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# Oklahoma's Timber Industry—An Assessment of Timber Product Output and Use, 2009

Tony G. Johnson

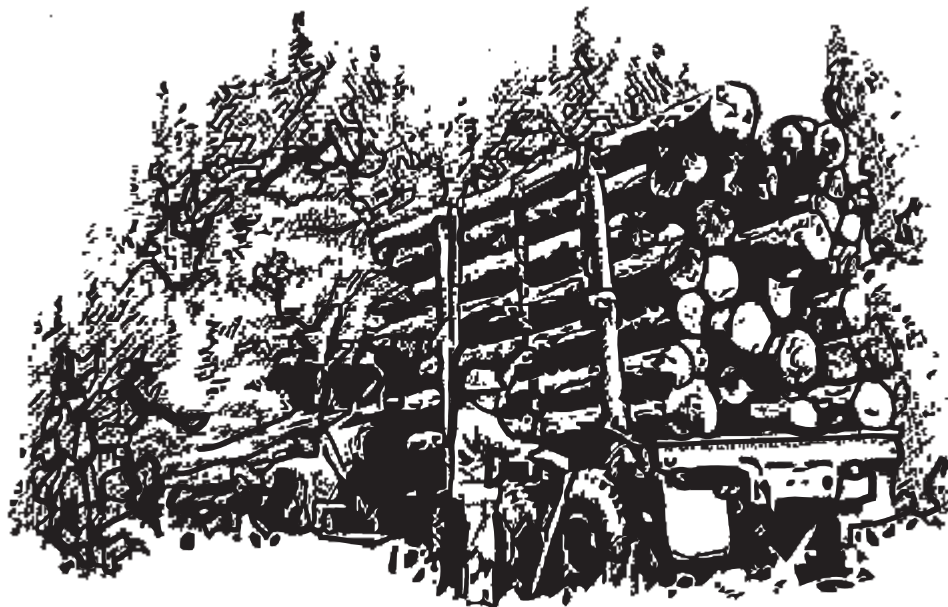


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## Foreword

This report contains the findings of a 2009 canvass of all known primary wood-using plants in Oklahoma, and presents changes in product output and residue use since 2005. It complements the Forest Inventory and Analysis annual inventory of volume and removals from the State's timberland. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain, by county, in 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 100-percent canvass of all wood processors in Oklahoma was conducted in 2010 to obtain information for 2009. In addition, roundwood from out-of-State mills known to be using logs or bolts harvested from Oklahoma timberland was incorporated into Oklahoma 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. Surveys for all timber products other than pulpwood began in 1955, and are currently conducted every 3 years.

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 author thanks George Geissler, Joanne Lenahan, and Robert Fry for review and comments; Carolyn Steppleton and Michael Howell for their tireless efforts in processing and accuracy of the data; Helen Beresford for timber product output database maintenance and support; Anne Jenkins, Janet Griffin, Sharon Johnson, and Charlene Walker for tables, graphs, and statistical checking; 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 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.

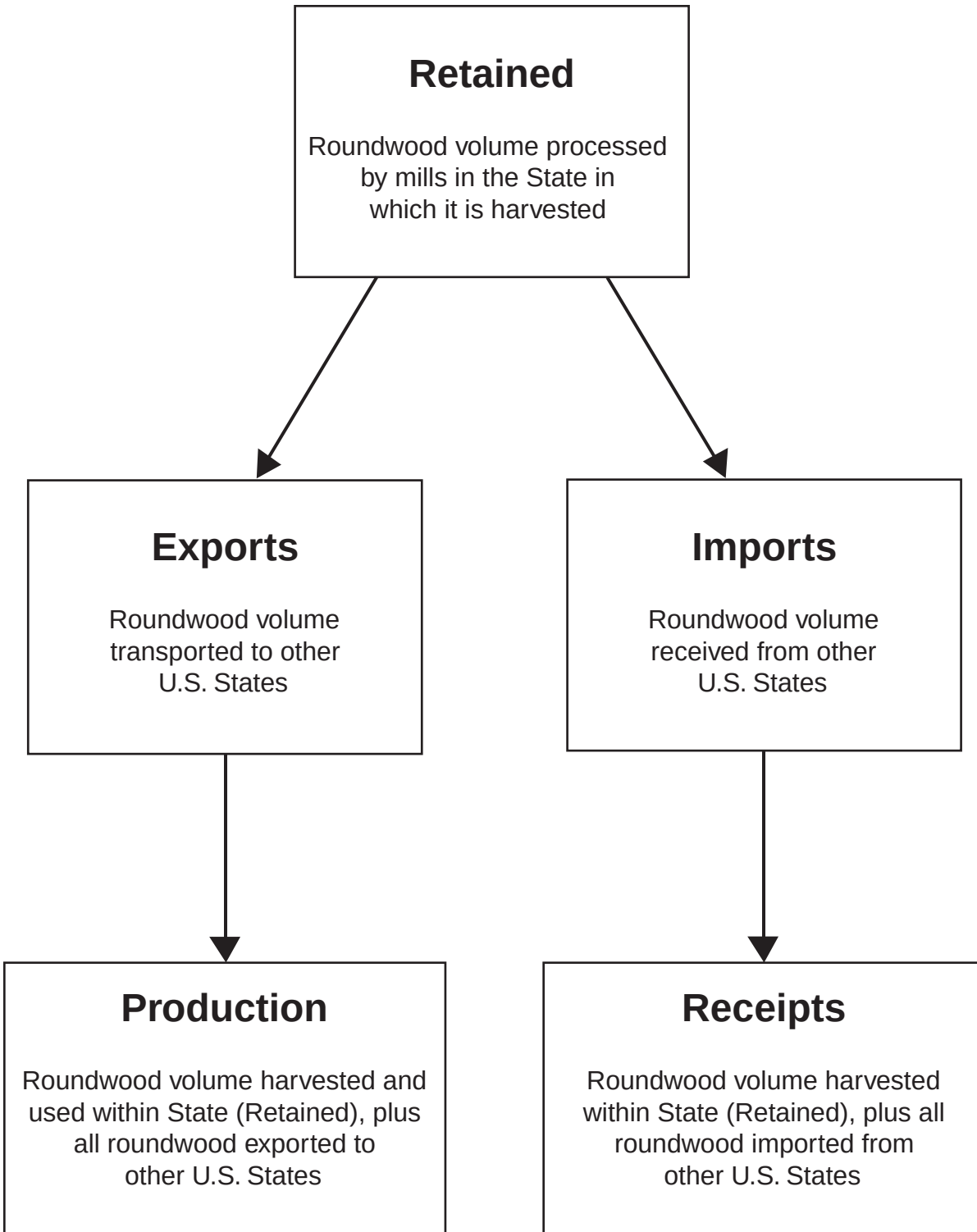
The TPO contacts are listed for each region to provide additional explanation or clarification.

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<sup>a</sup> 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.



**Production** = Retained + Exports

**Receipts** = Retained + Imports

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



# Oklahoma's Timber Industry—An Assessment of Timber Product Output and Use, 2009

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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 products output (fig. 1). Unless otherwise indicated, the context for production and receipts comparisons (increases, decreases, or stabilizations) throughout the report is the change from 2005 to 2009.

### All Products

- Between 2005 and 2009, industrial TPO from roundwood was down 52.9 million cubic feet, or 44 percent, from 119.2 million cubic feet in 2005 to 66.3 million cubic feet in 2009.

- Output of softwood roundwood products declined 52 percent to 46.3 million cubic feet, while output of hardwood roundwood products declined 16 percent to 20.0 million cubic feet (fig. 2).
- Pulpwood and saw logs were the principal roundwood products in 2009. Combined output of these two products totaled 62.7 million cubic feet and accounted for 95 percent of the State's total roundwood output (fig. 3).
- Total receipts at Oklahoma mills, which included roundwood harvested and retained in the State and roundwood imported from other States, fell 50 percent from 148.7 million cubic feet in 2005 to 74.5 million cubic feet, while output of utilized plant byproducts declined 64 percent to 19.2 million cubic feet.

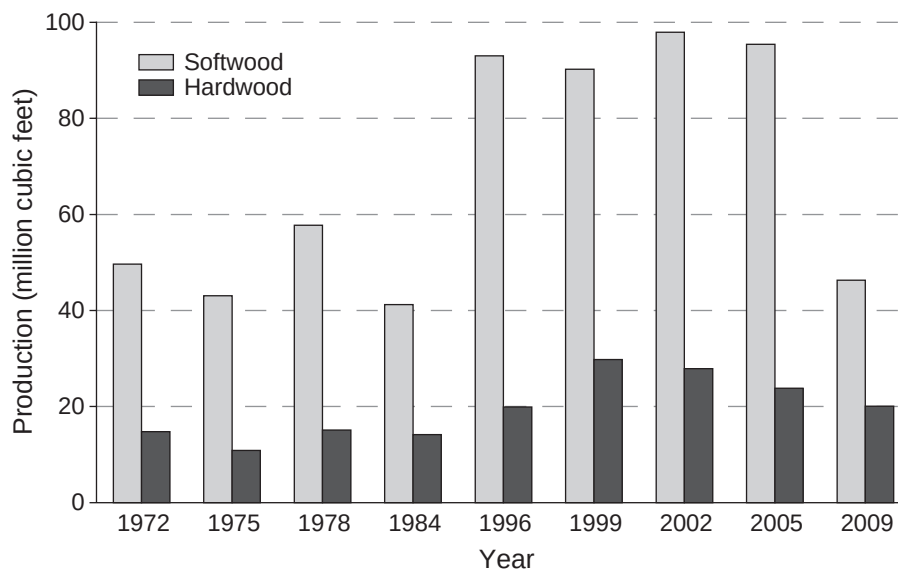


Figure 2—Roundwood production for all products by species group and year (see page 7 for references for individual years), Oklahoma.

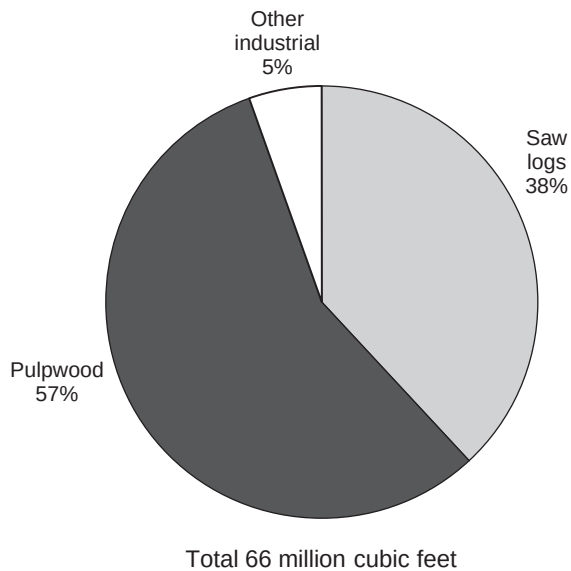


Figure 3—Roundwood production by type of product, Oklahoma, 2009.

of roundwood to other States amounted to 18.4 million cubic feet, while imports of roundwood amounted to 26.5 million cubic feet making the State a net importer of roundwood. Tables A.8 and A.9 show exports to and imports from other States by individual product type.

### Saw Logs

- Saw logs accounted for 38 percent of the State's total roundwood products. Output of softwood saw logs declined 58 percent to 22.7 million cubic feet (126.5 million board feet), while that of hardwood saw logs dropped 63 percent to 2.5 million cubic feet (15.1 million board feet) (fig. 5).
- In 2009, Oklahoma had 26 sawmills. Total softwood saw-log receipts were 18.8 million cubic feet, while those of hardwoods totaled 2.7 million cubic feet. Of the 12 reporting mills, 4 had receipts < 1.0 million board feet, 5 had receipts between 1.0 and 9.99 million board feet, while 3 had receipts > 10 million board feet. These three mills accounted for 80 percent of the reported volume.
- Oklahoma retained 71 percent of its saw-log production for domestic manufacture, with saw-log exports exceeding imports by nearly 3.8 million cubic feet in 2009.
- There were 31 primary roundwood-using plants operating in Oklahoma in 2009 (fig. 4). The map includes only those mills that were canvassed for this report.
- Across all products, 72 percent of roundwood harvested was retained for processing at Oklahoma mills. Exports

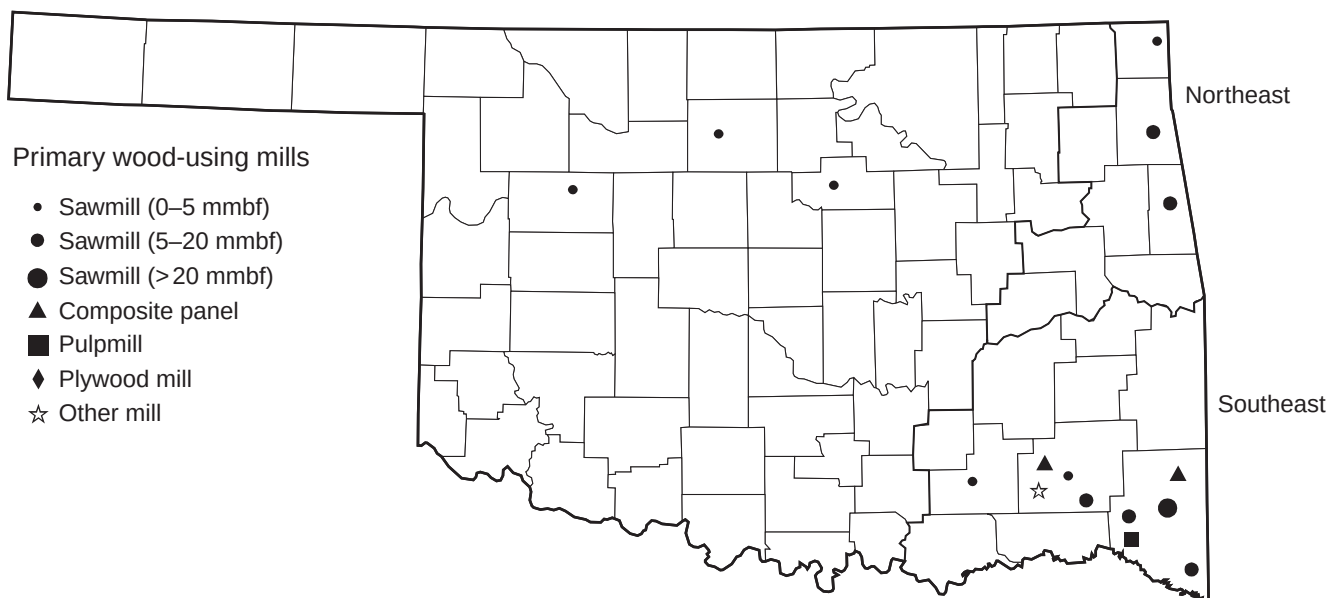


Figure 4—Primary wood-using mills by region, Oklahoma, 2009 (16 of the 31 mills were contacted).



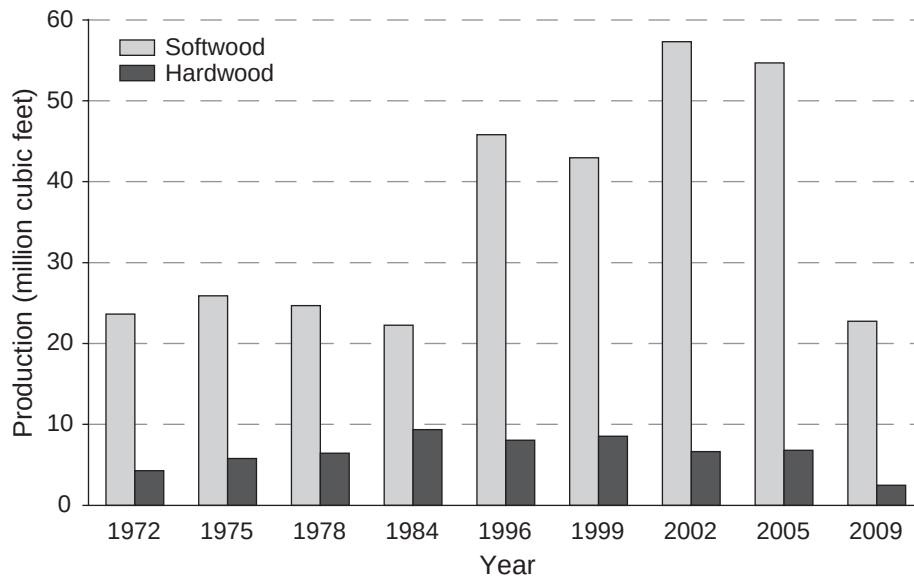


Figure 5—Roundwood saw-log production for all products by species group and year (see page 7 for references for individual years), Oklahoma.

## Pulpwood

- Total pulpwood production, increased 2 percent to 37.5 million cubic feet (503,400 cords) and accounted for 57 percent of the State's total roundwood TPO. Softwood output was up 1 percent to 19.9 million cubic feet

(274,200 cords), while hardwood output increased 3 percent to 17.6 million cubic feet (229,200 cords) (fig. 6).

- One pulpmill was operating and receiving roundwood in Oklahoma in 2009. Total pulpwood receipts have been combined with other industrial products to protect the confidentiality of the data.

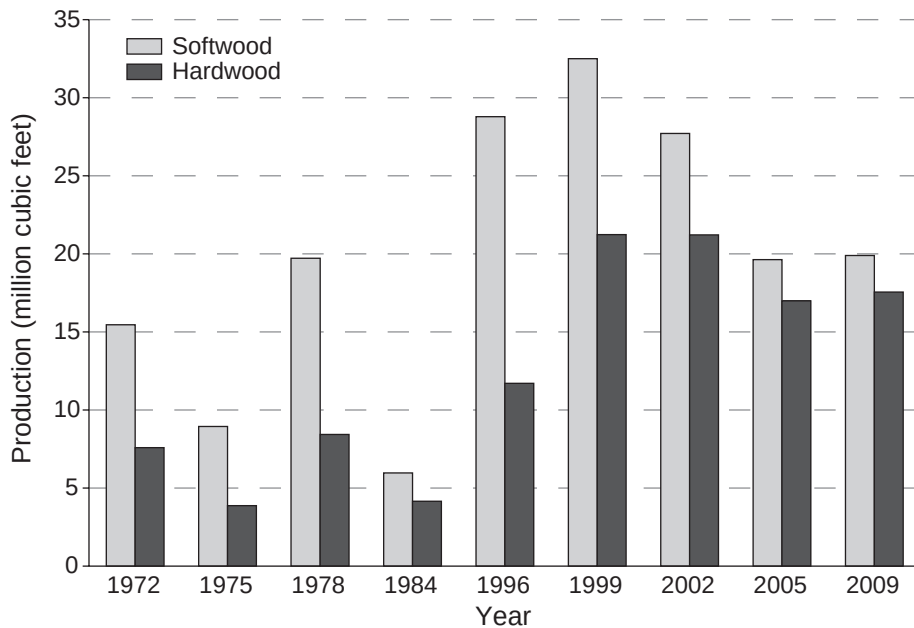


Figure 6—Roundwood pulpwood production for all products by species group and year (see page 7 for references for individual years), Oklahoma.

## Other Industrial Products

- In 2009, output of other industrial products totaled 3.6 million cubic feet and accounted for 5 percent of the State's total roundwood TPO volume. Softwood production declined 83 percent and accounted for all of the other industrial production volume.
- Two composite panel mills and two other industrial mills were contacted for this report. Receipts at these mills and the pulpmill totaled 53.0 million cubic feet. Softwood receipts dropped 28.6 million cubic feet, or 40 percent, to 42.7 million cubic feet. Hardwood receipts for the four mills were down 21 percent to 10.3 million cubic feet.
- Oklahoma retained 73 percent of its other industrial production for processing at the pulpmill and other industrial mills. Imports amounted to 23.1 million cubic feet, while exports were 11.2 million cubic feet, making the State a net importer of roundwood for pulpwood and other industrial uses.

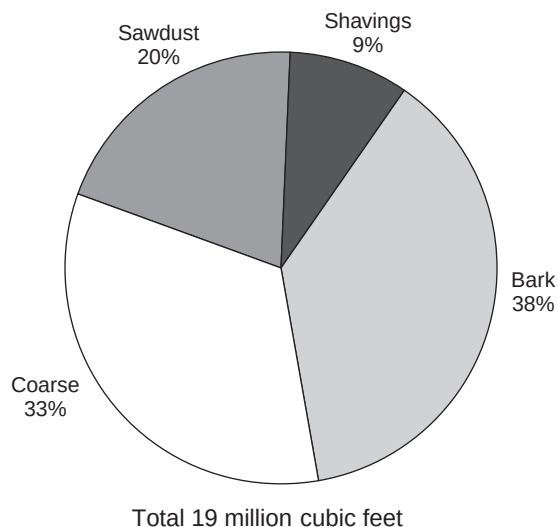


Figure 7—Primary mill residue by residue type, Oklahoma, 2009.

## Plant Byproducts

- In 2009, processing of primary products in Oklahoma mills generated 19.2 million cubic feet of wood and bark residues. Coarse residues from all primary products amounted to 6.4 million cubic feet, while bark volume totaled 7.2 million cubic feet. Collectively, sawdust and shavings made-up 29 percent of total residues, or 5.6 million cubic feet (fig. 7).
- The processing of saw logs generated 13.6 million cubic feet of mill residues, accounting for 70 percent of the total residues produced (fig. 8).
- Sixty-four percent, or 12.3 million cubic feet, of the wood and bark residues were used for industrial fuel (fig. 9). Twenty-five percent were used for fiber products, with the remainder used for miscellaneous and particle board products. Nearly 75 percent, or 4.8 million cubic feet, of the coarse residue generated were used for fiber products. Ninety-six and 93 percent, respectively, of the bark and sawdust was used for industrial fuel, while 80 percent of the shavings were used for industrial fuel.

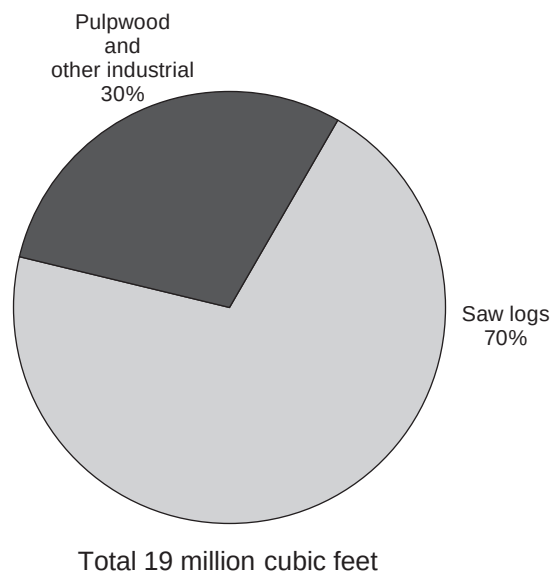


Figure 8—Primary mill residue produced by roundwood type, Oklahoma, 2009.

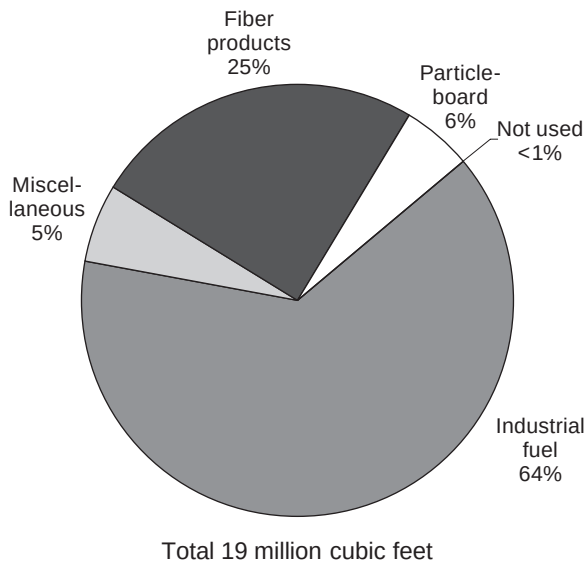


Figure 9—Disposal of residue by product, Oklahoma, 2009.

## County Data

- Table A.12 shows softwood and hardwood product output by county and individual product type. Only 18 of Oklahoma's 67 counties had reported softwood or hardwood product output. Three counties (Le Flore, McCurtain, and Pushmataha) had combined softwood and hardwood product output of > 6 million cubic feet each. These three counties total product output amounted to > 57.6 million cubic feet and accounted for 87 percent of the State's total product output.

## Total Roundwood Output

Using the latest inventory data for Oklahoma, product output for source, ownership, and detailed species group was estimated.

### Source

- In addition to the 66.3 million cubic feet of roundwood output for industrial roundwood products, an estimated 16.4 million cubic feet was harvested for residential fuelwood, bringing Oklahoma's total roundwood output to 82.7 million cubic feet.
- Eighty-four percent of total roundwood output was considered growing-stock volume (sawtimber and poletimber) from timberland sources. Other sources (such as saplings; stumps, tops, and limbs of trees on timberland; and trees on nonforest land) contributed an estimated 13.5 million cubic feet, or 16 percent of total roundwood output (fig. 10).

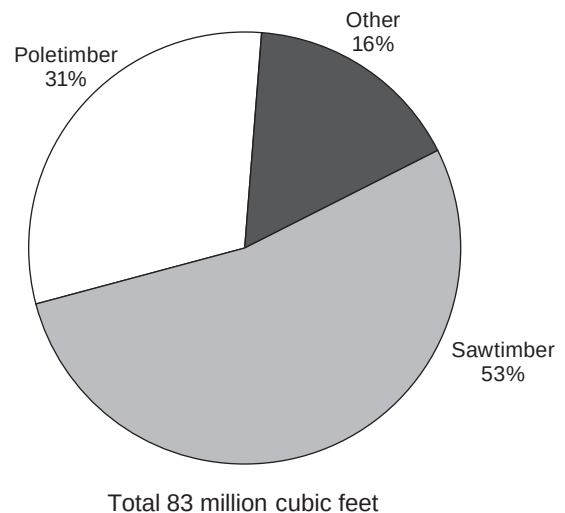


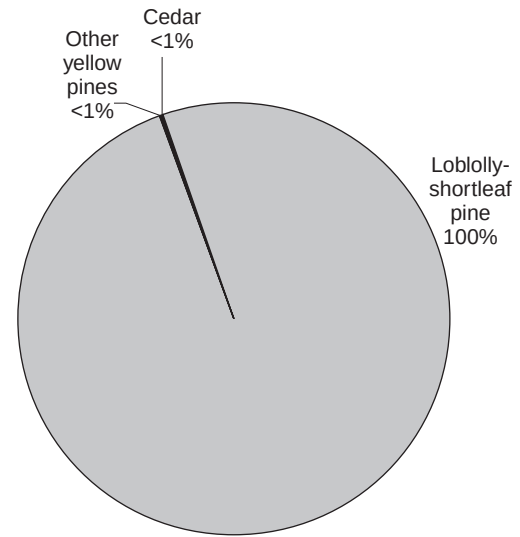
Figure 10—Roundwood output by source, Oklahoma, 2009.

## Ownership

- An estimated 39.6 million cubic feet, or 48 percent, of the total roundwood output came from nonindustrial private forest lands.
- Forest industry lands contributed 39.2 million cubic feet, or 47 percent, of the output. Public lands made-up the remaining 5 percent, or 3.9 million cubic feet (fig. 11).

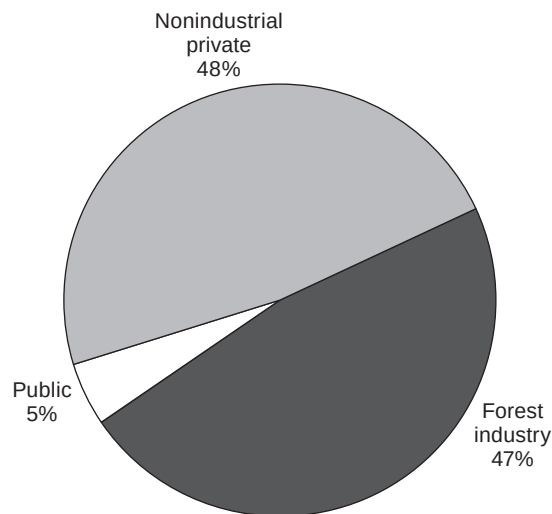
## Species

- The loblolly and shortleaf pine group provided more volume than any other softwood species group, accounting for 46.4 million cubic feet, or nearly 100 percent of total softwood output (fig. 12). The cedar and other yellow pine type accounted for 133,000 cubic feet of the softwood output.
- The red oak and white oak groups combined accounted for 24.2 million cubic feet, or 67 percent of total hardwood output (fig. 13).



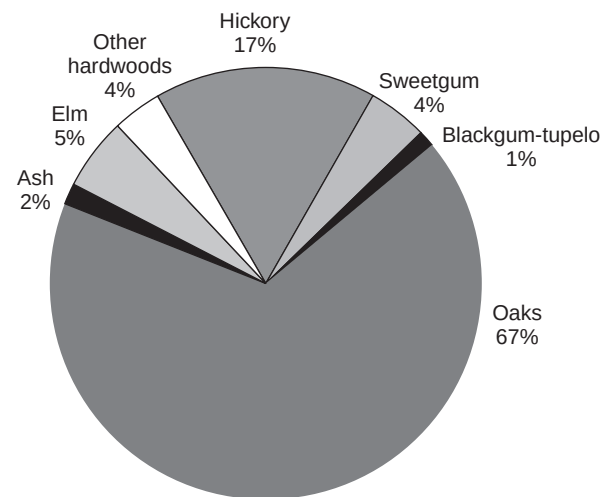
Total 47 million cubic feet

Figure 12—Roundwood output by softwood species group, Oklahoma, 2009.



Total 83 million cubic feet

Figure 11—Roundwood output by ownership, Oklahoma, 2009.



Total 36 million cubic feet

Figure 13—Roundwood output by hardwood species group, Oklahoma, 2009.

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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  $\leq 0.50$ , 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 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<sup>a</sup>**

|                       |                                   |  |
|-----------------------|-----------------------------------|--|
| 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 <sup>b</sup> |                                   |  |
| Softwood              | 72.5 cubic feet per cord          |  |
| Hardwood              | 76.6 cubic feet per cord          |  |

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

## Species List<sup>a</sup>

| Common name         | Scientific name <sup>b</sup>                | Common name                               | Scientific name <sup>b</sup>                                |
|---------------------|---------------------------------------------|-------------------------------------------|-------------------------------------------------------------|
| Softwoods           |                                             | Hardwoods (continued)                     |                                                             |
| Eastern redcedar    | <i>Juniperus virginiana</i> L.              | Chinaberry                                | <i>Melia azedarach</i> L.                                   |
| Shortleaf pine      | <i>Pinus echinata</i> Mill.                 | White mulberry                            | <i>Morus alba</i> L.                                        |
| Loblolly pine       | <i>P. taeda</i> L.                          | Red mulberry                              | <i>M. rubra</i> L.                                          |
| Baldcypress         | <i>Taxodium distichum</i> (L.) Rich.        | Water tupelo                              | <i>Nyssa aquatica</i> L.                                    |
| Hardwoods           |                                             | Blackgum                                  | <i>N. sylvatica</i> Marsh.                                  |
| Florida maple       | <i>Acer barbatum</i> Michx.                 | Swamp tupelo                              | <i>N. sylvatica</i> var. <i>biflora</i> (Walt.) Sarg.       |
| Boxelder            | <i>A. negundo</i> L.                        | Eastern hophornbeam                       | <i>Ostrya virginiana</i> (Mill.) K. Koch                    |
| Red maple           | <i>A. rubrum</i> L.                         | Sourwood                                  | <i>Oxydendrum arboreum</i> (L.) DC.                         |
| Silver maple        | <i>A. saccharinum</i> L.                    | Royal paulownia                           | <i>Paulownia tomentosa</i> (Thunb.) Sieb. & Zucc. ex Steud. |
| Sugar maple         | <i>A. saccharum</i> Marsh.                  | Water-elm                                 | <i>Planera aquatica</i> J. F. Gmel.                         |
| Ailanthus           | <i>Ailanthus altissima</i> (Mill.) Swingle  | American sycamore                         | <i>Platanus occidentalis</i> L.                             |
| Tung-oil-tree       | <i>Aleurites fordii</i> Hemsl.              | Eastern cottonwood                        | <i>Populus deltoides</i> Bartr. ex Marsh.                   |
| Serviceberry        | <i>Amelanchier</i> spp. Medic.              | Plums, cherries (other than black cherry) | <i>Prunus</i> spp. L.                                       |
| River birch         | <i>Betula nigra</i> L.                      | Black cherry                              | <i>P. serotina</i> Ehrh.                                    |
| Chittamwood         | <i>Bumelia lanuginosa</i> (Michx.) Pers.    | White oak                                 | <i>Quercus alba</i> L.                                      |
| Water hickory       | <i>Carya aquatica</i> (Michx. f.) Nutt.     | Scarlet oak                               | <i>Q. coccinea</i> Muenchh.                                 |
| Bitternut hickory   | <i>C. cordiformis</i> (Wangenh.) K. Koch    | Durand oak                                | <i>Q. durandii</i> Buckl.                                   |
| Pignut hickory      | <i>C. glabra</i> (Mill.) Sweet              | Southern red oak                          | <i>Q. falcata</i> Michx.                                    |
| Pecan               | <i>C. illinoensis</i> (Wangenh.) K. Koch    | Cherrybark oak                            | <i>Q. falcata</i> var. <i>pagodifolia</i> Ell.              |
| Shellbark hickory   | <i>C. laciniata</i> (Michx. f.) Loud.       | Laurel oak                                | <i>Q. laurifolia</i> Michx.                                 |
| Nutmeg hickory      | <i>C. myristiciformis</i> (Michx. f.) Nutt. | Overcup oak                               | <i>Q. lyrata</i> Walt.                                      |
| Shagbark hickory    | <i>C. ovata</i> (Mill.) K. Koch             | Bur oak                                   | <i>Q. macrocarpa</i> Michx.                                 |
| Mockernut hickory   | <i>C. tomentosa</i> (Poir.) Nutt.           | Blackjack oak                             | <i>Q. marilandica</i> Muenchh.                              |
| Allegheny chinkapin | <i>Castanea pumila</i> Mill.                | Swamp chestnut oak                        | <i>Q. michauxii</i> Nutt.                                   |
| Chinkapin           | <i>Castanopsis</i> (D. Don) Spach           | Chinkapin oak                             | <i>Q. muehlenbergii</i> Engelm.                             |
| Sugarberry          | <i>Celtis laevigata</i> Willd.              | Water oak                                 | <i>Q. nigra</i> L.                                          |
| Hackberry           | <i>C. occidentalis</i> L.                   | Nuttall oak                               | <i>Q. nuttallii</i> Palmer                                  |
| Eastern redbud      | <i>Cercis canadensis</i> L.                 | Pin oak                                   | <i>Q. palustris</i> Muenchh.                                |
| Flowering dogwood   | <i>Cornus florida</i> L.                    | Willow oak                                | <i>Q. phellos</i> L.                                        |
| American smoketree  | <i>Cotinus obovatus</i> Raf.                | Northern red oak                          | <i>Q. rubra</i> L.                                          |
| Hawthorn            | <i>Crataegus</i> spp. L.                    | Shumard oak                               | <i>Q. shumardii</i> Buckl.                                  |
| Common persimmon    | <i>Diospyros virginiana</i> L.              | Post oak                                  | <i>Q. stellata</i> Wangenh.                                 |
| American beech      | <i>Fagus grandifolia</i> Ehrh.              | Delta post oak                            | <i>Q. stellata</i> var. <i>paludosa</i> Sarg.               |
| White ash           | <i>Fraxinus americana</i> L.                | Black oak                                 | <i>Q. velutina</i> Lam.                                     |
| Green ash           | <i>F. pennsylvanica</i> Marsh.              | Black locust                              | <i>Robinia pseudoacacia</i> L.                              |
| Pumpkin ash         | <i>F. profunda</i> (Bush) Bush              | Willow                                    | <i>Salix</i> spp. L.                                        |
| Blue ash            | <i>F. quadrangulata</i> Michx.              | Sassafras                                 | <i>Sassafras albidum</i> (Nutt.) Nees                       |
| Waterlocust         | <i>Gleditsia aquatica</i> Marsh.            | American basswood                         | <i>Tilia americana</i> L.                                   |
| Honeylocust         | <i>G. triacanthos</i> L.                    | White basswood                            | <i>T. heterophylla</i> Vent.                                |
| Kentucky coffeetree | <i>Gymnocladus dioica</i> (L.) K. Koch      | Winged elm                                | <i>Ulmus alata</i> Michx.                                   |
| American holly      | <i>Ilex opaca</i> Ait.                      | American elm                              | <i>U. americana</i> L.                                      |
| Butternut           | <i>Juglans cinerea</i> L.                   | Cedar elm                                 | <i>U. crassifolia</i> Nutt.                                 |
| Black walnut        | <i>J. nigra</i> L.                          | Slippery elm                              | <i>U. rubra</i> Muhl.                                       |
| Sweetgum            | <i>Liquidambar styraciflua</i> L.           | September elm                             | <i>U. serotina</i> Sarg.                                    |
| Yellow-poplar       | <i>Liriodendron tulipifera</i> L.           | Rock elm                                  | <i>U. thomasi</i> Sarg.                                     |
| Osage-orange        | <i>Maclura pomifera</i> (Raf.) Schneid.     |                                           |                                                             |
| Apple               | <i>Malus</i> spp. Mill.                     |                                           |                                                             |

<sup>a</sup> Common and scientific names of tree species > 1.0 inch d.b.h. occurring in the Forest Inventory and Analysis sample.

<sup>b</sup> Little (1979).

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**Table A.1—Output of industrial products by product and species group, Oklahoma, 2005 and 2009**

| Product and species group     | Year                               |        | Change  | Change         |
|-------------------------------|------------------------------------|--------|---------|----------------|
|                               | 2005                               | 2009   |         |                |
|                               | <i>--- thousand cubic feet ---</i> |        |         | <i>percent</i> |
| 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 <sup>a</sup>         |                                    |        |         |                |
| 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 <sup>b</sup> |                                    |        |         |                |
| 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          |

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulp mills (3,707,000 cubic feet in 2005 and 0 cubic feet in 2009).

<sup>b</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.



**Table A.2—Roundwood receipts by product and species group, Oklahoma, 2005 and 2009**

| Product and species group                               | Year                          |        | Change  | Change  |
|---------------------------------------------------------|-------------------------------|--------|---------|---------|
|                                                         | 2005                          | 2009   |         |         |
|                                                         | ---- thousand cubic feet ---- |        |         | percent |
| Saw logs                                                |                               |        |         |         |
| Softwood                                                | 55,839                        | 18,816 | -37,023 | -66.3   |
| Hardwood                                                | 8,481                         | 2,652  | -5,829  | -68.7   |
| Total                                                   | 64,320                        | 21,468 | -42,852 | -66.6   |
| Pulpwood <sup>a</sup> and other industrial <sup>b</sup> |                               |        |         |         |
| Softwood                                                | 71,278                        | 42,682 | -28,596 | -40.1   |
| Hardwood                                                | 13,064                        | 10,311 | -2,753  | -21.1   |
| Total                                                   | 84,342                        | 52,993 | -31,349 | -37.2   |
| Total output                                            |                               |        |         |         |
| Softwood                                                | 127,117                       | 61,498 | -65,619 | -51.6   |
| Hardwood                                                | 21,545                        | 12,963 | -8,582  | -39.8   |
| Total                                                   | 148,662                       | 74,461 | -74,201 | -49.9   |

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (4,528,000 cubic feet in 2005 and 0 cubic feet in 2009).

<sup>b</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.3—Number of primary wood-using plants by type of mill, Oklahoma, 1972 to 2009**

| Type of mill            | Year   |      |      |      |      |      |      |      |      |
|-------------------------|--------|------|------|------|------|------|------|------|------|
|                         | 1972   | 1975 | 1978 | 1984 | 1996 | 1999 | 2002 | 2005 | 2009 |
|                         | number |      |      |      |      |      |      |      |      |
| Sawmills                | 103    | 83   | 66   | 84   | 68   | 62   | 97   | 95   | 26   |
| Veneer or plywood mills | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0    |
| Pulpmills               | 3      | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 1    |
| Composite panel mills   | 0      | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 2    |
| Other mills             | 11     | 14   | 11   | 12   | 2    | 2    | 8    | 8    | 2    |
| All plants              | 118    | 101  | 81   | 100  | 73   | 67   | 109  | 107  | 31   |

**Table A.4—Roundwood receipts by sawmill size, Oklahoma, 2005 and 2009**

| Sawmill<br>size class <sup>a</sup><br><i>mmbf</i> | 2005          |            |                | 2009          |            |                |
|---------------------------------------------------|---------------|------------|----------------|---------------|------------|----------------|
|                                                   | Mills         | Volume     |                | Mills         | Volume     |                |
|                                                   | <i>number</i> | <i>mbf</i> | <i>percent</i> | <i>number</i> | <i>mbf</i> | <i>percent</i> |
| < 1.0                                             | 7             | 612        | 0              | 4             | 172        | 0              |
| 1.0–9.99                                          | 8             | 35,209     | 10             | 5             | 24,345     | 20             |
| > 10.0                                            | 4             | 325,614    | 90             | 3             | 96,039     | 80             |
| Total                                             | 19            | 361,435    | 100            | 12            | 120,556    | 100            |

<sup>a</sup> Based on volume received as opposed to actual capacity.

**Table A.5—Roundwood receipts by species and type of mill, Oklahoma, 2009**

| Species                    | All<br>mills | Type of mill |                                                |
|----------------------------|--------------|--------------|------------------------------------------------|
|                            |              | Sawmills     | Pulpmills <sup>a</sup> and<br>other industrial |
| <i>thousand cubic feet</i> |              |              |                                                |
| Softwood                   |              |              |                                                |
| Yellow pine                | 18,807       | 18,807       | 0                                              |
| Eastern white pine         | 0            | 0            | 0                                              |
| Cedar                      | 9            | 9            | 0                                              |
| Cypress                    | 0            | 0            | 0                                              |
| Other softwood             | 0            | 0            | 0                                              |
| Unclassified               | 42,682       | 0            | 42,682                                         |
| Total softwoods            | 61,498       | 18,816       | 42,682                                         |
| Hardwood                   |              |              |                                                |
| Blackgum and tupelo        | 0            | 0            | 0                                              |
| Soft maple                 | 0            | 0            | 0                                              |
| Sweetgum                   | 0            | 0            | 0                                              |
| Yellow-poplar              | 0            | 0            | 0                                              |
| Other soft hardwood        | 24           | 24           | 0                                              |
| Hickory                    | 265          | 265          | 0                                              |
| Red oak                    | 1,113        | 1,113        | 0                                              |
| White oak                  | 662          | 662          | 0                                              |
| Other hard hardwood        | 588          | 588          | 0                                              |
| Unclassified               | 10,311       | 0            | 10,311                                         |
| Total hardwoods            | 12,963       | 2,652        | 10,311                                         |
| All species                | 74,461       | 21,468       | 52,993                                         |

<sup>a</sup> Only collected by softwood and hardwood and includes roundwood chipped.

**Table A.6—Industrial roundwood movement by year and species group, Oklahoma, 2005 and 2009**

| Year                       | Production | Exported to<br>other States | Retained | Imported from<br>other States | Receipts |
|----------------------------|------------|-----------------------------|----------|-------------------------------|----------|
| <i>thousand cubic feet</i> |            |                             |          |                               |          |
| <b>Softwood</b>            |            |                             |          |                               |          |
| 2005                       | 95,436     | 12,049                      | 83,387   | 43,730                        | 127,117  |
| 2009                       | 46,274     | 8,391                       | 37,883   | 23,615                        | 61,498   |
| <b>Hardwood</b>            |            |                             |          |                               |          |
| 2005                       | 23,799     | 10,751                      | 13,048   | 8,497                         | 21,545   |
| 2009                       | 20,045     | 9,991                       | 10,054   | 2,909                         | 12,963   |
| <b>All species</b>         |            |                             |          |                               |          |
| 2005                       | 119,235    | 22,800                      | 96,435   | 52,227                        | 148,662  |
| 2009                       | 66,319     | 18,382                      | 47,937   | 26,524                        | 74,461   |

**Table A.7—Industrial roundwood movement by product and species group, Oklahoma, 2009**

| Product and<br>species group                               | Production | Exported to<br>other States | Retained | Imported from<br>other States | Receipts |
|------------------------------------------------------------|------------|-----------------------------|----------|-------------------------------|----------|
| <i>thousand cubic feet</i>                                 |            |                             |          |                               |          |
| Saw logs                                                   |            |                             |          |                               |          |
| Softwood                                                   | 22,759     | 6,588                       | 16,171   | 2,645                         | 18,816   |
| Hardwood                                                   | 2,495      | 615                         | 1,880    | 772                           | 2,652    |
| Total                                                      | 25,254     | 7,203                       | 18,051   | 3,417                         | 21,468   |
| Pulpwood <sup>a</sup> and<br>other industrial <sup>b</sup> |            |                             |          |                               |          |
| Softwood                                                   | 23,515     | 1,803                       | 21,712   | 20,970                        | 42,682   |
| Hardwood                                                   | 17,550     | 9,376                       | 8,174    | 2,137                         | 10,311   |
| Total                                                      | 41,065     | 11,179                      | 29,886   | 23,107                        | 52,993   |
| All products                                               |            |                             |          |                               |          |
| Softwood                                                   | 46,274     | 8,391                       | 37,883   | 23,615                        | 61,498   |
| Hardwood                                                   | 20,045     | 9,991                       | 10,054   | 2,909                         | 12,963   |
| Total                                                      | 66,319     | 18,382                      | 47,937   | 26,524                        | 74,461   |

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulp mills.

<sup>b</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.8—Saw-log volume by destination, source, and species group, Oklahoma, 2009**

| Destination<br>and source  | All<br>species | Species group |          |
|----------------------------|----------------|---------------|----------|
|                            |                | Softwood      | Hardwood |
| <i>thousand cubic feet</i> |                |               |          |
| Oklahoma (retained)        | 18,051         | 16,171        | 1,880    |
| Exports to                 |                |               |          |
| Arkansas                   | 6,268          | 5,679         | 589      |
| Texas                      | 935            | 909           | 26       |
| Total                      | 7,203          | 6,588         | 615      |
| Imports from               |                |               |          |
| Arkansas                   | 2,004          | 1,357         | 647      |
| Missouri                   | 125            | 0             | 125      |
| Texas                      | 1,288          | 1,288         | 0        |
| Total                      | 3,417          | 2,645         | 772      |

**Table A.9—Pulpwood and other industrial<sup>a</sup> volume by destination, source, and species group, Oklahoma, 2009**

| Destination<br>and source  | All<br>species | Species group |          |
|----------------------------|----------------|---------------|----------|
|                            |                | Softwood      | Hardwood |
| <i>thousand cubic feet</i> |                |               |          |
| Oklahoma (retained)        | 29,886         | 21,712        | 8,174    |
| Exports to                 |                |               |          |
| Arkansas                   | 9,491          | 1,594         | 7,897    |
| Georgia                    | 2              | 0             | 2        |
| Texas                      | 1,686          | 209           | 1,477    |
| Total                      | 11,179         | 1,803         | 9,376    |
| Imports from               |                |               |          |
| Arkansas                   | 13,030         | 12,811        | 219      |
| Louisiana                  | 24             | 24            | 0        |
| Texas                      | 10,053         | 8,135         | 1,918    |
| Total                      | 23,107         | 20,970        | 2,137    |

<sup>a</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.10—Primary mill residue volume by roundwood type, species group, and residue type, Oklahoma, 2009**

| Roundwood type<br>and species group           | All<br>types | Residue type |        |         |          |
|-----------------------------------------------|--------------|--------------|--------|---------|----------|
|                                               |              | Bark         | Coarse | Sawdust | Shavings |
| <i>thousand cubic feet</i>                    |              |              |        |         |          |
| Saw logs                                      |              |              |        |         |          |
| Softwood                                      | 11,888       | 1,263        | 5,559  | 3,337   | 1,729    |
| Hardwood                                      | 1,664        | 275          | 856    | 533     | 0        |
| Total                                         | 13,552       | 1,538        | 6,415  | 3,870   | 1,729    |
| Pulpwood and<br>other industrial <sup>a</sup> |              |              |        |         |          |
| Softwood                                      | 4,405        | 4,405        | 0      | 0       | 0        |
| Hardwood                                      | 1,278        | 1,278        | 0      | 0       | 0        |
| Total                                         | 5,683        | 5,683        | 0      | 0       | 0        |
| Total                                         |              |              |        |         |          |
| Softwood                                      | 16,293       | 5,668        | 5,559  | 3,337   | 1,729    |
| Hardwood                                      | 2,942        | 1,553        | 856    | 533     | 0        |
| Total                                         | 19,235       | 7,221        | 6,415  | 3,870   | 1,729    |

<sup>a</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.11—Disposal of residue at primary wood-using plants by product, species group, and type of residue, Oklahoma, 2005 and 2009**

| Product and species group  | All types |        | Bark   |       | Coarse |       | Sawdust |       | Shavings |       |
|----------------------------|-----------|--------|--------|-------|--------|-------|---------|-------|----------|-------|
|                            | 2005      | 2009   | 2005   | 2009  | 2005   | 2009  | 2005    | 2009  | 2005     | 2009  |
| <i>thousand cubic feet</i> |           |        |        |       |        |       |         |       |          |       |
| Fiber products             |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 14,953    | 4,387  | 0      | 0     | 14,953 | 4,387 | 0       | 0     | 0        | 0     |
| Hardwood                   | 1,097     | 395    | 0      | 0     | 1,097  | 395   | 0       | 0     | 0        | 0     |
| Total                      | 16,050    | 4,782  | 0      | 0     | 16,050 | 4,782 | 0       | 0     | 0        | 0     |
| Particleboard              |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 1,515     | 1,128  | 0      | 0     | 1,515  | 1,128 | 0       | 0     | 0        | 0     |
| Hardwood                   | 0         | 0      | 0      | 0     | 0      | 0     | 0       | 0     | 0        | 0     |
| Total                      | 1,515     | 1,128  | 0      | 0     | 1,515  | 1,128 | 0       | 0     | 0        | 0     |
| Charcoal/<br>chemical wood |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 2         | 2      | 0      | 0     | 2      | 2     | 0       | 0     | 0        | 0     |
| Hardwood                   | 0         | 0      | 0      | 0     | 0      | 0     | 0       | 0     | 0        | 0     |
| Total                      | 2         | 2      | 0      | 0     | 2      | 2     | 0       | 0     | 0        | 0     |
| Sawn products              |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 3,146     | 0      | 0      | 0     | 3,146  | 0     | 0       | 0     | 0        | 0     |
| Hardwood                   | 3         | 3      | 0      | 0     | 3      | 3     | 0       | 0     | 0        | 0     |
| Total                      | 3,149     | 3      | 0      | 0     | 3,149  | 3     | 0       | 0     | 0        | 0     |
| Industrial fuel            |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 26,178    | 10,265 | 10,425 | 5,513 | 17     | 39    | 10,991  | 3,336 | 4,745    | 1,377 |
| Hardwood                   | 5,286     | 2,050  | 2,329  | 1,414 | 1,463  | 372   | 1,494   | 264   | 0        | 0     |
| Total                      | 31,464    | 12,315 | 12,754 | 6,927 | 1,480  | 411   | 12,485  | 3,600 | 4,745    | 1,377 |
| Miscellaneous              |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 1,091     | 510    | 647    | 155   | 2      | 2     | 1       | 1     | 441      | 352   |
| Hardwood                   | 452       | 494    | 102    | 139   | 150    | 86    | 200     | 269   | 0        | 0     |
| Total                      | 1,543     | 1,004  | 749    | 294   | 152    | 88    | 201     | 270   | 441      | 352   |
| Not used                   |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 6         | 1      | 1      | 0     | 3      | 1     | 2       | 0     | 0        | 0     |
| Hardwood                   | 43        | 0      | 7      | 0     | 23     | 0     | 13      | 0     | 0        | 0     |
| Total                      | 49        | 1      | 8      | 0     | 26     | 1     | 15      | 0     | 0        | 0     |
| All products               |           |        |        |       |        |       |         |       |          |       |
| Softwood                   | 46,891    | 16,293 | 11,073 | 5,668 | 19,638 | 5,559 | 10,994  | 3,337 | 5,186    | 1,729 |
| Hardwood                   | 6,881     | 2,942  | 2,438  | 1,553 | 2,736  | 856   | 1,707   | 533   | 0        | 0     |
| Total                      | 53,772    | 19,235 | 13,511 | 7,221 | 22,374 | 6,415 | 12,701  | 3,870 | 5,186    | 1,729 |

**Table A.12—Roundwood timber product output by county, product, and species group, Oklahoma, 2009**

| County                     | All products |           | Saw logs  |           | Pulpwood and other industrial <sup>a</sup> |           |
|----------------------------|--------------|-----------|-----------|-----------|--------------------------------------------|-----------|
|                            | Soft-wood    | Hard-wood | Soft-wood | Hard-wood | Soft-wood                                  | Hard-wood |
| <i>thousand cubic feet</i> |              |           |           |           |                                            |           |
| Adair                      | 0            | 1,846     | 0         | 528       | 0                                          | 1,318     |
| Atoka                      | 390          | 1,071     | 249       | 483       | 141                                        | 588       |
| Bryan                      | 0            | 874       | 0         | 0         | 0                                          | 874       |
| Cherokee                   | 15           | 438       | 0         | 282       | 15                                         | 156       |
| Choctaw                    | 996          | 599       | 575       | 13        | 421                                        | 586       |
| Coal                       | 0            | 48        | 0         | 0         | 0                                          | 48        |
| Delaware                   | 0            | 428       | 0         | 428       | 0                                          | 0         |
| Garfield                   | 8            | 0         | 8         | 0         | 0                                          | 0         |
| Haskell                    | 0            | 124       | 0         | 124       | 0                                          | 0         |
| Hughes                     | 0            | 65        | 0         | 8         | 0                                          | 57        |
| Latimer                    | 385          | 596       | 243       | 0         | 142                                        | 596       |
| Le Flore                   | 4,331        | 2,191     | 2,291     | 0         | 2,040                                      | 2,191     |
| Mayes                      | 0            | 83        | 0         | 83        | 0                                          | 0         |
| McCurtain                  | 26,213       | 3,037     | 14,348    | 177       | 11,865                                     | 2,860     |
| Ottawa                     | 0            | 157       | 0         | 157       | 0                                          | 0         |
| Pittsburg                  | 0            | 12        | 0         | 0         | 0                                          | 12        |
| Pushmataha                 | 13,925       | 7,945     | 5,045     | 5         | 8,880                                      | 7,940     |
| Sequoyah                   | 11           | 531       | 0         | 207       | 11                                         | 324       |
| All counties               | 46,274       | 20,045    | 22,759    | 2,495     | 23,515                                     | 17,550    |

<sup>a</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.13—Total roundwood output by product, species group, and source of material, Oklahoma, 2009**

| Product and species group     | All sources | Total  | Growing-stock trees |            | Other sources |
|-------------------------------|-------------|--------|---------------------|------------|---------------|
|                               |             |        | Sawtimber           | Poletimber |               |
| thousand cubic feet           |             |        |                     |            |               |
| Saw logs                      |             |        |                     |            |               |
| Softwood                      | 22,759      | 21,621 | 20,323              | 1,298      | 1,138         |
| Hardwood                      | 2,495       | 2,437  | 2,290               | 146        | 58            |
| Total                         | 25,254      | 24,057 | 22,614              | 1,444      | 1,196         |
| Pulpwood                      |             |        |                     |            |               |
| Softwood                      | 19,900      | 13,630 | 3,478               | 10,152     | 6,270         |
| Hardwood                      | 17,550      | 15,439 | 6,782               | 8,657      | 2,111         |
| Total                         | 37,450      | 29,069 | 10,260              | 18,809     | 8,381         |
| Other industrial <sup>a</sup> |             |        |                     |            |               |
| Softwood                      | 3,615       | 3,326  | 2,103               | 1,223      | 289           |
| Hardwood                      | 0           | 0      | 0                   | 0          | 0             |
| Total                         | 3,615       | 3,326  | 2,103               | 1,223      | 290           |
| Total industrial products     |             |        |                     |            |               |
| Softwood                      | 46,274      | 38,577 | 25,904              | 12,673     | 7,697         |
| Hardwood                      | 20,045      | 17,876 | 9,073               | 8,803      | 2,169         |
| Total                         | 66,319      | 56,452 | 34,977              | 21,476     | 9,867         |
| Residential fuelwood          |             |        |                     |            |               |
| Softwood                      | 279         | 129    | 106                 | 23         | 150           |
| Hardwood                      | 16,095      | 12,634 | 8,977               | 3,657      | 3,461         |
| Total                         | 16,374      | 12,763 | 9,083               | 3,680      | 3,611         |
| All products                  |             |        |                     |            |               |
| Softwood                      | 46,553      | 38,706 | 26,010              | 12,696     | 7,847         |
| Hardwood                      | 36,140      | 30,510 | 18,050              | 12,460     | 5,630         |
| Total                         | 82,693      | 69,216 | 44,060              | 25,156     | 13,478        |

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

<sup>a</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.14—Total roundwood output by species group, survey region, and ownership class, Oklahoma, 2009**

| Species group<br>and survey region | Total  | Ownership class |                    |                          |
|------------------------------------|--------|-----------------|--------------------|--------------------------|
|                                    |        | Public          | Forest<br>industry | Nonindustrial<br>private |
| thousand cubic feet                |        |                 |                    |                          |
| Softwoods                          |        |                 |                    |                          |
| Southeast                          | 46,519 | 3,042           | 28,971             | 14,506                   |
| Northeast                          | 26     | 0               | 0                  | 26                       |
| Western                            | 8      | 0               | 0                  | 8                        |
| Total softwoods                    | 46,553 | 3,042           | 28,971             | 14,540                   |
| Hardwoods                          |        |                 |                    |                          |
| Southeast                          | 29,743 | 442             | 10,219             | 19,082                   |
| Northeast                          | 6,280  | 442             | 0                  | 5,838                    |
| Western                            | 117    | 0               | 0                  | 117                      |
| Total hardwoods                    | 36,140 | 884             | 10,219             | 25,037                   |
| All species                        | 82,693 | 3,926           | 39,190             | 39,578                   |

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



**Table A.15—Total roundwood output by species group, detailed species group, and product, Oklahoma, 2009**

| Species group and<br>detailed species group | Total  | Product     |          |                                  | Residential<br>fuelwood |
|---------------------------------------------|--------|-------------|----------|----------------------------------|-------------------------|
|                                             |        | Saw<br>logs | Pulpwood | Other<br>industrial <sup>a</sup> |                         |
| thousand cubic feet                         |        |             |          |                                  |                         |
| Softwood                                    |        |             |          |                                  |                         |
| Cedar                                       | 114    | 64          | 27       | 22                               | 1                       |
| Loblolly-shortleaf pine                     | 46,420 | 22,687      | 19,862   | 3,593                            | 278                     |
| Other yellow pines                          | 19     | 8           | 11       | 0                                | 0                       |
| Total softwoods                             | 46,553 | 22,759      | 19,900   | 3,615                            | 279                     |
| Hardwood                                    |        |             |          |                                  |                         |
| Soft maple                                  | 36     | 1           | 19       | 0                                | 16                      |
| Hard maple                                  | 47     | 7           | 19       | 0                                | 21                      |
| Hickory                                     | 5,996  | 307         | 3,018    | 0                                | 2,670                   |
| Ash                                         | 566    | 80          | 234      | 0                                | 252                     |
| Sweetgum                                    | 1,618  | 11          | 887      | 0                                | 721                     |
| Blackgum-tupelo                             | 435    | 29          | 212      | 0                                | 194                     |
| Sycamore                                    | 198    | 0           | 110      | 0                                | 88                      |
| Black cherry                                | 167    | 0           | 93       | 0                                | 74                      |
| Select white oaks                           | 2,421  | 229         | 1,113    | 0                                | 1,078                   |
| Other white oaks                            | 11,474 | 502         | 5,862    | 0                                | 5,110                   |
| Select red oaks                             | 1,495  | 64          | 766      | 0                                | 665                     |
| Other red oaks                              | 8,852  | 986         | 3,923    | 0                                | 3,943                   |
| Elm                                         | 1,955  | 86          | 998      | 0                                | 871                     |
| Other eastern<br>hardwoods                  | 880    | 191         | 297      | 0                                | 392                     |
| Total hardwoods                             | 36,140 | 2,495       | 17,550   | 0                                | 16,095                  |
| All species                                 | 82,693 | 25,254      | 37,450   | 3,615                            | 16,374                  |

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

<sup>a</sup> Includes poles, posts, composite panels, mulch, firewood, log homes, charcoal, and all other industrial products.

**Table A.16—Total roundwood output by species group, detailed species group, and ownership class, Oklahoma, 2009**

| Species group and<br>detailed species group | Total  | Ownership class |                    |                          |
|---------------------------------------------|--------|-----------------|--------------------|--------------------------|
|                                             |        | Public          | Forest<br>industry | Nonindustrial<br>private |
| <i>thousand cubic feet</i>                  |        |                 |                    |                          |
| Softwood                                    |        |                 |                    |                          |
| Cedar                                       | 114    | 15              | 0                  | 99                       |
| Loblolly-shortleaf pine                     | 46,420 | 3,027           | 28,971             | 14,422                   |
| Other yellow pines                          | 19     | 0               | 0                  | 19                       |
| Total softwoods                             | 46,553 | 3,042           | 28,971             | 14,540                   |
| Hardwood                                    |        |                 |                    |                          |
| Soft maple                                  | 36     | 0               | 6                  | 29                       |
| Hard maple                                  | 47     | 0               | 0                  | 47                       |
| Hickory                                     | 5,996  | 94              | 2,303              | 3,599                    |
| Ash                                         | 566    | 8               | 10                 | 548                      |
| Sweetgum                                    | 1,618  | 0               | 845                | 773                      |
| Blackgum-tupelo                             | 435    | 19              | 25                 | 391                      |
| Sycamore                                    | 198    | 0               | 0                  | 198                      |
| Black cherry                                | 167    | 19              | 0                  | 148                      |
| Select white oaks                           | 2,421  | 166             | 126                | 2,129                    |
| Other white oaks                            | 11,474 | 283             | 4,295              | 6,896                    |
| Select red oaks                             | 1,495  | 103             | 53                 | 1,338                    |
| Other red oaks                              | 8,852  | 137             | 1,775              | 6,940                    |
| Elm                                         | 1,955  | 17              | 760                | 1,178                    |
| Other eastern<br>hardwoods                  | 880    | 38              | 21                 | 822                      |
| Total hardwoods                             | 36,140 | 884             | 10,219             | 25,037                   |
| All species                                 | 82,693 | 3,926           | 39,190             | 39,578                   |

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



**Johnson, Tony G.** 2011. Oklahoma's timber industry—an assessment of timber product output and use, 2009. Resour. Bull. SRS-184. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 27 p.

In 2009, roundwood output from Oklahoma's forests totaled 66.3 million cubic feet. Mill byproducts generated from primary manufacturers totaled 19.2 million cubic feet. Almost all plant residues generated were used primarily for fuel and fiber products. Pulpwood was the leading roundwood product at 37.5 million cubic feet; saw logs ranked second at 25.3 million cubic feet. There were 27 primary processing plants operating in Oklahoma in 2009. Receipts totaled 74.5 million cubic feet.

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



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