



Forest Service  
U.S. DEPARTMENT OF AGRICULTURE

Southern Research Station | Resource Bulletin SRS-242 | September 2024

# THE SOUTH'S TIMBER INDUSTRY

## An Assessment of Timber Product Output and Use, 2011–2017

**William P. Durham and Larry T. Cyprian**



Cover photo: A logging truck being loaded with roundwood.  
(USDA Forest Service photo by Tony Johnson)

**PRODUCT DISCLAIMER**

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.

September 2024

<https://doi.org/10.2737/SRS-RB-242>



Forest Service  
Research & Development  
Southern Research Station  
Resource Bulletin SRS-242



Southern Research Station  
200 W.T. Weaver Blvd.  
Asheville, NC 28804  
[research.fs.usda.gov/srs](https://research.fs.usda.gov/srs)

# **THE SOUTH'S TIMBER INDUSTRY**

## **An Assessment of Timber Product Output and Use, 2011–2017**

William P. Durham, *Forester*

U.S. Department of Agriculture, Forest Service,  
Forest Inventory and Analysis, Southern Research Station  
Inman, SC 29349

Larry T. Cyprian, *Forester*

U.S. Department of Agriculture, Forest Service,  
Forest Inventory and Analysis, Southern Research Station  
Knoxville, TN 37919

## INTRODUCTION

This bulletin contains the findings of a periodic canvass of southern primary wood-processing plants performed in 2012, 2014, 2016, and 2018 to gather information for 2011, 2013, 2015, and 2017, respectively. The canvass was conducted to determine the amount and source of annual timber product drain, by county, from 2011 to 2017 and to determine interstate and cross regional movement of industrial roundwood. The effort complements the U.S. Department of Agriculture, Forest Service, Forest Inventory and Analysis (FIA) periodic inventory of volume and removals from southern timberland. 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.

Our aim was to canvass primary plants across all Southern States, however, only pulp mills were included in the data collection for the State of Texas. All other primary plants in Texas were surveyed by the Texas A&M Forest Service. Unless otherwise noted, we report southwide estimates by incorporating information from Texas A&M Forest

Service Harvest Trends publications (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019). Texas saw log production volumes were converted from board feet to cubic feet by using Forest Service conversion factors (Winn et al. 2020). This report also presents changes in product output and residue use from 2009 to 2011 as well as from 2011 to 2017.

In addition, roundwood information 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. When additional information or clarification of a response was necessary, telephone contacts followed mailed questionnaire responses. In the event of a nonresponse, previous survey data 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 pulp mills including paper mills, medium density fiberboard, insulating board, and hardboard plants.

### Output of Industrial Timber Products

Certain terms used in this report—retained, export, import, production, and receipts—have specialized meanings and relationships unique to FIA units across the country that deal with timber product output (TPO) (fig. 1).

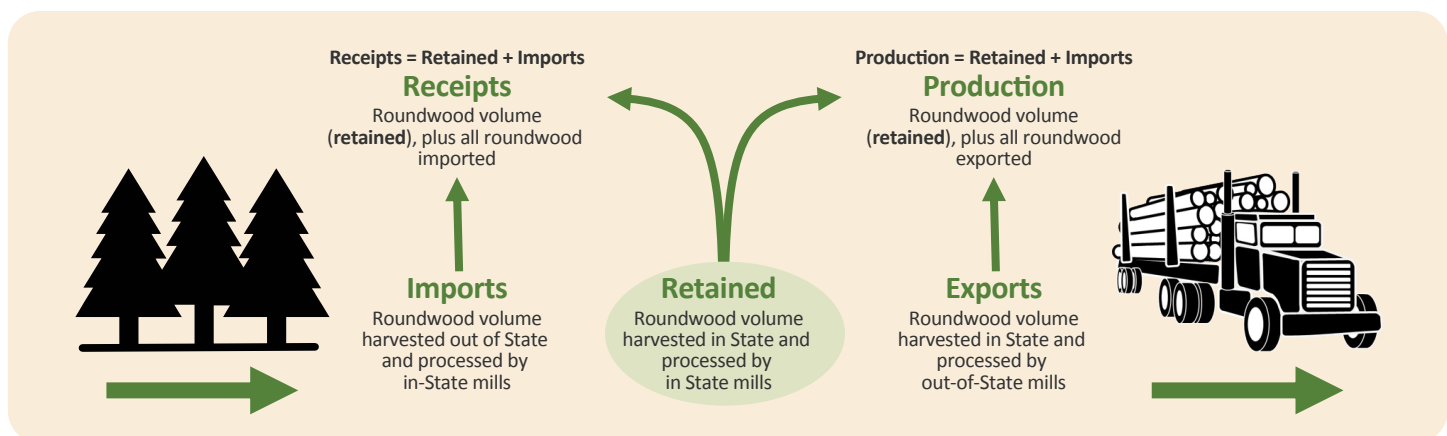


Figure 1—Movement of roundwood exports and imports within the United States.

## All Products

Between 2011 and 2017, the South's roundwood industrial TPO increased by 1.34 billion cubic feet, 19 percent, from 7.17 to 8.51 billion cubic feet (table A1.1, fig. 2). Output of softwood roundwood products increased 22 percent, 1.22 billion cubic feet, from 5.49 to 6.71 billion cubic feet, whereas output of hardwood roundwood products was up 7 percent, 118.8 million cubic feet, from 1.68 to 1.80 billion cubic feet (table A1.1, fig. 2).

Figures 3 and 4 show softwood and hardwood county-level intensity of roundwood production for all industrial products across the South.

In 2017, saw logs and pulpwood were the principal roundwood products. Output of these two products totaled 6.84 billion cubic feet and accounted for 80 percent of the South's total industrial roundwood output (table A1.1, fig. 5).

Between 2009 and 2011, the number of primary roundwood-using plants in the southern region decreased by 6 percent, 99 mills (table A1.2). However, between 2011 and 2017, the number of mills in the southern region rebounded, gaining 142 mills and totaling 1,572 by 2017 (table A1.2, fig. 6).

In 2017, Georgia led the 13 Southern States in total industrial roundwood output with 1.33 billion cubic feet and Alabama was second with 1.14 billion cubic feet. Mississippi, South Carolina, and North Carolina followed with 978.9, 807.6, and 716.9 million cubic feet, respectively (table A1.3, fig. 7). Total industrial roundwood output for these five States amounted to 4.97 billion cubic feet and accounted for 61 percent of the South's industrial production.

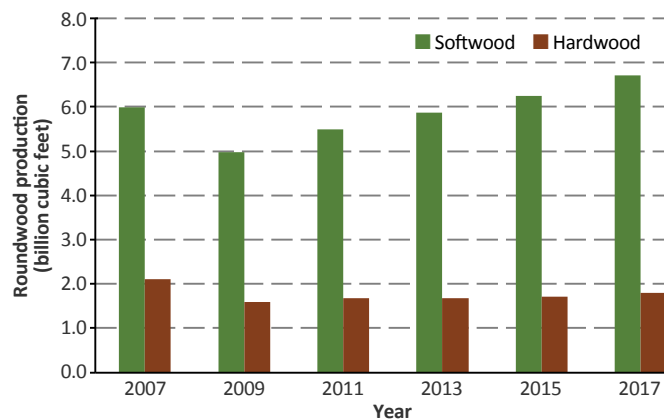


Figure 2—Roundwood production for all products by species group and year in the southern region from 2007 to 2017. Texas data derived from Texas harvest trends reports (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019)

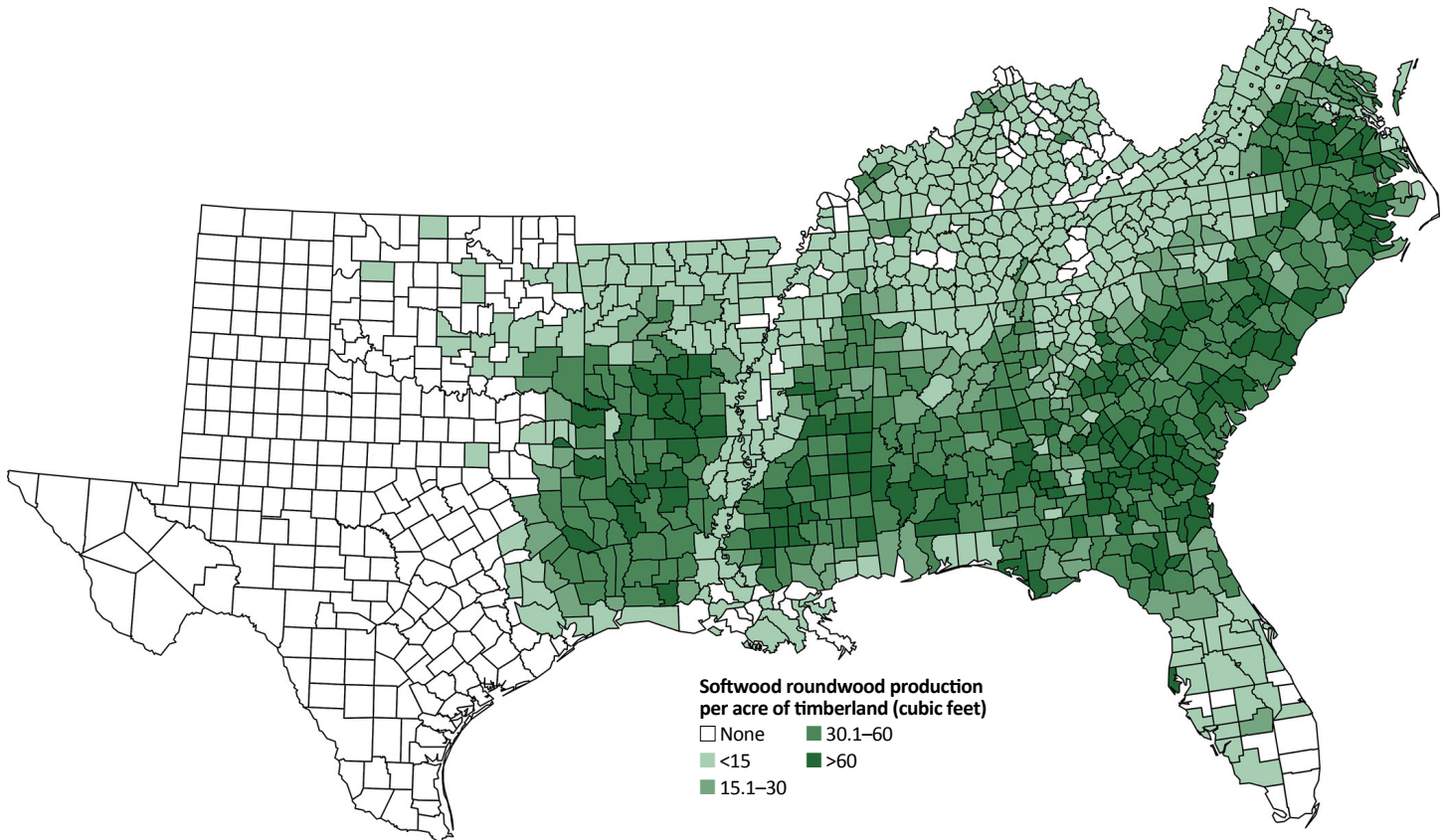


Figure 3—Intensity of roundwood softwood output for all industrial products from timberland in the southern region by county, 2017. Texas data derived from the 2017 Texas harvest trend report (Stottlemeyer et al. 2019).

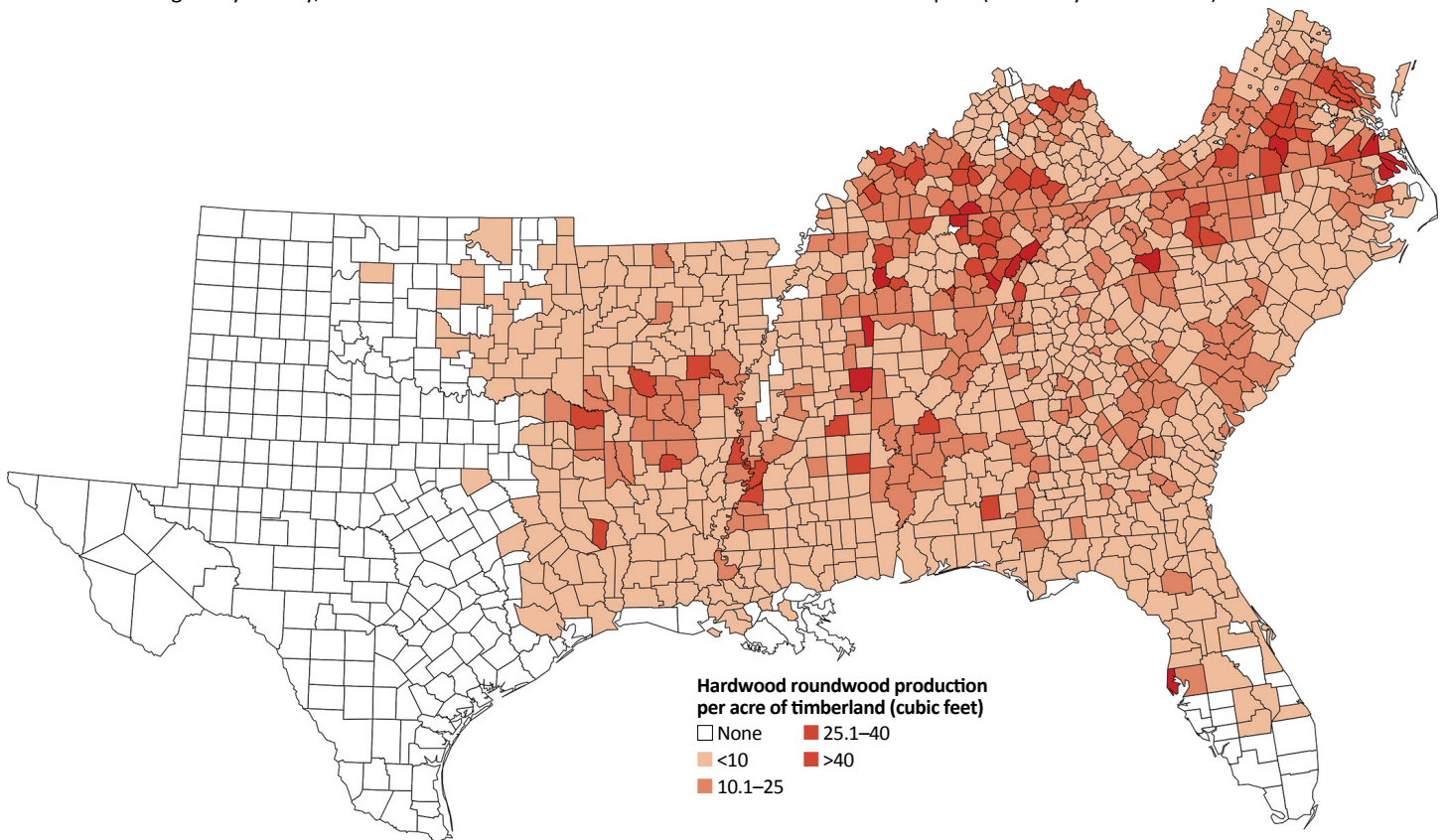
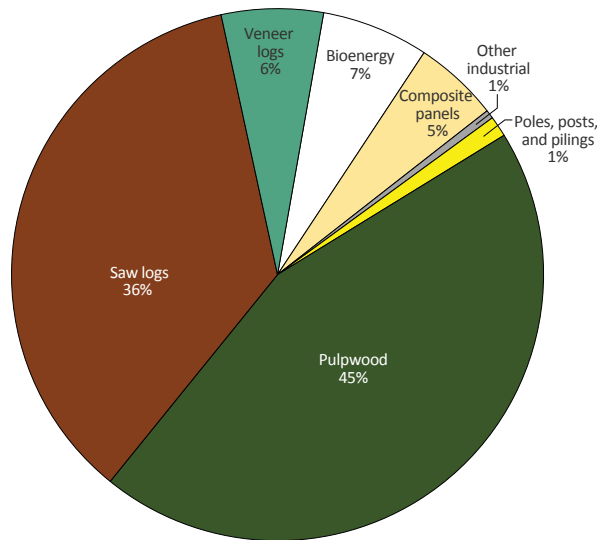


Figure 4—Intensity of roundwood hardwood output for all industrial products from timberland in the southern region by county, 2017. Texas data derived from the 2017 Texas harvest trend report (Stottlemeyer et al. 2019).



Total = 8.51 billion cubic feet

Figure 5—Roundwood production by type of product in the southern region, 2017. Texas data derived from the

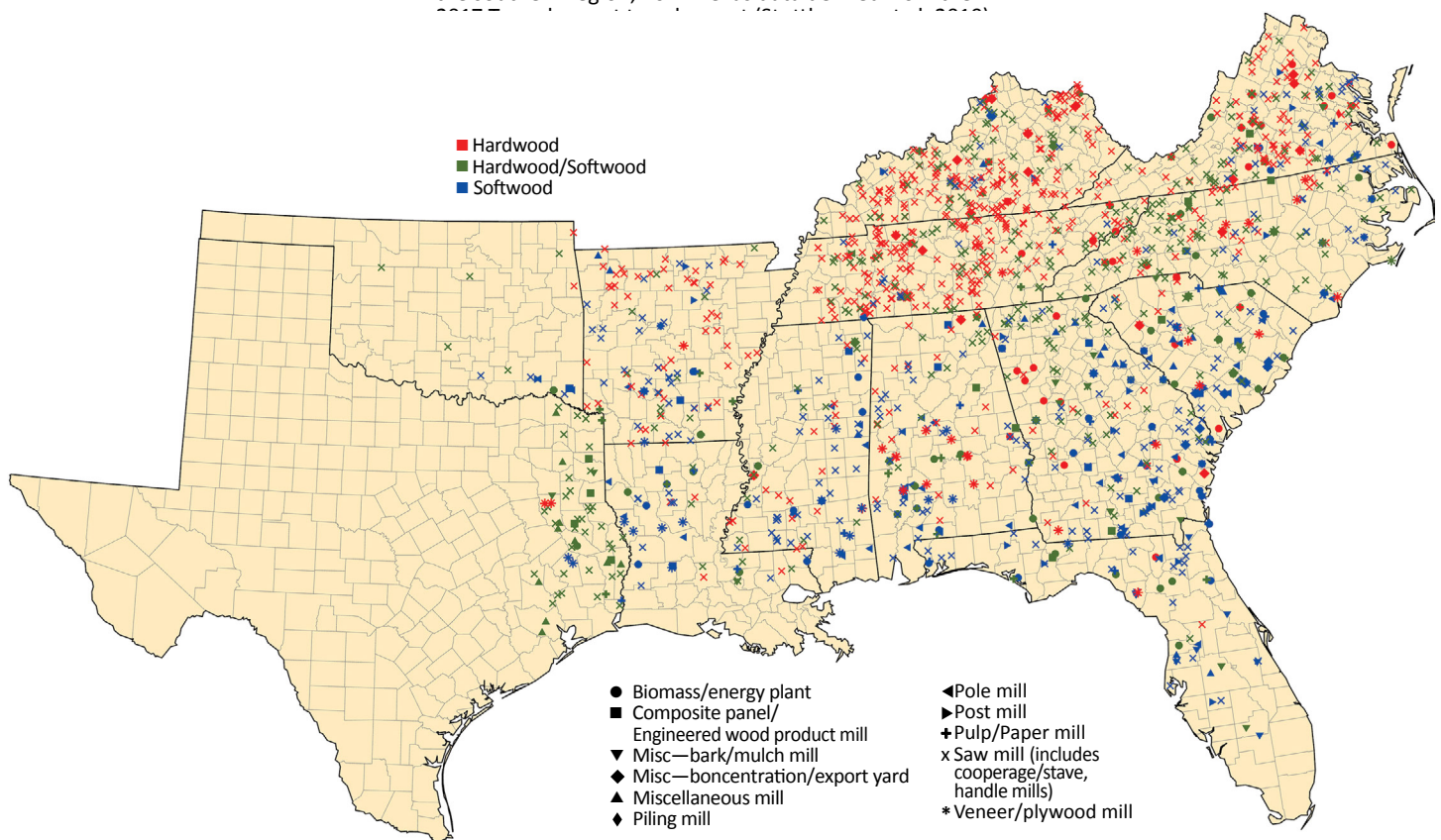


Figure 6—Primary wood-using mills in the South by State, 2017. Texas data derived from the 2017 Texas harvest trend report (Stottlemyer et al. 2019).

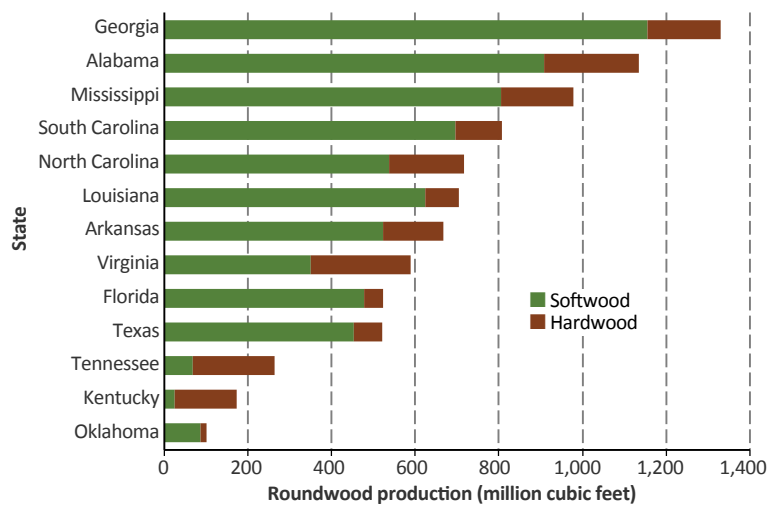


Figure 7—Roundwood production for all products by State and species group in the South, 2017. Texas data derived from the 2017 Texas harvest trend report (Stottlemyer et al. 2019).

### Saw Logs

Total saw log production increased 3 percent from 2.26 billion cubic feet in 2009 to 2.31 billion cubic feet in 2011. Between 2011 and 2017, saw log production volume increased by another 723.0 million cubic feet, 31 percent (table A1.1, fig. 8). In 2017, saw logs accounted for 36 percent of the South's total industrial roundwood products (table A1.1, fig. 5).

From 2009 to 2011, output of softwood saw logs increased by 2 percent from 1.64 to 1.67 billion cubic feet, whereas output of hardwood saw logs increased by 5 percent from 615.9 to 646.2 million cubic feet (table A1.1). Between 2011 and 2017, softwood and hardwood saw log production increased by 633.6 and 89.4 million cubic feet, 38 and 14 percent, to 2.31 billion cubic feet and 735.6 million cubic feet, respectively (table A1.1).

In 2017, the South had 1,116 sawmills, a net gain of 18 mills since 2011 (table A1.2). In the southern region, some small and one-person sawmills are not included in the total number of sawmills. Of the 1,116 sawmills operating, 247 were classified as softwood, 541 hardwood, and the remaining 328 softwood and hardwood (fig. 6).

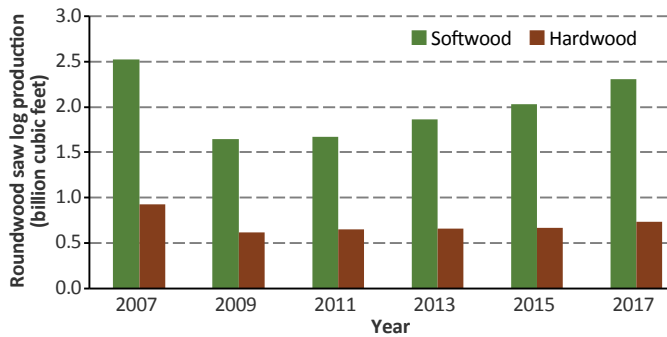


Figure 8—Roundwood saw log production by species group and year in the South. Texas data derived from multiple Texas harvest trends reports (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019).

### Pulpwood

From 2009 to 2011, total pulpwood production including chipped roundwood increased by 385.6 million cubic feet, 11 percent, from 3.43 to 3.82 billion cubic feet (table A1.1). However, from 2011 to 2017, total pulpwood production decreased by 21.8 million cubic feet, 1 percent, to 3.80 billion cubic feet (table A1.1, fig. 9).

In 2017, pulpwood production accounted for 45 percent of the South's total industrial roundwood production compared to 53 percent in 2011 (fig. 5). From 2011 to 2017, softwood output was up by 4 percent to 2.98 billion cubic feet, whereas hardwood output declined by 14 percent to 816.4 million cubic feet (table A1.1, fig. 9).

In 2017, there were 77 pulp mill facilities operating and receiving roundwood in the South, 3 less than in 2011 (table A1.2). Of the 77 pulp mills operating, 36 were classified as softwood, 5 hardwood, and the remaining 36 softwood and hardwood (fig. 6).

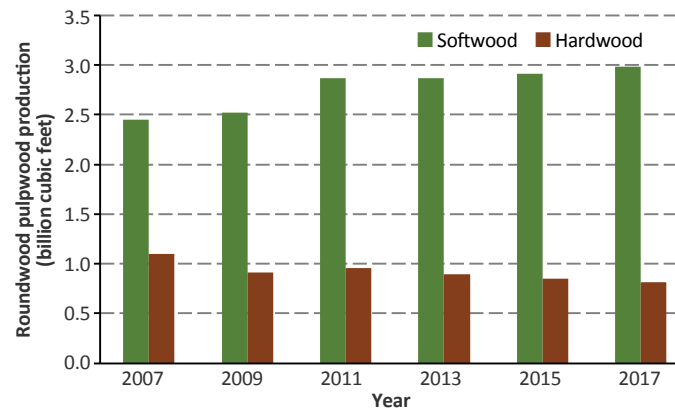


Figure 9—Roundwood pulpwood production by species group and year in the South.



### Veneer Logs

From 2009 to 2011, output of veneer logs increased 101.9 million cubic feet, 27 percent, from 384.4 to 486.2 million cubic feet and accounted for 7 percent of the South's total industrial roundwood production volume (table A1.1). Between 2011 and 2017, veneer log production also increased, reaching 526.3 million cubic feet, but only accounted for 6 percent of the South's total industrial roundwood production. Over the study period, softwood veneer production increased 10 percent to nearly 492.6 million cubic feet, whereas output of hardwood veneer logs decreased by 8 percent to 33.7 million cubic feet (table A1.1, fig. 10). Between 2011 and 2017, the number of veneer mills operating in the South declined from 60 to 54 (table A1.2). Of the 54 veneer mills operating in 2017, 22 were classified as softwood, 27 hardwood, and the remaining 5 softwood and hardwood (fig. 6).

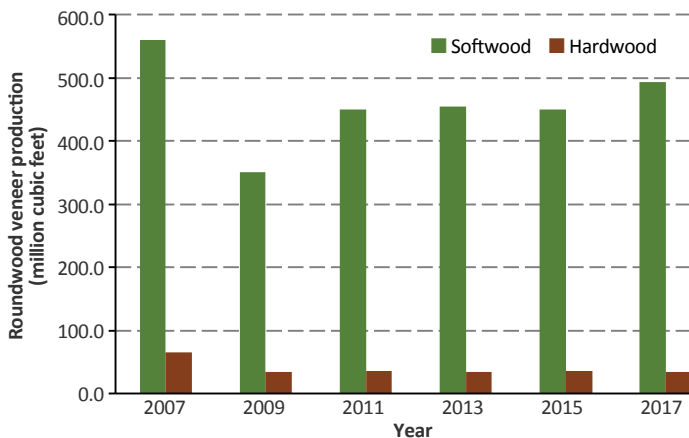


Figure 10—Roundwood veneer production by species group and year in the South. Texas data derived from multiple Texas harvest trends reports (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019).

### Composite Panels

From 2009 to 2011, roundwood harvested from the South's forests for composite panels dropped by 10 percent from 330.7 to 298.5 million cubic feet (table A1.1). However, between 2011 and 2017, composite panel production increased by 47 percent to 438.5 million cubic feet. Softwood output increased by 51 percent to 426.5 million cubic feet, whereas hardwood production declined by 21 percent from 15.2 to 12.0 million cubic feet (table A1.1, fig. 11).

In 2017, there were 27 composite panel mills operating in the South, 4 more than in 2011 (table A1.2). Of the 27 composite panel mills operating, 14 were classified as softwood, and 13 softwood and hardwood (fig. 6).

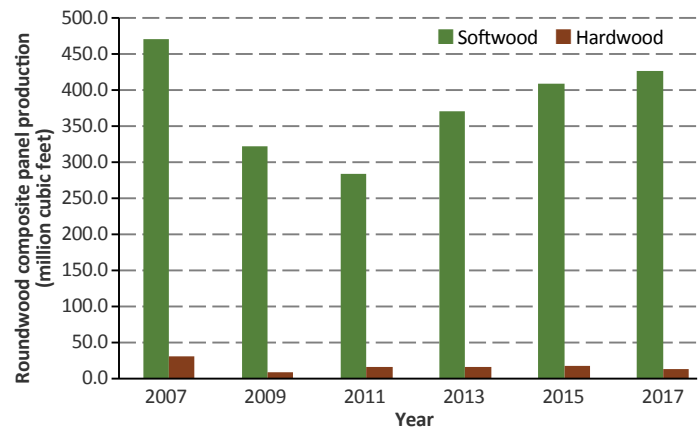


Figure 11—Roundwood composite panel production by species group and year in the South.



LEFT: White oak barrels in production. (USDA Forest Service photo by Tony Johnson); RIGHT: Tree stump in a bottomland hardwood logging operation. (USDA Forest Service photo by Jason Cooper)

### Bioenergy/Fuelwood

From 2011 to 2017, bioenergy/fuelwood production increased over threefold from 150.2 to 554.0 million cubic feet (table A1.1). In 2017, bioenergy/fuelwood accounted for 7 percent of total industrial roundwood production. Over the 2011–2017 time period, both softwood and hardwood increased at nearly the same rate from 122.0 and 28.2 million cubic feet to 357.2 and 196.9 million cubic feet, respectively (table A1.1, fig. 12).

In 2017, there were 125 bioenergy/fuelwood mills operating in the South, a threefold increase from the 43 bioenergy/fuelwood mills operating in 2011 (table A1.2). Of the 125 bioenergy/fuelwood mills operating, 45 were classified as softwood, 31 hardwood, and the remaining 49 softwood and hardwood (fig. 6).

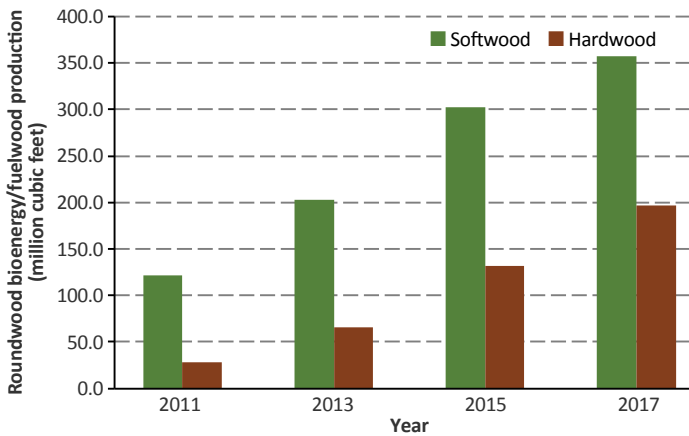


Figure 12—Roundwood bioenergy and fuelwood production by species group and year in the South.

### Poles, Posts, and Pilings

From 2011 to 2017, poles, posts, and pilings production increased by 77 percent from 60.5 to 107.2 million cubic feet (table A1.1). Because the use of hardwood species for poles, posts, and pilings was limited over the study period, most of this increase was due to an increase in softwood output from 60.4 to 107.1 million cubic feet, whereas hardwood production declined from 189 to 132 thousand cubic feet (table A1.1, fig. 13).

In 2017, there were 73 poles, posts, and pilings mills operating in the South, an eight-mill increase from the 65 operating in 2011 (table A1.2). Of the 73 poles, posts, and pilings mills operating, 70 were classified as softwood, 1 hardwood, and the remaining 2 softwood and hardwood (fig. 6).

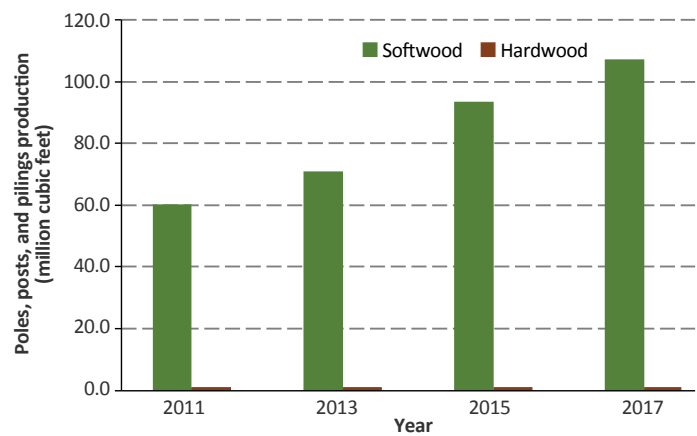


Figure 13—Roundwood poles, posts, and pilings production by species group and year in the South. Texas data derived from multiple Texas harvest trends reports (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019).



LEFT: A stack of lumber and RIGHT: A lumber yard with new roundwood logs arriving to the mill in the background. (USDA Forest Service photos by Tony Johnson)

### Other Industrial Products

In 2017, roundwood harvested for other industrial uses such as mulch, export yards, commercial firewood, logs for homes, and all other industrial products totaled 44.6 million cubic feet, a 34-percent increase from 2011 (table A1.1). From 2011 to 2017, softwood other industrial volume increased by 28 percent, from 8.8 to 40.4 million cubic feet. Softwood made up 91 percent of the other industrial products volume. From 2011 to 2017, other industrial volume of hardwood more than doubled to 4.1 million cubic feet (table A1.1, fig. 14).

In 2017, the number of other industrial plants producing products totaled 100, 39 more than in 2011 (table A1.2). In 2013, only five export yards were identified, and by 2017 there were 39 export yards in the southern region (fig. 6). Of the 100 other industrial plants operating, 45 were classified as softwood, 25 hardwood, and the remaining 30 softwood and hardwood (fig. 6).

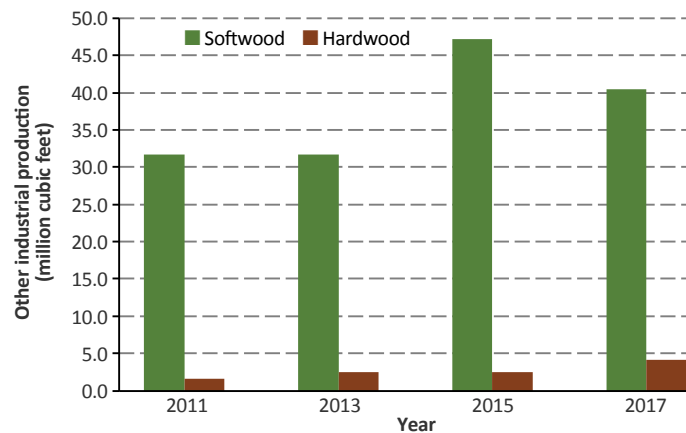


Figure 14—Roundwood other industrial production by species group and year in the South.



LEFT: A rubber-tired grapple skidder moving loblolly pine trees to the logging landing. (USDA Forest Service photo by William Durham); RIGHT: A stack of roundwood at the mill. (USDA Forest Service photo by Tony Johnson)

### Plant Byproducts

Due to reporting differences, the following regional totals do not include all plant byproducts from Texas mills—only bark residues from Texas pulp mills were included.

In 2017, the processing of primary products in southern mills generated 2.59 billion cubic feet of wood and bark residues, a 23-percent increase from 2011 (table A1.4). In 2017, coarse residues from all primary products amounted to 1.03 billion cubic feet, 40 percent of total residues, whereas bark volume totaled 782.0 million cubic feet, 30 percent of residue produced. Collectively, sawdust and shavings made up the remaining 30 percent of total residues, 775.0 million cubic feet (table A1.4, fig. 15).

In 2017, the processing of saw logs generated 1.85 billion cubic feet of mill residues, 71 percent of the total residues produced (fig. 16). In 2017, bark generated from

pulpwood totaled 410.6 million cubic feet, 16 percent of mill residues produced (fig. 16).

In 2017, almost 2.59 billion cubic feet, 99 percent of wood and bark residues were used for a product (table A1.5). Of the utilized mill residue, 53 percent was used for industrial fuel, 34 percent for fiber products, and 12 percent was utilized in miscellaneous products such as particleboard production, mulch, charcoal, or sawn products such as landscape timbers. Only 1 percent was not used for a product (fig. 17). In the South, 800.0 million cubic feet, 78 percent, of the coarse residues were used for fiber products. Most of the bark was used for industrial fuel (81 percent) or other miscellaneous products (18 percent), whereas 74 percent of the sawdust and shavings were used for industrial fuel (table A1.5).

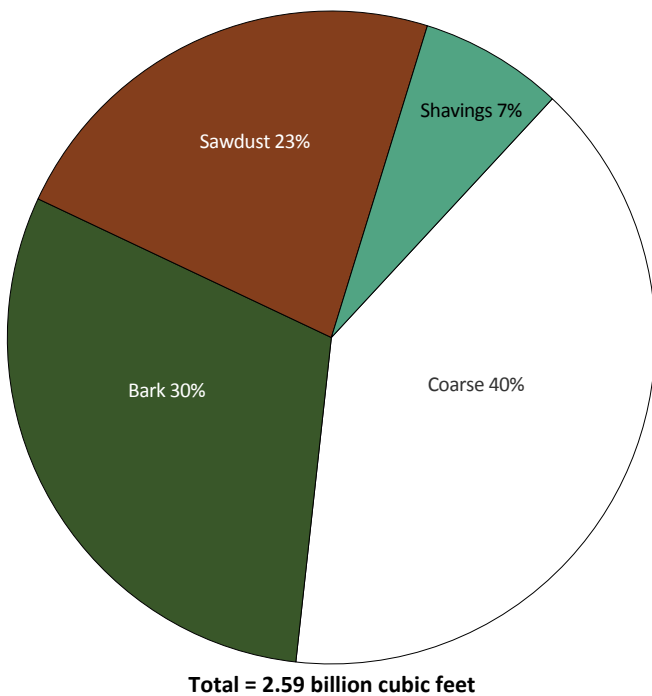


Figure 15—Primary mill residue by residue type in the South, 2017 (excludes Texas mill residues, aside from Texas pulp mill residues).

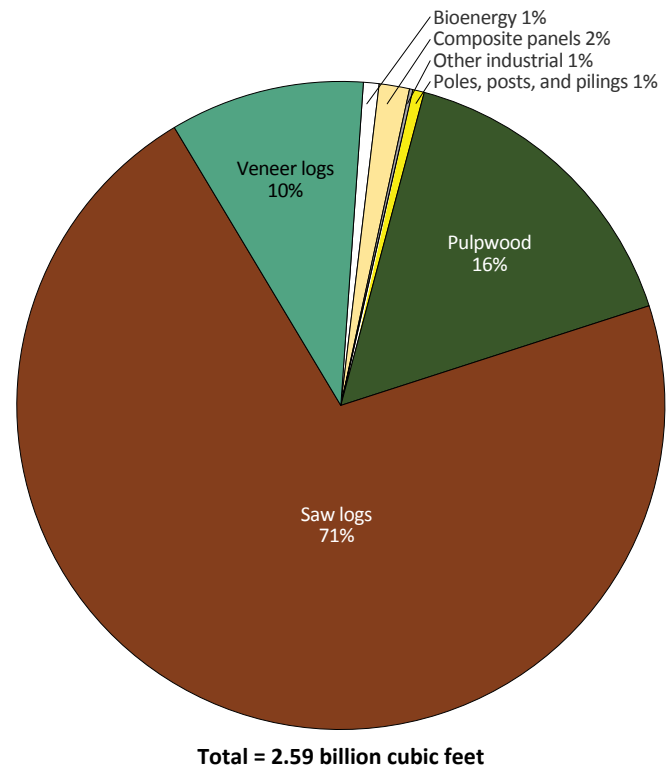
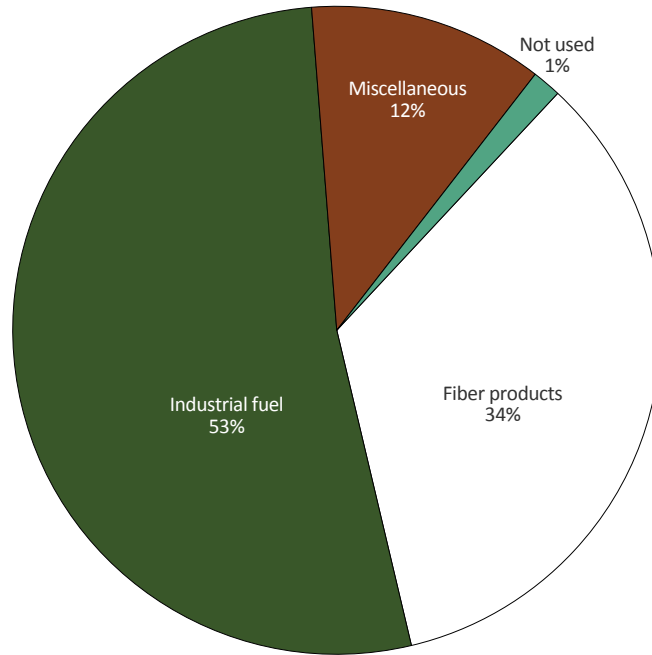


Figure 16—Primary mill residue produced by roundwood type in the South, 2017 (excludes Texas mill residues, aside from Texas pulp mill residues).



Total = 2.59 billion cubic feet

Figure 17— Disposal of residue by product in the South, 2017 (excludes Texas mill residues, aside from Texas pulp mill residues).



Tractor trailers being unloaded at the mill. (USDA Forest Service photo by Tony Johnson)

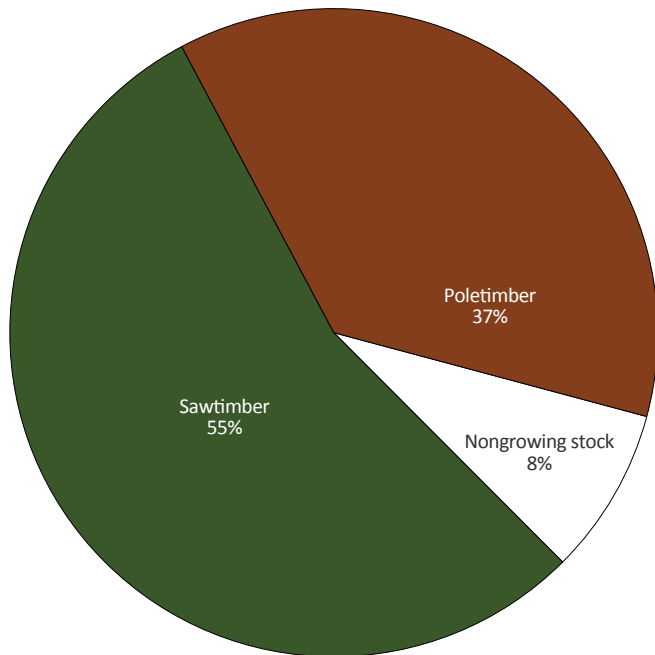
### Roundwood Output

Product output by source, ownership, and detailed species group was estimated using the 2017 inventory data for the South. The following output totals cover only canvassed mills (i.e., excludes Texas primary mills other than pulp mills).

#### Source

In addition to the 8.19 billion cubic feet of roundwood output for industrial roundwood in 2017, an estimated 335.0 million cubic feet were harvested for residential fuelwood, bringing the South's total roundwood output to 8.53 billion cubic feet.

In 2017, 92 percent of total industrial roundwood output was considered growing-stock volume (sawtimber and poletimber) from timberland sources. Other sources (saplings; stumps, tops, and limbs of trees on timberland; and trees on nonforest land) contributed an estimated 684.1 million cubic feet, 8 percent of total industrial roundwood output (table A1.6, fig. 18).

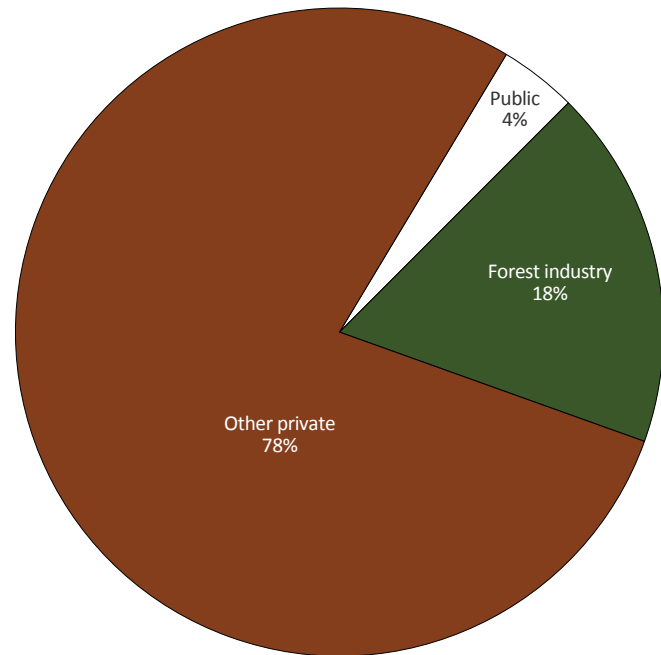


Total = 8.19 billion cubic feet

Figure 18—Roundwood output by source in the South, 2017 (excludes Texas output, aside from Texas pulp mill output).

### Ownership

In 2017, an estimated 6.42 billion cubic feet, 78 percent of the total industrial roundwood output came from nonindustrial private forest lands. Forest industry lands contributed 1.45 billion cubic feet, 18 percent of the output. Public lands made up the remaining 4 percent, 317.2 million cubic feet (table A1.3, fig. 19).



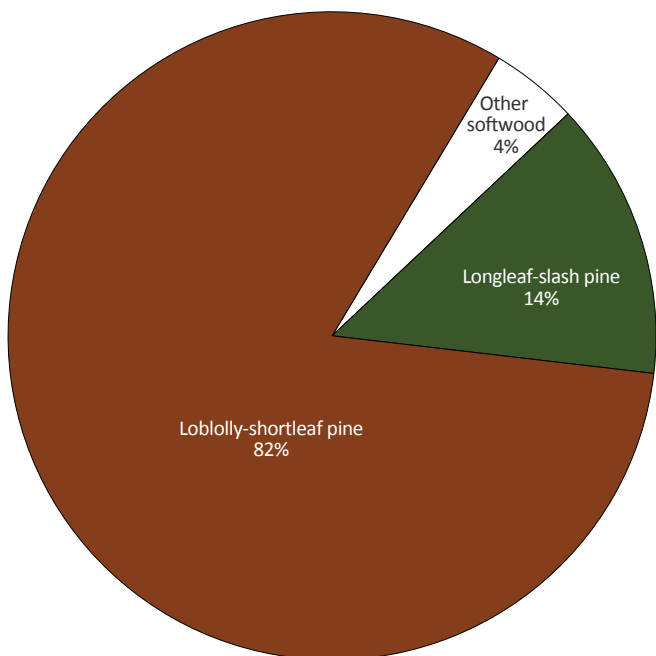
Total = 8.19 billion cubic feet

Figure 19—Roundwood output by ownership class in the South, 2017 (excludes Texas output, aside from Texas pulp mill output).

**Species**

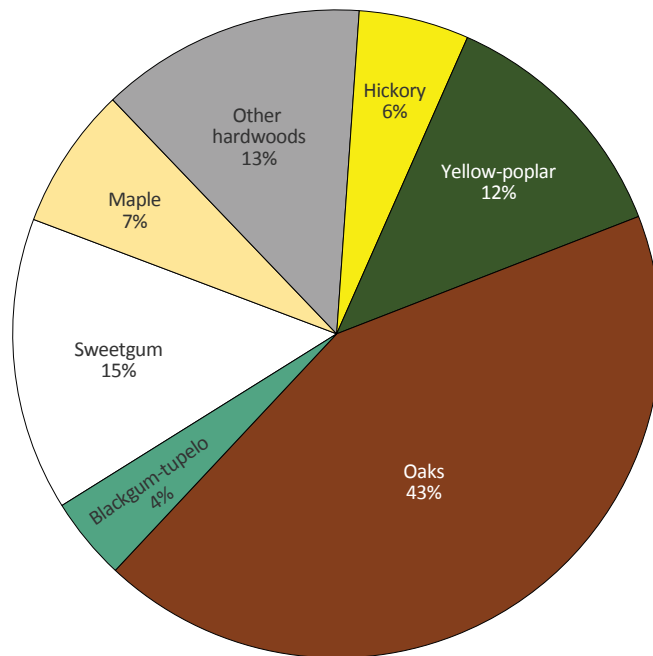
At 5.24 billion cubic feet, the loblolly-shortleaf pine group provided more volume than any other softwood species group and accounted for 82 percent of the total softwood output (tables A1.7, A1.8; fig. 20). The longleaf-slash pine group accounted for 14 percent of the softwood output. In hardwoods, the red oak

and white oak groups combined accounted for 766.1 million cubic feet, 43 percent of total hardwood output (tables A1.7, A1.8; fig. 21). Sweetgum and yellow-poplar accounted for 261.5 million cubic feet (15 percent) and 223.1 million cubic feet (12 percent), respectively.



**Total = 6.4 billion cubic feet**

Figure 20—Roundwood output by softwood species group in the South, 2017 (excludes Texas output aside from Texas pulp mill output).



**Total = 1.79 billion cubic feet**

Figure 21—Roundwood output by hardwood species group in the South, 2017 (excludes Texas output aside from Texas pulp mill output).



LEFT: A tractor moving felled mixed hardwoods to the logging landing and RIGHT: Stacks of lumber on pallets in a warehouse. (USDA Forest Service photo by Tony Johnson)

### Regional Trends

Figure 22 displays three major physiographic regions in the South: Mountain, Piedmont, and Coastal Plain. From 2011 to 2017, output of industrial roundwood products increased in all the major physiographic regions of the South (tables A1.9, A1.10, A1.11). The Piedmont region had the largest increase at 22 percent

(table A1.10). During 2017, the Coastal Plain region produced 55 percent of the South's total industrial roundwood, whereas the Piedmont and Mountain regions produced 41 and 4 percent of the South's total output, respectively (fig. 23).

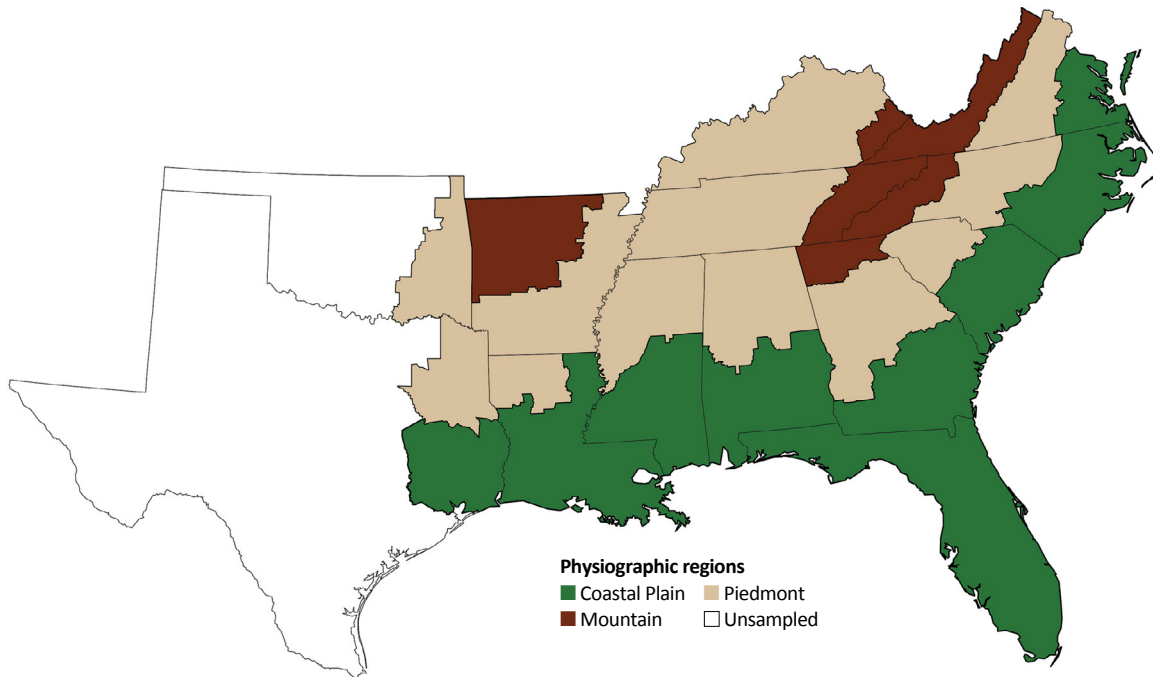


Figure 22—Physiographic regions of the South delineated along Forest Inventory and Analysis unit boundaries.

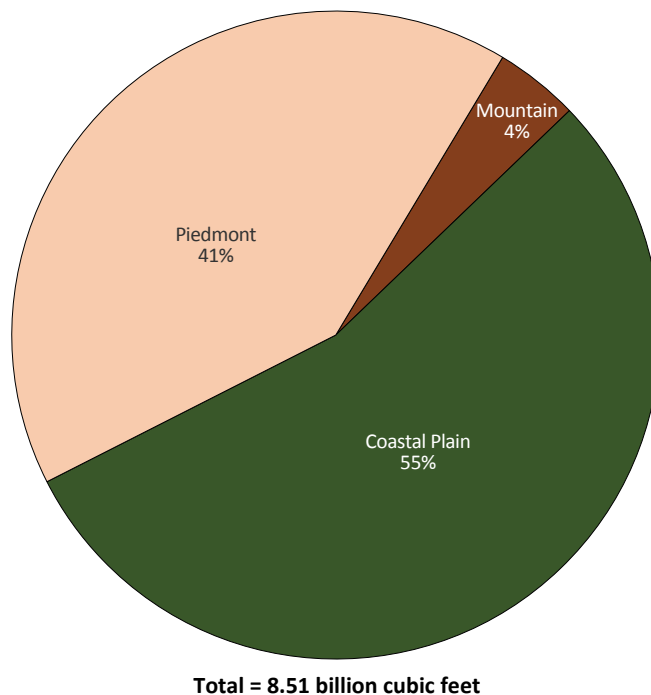


Figure 23—Roundwood production for all products by region in the South, 2017. Texas data are from multiple Texas harvest trends reports (Edgar et al. 2012, 2014, 2017; Stottlemeyer et al. 2019).



### Mountain Region

In 2017, industrial roundwood output from the Mountain region totaled 358.4 million cubic feet, up 5 percent since 2011. Bioenergy/fuelwood increased over sixfold from 3.4 million cubic feet in 2011 to 21.8 million cubic feet in 2017. From 2011 to 2017, all other products increased or had no change in production levels except pulpwood, which declined by 28.7 million cubic feet, 17 percent (table A1.9).

At 187.3 million cubic feet, saw logs accounted for 52 percent of the Mountain region's industrial production and 6 percent of the South's saw log output in 2017. The 136.8 million cubic feet of pulpwood accounted for 38 percent of the total industrial roundwood output for the Mountain region and 4 percent of the South's total pulpwood output. The 5.2 million cubic feet of hardwood veneer logs accounted for 15 percent of the South's total hardwood veneer-log output.

### Piedmont Region

In 2017, industrial roundwood output from the Piedmont region totaled 3.50 billion cubic feet, an increase of 22 percent since 2011. Production levels of all products in the Piedmont region increased during the study period except pulpwood, which decreased by 2 percent. Bioenergy/fuelwood increased almost fourfold from 43.6 million cubic feet in 2011 to 167.7 million cubic feet in 2017. Poles, posts, and pilings production almost doubled over the study period from 16.3 million cubic feet in 2011 to 29.6 million cubic feet in 2017 (table A1.10).

In 2017, saw log production of 1.41 billion cubic feet accounted for 40 percent of the Piedmont region's industrial production and 46 percent of the South's total saw log output. Pulpwood production accounted for another 40 percent of the Piedmont region's total industrial roundwood output and 37 percent of the South's total pulpwood output. The 229.6 million cubic feet of veneer logs accounted for 7 percent of the Piedmont region's total output and 44 percent of the South's total veneer-log output.

### Coastal Plain Region

In 2017, industrial roundwood output from the Coastal Plain region totaled 4.65 billion cubic feet, an increase of 18 percent since 2011. Bioenergy/fuelwood increased over threefold from 103.2 million cubic feet in 2011 to 364.6 million cubic feet in 2017. All products in the Coastal Plain region increased production levels during the study period except veneer logs, which decreased by 4 percent (table A1.11).

In 2017, saw log production of 1.45 billion cubic feet accounted for 31 percent of the Coastal Plain region's total production and 48 percent of the South's total saw log output. Pulpwood production of 2.26 billion cubic feet accounted for another 49 percent of the Coastal Plain region's total industrial roundwood output and 59 percent of the South's total pulpwood production. The 290.5 million cubic feet of veneer logs accounted for 55 percent of the South's total veneer-log output.

## LITERATURE CITED

- Edgar, C.; Li, Y.; Carraway, B. 2012. Harvest trends 2011. Texas A&M Forest Service. [https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data and Analysis/Forest Economics and Resource Analysis/Resource Analysis/publications/HarvestTrends2011.pdf](https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data%20and%20Analysis/Forest%20Economics%20and%20Resource%20Analysis/Resource%20Analysis%20publications/HarvestTrends2011.pdf). [Date accessed: 14 February 2024].
- Edgar, C.; Omkar, J.; Zehnder, R. [et al.]. 2014. Harvest trends 2013. Texas A&M Forest Service. [https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data and Analysis/Forest Economics and Resource Analysis/Resource Analysis/publications/HarvestTrends2013.pdf](https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data%20and%20Analysis/Forest%20Economics%20and%20Resource%20Analysis/Resource%20Analysis/publications/HarvestTrends2013.pdf). [Date accessed: 14 February 2024].
- Edgar, C.; Parajuli, R.; Zehnder, R. [et al.]. 2017. Harvest trends 2015. Texas A&M Forest Service. [https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data and Analysis/Forest Economics and Resource Analysis/Resource Analysis/publications/HarvestTrends2015.pdf](https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data%20and%20Analysis/Forest%20Economics%20and%20Resource%20Analysis/Resource%20Analysis/publications/HarvestTrends2015.pdf). [Date accessed: 14 February 2024].
- Stottlemeyer, A.; Dougal, E.; Tian, N. [et al.]. 2019. Harvest trends 2017. Texas A&M Forest Service. [https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data and Analysis/Forest Economics and Resource Analysis/Resource Analysis/publications/HarvestTrends2017.pdf](https://tfsweb.tamu.edu/uploadedFiles/TFSSMain/Data%20and%20Analysis/Forest%20Economics%20and%20Resource%20Analysis/Resource%20Analysis/publications/HarvestTrends2017.pdf). [Date accessed: 14 February 2024].
- U.S. Department of Agriculture, Forest Service. [USDA Forest Service]. [N.d.]. The Forest Inventory and Analysis database user guide for phase 2 (Version 9.1). <https://research.fs.usda.gov/understory/nationwide-forest-inventory-field-guide>. [Date accessed: 6 May 2024].
- U.S. Department of Agriculture, Forest Service. [USDA Forest Service]. 2024. FIA DataMart species reference table. <https://apps.fs.usda.gov/fia/datamart/datamart.html>. [Date accessed: 6 May 2024].

## SPECIES LISTS

Species lists are included in the FIA database user guide for phase 2 (Version 9.1) (USDA Forest Service, n.d.) and FIA DataMart species reference table (USDA Forest Service 2024).

## 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 log 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 in diameter at breast height (d.b.h.) from a 1-foot stump to a minimum 4.0-inch top diameter outside bark (d.o.b.) of the central stem.

**Hardwoods**—Dicotyledonous trees, usually broadleaf and deciduous.

**Soft hardwoods**—Hardwood species with an average specific gravity of  $\leq 0.50$ , 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 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**—The 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. The 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 20 cubic feet per acre per year 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 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 quantity or 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 outside of that State.

**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 outside that State.

**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 that do not contain at least one 12-foot saw log or two noncontiguous 8-foot or longer saw logs, 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 that do not contain at least one 12-foot saw log or two noncontiguous 8-foot or longer saw logs, 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 nonpulp mills, chipped, and then sold to pulp mills 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 1.0–5.0 inches d.b.h.

**Saw log**—A roundwood product, usually  $\geq 8$  feet in length, 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  $\geq 9.0$  inches d.b.h. and hardwoods  $\geq 11.0$  inches d.b.h.

**Sawtimber volume**—Growing-stock volume in the saw log portion of sawtimber-sized trees in board feet (International  $\frac{1}{4}$ -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 needles or scale-like leaves.

**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  $\frac{1}{4}$ -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 sawtimber 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).

## APPENDIX 1—SUPPLEMENTAL TABLES

**Table A1.1—Output of industrial products by product and species group, southern region, 2009–2017<sup>a</sup>**

Product and species group	Year				
	2009 <sup>b</sup>	2011	2013	2015	2017
	<i>thousand cubic feet</i>				
<b>Softwood</b>					
Bioenergy	–	121,997	203,116	302,129	357,160
Composite panels	322,060	283,341	370,868	408,399	426,455
Other industrial	138,831	31,659	31,706	47,159	40,434
Poles, posts, and pilings	–	60,352	70,782	93,460	107,110
Pulpwood	2,519,519	2,866,033	2,868,344	2,909,983	2,979,933
Saw logs	1,642,327	1,674,328	1,864,284	2,033,660	2,307,963
Veneer logs	350,042	449,685	454,996	449,854	492,564
<b>All industrial</b>	<b>4,972,779</b>	<b>5,487,394</b>	<b>5,864,096</b>	<b>6,244,644</b>	<b>6,711,620</b>
<b>Hardwood</b>					
Bioenergy	–	28,183	65,455	132,166	196,881
Composite panels	8,664	15,206	16,193	16,344	12,008
Other industrial	20,213	1,598	2,529	2,531	4,166
Poles, posts, and pilings	–	189	137	218	132
Pulpwood	913,065	952,167	896,080	853,487	816,430
Saw logs	615,940	646,205	657,188	664,496	735,577
Veneer logs	34,326	36,558	35,041	35,551	33,705
<b>All industrial</b>	<b>1,592,208</b>	<b>1,680,106</b>	<b>1,672,623</b>	<b>1,704,793</b>	<b>1,798,898</b>
<b>Total industrial (all species)</b>	<b>6,564,987</b>	<b>7,167,500</b>	<b>7,536,719</b>	<b>7,949,437</b>	<b>8,510,518</b>
Residential fuelwood (undifferentiated)	420,100	431,452	556,168	428,564	335,008
<b>Total roundwood output</b>	<b>6,985,087</b>	<b>7,598,952</b>	<b>8,092,887</b>	<b>8,378,001</b>	<b>8,845,526</b>

– = Not applicable.

<sup>a</sup>This table uses data from multiple Texas harvest trends reports.<sup>b</sup>2009 other industrial product volume includes volume from bioenergy and poles, posts, and pilings products from 2009. These product volumes were not delineated in 2009.

Sources: Edgar et al. (2012, 2014, 2017); Stottlemeyer et al. (2019).

**Table A1.2—Number of primary wood-using plants by type of mill, southern region, 1970–2017<sup>1</sup>**

Type of mill	Year														
	1970	1975	1980	1985	1990	1995	1999	2003	2005	2007	2009	2011	2013	2015	2017
Sawmills	4,289	3,591	3,482	3,086	2,683	2,386	2,165	1,896	1,669	1,540	1,216	1,098	1,096	1,033	1,116
Veneer logs	239	200	192	168	155	139	124	107	99	87	66	60	53	50	54
Pulpwood	109	115	116	107	105	105	97	91	87	87	83	80	81	79	77
Composite panels	0	0	0	6	11	21	24	29	30	27	24	23	26	26	27
Other industrial	452	358	313	295	235	161	141	158	143	141	140	62	65	74	100
Poles, posts, and pilings <sup>2</sup>	–	–	–	–	–	–	–	–	–	–	–	65	65	70	73
Bioenergy/fuelwood mills <sup>3</sup>	–	–	–	–	–	–	–	–	–	–	–	42	58	101	125
<b>Total number of mills</b>	<b>5,089</b>	<b>4,264</b>	<b>4,103</b>	<b>3,662</b>	<b>3,189</b>	<b>2,812</b>	<b>2,551</b>	<b>2,281</b>	<b>2,028</b>	<b>1,882</b>	<b>1,529</b>	<b>1,430</b>	<b>1,444</b>	<b>1,433</b>	<b>1,572</b>

– = Not applicable.

<sup>1</sup>This table uses data from multiple Texas harvest trends reports.<sup>2</sup>From 1970 to 2009, other industrial mill counts included poles, posts, and pilings mills. These mills were not delineated during the aforementioned timeframe.<sup>3</sup>From 1970 to 2009, other industrial mill counts included bioenergy and fuelwood mills. These mills were not delineated during the aforementioned timeframe.

Source: Edgar et al. (2012, 2014, 2017); Stottlemeyer et al. (2019).

Table A1.3—Total roundwood output by species group, State, and ownership class, southern region, 2011–2017

Product and species group	Public				Forest industry				Other private				All types			
	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017
<i>thousand cubic feet</i>																
<b>Alabama</b>																
Softwood	12,950	19,256	21,513	21,417	179,522	183,791	169,584	162,322	548,847	608,993	652,313	724,178	741,319	812,040	843,410	907,917
Hardwood	3,702	4,871	6,107	6,710	50,587	49,719	46,729	40,044	169,574	171,103	174,650	180,409	223,864	225,693	227,485	227,163
<b>Total</b>	<b>16,653</b>	<b>24,127</b>	<b>27,620</b>	<b>28,127</b>	<b>230,109</b>	<b>233,510</b>	<b>216,313</b>	<b>202,366</b>	<b>718,421</b>	<b>780,096</b>	<b>826,962</b>	<b>904,588</b>	<b>965,183</b>	<b>1,037,733</b>	<b>1,070,895</b>	<b>1,135,081</b>
<b>Arkansas</b>																
Softwood	15,624	17,203	13,721	15,864	191,979	192,884	205,542	230,435	198,594	185,157	183,967	276,148	406,197	395,244	403,230	522,447
Hardwood	5,558	6,572	5,274	4,357	52,592	56,089	54,313	53,134	71,166	77,164	71,639	86,737	129,316	139,824	131,225	144,228
<b>Total</b>	<b>21,182</b>	<b>23,775</b>	<b>18,994</b>	<b>20,221</b>	<b>244,571</b>	<b>248,973</b>	<b>259,855</b>	<b>283,569</b>	<b>269,760</b>	<b>262,321</b>	<b>255,606</b>	<b>362,885</b>	<b>535,513</b>	<b>535,069</b>	<b>534,455</b>	<b>666,676</b>
<b>Florida</b>																
Softwood	43,201	48,485	42,531	43,150	93,242	91,269	60,973	57,981	311,783	350,111	386,768	377,064	448,226	489,865	490,272	478,196
Hardwood	1,925	2,621	4,748	6,101	4,082	4,347	3,810	5,118	13,805	17,280	25,469	33,406	19,813	24,248	34,028	44,625
<b>Total</b>	<b>45,126</b>	<b>51,107</b>	<b>47,279</b>	<b>49,251</b>	<b>97,324</b>	<b>95,616</b>	<b>64,784</b>	<b>63,099</b>	<b>325,588</b>	<b>367,390</b>	<b>412,237</b>	<b>410,470</b>	<b>468,038</b>	<b>514,113</b>	<b>524,300</b>	<b>522,821</b>
<b>Georgia</b>																
Softwood	24,757	26,204	23,133	28,491	236,594	213,059	203,814	172,766	768,687	806,562	923,065	954,204	1,030,038	1,045,825	1,150,012	1,155,460
Hardwood	4,570	5,007	4,649	5,711	38,784	29,518	29,252	22,263	137,486	128,854	151,342	146,754	180,840	163,378	185,244	174,728
<b>Total</b>	<b>29,327</b>	<b>31,212</b>	<b>27,782</b>	<b>34,201</b>	<b>275,378</b>	<b>242,576</b>	<b>233,067</b>	<b>195,028</b>	<b>906,173</b>	<b>935,415</b>	<b>1,074,407</b>	<b>1,100,958</b>	<b>1,210,878</b>	<b>1,209,203</b>	<b>1,335,256</b>	<b>1,330,188</b>
<b>Kentucky</b>																
Softwood	233	399	279	1,040	58	63	40	69	6,308	15,268	17,713	23,545	6,599	15,729	18,032	24,654
Hardwood	7,129	3,565	4,415	5,699	425	480	651	1,567	129,756	139,584	141,454	141,029	137,310	143,630	146,520	148,295
<b>Total</b>	<b>7,362</b>	<b>3,964</b>	<b>4,694</b>	<b>6,739</b>	<b>483</b>	<b>543</b>	<b>691</b>	<b>1,636</b>	<b>136,063</b>	<b>154,852</b>	<b>159,167</b>	<b>164,573</b>	<b>143,909</b>	<b>159,359</b>	<b>164,551</b>	<b>172,949</b>
<b>Louisiana</b>																
Softwood	30,142	28,370	23,399	25,902	236,649	275,895	287,431	279,116	283,953	293,743	275,711	319,507	550,743	598,009	586,540	624,524
Hardwood	5,168	3,295	2,899	3,112	31,711	28,029	30,153	31,532	49,060	38,208	34,873	44,484	85,938	69,532	67,925	79,127
<b>Total</b>	<b>35,309</b>	<b>31,666</b>	<b>26,298</b>	<b>29,013</b>	<b>268,360</b>	<b>303,924</b>	<b>317,584</b>	<b>310,648</b>	<b>333,012</b>	<b>331,951</b>	<b>310,584</b>	<b>363,991</b>	<b>636,681</b>	<b>667,541</b>	<b>654,465</b>	<b>703,652</b>
<b>Mississippi</b>																
Softwood	41,634	41,213	41,607	39,744	137,065	136,535	152,547	123,162	386,116	448,844	495,774	642,413	564,815	626,592	689,928	805,319
Hardwood	15,351	15,084	11,498	8,369	32,885	33,338	30,698	21,393	111,726	132,621	124,972	143,859	159,962	181,043	167,167	173,621
<b>Total</b>	<b>56,985</b>	<b>56,297</b>	<b>53,105</b>	<b>48,113</b>	<b>169,951</b>	<b>169,872</b>	<b>183,244</b>	<b>144,554</b>	<b>497,841</b>	<b>581,465</b>	<b>620,746</b>	<b>786,272</b>	<b>724,777</b>	<b>807,634</b>	<b>857,095</b>	<b>978,940</b>
<b>North Carolina</b>																
Softwood	15,855	18,308	25,934	24,873	98,621	121,541	109,772	117,085	329,428	345,541	348,880	396,400	443,904	485,389	484,586	538,357
Hardwood	4,825	4,161	7,067	5,228	22,085	28,009	28,100	26,772	150,964	140,244	153,870	146,504	177,874	172,415	189,037	178,505
<b>Total</b>	<b>20,680</b>	<b>22,469</b>	<b>33,001</b>	<b>30,101</b>	<b>120,706</b>	<b>149,550</b>	<b>137,873</b>	<b>143,858</b>	<b>480,392</b>	<b>485,785</b>	<b>502,750</b>	<b>542,904</b>	<b>621,777</b>	<b>657,804</b>	<b>673,623</b>	<b>716,862</b>
<b>Oklahoma</b>																
Softwood	0	1,354	4,198	8,032	17,699	26,260	29,979	37,889	38,094	42,651	41,556	40,852	55,793	70,265	75,733	86,774
Hardwood	0	270	557	1,152	4,502	5,228	3,977	5,436	11,781	12,175	10,585	8,509	16,283	17,673	15,119	15,097
<b>Total</b>	<b>0</b>	<b>1,624</b>	<b>4,755</b>	<b>9,185</b>	<b>22,201</b>	<b>31,488</b>	<b>33,956</b>	<b>43,325</b>	<b>49,875</b>	<b>54,826</b>	<b>52,141</b>	<b>49,361</b>	<b>72,076</b>	<b>87,938</b>	<b>90,851</b>	<b>101,871</b>
<b>South Carolina</b>																
Softwood	15,187	23,555	28,618	27,680	105,911	94,898	52,035	18,715	432,703	471,827	589,243	649,610	553,801	590,280	669,896	696,005
Hardwood	2,647	3,528	4,396	4,332	19,762	14,759	8,151	3,094	76,385	72,262	91,155	104,208	98,794	90,550	103,703	111,634
<b>Total</b>	<b>17,834</b>	<b>27,083</b>	<b>33,014</b>	<b>32,012</b>	<b>125,673</b>	<b>109,657</b>	<b>60,185</b>	<b>21,810</b>	<b>509,089</b>	<b>544,089</b>	<b>680,398</b>	<b>753,818</b>	<b>652,595</b>	<b>680,830</b>	<b>773,598</b>	<b>807,640</b>
<b>Tennessee</b>																
Softwood	748	558	2,043	2,240	8,521	3,710	2,207	910	40,832	50,892	55,882	64,935	50,101	55,160	60,131	68,085
Hardwood	5,814	1,749	4,701	10,671	28,766	10,958	5,148	2,923	165,917	175,956	160,645	181,657	200,497	188,663	170,494	195,251
<b>Total</b>	<b>6,562</b>	<b>2,307</b>	<b>6,745</b>	<b>12,911</b>	<b>37,288</b>	<b>14,668</b>	<b>7,354</b>	<b>3,833</b>	<b>206,749</b>	<b>226,848</b>	<b>216,526</b>	<b>246,592</b>	<b>250,598</b>	<b>243,823</b>	<b>230,625</b>	<b>263,336</b>
<b>Texas<sup>1</sup></b>																
Softwood	966	955	3,397	5,033	62,995	51,962	40,502	12,581	64,120	75,364	129,598	128,065	391,049	407,407	461,302	453,535
Hardwood	353	338	897	2,149	15,548	13,568	10,495	4,586	28,366	32,949	41,717	48,560	71,100	68,898	68,775	67,215
<b>Total</b>	<b>1,319</b>	<b>1,293</b>	<b>4,294</b>	<b>7,182</b>	<b>78,543</b>	<b>65,530</b>	<b>50,998</b>	<b>17,167</b>	<b>92,487</b>	<b>108,314</b>	<b>171,315</b>	<b>176,625</b>	<b>462,148</b>	<b>476,305</b>	<b>530,078</b>	<b>520,750</b>
<b>Virginia</b>																
Softwood	4,817	6,964	8,949	5,484	15,797	10,158	9,796	12,561	224,195	255,170	292,825	332,302	244,810	272,292	311,570	350,347
Hardwood	4,310	4,334	6,716	4,687	11,259	5,540	6,738	10,672	162,948	177,203	184,618	224,050	178,517	187,077	198,072	239,409
<b>Total</b>	<b>9,127</b>	<b>11,298</b>	<b>15,665</b>	<b>10,170</b>	<b>27,056</b>	<b>15,697</b>	<b>16,533</b>	<b>23,233</b>	<b>387,143</b>	<b>432,374</b>	<b>477,444</b>	<b>556,352</b>	<b>423,326</b>	<b>459,369</b>	<b>509,642</b>	<b>589,756</b>
<b>All States<sup>2</sup></b>																
Softwood	206,113	232,825	239,322	248,949	1,384,654	1,402,024	1,324,221	1,225,593	3,633,659	3,950,124	4,393,296	4,929,222	5,487,394	5,864,098	6,244,644	6,711,620
Hardwood	61,353	55,395	63,924	68,277	312,987	279,582	258,214	228,534	1,278,934	1,315,603	1,366,989	1,490,168	1,653,274	1,680,106	1,672,623	1,704,793
<b>Total</b>	<b>267,466</b>	<b>288,220</b>	<b>303,246</b>	<b>317,226</b>	<b>1,697,641</b>	<b>1,681,606</b>	<b>1,582,435</b>	<b>1,454,127</b>	<b>4,912,593</b>	<b>5,265,727</b>	<b>5,760,284</b>	<b>6,419,390</b>	<b>7,167,500</b>	<b>7,536,722</b>	<b>7,949,437</b>	<b>8,510,518</b>

<sup>1</sup> This table uses data from multiple Texas harvest trends reports to produce total Texas industrial roundwood production. However, no Texas production data except Texas pulp mill production is presented below the three ownership columns. Therefore, the Texas row values will not add up to the totals presented in the "All types" column.

<sup>2</sup> Excluding Texas production except Texas pulp mills.

Source: Edgar et al. (2012, 2014, 2017); Stottlemeyer et al. (2019).

Table A1.4—Primary mill residue volume by roundwood type, species group, and residue type, southern region<sup>1</sup>, 2011–2017

Roundwood type and species group	Residue type																			
	All types				Bark				Coarse				Sawdust				Shavings			
	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017
	<i>thousand cubic feet</i>																			
<b>Saw logs</b>																				
Softwood	1,005,053	1,115,767	1,227,531	1,387,820	132,359	149,084	164,253	185,301	477,886	529,434	588,670	665,367	254,145	283,937	312,295	354,063	140,662	153,312	162,312	183,089
Hardwood	401,923	411,299	414,063	458,531	66,939	68,378	68,965	76,409	204,290	209,580	211,027	234,213	127,682	130,590	131,800	145,961	3,012	2,751	2,271	1,949
<b>Total</b>	<b>1,406,976</b>	<b>1,527,066</b>	<b>1,641,594</b>	<b>1,846,351</b>	<b>199,298</b>	<b>217,462</b>	<b>233,218</b>	<b>261,710</b>	<b>682,177</b>	<b>739,014</b>	<b>799,697</b>	<b>899,580</b>	<b>381,827</b>	<b>414,527</b>	<b>444,095</b>	<b>500,024</b>	<b>143,674</b>	<b>156,063</b>	<b>164,583</b>	<b>185,038</b>
<b>Veneer logs</b>																				
Softwood	222,205	219,009	208,269	232,446	31,086	30,721	29,182	32,596	113,636	110,276	105,125	116,620	77,483	78,013	73,962	83,229	0	0	0	0
Hardwood	21,445	20,328	19,970	18,460	4,213	3,908	3,958	3,691	9,398	8,861	8,745	8,097	7,834	7,559	7,267	6,672	0	0	0	0
<b>Total</b>	<b>243,650</b>	<b>239,337</b>	<b>228,239</b>	<b>250,906</b>	<b>35,298</b>	<b>34,629</b>	<b>33,140</b>	<b>36,287</b>	<b>123,034</b>	<b>119,137</b>	<b>113,870</b>	<b>124,717</b>	<b>85,317</b>	<b>85,571</b>	<b>81,230</b>	<b>89,901</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Pulpwood</b>																				
Softwood	292,430	292,725	297,396	305,406	292,430	292,725	297,396	305,406	0	0	0	0	0	0	0	0	0	0	0	0
Hardwood	119,962	111,979	108,813	105,229	119,962	111,979	108,813	105,229	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>412,392</b>	<b>404,703</b>	<b>406,209</b>	<b>410,635</b>	<b>412,392</b>	<b>404,703</b>	<b>406,209</b>	<b>410,635</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Composite panel</b>																				
Softwood	26,701	34,884	38,566	38,010	26,701	34,884	38,566	38,010	0	0	0	0	0	0	0	0	0	0	0	0
Hardwood	1,916	1,767	1,802	1,131	1,916	1,767	1,802	1,131	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>28,617</b>	<b>36,651</b>	<b>40,368</b>	<b>39,141</b>	<b>28,617</b>	<b>36,651</b>	<b>40,368</b>	<b>39,141</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Bioenergy/fuelwood</b>																				
Softwood	4,946	8,138	8,475	10,820	4,946	8,138	8,475	10,820	0	0	0	0	0	0	0	0	0	0	0	0
Hardwood	482	3,034	4,550	9,386	482	3,034	4,550	9,386	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5,428</b>	<b>11,171</b>	<b>13,025</b>	<b>20,205</b>	<b>5,428</b>	<b>11,171</b>	<b>13,025</b>	<b>20,205</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Poles, posts, pilings</b>																				
Softwood	10,073	11,402	13,897	18,086	6,392	7,692	9,954	12,859	3,681	3,710	3,944	5,228	0	0	0	0	0	0	0	0
Hardwood	27	16	27	15	20	13	20	13	7	3	7	2	0	0	0	0	0	0	0	0
<b>Total</b>	<b>10,100</b>	<b>11,418</b>	<b>13,924</b>	<b>18,101</b>	<b>6,412</b>	<b>7,705</b>	<b>9,974</b>	<b>12,871</b>	<b>3,688</b>	<b>3,713</b>	<b>3,951</b>	<b>5,230</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Miscellaneous<sup>2</sup></b>																				
Softwood	145	474	973	1,102	145	474	973	1,102	0	0	0	0	0	0	0	0	0	0	0	0
Hardwood	0	0	48	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>145</b>	<b>474</b>	<b>1,021</b>	<b>1,102</b>	<b>145</b>	<b>474</b>	<b>1,021</b>	<b>1,102</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total softwood</b>	<b>1,561,553</b>	<b>1,682,399</b>	<b>1,795,108</b>	<b>1,993,690</b>	<b>494,059</b>	<b>523,718</b>	<b>548,800</b>	<b>586,094</b>	<b>595,204</b>	<b>643,420</b>	<b>697,738</b>	<b>787,215</b>	<b>331,628</b>	<b>361,949</b>	<b>386,257</b>	<b>437,292</b>	<b>140,662</b>	<b>153,312</b>	<b>162,312</b>	<b>183,089</b>
<b>Total hardwood</b>	<b>545,755</b>	<b>548,422</b>	<b>549,273</b>	<b>592,751</b>	<b>193,532</b>	<b>189,078</b>	<b>188,155</b>	<b>195,858</b>	<b>213,696</b>	<b>218,444</b>	<b>219,779</b>	<b>242,311</b>	<b>135,516</b>	<b>138,149</b>	<b>139,068</b>	<b>152,633</b>	<b>3,012</b>	<b>2,751</b>	<b>2,271</b>	<b>1,949</b>
<b>Total</b>	<b>2,107,308</b>	<b>2,230,821</b>	<b>2,344,380</b>	<b>2,586,441</b>	<b>687,590</b>	<b>712,795</b>	<b>736,955</b>	<b>781,951</b>	<b>808,899</b>	<b>861,864</b>	<b>917,518</b>	<b>1,029,526</b>	<b>467,144</b>	<b>500,098</b>	<b>525,325</b>	<b>589,925</b>	<b>143,674</b>	<b>156,063</b>	<b>164,583</b>	<b>185,038</b>

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

<sup>1</sup>Table excludes Texas mill residue volumes aside from Texas pulp mill residues.<sup>2</sup>Includes mulch, shavings, and other industrial products.

**Table A1.5—Disposal of residue at primary wood-using plants by product, species group, and type of residue, southern region, 2011–2017<sup>a</sup>**

Product and species group	All types				Bark				Coarse				Fines (sawdust and shavings)			
	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017	2011	2013	2015	2017
	<i>thousand cubic feet</i>															
<b>Fiber products</b>																
Softwood	633,636	653,965	663,209	726,204	0	0	0	0	548,273	572,427	588,732	641,937	85,363	81,538	74,477	84,267
Hardwood	152,740	157,780	152,505	163,001	0	38	0	0	149,181	152,388	144,484	158,096	3,559	5,354	8,021	4,905
<b>Total</b>	<b>786,376</b>	<b>811,745</b>	<b>815,714</b>	<b>889,205</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>697,454</b>	<b>724,815</b>	<b>733,216</b>	<b>800,033</b>	<b>88,922</b>	<b>86,892</b>	<b>82,498</b>	<b>89,172</b>
<b>Industrial fuel</b>																
Softwood	790,261	870,889	956,184	1,036,367	424,841	450,766	469,212	480,927	26,162	42,697	77,139	95,371	339,258	377,426	409,833	460,069
Hardwood	289,452	280,563	285,229	319,568	153,635	142,765	147,209	152,765	33,464	33,911	41,353	52,758	102,353	103,887	96,667	114,045
<b>Total</b>	<b>1,079,713</b>	<b>1,151,452</b>	<b>1,241,413</b>	<b>1,355,935</b>	<b>578,476</b>	<b>593,531</b>	<b>616,421</b>	<b>633,692</b>	<b>59,626</b>	<b>76,608</b>	<b>118,492</b>	<b>148,129</b>	<b>441,611</b>	<b>481,313</b>	<b>506,500</b>	<b>574,114</b>
<b>Miscellaneous</b>																
Softwood	134,913	153,741	171,662	210,333	67,289	70,877	76,217	100,168	20,493	27,415	31,550	39,844	47,131	55,449	63,895	70,321
Hardwood	97,654	96,876	100,048	93,487	38,987	39,233	39,243	39,867	28,464	28,939	29,192	23,245	30,203	28,704	31,613	30,375
<b>Total</b>	<b>232,567</b>	<b>250,617</b>	<b>271,710</b>	<b>303,820</b>	<b>106,276</b>	<b>110,110</b>	<b>115,460</b>	<b>140,035</b>	<b>48,957</b>	<b>56,354</b>	<b>60,742</b>	<b>63,089</b>	<b>77,334</b>	<b>84,153</b>	<b>95,508</b>	<b>100,696</b>
<b>Not used</b>																
Softwood	2,743	3,804	4,053	20,786	1,928	2,075	3,371	4,999	276	881	318	10,063	539	848	364	5,724
Hardwood	5,909	13,204	11,490	16,694	910	7,042	1,703	3,225	2,587	3,207	4,750	8,212	2,412	2,955	5,037	5,257
<b>Total</b>	<b>8,652</b>	<b>17,008</b>	<b>15,543</b>	<b>37,480</b>	<b>2,838</b>	<b>9,117</b>	<b>5,074</b>	<b>8,224</b>	<b>2,863</b>	<b>4,088</b>	<b>5,068</b>	<b>18,275</b>	<b>2,951</b>	<b>3,803</b>	<b>5,401</b>	<b>10,981</b>
<b>All products</b>																
Softwood	1,561,553	1,682,399	1,795,108	1,991,839	494,058	523,718	548,800	586,094	595,204	643,420	697,739	787,215	472,291	515,261	548,569	620,381
Hardwood	545,755	548,423	549,272	594,601	193,532	189,078	188,155	195,857	213,696	218,445	219,779	242,311	138,527	140,900	141,338	154,582
<b>Total</b>	<b>2,107,308</b>	<b>2,230,822</b>	<b>2,344,380</b>	<b>2,586,440</b>	<b>687,590</b>	<b>712,796</b>	<b>736,955</b>	<b>781,951</b>	<b>808,900</b>	<b>861,865</b>	<b>917,518</b>	<b>1,029,526</b>	<b>610,818</b>	<b>656,161</b>	<b>689,907</b>	<b>774,963</b>

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

<sup>a</sup>Table excludes Texas mill residue volumes aside from Texas pulp mill residues.**Table A1.6—Total roundwood output by product, species group, and source of material, southern region, 2011–2017<sup>a</sup>**

Year	Species group	Roundwood products			Logging residues			Other removals			All removals		
		Growing stock	Nongrowing stock	All sources	Growing stock	Nongrowing stock	All sources	Growing stock	Nongrowing stock	All sources	Growing stock	Nongrowing stock	All sources
		<i>thousand cubic feet</i>											
2011	Softwood	4,762,387	462,082	5,224,469	310,676	697,117	1,007,793	29,786	58,398	88,184	5,102,849	1,217,597	6,320,446
	Hardwood	1,582,200	71,080	1,653,280	483,751	594,489	1,078,240	160,540	196,191	356,731	2,226,491	861,760	3,088,251
	<b>Total</b>	<b>6,344,587</b>	<b>533,162</b>	<b>6,877,749</b>	<b>794,427</b>	<b>1,291,606</b>	<b>2,086,033</b>	<b>190,326</b>	<b>254,589</b>	<b>444,915</b>	<b>7,329,340</b>	<b>2,079,357</b>	<b>9,408,697</b>
2013	Softwood	5,068,663	516,359	5,585,022	314,805	679,300	994,105	27,661	56,009	83,670	5,411,129	1,251,668	6,662,797
	Hardwood	1,580,784	69,802	1,650,586	464,480	575,911	1,040,391	122,732	154,730	277,462	2,167,996	800,443	2,968,439
	<b>Total</b>	<b>6,649,447</b>	<b>586,161</b>	<b>7,235,608</b>	<b>779,285</b>	<b>1,255,211</b>	<b>2,034,496</b>	<b>150,393</b>	<b>210,739</b>	<b>361,132</b>	<b>7,579,125</b>	<b>2,052,111</b>	<b>9,631,236</b>
2015	Softwood	5,396,120	560,719	5,956,839	320,874	682,842	1,003,716	31,511	58,089	89,600	5,748,505	1,301,650	7,050,155
	Hardwood	1,620,889	68,238	1,689,127	461,695	557,367	1,019,062	166,530	230,721	397,251	2,249,114	856,326	3,105,440
	<b>Total</b>	<b>7,017,009</b>	<b>628,957</b>	<b>7,645,966</b>	<b>782,569</b>	<b>1,240,209</b>	<b>2,022,778</b>	<b>198,041</b>	<b>288,810</b>	<b>486,851</b>	<b>7,997,619</b>	<b>2,157,976</b>	<b>10,155,595</b>
2017	Softwood	5,792,991	610,774	6,403,765	330,571	698,986	1,029,557	35,009	58,413	93,422	6,158,571	1,368,173	7,526,744
	Hardwood	1,713,645	73,332	1,786,977	435,345	511,820	947,165	159,683	210,008	369,691	2,308,673	795,160	3,103,833
	<b>Total</b>	<b>7,506,636</b>	<b>684,106</b>	<b>8,190,742</b>	<b>765,916</b>	<b>1,210,806</b>	<b>1,976,722</b>	<b>194,692</b>	<b>268,421</b>	<b>463,113</b>	<b>8,467,244</b>	<b>2,163,333</b>	<b>10,630,577</b>

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

<sup>a</sup>Table excludes Texas roundwood output volumes aside from Texas pulp mill output volumes.



Table A1.7—Total roundwood output by species group and product, southern region, 2017<sup>a</sup>

Species group	Total	Product						
		Bioenergy/ fuelwood	Composite panels	Misc.	Poles, posts, and pilings	Pulpwood	Saw logs	Veneer logs
<i>thousand cubic feet</i>								
<b>Softwood</b>								
Cedars	45,033	952	2,552	637	1,517	11,323	27,331	721
Cypress	35,792	2,413	3,835	597	481	16,955	10,269	1,242
Hemlock	1,264	43	75	5	13	520	606	2
Loblolly-shortleaf pine	5,235,506	285,643	348,288	17,902	73,890	2,445,418	1,746,595	317,770
Longleaf-slash pine	887,939	55,821	49,460	18,632	23,225	425,233	279,447	36,120
Other pines	169,199	11,040	19,250	2,283	3,077	71,176	56,591	5,783
True firs	182	2	15	0	0	58	107	0
White pine	28,850	1,246	2,981	378	997	9,250	13,842	158
<b>Total softwoods</b>	<b>6,403,765</b>	<b>357,160</b>	<b>426,455</b>	<b>40,434</b>	<b>103,199</b>	<b>2,979,933</b>	<b>2,134,788</b>	<b>361,795</b>
<b>Hardwood</b>								
Ash	38,717	4,056	138	27	3	15,517	18,328	648
Aspen	193	75	0	0	0	72	45	0
Basswood	3,304	301	2	0	0	938	2,009	54
Beech	16,749	1,758	120	4	0	5,934	8,646	287
Black cherry	23,544	2,948	246	85	3	9,832	9,926	504
Black walnut	10,732	730	53	11	1	3,000	6,723	213
Cottonwood	5,953	321	143	2	0	3,539	1,893	56
Elm	30,571	1,858	162	49	7	17,282	10,904	308
Hard maple	13,599	542	12	3	2	1,854	10,946	240
Hickory	98,346	7,044	768	188	15	40,546	48,338	1,447
Other birch	7,627	930	43	17	2	3,605	2,903	126
Other hardwoods	86,115	8,381	458	642	5	40,991	34,101	1,538
Other red oaks	341,207	40,458	1,662	964	12	181,279	110,389	6,442
Other white oaks	120,878	12,703	817	461	7	53,566	51,607	1,716
Select red oaks	118,919	9,770	697	205	11	56,397	49,972	1,868
Select white oaks	185,118	16,895	1,311	246	20	72,550	90,963	3,135
Soft maple	113,403	18,781	691	251	12	46,423	44,594	2,651
Sweetgum	261,493	32,612	1,669	505	14	145,005	76,427	5,261
Sycamore	13,450	741	44	10	3	4,044	8,316	292
Tupelo/black gum	73,949	12,033	329	167	2	36,695	22,920	1,802
Yellow birch	15	2	0	0	0	6	6	1
Yellow-poplar	223,098	23,943	2,643	328	13	77,354	113,702	5,115
<b>Total hardwoods</b>	<b>1,786,977</b>	<b>196,881</b>	<b>12,008</b>	<b>4,166</b>	<b>132</b>	<b>816,430</b>	<b>723,656</b>	<b>33,705</b>
<b>All species</b>	<b>8,190,742</b>	<b>554,041</b>	<b>438,464</b>	<b>44,600</b>	<b>103,331</b>	<b>3,796,363</b>	<b>2,858,444</b>	<b>395,500</b>

<sup>a</sup>Table excludes Texas roundwood output volumes aside from Texas pulp mill output volumes.

**Table A1.8—Total roundwood output by species group and ownership class, southern region, 2017<sup>a</sup>**

Species group	Total	Ownership class		
		Forest industry	Other private	Public
		<i>thousand cubic feet</i>		
<b>Softwood</b>				
Cedars	45,033	4,096	39,138	1,799
Cypress	35,792	4,401	29,966	1,425
Hemlock	1,264	99	1,118	46
Loblolly-shortleaf pine	5,235,506	1,034,707	4,006,877	193,923
Longleaf-slash pine	887,939	165,967	681,413	40,559
Other pines	169,199	14,634	144,052	10,512
True firs	182	19	160	3
White pine	28,850	1,669	26,500	681
<b>Total softwoods</b>	<b>6,403,765</b>	<b>1,225,593</b>	<b>4,929,223</b>	<b>248,949</b>
<b>Hardwood</b>				
Ash	38,717	4,573	32,746	1,398
Aspen	193	0	190	3
Basswood	3,304	231	2,930	143
Beech	16,749	2,372	13,940	437
Black cherry	23,544	2,966	19,728	850
Black walnut	10,732	602	9,813	318
Cottonwood	5,953	1,248	4,473	231
Elm	30,571	4,682	24,789	1,100
Hard maple	13,599	210	12,820	569
Hickory	98,346	10,352	84,143	3,851
Other birch	7,627	779	6,607	241
Other hardwoods	86,115	11,988	71,087	3,040
Other red oaks	341,207	54,669	272,577	13,960
Other white oaks	120,878	13,901	99,889	7,087
Select red oaks	118,919	14,320	99,604	4,995
Select white oaks	185,118	18,330	159,749	7,039
Soft maple	113,403	13,630	95,871	3,903
Sweetgum	261,493	43,905	208,576	9,011
Sycamore	13,450	841	12,238	370
Tupelo/black gum	73,949	13,683	57,771	2,494
Yellow birch	15	0	14	1
Yellow-poplar	223,098	15,252	200,612	7,234
<b>Total hardwoods</b>	<b>1,786,977</b>	<b>228,533</b>	<b>1,490,167</b>	<b>68,277</b>
<b>All species</b>	<b>8,190,742</b>	<b>1,454,127</b>	<b>6,419,390</b>	<b>317,226</b>

<sup>a</sup> Table excludes Texas roundwood output volumes aside from Texas pulp mill output volumes.

**Table A1.9—Output of roundwood products by product and species group, Mountain region, 2011–2017**

Product and species group	Year			
	2011	2013	2015	2017
	<i>thousand cubic feet</i>			
<b>Bioenergy/fuelwood</b>				
Softwood	1,217	1,263	13,086	7,951
Hardwood	2,151	2,244	9,479	13,823
<b>Total</b>	<b>3,368</b>	<b>3,507</b>	<b>22,565</b>	<b>21,774</b>
<b>Miscellaneous</b>				
Softwood	4,206	4,465	7,137	6,009
Hardwood	805	1,520	1,883	354
<b>Total</b>	<b>5,011</b>	<b>5,984</b>	<b>9,021</b>	<b>6,363</b>
<b>Pulpwood</b>				
Softwood	89,367	60,684	59,766	64,148
Hardwood	76,166	73,109	67,730	72,661
<b>Total</b>	<b>165,533</b>	<b>133,793</b>	<b>127,496</b>	<b>136,809</b>
<b>Saw logs</b>				
Softwood	74,376	82,121	81,354	87,622
Hardwood	87,958	93,503	93,858	99,695
<b>Total</b>	<b>162,335</b>	<b>175,624</b>	<b>175,212</b>	<b>187,317</b>
<b>Veneer logs</b>				
Softwood	175	498	904	884
Hardwood	5,945	4,095	5,843	5,223
<b>Total</b>	<b>6,120</b>	<b>4,592</b>	<b>6,748</b>	<b>6,107</b>
<b>All products</b>				
Softwood	169,340	149,031	162,248	166,614
Hardwood	173,026	174,471	178,794	191,756
<b>Total</b>	<b>342,366</b>	<b>323,501</b>	<b>341,042</b>	<b>358,370</b>

**Table A1.10—Output of roundwood products by product and species group, Piedmont region, 2011–2017<sup>a</sup>**

Product and species group	Year			
	2011	2013	2015	2017
	<i>thousand cubic feet</i>			
<b>Bioenergy/fuelwood</b>				
Softwood	28,266	50,747	88,854	111,162
Hardwood	15,375	24,840	48,460	56,552
<b>Total</b>	<b>43,641</b>	<b>75,587</b>	<b>137,314</b>	<b>167,714</b>
<b>Composite panels</b>				
Softwood	153,655	211,304	235,326	253,046
Hardwood	10,836	13,996	12,876	10,207
<b>Total</b>	<b>164,491</b>	<b>225,300</b>	<b>248,202</b>	<b>263,253</b>
<b>Miscellaneous</b>				
Softwood	5,523	6,049	14,030	8,320
Hardwood	192	1,003	526	1,683
<b>Total</b>	<b>5,715</b>	<b>7,052</b>	<b>14,556</b>	<b>10,003</b>
<b>Poles, posts, pilings</b>				
Softwood	16,122	20,040	28,143	29,521
Hardwood	161	126	129	126
<b>Total</b>	<b>16,283</b>	<b>20,166</b>	<b>28,272</b>	<b>29,647</b>
<b>Pulpwood</b>				
Softwood	926,369	932,396	934,160	981,889
Hardwood	497,770	479,208	428,413	415,727
<b>Total</b>	<b>1,424,140</b>	<b>1,411,604</b>	<b>1,362,573</b>	<b>1,397,616</b>
<b>Saw logs</b>				
Softwood	626,581	706,457	766,543	896,430
Hardwood	414,124	428,675	442,916	508,966
<b>Total</b>	<b>1,040,705</b>	<b>1,135,132</b>	<b>1,209,459</b>	<b>1,405,397</b>
<b>Veneer logs</b>				
Softwood	165,586	179,301	200,135	217,867
Hardwood	12,430	12,687	11,944	11,749
<b>Total</b>	<b>178,017</b>	<b>191,988</b>	<b>212,078</b>	<b>229,616</b>
<b>All products</b>				
Softwood	1,922,102	2,106,294	2,267,191	2,498,235
Hardwood	950,888	960,535	945,263	1,005,011
<b>Total</b>	<b>2,872,990</b>	<b>3,066,830</b>	<b>3,212,454</b>	<b>3,503,245</b>

<sup>a</sup>Data from multiple Texas harvest trends reports.  
Source: Edgar et al. (2012, 2014, 2017); Stottlemeyer et al. (2019).

**Table A1.11—Output of roundwood products by product and species group, Coastal Plain region, 2011–2017<sup>a</sup>**

Product and species group	Year			
	2011	2013	2015	2017
	<i>thousand cubic feet</i>			
<b>Bioenergy/fuelwood</b>				
Softwood	92,515	151,106	200,188	238,047
Hardwood	10,657	38,371	74,228	126,505
<b>Total</b>	<b>103,172</b>	<b>189,477</b>	<b>274,416</b>	<b>364,553</b>
<b>Composite panels</b>				
Softwood	126,132	155,979	167,556	169,926
Hardwood	3,564	677	1,665	1,460
<b>Total</b>	<b>129,697</b>	<b>156,656</b>	<b>169,221</b>	<b>171,386</b>
<b>Miscellaneous</b>				
Softwood	25,949	25,329	32,602	30,907
Hardwood	1,406	1,526	1,926	2,459
<b>Total</b>	<b>27,355</b>	<b>26,855</b>	<b>34,528</b>	<b>33,367</b>
<b>Poles, posts, pilings</b>				
Softwood	43,765	50,192	64,223	76,271
Hardwood	28	11	89	16
<b>Total</b>	<b>43,793</b>	<b>50,203</b>	<b>64,312</b>	<b>76,287</b>
<b>Pulpwood</b>				
Softwood	1,850,296	1,875,264	1,916,058	1,933,896
Hardwood	378,230	343,764	357,343	328,041
<b>Total</b>	<b>2,228,527</b>	<b>2,219,028</b>	<b>2,273,400</b>	<b>2,261,938</b>
<b>Saw logs</b>				
Softwood	973,370	1,075,704	1,185,764	1,323,913
Hardwood	144,124	135,011	127,721	126,915
<b>Total</b>	<b>1,117,494</b>	<b>1,210,715</b>	<b>1,313,485</b>	<b>1,450,828</b>
<b>Veneer logs</b>				
Softwood	283,924	275,196	248,816	273,811
Hardwood	18,184	18,259	17,764	16,734
<b>Total</b>	<b>302,107</b>	<b>293,455</b>	<b>266,579</b>	<b>290,544</b>
<b>All products</b>				
Softwood	3,395,951	3,608,770	3,815,206	4,046,771
Hardwood	556,193	537,618	580,735	602,131
<b>Total</b>	<b>3,952,144</b>	<b>4,146,388</b>	<b>4,395,941</b>	<b>4,648,902</b>

<sup>a</sup>Data obtained from multiple Texas harvest trends reports.  
Source: Edgar et al. (2012, 2014, 2017); Stottlemeyer et al. (2019).

## APPENDIX 2—CONVERSION FACTORS

**Table A2.1—Alabama conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.167	cubic foot = 1 board foot
	5.99	board feet = 1 cubic foot
Hardwood	0.165	cubic foot = 1 board foot
	6.06	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.167	cubic foot = 1 board foot
	5.99	board feet = 1 cubic foot
Hardwood	0.165	cubic foot = 1 board foot
	6.06	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	77	cubic feet per cord
Hardwood	75.5	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.2—Arkansas conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.159	cubic foot = 1 board foot
	6.29	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.159	cubic foot = 1 board foot
	6.29	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	77.5	cubic feet per cord
Hardwood	76.6	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.3—Florida conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.17	cubic foot = 1 board foot
	5.88	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	76	cubic feet per cord
Hardwood	75	cubic feet per cord

<sup>1</sup> 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 most recent survey period.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.4—Georgia conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	77	cubic feet per cord
Hardwood	77.4	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.5—Kentucky conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.165	cubic foot = 1 board foot
	6.06	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.164	cubic foot = 1 board foot
	6.1	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	77.3	cubic feet per cord
Hardwood	76.4	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.6—Louisiana conversion factors<sup>1</sup>**

<b>Saw logs</b>		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.166	cubic foot = 1 board foot
	6.02	board feet = 1 cubic foot
<b>Veneer logs</b>		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.161	cubic foot = 1 board foot
	6.21	board feet = 1 cubic foot
<b>Pulpwood<sup>2</sup></b>		
Softwood	76	cubic feet per cord
Hardwood	75	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.7—Mississippi conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.165	cubic foot = 1 board foot
	6.06	board feet = 1 cubic foot
Veneer logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	76.6	cubic feet per cord
Hardwood	75	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.8—North Carolina conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.171	cubic foot = 1 board foot
	5.85	board feet = 1 cubic foot
Hardwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Veneer logs		
Softwood	0.17	cubic foot = 1 board foot
	5.88	board feet = 1 cubic foot
Hardwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	76.5	cubic feet per cord
Hardwood	77	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.9—Oklahoma conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Veneer logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.157	cubic foot = 1 board foot
	6.37	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	77	cubic feet per cord
Hardwood	76.6	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.10—South Carolina conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Veneer logs		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	75	cubic feet per cord
Hardwood	70.6	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.11—Tennessee conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Veneer logs		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.162	cubic foot = 1 board foot
	6.17	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	77	cubic feet per cord
Hardwood	76.6	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.12—Texas conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.168	cubic foot = 1 board foot
	5.95	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Veneer logs		
Softwood	0.169	cubic foot = 1 board foot
	5.92	board feet = 1 cubic foot
Hardwood	0.163	cubic foot = 1 board foot
	6.13	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	75	cubic feet per cord
Hardwood	70.6	cubic feet per cord

<sup>1</sup> Conversion factors vary with stem size (d.b.h.) and species. The factors shown are for trees of average diameters removed in Texas during the most recent survey period.

<sup>2</sup> Cubic feet of solid wood per cord.

**Table A2.13—Virginia conversion factors<sup>1</sup>**

Saw logs		
Softwood	0.171	cubic foot = 1 board foot
	5.85	board feet = 1 cubic foot
Hardwood	0.164	cubic foot = 1 board foot
	6.1	board feet = 1 cubic foot
Veneer logs		
Softwood	0.17	cubic foot = 1 board foot
	5.88	board feet = 1 cubic foot
Hardwood	0.164	cubic foot = 1 board foot
	6.1	board feet = 1 cubic foot
Pulpwood <sup>2</sup>		
Softwood	76.3	cubic feet per cord
Hardwood	76.3	cubic feet per cord

<sup>1</sup> 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.

<sup>2</sup> Cubic feet of solid wood per cord.

## LITERATURE CITED

Winn, M.F.; Royer, L.A.; Bentley, J.W. [et al.]. 2020. Timber products monitoring: unit of measure conversion factors for roundwood receiving facilities. Gen. Tech. Rep. SRS-251. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 148 p. <https://doi.org/10.2737/SRS-GTR-251>.

**Durham, W.P.; Cyprian L.T. 2024.** The South's Timber Industry—an Assessment of Timber Product Output and Use, 2011–2017. Resour. Bull. SRS-242. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 26 p. <https://doi.org/10.2737/SRS-RB-242>.

In 2011, industrial roundwood output from the South's forests totaled 7.17 billion cubic feet, 9 percent more than in 2009. From 2011 to 2017, industrial roundwood increased to 8.51 billion cubic feet, 19 percent. In 2017, pulpwood was the leading roundwood product at 3.80 billion cubic feet; saw logs ranked second at 3.04 billion cubic feet; bioenergy/fuelwood production was third at 554.0 million cubic feet. Between 2011 and 2017, total byproducts generated from primary manufacturers increased 23 percent to 2.59 billion cubic feet. In 2017, 99 percent of produced residues were used for another product. Fuel and fiber products accounted for 87 percent of utilized plant byproducts. The number of primary processing plants declined from 1,529 in 2009 to 1,430 in 2011, a net loss of 99 mills. However, from 2011 to 2017, there was a net gain of 147 mills resulting in 1,572 primary processing plants in the southern region.

**Keywords:** FIA, production, mill residues, roundwood, saw logs, pulpwood, bioenergy, veneer logs, fuelwood.



[research.fs.usda.gov/srs](https://research.fs.usda.gov/srs)



In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at <https://www.usda.gov/oascr/filing-program-discrimination-complaint-usda-customer> and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

USDA is an equal opportunity provider, employer, and lender.