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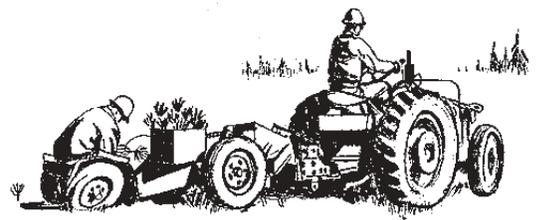
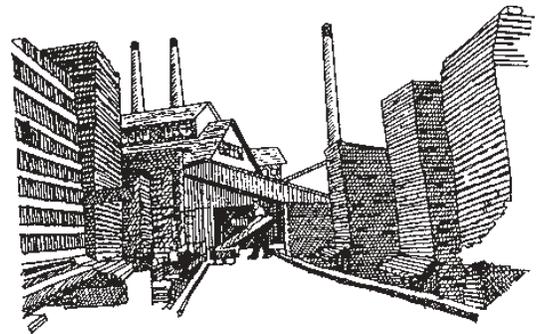
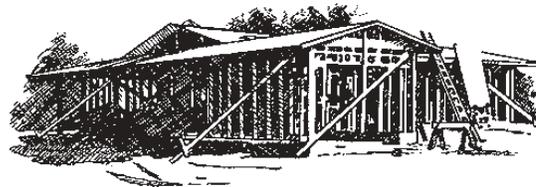
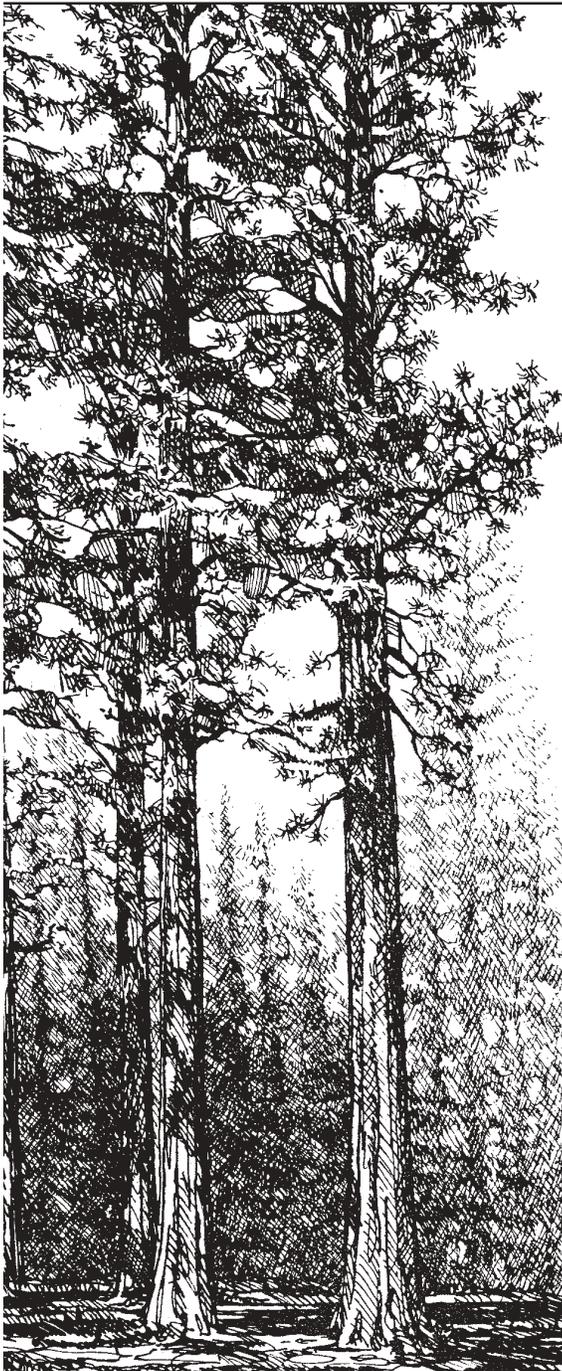


Southern  
Research Station

Resource Bulletin  
SRS-79

# Arkansas' Timber Industry— An Assessment of Timber Product Output and Use, 1999

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

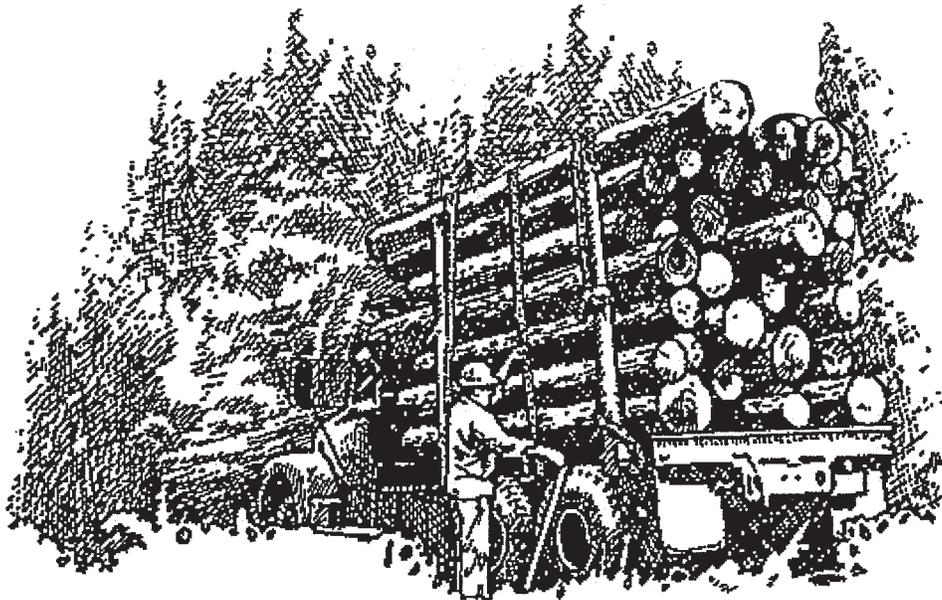


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## Foreword

This report contains the findings of a 1999 canvass of all primary wood-using plants in Arkansas, and presents changes in product output and residue use since 1996. It complements the Forest Inventory and Analysis (FIA) periodic inventory of volume and removals from the State's timberland. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain, by county, in 1999 and to determine interstate and cross-regional movement of industrial roundwood. Only primary wood-using mills were canvassed. Primary mills are those that process roundwood in log or bolt form or as chipped roundwood. Examples of industrial roundwood products are saw logs, pulpwood, veneer logs, poles, and logs used for composite board products. Mills producing products from residues generated at primary and secondary processors were not canvassed. Trees chipped in the woods were included in the estimate of timber drain only if they were delivered to a primary domestic manufacturer.

A canvass of wood processors in Arkansas was conducted in 2000 to obtain information for 1999. In addition, roundwood from out-of-State mills known to be using logs or bolts harvested from Arkansas timberland was incorporated into Arkansas 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 1948, and are currently conducted every 3 years.

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

## Acknowledgments

The authors thank Richard Bohnen and Robert Lewis for review and comments; Dale Gormanson from the North Central Research Station for the maps; Anne Jenkins, Susan Bowman, Lyn Thornhill, and Donna Burnett for tables, graphs, and statistical checking; and Paul Smith, Diana Corbin, and Louise Wilde for editorial review, styling, and publication of this report.

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



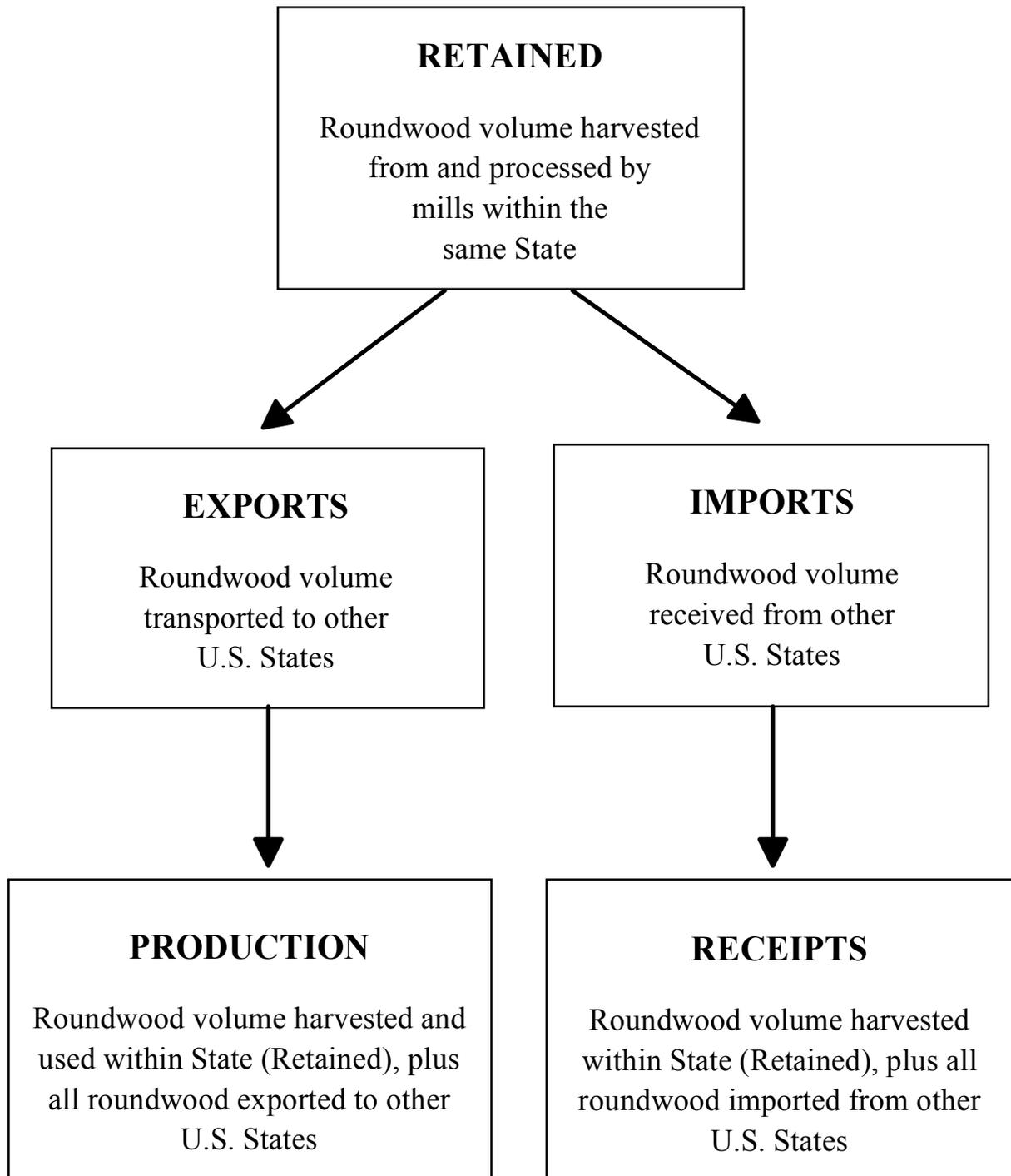


## Contents

	<i>Page</i>
Output of Industrial Timber Products .....	1
All Products .....	1
Saw Logs .....	4
Pulpwood .....	5
Veneer Logs .....	5
Composite Panels .....	6
Other Industrial Products .....	6
Plant Byproducts .....	6
Regional Trends .....	7
South Delta Region .....	7
North Delta Region .....	8
Southwest Region .....	8
Ouachita Region .....	9
Ozark Region .....	9
Total Roundwood Output .....	9
Source .....	9
Ownership .....	9
Species .....	9
References .....	10
Definition of Terms .....	11
Conversion Factors .....	14
Index of Tables .....	15
Tables 1–28 <sup>a</sup> .....	17

<sup>a</sup> All tables in this report are available in Microsoft® Excel workbook files. Upon request, these files will be supplied on 3½-inch diskettes.

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**Production** = Retained + Exports

**Receipts** = Retained + Imports

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

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## Output of Industrial Timber Products

Note: The reader must understand that certain terms, namely—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).

### All Products

- Between 1996 and 1999, the combined industrial timber product output (TPO) from roundwood and plant byproducts increased from 922 million cubic feet to 981 million cubic feet.

- Timber product output from roundwood increased 56 million cubic feet, or 9 percent, while output of plant byproducts increased 4 million cubic feet.
- Output of softwood roundwood products increased 17 percent to 495 million cubic feet, while output of hardwood roundwood products was down 8 percent to 197 million cubic feet (fig. 2).
- Figures 3 and 4 display softwood and hardwood county-level intensity of roundwood production for all industrial products across Arkansas. The data are depicted in cubic feet produced per acre of census land area. Counties with

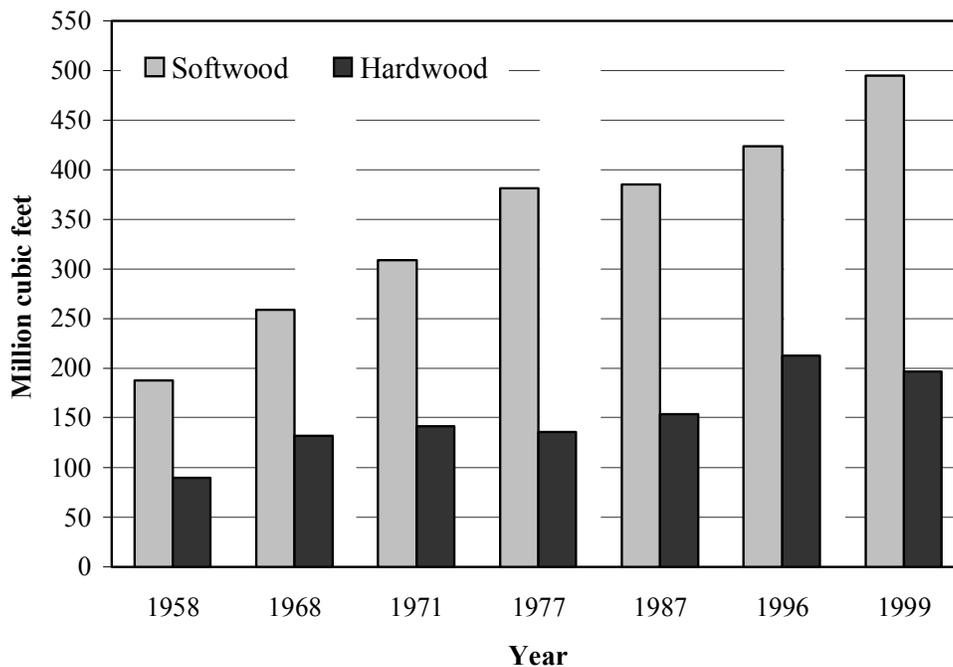


Figure 2—Roundwood production for all products by species group and year (see page 10 for references for individual years).

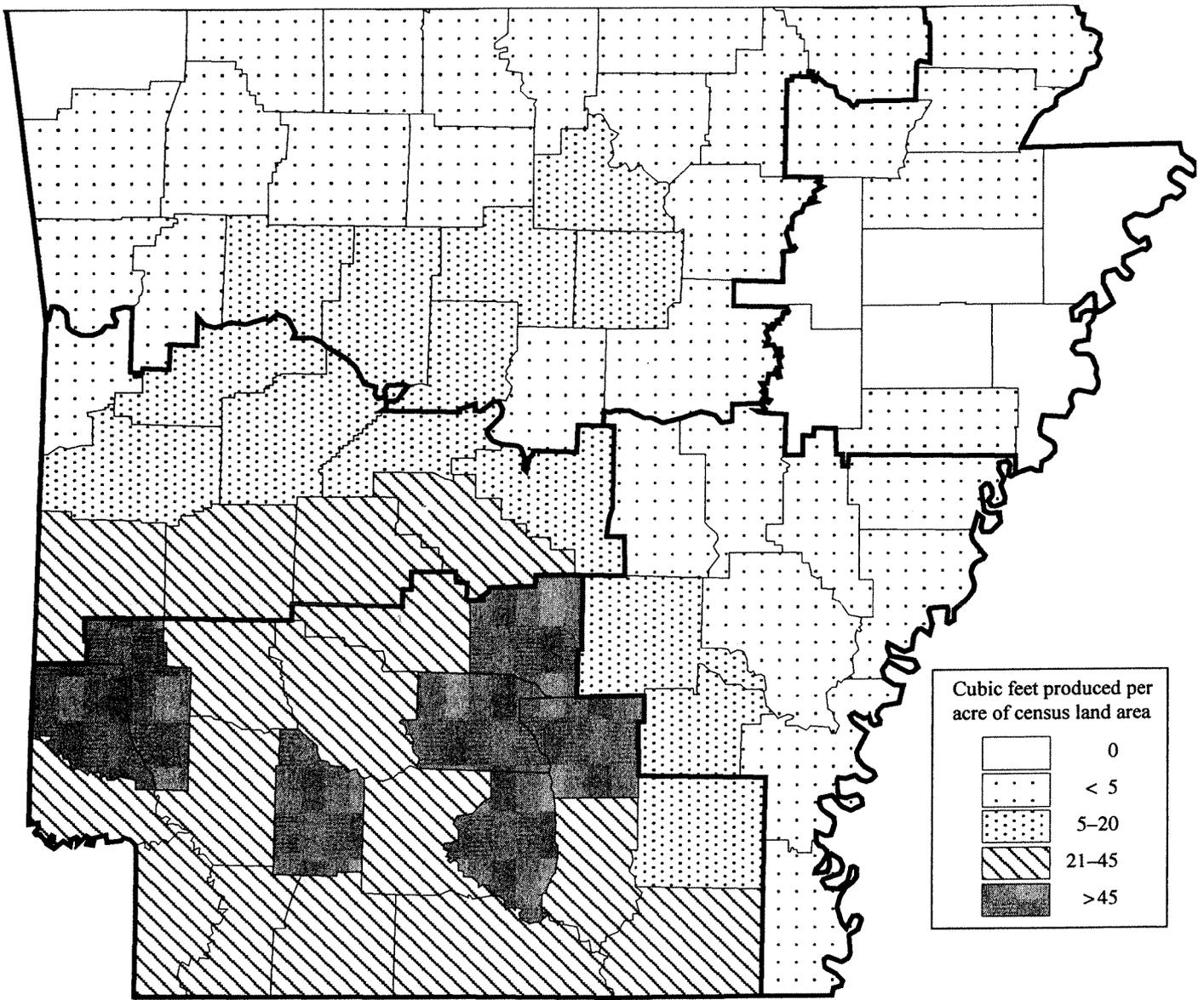


Figure 3—Intensity of roundwood softwood output for all industrial products in Arkansas by county, 1999.

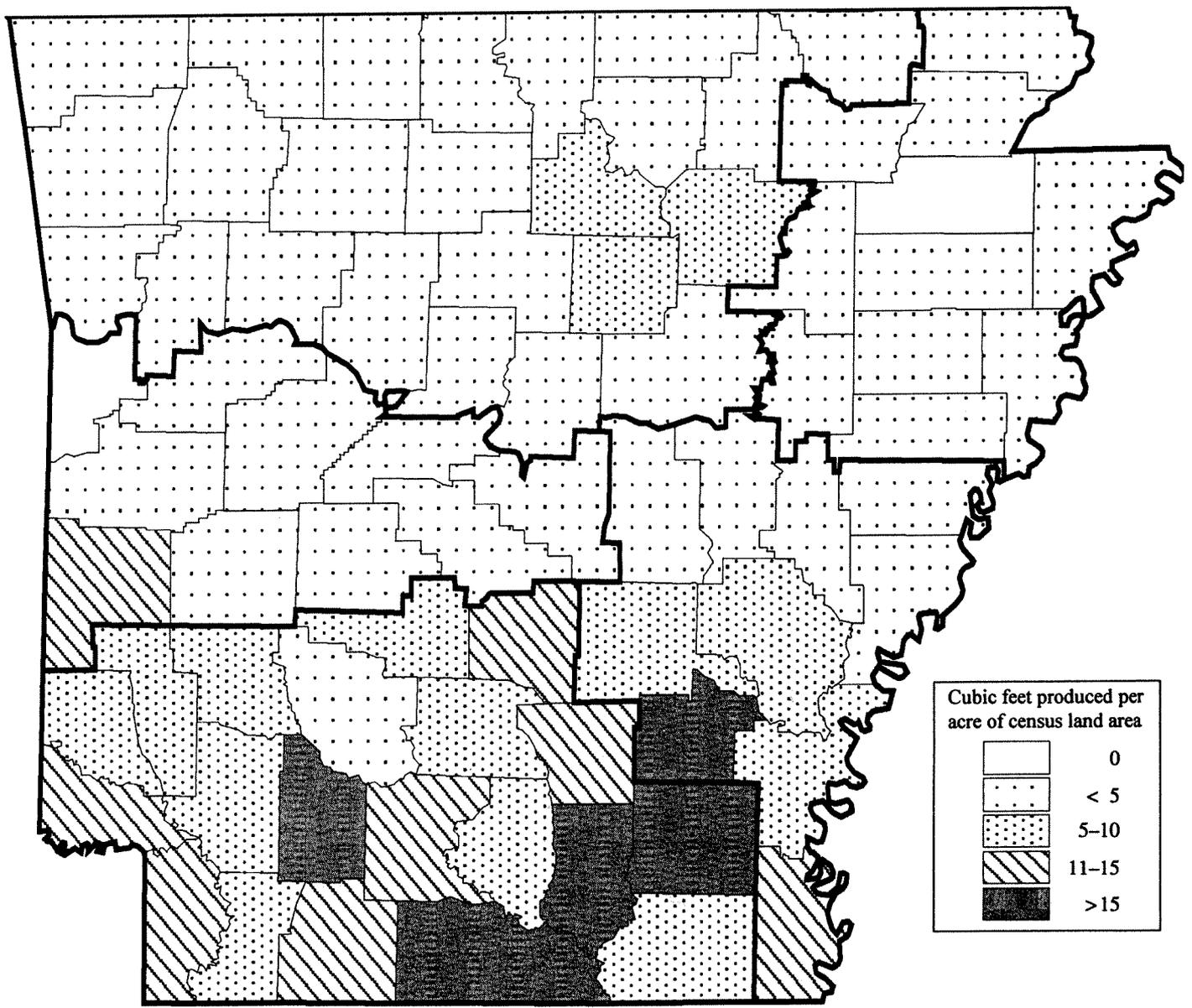


Figure 4—Intensity of roundwood hardwood output for all industrial products in Arkansas by county, 1999.

shades. For softwoods the darkest shade represents more than 45 cubic feet of production per acre, while for hardwoods the darkest shade represents more than 15 cubic feet per acre.

- Saw logs and pulpwood were the principal roundwood products in 1999. Combined output totaled 605 million cubic feet and accounted for 87 percent of the State's total roundwood output (fig. 5).
- Total receipts at Arkansas mills, which included roundwood harvested and retained in the State and roundwood imported from other States, was 681 million cubic feet. The number of primary roundwood-using plants in Arkansas was 336.

### Saw Logs

- Saw logs accounted for 46 percent of the State's total roundwood products. Output of softwood saw logs was 232 million cubic feet (1.3 billion board feet, International ¼-inch rule), while that of hardwood saw logs was 88 million cubic feet (533 million board feet, International ¼-inch rule) (fig. 6).

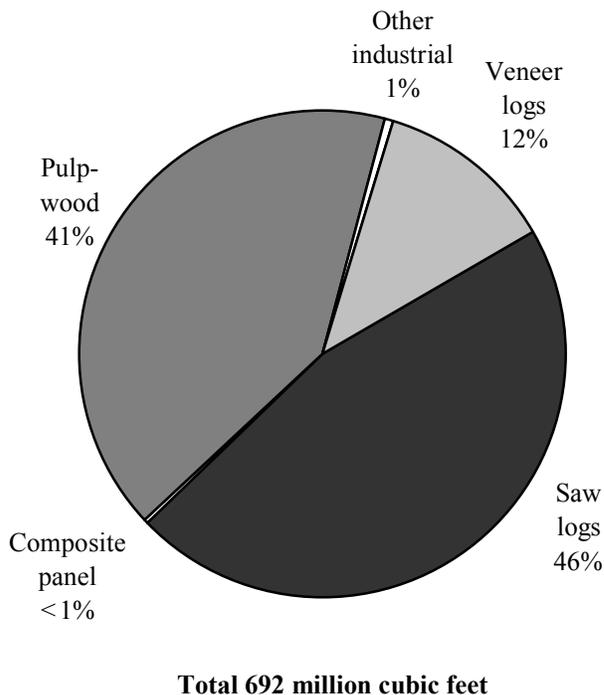


Figure 5—Roundwood production by type of product, 1999.

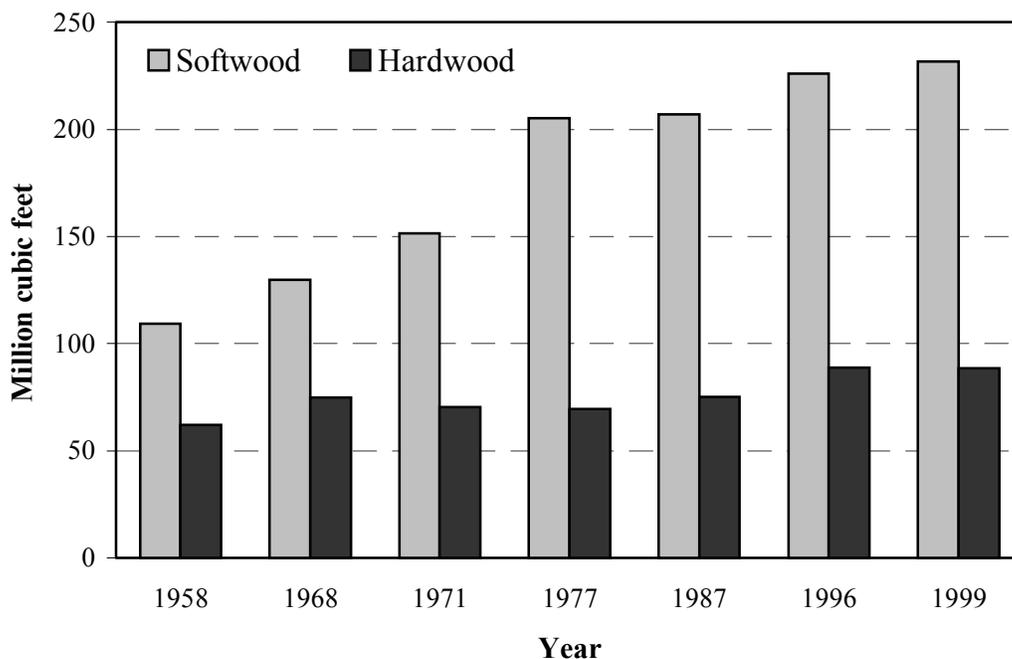


Figure 6—Roundwood pulpwood production by species group and year (see page 10 for references for individual years).

- In 1999, 128 sawmills were canvassed for this report, an increase of 1 mill since 1996. Those mills with production under 1 million board feet were not included. Total saw log receipts increased 14 million cubic feet to 353 million cubic feet. Softwood receipts were up 5 percent to 264 million cubic feet, while hardwood receipts increased 2 percent to 89 million cubic feet. Of the 128 canvassed mills, 50 percent had receipts of less than 5 million board feet, while 28 percent had receipts greater than 10 million board feet. Only 14 mills, or 11 percent, had receipts greater than 50 million board feet, but those mills accounted for 61 percent of sawmill receipts.
- Arkansas retained 94 percent of its saw-log production for domestic manufacture. Saw-log imports amounted to 52 million cubic feet, while exports totaled 19 million cubic feet in 1999, making the State a net importer of saw logs.

### Pulpwood

- Total pulpwood production, including chipped roundwood, was up 43 million cubic feet, or 18 percent, to 285 million cubic feet (3.8 million cords) and accounted for 41 percent of the State's total roundwood TPO. Softwood output increased 46 percent to 183 million cubic feet (2.5 million cords), while hardwood output declined 13

percent to 102 million cubic feet (1.3 million cords) (fig. 7).

- Eight pulpmills were operating and receiving roundwood in 1999, the same as in 1996. Total pulpwood receipts for these mills declined 3 million cubic feet to 232 million cubic feet, accounting for 34 percent of receipts for all mills.
- Sixty-six percent of roundwood cut for pulpwood was retained for processing at Arkansas pulpmills. Roundwood pulpwood accounted for 79 percent of total known exports and 39 percent of total imports. Roundwood pulpwood exports were 97 million cubic feet, while imports totaled 44 million cubic feet.

### Veneer Logs

- Output of veneer logs in 1999 totaled 84 million cubic feet and accounted for 12 percent of the State's total roundwood TPO volume. Softwood veneer production increased 14 percent to 78 million cubic feet (446 million board feet, International ¼-inch rule), while output of hardwood veneer logs declined 2 percent to 6 million cubic feet (37 million board feet, International ¼-inch rule) (fig. 8).

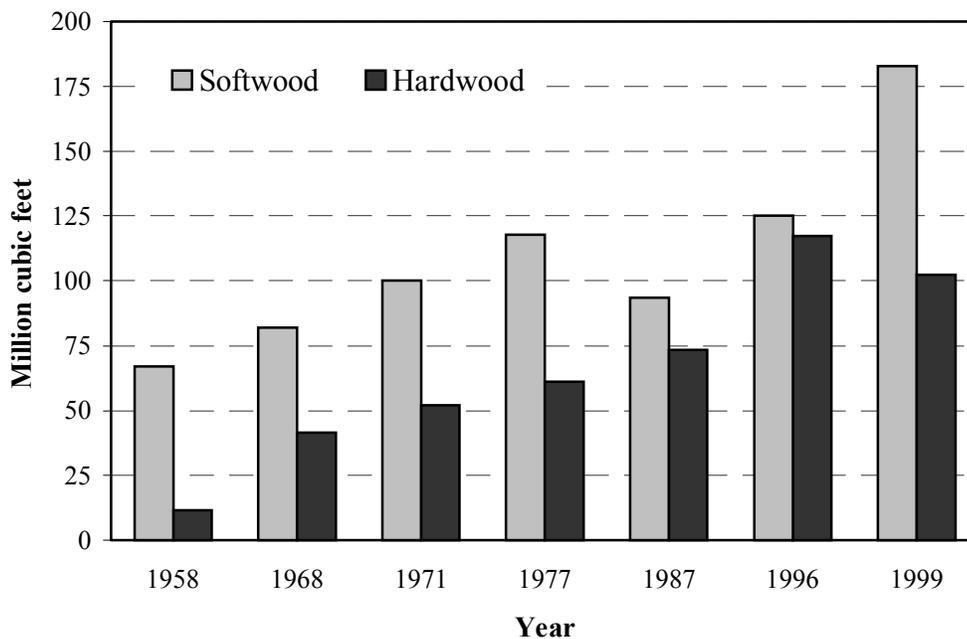


Figure 7—Roundwood saw-log production by species group and year (see page 10 for references for individual years).

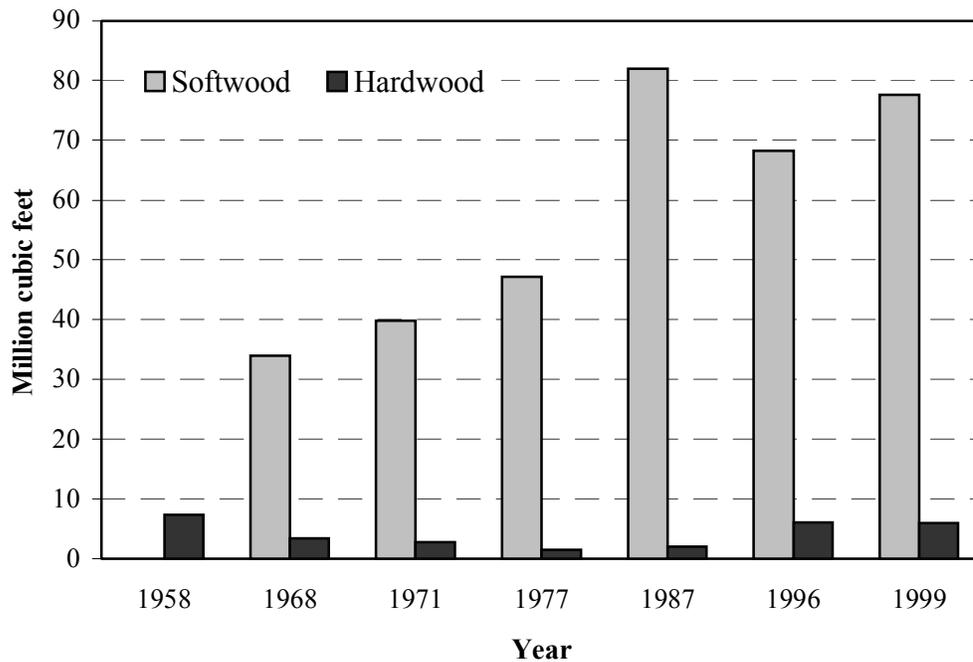


Figure 8—Roundwood veneer-log production by species group and year (see page 10 for references for individual years).

- Between 1996 and 1999, the number of veneer mills operating in Arkansas remained at 10. Receipts of veneer logs increased 12 percent to 95 million cubic feet. Softwood veneer receipts were up 13 percent to 88 million cubic feet, while hardwood veneer receipts remained relatively stable at 7 million cubic feet.
- Arkansas retained 94 percent of its veneer-log production for processing at domestic veneer mills. Imports totaled 16 million cubic feet, while exports totaled 5 million cubic feet, making the State a net importer of roundwood veneer logs.

#### Composite Panels

- There were no composite panel mills operating in 1999. All of the 625 thousand cubic feet (9 thousand cords) of production was exported to other States.

#### Other Industrial Products

- Roundwood harvested for other industrial uses such as poles, posts, mulch, firewood, logs for log homes, and

other industrial products, declined 36 percent to 3 million cubic feet. Softwood constituted 99 percent of the other industrial product volume (fig. 9).

- Ten plants manufactured other industrial products. Total receipts of other industrial products remained stable at 2.5 million cubic feet.
- Exports of other industrial products amounted to 1.2 million cubic feet, while imports totaled 865 thousand cubic feet, making the State a net exporter of roundwood used for other industrial products.

#### Plant Byproducts

- In 1999, processing of primary products in Arkansas mills generated 290 million cubic feet of wood and bark residues. Coarse residues from all primary products amounted to 136 million cubic feet, while bark volume totaled 54 million cubic feet. Sawdust and shavings constituted 34 percent of total residues, or 100 million cubic feet (fig. 10).

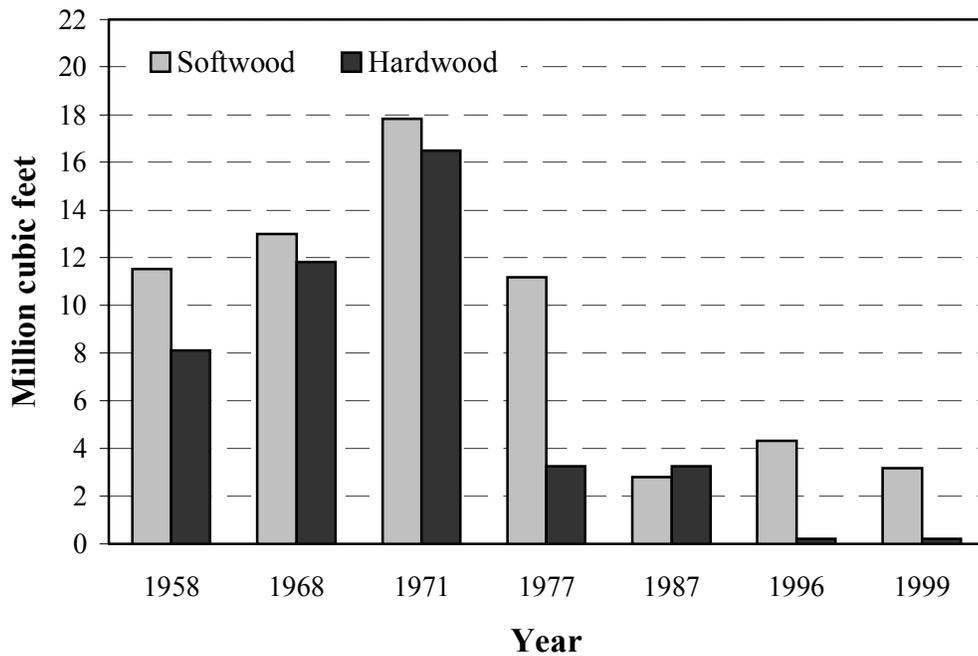


Figure 9—Roundwood production for composite panels by species group and year (see page 10 for references for individual years).

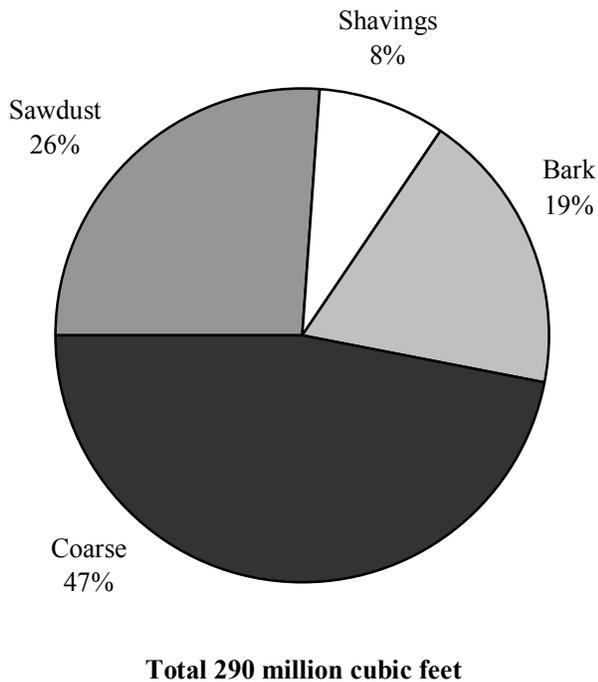


Figure 10—Primary mill residue by residue type, 1999.

- Virtually all of residues were used for a product (fig. 11). One hundred and nine million cubic feet, or 80 percent, of the coarse residues were used for fiber products. Most bark was used as industrial fuel or miscellaneous products, while 79 percent of the sawdust and shavings was used for industrial fuel.
- The processing of saw logs generated 217 million cubic feet of residue, accounting for 75 percent of the total residue produced (fig. 12).

## Regional Trends

### South Delta Region

- Roundwood output from the South Delta region totaled 38 million cubic feet, the same as in 1996. Hardwood production was down 1 percent to 29 million cubic feet, however, softwood production increased 6 percent, or 532 thousand cubic feet, to 10 million cubic feet.
- Pulpwood production of 22 million cubic feet accounted for 57 percent of the region's TPO and 8 percent of the State's roundwood pulpwood output. Saw-log production

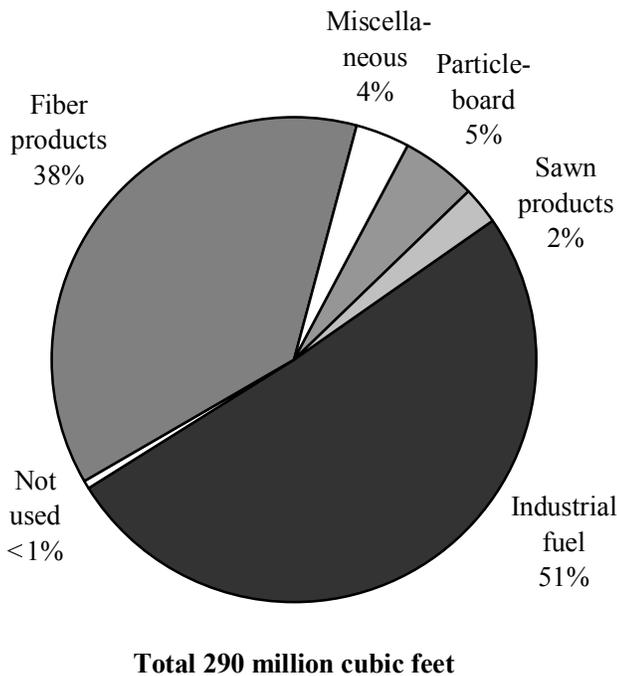


Figure 11—Disposal of residue by product, 1999.

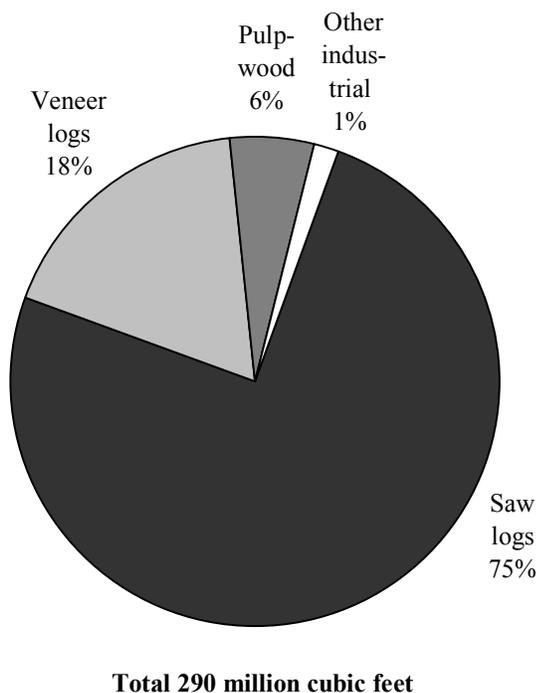


Figure 12—Primary mill residue produced by roundwood type, 1999.

of 12 million cubic feet accounted for 31 percent of the total roundwood output for the region.

- Sixteen primary wood-using plants were operating in the South Delta region during 1999: 12 sawmills, 3 pulpmills, and 1 veneer or plywood mill. These mills processed 6 percent of the State's total roundwood output.

### North Delta Region

- Ten million cubic feet of roundwood were produced in the North Delta region, a decline of 27 percent since 1996. Softwood production was down 41 percent to 1.3 million cubic feet, while hardwood declined 25 percent to 8.4 million cubic feet.
- Saw-log production declined 18 percent to 8 million cubic feet and accounted for 85 percent of the total roundwood output for the region. Pulpwood production dropped 78 percent to 535 thousand cubic feet and only accounted for 6 percent of the region's TPO and less than 1 percent of the State's roundwood pulpwood output.
- Thirty-three primary wood-using mills were operating in the North Delta region in 1999: 32 sawmills and 1 other miscellaneous mill. These mills processed 1 percent of the State's total roundwood output.

### Southwest Region

- Roundwood output from the Southwest region of Arkansas totaled 482 million cubic feet, an increase of 8 percent since 1996. Roundwood production from this region accounted for 70 percent of the total roundwood TPO for the State. Softwood production was up 15 percent to 376 million cubic feet, while hardwood output dropped 11 percent to 106 million cubic feet.
- Saw-log production was up 8 percent to 205 million cubic feet, accounting for 43 percent of the region's total roundwood output and 64 percent of the State's saw-log production. Pulpwood production increased 7 percent to 213 million cubic feet and accounted for 44 percent of the region's total TPO and 75 percent of the State's total pulpwood production.
- The 85 primary wood-using plants operating in the Southwest region included: 73 sawmills, 6 veneer or plywood mills, 3 pulpmills, and 3 other miscellaneous mills.

### Ouachita Region

- Roundwood output from the Ouachita region totaled 100 million cubic feet, an increase of 19 percent since 1996. Softwood production was up 26 percent to 83 million cubic feet, while hardwood production dropped 7 percent to 16 million cubic feet.
- Saw-log production declined 6 percent to 51 million cubic feet and accounted for 51 percent of the region's total roundwood output. Pulpwood production more than doubled to 32 million cubic feet accounted for 33 percent of the region's total TPO.
- Forty-five primary wood-using plants were operating during 1999: 38 sawmills, 3 veneer or plywood mills, 1 pulpmill, and 3 other miscellaneous mills.

### Ozark Region

- Sixty-two million cubic feet of roundwood were produced in the Ozark region, an increase of 13 percent. Softwood production was up 33 percent to 24 million cubic feet, while hardwood production increased 3 percent to 37 million cubic feet.
- Saw-log production declined 10 percent to 44 million cubic feet and accounted for 71 percent of the region's total roundwood output. Pulpwood production increased threefold to 18 million cubic feet and accounted for 29 percent of the region's total TPO.
- One hundred fifty-seven primary wood-using plants were operating in the Ozark region during 1999: 153 sawmills, 1 pulpmill, and 3 other miscellaneous mills.

### Total Roundwood Output

- Using the most recent inventory data for Arkansas, product output by source, ownership, and detailed species group were estimated.

### Source

- In addition to the 692 million cubic feet of roundwood output for industrial roundwood, an estimated 29 million cubic feet were harvested for domestic fuelwood, bringing Arkansas's total roundwood output to 721 million cubic feet.

- Ninety-two percent of total roundwood output was considered growing-stock volume (sawtimber and poletimber) from timberland sources. Other sources (such as saplings, stumps, tops, limbs of trees on timberland, and trees on nonforest land) contributed an estimated 59 million cubic feet, or 8 percent of total roundwood output (fig. 13).

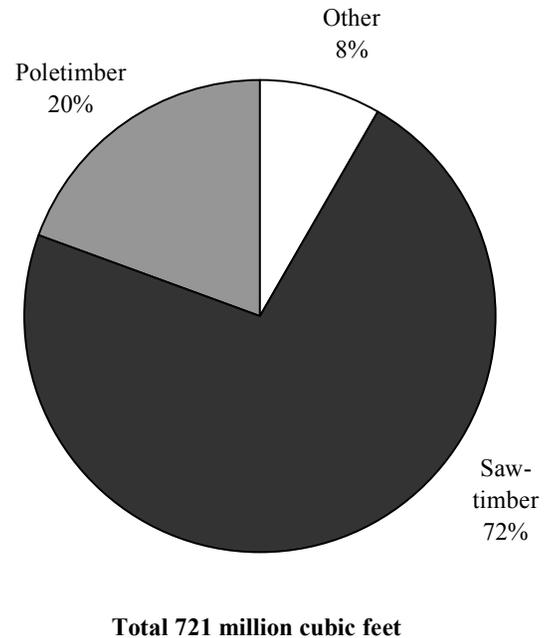


Figure 13—Roundwood output by source, 1999.

### Ownership

- Nonindustrial private forest (NIPF) lands contributed 354 million cubic feet, or 49 percent, of the total roundwood output, while forest industry lands accounted for 317 million cubic feet, or 44 percent of the total output. Public lands made up the remaining 7 percent, or 50 million cubic feet (fig. 14).

### Species

- The loblolly and shortleaf pine group provided the most volume of any softwood species group, accounting for 99 percent of the total softwood output (fig. 15). The cedar,

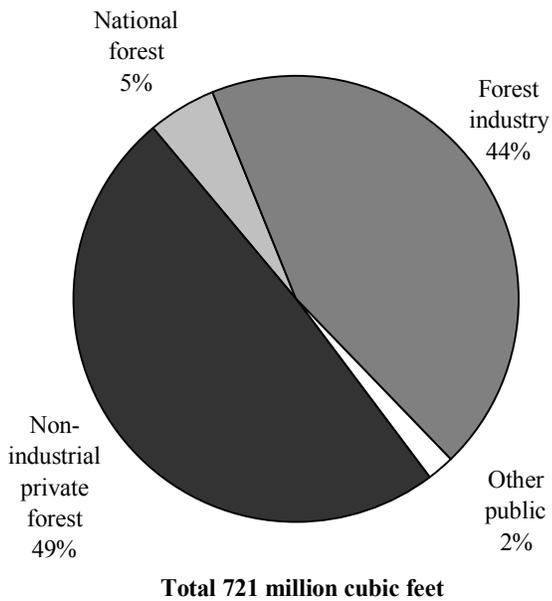


Figure 14—Roundwood output by ownership, 1999.

cypress, and other pine types accounted for the remaining 1 percent of the softwood output. In hardwoods, the red oak and white oak groups, combined, accounted for 127 million cubic feet, or 57 percent of total hardwood output (fig. 16).

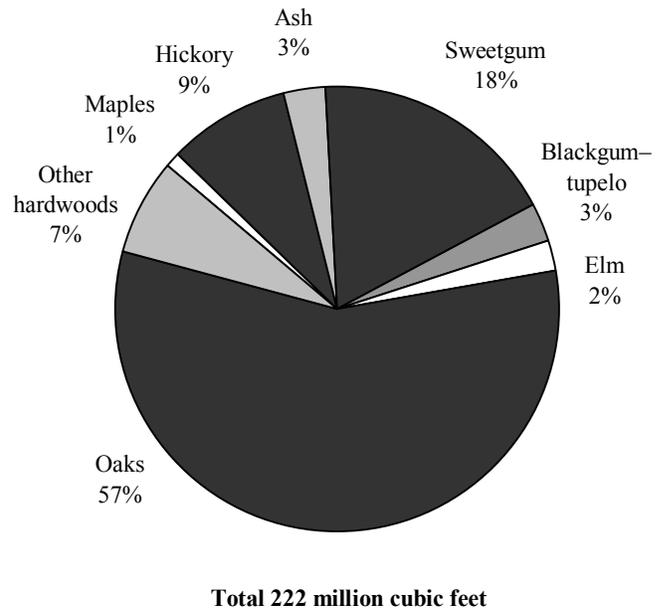


Figure 16—Roundwood output by hardwood species group, 1999.

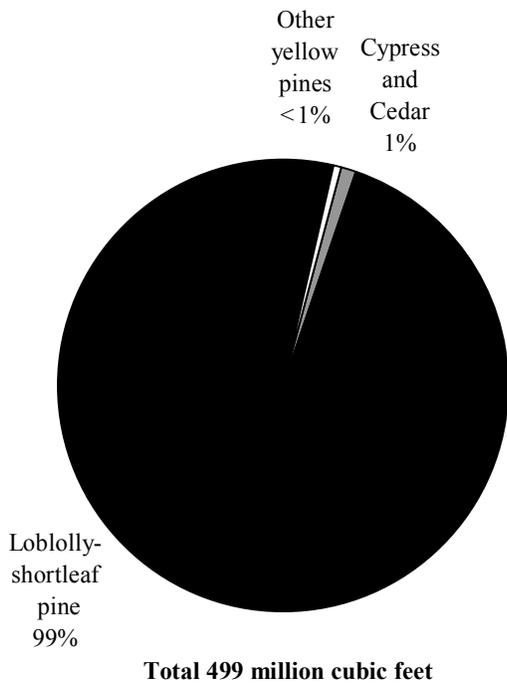


Figure 15—Roundwood output by softwood species group, 1999.

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## Definition of Terms

**Board foot.** Unit of measure applied to roundwood. It relates to lumber that is 1-foot long, 1-foot wide, and 1-inch thick (or its equivalent).

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

**Composite products.** 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 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 waferboard or chipboard.

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

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

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

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

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

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

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

**Imports.** The volume of roundwood delivered to a mill or group of mills in a specific State but harvested outside that State.

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

**Industrial roundwood products.** Any primary use of the main stem of a tree, such as saw logs, pulpwood, veneer logs, intended to be processed into primary wood products such as lumber, wood pulp, sheathing, at primary wood-using mills.

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

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

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

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

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

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

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

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

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

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

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

**Other sources.** (see: Nongrowing-stock sources.)

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

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

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

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

Corporate. Owned by corporations, including incorporated farm ownerships.

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

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

Miscellaneous Federal land. Federal land other than national forests.

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

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

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

*Fine residues.* Material, such as sawdust, shavings, and veneer chippings, 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.

**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.

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

**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 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 chipboard, fiberboard, insulating board, and paperboard.

**Receipts.** The quantity or volume of industrial roundwood received at a mill or by a group of mills in a State, regardless of the geographic source. Volume of roundwood receipts is equal to the volume of roundwood retained in a State plus roundwood imported from other States.

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

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

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

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

**Roundwood chipped.** Any timber cut primarily for industrial manufacture, delivered to nonpulp mills, chipped, and then sold to pulp mills for use as fiber. Includes tops, jump sections, whole trees, and pulpwood sticks.

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

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

**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.

**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 less than 1.0 inch d.b.h. and greater than 1 foot tall for hardwoods, greater than 6 inches tall for softwood, and greater than 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 scalelike.

**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 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 products.** Roundwood products and byproducts.

**Timber products output.** The total volume of roundwood products from all sources plus the volume of byproducts

recovered from mill residues (equals roundwood product drain).

**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).

### Conversion Factors<sup>a</sup>

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#### 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

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<sup>a</sup> Conversion factors vary with stem size (d.b.h.) and species.

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

## Index of Tables

1. Output of industrial products by product and species group, Arkansas, 1996 and 1999
2. Roundwood receipts by product and species group, Arkansas, 1996 and 1999
3. Number of primary wood-using plants by industry, Arkansas, 1948–1999
4. Roundwood receipts by sawmill size, Arkansas, 1996 and 1999
5. Roundwood receipts by species and type of mill, Arkansas, 1999
6. Industrial roundwood movement by year and species group, Arkansas, 1996 and 1999
7. Industrial roundwood movement by product and species group, Arkansas, 1999
8. Saw-log volume by destination, source, and species group, Arkansas, 1999
9. Veneer volume by destination, source, and species group, Arkansas, 1999
10. Pulpwood volume by destination, source, and species group, Arkansas, 1999
11. Composite panel volume by destination, source, and species group, Arkansas, 1999
12. Other industrial volume by destination, source, and species group, Arkansas, 1999
13. Primary mill residue volume by roundwood type, species group, and residue type, Arkansas, 1999
14. Disposal of residue at primary wood-using plants by product, species group, and type of residue, Arkansas, 1996 and 1999
15. Roundwood timber products output by product and species group, South Delta Region of Arkansas, 1996 and 1999
16. Roundwood timber products output by county, product, and species group, South Delta Region of Arkansas, 1999
17. Roundwood timber products output by product and species group, North Delta Region of Arkansas, 1996 and 1999
18. Roundwood timber products output by county, product, and species group, North Delta Region of Arkansas, 1999
19. Roundwood timber products output by product and species group, Southwest Region of Arkansas, 1996 and 1999
20. Roundwood timber products output by county, product, and species group, Southwest Region of Arkansas, 1999
21. Roundwood timber products output by product and species group, Ouachita Region of Arkansas, 1996 and 1999
22. Roundwood timber products output by county, product, and species group, Ouachita Region of Arkansas, 1999
23. Roundwood timber products output by product and species group, Ozark Region of Arkansas, 1996 and 1999
24. Roundwood timber products output by county, product, and species group, Ozark Region of Arkansas, 1999
25. Total roundwood output by product, species group, and source of material, Arkansas, 1999
26. Total roundwood output by species group, survey unit, and ownership class, Arkansas, 1999
27. Total roundwood output by species group, detailed species group, and product, Arkansas, 1999
28. Total roundwood output by species group, detailed species group, and ownership class, Arkansas, 1999



**Table 1—Output of industrial products by product and species group, Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	225,807	231,530	5,723	2.5
Hardwood	88,965	88,325	-640	-0.7
Total	314,772	319,855	5,083	1.6
<b>Veneer logs</b>				
Softwood	68,257	77,621	9,364	13.7
Hardwood	6,047	5,927	-120	-2.0
Total	74,304	83,548	9,244	12.4
<b>Pulpwood<sup>a</sup></b>				
Softwood	125,131	182,819	57,688	46.1
Hardwood	117,344	102,146	-15,198	-13.0
Total	242,475	284,965	42,490	17.5
<b>Composite panels</b>				
Softwood	50	437	387	774.0
Hardwood	187	188	1	0.5
Total	237	625	388	163.7
<b>Other industrial</b>				
Softwood	4,279	2,725	-1,554	-36.3
Hardwood	11	28	17	154.5
Total	4,290	2,753	-1,537	-35.8
<b>All industrial</b>				
Softwood	423,524	495,132	71,608	16.9
Hardwood	212,554	196,614	-15,940	-7.5
Total	636,078	691,746	55,668	8.8
<b>Byproduct output</b>				
Softwood	208,534	220,430	11,896	5.7
Hardwood	77,180	69,230	-7,950	-10.3
Total	285,714	289,660	3,946	1.4
<b>Total output</b>				
Softwood	632,058	715,562	83,504	13.2
Hardwood	289,734	265,844	-23,890	-8.2
Total	921,792	981,406	59,614	6.5

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulp mills (5,083,000 cubic feet in 1996 and 4,636,000 cubic feet in 1999).

**Table 2—Roundwood receipts by product and species group, Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	251,001	263,441	12,440	5.0
Hardwood	87,308	89,150	1,842	2.1
Total	338,309	352,591	14,282	4.2
<b>Veneer logs</b>				
Softwood	77,593	87,509	9,916	12.8
Hardwood	7,185	7,195	10	0.1
Total	84,778	94,704	9,926	11.7
<b>Pulpwood<sup>a</sup></b>				
Softwood	101,937	117,160	15,223	14.9
Hardwood	133,076	114,445	-18,631	-14.0
Total	235,013	231,605	-3,408	-1.5
<b>Composite panels</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>Other industrial</b>				
Softwood	2,460	2,463	3	0.1
Hardwood	0	0	0	--
Total	2,460	2,463	3	0.1
<b>Total output</b>				
Softwood	432,991	470,573	37,582	8.7
Hardwood	227,569	210,790	-16,779	-7.4
Total	660,560	681,363	20,803	3.1

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (5,685,000 cubic feet in 1996 and 5,055,000 cubic feet in 1999).

**Table 3—Number of primary wood-using plants by industry, Arkansas, 1948–1999**

Industry	Year							
	1948	1958	1968	1971	1977	1987	1996	1999
Sawmills	1,736	974	448	278	384	274	286	308
Veneer or plywood mills	23	11	12	13	8	8	10	10
Pulpmills	2	4	7	7	8	8	8	8
Composite panel mills	0	0	0	0	0	0	0	0
Other mills	146	79	104	108	72	35	15	10
All plants	1,761	989	467	298	400	290	319	336

**Table 4—Roundwood receipts by sawmill size, Arkansas, 1996 and 1999**

Sawmill size class <sup>a</sup>	1996			1999		
	Number of mills <sup>b</sup>	Thousand board feet	Percent of volume	Number of mills <sup>b</sup>	Thousand board feet	Percent of volume
<i>Million board feet</i>						
1.0–4.99	66	204,764	11	64	199,671	10
5.0–9.99	28	193,616	10	28	194,480	9
10.0–49.99	19	334,231	17	22	421,092	20
>50	14	1,187,816	62	14	1,296,794	61
Total	127	1,920,427	100	128	2,112,037	100

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

<sup>b</sup> Mills less than 1.0 million board feet were not included.

**Table 5—Roundwood receipts by species and type of mill, Arkansas, 1999**

Species	Type of mill						
	All mills	Veneer mills			OSB <sup>a</sup> and panels	Pulpmills <sup>b</sup>	Other mills
		Sawmills	Pine plywood	Other veneer			
<i>Thousand cubic feet</i>							
<b>Softwood</b>							
Yellow pine	353,413	263,441	87,509	0	0	NA	2,463
White pine	0	0	0	0	0	NA	0
Cedar	0	0	0	0	0	NA	0
Cypress	0	0	0	0	0	NA	0
Other softwood	0	0	0	0	0	NA	0
Unclassified	117,160	0	0	0	0	117,160	0
Total softwoods	470,573	263,441	87,509	0	0	117,160	2,463
<b>Hardwood</b>							
Blackgum and tupelo	1,968	1,367	451	150	0	NA	0
Soft maple	226	0	226	0	0	NA	0
Sweetgum	9,515	8,549	451	515	0	NA	0
Yellow-poplar	9,466	8,600	451	415	0	NA	0
Other soft hardwood	7,673	6,134	902	637	0	NA	0
Hickory	7,991	7,472	451	68	0	NA	0
Red oak	29,844	28,909	451	484	0	NA	0
White oak	23,919	23,189	452	278	0	NA	0
Other hard hardwood	5,743	4,930	677	136	0	NA	0
Unclassified	114,445	0	0	0	0	114,445	0
Total hardwoods	210,790	89,150	4,512	2,683	0	114,445	0
All species	681,363	352,591	92,021	2,683	0	231,605	2,463

NA = not applicable.

<sup>a</sup> OSB = oriented strand board.

<sup>b</sup> Collected only by softwood and hardwood and includes roundwood chipped.

**Table 6—Industrial roundwood movement by year and species group, Arkansas, 1996 and 1999**

Year	Production	Exported to other States	Retained	Imported from other States	Receipts
<i>Thousand cubic feet</i>					
<b>Softwood</b>					
1996	423,524	63,738	359,786	73,205	432,991
1999	495,132	94,184	400,948	69,625	470,573
<b>Hardwood</b>					
1996	212,554	27,935	184,619	42,950	227,569
1999	196,614	28,272	168,342	42,448	210,790
<b>All species</b>					
1996	636,078	91,673	544,405	116,155	660,560
1999	691,746	122,456	569,290	112,073	681,363

**Table 7—Industrial roundwood movement by product and species group, Arkansas, 1999**

Product and species group	Production	Exported to other States	Retained	Imported from other States	Receipts
<i>Thousand cubic feet</i>					
<b>Saw logs</b>					
Softwood	231,530	14,598	216,932	46,509	263,441
Hardwood	88,325	4,517	83,808	5,342	89,150
Total	319,855	19,115	300,740	51,851	352,591
<b>Veneer logs</b>					
Softwood	77,621	4,649	72,972	14,537	87,509
Hardwood	5,927	0	5,927	1,268	7,195
Total	83,548	4,649	78,899	15,805	94,704
<b>Pulpwood</b>					
Softwood	182,819	73,373	109,446	7,714	117,160
Hardwood	102,146	23,539	78,607	35,838	114,445
Total	284,965	96,912	188,053	43,552	231,605
<b>Composite panels</b>					
Softwood	437	437	0	0	0
Hardwood	188	188	0	0	0
Total	625	625	0	0	0
<b>Other industrial</b>					
Softwood	2,725	1,127	1,598	865	2,463
Hardwood	28	28	0	0	0
Total	2,753	1,155	1,598	865	2,463
<b>All products</b>					
Softwood	495,132	94,184	400,948	69,625	470,573
Hardwood	196,614	28,272	168,342	42,448	210,790
Total	691,746	122,456	569,290	112,073	681,363

**Table 8—Saw-log volume by destination, source, and species group, Arkansas, 1999**

Destination and source	All species	Species group	
		Softwood	Hardwood
<i>Thousand cubic feet</i>			
<b>Arkansas (retained)</b>	300,740	216,932	83,808
<b>Exports to:</b>			
Louisiana	7,796	6,777	1,019
Mississippi	176	9	167
Missouri	1,953	76	1,877
Oklahoma	9,190	7,736	1,454
Total	19,115	14,598	4,517
<b>Imports from:</b>			
Louisiana	34,126	30,712	3,414
Mississippi	491	0	491
Missouri	968	72	896
Oklahoma	6,018	5,477	541
Texas	10,248	10,248	0
Total	51,851	46,509	5,342

**Table 9—Veneer volume by destination, source, and species group, Arkansas, 1999**

Destination and source	All species	Species group	
		Softwood	Hardwood
<i>Thousand cubic feet</i>			
<b>Arkansas (retained)</b>	78,899	72,972	5,927
<b>Exports to:</b>			
Louisiana	4,649	4,649	0
Total	4,649	4,649	0
<b>Imports from:</b>			
Louisiana	13,510	13,510	0
Mississippi	1,268	0	1,268
Oklahoma	1,027	1,027	0
Total	15,805	14,537	1,268

**Table 10—Pulpwood volume by destination, source, and species group, Arkansas, 1999<sup>a</sup>**

Destination and source	All species	Species group	
		Softwood	Hardwood
<i>Thousand cubic feet</i>			
<b>Arkansas (retained)</b>	188,053	109,446	78,607
<b>Exports to:</b>			
Alabama	7	5	2
Louisiana	40,197	29,924	10,273
Mississippi	544	234	310
Oklahoma	26,961	26,181	780
Texas	29,202	17,029	12,173
Virginia	1	0	1
Total	96,912	73,373	23,539
<b>Imports from:</b>			
Louisiana	9,628	1,978	7,650
Mississippi	1,331	3	1,328
Oklahoma	14,649	4,235	10,414
Texas	17,944	1,498	16,446
Total	43,552	7,714	35,838

<sup>a</sup> Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills.

**Table 11—Composite panel volume by destination, source, and species group, Arkansas, 1999**

Destination and source	All species	Species group	
		Softwood	Hardwood
<i>Thousand cubic feet</i>			
Arkansas (retained)	0	0	0
<b>Exports to:</b>			
Louisiana	625	437	188
Total	625	437	188

**Table 12—Other industrial volume by destination, source, and species group, Arkansas, 1999<sup>a</sup>**

Destination and source	All species	Species group	
		Softwood	Hardwood
<i>Thousand cubic feet</i>			
Arkansas (retained)	1,598	1,598	0
<b>Exports to:</b>			
Missouri	93	65	28
Oklahoma	1,062	1,062	0
Total	1,155	1,127	28
<b>Imports from:</b>			
Louisiana	304	304	0
Oklahoma	129	129	0
Texas	432	432	0
Total	865	865	0

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

**Table 13—Primary mill residue volume by roundwood type, species group, and residue type, Arkansas, 1999**

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
<i>Thousand cubic feet</i>					
<b>Saw logs</b>					
Softwood	158,158	17,660	71,346	46,656	22,496
Hardwood	59,234	9,062	30,027	17,940	2,205
Total	217,392	26,722	101,373	64,596	24,701
<b>Veneer logs</b>					
Softwood	48,694	6,076	32,552	10,066	0
Hardwood	2,668	779	1,246	643	0
Total	51,362	6,855	33,798	10,709	0
<b>Pulpwood</b>					
Softwood	9,014	9,014	0	0	0
Hardwood	7,498	7,498	0	0	0
Total	16,512	16,512	0	0	0
<b>Composite panels</b>					
Softwood	0	0	0	0	0
Hardwood	0	0	0	0	0
Total	0	0	0	0	0
<b>Other industrial<sup>a</sup></b>					
Softwood	4,564	3,780	784	0	0
Hardwood	0	0	0	0	0
Total	4,564	3,780	784	0	0
<b>Total</b>					
Softwood	220,430	36,530	104,682	56,722	22,496
Hardwood	69,400	17,339	31,273	18,583	2,205
Total	289,830	53,869	135,955	75,305	24,701

<sup>a</sup> Includes poles, pilings, posts, and other industrial products.

**Table 14—Disposal of residue at primary wood-using plants by product, species group, and type of residue, Arkansas, 1996 and 1999**

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	1996	1999	1996	1999	1996	1999	1996	1999	1996	1999
<i>Thousand cubic feet</i>										
<b>Fiber products</b>										
Softwood	85,310	90,994	0	0	84,814	90,452	0	0	496	542
Hardwood	18,273	18,648	12	0	18,261	18,648	0	0	0	0
Total	103,583	109,642	12	0	103,075	109,100	0	0	496	542
<b>Particleboard</b>										
Softwood	15,600	14,321	0	0	0	0	0	0	15,600	14,321
Hardwood	0	0	0	0	0	0	0	0	0	0
Total	15,600	14,321	0	0	0	0	0	0	15,600	14,321
<b>Charcoal/chemical wood</b>										
Softwood	2,065	2,065	0	0	2,065	2,065	0	0	0	0
Hardwood	0	0	0	0	0	0	0	0	0	0
Total	2,065	2,065	0	0	2,065	2,065	0	0	0	0
<b>Sawn products</b>										
Softwood	6,810	7,447	0	0	6,810	7,447	0	0	0	0
Hardwood	0	0	0	0	0	0	0	0	0	0
Total	6,810	7,447	0	0	6,810	7,447	0	0	0	0
<b>Fuel</b>										
Softwood	93,532	98,961	34,486	34,958	4,094	4,718	51,829	55,546	3,123	3,739
Hardwood	58,034	49,040	26,083	16,779	12,055	12,079	17,897	18,088	1,999	2,094
Total	151,566	148,001	60,569	51,737	16,149	16,797	69,726	73,634	5,122	5,833
<b>Miscellaneous</b>										
Softwood	5,217	6,642	1,547	1,572	0	0	1,506	1,176	2,164	3,894
Hardwood	873	1,542	225	533	270	456	267	442	111	111
Total	6,090	8,184	1,772	2,105	270	456	1,773	1,618	2,275	4,005
<b>Not used</b>										
Softwood	0	0	0	0	0	0	0	0	0	0
Hardwood	170	170	27	27	90	90	53	53	0	0
Total	170	170	27	27	90	90	53	53	0	0
<b>All products</b>										
Softwood	208,534	220,430	36,033	36,530	97,783	104,682	53,335	56,722	21,383	22,496
Hardwood	77,350	69,400	26,347	17,339	30,676	31,273	18,217	18,583	2,110	2,205
Total	285,884	289,830	62,380	53,869	128,459	135,955	71,552	75,305	23,493	24,701

**Table 15—Roundwood timber products output by product and species group, South Delta Region of Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	1,741	2,184	443	25.4
Hardwood	10,830	9,754	-1,076	-9.9
Total	12,571	11,938	-633	-5.0
<b>Veneer logs</b>				
Softwood	1,585	2,032	447	28.2
Hardwood	2,724	2,725	1	0.0
Total	4,309	4,757	448	10.4
<b>Pulpwood<sup>a</sup></b>				
Softwood	5,713	5,383	-330	-5.8
Hardwood	15,689	16,358	669	4.3
Total	21,402	21,741	339	1.6
<b>Composite panels</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>Other industrial</b>				
Softwood	28	0	-28	-100.0
Hardwood	0	0	0	--
Total	28	0	-28	-100.0
<b>All industrial</b>				
Softwood	9,067	9,599	532	5.9
Hardwood	29,243	28,837	-406	-1.4
Total	38,310	38,436	126	0.3

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (45,000 cubic feet in 1996 and 28,000 cubic feet in 1999).

**Table 16—Roundwood timber products output by county, product, and species group, South Delta Region of Arkansas, 1999**

County	All products		Saw logs		Veneer logs		Pulpwood <sup>a</sup>		Composite panel		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
<i>Thousand cubic feet</i>												
Arkansas	323	3,782	84	1,427	0	691	239	1,664	0	0	0	0
Chicot	197	4,396	0	245	0	0	197	4,151	0	0	0	0
Desha	16	2,776	0	455	0	496	16	1,825	0	0	0	0
Jefferson	6,575	3,580	1,800	1,250	2,032	164	2,743	2,166	0	0	0	0
Lee	4	1,968	4	1,040	0	676	0	252	0	0	0	0
Lincoln	2,093	5,941	0	741	0	0	2,093	5,200	0	0	0	0
Lonoke	196	1,663	103	1,163	0	112	93	388	0	0	0	0
Monroe	99	1,534	99	1,382	0	0	0	152	0	0	0	0
Phillips	2	1,699	0	748	0	586	2	365	0	0	0	0
Prairie	94	1,498	94	1,303	0	0	0	195	0	0	0	0
All counties	9,599	28,837	2,184	9,754	2,032	2,725	5,383	16,358	0	0	0	0

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (28,000 cubic feet in 1999).

**Table 17—Roundwood timber products output by product and species group, North Delta Region of Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	1,252	1,277	25	2.0
Hardwood	8,757	6,964	-1,793	-20.5
Total	10,009	8,241	-1,768	-17.7
<b>Veneer logs</b>				
Softwood	0	0	0	--
Hardwood	987	945	-42	-4.3
Total	987	945	-42	-4.3
<b>Pulpwood<sup>a</sup></b>				
Softwood	927	12	-915	-98.7
Hardwood	1,449	523	-926	-63.9
Total	2,376	535	-1,841	-77.5
<b>Composite panels</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>Other industrial</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>All industrial</b>				
Softwood	2,179	1,289	-890	-40.8
Hardwood	11,193	8,432	-2,761	-24.7
Total	13,372	9,721	-3,651	-27.3

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (30,000 cubic feet in 1996 and 30,000 cubic feet in 1999).

**Table 18—Roundwood timber products output by county, product, and species group, North Delta Region of Arkansas, 1999**

County	All products		Saw logs		Veneer logs		Pulpwood <sup>a</sup>		Composite panel		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	<i>Thousand cubic feet</i>											
Clay	98	191	98	191	0	0	0	0	0	0	0	0
Craighead	2	0	0	0	0	0	2	0	0	0	0	0
Crittenden	0	488	0	488	0	0	0	0	0	0	0	0
Cross	0	1,034	0	453	0	540	0	41	0	0	0	0
Greene	72	275	72	275	0	0	0	0	0	0	0	0
Jackson	0	1,233	0	1,179	0	0	0	54	0	0	0	0
Lawrence	1,113	1,353	1,103	1,300	0	0	10	53	0	0	0	0
Mississippi	0	782	0	782	0	0	0	0	0	0	0	0
Poinsett	0	3	0	0	0	0	0	3	0	0	0	0
St. Francis	4	1,541	4	776	0	405	0	360	0	0	0	0
Woodruff	0	1,532	0	1,520	0	0	0	12	0	0	0	0
<b>All counties</b>	<b>1,289</b>	<b>8,432</b>	<b>1,277</b>	<b>6,964</b>	<b>0</b>	<b>945</b>	<b>12</b>	<b>523</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (30,000 cubic feet in 1999).

**Table 19—Roundwood timber products output by product and species group, Southwest Region of Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	159,526	174,026	14,500	9.1
Hardwood	30,195	31,148	953	3.2
Total	189,721	205,174	15,453	8.1
<b>Veneer logs</b>				
Softwood	52,388	60,410	8,022	15.3
Hardwood	839	839	0	--
Total	53,227	61,249	8,022	15.1
<b>Pulpwood<sup>a</sup></b>				
Softwood	111,822	138,966	27,144	24.3
Hardwood	87,317	73,720	-13,597	-15.6
Total	199,139	212,686	13,547	6.8
<b>Composite panels</b>				
Softwood	50	437	387	774.0
Hardwood	187	188	1	0.5
Total	237	625	388	163.7
<b>Other industrial</b>				
Softwood	3,919	2,552	-1,367	-34.9
Hardwood	0	0	0	--
Total	3,919	2,552	-1,367	-34.9
<b>All industrial</b>				
Softwood	327,705	376,391	48,686	14.9
Hardwood	118,538	105,895	-12,643	-10.7
Total	446,243	482,286	36,043	8.1

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (3,016,000 cubic feet in 1996 and 2,618,000 cubic feet in 1999).

**Table 20—Roundwood timber products output by county, product, and species group, Southwest Region of Arkansas, 1999**

County	All products		Saw logs		Veneer logs		Pulpwood <sup>a</sup>		Composite panel		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
<i>Thousand cubic feet</i>												
Ashley	13,309	5,623	7,295	1,556	1,459	0	4,555	4,067	0	0	0	0
Bradley	15,190	7,150	6,616	2,156	1,950	0	6,624	4,994	0	0	0	0
Calhoun	19,784	3,969	8,654	2,119	3,970	0	7,160	1,850	0	0	0	0
Clark	21,800	2,563	12,615	1,537	2,921	0	6,234	1,026	0	0	30	0
Cleveland	18,264	4,405	9,281	1,776	4,471	0	4,512	2,629	0	0	0	0
Columbia	20,484	5,660	10,017	2,251	5,124	0	4,978	3,409	193	0	172	0
Dallas	24,438	3,359	11,213	1,498	4,116	0	9,109	1,861	0	0	0	0
Drew	9,353	8,913	1,259	1,077	2,204	0	5,890	7,836	0	0	0	0
Grant	28,974	5,096	13,314	1,894	3,337	109	12,323	3,093	0	0	0	0
Hempstead	21,103	2,609	12,496	1,104	3,776	85	4,641	1,420	0	0	190	0
Hot Spring	15,973	2,153	10,998	1,267	2,971	164	2,004	722	0	0	0	0
Howard	20,531	3,310	4,845	1,205	529	153	14,563	1,952	0	0	594	0
Lafayette	15,522	3,363	6,952	855	4,449	0	3,992	2,444	0	64	129	0
Little River	15,816	4,106	5,177	590	0	96	10,138	3,420	0	0	501	0
Miller	9,946	4,249	5,888	447	1,992	0	1,958	3,802	0	0	108	0
Nevada	19,510	11,032	11,156	1,063	2,387	0	5,859	9,907	0	62	108	0
Ouachita	20,014	5,247	9,615	2,858	4,898	0	5,501	2,389	0	0	0	0
Pike	17,120	3,295	8,593	1,519	2,492	102	5,906	1,674	0	0	129	0
Sevier	18,801	2,258	6,788	1,338	1,026	130	10,396	790	0	0	591	0
Union	30,459	17,535	11,254	3,038	6,338	0	12,623	14,435	244	62	0	0
All counties	376,391	105,895	174,026	31,148	60,410	839	138,966	73,720	437	188	2,552	0

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (2,618,000 cubic feet in 1999).

**Table 21—Roundwood timber products output by product and species group, Ouachita Region of Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	45,806	42,273	-3,533	-7.7
Hardwood	8,267	8,502	235	2.8
Total	54,073	50,775	-3,298	-6.1
<b>Veneer logs</b>				
Softwood	14,284	15,179	895	6.3
Hardwood	1,193	1,193	0	--
Total	15,477	16,372	895	5.8
<b>Pulpwood<sup>a</sup></b>				
Softwood	6,025	25,842	19,817	328.9
Hardwood	8,080	6,590	-1,490	-18.4
Total	14,105	32,432	18,327	129.9
<b>Composite panels</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>Other industrial</b>				
Softwood	107	107	0	--
Hardwood	0	0	0	--
Total	107	107	0	--
<b>All industrial</b>				
Softwood	66,222	83,401	17,179	25.9
Hardwood	17,540	16,285	-1,255	-7.2
Total	83,762	99,686	15,924	19.0

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (1,350,000 cubic feet in 1996 and 1,204,000 cubic feet in 1999).

**Table 22—Roundwood timber products output by county, product, and species group, Ouachita Region of Arkansas, 1999**

County	All products		Saw logs		Veneer logs		Pulpwood <sup>a</sup>		Composite panel		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	<i>Thousand cubic feet</i>											
Garland	13,557	1,708	8,474	1,292	4,139	205	944	211	0	0	0	0
Logan	2,543	617	1,427	608	0	0	1,116	9	0	0	0	0
Montgomery	14,557	1,792	6,577	1,702	2,516	0	5,464	90	0	0	0	0
Perry	4,220	678	2,600	408	683	205	937	65	0	0	0	0
Polk	15,322	6,247	7,298	1,952	1,282	0	6,665	4,295	0	0	77	0
Pulaski	4,601	1,189	1,719	490	1,542	297	1,340	402	0	0	0	0
Saline	13,723	2,107	5,632	804	1,950	308	6,141	995	0	0	0	0
Scott	4,499	1,064	2,779	555	683	0	1,007	509	0	0	30	0
Sebastian	306	0	297	0	0	0	9	0	0	0	0	0
Yell	10,073	883	5,470	691	2,384	178	2,219	14	0	0	0	0
All counties	83,401	16,285	42,273	8,502	15,179	1,193	25,842	6,590	0	0	107	0

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulp mills (1,204,000 cubic feet in 1999).

**Table 23—Roundwood timber products output by product and species group, Ozark Region of Arkansas, 1996 and 1999**

Product and species group	Year		Change	Percent change
	1996	1999		
<i>Thousand cubic feet</i>				
<b>Saw logs</b>				
Softwood	17,482	11,770	-5,712	-32.7
Hardwood	30,916	31,957	1,041	3.4
Total	48,398	43,727	-4,671	-9.7
<b>Veneer logs</b>				
Softwood	0	0	0	--
Hardwood	304	225	-79	-26.0
Total	304	225	-79	-26.0
<b>Pulpwood<sup>a</sup></b>				
Softwood	644	12,616	11,972	1,859.0
Hardwood	4,809	4,955	146	3.0
Total	5,453	17,571	12,118	222.2
<b>Composite panels</b>				
Softwood	0	0	0	--
Hardwood	0	0	0	--
Total	0	0	0	--
<b>Other industrial</b>				
Softwood	225	66	-159	-70.7
Hardwood	11	28	17	154.5
Total	236	94	-142	-60.2
<b>All industrial</b>				
Softwood	18,351	24,452	6,101	33.2
Hardwood	36,040	37,165	1,125	3.1
Total	54,391	61,617	7,226	13.3

-- = negligible.

<sup>a</sup> Includes roundwood delivered to nonpulp mills, then chipped and sold to pulpmills (642,000 cubic feet in 1996 and 756,000 cubic feet in 1999).

**Table 24—Roundwood timber products output by county, product, and species group, Ozark Region of Arkansas, 1999**

County	All products		Saw logs		Veneer logs		Pulpwood <sup>a</sup>		Composite panel		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
<i>Thousand cubic feet</i>												
Baxter	326	691	271	687	0	0	55	4	0	0	0	0
Benton	0	1,869	0	1,841	0	0	0	0	0	0	0	28
Boone	70	847	70	840	0	0	0	7	0	0	0	0
Carroll	145	1,127	79	1,127	0	0	0	0	0	0	66	0
Cleburne	2,456	2,249	296	1,015	0	0	2,160	1,234	0	0	0	0
Conway	4,301	46	2,001	0	0	0	2,300	46	0	0	0	0
Crawford	125	1,505	65	1,477	0	0	60	28	0	0	0	0
Faulkner	351	211	0	0	0	150	351	61	0	0	0	0
Franklin	499	1,244	254	1,244	0	0	245	0	0	0	0	0
Fulton	351	1,857	351	1,856	0	0	0	1	0	0	0	0
Independence	1,312	3,109	560	1,945	0	0	752	1,164	0	0	0	0
Izard	573	1,285	445	1,284	0	0	128	1	0	0	0	0
Johnson	2,546	887	1,817	883	0	0	729	4	0	0	0	0
Madison	79	1,999	79	1,999	0	0	0	0	0	0	0	0
Marion	193	1,441	193	1,025	0	0	0	416	0	0	0	0
Newton	329	2,312	318	2,295	0	0	11	17	0	0	0	0
Pope	3,856	1,479	2,515	1,457	0	0	1,341	22	0	0	0	0
Randolph	201	1,242	201	1,242	0	0	0	0	0	0	0	0
Searcy	340	1,540	298	1,450	0	0	42	90	0	0	0	0
Sharp	216	1,609	216	1,609	0	0	0	0	0	0	0	0
Stone	2,218	2,529	463	1,915	0	0	1,755	614	0	0	0	0
Van Buren	2,558	994	839	679	0	0	1,719	315	0	0	0	0
Washington	65	1,825	65	1,825	0	0	0	0	0	0	0	0
White	1,342	3,268	374	2,262	0	75	968	931	0	0	0	0
All counties	24,452	37,165	11,770	31,957	0	225	12,616	4,955	0	0	66	28

<sup>a</sup> Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (756,000 cubic feet in 1999).

**Table 25—Total roundwood output by product, species group, and source of material, Arkansas, 1999**

Product and species group	All sources	Total	Growing-stock trees		Other sources
			Sawtimber	Poletimber	
<i>Thousand cubic feet</i>					
<b>Saw logs</b>					
Softwood	231,530	219,954	211,156	8,798	11,576
Hardwood	88,325	86,257	81,082	5,175	2,068
Total	319,855	306,211	292,237	13,974	13,644
<b>Veneer logs and bolts</b>					
Softwood	77,621	76,045	73,764	2,281	1,576
Hardwood	5,927	5,822	5,822	0	105
Total	83,548	81,867	79,586	2,281	1,681
<b>Pulpwood</b>					
Softwood	182,819	155,396	78,451	76,945	27,423
Hardwood	102,146	89,868	51,651	38,217	12,278
Total	284,965	245,263	130,102	115,161	39,702
<b>Composite panels</b>					
Softwood	437	392	180	212	45
Hardwood	188	167	75	92	21
Total	625	559	256	304	66
<b>Poles and posts</b>					
Softwood	2,659	2,183	1,995	189	476
Hardwood	0	0	0	0	0
Total	2,659	2,183	1,995	189	476
<b>Other miscellaneous</b>					
Softwood	66	63	47	16	3
Hardwood	28	18	13	4	10
Total	94	80	60	20	14
<b>Total industrial products</b>					
Softwood	495,132	454,033	365,592	88,440	41,099
Hardwood	196,614	182,132	138,643	43,489	14,482
Total	691,746	636,164	504,236	131,929	55,582
<b>Fuelwood</b>					
Softwood	3,677	3,037	2,005	1,033	640
Hardwood	25,529	22,980	15,335	7,646	2,549
Total	29,206	26,018	17,340	8,678	3,188
<b>All products</b>					
Softwood	498,809	457,070	367,597	89,473	41,739
Hardwood	222,143	205,112	153,978	51,134	17,031
Total	720,952	662,182	521,575	140,607	58,770

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

**Table 26—Total roundwood output by species group, survey unit, and ownership class, Arkansas, 1999**

Species group and survey unit	Total	Ownership class			
		National forest	Other public	Forest industry	Nonindustrial private
<i>Thousand cubic feet</i>					
<b>Softwoods</b>					
South Delta	9,670	0	249	4,613	4,808
North Delta	1,299	0	0	0	1,299
Southwest	379,186	0	3,684	220,347	155,155
Ouachita	84,020	25,092	1,987	31,382	25,559
Ozark	24,634	4,073	394	820	19,348
Total softwoods	498,809	29,165	6,314	257,162	206,168
<b>Hardwoods</b>					
South Delta	32,581	255	1,029	8,217	23,080
North Delta	9,527	0	2,004	0	7,523
Southwest	119,645	0	3,545	46,898	69,202
Ouachita	18,400	3,641	383	4,572	9,804
Ozark	41,990	2,850	888	400	37,852
Total hardwoods	222,143	6,746	7,850	60,087	147,461
<b>All species</b>	720,952	35,910	14,164	317,248	353,629

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

**Table 27—Total roundwood output by species group, detailed species group, and product, Arkansas, 1999**

Species group and detailed species group	Product							
	Total	Saw log	Veneer	Pulpwood	Composite panel	Poles and posts	Other miscellaneous	Fuelwood
<i>Thousand cubic feet</i>								
<b>Softwood</b>								
Cedar	4,177	2,106	152	1,847	0	30	11	31
Loblolly-shortleaf pine	491,364	226,950	77,436	180,234	437	2,628	55	3,623
Other yellow pines	2,092	1,857	0	220	0	0	0	15
Cypress	1,176	616	34	518	0	1	0	8
<b>Total softwoods</b>	<b>498,809</b>	<b>231,530</b>	<b>77,621</b>	<b>182,819</b>	<b>437</b>	<b>2,659</b>	<b>66</b>	<b>3,677</b>
<b>Hardwood</b>								
Soft maple	2,018	870	30	885	1	0	0	232
Hard maple	406	252	0	107	0	0	0	47
Other birch	174	112	5	36	0	0	0	20
Hickory	19,857	7,851	1,004	8,711	8	0	1	2,282
Beech	570	190	49	264	0	0	0	65
Ash	6,420	2,697	425	2,558	3	0	0	738
Black walnut	270	187	2	50	0	0	0	31
Sweetgum	40,306	11,190	842	23,577	64	0	0	4,632
Yellow-poplar	14	12	0	0	0	0	0	2
Blackgum-tupelo	6,115	2,909	57	2,444	4	0	0	702
Sycamore	1,829	968	68	582	1	0	0	210
Cottonwood	1,908	1,158	106	425	0	0	0	220
Black cherry	725	289	9	342	1	0	0	83
Select white oaks	27,941	12,596	619	11,492	20	0	4	3,211
Other white oaks	26,358	11,720	407	11,168	26	0	8	3,029
Select red oaks	11,648	4,885	278	5,128	13	0	6	1,339
Other red oaks	60,921	25,074	1,456	27,340	40	0	9	7,001
Basswood	28	9	4	12	0	0	0	3
Elm	4,985	1,820	164	2,422	6	0	0	573
Other Eastern hardwoods	9,652	3,533	403	4,604	2	0	1	1,109
<b>Total hardwoods</b>	<b>222,143</b>	<b>88,325</b>	<b>5,927</b>	<b>102,146</b>	<b>188</b>	<b>0</b>	<b>28</b>	<b>25,529</b>
<b>All species</b>	<b>720,952</b>	<b>319,855</b>	<b>83,548</b>	<b>284,965</b>	<b>625</b>	<b>2,659</b>	<b>94</b>	<b>29,206</b>

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

**Table 28—Total roundwood output by species group, detailed species group, and ownership class, Arkansas, 1999**

Species group and detailed species group	Total	Ownership class			Nonindustrial private
		National forest	Other public	Forest industry	
<i>Thousand cubic feet</i>					
<b>Softwood</b>					
Cedar	4,177	519	69	1,258	2,331
Loblolly-shortleaf pine	491,364	28,645	6,230	255,768	200,721
Other yellow pines	2,092	0	0	0	2,092
Cypress	1,176	0	15	136	1,025
Total softwoods	498,809	29,165	6,314	257,162	206,168
<b>Hardwood</b>					
Soft maple	2,018	20	96	510	1,393
Hard maple	406	31	0	62	313
Other birch	174	0	0	16	158
Hickory	19,857	1,011	418	4,355	14,072
Beech	570	0	0	181	388
Ash	6,420	17	715	1,616	4,072
Black walnut	270	23	1	15	232
Sweetgum	40,306	398	1,148	13,906	24,853
Yellow-poplar	14	0	0	0	14
Blackgum-tupelo	6,115	214	245	1,497	4,159
Sycamore	1,829	81	45	312	1,392
Cottonwood	1,908	0	1,001	483	425
Black cherry	725	50	28	244	402
Select white oaks	27,941	1,693	618	8,439	17,191
Other white oaks	26,358	808	801	6,218	18,531
Select red oaks	11,648	692	330	3,229	7,398
Other red oaks	60,921	1,601	1,706	14,655	42,958
Basswood	28	0	0	6	22
Elm	4,985	73	237	1,318	3,356
Other Eastern hardwoods	9,651	33	462	3,025	6,131
Total hardwoods	222,143	6,746	7,850	60,087	147,461
<b>All species</b>	720,952	35,910	14,164	317,248	353,629

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





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**Bentley, James W.; Johnson, Tony G.; Howell, Michael.** 2002. Arkansas' timber industry—an assessment of timber product output and use, 1999. Resour. Bull. SRS-79. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 40 p.

In 1999, roundwood output from Arkansas' forests totaled 692 million cubic feet. Mill byproducts generated from primary manufacturers were 290 million cubic feet. Almost all plant residues were used, primarily for fuel and fiber products. Saw logs were the leading roundwood product at 320 million cubic feet; pulpwood ranked second at 285 million cubic feet; veneer logs were third at 84 million cubic feet. The number of primary processing plants was 336 in 1999. Receipts for those mills totaled 681 million cubic feet.

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

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