044	195,572	146,445	33,718	22,688	155,927	94,845	4,898	2,066
Total	1,427,252	999,903	730,142	539,491	70,429	39,340	554,427	362,811	72,254	58,261
Miscellaneous										
Softwood	202,484	119,123	97,338	60,485	24,067	8,068	42,358	23,293	38,721	27,277
Hardwood	99,612	64,418	53,536	32,280	21,204	9,662	23,727	21,201	1,145	1,275
Total	302,096	183,541	150,874	92,765	45,271	17,730	66,085	44,494	39,866	28,552
Not used										
Softwood	3,034	1,838	378	1,384	1,266	211	1,389	242	1	1
Hardwood	14,209	3,882	2,581	749	6,617	1,423	4,997	1,676	14	34
Total	17,243	5,720	2,959	2,133	7,883	1,634	6,386	1,918	15	35
All products										
Softwood	2,212,029	1,473,884	632,356	454,949	888,753	575,253	487,563	310,597	203,357	133,085
Hardwood	739,858	494,057	253,905	182,418	281,561	180,641	198,196	127,590	6,196	3,408
Total	2,951,887	1,967,941	886,261	637,367	1,170,314	755,894	685,759	438,187	209,553	136,493

Table A.8—Total roundwood output by product, species group, and source of material, Southern Region, 2009

Product and species group	All sources	Growing-stock trees			Other sources
		Total	Sawtimber	Poletimber	
	thousand cubic feet				
Saw logs					
Softwood	1,642,327	1,598,903	1,489,913	108,990	43,424
Hardwood	615,940	593,462	561,432	32,030	22,478
Total	2,258,267	2,192,365	2,051,345	141,020	65,902
Veneer logs and bolts					
Softwood	404,502	393,021	371,117	21,904	11,481
Hardwood	34,326	33,765	33,527	238	561
Total	438,828	426,786	404,644	22,142	12,042
Pulpwood					
Softwood	2,519,519	2,288,406	1,065,235	1,223,171	231,113
Hardwood	913,065	814,982	403,795	411,187	98,083
Total	3,432,584	3,103,388	1,469,030	1,634,358	329,196
Composite panels					
Softwood	252,412	226,608	97,729	128,879	25,804
Hardwood	7,695	7,287	3,921	3,366	408
Total	260,107	233,895	101,650	132,245	26,212
Poles and posts					
Softwood	46,331	43,172	39,249	3,923	3,159
Hardwood	294	159	106	53	135
Total	46,625	43,331	39,355	3,976	3,294
Other miscellaneous					
Softwood	107,688	58,891	41,317	17,574	48,797
Hardwood	20,888	13,636	9,346	4,290	7,252
Total	128,576	72,527	50,663	21,864	56,049
Total industrial products					
Softwood	4,972,779	4,609,001	3,104,560	1,504,441	363,778
Hardwood	1,592,208	1,463,291	1,012,127	451,164	128,917
Total	6,564,987	6,072,292	4,116,687	1,955,605	492,695
Residential fuelwood					
Softwood	44,372	33,131	22,458	10,673	11,241
Hardwood	375,761	323,489	254,744	68,745	52,272
Total	420,133	356,620	277,202	79,418	63,513
All products					
Softwood	5,017,151	4,642,132	3,127,018	1,515,114	375,019
Hardwood	1,967,969	1,786,780	1,266,871	519,909	181,189
Total	6,985,120	6,428,912	4,393,889	2,035,023	556,208

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, 2009

Species group and State	Total	Ownership class		
		Other public	Forest industry	Nonindustrial private
	thousand cubic feet			
Softwoods				
Alabama	601,342	13,974	151,117	436,251
Arkansas	364,548	24,081	200,572	139,895
Florida	455,824	25,600	91,724	338,500
Georgia	914,394	18,186	294,974	601,234
Kentucky	10,166	20	3	10,143
Louisiana	515,509	11,164	266,498	237,847
Mississippi	532,482	18,538	125,019	388,925
North Carolina	421,749	11,075	87,979	322,695
Oklahoma	46,553	3,042	28,971	14,540
South Carolina	475,542	40,952	106,656	327,934
Tennessee	52,068	7,474	10,854	33,740
Texas	397,130	10,474	141,621	245,035
Virginia	229,844	4,627	22,217	203,000
Total softwoods	5,017,151	189,207	1,528,205	3,299,739
Hardwoods				
Alabama	234,542	12,012	37,226	185,304
Arkansas	150,170	12,033	36,640	101,497
Florida	36,418	3,501	5,446	27,471
Georgia	194,085	7,540	25,231	161,314
Kentucky	156,229	2,998	5,825	147,406
Louisiana	110,894	4,039	33,907	72,948
Mississippi	170,417	4,035	35,573	130,809
North Carolina	227,475	3,395	13,179	210,901
Oklahoma	36,140	884	10,219	25,037
South Carolina	121,719	4,847	9,306	107,566
Tennessee	215,635	22,168	19,676	173,791
Texas	89,967	991	9,751	79,225
Virginia	224,278	11,356	11,522	201,400
Total hardwoods	1,967,969	89,799	253,501	1,624,669
All species	6,985,120	279,006	1,781,706	4,924,408

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, 2009

Species group and detailed species group	Total	Product						
		Saw logs	Veneer logs	Pulpwood	Composite panels	Poles and posts	Other miscellaneous	Residential fuelwood
		thousand cubic feet						
Softwood								
Cedars	25,714	11,017	1,163	10,836	1,547	108	569	474
Cypress	51,132	13,638	2,704	28,450	2,676	750	2,493	421
Hemlock	4,072	1,634	8	1,656	83	70	481	140
Loblolly-shortleaf pines	3,748,538	1,273,778	343,999	1,839,533	176,833	25,675	54,685	34,035
Longleaf-slash pines	940,385	258,062	47,923	521,487	50,376	18,080	39,735	4,722
Eastern white pine	18,615	9,517	234	6,491	1,431	103	447	392
Other yellow pines	228,695	74,681	8,471	111,066	19,466	1,545	9,278	4,188
Total softwoods	5,017,151	1,642,327	404,502	2,519,519	252,412	46,331	107,688	44,372
Hardwood								
Ash	40,591	16,940	502	14,893	54	15	589	7,598
Basswood	5,409	2,710	107	1,479	21	0	15	1,077
Beech	20,827	9,481	288	7,027	42	3	87	3,899
Yellow birch	1,425	418	48	652	3	0	51	253
Other birch	3,472	1,177	57	1,769	14	0	21	434
Black cherry	20,032	6,255	562	9,051	112	10	243	3,799
Cottonwood	12,149	5,036	157	4,814	7	1	152	1,982
Elm	43,663	14,031	552	20,853	58	4	291	7,874
Hickory	110,871	37,798	1,550	49,184	262	5	1,385	20,687
Hard maples	15,439	6,855	117	5,385	26	1	188	2,867
Soft maples	88,420	27,831	2,020	37,955	720	12	1,183	18,699
Select red oaks	82,258	29,697	1,221	36,173	123	34	521	14,489
Other red oaks	456,309	130,152	8,513	227,382	1,349	67	3,499	85,347
Select white oaks	201,958	72,636	2,588	86,912	788	40	1,990	37,004
Other white oaks	148,127	47,204	2,353	66,658	321	7	2,104	29,480
Sweetgum	290,234	68,903	5,884	158,111	1,289	44	1,984	54,019
Sycamore	14,678	6,310	385	5,295	70	0	56	2,562
Tupelo-blackgum	80,621	17,251	1,737	42,320	247	2	1,250	17,814
Black walnut	11,470	6,185	588	2,459	6	1	24	2,207
Yellow-poplar	213,138	79,265	3,255	82,951	1,944	41	3,501	42,181
Other hardwoods	106,878	29,805	1,842	51,742	239	7	1,754	21,489
Total hardwoods	1,967,969	615,940	34,326	913,065	7,695	294	20,888	375,761
All species	6,985,120	2,258,267	438,828	3,432,584	260,107	46,625	128,576	420,133

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, 2009

Species group and detailed species group	Total	Ownership class		
		Public	Forest industry	Nonindustrial private
		thousand cubic feet		
Softwood				
Cedars	25,714	638	1,687	23,389
Cypress	51,132	1,522	14,626	34,985
Hemlock	4,071	383	616	3,072
Loblolly-shortleaf pines	3,748,538	129,306	1,192,166	2,427,066
Longleaf-slash pines	940,385	45,761	280,950	613,675
Eastern white pine	18,615	1,961	140	16,514
Other yellow pines	228,695	9,637	38,020	181,038
Total softwoods	5,017,151	189,207	1,528,205	3,299,739
Hardwood				
Ash	40,591	3,120	4,215	33,256
Basswood	5,409	74	315	5,020
Beech	20,827	602	2,323	17,902
Yellow birch	1,425	53	1	1,371
Other birch	3,472	62	223	3,187
Black cherry	20,032	1,087	2,260	16,686
Cottonwood	12,149	545	1,414	10,190
Elm	43,663	1,864	6,208	35,591
Hickory	110,871	6,387	13,533	90,951
Hard maples	15,439	1,533	2,689	11,216
Soft maples	88,420	3,959	8,021	76,440
Select red oaks	82,258	4,771	10,458	67,029
Other red oaks	456,309	19,294	67,716	369,300
Select white oaks	201,958	11,781	23,635	166,541
Other white oaks	148,127	7,784	24,389	115,953
Sweetgum	290,234	8,660	38,116	243,459
Sycamore	14,678	1,557	2,042	11,078
Tupelo-blackgum	80,622	4,144	14,216	62,261
Black walnut	11,470	325	392	10,753
Yellow-poplar	213,138	6,974	18,857	187,308
Other hardwoods	106,878	5,224	12,479	89,175
Total hardwoods	1,967,969	89,799	253,501	1,624,669
All species	6,985,120	279,006	1,781,706	4,924,408

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

Table A.12—Output of roundwood products by product and species group, Southern Mountain, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	105,711	82,165	-23,546	-22.3
Hardwood	164,472	103,002	-61,470	-37.4
Total	270,183	185,167	-85,016	-31.5
Veneer logs				
Softwood	4,178	2,279	-1,899	-45.5
Hardwood	9,398	6,092	-3,306	-35.2
Total	13,576	8,371	-5,205	-38.3
Pulpwood				
Softwood	79,992	75,162	-4,830	-6.0
Hardwood	67,621	73,078	5,457	8.1
Total	147,613	148,240	627	0.4
Composite panels				
Softwood	5,579	2,214	-3,365	-60.3
Hardwood	4,659	709	-3,950	-84.8
Total	10,238	2,923	-7,315	-71.4
Other industrial				
Softwood	8,594	2,317	-6,277	-73.0
Hardwood	4,405	2,056	-2,349	-53.3
Total	12,999	4,373	-8,626	-66.4
All industrial				
Softwood	204,054	164,137	-39,917	-19.6
Hardwood	250,555	184,937	-65,618	-26.2
Total	454,609	349,074	-105,535	-23.2
Residential fuelwood				
Softwood	2,127	2,399	272	12.8
Hardwood	34,706	45,652	10,946	31.5
Total	36,833	48,051	11,218	30.5
Total output				
Softwood	206,181	166,536	-39,645	-19.2
Hardwood	285,261	230,589	-54,672	-19.2
Total	491,442	397,125	-94,317	-19.2

Table A.13—Output of roundwood products by product and species group, Southern Piedmont, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - - thousand cubic feet - - - -			*percent*
Saw logs				
Softwood	971,207	625,592	-345,615	-35.6
Hardwood	574,122	385,729	-188,393	-32.8
Total	1,545,329	1,011,321	-534,008	-34.6
Veneer logs				
Softwood	271,975	155,477	-116,498	-42.8
Hardwood	26,523	10,799	-15,724	-59.3
Total	298,498	166,276	-132,222	-44.3
Pulpwood				
Softwood	782,794	793,602	10,808	1.4
Hardwood	547,861	450,641	-97,220	-17.7
Total	1,330,655	1,244,243	-86,412	-6.5
Composite panels				
Softwood	228,187	115,059	-113,128	-49.6
Hardwood	17,915	4,802	-13,113	-73.2
Total	246,102	119,861	-126,241	-51.3
Other industrial				
Softwood	18,883	44,984	26,101	138.2
Hardwood	6,432	12,717	6,285	97.7
Total	25,315	57,701	32,386	127.9
All industrial				
Softwood	2,273,046	1,734,714	-538,332	-23.7
Hardwood	1,172,853	864,688	-308,165	-26.3
Total	3,445,899	2,599,402	-846,497	-24.6
Residential fuelwood				
Softwood	13,342	18,327	4,985	37.4
Hardwood	147,384	200,292	52,908	35.9
Total	160,726	218,619	57,893	36.0
Total output				
Softwood	2,286,388	1,753,041	-533,347	-23.3
Hardwood	1,320,237	1,064,980	-255,257	-19.3
Total	3,606,625	2,818,021	-788,604	-21.9

Table A.14—Output of roundwood products by product and species group, Southern Coastal Plain, 2007 and 2009

Product and species group	Year		Change	Change
	2007	2009		
	- - - - - thousand cubic feet - - - - -			*percent*
Saw logs				
Softwood	1,447,550	934,570	-512,980	-35.4
Hardwood	184,398	127,209	-57,189	-31.0
Total	1,631,948	1,061,779	-570,169	-34.9
Veneer logs				
Softwood	282,923	192,286	-90,637	-32.0
Hardwood	29,905	17,435	-12,470	-41.7
Total	312,828	209,721	-103,107	-33.0
Pulpwood				
Softwood	1,587,186	1,650,812	63,626	4.0
Hardwood	487,076	389,289	-97,787	-20.1
Total	2,074,262	2,040,101	-34,161	-1.6
Composite panels				
Softwood	227,855	189,599	-38,256	-16.8
Hardwood	4,718	2,184	-2,534	-53.7
Total	232,573	191,783	-40,790	-17.5
Other industrial				
Softwood	64,170	106,718	42,548	66.3
Hardwood	1,019	6,409	5,390	528.9
Total	65,189	113,127	47,938	73.5
All industrial				
Softwood	3,609,684	3,073,985	-535,699	-14.8
Hardwood	707,116	542,526	-164,590	-23.3
Total	4,316,800	3,616,511	-700,289	-16.2
Residential fuelwood				
Softwood	18,221	23,646	5,425	29.8
Hardwood	100,702	129,817	29,115	28.9
Total	118,923	153,463	34,540	29.0
Total output				
Softwood	3,627,905	3,097,631	-530,274	-14.6
Hardwood	807,818	672,343	-135,475	-16.8
Total	4,435,723	3,769,974	-665,749	-15.0

Table A.15—Volume of roundwood products by State, year, species group, and type of product, Southern Region, 2009

State, year, and species group	All products	Product						
		Saw logs	Veneer logs	Pulpwood[a]	Composite panels[b]	Poles and posts	Other miscel-laneous	Residential fuelwood
		thousand cubic feet						
Alabama								
Softwood	601,342	187,930	21,166	360,279	0	8,880	18,758	4,329
Hardwood	234,542	40,352	7,861	154,809	0	0	3,282	28,238
Total	835,884	228,282	29,027	515,088	0	8,880	22,040	32,567
Arkansas								
Softwood	364,548	169,755	43,333	133,200	14,260	1,063	130	2,807
Hardwood	150,170	45,456	951	81,285	0	0	0	22,478
Total	514,718	215,211	44,284	214,485	14,260	1,063	130	25,285
Florida								
Softwood	455,824	117,773	18,686	249,195	25,104	4,228	39,541	1,297
Hardwood	36,418	1,864	1,256	16,029	236	0	666	16,367
Total	492,242	119,637	19,942	265,224	25,340	4,228	40,207	17,664
Georgia								
Softwood	914,394	266,169	42,145	503,176	57,522	18,363	21,192	5,827
Hardwood	194,085	43,310	3,279	94,244	370	0	2,917	49,965
Total	1,108,479	309,479	45,424	597,420	57,892	18,363	24,109	55,792
Kentucky								
Softwood	10,166	2,754	3	5,788	0	122	1,210	289
Hardwood	156,229	99,861	3,369	22,139	0	0	1,092	29,768
Total	166,395	102,615	3,372	27,927	0	122	2,302	30,057
Louisiana								
Softwood	515,509	134,779	79,821	256,030	35,287	3,277	4,420	1,895
Hardwood	110,894	19,878	670	66,423	0	0	0	23,923
Total	626,403	154,657	80,491	322,453	35,287	3,277	4,420	25,818
Mississippi								
Softwood	532,482	165,049	44,484	298,486	17,969	890	2,543	3,061
Hardwood	170,417	54,541	2,420	97,936	526	0	195	14,799
Total	702,899	219,590	46,904	396,422	18,495	890	2,738	17,860
North Carolina								
Softwood	421,749	183,745	32,871	167,060	25,033	1,632	1,052	10,356
Hardwood	227,475	70,500	6,130	90,925	5,082	0	1,053	53,785
Total	649,224	254,245	39,001	257,985	30,115	1,632	2,105	64,141
Oklahoma								
Softwood	46,553	22,759	0	19,900	0	0	3,615	279
Hardwood	36,140	2,495	0	17,550	0	0	0	16,095
Total	82,693	25,254	0	37,450	0	0	3,615	16,374

continued

Table A.15—Volume of roundwood products by State, year, species group, and type of product, Southern Region, 2009 (continued)

State, year, and species group	All products	Product						
		Saw logs	Veneer logs	Pulpwood[a]	Composite panels[b]	Poles and posts	Other miscel-laneous	Residential fuelwood
		thousand cubic feet						
South Carolina								
Softwood	475,542	134,525	23,948	265,073	34,712	4,484	9,155	3,645
Hardwood	121,719	14,337	3,777	73,000	0	0	1,160	29,445
Total	597,261	148,862	27,725	338,073	34,712	4,484	10,315	33,090
Tennessee								
Softwood	52,068	8,029	43	37,571	0	10	1,712	4,703
Hardwood	215,635	97,450	1,218	77,945	0	140	1,015	37,867
Total	267,703	105,479	1,261	115,516	0	150	2,727	42,570
Texas								
Softwood	397,130	165,930	36,568	137,590	54,460	1,856	0	726
Hardwood	89,967	34,168	528	48,741	0	0	0	6,530
Total	487,097	200,098	37,096	186,331	54,460	1,856	0	7,256
Virginia								
Softwood	229,844	83,130	6,974	86,171	42,525	1,526	4,360	5,158
Hardwood	224,278	91,728	2,867	72,039	1,481	154	9,508	46,501
Total	454,122	174,858	9,841	158,210	44,006	1,680	13,868	51,659
Total States								
Softwood	5,017,151	1,642,327	350,042	2,519,519	306,872	46,331	107,688	44,372
Hardwood	1,967,969	615,940	34,326	913,065	7,695	294	20,888	375,761
Total	6,985,120	2,258,267	384,368	3,432,584	314,567	46,625	128,576	420,133

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

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (43,983,000 cubic feet in 2009).

[b] Composite panels volume for Alabama, Tennessee, and Oklahoma included with other miscellaneous volume for confidentiality.

Table A.16—Output of industrial products by product and species group, Alabama, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - - thousand cubic feet - - - -			*percent*
Saw logs				
Softwood	354,977	187,930	-167,047	-47.1
Hardwood	58,030	40,352	-17,678	-30.5
Total	413,007	228,282	-184,725	-44.7
Veneer logs				
Softwood	60,069	21,166	-38,903	-64.8
Hardwood	15,100	7,861	-7,239	-47.9
Total	75,169	29,027	-46,142	-61.4
Pulpwood[a]				
Softwood	374,966	360,279	-14,687	-3.9
Hardwood	199,131	154,809	-44,322	-22.3
Total	574,097	515,088	-59,009	-10.3
Other industrial[b]				
Softwood	38,083	27,638	-10,445	-27.4
Hardwood	1,710	3,282	1,572	91.9
Total	39,793	30,920	-8,873	-22.3
All industrial				
Softwood	828,095	597,013	-231,082	-27.9
Hardwood	273,971	206,304	-67,667	-24.7
Total	1,102,066	803,317	-298,749	-27.1

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (4,084,000 cubic feet in 2007 and 4,894,000 cubic feet in 2009).

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

Table A.17—Output of industrial products by product and species group, Arkansas, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	257,812	169,755	-88,057	-34.2
Hardwood	95,700	45,456	-50,244	-52.5
Total	353,512	215,211	-138,301	-39.1
Veneer logs				
Softwood	56,095	43,333	-12,762	-22.8
Hardwood	5,283	951	-4,332	-82.0
Total	61,378	44,284	-17,094	-27.9
Pulpwood[a]				
Softwood	135,715	133,200	-2,515	-1.9
Hardwood	94,061	81,285	-12,776	-13.6
Total	229,776	214,485	-15,291	-6.7
Composite panels				
Softwood	24,760	14,260	-10,500	-42.4
Hardwood	0	0	0	0
Total	24,760	14,260	-10,500	-42.4
Other industrial				
Softwood	331	1,193	862	260.4
Hardwood	2	0	-2	100.0
Total	333	1,193	860	258.3
All industrial				
Softwood	474,713	361,741	-112,972	-23.8
Hardwood	195,046	127,692	-67,354	-34.5
Total	669,759	489,433	-180,326	-26.9

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,170,000 cubic feet in 2007 and 742,000 cubic feet in 2009).

Table A.18—Output of industrial products by product and species group, Florida, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	173,532	117,773	-55,759	-32.1
Hardwood	3,899	1,864	-2,035	-52.2
Total	177,431	119,637	-57,794	-32.6
Veneer logs				
Softwood	24,229	18,686	-5,543	-22.9
Hardwood	1,371	1,256	-115	-8.4
Total	25,600	19,942	-5,658	-22.1
Pulpwood[a]				
Softwood	221,021	249,195	28,174	12.7
Hardwood	15,533	16,029	496	3.2
Total	236,554	265,224	28,670	12.1
Composite panels				
Softwood	28,335	25,104	-3,231	-11.4
Hardwood	1,218	236	-982	-80.6
Total	29,553	25,340	-4,213	-14.3
Other industrial				
Softwood	21,257	43,769	22,512	105.9
Hardwood	666	666	0	0.0
Total	21,923	44,435	22,512	102.7
All industrial				
Softwood	468,374	454,527	-13,847	-3.0
Hardwood	22,687	20,051	-2,636	-11.6
Total	491,061	474,578	-16,483	-3.4

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 (1,403,000 cubic feet in 2007 and 3,821,000 cubic feet in 2009).

Table A.19—Output of industrial products by product and species group, Georgia, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - - thousand cubic feet - - - -			*percent*
Saw logs				
Softwood	352,142	266,169	-85,973	-24.4
Hardwood	59,543	43,310	-16,233	-27.3
Total	411,685	309,479	-102,206	-24.8
Veneer logs				
Softwood	57,684	42,145	-15,539	-26.9
Hardwood	5,804	3,279	-2,525	-43.5
Total	63,488	45,424	-18,064	-28.5
Pulpwood[a]				
Softwood	507,960	503,176	-4,784	-0.9
Hardwood	102,767	94,244	-8,523	-8.3
Total	610,727	597,420	-13,307	-2.2
Composite panels				
Softwood	95,415	57,522	-37,893	-39.7
Hardwood	2,786	370	-2,416	-86.7
Total	98,201	57,892	-40,309	-41.0
Other industrial				
Softwood	25,106	39,555	14,449	57.6
Hardwood	609	2,917	2,308	379.0
Total	25,715	42,472	16,757	65.2
All industrial				
Softwood	1,038,307	908,567	-129,740	-12.5
Hardwood	171,509	144,120	-27,389	-16.0
Total	1,209,816	1,052,687	-157,129	-13.0

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (10,131,000 cubic feet in 2007 and 13,459,000 cubic feet in 2009).

Table A.20—Output of industrial products by product and species group, Kentucky, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	4,164	2,754	-1,410	-33.9
Hardwood	140,254	99,861	-40,393	-28.8
Total	144,418	102,615	-41,803	-28.9
Veneer logs				
Softwood	7	3	-4	-57.1
Hardwood	6,538	3,369	-3,169	-48.5
Total	6,545	3,372	-3,173	-48.5
Pulpwood[a]				
Softwood	4,187	5,788	1,601	38.2
Hardwood	20,420	22,139	1,719	8.4
Total	24,607	27,927	3,320	13.5
Composite panels				
Softwood	1,929	0	-1,929	-100.0
Hardwood	6,946	0	-6,946	-100.0
Total	8,875	0	-8,875	-100.0
Other industrial				
Softwood	1,251	1,332	81	6.5
Hardwood	0	1,092	1,092	0.0
Total	1,251	2,424	1,173	93.8
All industrial				
Softwood	11,538	9,877	-1,661	-14.4
Hardwood	174,158	126,461	-47,697	-27.4
Total	185,696	136,338	-49,358	-26.6

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 (140,000 cubic feet in 2007 and 88,000 cubic feet in 2009).

Table A.21—Output of industrial products by product and species group, Louisiana, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	264,861	134,779	-130,082	-49.1
Hardwood	50,766	19,878	-30,888	-60.8
Total	315,627	154,657	-160,970	-51.0
Veneer logs				
Softwood	130,054	79,821	-50,233	-38.6
Hardwood	463	670	207	44.7
Total	130,517	80,491	-50,026	-38.3
Pulpwood[a]				
Softwood	266,738	256,030	-10,708	-4.0
Hardwood	79,217	66,423	-12,794	-16.2
Total	345,955	322,453	-23,502	-6.8
Composite panels				
Softwood	19,046	35,287	16,241	85.3
Hardwood	109	0	-109	-100.0
Total	19,155	35,287	16,132	84.2
Other industrial				
Softwood	3,199	7,697	4,498	140.6
Hardwood	0	0	0	0
Total	3,199	7,697	4,498	140.6
All industrial				
Softwood	683,898	513,614	-170,284	-24.9
Hardwood	130,555	86,971	-43,584	-33.4
Total	814,453	600,585	-213,868	-26.3

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (1,441,000 cubic feet in 2007 and 36,000 cubic feet in 2009).

Table A.22—Output of industrial products by product and species group, Mississippi, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	300,541	165,049	-135,492	-45.1
Hardwood	78,241	54,541	-23,700	-30.3
Total	378,782	219,590	-159,192	-42.0
Veneer logs				
Softwood	70,675	44,484	-26,191	-37.1
Hardwood	4,967	2,420	-2,547	-51.3
Total	75,642	46,904	-28,738	-38.0
Pulpwood[a]				
Softwood	274,250	298,486	24,236	8.8
Hardwood	126,305	97,936	-28,369	-22.5
Total	400,555	396,422	-4,133	-1.0
Composite panels				
Softwood	32,980	17,969	-15,011	-45.5
Hardwood	4,606	526	-4,080	-88.6
Total	37,586	18,495	-19,091	-50.8
Other industrial				
Softwood	1,534	3,433	1,899	123.8
Hardwood	0	195	195	0.0
Total	1,534	3,628	2,094	136.5
All industrial				
Softwood	679,980	529,421	-150,559	-22.1
Hardwood	214,119	155,618	-58,501	-27.3
Total	894,099	685,039	-209,060	-23.4

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 (2,968,000 cubic feet in 2007 and 4,974,000 cubic feet in 2009).

Table A.23—Output of industrial products by product and species group, North Carolina, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	244,657	183,745	-60,912	-24.9
Hardwood	103,760	70,500	-33,260	-32.1
Total	348,417	254,245	-94,172	-27.0
Veneer logs				
Softwood	35,911	32,871	-3,040	-8.5
Hardwood	14,505	6,130	-8,375	-57.7
Total	50,416	39,001	-11,415	-22.6
Pulpwood[a]				
Softwood	151,350	167,060	15,710	10.4
Hardwood	129,059	90,925	-38,134	-29.5
Total	280,409	257,985	-22,424	-8.0
Composite panels				
Softwood	39,403	25,033	-14,370	-36.5
Hardwood	6,356	5,082	-1,274	-20.0
Total	45,759	30,115	-15,644	-34.2
Other industrial				
Softwood	2,383	2,684	301	12.6
Hardwood	1,000	1,053	53	5.3
Total	3,383	3,737	354	10.5
All industrial				
Softwood	473,704	411,393	-62,311	-13.2
Hardwood	254,680	173,690	-80,990	-31.8
Total	728,384	585,083	-143,301	-19.7

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (4,608,000 cubic feet in 2007 and 5,227,000 cubic feet in 2009).

Table A.24—Output of industrial products by product and species group, Oklahoma, 2005 and 2009

Product and species group	Year 2005	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	54,691	22,759	-31,932	-58.4
Hardwood	6,803	2,495	-4,308	-63.3
Total	61,494	25,254	-36,240	-58.9
Pulpwood[a]				
Softwood	19,626	19,900	274	1.4
Hardwood	16,983	17,550	567	3.3
Total	36,609	37,450	841	2.3
Other industrial[b]				
Softwood	21,119	3,615	-17,504	-82.9
Hardwood	13	0	-13	-100.0
Total	21,132	3,615	-17,517	-82.9
All industrial				
Softwood	95,436	46,274	-49,162	-51.5
Hardwood	23,799	20,045	-3,754	-15.8
Total	119,235	66,319	-52,916	-44.4

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills 3,707,000 cubic feet in 2005 and 0 cubic feet in 2009).

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

Table A.25—Output of industrial products by product and species group, South Carolina, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	204,382	134,525	-69,857	-34.2
Hardwood	22,108	14,337	-7,771	-35.2
Total	226,490	148,862	-77,628	-34.3
Veneer logs				
Softwood	33,091	23,948	-9,143	-27.6
Hardwood	4,705	3,777	-928	-19.7
Total	37,796	27,725	-10,071	-26.6
Pulpwood[a]				
Softwood	230,722	265,073	34,351	14.9
Hardwood	72,777	73,000	223	0.3
Total	303,499	338,073	34,574	11.4
Composite panels				
Softwood	39,286	34,712	-4,574	-11.6
Hardwood	97	0	-97	-100.0
Total	39,383	34,712	-4,671	-11.9
Other industrial				
Softwood	5,637	13,639	8,002	142.0
Hardwood	0	1,160	1,160	0.0
Total	5,637	14,799	9,162	162.5
All industrial				
Softwood	513,118	471,897	-41,221	-8.0
Hardwood	99,687	92,274	-7,413	-7.4
Total	612,805	564,171	-48,634	-7.9

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 (3,516,000 cubic feet in 2007 and 8,582,000 cubic feet in 2009).

Table A.26—Output of industrial products by product and species group, Tennessee, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	13,448	8,029	-5,419	-40.3
Hardwood	152,316	97,450	-54,866	-36.0
Total	165,764	105,479	-60,285	-36.4
Veneer logs				
Softwood	0	43	43	0.0
Hardwood	2,365	1,218	-1,147	-48.5
Total	2,365	1,261	-1,104	-46.7
Pulpwood				
Softwood	43,360	37,571	-5,789	-13.4
Hardwood	73,834	77,945	4,111	5.6
Total	117,194	115,516	-1,678	-1.4
Other industrial				
Softwood	8,218	1,722	-6,496	-79.0
Hardwood	3,565	1,155	-2,410	-67.6
Total	11,783	2,877	-8,906	-75.6
All industrial				
Softwood	65,026	47,365	-17,661	-27.2
Hardwood	232,080	177,768	-54,312	-23.4
Total	297,106	225,133	-71,973	-24.2

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

Table A.27—Output of industrial products by product and species group, Texas, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	199,402	165,930	-33,472	-16.8
Hardwood	32,166	34,168	2,002	6.2
Total	231,568	200,098	-31,470	-13.6
Veneer logs				
Softwood	67,816	36,568	-31,248	-46.1
Hardwood	570	528	-42	-7.4
Total	68,386	37,096	-31,290	-45.8
Pulpwood				
Softwood	135,401	137,590	2,189	1.6
Hardwood	94,867	48,741	-46,126	-48.6
Total	230,268	186,331	-43,937	-19.1
Composite panels				
Softwood	95,821	54,460	-41,361	-43.2
Hardwood	0	0	0	0
Total	95,821	54,460	-41,361	-43.2
Other industrial				
Softwood	2,761	1,856	-905	-32.8
Hardwood	17	0	-17	-100.0
Total	2,778	1,856	-922	-33.2
All industrial				
Softwood	501,201	396,404	-104,797	-20.9
Hardwood	127,620	83,437	-44,183	-34.6
Total	628,821	479,841	-148,980	-23.7

Table A.28—Output of industrial products by product and species group, Virginia, 2007 and 2009

Product and species group	Year 2007	2009	Change	Change
	- - - thousand cubic feet - - -			*percent*
Saw logs				
Softwood	99,859	83,130	-16,729	-16.8
Hardwood	119,406	91,728	-27,678	-23.2
Total	219,265	174,858	-44,407	-20.3
Veneer logs				
Softwood	12,754	6,974	-5,780	-45.3
Hardwood	4,142	2,867	-1,275	-30.8
Total	16,896	9,841	-7,055	-41.8
Pulpwood[a]				
Softwood	84,676	86,171	1,495	1.8
Hardwood	77,604	72,039	-5,565	-7.2
Total	162,280	158,210	-4,070	-2.5
Composite panels				
Softwood	50,556	42,525	-8,031	-15.9
Hardwood	3,564	1,481	-2,083	-58.4
Total	54,120	44,006	-10,114	-18.7
Other industrial				
Softwood	5,549	5,886	337	6.1
Hardwood	5,897	9,662	3,765	63.8
Total	11,446	15,548	4,102	35.8
All industrial				
Softwood	253,394	224,686	-28,708	-11.3
Hardwood	210,613	177,777	-32,836	-15.6
Total	464,007	402,463	-61,544	-13.3

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (3,436,000 cubic feet in 2007 and 2,070,000 cubic feet in 2009).

Johnson, Tony G.; Bentley, James W.; Howell, Michael. 2011. The South's timber industry—an assessment of timber product output and use, 2009. Resour. Bull. SRS–182. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 44 p.

In 2009, industrial roundwood output from the South's forests totaled 6.56 billion cubic feet, 20 percent less than in 2007. Pulpwood was the leading roundwood product at 3.43 billion cubic feet; saw logs ranked second at 2.26 billion cubic feet; veneer logs were third at 384.4 million cubic feet. Total receipts declined 21 percent to 6.55 billion cubic feet. Mill byproducts generated from primary manufacturers declined 33 percent to 1.97 billion cubic feet. Almost all plant residues produced were used for another product. Fuel and fiber products accounted for 85 percent of utilized plant byproducts. The number of primary processing plants declined from 1,882 in 2007 to 1,529 in 2009, a net loss of 353 mills.

Keywords: FIA, mill residues, production, pulpwood, receipts, roundwood, saw logs, veneer logs.

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