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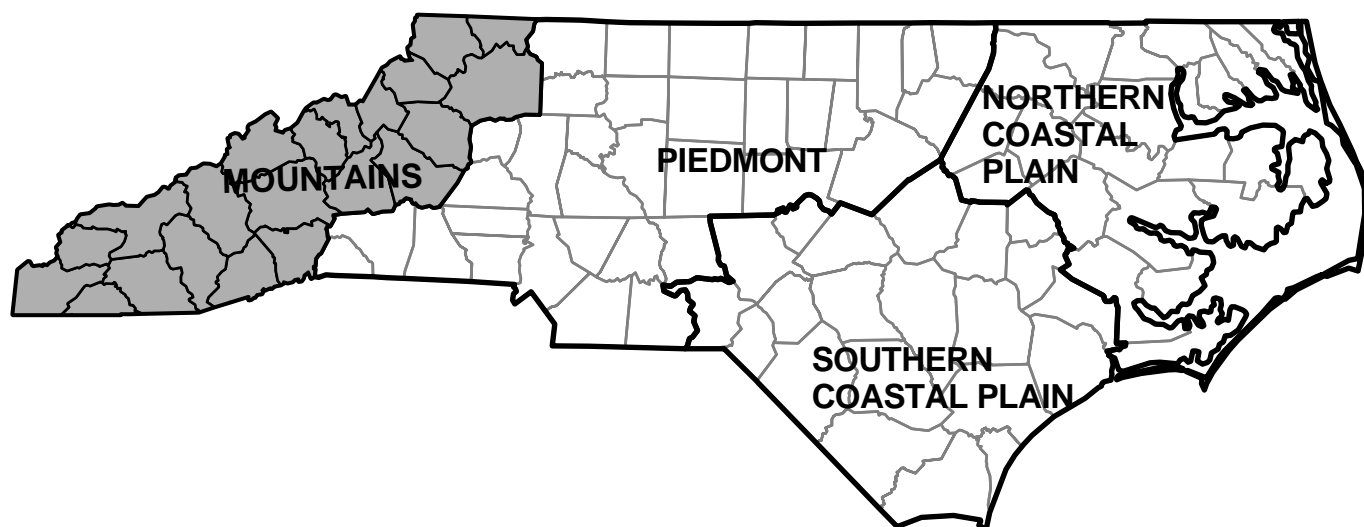
Southern  
Research Station

# Forest Statistics for the Mountains of North Carolina, 2002

Mark J. Brown

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SRS-87

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**The Author:**

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## **Foreword**

This report highlights principal findings of the seventh forest survey of the Mountains of North Carolina. The survey began in August of 1998 with a special inventory of the forests in the Great Smoky Mountains National Park. Subsequently, fieldwork began in the remaining majority of the Mountains region in July of 2000 and was completed in December of 2002. Six previous surveys, completed in 1938, 1955, 1964, 1974, 1984, and 1990, provide statistics for measuring changes and trends over the past 64 years. This report primarily emphasizes changes and trends since 1990. It discusses the extent and condition of forest land, associated timber volumes, and rates of timber growth, mortality, and removals.

Periodic surveys of forest resources are authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the regional experiment stations of the U.S. Department of Agriculture, Forest Service. In the Southern United States, the Forest Inventory and Analysis Research Work Unit (FIA) at the Southern Research Station conducts these surveys in 13 Southern States and the Commonwealth of Puerto Rico. The FIA unit operates from its headquarters in Knoxville, TN, and offices in Asheville, NC, and Starkville, MS. The primary objective of these surveys is to periodically inventory and evaluate all forest and related resources. These multiresource data help provide a basis for formulating forest policies and programs and for the orderly development and use of the resources.

Additional information about any aspect of this survey may be obtained from:

USDA Forest Service  
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Knoxville, TN 37919  
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## **Acknowledgments**

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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 on 3½-inch diskettes.

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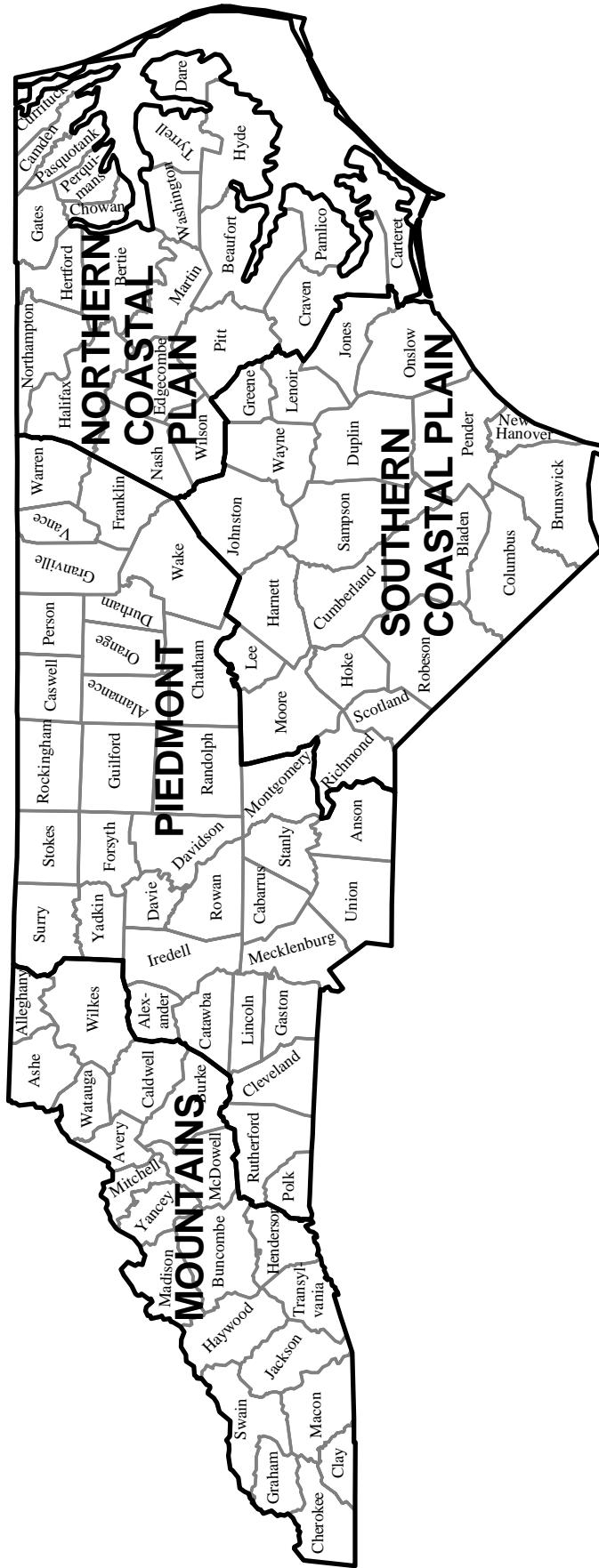


Figure 1—Forest survey regions in North Carolina.

# Forest Statistics for the Mountains of North Carolina, 2002

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## Highlights

This report summarizes results from a 2002 inventory of the forest resources of the Mountains of North Carolina (fig. 1). Current estimates of forest area, timberland area, related classifications such as ownership and forest type, and timber volumes are presented and compared with previous values. It summarizes the average annual rates of growth, removals, and mortality since 1990. Although the previous and current inventories are similar in scope, they differ in sampling design and intensity, standards and definitions, and in methods used to determine key attributes such as stocking, forest type, and stand-size class. Many of the changes in methods, plot design, and sampling intensity were necessary to increase national consistency between Forest Inventory and Analysis (FIA) Research Work Units. These changes complicate the comparison of data between surveys and make detection of genuine resource trends difficult. However, some general comparisons are possible where differences between inventories can be reconciled or are considered minimal. Resource data are presented in 49 tables and 9 graphs. A summary of major findings follows.

**Forest land area**—Forests covered 4.2 million acres, or 74 percent of the region's land area, in 2002. Ten percent, or 400,000 acres, of these forests were classified as reserved timberland, mostly located in the Great Smoky Mountains National Park and national forest wilderness areas. Ninety percent, or 3.8 million acres, of the forests in the mountains were classified as timberland. Since 1990, the area of timberland in this 21-county region has declined by 179,000 acres. Urban and other land uses closely followed by agriculture were the leading factors in the net loss.

**Ownership**—Nonindustrial private forest (NIPF) landowners accounted for 71 percent, or 2.7 million acres, of the timberland in the region. The NIPF owner group is composed of individual and corporate timberland owners. Individual ownership decreased 11 percent since 1990, from 2.5 million acres to 2.2 million acres. Timberland under corporate ownership increased 11 percent to 474,000 acres. Public ownership increased by 69,000 acres to 1.1 million acres. National forest lands made up 89 percent of the public timberland. Timberland owned by forest industry declined 71 percent, from 102,000 acres in 1990 to 29,000 acres in 2002.

**Forest type**—Hardwood forest types accounted for 90 percent of the timberland area. Overall, area of hardwoods

declined by 1 percent and remained above 3.4 million acres. Area of oak-hickory, the predominant forest-type group, increased 6 percent to 2.9 million acres in 2002. The gain in area of oak-hickory mostly offset the losses in other forest types. For instance, area of oak-pine decreased 23 percent to 366,000 acres, and area of maple-beech-birch declined 41 percent to 116,000 acres. Area of timberland classed as a softwood forest type declined by 141,000 acres to 375,000 acres in 2002. Softwood forest types accounted for 10 percent of the timberland in the region, down from 13 percent in 1990. White pine increased by 24 percent to 192,000 acres, and now leads softwood forest types in area. In contrast, area of yellow pine forest types decreased. Planted stands occupied just 2 percent of the total area of timberland as of 2002.

**Stand-size**—Sawtimber-size stands continued to dominate the Mountains of North Carolina. Although the area of sawtimber stands decreased by 193,000 acres to 2.4 million acres, they still accounted for 65 percent of the timberland in this region. Poletimber-size stands decreased as well, by 184,000 acres to 759,000 acres. Poletimber stands accounted for 20 percent of the timberland in the region. In contrast, area of sapling-seedling size stands rose by 198,000 acres to 574,000 acres. Sapling-seedling stands accounted for 15 percent of the timberland in the Mountains.

**Stand treatment**—Final harvest occurred on an average of 9,400 acres annually since 1990, down from an average of 28,000 during the 1984 to 1989 period. The predominant type of cutting was partial harvest. Partial harvests averaged 17,000 acres annually, up from an average of 10,000 acres annually between 1984 and 1989. New stands were established on 18,000 acres each year through reforestation and afforestation. Natural disturbances damaged many acres annually; the greatest of these were insects, followed by fire and weather. Insect damage averaged 10,000 acres annually since 1990. Fire and weather damage each averaged more than 6,000 acres annually.

**Softwood volume**—Merchantable volume of softwood live trees declined from 1.7 billion cubic feet in 1990 to 1.6 billion cubic feet in 2002, a drop of 6 percent. White pine remained the predominant softwood species and accounted for 52 percent of the total softwood volume. Volume of white pine increased by 21 percent to 832.9 million cubic feet. However, most yellow pine species declined in volume as evidenced

by Virginia pine volume which decreased 45 percent to 220.1 million cubic feet, dropping from second in softwood abundance to third. Eastern hemlock rose by 22 percent to 270.3 million cubic feet, and is now second in softwood abundance. NIPF lands accounted for 75 percent of softwood volume, down 5 percent to 1.2 billion cubic feet. Public lands had 25 percent of the softwood volume, up by 14 percent to 405.5 million cubic feet.

**Hardwood volume**—Hardwood live-tree volume increased 7 percent—from 7.3 billion cubic feet in 1990 to 7.8 billion cubic feet in 2002. Hardwoods made up 83 percent of all volume. Yellow-poplar was the predominant individual hardwood species, followed by chestnut oak, and then soft maple. Volume of yellow-poplar increased 39 percent to 1.8 billion cubic feet. Volume of chestnut oak rose 8 percent to 1.1 billion cubic feet. Soft maple rose 22 percent to 827.0 million cubic feet. Collectively, the remaining white oaks accounted for 483.9 million cubic feet, down 4 percent since 1990. Collectively, the red oaks accounted for 1.4 billion cubic feet, down 7 percent. NIPF lands accounted for 69 percent of the hardwood inventory. Hardwood inventory on NIPF land rose by 10 percent to 5.4 billion cubic feet as of 2002. Public lands have 30 percent of the hardwood volume and increased by 8 percent to 2.3 billion cubic feet.

**Growth**—Total net growth of all live trees averaged 193.6 million cubic feet annually. Hardwood net growth accounted for 81 percent of all growth. Net annual growth of hardwood live trees increased 17 percent to 156.6 million cubic feet. NIPF lands accounted for 75 percent of hardwood net growth and increased 23 percent to 116.4 million cubic feet annually. Public lands accounted for 25 percent of hardwood growth and rose by 13 percent to 39.1 million cubic feet annually. Net annual growth of softwood live trees decreased 16 percent to 37.0 million cubic feet annually. On NIPF lands, softwood net annual growth was down 16 percent to 28.7 million cubic feet per year. Softwood growth increased 4 percent on public lands to 8.2 million cubic feet annually.

**Mortality**—Total mortality of all live trees averaged 101.0 million cubic feet annually since 1990. Hardwoods made up 64 percent of the mortality. Hardwood live-tree mortality in the region was down, dropping 8 percent to 64.4 million cubic feet per year. Mortality for all oak species combined, amounted to 30.2 million cubic feet per year, approaching half of the total hardwood mortality. Hardwood mortality declined 18 percent on NIPF lands to 36.2 million cubic feet annually, whereas it rose 15 percent on public lands to 27.5 million cubic feet annually. Increases in softwood live-tree mortality were recorded for this inventory period, due largely to insect-related damage from pine beetles. Annual mortality of softwood live trees increased 62 percent to nearly 36.6 million cubic feet. Cumulatively, yellow pines accounted for 70 percent of softwood mortality. Virginia pine alone

accounted for 33 percent of the softwood mortality. Softwood mortality was up 46 percent on NIPF lands to 26.3 million cubic feet annually, and more than doubled on public lands to 10.2 million cubic feet annually.

**Removals**—Total removals of all live trees averaged 100.2 million cubic feet annually. Hardwoods made up 62 percent of the removals. Removals of hardwood live trees decreased 20 percent to 62.2 million cubic feet per year. Between 1990 and 2001, annual hardwood growth was more than double the level of hardwood removals. NIPF owners provided 90 percent of the hardwood removals, while public timberland accounted for less than 10 percent. Annual removals of softwood live-tree volume increased 10 percent to 38.0 million cubic feet. Between 1990 and 2001, annual softwood removals approximated softwood growth, exceeding net annual growth by just 1.0 million cubic feet. Eighty-eight percent of the softwood removals came from NIPF lands, while public timberlands accounted for almost 12 percent of softwood removals annually.

## Inventory Methods

The Southern Research Station, FIA unit secured data on forest acreage and timber volume using a three-step process. A forest-nonforest classification using aerial photographs was accomplished using points representing approximately 292 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 5,186 acres. Finally, field measurements were made at each of the sample locations where the plot design sampled forest land.

The plot installed at each ground sample location was a cluster of four points spaced 120 feet apart. Each point served as the center of a 1/24-acre circular subplot used to sample trees 5.0 inches diameter at breast height (d.b.h.) and larger. A 1/300-acre microplot, located at the subplot center, was used to sample trees 1.0 to 4.9 inches d.b.h. and seedlings (trees less than 1.0 inch d.b.h.). These fixed-radius sample plots were established without regard to land use or land cover. Forest and nonforest condition classes were delineated and recorded. Condition classes were defined by six attributes: land use, forest type, stand origin, stand size, forest density, and major ownership class. All trees tallied were assigned to their respective condition class.

The cluster of four fixed plots sampled timberland at 795 ground sample locations in this unit. Estimates of timber volume and forest classifications were derived from tree measurements and classifications made at these locations. Volumes for individual tally trees were computed using equations for each of the major species in the survey unit. The equations were developed from detailed measurements collected from standing trees throughout the region.

Estimates of growth, removals, and mortality were determined from the remeasurement of 591 permanent sample plots established in the previous inventory. The plot design for the previous inventory was based on a cluster of 10 points. Variable plots were systematically spaced within a single forest condition at three to five points. At each point, trees 5.0 inches d.b.h. and larger were selected for measurement on a variable-radius plot defined by a 37.5-factor prism. Trees less than 5.0 inches d.b.h. were tallied on a fixed-radius plot around points 1 through 3.

### Statistical Reliability

FIA inventories employ sampling methods designed to achieve reliable statistics at the survey unit and State levels. A measure of reliability of inventory statistics is provided by sampling errors. These sampling errors mean that the chances are two out of three that the true population value is within the limits indicated by a confidence interval. Sampling errors (in percent) and associated confidence intervals around the sample estimates for timberland area, inventory volumes, and components of change are presented in the following table.

| Item                                    | Sample estimate<br>and<br>confidence interval |         | Sampling<br>error |
|---|---|---------|-------------------|
|   | Percent                                       |         |                   |
| <b>Timberland (1,000 acres)</b>         | 3,775.9 ±                                     | 32.2    | 0.85              |
| <b>All live (M ft<sup>3</sup>)</b>      |   |         |                   |
| Inventory                               | 9,408.2 ±                                     | 224.0   | 2.38              |
| Net annual growth                       | 193.6 ±                                       | 9.4     | 4.86              |
| Annual removals                         | 100.2 ±                                       | 11.7    | 11.67             |
| Annual mortality                        | 101.0 ±                                       | 5.9     | 5.85              |
| <b>Growing stock (M ft<sup>3</sup>)</b> |   |         |                   |
| Inventory                               | 8,502.3 ±                                     | 215.8   | 2.54              |
| Net annual growth                       | 189.0 ±                                       | 9.0     | 4.74              |
| Annual removals                         | 95.6 ±  | 11.3    | 11.79             |
| Annual mortality                        | 81.8 ±  | 5.7     | 6.93              |
| <b>Sawtimber (M fbm)</b>                |   |         |                   |
| Inventory                               | 30,936.9 ±                                    | 1,083.1 | 3.50              |
| Net annual growth                       | 926.1 ±                                       | 45.5    | 4.91              |
| Annual removals                         | 378.7 ±                                       | 46.8    | 12.37             |
| Annual mortality                        | 266.2 ±                                       | 22.7    | 8.51              |

Sampling error increases as the area or volume considered decreases in magnitude. Sampling errors and associated confidence intervals are often unacceptably high for small components of the total resource. Statistical confidence may be computed for any subdivision of survey unit or State totals using the following formula. Sampling errors obtained from this method are only approximations of reliability because this process assumes constant variance across all subdivisions of totals.

$$SE_s = SE_t \frac{\sqrt{X_t}}{\sqrt{X_s}}$$

where

$SE_s$  = sampling error for subdivision of survey unit or State total,

$SE_t$  = sampling error for survey unit or State total,

$X_s$  = sum of values for the variable of interest (area or volume) for subdivision of survey unit or State,

$X_t$  = total area or volume for survey unit or State.

For example, the estimate of sampling error for softwood live-tree volume on NIPF land is computed as:

$$SE_s = 2.38 \frac{\sqrt{9,408.2}}{\sqrt{1,193.2}} = 6.68$$

Thus, the sampling error is 6.68 percent, and the resulting confidence interval (two times out of three) for softwood live-tree inventory on NIPF land is 1,193.2 ± 79.7 million cubic feet.

County statistics are provided, but users are cautioned that the accuracy of individual county data is highly variable. Individual county statistics are provided so any combination of counties may be added together until the totals are large enough to meet the desired degree of reliability. Sampling errors for key resource items for individual counties are provided in the following table.



**Sampling errors<sup>a</sup> by counties and survey unit for timberland, live trees, growing stock, and sawtimber, Mountains of North Carolina, 2002**

| Counties and survey unit | Timberland area | Live trees |            |             | Growing stock |            |             | Sawtimber  |            |             |
|--------------------------|-----------------|------------|------------|-------------|---------------|------------|-------------|------------|------------|-------------|
|                          |                 | Volume     | Growth     | Removals    | Volume        | Growth     | Removals    | Volume     | Growth     | Removals    |
| <i>Percent</i>           |                 |            |            |             |               |            |             |            |            |             |
| Alleghany                | 3.7             | 20.5       | 26.2       | 64.0        | 22.6          | 30.4       | 63.4        | 31.2       | 32.7       | 62.4        |
| Ashe                     | 4.3             | 11.1       | 17.1       | 37.2        | 12.5          | 16.0       | 37.3        | 15.2       | 13.5       | 39.9        |
| Avery                    | 4.6             | 12.1       | 24.4       | —           | 12.0          | 23.4       | —           | 14.7       | 21.2       | —           |
| Buncombe                 | 2.9             | 10.6       | 20.6       | 40.5        | 10.4          | 18.8       | 40.6        | 13.1       | 19.6       | 43.7        |
| Burke                    | 2.4             | 10.5       | 15.0       | 29.3        | 10.8          | 14.9       | 29.5        | 14.6       | 17.6       | 31.7        |
| Caldwell                 | 3.0             | 10.1       | 9.1        | 37.6        | 10.9          | 9.9        | 37.0        | 14.2       | 11.2       | 38.3        |
| Cherokee                 | 2.4             | 6.7        | 14.1       | 43.5        | 7.1           | 13.3       | 43.7        | 10.5       | 15.9       | 42.1        |
| Clay                     | 4.2             | 12.5       | 32.8       | 84.3        | 13.0          | 29.2       | 84.3        | 18.4       | 38.5       | 85.0        |
| Graham                   | 4.2             | 9.5        | 20.9       | 90.5        | 9.7           | 19.5       | 90.5        | 14.6       | 22.1       | 100.1       |
| Haywood                  | 2.9             | 8.7        | 16.9       | 48.4        | 9.5           | 14.7       | 51.1        | 12.9       | 16.9       | 51.1        |
| Henderson                | 3.8             | 10.9       | 35.8       | 55.4        | 11.6          | 33.7       | 55.7        | 15.3       | 27.2       | 63.7        |
| Jackson                  | 1.6             | 8.9        | 18.6       | 63.7        | 9.8           | 16.8       | 65.3        | 15.7       | 13.8       | 68.3        |
| Macon                    | 3.3             | 9.0        | 33.0       | 72.0        | 9.7           | 32.0       | 74.5        | 13.4       | 30.9       | 86.7        |
| Madison                  | 3.2             | 12.3       | 47.1       | 67.5        | 13.7          | 49.1       | 67.5        | 16.7       | 33.3       | 67.5        |
| McDowell                 | 1.8             | 9.7        | 29.4       | 47.6        | 10.3          | 29.5       | 48.1        | 15.0       | 24.3       | 53.1        |
| Mitchell                 | 4.9             | 15.1       | 16.7       | 56.3        | 16.2          | 16.0       | 55.8        | 22.1       | 15.6       | 56.3        |
| Swain                    | 1.7             | 14.5       | 31.2       | 68.9        | 15.0          | 34.2       | 74.8        | 23.8       | 31.8       | 76.9        |
| Transylvania             | 2.7             | 8.1        | 21.9       | —           | 8.9           | 19.9       | —           | 12.7       | 22.1       | —           |
| Watauga                  | 3.2             | 9.4        | 13.8       | 69.7        | 11.2          | 15.6       | 69.7        | 15.4       | 18.9       | 71.1        |
| Wilkes                   | 2.8             | 9.2        | 17.5       | 27.2        | 9.8           | 17.4       | 27.3        | 13.9       | 18.3       | 28.6        |
| Yancey                   | 4.3             | 14.4       | 31.9       | 57.8        | 16.5          | 34.1       | 57.8        | 20.8       | 31.1       | 59.9        |
| <b>Survey unit</b>       | <b>0.9</b>      | <b>2.4</b> | <b>4.9</b> | <b>11.7</b> | <b>2.5</b>    | <b>4.7</b> | <b>11.8</b> | <b>3.5</b> | <b>4.9</b> | <b>12.4</b> |

A dash (—) indicates no sample for the cell.

<sup>a</sup> By random-sampling formula.

## Definitions

**Afforestation.** Area of land previously classified as nonforest that is converted to forest by planting trees or by natural reversion to forest.

**Average annual mortality.** Average annual volume of trees 5.0 inches d.b.h. and larger that died from natural causes during the intersurvey period.

**Average annual removals.** Average annual volume of trees 5.0 inches d.b.h. and larger removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use during the intersurvey period.

**Average net annual growth.** Average annual net change in volume of trees 5.0 inches d.b.h. and larger in the absence of cutting (gross growth minus mortality) during the intersurvey period.

**Basal area.** The area in square feet of the cross section at breast height of a single tree or of all the trees in a stand, usually expressed in square feet per acre.

**Biomass.** The aboveground fresh weight of solid wood and bark in live trees 1.0 inch d.b.h. and larger from the ground to the tip of the tree. All foliage is excluded. The weight of wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

**Bole.** That portion of a tree between a 1-foot stump and a 4-inch top d.o.b. in trees 5.0 inches d.b.h. and larger.

**Census water.** Streams, sloughs, estuaries, canals, and other moving bodies of water 200 feet wide and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 4.5 acres in area and greater.

**Commercial species.** Tree species currently or potentially suitable for industrial wood products.

**D.b.h.** Tree diameter in inches (outside bark) at breast height (4.5 feet aboveground).

**Diameter class.** A classification of trees based on tree d.b.h. Two-inch diameter classes are commonly used by Forest Inventory and Analysis, with the even inch as the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.

**D.o.b. (diameter outside bark).** Stem diameter including bark.

**Forest land.** Land at least 10 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. The minimum area considered for classification is 1 acre. Forested strips must be at least 120 feet wide.

**Forest management type.** A classification of timberland based on forest type and stand origin.

*Pine plantation.* Stands that (a) have been artificially regenerated by planting or direct seeding, (b) are classed as a pine or other softwood forest type, and (c) have at least 10 percent stocking.

*Natural pine.* Stands that (a) have not been artificially regenerated, (b) are classed as a pine or other softwood forest type, and (c) have at least 10 percent stocking.

*Oak-pine.* Stands that have at least 10 percent stocking and classed as a forest type of oak-pine.

*Upland hardwood.* Stands that have at least 10 percent stocking and classed as an oak-hickory or maple-beech-birch forest type.

*Lowland hardwood.* Stands that have at least 10 percent stocking with a forest type of oak-gum-cypress, elm-ash-cottonwood, palm, or other tropical.

*Nonstocked stands.* Stands less than 10 percent stocked with live trees.

**Forest type.** A classification of forest land based on the species forming a plurality of live-tree stocking. Major eastern forest-type groups are:

*White-red-jack pine.* Forests in which eastern white pine, red pine, or jack pine, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, birch, and maple).

*Spruce-fir.* Forests in which spruce or true firs, singly or in combination, constitute a plurality of the stocking. (Common associates include maple, birch, and hemlock).

*Longleaf-slash pine.* Forests in which longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum).

*Loblolly-shortleaf pine.* Forests in which loblolly pine, shortleaf pine, or other southern yellow pines, except longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum).

*Oak-pine.* Forests in which hardwoods (usually upland oaks) constitute a plurality of the stocking but in which pines account for 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar).

*Oak-hickory.* Forests in which upland oaks or hickory, singly or in combination, constitute a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include yellow-poplar, elm, maple, and black walnut).

*Oak-gum-cypress.* Bottom-land forests in which tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, constitute a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple).

*Elm-ash-cottonwood.* Forests in which elm, ash, or cottonwood, singly or in combination, constitute a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple).

*Maple-beech-birch.* Forests in which maple, beech, or yellow birch, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, elm, basswood, and white pine).

*Nonstocked stands.* Stands less than 10 percent stocked with live trees.

**Forested tract size.** The area of forest within the contiguous tract containing each Forest Inventory and Analysis sample plot.

**Fresh weight.** Mass of tree component at time of cutting.

**Gross growth.** Annual increase in volume of trees 5.0 inches d.b.h. and larger in the absence of cutting and mortality. (Gross growth includes survivor growth, ingrowth, growth on ingrowth, growth on removals before removal, and growth on mortality before death).

**Growing-stock trees.** Living trees of commercial species classified as sawtimber, poletimber, saplings, and seedlings.

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), to be classed as growing stock. The log(s) must meet dimension and merchantability standards to qualify. Trees must also 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.

**Industrial wood.** All roundwood products except fuelwood.

**Land area.** The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river floodplains (omitting tidal flats below mean high tide), streams, sloughs, estuaries, and canals less than 200 feet wide, and lakes, reservoirs, and ponds less than 4.5 acres in area.

**Live trees.** All living trees. All size classes, all tree classes, and both commercial and noncommercial species are included.

**Log grade.** A classification of logs based on external characteristics indicating quality or value.

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

**Net annual change.** Increase or decrease in volume of live trees at least 5.0 inches d.b.h. Net annual change is equal to net annual growth minus average annual removals.

**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.

**Nonstocked stands.** Stands less than 10 percent stocked with live trees.

**Other forest land.** Forest land other than timberland and productive reserved forest land. It includes available and reserved forest land which 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 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.

**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, suitable for chipping.

*Fine residues.* Material, such as sawdust, shavings, and veneer chippings, not suitable for chipping.

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

*Unused plant residues.* Residues (coarse or fine) 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.

**Primary wood-using plants.** Industries receiving roundwood or chips from roundwood for the manufacture of products, such as veneer, pulp, and lumber.

**Productive-reserved forest land.** Forest land sufficiently productive to qualify as timberland but withdrawn from timber utilization through statute or administrative regulation.

**Reforestation.** Area of land previously classified as forest that is regenerated by planting trees or natural regeneration.

**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 or consumer uses.

**Roundwood chipped.** Any timber cut primarily for pulpwood, delivered to nonpulpmills, chipped, and then sold to pulp-mills as residues, including chipped 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.

**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 log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods).

**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-size trees in board feet (International 1/4-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.

**Site class.** A classification of forest land in terms of potential capacity to grow crops of industrial wood based on fully stocked natural stands.

**Softwoods.** Coniferous trees, usually evergreen, having leaves that are needles or scalelike.

*Yellow pines.* Loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, sand, spruce, and Table Mountain pines.

*Other softwoods.* Cypress, eastern redcedar, white-cedar, eastern white pine, eastern hemlock, spruce, and fir.

**Stand age.** The average age of dominant and codominant trees in the stand.

**Stand origin.** A classification of forest stands describing their means of origin.

*Planted.* Planted or artificially seeded.

*Natural.* No evidence of artificial regeneration.

**Stand-size class.** A classification of forest land based on the diameter class distribution of live trees in the stand.

*Sawtimber stands.* Stands at least 10 percent stocked with live trees, with half or more of total stocking in sawtimber and poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

*Poletimber stands.* Stands at least 10 percent stocked with live trees, of which half or more of total stocking is in poletimber and sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

*Sapling-seedling stands.* Stands at least 10 percent stocked with live trees of which more than half of total stocking is saplings and seedlings.

*Nonstocked stands.* Stands less than 10 percent stocked with live trees.

**Stocking.** The degree of occupancy of land by trees, measured by basal area or the number of trees in a stand and spacing in the stand, compared with a minimum standard, depending on tree size, required to fully utilize the growth potential of the land.

Density of trees and basal area per acre required for full stocking

| D.b.h. class | Trees per acre for full stocking | Basal area per acre |
|--------------|----------------------------------|---------------------|
| Seedlings    | 600                              | —                   |
| 2            | 560                              | —                   |
| 4            | 460                              | —                   |
| 6            | 340                              | 67                  |
| 8            | 240                              | 84                  |
| 10           | 155                              | 85                  |
| 12           | 115                              | 90                  |
| 14           | 90                               | 96                  |
| 16           | 72                               | 101                 |
| 18           | 60                               | 106                 |
| 20           | 51                               | 111                 |

**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.

**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).

**Tree grade.** A classification of the saw-log portion of saw-timber trees based on: (1) the grade of the butt log or (2) the ability to produce at least one 12-foot or two 8-foot logs in the upper section of the saw-log portion. Tree grade is an indicator of quality; grade 1 is the best quality.

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

**Volume of live trees.** The cubic-foot volume of sound wood in live 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.

**Volume of saw-log portion of sawtimber trees.** The cubic-foot volume of sound wood in the saw-log portion of saw-timber trees. Volume is the net result after deductions for rot, sweep, and other defects that affect use for lumber.

## Metric Equivalents

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1 acre = 4,046.86 square meters or 0.404686 hectare

1 cubic foot = 0.028317 cubic meter

1 inch = 2.54 centimeters or 0.0254 meter

Breast height = 1.4 meters above the ground

1 square foot = 929.03 square centimeters or 0.0929 square meter

1 square foot per acre basal area = 0.229568 square meter per hectare

1 pound = 0.454 kilogram

1 ton = 0.907 metric ton

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## Graphs

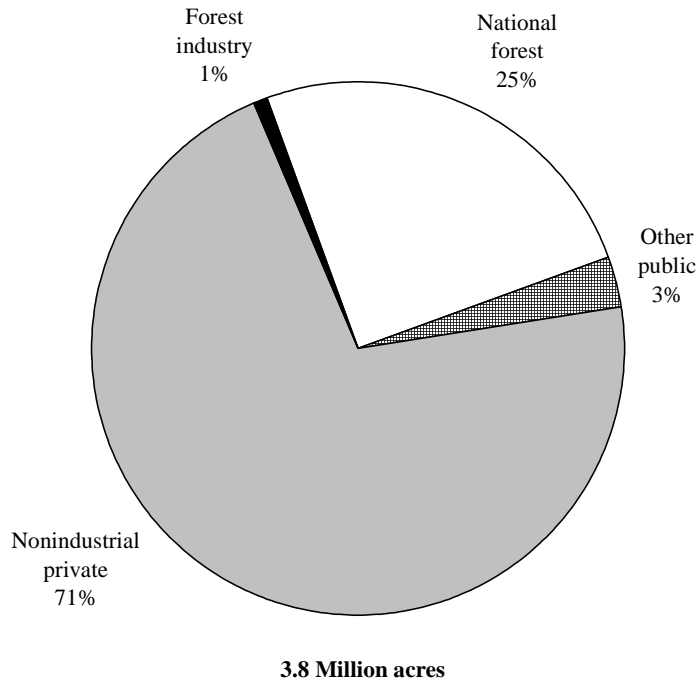


Figure 2—Distribution of timberland by ownership class, Mountains of North Carolina, 2002.

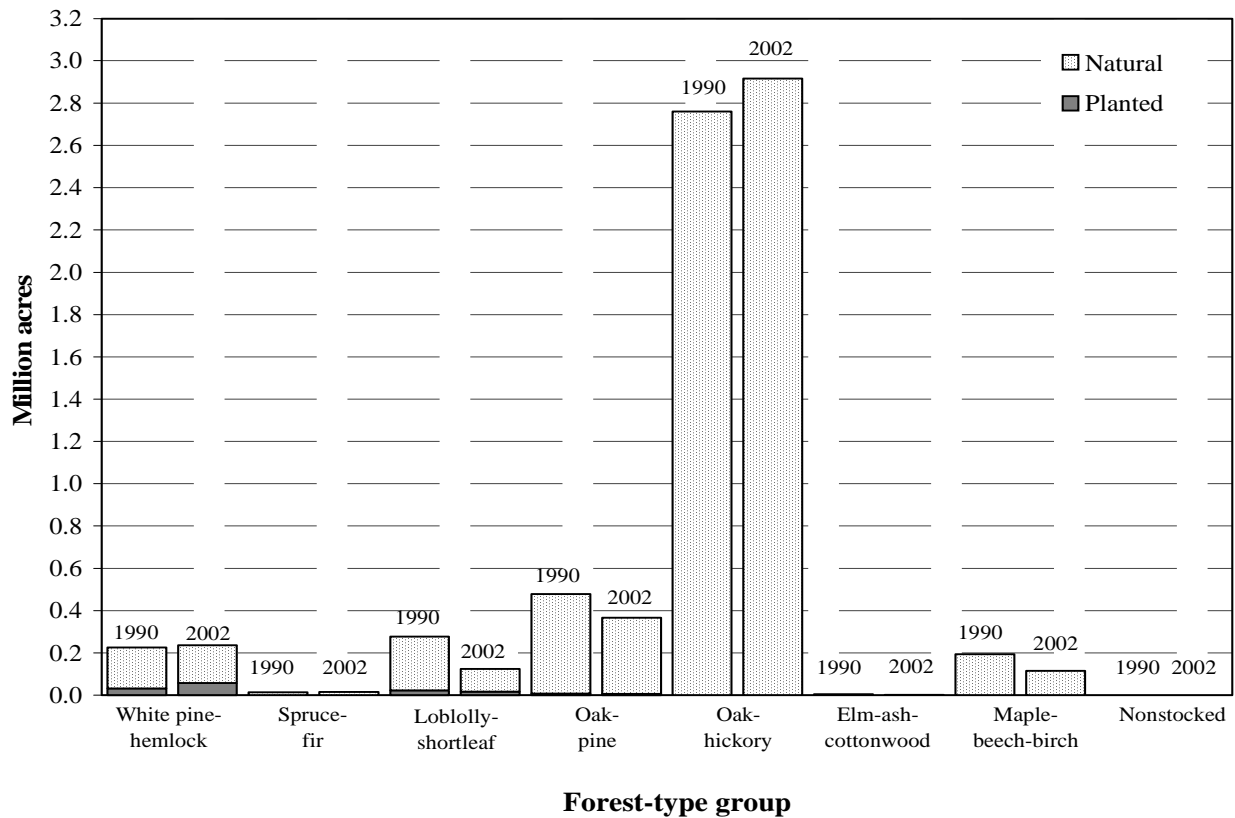


Figure 3—Area of timberland by forest-type group and stand origin, Mountains of North Carolina, 1990 and 2002.

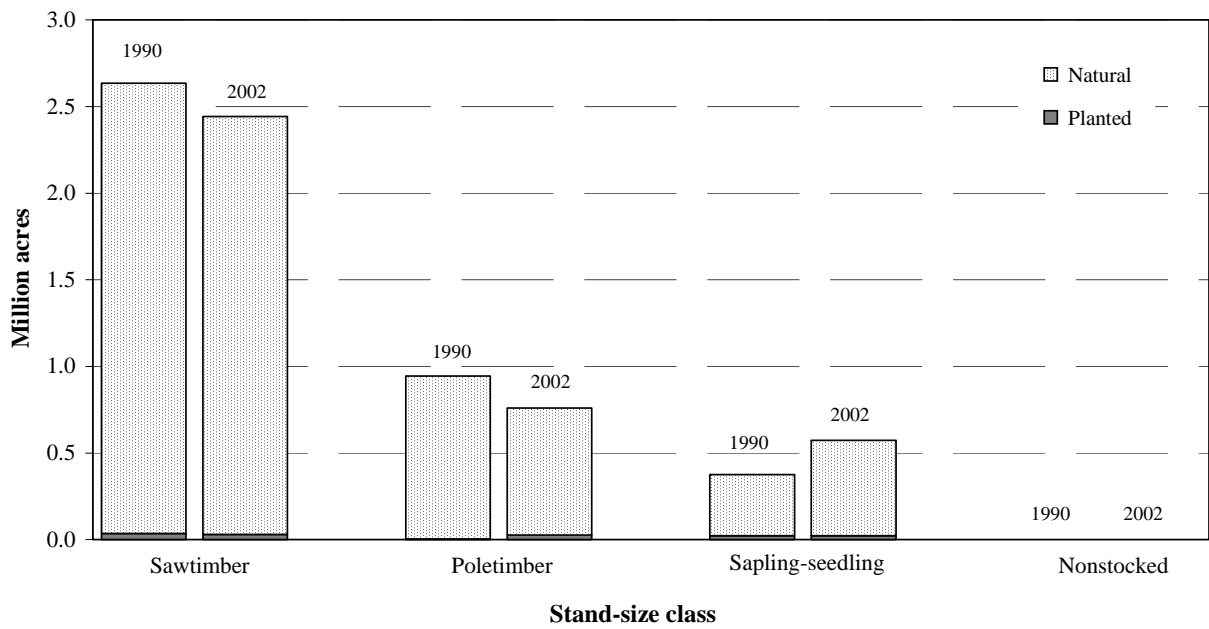


Figure 4—Area of timberland by stand-size class and stand origin, Mountains of North Carolina, 1990 and 2002.

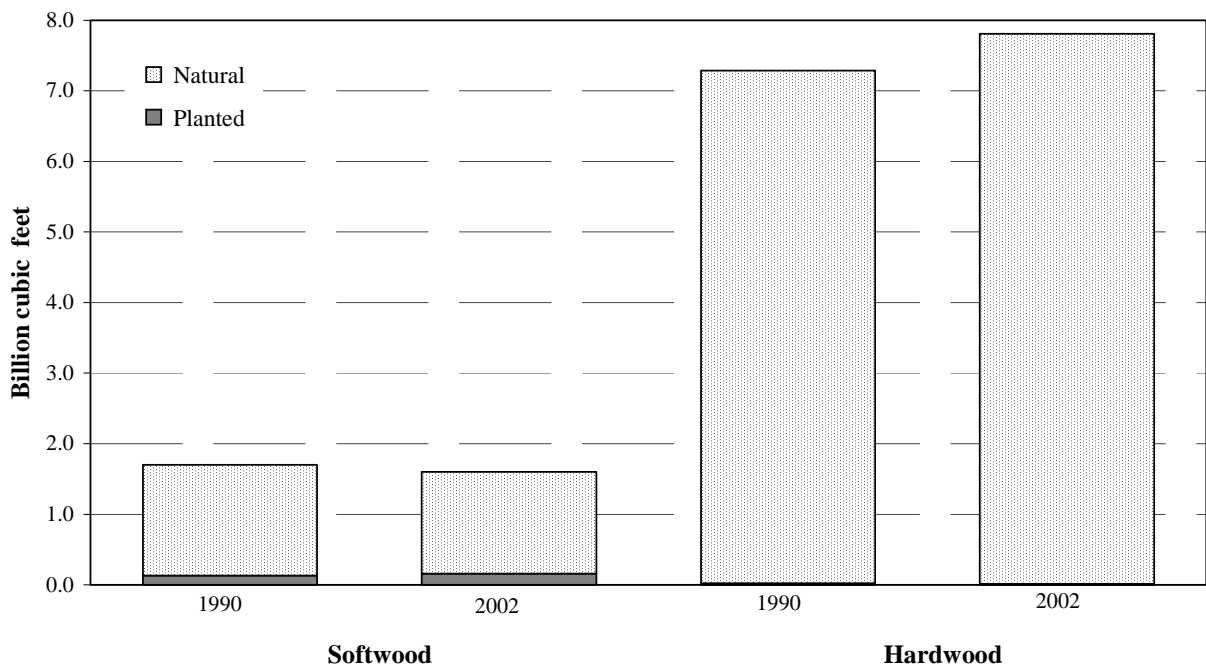


Figure 5—Volume of live trees on timberland by species group and stand origin, Mountains of North Carolina, 1990 and 2002.



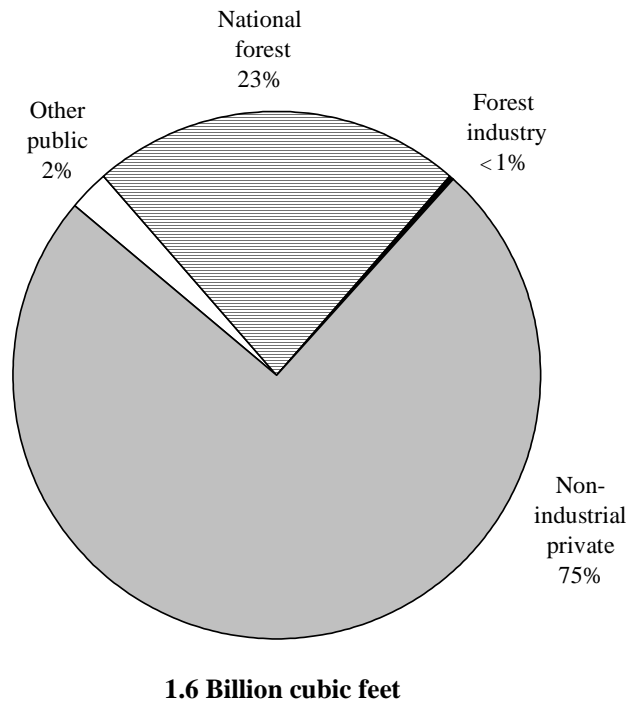


Figure 6—Distribution of softwood live-tree volume by ownership class, Mountains of North Carolina, 2002.

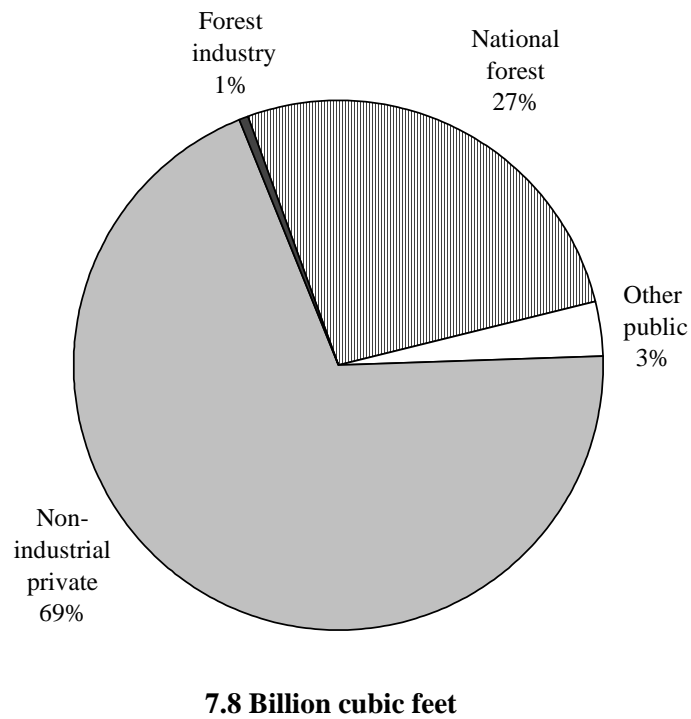


Figure 7—Distribution of hardwood live-tree volume by ownership class, Mountains of North Carolina, 2002.

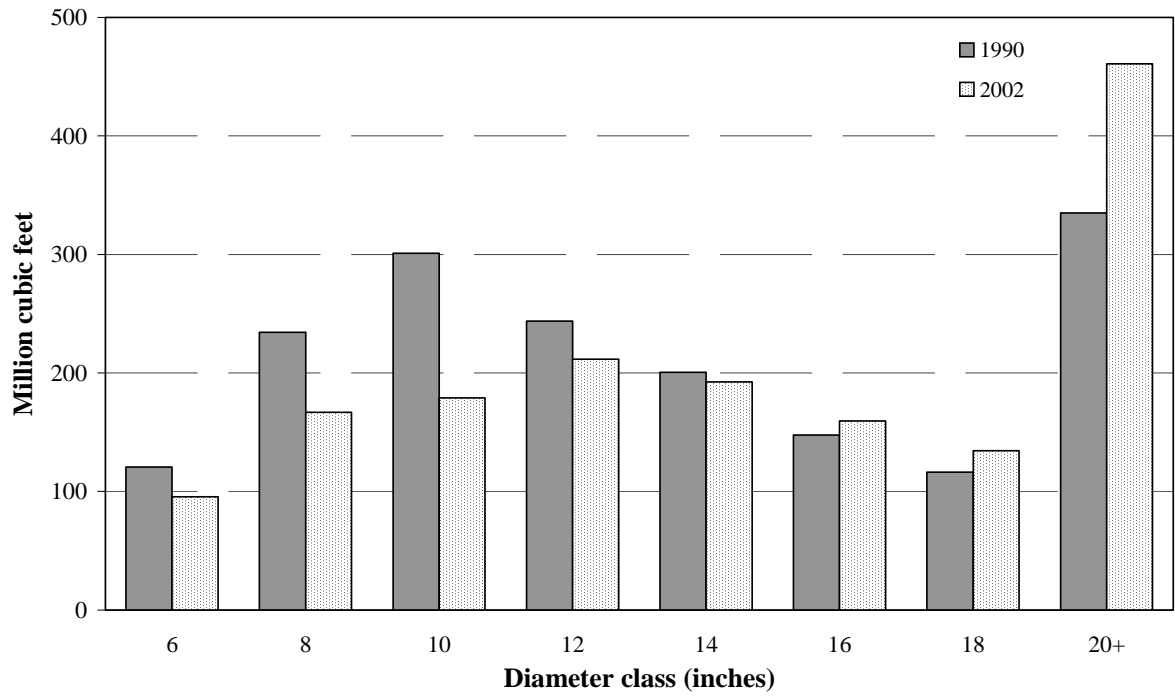


Figure 8—Volume of softwood live trees on timberland by diameter class, Mountains of North Carolina, 1990 and 2002.

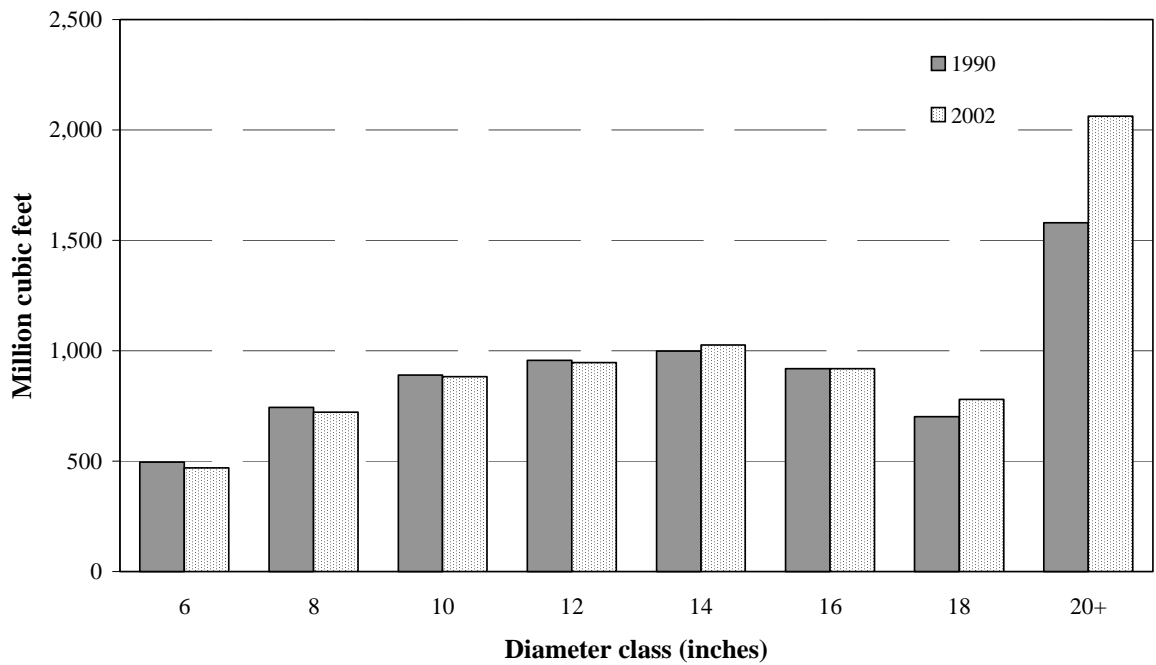


Figure 9—Volume of hardwood live trees on timberland by diameter class, Mountains of North Carolina, 1990 and 2002.

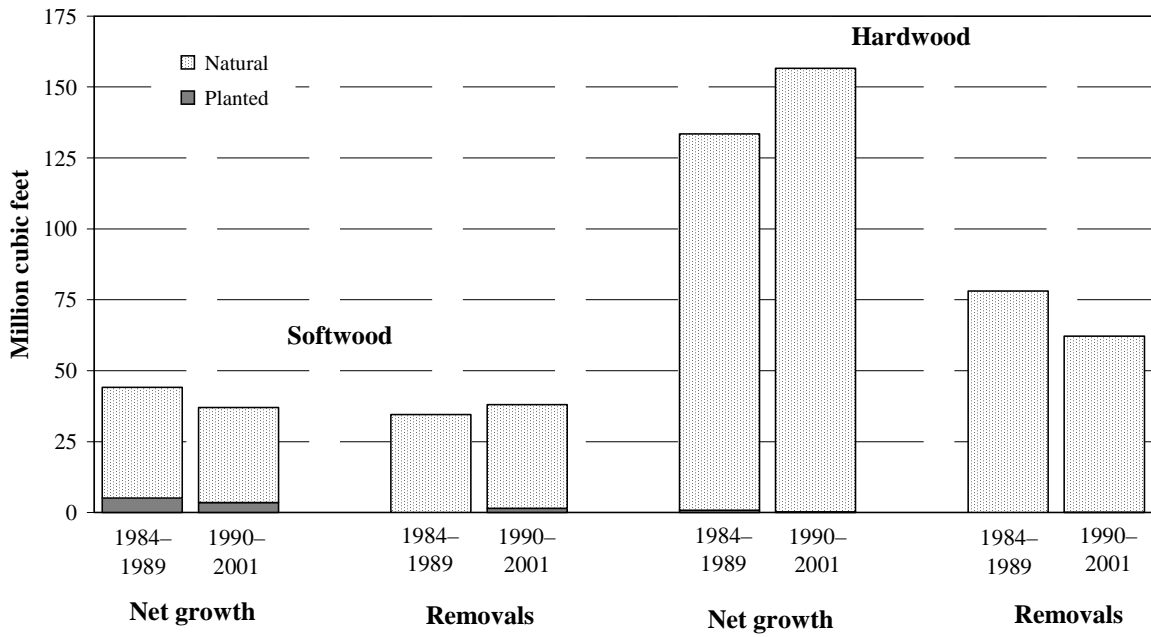


Figure 10—Average net annual growth and removals of live trees on timberland by species group and stand origin, Mountains of North Carolina, 1984-1989 and 1990-2001.

### Cross Reference of Eastern Core Tables

| Core table | Corresponding table number in this report | Core table | Corresponding table number in this report |
|------------|---|------------|---|
| 1          | 1   | 14         | 22  |
| 2          | 3   | 15         | 24, 26                                    |
| 3          | 4   | 16         | 27  |
| 4          | 5   | 17         | 28  |
| 5          | 6   | 18         | 32, 34                                    |
| 6          | 7   | 19         | 35, 37                                    |
| 7          | 8   | 20         | 38  |
| 8          | 10  | 21         | 38  |
| 9          | 11  | 22         | 40  |
| 10         | 17  | 23         | 41  |
| 11         | 18  | 24         | 43  |
| 12         | 20  | 25         | 23  |
| 13         | 21  |            |   |

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**Table 1—Land area by county and land class, Mountains of North Carolina, 2002**

| County                | Total land area <sup>a</sup> | Forest land    |                |                     | Other land <sup>b</sup> |                |
|-----------------------|------------------------------|----------------|----------------|---------------------|-------------------------|----------------|
|                       |                              | Total forest   | Timberland     | Productive reserved |                         | Other          |
| <i>Thousand acres</i> |                              |                |                |                     |                         |                |
| Alleghany             | 150.2                        | 77.0           | 68.1           | 8.8                 | —                       | 73.2           |
| Ashe                  | 272.7                        | 169.2          | 166.6          | 2.6                 | —                       | 103.5          |
| Avery                 | 158.1                        | 137.2          | 132.8          | 4.4                 | —                       | 20.9           |
| Buncombe              | 420.0                        | 263.6          | 258.0          | 5.6                 | —                       | 156.4          |
| Burke                 | 324.3                        | 215.7          | 188.6          | 27.1                | —                       | 108.6          |
| Caldwell              | 301.9                        | 226.9          | 226.8          | 0.2                 | —                       | 74.9           |
| Cherokee              | 291.3                        | 239.7          | 239.4          | 0.3                 | —                       | 51.6           |
| Clay                  | 137.4                        | 101.2          | 94.0           | 7.1                 | —                       | 36.2           |
| Graham                | 186.9                        | 167.8          | 154.5          | 13.3                | —                       | 19.2           |
| Haywood               | 354.5                        | 282.5          | 194.8          | 87.7                | —                       | 72.0           |
| Henderson             | 239.3                        | 118.6          | 118.0          | 0.6                 | —                       | 120.6          |
| Jackson               | 314.0                        | 247.0          | 239.5          | 7.6                 | —                       | 66.9           |
| Macon                 | 330.5                        | 259.8          | 245.3          | 7.3                 | 7.3                     | 70.7           |
| Madison               | 287.6                        | 227.7          | 227.7          | —                   | —                       | 59.9           |
| McDowell              | 282.7                        | 233.3          | 231.5          | 1.8                 | —                       | 49.3           |
| Mitchell              | 141.7                        | 115.0          | 114.4          | 0.6                 | —                       | 26.8           |
| Swain                 | 338.0                        | 301.2          | 87.9           | 213.3               | —                       | 36.8           |
| Transylvania          | 242.2                        | 206.8          | 199.3          | 7.6                 | —                       | 35.3           |
| Watauga               | 200.0                        | 137.5          | 128.7          | 8.8                 | —                       | 62.5           |
| Wilkes                | 484.6                        | 328.8          | 312.2          | 16.6                | —                       | 155.8          |
| Yancey                | 200.0                        | 151.9          | 147.8          | 4.1                 | —                       | 48.1           |
| <b>Total</b>          | <b>5,658.0</b>               | <b>4,208.6</b> | <b>3,775.9</b> | <b>425.4</b>        | <b>7.3</b>              | <b>1,449.4</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> From the U.S. Bureau of the Census, 1990.

<sup>b</sup> Includes 25.6 thousand acres of water according to Forest Inventory and Analysis standards of area classification, but defined by the Bureau of Census as land.

**Table 2—Area of forest land by forest-type group and ownership class, Mountains of North Carolina, 2002**

| Forest-type group       | All classes    | Ownership class |                       |             |                      |                 |                       |
|-------------------------|----------------|-----------------|-----------------------|-------------|----------------------|-----------------|-----------------------|
|                         |                | National forest | Miscellaneous Federal | State       | County and municipal | Forest industry | Nonindustrial private |
| <i>Thousand acres</i>   |                |                 |                       |             |                      |                 |                       |
| White-red-jack pine     | 237.8          | 44.9            | 1.7                   | 4.8         | —                    | —               | 186.3                 |
| Spruce-fir              | 41.1           | 9.2             | 25.4                  | —           | —                    | —               | 6.4                   |
| Loblolly-shortleaf pine | 130.6          | 12.7            | 6.9                   | —           | —                    | —               | 111.0                 |
| Oak-pine                | 384.3          | 69.0            | 6.2                   | 24.8        | 0.1                  | —               | 284.2                 |
| Oak-hickory             | 3,262.6        | 846.3           | 250.9                 | 64.2        | 50.3                 | 29.2            | 2,021.7               |
| Elm-ash-cottonwood      | 2.8            | —               | —                     | —           | —                    | —               | 2.8                   |
| Maple-beech-birch       | 149.4          | 46.1            | 24.3                  | —           | —                    | —               | 79.0                  |
| <b>Total</b>            | <b>4,208.6</b> | <b>1,028.1</b>  | <b>315.5</b>          | <b>93.9</b> | <b>50.4</b>          | <b>29.2</b>     | <b>2,691.5</b>        |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 3—Area of timberland by county and ownership class, Mountains of North Carolina, 2002**

| County                | All classes    | Ownership class |                       |             |                      |                 |                       |                |
|-----------------------|----------------|-----------------|-----------------------|-------------|----------------------|-----------------|-----------------------|----------------|
|                       |                | National forest | Miscellaneous Federal | State       | County and municipal | Forest industry | Nonindustrial private |                |
|                       |                |                 |                       |             |                      |                 | Corporate             | Individual     |
| <i>Thousand acres</i> |                |                 |                       |             |                      |                 |                       |                |
| Alleghany             | 68.1           | —               | —                     | —           | —                    | —               | 6.2                   | 61.9           |
| Ashe                  | 166.6          | 0.3             | —                     | 5.9         | —                    | —               | 17.8                  | 142.6          |
| Avery                 | 132.8          | 27.8            | —                     | —           | —                    | —               | 36.1                  | 68.9           |
| Buncombe              | 258.0          | 31.3            | —                     | —           | 36.8                 | —               | 27.2                  | 162.7          |
| Burke                 | 188.6          | 35.7            | —                     | 12.1        | —                    | —               | 33.9                  | 106.9          |
| Caldwell              | 226.8          | 49.3            | —                     | —           | —                    | —               | 20.6                  | 156.9          |
| Cherokee              | 239.4          | 92.4            | —                     | —           | —                    | —               | 18.8                  | 128.2          |
| Clay                  | 94.0           | 58.3            | —                     | —           | —                    | —               | 5.4                   | 30.4           |
| Graham                | 154.5          | 98.2            | —                     | —           | —                    | —               | 3.3                   | 53.0           |
| Haywood               | 194.8          | 41.1            | —                     | 6.0         | 4.8                  | —               | 22.9                  | 120.0          |
| Henderson             | 118.0          | 17.1            | —                     | 9.3         | —                    | —               | 10.9                  | 80.6           |
| Jackson               | 239.5          | 71.0            | —                     | —           | 3.1                  | —               | 57.7                  | 107.6          |
| Macon                 | 245.3          | 142.7           | —                     | —           | —                    | —               | 12.4                  | 90.2           |
| Madison               | 227.7          | 54.7            | —                     | —           | —                    | —               | 6.0                   | 167.0          |
| McDowell              | 231.5          | 67.9            | —                     | —           | —                    | 12.4            | 49.6                  | 101.5          |
| Mitchell              | 114.4          | 18.4            | —                     | —           | —                    | 7.4             | 29.8                  | 58.8           |
| Swain                 | 87.9           | 21.8            | —                     | —           | —                    | 5.6             | 16.9                  | 43.6           |
| Transylvania          | 199.3          | 79.3            | —                     | 16.1        | 5.4                  | —               | 19.3                  | 79.3           |
| Watauga               | 128.7          | 0.4             | —                     | —           | —                    | —               | 36.4                  | 91.9           |
| Wilkes                | 312.2          | —               | —                     | 12.2        | —                    | 3.7             | 16.6                  | 279.6          |
| Yancey                | 147.8          | 35.9            | —                     | —           | —                    | —               | 25.8                  | 86.1           |
| <b>Total</b>          | <b>3,775.9</b> | <b>943.6</b>    | <b>—</b>              | <b>61.6</b> | <b>50.0</b>          | <b>29.2</b>     | <b>473.5</b>          | <b>2,218.0</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 4—Area of timberland by county and forest-type group, Mountains of North Carolina, 2002**

| County                | All groups     | Forest-type group   |             |                    |              |                |                    |                   | Nonstocked |
|-----------------------|----------------|---------------------|-------------|--------------------|--------------|----------------|--------------------|-------------------|------------|
|                       |                | White-red-jack pine | Spruce-fir  | Loblolly-shortleaf | Oak-pine     | Oak-hickory    | Elm-ash-cottonwood | Maple-beech-birch |            |
| <i>Thousand acres</i> |                |                     |             |                    |              |                |                    |                   |            |
| Alleghany             | 68.1           | 23.2                | —           | —                  | 5.5          | 39.4           | —                  | —                 | —          |
| Ashe                  | 166.6          | 18.3                | —           | —                  | 8.1          | 140.2          | —                  | —                 | —          |
| Avery                 | 132.8          | 10.5                | —           | —                  | 4.6          | 93.3           | —                  | 24.3              | —          |
| Buncombe              | 258.0          | 9.2                 | —           | 5.5                | 19.4         | 223.9          | —                  | —                 | —          |
| Burke                 | 188.6          | 35.3                | —           | 26.7               | 19.6         | 106.9          | —                  | —                 | —          |
| Caldwell              | 226.8          | 14.6                | —           | 21.6               | 57.7         | 132.8          | —                  | —                 | —          |
| Cherokee              | 239.4          | 23.5                | —           | 13.6               | 31.8         | 166.1          | —                  | 4.4               | —          |
| Clay                  | 94.0           | 2.9                 | —           | 4.9                | 6.7          | 79.5           | —                  | —                 | —          |
| Graham                | 154.5          | 8.0                 | —           | —                  | 4.6          | 135.0          | —                  | 6.8               | —          |
| Haywood               | 194.8          | 8.9                 | 3.7         | 4.8                | 9.6          | 167.7          | —                  | —                 | —          |
| Henderson             | 118.0          | 6.6                 | —           | —                  | 11.0         | 100.4          | —                  | —                 | —          |
| Jackson               | 239.5          | 9.3                 | 5.5         | 1.3                | —            | 207.3          | —                  | 16.1              | —          |
| Macon                 | 245.3          | 1.4                 | —           | 3.3                | 38.0         | 195.5          | —                  | 7.1               | —          |
| Madison               | 227.7          | 15.7                | —           | 5.1                | 22.0         | 179.9          | —                  | 5.0               | —          |
| McDowell              | 231.5          | 9.9                 | —           | 12.2               | 27.2         | 182.3          | —                  | —                 | —          |
| Mitchell              | 114.4          | 4.2                 | —           | —                  | 5.6          | 75.0           | —                  | 29.6              | —          |
| Swain                 | 87.9           | —                   | —           | 8.5                | —            | 79.4           | —                  | —                 | —          |
| Transylvania          | 199.3          | 14.3                | —           | —                  | 26.0         | 159.0          | —                  | —                 | —          |
| Watauga               | 128.7          | 0.8                 | 6.4         | —                  | 3.2          | 103.6          | —                  | 14.7              | —          |
| Wilkes                | 312.2          | 16.3                | —           | 16.2               | 65.1         | 211.7          | 2.8                | —                 | —          |
| Yancey                | 147.8          | 3.0                 | —           | —                  | —            | 137.2          | —                  | 7.6               | —          |
| <b>Total</b>          | <b>3,775.9</b> | <b>236.0</b>        | <b>15.7</b> | <b>123.7</b>       | <b>365.9</b> | <b>2,916.3</b> | <b>2.8</b>         | <b>115.6</b>      | <b>—</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.



**Table 5—Area of timberland by county and stand-size class, Mountains of North Carolina, 2002**

| County                | All classes    | Stand-size class |              |                  |            |
|-----------------------|----------------|------------------|--------------|------------------|------------|
|                       |                | Sawtimber        | Poletimber   | Sapling-seedling | Nonstocked |
| <i>Thousand acres</i> |                |                  |              |                  |            |
| Alleghany             | 68.1           | 30.3             | 17.0         | 20.8             | —          |
| Ashe                  | 166.6          | 116.3            | 26.6         | 23.7             | —          |
| Avery                 | 132.8          | 101.1            | 10.7         | 21.1             | —          |
| Buncombe              | 258.0          | 198.1            | 28.5         | 31.4             | —          |
| Burke                 | 188.6          | 84.1             | 53.4         | 51.1             | —          |
| Caldwell              | 226.8          | 110.6            | 57.1         | 59.0             | —          |
| Cherokee              | 239.4          | 116.5            | 75.0         | 48.0             | —          |
| Clay                  | 94.0           | 47.7             | 40.4         | 5.9              | —          |
| Graham                | 154.5          | 104.0            | 32.3         | 18.2             | —          |
| Haywood               | 194.8          | 144.4            | 29.6         | 20.9             | —          |
| Henderson             | 118.0          | 80.5             | 22.5         | 14.9             | —          |
| Jackson               | 239.5          | 159.3            | 77.5         | 2.7              | —          |
| Macon                 | 245.3          | 194.8            | 17.7         | 32.8             | —          |
| Madison               | 227.7          | 136.2            | 33.2         | 58.3             | —          |
| McDowell              | 231.5          | 151.2            | 34.2         | 46.1             | —          |
| Mitchell              | 114.4          | 83.3             | 15.7         | 15.4             | —          |
| Swain                 | 87.9           | 44.0             | 30.6         | 13.2             | —          |
| Transylvania          | 199.3          | 148.1            | 43.5         | 7.6              | —          |
| Watauga               | 128.7          | 107.2            | 15.9         | 5.6              | —          |
| Wilkes                | 312.2          | 173.4            | 76.9         | 61.9             | —          |
| Yancey                | 147.8          | 111.4            | 21.1         | 15.4             | —          |
| <b>Total</b>          | <b>3,775.9</b> | <b>2,442.5</b>   | <b>759.3</b> | <b>574.1</b>     | <b>—</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 6—Area of timberland by county and site class, Mountains of North Carolina, 2002**

| County                | All classes    | Site class ( <i>cubic feet/acre/year</i> ) |                |                |              |             |
|-----------------------|----------------|--|----------------|----------------|--------------|-------------|
|                       |                | 20–49                                      | 50–84          | 85–119         | 120–164      | >165        |
| <i>Thousand acres</i> |                |  |                |                |              |             |
| Alleghany             | 68.1           | 1.5  | 24.8           | 24.8           | 17.0         | —           |
| Ashe                  | 166.6          | 35.6                                       | 61.2           | 36.8           | 28.3         | 4.7         |
| Avery                 | 132.8          | 13.3                                       | 62.4           | 37.9           | 19.2         | —           |
| Buncombe              | 258.0          | 34.0                                       | 117.7          | 54.4           | 43.3         | 8.6         |
| Burke                 | 188.6          | 12.1                                       | 55.6           | 70.9           | 46.1         | 3.9         |
| Caldwell              | 226.8          | 41.4                                       | 73.8           | 49.0           | 55.5         | 7.1         |
| Cherokee              | 239.4          | 34.4                                       | 71.8           | 66.1           | 67.2         | —           |
| Clay                  | 94.0           | 30.5                                       | 14.3           | 37.5           | 11.7         | —           |
| Graham                | 154.5          | 22.6                                       | 44.5           | 52.0           | 35.5         | —           |
| Haywood               | 194.8          | 30.2                                       | 64.2           | 61.3           | 34.4         | 4.8         |
| Henderson             | 118.0          | 20.8                                       | 55.9           | 28.3           | 10.5         | 2.5         |
| Jackson               | 239.5          | 75.3                                       | 113.4          | 30.5           | 14.8         | 5.5         |
| Macon                 | 245.3          | 59.1                                       | 91.6           | 61.3           | 20.6         | 12.7        |
| Madison               | 227.7          | 17.1                                       | 75.8           | 74.3           | 55.5         | 5.1         |
| McDowell              | 231.5          | 56.9                                       | 94.1           | 40.8           | 33.1         | 6.6         |
| Mitchell              | 114.4          | 20.6                                       | 30.7           | 39.1           | 24.0         | —           |
| Swain                 | 87.9           | 25.9                                       | 33.8           | 22.5           | 5.6          | —           |
| Transylvania          | 199.3          | 76.8                                       | 39.1           | 51.7           | 31.7         | —           |
| Watauga               | 128.7          | 41.2                                       | 49.6           | 18.6           | 19.3         | —           |
| Wilkes                | 312.2          | 26.5                                       | 105.0          | 125.7          | 50.2         | 4.8         |
| Yancey                | 147.8          | 38.4                                       | 54.4           | 45.0           | 10.1         | —           |
| <b>Total</b>          | <b>3,775.9</b> | <b>714.1</b>                               | <b>1,333.5</b> | <b>1,028.4</b> | <b>633.5</b> | <b>66.3</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 7—Area of timberland by county and stocking class of growing-stock trees, Mountains of North Carolina, 2002**

| County                | All classes    | Stocking class ( <i>percent</i> ) |              |                |                |              |
|-----------------------|----------------|-----------------------------------|--------------|----------------|----------------|--------------|
|                       |                | <16.7                             | 16.7–59      | 60–99          | 100–130        | >130         |
| <i>Thousand acres</i> |                |                                   |              |                |                |              |
| Alleghany             | 68.1           | —                                 | 3.1          | 32.5           | 4.6            | 27.9         |
| Ashe                  | 166.6          | 8.9                               | 16.6         | 74.0           | 64.1           | 3.0          |
| Avery                 | 132.8          | 1.5                               | 16.6         | 57.8           | 41.8           | 15.2         |
| Buncombe              | 258.0          | —                                 | 33.4         | 66.7           | 116.7          | 41.1         |
| Burke                 | 188.6          | 7.5                               | 15.0         | 80.3           | 57.5           | 28.3         |
| Caldwell              | 226.8          | 2.0                               | 42.5         | 48.5           | 95.1           | 38.6         |
| Cherokee              | 239.4          | —                                 | 21.4         | 94.0           | 85.6           | 38.4         |
| Clay                  | 94.0           | —                                 | 21.4         | 54.6           | 14.3           | 3.7          |
| Graham                | 154.5          | 0.1                               | 9.6          | 55.5           | 61.4           | 27.9         |
| Haywood               | 194.8          | 2.4                               | 15.8         | 66.5           | 68.5           | 41.6         |
| Henderson             | 118.0          | 1.8                               | 10.8         | 39.6           | 56.6           | 9.3          |
| Jackson               | 239.5          | 1.3                               | 61.0         | 88.9           | 73.7           | 14.6         |
| Macon                 | 245.3          | 2.2                               | 20.6         | 108.0          | 92.3           | 22.1         |
| Madison               | 227.7          | 15.7                              | 46.2         | 84.0           | 59.8           | 22.0         |
| McDowell              | 231.5          | 4.6                               | 16.8         | 92.0           | 65.9           | 52.2         |
| Mitchell              | 114.4          | —                                 | 13.6         | 53.0           | 23.1           | 24.7         |
| Swain                 | 87.9           | —                                 | 22.8         | 34.0           | 18.3           | 12.7         |
| Transylvania          | 199.3          | 0.7                               | 27.0         | 94.4           | 51.4           | 25.8         |
| Watauga               | 128.7          | 6.4                               | 9.6          | 37.4           | 49.0           | 26.2         |
| Wilkes                | 312.2          | 6.3                               | 38.4         | 119.9          | 111.0          | 36.7         |
| Yancey                | 147.8          | 10.3                              | 23.8         | 77.6           | 18.2           | 18.0         |
| <b>Total</b>          | <b>3,775.9</b> | <b>71.8</b>                       | <b>485.9</b> | <b>1,459.4</b> | <b>1,228.8</b> | <b>530.1</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 8—Area of timberland by forest-type group, stand origin, and ownership class, Mountains of North Carolina, 2002**

| Forest-type group<br>and stand origin | All<br>classes | Ownership class    |                 |                    |                          |
|---------------------------------------|----------------|--------------------|-----------------|--------------------|--------------------------|
|                                       |                | National<br>forest | Other<br>public | Forest<br>industry | Nonindustrial<br>private |
| <i>Thousand acres</i>                 |                |                    |                 |                    |                          |
| <b>Softwood types</b>                 |                |                    |                 |                    |                          |
| White-red-jack pine                   |                |                    |                 |                    |                          |
| Planted                               | 58.0           | 2.6                | 4.8             | —                  | 50.6                     |
| Natural                               | 178.0          | 42.3               | —               | —                  | 135.7                    |
| Total                                 | 236.0          | 44.9               | 4.8             | —                  | 186.3                    |
| Spruce-fir                            |                |                    |                 |                    |                          |
| Planted                               | —              | —                  | —               | —                  | —                        |
| Natural                               | 15.7           | 9.2                | —               | —                  | 6.4                      |
| Total                                 | 15.7           | 9.2                | —               | —                  | 6.4                      |
| Loblolly-shortleaf pine               |                |                    |                 |                    |                          |
| Planted                               | 16.7           | —                  | —               | —                  | 16.7                     |
| Natural                               | 107.0          | 12.7               | —               | —                  | 94.3                     |
| Total                                 | 123.7          | 12.7               | —               | —                  | 111.0                    |
| Total softwoods                       | 375.4          | 66.8               | 4.8             | —                  | 303.8                    |
| <b>Hardwood types</b>                 |                |                    |                 |                    |                          |
| Oak-pine                              |                |                    |                 |                    |                          |
| Planted                               | 6.3            | —                  | —               | —                  | 6.3                      |
| Natural                               | 359.6          | 67.2               | 14.5            | —                  | 277.9                    |
| Total                                 | 365.9          | 67.2               | 14.5            | —                  | 284.2                    |
| Oak-hickory                           | 2,916.3        | 773.0              | 92.4            | 29.2               | 2,021.7                  |
| Elm-ash-cottonwood                    | 2.8            | —                  | —               | —                  | 2.8                      |
| Maple-beech-birch                     | 115.6          | 36.5               | —               | —                  | 79.0                     |
| Total hardwoods                       | 3,400.5        | 876.8              | 106.9           | 29.2               | 2,387.7                  |
| <b>Nonstocked</b>                     | —              | —                  | —               | —                  | —                        |
| <b>All groups</b>                     | 3,775.9        | 943.6              | 111.7           | 29.2               | 2,691.5                  |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 9—Area of timberland by forest-type group, detailed forest type, and ownership class, Mountains of North Carolina, 2002**

| Forest-type group<br>and detailed forest type | All<br>classes | Ownership class    |                 |                    |                          |
|---|----------------|--------------------|-----------------|--------------------|--------------------------|
|   |                | National<br>forest | Other<br>public | Forest<br>industry | Nonindustrial<br>private |
| <i>Thousand acres</i>                         |                |                    |                 |                    |                          |
| <b>Softwood types</b>                         |                |                    |                 |                    |                          |
| White-red-jack pine                           |                |                    |                 |                    |                          |
| White pine                                    | 191.8          | 32.9               | 4.8             | —                  | 154.1                    |
| White pine-hemlock                            | 30.7           | 9.5                | —               | —                  | 21.1                     |
| Hemlock                                       | 13.6           | 2.4                | —               | —                  | 11.2                     |
| Total   | 236.0          | 44.9               | 4.8             | —                  | 186.3                    |
| Spruce-fir                                    |                |                    |                 |                    |                          |
| Red spruce-balsam fir                         | 15.7           | 9.2                | —               | —                  | 6.4                      |
| Total   | 15.7           | 9.2                | —               | —                  | 6.4                      |
| Loblolly-shortleaf                            |                |                    |                 |                    |                          |
| Loblolly pine                                 | 16.3           | 2.9                | —               | —                  | 13.4                     |
| Shortleaf pine                                | 14.2           | —                  | —               | —                  | 14.2                     |
| Virginia pine                                 | 75.1           | 4.6                | —               | —                  | 70.5                     |
| Pitch pine                                    | 12.9           | —                  | —               | —                  | 12.9                     |
| Table Mountain pine                           | 5.2            | 5.2                | —               | —                  | —                        |
| Total   | 123.7          | 12.7               | —               | —                  | 111.0                    |
| Total softwoods                               | 375.4          | 66.8               | 4.8             | —                  | 303.8                    |
| <b>Hardwood types</b>                         |                |                    |                 |                    |                          |
| Oak-pine                                      |                |                    |                 |                    |                          |
| White pine-n. red oak-white ash               | 190.3          | 44.6               | 14.5            | —                  | 131.2                    |
| Shortleaf pine-oak                            | 37.5           | 3.9                | —               | —                  | 33.6                     |
| Virginia pine-s. red oak                      | 64.3           | 9.6                | —               | —                  | 54.7                     |
| Other oak-pine                                | 73.9           | 9.1                | —               | —                  | 64.8                     |
| Total   | 365.9          | 67.2               | 14.5            | —                  | 284.2                    |
| Oak-hickory                                   |                |                    |                 |                    |                          |
| Post oak-black oak                            | 14.2           | —                  | —               | —                  | 14.2                     |
| Chestnut oak                                  | 320.4          | 84.6               | 19.3            | 12.4               | 204.2                    |
| White oak-red oak-hickory                     | 284.5          | 75.3               | 11.0            | —                  | 198.2                    |
| White oak                                     | 3.7            | —                  | —               | —                  | 3.7                      |
| N. red oak                                    | 19.2           | 4.8                | —               | —                  | 14.3                     |
| Yellow-poplar-white oak-n. red oak            | 658.1          | 137.8              | 7.6             | 3.7                | 508.9                    |
| Sweetgum-yellow-poplar                        | 23.1           | —                  | 1.2             | —                  | 21.9                     |
| Mixed hardwood                                | 1,593.1        | 470.5              | 53.2            | 13.1               | 1,056.3                  |
| Total   | 2,916.3        | 773.0              | 92.4            | 29.2               | 2,021.7                  |
| Elm-ash-cottonwood                            |                |                    |                 |                    |                          |
| River birch-sycamore                          | 2.8            | —                  | —               | —                  | 2.8                      |
| Total   | 2.8            | —                  | —               | —                  | 2.8                      |
| Maple-beech-birch                             |                |                    |                 |                    |                          |
| Sugar maple-beech-yellow birch                | 115.6          | 36.5               | —               | —                  | 79.0                     |
| Total   | 115.6          | 36.5               | —               | —                  | 79.0                     |
| Total hardwoods                               | 3,400.5        | 876.8              | 106.9           | 29.2               | 2,387.7                  |
| <b>Nonstocked</b>                             | —              | —                  | —               | —                  | —                        |
| <b>All groups</b>                             | 3,775.9        | 943.6              | 111.7           | 29.2               | 2,691.5                  |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 10—Area of timberland by ownership and stocking class of growing-stock trees, Mountains of North Carolina, 2002**

| Ownership class       | All classes    | Stocking class ( <i>percent</i> ) |              |                |                |              |
|-----------------------|----------------|-----------------------------------|--------------|----------------|----------------|--------------|
|                       |                | <16.7                             | 16.7–59      | 60–99          | 100–130        | >130         |
| <i>Thousand acres</i> |                |                                   |              |                |                |              |
| National forest       | 943.6          | 16.1                              | 116.1        | 373.0          | 319.6          | 118.8        |
| Other public          | 111.7          | 2.0                               | 9.6          | 42.4           | 50.9           | 6.7          |
| Forest industry       | 29.2           | —                                 | 7.5          | 15.5           | 6.2            | —            |
| Nonindustrial private | 2,691.5        | 53.7                              | 352.8        | 1,028.5        | 852.1          | 404.5        |
| <b>All ownerships</b> | <b>3,775.9</b> | <b>71.8</b>                       | <b>485.9</b> | <b>1,459.4</b> | <b>1,228.8</b> | <b>530.1</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 11—Area of timberland by forest-type group, stand origin, and stand-size class, Mountains of North Carolina, 2002**

| Forest-type group and stand origin | All classes    | Stand-size class |              |                  |            |
|------------------------------------|----------------|------------------|--------------|------------------|------------|
|                                    |                | Sawtimber        | Poletimber   | Sapling-seedling | Nonstocked |
| <i>Thousand acres</i>              |                |                  |              |                  |            |
| <b>Softwood types</b>              |                |                  |              |                  |            |
| White-red-jack pine                |                |                  |              |                  |            |
| Planted                            | 58.0           | 29.8             | 9.5          | 18.8             | —          |
| Natural                            | 178.0          | 132.3            | 19.8         | 25.9             | —          |
| <b>Total</b>                       | <b>236.0</b>   | <b>162.1</b>     | <b>29.3</b>  | <b>44.7</b>      | <b>—</b>   |
| Spruce-fir                         |                |                  |              |                  |            |
| Planted                            | —              | —                | —            | —                | —          |
| Natural                            | 15.7           | 5.5              | 10.2         | —                | —          |
| <b>Total</b>                       | <b>15.7</b>    | <b>5.5</b>       | <b>10.2</b>  | <b>—</b>         | <b>—</b>   |
| Loblolly-shortleaf pine            |                |                  |              |                  |            |
| Planted                            | 16.7           | 1.3              | 13.7         | 1.7              | —          |
| Natural                            | 107.0          | 63.4             | 22.9         | 20.7             | —          |
| <b>Total</b>                       | <b>123.7</b>   | <b>64.7</b>      | <b>36.6</b>  | <b>22.5</b>      | <b>—</b>   |
| <b>Total softwoods</b>             | <b>375.4</b>   | <b>232.2</b>     | <b>76.0</b>  | <b>67.2</b>      | <b>—</b>   |
| <b>Hardwood types</b>              |                |                  |              |                  |            |
| Oak-pine                           |                |                  |              |                  |            |
| Planted                            | 6.3            | —                | 3.0          | 3.3              | —          |
| Natural                            | 359.6          | 234.3            | 64.0         | 61.3             | —          |
| <b>Total</b>                       | <b>365.9</b>   | <b>234.3</b>     | <b>67.0</b>  | <b>64.6</b>      | <b>—</b>   |
| Oak-hickory                        | 2,916.3        | 1,905.1          | 583.8        | 427.5            | —          |
| Elm-ash-cottonwood                 | 2.8            | —                | 2.8          | —                | —          |
| Maple-beech-birch                  | 115.6          | 70.9             | 29.8         | 14.8             | —          |
| <b>Total hardwoods</b>             | <b>3,400.5</b> | <b>2,210.3</b>   | <b>683.3</b> | <b>506.9</b>     | <b>—</b>   |
| <b>Nonstocked</b>                  | <b>—</b>       | <b>—</b>         | <b>—</b>     | <b>—</b>         | <b>—</b>   |
| <b>All groups</b>                  | <b>3,775.9</b> | <b>2,442.5</b>   | <b>759.3</b> | <b>574.1</b>     | <b>—</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 12—Area of timberland by stand-age class and forest management type, all ownerships, Mountains of North Carolina, 2002**

| Stand-age class | All types | Forest management type |              |          |                 |                  |            |
|-----------------|-----------|------------------------|--------------|----------|-----------------|------------------|------------|
|                 |           | Pine plantation        | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Years</i>    |           | <i>Thousand acres</i>  |              |          |                 |                  |            |
| 0–10            | 153.2     | 6.1                    | 19.8         | 9.9      | 117.4           | —                | —          |
| 11–20           | 257.3     | 35.8                   | 17.7         | 25.9     | 177.9           | —                | —          |
| 21–30           | 166.2     | 17.7                   | 9.8          | 39.5     | 99.2            | —                | —          |
| 31–40           | 240.0     | 8.7                    | 51.0         | 39.9     | 140.4           | —                | —          |
| 41–50           | 464.2     | 6.5                    | 52.3         | 41.8     | 360.7           | 2.8              | —          |
| 51–60           | 604.9     | —                      | 69.0         | 67.8     | 468.1           | —                | —          |
| 61–70           | 635.8     | —                      | 45.0         | 50.8     | 540.0           | —                | —          |
| 71–80           | 536.9     | —                      | 21.6         | 58.8     | 456.5           | —                | —          |
| 81+             | 717.5     | —                      | 14.5         | 31.5     | 671.6           | —                | —          |
| All classes     | 3,775.9   | 74.8                   | 300.7        | 365.9    | 3,031.8         | 2.8              | —          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 13—Area of timberland by stand-age class and forest management type, public ownerships, Mountains of North Carolina, 2002**

| Stand-age class | All types | Forest management type |              |          |                 |                  |            |
|-----------------|-----------|------------------------|--------------|----------|-----------------|------------------|------------|
|                 |           | Pine plantation        | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Years</i>    |           | <i>Thousand acres</i>  |              |          |                 |                  |            |
| 0–10            | 17.8      | —                      | 3.6          | —        | 14.2            | —                | —          |
| 11–20           | 62.8      | 1.4                    | 3.6          | 9.8      | 48.0            | —                | —          |
| 21–30           | 26.9      | —                      | —            | 13.2     | 13.7            | —                | —          |
| 31–40           | 33.9      | —                      | 8.4          | —        | 25.5            | —                | —          |
| 41–50           | 77.4      | 6.0                    | 9.9          | 7.6      | 53.9            | —                | —          |
| 51–60           | 125.9     | —                      | 20.3         | 16.5     | 89.1            | —                | —          |
| 61–70           | 190.2     | —                      | 9.7          | 7.9      | 172.7           | —                | —          |
| 71–80           | 146.6     | —                      | 4.1          | 12.0     | 130.4           | —                | —          |
| 81+             | 373.8     | —                      | 4.7          | 14.7     | 354.4           | —                | —          |
| All classes     | 1,055.2   | 7.4                    | 64.2         | 81.7     | 902.0           | —                | —          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 14—Area of timberland by stand-age class and forest management type, forest industry ownerships, Mountains of North Carolina, 2002**

| Stand-age class       | Forest management type |                 |              |          |                 |                  |            |
|-----------------------|------------------------|-----------------|--------------|----------|-----------------|------------------|------------|
|                       | All types              | Pine plantation | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Years</i>          |                        |                 |              |          |                 |                  |            |
| <i>Thousand acres</i> |                        |                 |              |          |                 |                  |            |
| 0–10                  | 1.9                    | —               | —            | —        | 1.9             | —                | —          |
| 11–20                 | —                      | —               | —            | —        | —               | —                | —          |
| 21–30                 | —                      | —               | —            | —        | —               | —                | —          |
| 31–40                 | —                      | —               | —            | —        | —               | —                | —          |
| 41–50                 | —                      | —               | —            | —        | —               | —                | —          |
| 51–60                 | 6.2                    | —               | —            | —        | 6.2             | —                | —          |
| 61–70                 | —                      | —               | —            | —        | —               | —                | —          |
| 71–80                 | 11.8                   | —               | —            | —        | 11.8            | —                | —          |
| 81+                   | 9.4                    | —               | —            | —        | 9.4             | —                | —          |
| All classes           | 29.2                   | —               | —            | —        | 29.2            | —                | —          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 15—Area of timberland by stand-age class and forest management type, nonindustrial private ownerships, Mountains of North Carolina, 2002**

| Stand-age class       | Forest management type |                 |              |          |                 |                  |            |
|-----------------------|------------------------|-----------------|--------------|----------|-----------------|------------------|------------|
|                       | All types              | Pine plantation | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Years</i>          |                        |                 |              |          |                 |                  |            |
| <i>Thousand acres</i> |                        |                 |              |          |                 |                  |            |
| 0–10                  | 133.5                  | 6.1             | 16.2         | 9.9      | 101.3           | —                | —          |
| 11–20                 | 194.5                  | 34.4            | 14.1         | 16.1     | 129.9           | —                | —          |
| 21–30                 | 139.3                  | 17.7            | 9.8          | 26.3     | 85.5            | —                | —          |
| 31–40                 | 206.1                  | 8.7             | 42.6         | 39.9     | 114.9           | —                | —          |
| 41–50                 | 386.8                  | 0.5             | 42.4         | 34.3     | 306.9           | 2.8              | —          |
| 51–60                 | 472.8                  | —               | 48.8         | 51.3     | 372.7           | —                | —          |
| 61–70                 | 445.6                  | —               | 35.3         | 43.0     | 367.3           | —                | —          |
| 71–80                 | 378.5                  | —               | 17.4         | 46.8     | 314.3           | —                | —          |
| 81+                   | 334.4                  | —               | 9.7          | 16.8     | 307.9           | —                | —          |
| All classes           | 2,691.5                | 67.3            | 236.5        | 284.2    | 2,100.7         | 2.8              | —          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.



**Table 16—Area of nonindustrial private timberland by ownership, forested tract-size class, and forest management type, Mountains of North Carolina, 2002**

| Ownership and forested tract-size class | All types | Forest management type |              |          |                 |                  |            |
|---|-----------|------------------------|--------------|----------|-----------------|------------------|------------|
|   |           | Pine plantation        | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Acres</i>                            |           | <i>Thousand acres</i>  |              |          |                 |                  |            |
| <b>Individual</b>                       |           |                        |              |          |                 |                  |            |
| ≤ 10                                    | 388.3     | 4.6                    | 40.6         | 52.4     | 290.7           | —                | —          |
| 11–50                                   | 716.4     | 23.7                   | 80.1         | 108.5    | 501.2           | 2.8              | —          |
| 51–100                                  | 495.8     | 6.2                    | 31.5         | 31.1     | 427.0           | —                | —          |
| 101–200                                 | 316.3     | 4.7                    | 19.2         | 49.5     | 242.9           | —                | —          |
| 201–500                                 | 192.2     | —                      | 17.7         | 3.3      | 171.2           | —                | —          |
| ≥ 501                                   | 109.0     | —                      | —            | 11.8     | 97.2            | —                | —          |
| Total                                   | 2,218.0   | 39.3                   | 189.1        | 256.7    | 1,730.1         | 2.8              | —          |
| <b>Corporate</b>                        |           |                        |              |          |                 |                  |            |
| ≤ 10                                    | 39.9      | —                      | —            | 1.7      | 38.1            | —                | —          |
| 11–50                                   | 63.0      | —                      | —            | —        | 63.0            | —                | —          |
| 51–100                                  | 30.6      | —                      | 2.9          | 7.8      | 20.0            | —                | —          |
| 101–200                                 | 55.4      | —                      | 7.1          | 5.5      | 42.8            | —                | —          |
| 201–500                                 | 78.8      | 6.9                    | —            | 1.6      | 70.4            | —                | —          |
| ≥ 501                                   | 205.8     | 21.2                   | 37.4         | 11.0     | 136.3           | —                | —          |
| Total                                   | 473.5     | 28.0                   | 47.4         | 27.5     | 370.6           | —                | —          |
| <b>All nonindustrial private</b>        |           |                        |              |          |                 |                  |            |
| ≤ 10                                    | 428.2     | 4.6                    | 40.6         | 54.1     | 328.8           | —                | —          |
| 11–50                                   | 779.4     | 23.7                   | 80.1         | 108.5    | 564.2           | 2.8              | —          |
| 51–100                                  | 526.5     | 6.2                    | 34.4         | 38.9     | 447.0           | —                | —          |
| 101–200                                 | 371.7     | 4.7                    | 26.3         | 55.0     | 285.7           | —                | —          |
| 201–500                                 | 271.0     | 6.9                    | 17.7         | 4.9      | 241.5           | —                | —          |
| ≥ 501                                   | 314.8     | 21.2                   | 37.4         | 22.8     | 233.5           | —                | —          |
| Total                                   | 2,691.5   | 67.3                   | 236.5        | 284.2    | 2,100.7         | 2.8              | —          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 17—Number of live trees on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                 | Diameter class (inches at breast height) |                  |                |                |                |               |               |               |               |               |               |               |                 |
|-------------------------|--|------------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|
|                         | All classes                              | 1.0–2.9          | 3.0–4.9        | 5.0–6.9        | 7.0–8.9        | 9.0–10.9      | 11.0–12.9     | 13.0–14.9     | 15.0–16.9     | 17.0–18.9     | 19.0–20.9     | 21.0–28.9     | 29.0 and larger |
| <i>Thousand trees</i>   |  |                  |                |                |                |               |               |               |               |               |               |               |                 |
| <b>Softwood</b>         |  |                  |                |                |                |               |               |               |               |               |               |               |                 |
| Shortleaf pine          | 7,817                                    | 747              | —              | 2,083          | 1,781          | 1,356         | 818           | 831           | 119           | 41            | 22            | 19            | —               |
| Loblolly pine           | 3,837                                    | 444              | —              | 348            | 1,666          | 849           | 195           | 178           | 72            | 48            | 37            | —             | —               |
| Virginia pine           | 43,378                                   | 15,283           | 6,812          | 8,005          | 5,748          | 3,823         | 2,338         | 838           | 437           | 19            | 75            | —             | —               |
| Pitch pine              | 10,752                                   | 1,230            | 2,910          | 1,395          | 1,562          | 1,276         | 1,061         | 741           | 316           | 188           | 73            | —             | —               |
| Table Mountain pine     | 3,762                                    | 2,349            | 713            | 66             | 213            | 86            | 110           | 103           | 122           | —             | —             | —             | —               |
| Eastern white pine      | 147,739                                  | 73,629           | 29,796         | 13,955         | 10,251         | 5,566         | 4,337         | 2,980         | 2,102         | 1,832         | 1,440         | 1,529         | 322             |
| Eastern hemlock         | 77,073                                   | 38,436           | 17,939         | 9,109          | 4,496          | 1,858         | 1,973         | 1,158         | 920           | 341           | 267           | 389           | 187             |
| Spruce and fir          | 16,455                                   | 9,375            | 2,696          | 1,468          | 1,394          | 585           | 379           | 247           | 67            | 132           | 23            | 89            | —               |
| Redcedars               | 1,559                                    | 819              | 428            | 156            | 112            | —             | 44            | —             | —             | —             | —             | —             | —               |
| <b>Total softwoods</b>  | <b>312,372</b>                           | <b>142,312</b>   | <b>61,294</b>  | <b>36,585</b>  | <b>27,223</b>  | <b>15,399</b> | <b>11,255</b> | <b>7,076</b>  | <b>4,155</b>  | <b>2,601</b>  | <b>1,937</b>  | <b>2,026</b>  | <b>509</b>      |
| <b>Hardwood</b>         |  |                  |                |                |                |               |               |               |               |               |               |               |                 |
| Select white oaks       | 52,948                                   | 18,319           | 10,058         | 6,345          | 4,497          | 4,170         | 2,912         | 2,111         | 1,561         | 1,271         | 712           | 837           | 155             |
| Select red oaks         | 67,091                                   | 37,124           | 4,624          | 5,091          | 4,903          | 3,683         | 3,074         | 2,287         | 1,982         | 1,247         | 993           | 1,729         | 354             |
| Other white oaks        | 112,804                                  | 30,462           | 22,165         | 13,711         | 11,702         | 10,820        | 7,055         | 5,639         | 3,555         | 2,490         | 2,298         | 2,470         | 437             |
| Other red oaks          | 86,356                                   | 26,777           | 12,926         | 10,158         | 9,857          | 7,646         | 6,284         | 4,845         | 2,865         | 2,065         | 1,193         | 1,615         | 125             |
| Hickory                 | 70,663                                   | 28,727           | 15,036         | 8,927          | 6,180          | 3,981         | 2,878         | 2,241         | 1,408         | 776           | 129           | 380           | —               |
| Yellow birch            | 21,855                                   | 9,747            | 5,346          | 2,805          | 1,906          | 836           | 622           | 269           | 124           | 87            | 36            | 77            | —               |
| Hard maple              | 36,467                                   | 20,122           | 8,088          | 2,849          | 1,720          | 1,143         | 640           | 668           | 482           | 266           | 64            | 322           | 103             |
| Soft maple              | 348,896                                  | 193,538          | 74,706         | 32,341         | 20,454         | 11,823        | 5,915         | 4,402         | 2,823         | 1,198         | 703           | 865           | 128             |
| Beech                   | 44,693                                   | 28,898           | 5,158          | 2,706          | 2,860          | 1,973         | 1,079         | 841           | 506           | 256           | 268           | 148           | —               |
| Sweetgum                | 1,747                                    | 1,316            | —              | 242            | 60             | 62            | —             | 36            | 31            | —             | —             | —             | —               |
| Tupelo and blackgum     | 94,606                                   | 70,486           | 12,056         | 5,665          | 2,638          | 1,630         | 804           | 522           | 553           | 156           | —             | 75            | 21              |
| Ash                     | 19,659                                   | 8,019            | 5,185          | 1,395          | 1,482          | 736           | 941           | 577           | 432           | 263           | 171           | 422           | 36              |
| Basswood                | 13,406                                   | 4,583            | 3,307          | 1,191          | 1,053          | 635           | 717           | 888           | 566           | 215           | 157           | 94            | —               |
| Yellow-poplar           | 189,084                                  | 94,033           | 23,614         | 15,920         | 13,188         | 10,697        | 8,546         | 7,915         | 5,485         | 3,994         | 2,430         | 3,064         | 198             |
| Bay and magnolia        | 25,283                                   | 13,547           | 5,271          | 2,547          | 1,332          | 854           | 770           | 606           | 94            | 147           | 32            | 83            | —               |
| Black cherry            | 39,779                                   | 25,598           | 6,794          | 3,269          | 1,706          | 982           | 553           | 327           | 252           | 55            | 93            | 150           | —               |
| Black walnut            | 7,110                                    | 2,118            | 3,007          | 586            | 356            | 545           | 214           | 146           | 94            | 44            | —             | —             | —               |
| Sycamore                | 1,030                                    | 788              | —              | 106            | —              | —             | 78            | 34            | —             | —             | 24            | —             | —               |
| Black locust            | 54,438                                   | 26,019           | 11,562         | 5,156          | 3,815          | 2,860         | 2,260         | 1,150         | 771           | 340           | 187           | 285           | 33              |
| Elm                     | 3,065                                    | 1,948            | 453            | 289            | 172            | 84            | 54            | —             | 36            | 29            | —             | —             | —               |
| Other Eastern hardwoods | 575,965                                  | 344,272          | 129,404        | 50,771         | 27,405         | 12,293        | 6,377         | 2,530         | 1,189         | 996           | 299           | 397           | 32              |
| <b>Total hardwoods</b>  | <b>1,866,945</b>                         | <b>986,441</b>   | <b>358,760</b> | <b>172,070</b> | <b>117,286</b> | <b>77,453</b> | <b>51,773</b> | <b>38,034</b> | <b>24,809</b> | <b>15,895</b> | <b>9,789</b>  | <b>13,013</b> | <b>1,622</b>    |
| <b>All species</b>      | <b>2,179,317</b>                         | <b>1,128,753</b> | <b>420,054</b> | <b>208,655</b> | <b>144,509</b> | <b>92,852</b> | <b>63,028</b> | <b>45,110</b> | <b>28,964</b> | <b>18,496</b> | <b>11,726</b> | <b>15,039</b> | <b>2,131</b>    |

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

A dash (—) indicates no sample for the cell.

**Table 18—Number of growing-stock trees on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                 | Diameter class (inches at breast height) |                |                |                |                |               |               |               |               |               |               |               |                 |
|-------------------------|--|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|
|                         | All classes                              | 1.0–2.9        | 3.0–4.9        | 5.0–6.9        | 7.0–8.9        | 9.0–10.9      | 11.0–12.9     | 13.0–14.9     | 15.0–16.9     | 17.0–18.9     | 19.0–20.9     | 21.0–28.9     | 29.0 and larger |
| <i>Thousand trees</i>   |  |                |                |                |                |               |               |               |               |               |               |               |                 |
| <b>Softwood</b>         |  |                |                |                |                |               |               |               |               |               |               |               |                 |
| Shortleaf pine          | 7,163                                    | 233            | —              | 1,943          | 1,781          | 1,356         | 818           | 831           | 119           | 41            | 22            | 19            | —               |
| Loblolly pine           | 3,321                                    | —              | —              | 317            | 1,625          | 849           | 195           | 178           | 72            | 48            | 37            | —             | —               |
| Virginia pine           | 30,739                                   | 6,667          | 4,180          | 7,082          | 5,451          | 3,725         | 2,301         | 838           | 401           | 19            | 75            | —             | —               |
| Pitch pine              | 9,596                                    | 766            | 2,642          | 1,250          | 1,500          | 1,161         | 1,061         | 705           | 287           | 151           | 73            | —             | —               |
| Table Mountain pine     | 1,473                                    | 445            | 445            | 66             | 127            | 86            | 79            | 103           | 122           | —             | —             | —             | —               |
| Eastern white pine      | 121,085                                  | 53,871         | 24,886         | 13,051         | 9,754          | 5,390         | 4,233         | 2,944         | 2,030         | 1,784         | 1,363         | 1,457         | 322             |
| Eastern hemlock         | 54,652                                   | 20,333         | 15,493         | 8,164          | 4,350          | 1,570         | 1,667         | 1,137         | 855           | 341           | 267           | 317           | 158             |
| Spruce and fir          | 11,901                                   | 5,217          | 2,696          | 1,328          | 1,254          | 539           | 340           | 247           | 36            | 132           | 23            | 89            | —               |
| Redcedars               | 740                                      | 428            | —              | 156            | 112            | —             | 44            | —             | —             | —             | —             | —             | —               |
| Total softwoods         | 240,670                                  | 87,960         | 50,342         | 33,357         | 25,954         | 14,676        | 10,738        | 6,983         | 3,922         | 2,516         | 1,860         | 1,882         | 480             |
| <b>Hardwood</b>         |  |                |                |                |                |               |               |               |               |               |               |               |                 |
| Select white oaks       | 34,423                                   | 6,007          | 6,203          | 5,447          | 4,284          | 3,727         | 2,790         | 1,911         | 1,527         | 1,122         | 636           | 709           | 60              |
| Select red oaks         | 34,039                                   | 8,295          | 3,311          | 4,220          | 4,384          | 3,245         | 2,710         | 2,088         | 1,779         | 1,179         | 904           | 1,599         | 325             |
| Other white oaks        | 64,481                                   | 4,684          | 10,031         | 10,209         | 9,463          | 9,138         | 5,961         | 5,012         | 3,302         | 2,244         | 2,061         | 2,081         | 295             |
| Other red oaks          | 56,683                                   | 7,657          | 7,724          | 8,465          | 8,512          | 7,008         | 5,640         | 4,496         | 2,689         | 1,897         | 1,161         | 1,338         | 96              |
| Hickory                 | 41,790                                   | 7,543          | 9,617          | 8,052          | 5,621          | 3,679         | 2,613         | 2,136         | 1,364         | 744           | 100           | 321           | —               |
| Yellow birch            | 10,766                                   | 2,833          | 3,111          | 1,983          | 1,408          | 631           | 493           | 164           | 95            | —             | —             | 48            | —               |
| Hard maple              | 13,896                                   | 3,065          | 3,843          | 2,324          | 1,441          | 1,065         | 503           | 668           | 364           | 266           | 64            | 293           | —               |
| Soft maple              | 141,696                                  | 40,978         | 38,245         | 23,708         | 16,293         | 9,645         | 4,702         | 3,719         | 2,421         | 857           | 453           | 591           | 84              |
| Beech                   | 14,514                                   | 5,063          | 1,812          | 1,942          | 2,108          | 1,329         | 766           | 774           | 359           | 140           | 106           | 115           | —               |
| Sweetgum                | 1,294                                    | 863            | —              | 242            | 60             | 62            | —             | 36            | 31            | —             | —             | —             | —               |
| Tupelo and blackgum     | 27,382                                   | 11,917         | 5,948          | 4,163          | 2,178          | 1,391         | 567           | 435           | 553           | 156           | —             | 53            | 21              |
| Ash                     | 8,660                                    | 1,150          | 2,335          | 992            | 969            | 707           | 789           | 488           | 403           | 263           | 142           | 422           | —               |
| Basswood                | 7,884                                    | 1,249          | 1,698          | 1,011          | 924            | 591           | 610           | 826           | 530           | 215           | 157           | 73            | —               |
| Yellow-poplar           | 154,070                                  | 65,094         | 21,028         | 14,862         | 12,083         | 10,277        | 7,983         | 7,879         | 5,379         | 3,965         | 2,394         | 2,993         | 133             |
| Bay and magnolia        | 17,033                                   | 7,088          | 4,525          | 2,005          | 1,113          | 753           | 651           | 574           | 94            | 147           | —             | 83            | —               |
| Black cherry            | 11,757                                   | 3,271          | 3,881          | 1,863          | 1,123          | 667           | 230           | 267           | 216           | 19            | 93            | 127           | —               |
| Black walnut            | 1,348                                    | —              | —              | 351            | 279            | 317           | 182           | 117           | 58            | 44            | —             | —             | —               |
| Sycamore                | 996                                      | 788            | —              | 106            | —              | —             | 78            | —             | —             | —             | 24            | —             | —               |
| Black locust            | 20,128                                   | 4,388          | 5,212          | 3,078          | 2,382          | 2,061         | 1,257         | 786           | 471           | 275           | 117           | 68            | 33              |
| Elm                     | 907                                      | —              | 453            | 144            | 136            | 84            | 54            | —             | 36            | —             | —             | —             | —               |
| Other Eastern hardwoods | 180,327                                  | 66,034         | 49,022         | 27,766         | 19,261         | 8,952         | 4,791         | 2,155         | 982           | 779           | 224           | 361           | —               |
| Total hardwoods         | 844,074                                  | 247,967        | 177,999        | 122,933        | 94,022         | 65,329        | 43,370        | 34,531        | 22,653        | 14,312        | 8,636         | 11,275        | 1,047           |
| <b>All species</b>      | <b>1,084,744</b>                         | <b>335,927</b> | <b>228,341</b> | <b>156,290</b> | <b>119,976</b> | <b>80,005</b> | <b>54,108</b> | <b>41,514</b> | <b>26,575</b> | <b>16,828</b> | <b>10,496</b> | <b>13,157</b> | <b>1,527</b>    |

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

A dash (—) indicates no sample for the cell.

**Table 19—Volume of live trees on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                   | All classes    | Diameter class (inches at breast height) |              |                |                |                |                |              |              |                |                 |
|---------------------------|----------------|--|--------------|----------------|----------------|----------------|----------------|--------------|--------------|----------------|-----------------|
|                           |                | 5.0–6.9                                  | 7.0–8.9      | 9.0–10.9       | 11.0–12.9      | 13.0–14.9      | 15.0–16.9      | 17.0–18.9    | 19.0–20.9    | 21.0–28.9      | 29.0 and larger |
| <i>Million cubic feet</i> |                |  |              |                |                |                |                |              |              |                |                 |
| <b>Softwood</b>           |                |  |              |                |                |                |                |              |              |                |                 |
| Shortleaf pine            | 92.3           | 5.3                                      | 13.5         | 18.6           | 17.5           | 25.7           | 5.2            | 2.2          | 1.2          | 3.2            | —               |
| Loblolly pine             | 35.2           | 0.7                                      | 8.2          | 8.5            | 3.6            | 5.7            | 3.6            | 3.2          | 1.6          | —              | —               |
| Virginia pine             | 220.1          | 25.8                                     | 42.6         | 51.1           | 50.3           | 25.3           | 18.7           | 1.0          | 5.4          | —              | —               |
| Pitch pine                | 94.1           | 3.5                                      | 10.3         | 14.9           | 20.1           | 19.9           | 12.1           | 8.2          | 5.2          | —              | —               |
| Table Mountain pine       | 11.6           | 0.3                                      | 1.1          | 0.9            | 2.0            | 2.7            | 4.7            | —            | —            | —              | —               |
| Eastern white pine        | 832.9          | 38.3                                     | 61.8         | 63.5           | 83.3           | 80.9           | 80.3           | 96.3         | 99.3         | 170.4          | 58.8            |
| Eastern hemlock           | 270.3          | 18.2                                     | 22.3         | 16.3           | 28.8           | 27.2           | 33.2           | 17.1         | 18.3         | 35.7           | 53.3            |
| Spruce and fir            | 42.0           | 3.0                                      | 6.4          | 5.2            | 5.2            | 5.2            | 1.9            | 6.6          | 1.1          | 7.4            | —               |
| Redcedars                 | 2.2            | 0.5                                      | 0.7          | —              | 1.0            | —              | —              | —            | —            | —              | —               |
| <b>Total softwoods</b>    | <b>1,600.8</b> | <b>95.6</b>                              | <b>166.9</b> | <b>179.0</b>   | <b>211.7</b>   | <b>192.6</b>   | <b>159.7</b>   | <b>134.5</b> | <b>132.1</b> | <b>216.6</b>   | <b>112.1</b>    |
| <b>Hardwood</b>           |                |  |              |                |                |                |                |              |              |                |                 |
| Select white oaks         | 473.5          | 16.8                                     | 28.6         | 49.4           | 55.3           | 58.5           | 60.5           | 60.4         | 41.8         | 72.0           | 30.2            |
| Select red oaks           | 610.8          | 14.5                                     | 31.5         | 43.2           | 55.4           | 57.7           | 67.5           | 57.2         | 64.3         | 159.0          | 60.5            |
| Other white oaks          | 1,117.1        | 35.2                                     | 70.4         | 116.6          | 119.7          | 137.6          | 122.1          | 109.8        | 126.2        | 212.6          | 67.0            |
| Other red oaks            | 824.5          | 28.1                                     | 59.1         | 84.7           | 108.9          | 123.9          | 102.9          | 99.9         | 68.5         | 130.9          | 17.6            |
| Hickory                   | 361.7          | 22.0                                     | 38.2         | 47.3           | 55.7           | 61.5           | 52.8           | 39.4         | 7.2          | 37.5           | —               |
| Yellow birch              | 64.7           | 10.3                                     | 12.3         | 8.6            | 10.8           | 7.3            | 4.8            | 3.6          | 1.4          | 5.7            | —               |
| Hard maple                | 141.1          | 8.7                                      | 11.5         | 14.1           | 12.1           | 17.4           | 16.7           | 14.2         | 4.3          | 29.6           | 12.6            |
| Soft maple                | 827.0          | 96.0                                     | 128.0        | 133.6          | 103.0          | 108.3          | 94.3           | 47.6         | 35.0         | 61.8           | 19.3            |
| Beech                     | 136.5          | 7.3                                      | 16.2         | 20.0           | 19.2           | 20.5           | 16.7           | 11.2         | 14.1         | 11.3           | —               |
| Sweetgum                  | 4.5            | 0.6                                      | 0.5          | 0.9            | —              | 1.1            | 1.4            | —            | —            | —              | —               |
| Tupelo and blackgum       | 101.1          | 14.1                                     | 15.0         | 16.1           | 12.8           | 12.0           | 17.7           | 5.7          | —            | 5.2            | 2.5             |
| Ash                       | 146.8          | 3.6                                      | 9.9          | 9.2            | 18.2           | 16.7           | 16.0           | 13.8         | 12.2         | 40.8           | 6.4             |
| Basswood                  | 121.7          | 4.3                                      | 7.3          | 8.6            | 14.1           | 30.0           | 24.4           | 11.5         | 12.9         | 8.6            | —               |
| Yellow-poplar             | 1,802.4        | 49.7                                     | 94.3         | 146.4          | 192.0          | 260.8          | 242.9          | 237.9        | 184.2        | 352.6          | 41.7            |
| Bay and magnolia          | 71.1           | 7.6                                      | 8.9          | 10.0           | 13.4           | 15.2           | 2.8            | 6.7          | 1.1          | 5.6            | —               |
| Black cherry              | 79.0           | 8.5                                      | 9.4          | 10.2           | 8.5            | 9.2            | 9.0            | 2.6          | 6.1          | 15.5           | —               |
| Black walnut              | 20.4           | 1.5                                      | 2.1          | 5.0            | 3.2            | 4.0            | 2.9            | 1.7          | —            | —              | —               |
| Sycamore                  | 4.7            | 0.5                                      | —            | —              | 1.6            | 0.6            | —              | —            | 1.9          | —              | —               |
| Black locust              | 179.8          | 12.7                                     | 20.5         | 28.0           | 32.9           | 24.0           | 21.4           | 13.0         | 8.1          | 14.8           | 4.5             |
| Elm                       | 6.3            | 0.9                                      | 1.1          | 1.0            | 1.5            | —              | 0.8            | 1.0          | —            | —              | —               |
| Other Eastern hardwoods   | 712.4          | 127.2                                    | 156.7        | 130.0          | 107.3          | 60.6           | 40.7           | 42.3         | 14.1         | 32.2           | 1.3             |
| <b>Total hardwoods</b>    | <b>7,807.4</b> | <b>470.2</b>                             | <b>721.6</b> | <b>882.7</b>   | <b>945.5</b>   | <b>1,026.7</b> | <b>918.5</b>   | <b>779.6</b> | <b>603.3</b> | <b>1,195.7</b> | <b>263.5</b>    |
| <b>All species</b>        | <b>9,408.2</b> | <b>565.8</b>                             | <b>888.5</b> | <b>1,061.7</b> | <b>1,157.3</b> | <b>1,219.3</b> | <b>1,078.2</b> | <b>914.1</b> | <b>735.4</b> | <b>1,412.3</b> | <b>375.7</b>    |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 20—Volume of growing-stock trees on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                   | All classes    | Diameter class (inches at breast height) |              |              |                |                |                |              |              |                |                 |
|---------------------------|----------------|--|--------------|--------------|----------------|----------------|----------------|--------------|--------------|----------------|-----------------|
|                           |                | 5.0–6.9                                  | 7.0–8.9      | 9.0–10.9     | 11.0–12.9      | 13.0–14.9      | 15.0–16.9      | 17.0–18.9    | 19.0–20.9    | 21.0–28.9      | 29.0 and larger |
| <i>Million cubic feet</i> |                |  |              |              |                |                |                |              |              |                |                 |
| <b>Softwood</b>           |                |  |              |              |                |                |                |              |              |                |                 |
| Shortleaf pine            | 92.0           | 5.0                                      | 13.5         | 18.6         | 17.5           | 25.7           | 5.2            | 2.2          | 1.2          | 3.2            | —               |
| Loblolly pine             | 35.0           | 0.6                                      | 8.0          | 8.5          | 3.6            | 5.7            | 3.6            | 3.2          | 1.6          | —              | —               |
| Virginia pine             | 213.5          | 23.7                                     | 41.1         | 50.1         | 49.7           | 25.3           | 17.3           | 1.0          | 5.4          | —              | —               |
| Pitch pine                | 89.9           | 3.3                                      | 10.1         | 13.9         | 20.1           | 19.3           | 11.5           | 6.7          | 5.2          | —              | —               |
| Table Mountain pine       | 10.7           | 0.3                                      | 0.7          | 0.9          | 1.4            | 2.7            | 4.7            | —            | —            | —              | —               |
| Eastern white pine        | 810.2          | 36.3                                     | 59.0         | 62.2         | 81.5           | 79.9           | 78.0           | 94.5         | 94.3         | 165.7          | 58.8            |
| Eastern hemlock           | 253.6          | 16.7                                     | 21.7         | 13.7         | 24.8           | 26.7           | 31.2           | 17.1         | 18.3         | 30.7           | 52.6            |
| Spruce and fir            | 39.6           | 2.7                                      | 5.9          | 4.9          | 4.7            | 5.2            | 1.1            | 6.6          | 1.1          | 7.4            | —               |
| Redcedars                 | 2.2            | 0.5                                      | 0.7          | —            | 1.0            | —              | —              | —            | —            | —              | —               |
| Total softwoods           | 1,546.4        | 89.1                                     | 160.7        | 172.7        | 204.3          | 190.4          | 152.6          | 131.3        | 127.0        | 206.9          | 111.4           |
| <b>Hardwood</b>           |                |  |              |              |                |                |                |              |              |                |                 |
| Select white oaks         | 423.9          | 14.9                                     | 27.7         | 45.0         | 53.9           | 54.6           | 59.2           | 57.0         | 39.0         | 61.7           | 10.9            |
| Select red oaks           | 573.6          | 12.8                                     | 28.8         | 39.3         | 50.3           | 53.7           | 62.3           | 55.1         | 60.7         | 152.7          | 58.0            |
| Other white oaks          | 995.2          | 27.9                                     | 58.9         | 101.4        | 104.3          | 124.9          | 115.4          | 101.9        | 116.3        | 190.9          | 53.2            |
| Other red oaks            | 763.3          | 24.5                                     | 52.6         | 79.5         | 99.4           | 117.6          | 97.8           | 94.5         | 67.2         | 114.8          | 15.3            |
| Hickory                   | 343.6          | 20.5                                     | 35.8         | 44.2         | 51.9           | 59.6           | 51.8           | 38.9         | 6.3          | 34.6           | —               |
| Yellow birch              | 45.8           | 7.7                                      | 9.5          | 7.1          | 8.7            | 4.7            | 3.7            | —            | —            | 4.4            | —               |
| Hard maple                | 114.2          | 7.4                                      | 10.0         | 13.2         | 9.6            | 17.4           | 12.7           | 14.2         | 4.3          | 25.4           | —               |
| Soft maple                | 681.2          | 73.4                                     | 106.3        | 113.4        | 85.2           | 94.7           | 82.0           | 39.1         | 26.4         | 46.8           | 13.8            |
| Beech                     | 103.0          | 5.5                                      | 12.4         | 13.9         | 14.7           | 19.4           | 12.6           | 7.2          | 6.8          | 10.5           | —               |
| Sweetgum                  | 4.5            | 0.6                                      | 0.5          | 0.9          | —              | 1.1            | 1.4            | —            | —            | —              | —               |
| Tupelo and blackgum       | 88.4           | 11.0                                     | 12.7         | 14.4         | 9.6            | 10.5           | 17.7           | 5.7          | —            | 4.4            | 2.5             |
| Ash                       | 129.3          | 2.9                                      | 7.1          | 8.8          | 16.2           | 14.6           | 14.7           | 13.8         | 10.4         | 40.8           | —               |
| Basswood                  | 115.3          | 3.9                                      | 6.4          | 8.2          | 12.9           | 28.9           | 22.8           | 11.5         | 12.9         | 7.8            | —               |
| Yellow-poplar             | 1,750.7        | 46.4                                     | 88.0         | 142.6        | 182.6          | 259.6          | 239.9          | 237.8        | 182.2        | 343.1          | 28.4            |
| Bay and magnolia          | 63.3           | 6.1                                      | 7.5          | 8.8          | 11.3           | 14.5           | 2.8            | 6.7          | —            | 5.6            | —               |
| Black cherry              | 59.5           | 5.2                                      | 6.5          | 7.6          | 3.8            | 8.0            | 7.9            | 1.4          | 6.1          | 13.1           | —               |
| Black walnut              | 15.8           | 1.0                                      | 1.8          | 3.1          | 2.7            | 3.2            | 2.3            | 1.7          | —            | —              | —               |
| Sycamore                  | 4.1            | 0.5                                      | —            | —            | 1.6            | —              | —              | —            | 1.9          | —              | —               |
| Black locust              | 123.3          | 8.0                                      | 14.3         | 21.9         | 20.5           | 17.7           | 14.2           | 11.8         | 6.0          | 4.4            | 4.5             |
| Elm                       | 4.8            | 0.5                                      | 1.0          | 1.0          | 1.5            | —              | 0.8            | —            | —            | —              | —               |
| Other Eastern hardwoods   | 553.0          | 81.1                                     | 119.9        | 101.8        | 85.3           | 54.1           | 34.5           | 34.2         | 11.3         | 30.9           | —               |
| Total hardwoods           | 6,955.8        | 361.8                                    | 607.8        | 775.9        | 826.1          | 958.9          | 856.5          | 732.5        | 557.7        | 1,092.0        | 186.7           |
| <b>All species</b>        | <b>8,502.3</b> | <b>450.9</b>                             | <b>768.5</b> | <b>948.6</b> | <b>1,030.4</b> | <b>1,149.3</b> | <b>1,009.1</b> | <b>863.8</b> | <b>684.7</b> | <b>1,298.9</b> | <b>298.1</b>    |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 21—Volume in the saw-log portion of sawtimber trees on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                   | All classes    | Diameter class ( <i>inches at breast height</i> ) |              |              |              |              |              |                |                 |
|---------------------------|----------------|---|--------------|--------------|--------------|--------------|--------------|----------------|-----------------|
|                           |                | 9.0–10.9  | 11.0–12.9    | 13.0–14.9    | 15.0–16.9    | 17.0–18.9    | 19.0–20.9    | 21.0–28.9      | 29.0 and larger |
| <i>Million cubic feet</i> |                |   |              |              |              |              |              |                |                 |
| <b>Softwood</b>           |                |   |              |              |              |              |              |                |                 |
| Shortleaf pine            | 66.8           | 15.0  | 15.9         | 24.5         | 5.1          | 2.1          | 1.2          | 3.1            | —               |
| Loblolly pine             | 23.3           | 6.4   | 3.2          | 5.4          | 3.5          | 3.2          | 1.6          | —              | —               |
| Virginia pine             | 130.9          | 40.2  | 44.5         | 23.6         | 16.5         | 0.9          | 5.3          | —              | —               |
| Pitch pine                | 69.7           | 11.2  | 18.1         | 18.0         | 10.9         | 6.4          | 5.0          | —              | —               |
| Table Mountain pine       | 9.3            | 0.7   | 1.4          | 2.6          | 4.6          | —            | —            | —              | —               |
| Eastern white pine        | 670.8          | 49.5  | 72.7         | 74.2         | 74.0         | 90.6         | 91.0         | 161.3          | 57.5            |
| Eastern hemlock           | 200.8          | 10.6  | 21.7         | 24.5         | 29.3         | 16.2         | 17.5         | 29.6           | 51.3            |
| Spruce and fir            | 28.6           | 3.9   | 4.2          | 4.8          | 1.0          | 6.4          | 1.0          | 7.2            | —               |
| Redcedars                 | 0.9            | —   | 0.9          | —            | —            | —            | —            | —              | —               |
| Total softwoods           | 1,201.1        | 137.6   | 182.6        | 177.5        | 144.9        | 125.9        | 122.5        | 201.3          | 108.9           |
| <b>Hardwood</b>           |                |   |              |              |              |              |              |                |                 |
| Select white oaks         | 292.8          | —   | 39.0         | 45.1         | 51.9         | 51.8         | 36.1         | 58.3           | 10.6            |
| Select red oaks           | 421.8          | —   | 35.7         | 42.7         | 52.4         | 47.6         | 53.5         | 137.1          | 52.9            |
| Other white oaks          | 705.7          | —   | 75.0         | 102.7        | 100.4        | 91.5         | 106.5        | 178.9          | 50.8            |
| Other red oaks            | 523.8          | —   | 70.7         | 97.0         | 85.8         | 85.5         | 62.1         | 108.0          | 14.7            |
| Hickory                   | 205.5          | —   | 37.9         | 48.9         | 45.2         | 35.0         | 5.9          | 32.7           | —               |
| Yellow birch              | 17.3           | —   | 6.1          | 3.8          | 3.2          | —            | —            | 4.1            | —               |
| Hard maple                | 72.9           | —   | 6.6          | 14.3         | 11.1         | 12.9         | 4.0          | 24.1           | —               |
| Soft maple                | 317.3          | —   | 58.3         | 75.2         | 69.6         | 34.4         | 23.8         | 43.1           | 13.0            |
| Beech                     | 59.1           | —   | 10.7         | 15.8         | 10.7         | 6.3          | 6.0          | 9.6            | —               |
| Sweetgum                  | 2.2            | —   | —            | 0.9          | 1.3          | —            | —            | —              | —               |
| Tupelo and blackgum       | 41.7           | —   | 6.6          | 8.5          | 15.2         | 5.0          | —            | 4.0            | 2.4             |
| Ash                       | 96.9           | —   | 11.4         | 12.1         | 12.7         | 12.5         | 9.7          | 38.5           | —               |
| Basswood                  | 83.1           | —   | 9.4          | 24.1         | 19.9         | 10.4         | 11.9         | 7.4            | —               |
| Yellow-poplar             | 1,310.1        | —   | 128.7        | 214.8        | 213.0        | 219.6        | 172.4        | 333.5          | 28.1            |
| Bay and magnolia          | 34.0           | —   | 7.8          | 12.1         | 2.5          | 6.3          | —            | 5.4            | —               |
| Black cherry              | 35.3           | —   | 2.8          | 6.6          | 6.9          | 1.3          | 5.6          | 12.2           | —               |
| Black walnut              | 7.9            | —   | 1.9          | 2.6          | 1.9          | 1.5          | —            | —              | —               |
| Sycamore                  | 2.8            | —   | 1.1          | —            | —            | —            | 1.7          | —              | —               |
| Black locust              | 63.6           | —   | 14.4         | 14.0         | 11.8         | 10.2         | 5.2          | 3.9            | 4.0             |
| Elm                       | 1.8            | —   | 1.1          | —            | 0.7          | —            | —            | —              | —               |
| Other Eastern hardwoods   | 197.2          | —   | 57.0         | 42.0         | 29.0         | 29.7         | 10.5         | 29.0           | —               |
| Total hardwoods           | 4,492.7        | —   | 582.2        | 783.0        | 745.0        | 661.6        | 514.8        | 1,029.6        | 176.5           |
| <b>All species</b>        | <b>5,693.8</b> | <b>137.6</b>                                      | <b>764.7</b> | <b>960.5</b> | <b>889.9</b> | <b>787.4</b> | <b>637.3</b> | <b>1,230.9</b> | <b>285.4</b>    |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 22—Volume of sawtimber on timberland by species and diameter class, Mountains of North Carolina, 2002**

| Species                   | All classes | Diameter class (inches at breast height) |           |           |           |           |           |           |                 |
|---------------------------|-------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|
|                           |             | 9.0–10.9                                 | 11.0–12.9 | 13.0–14.9 | 15.0–16.9 | 17.0–18.9 | 19.0–20.9 | 21.0–28.9 | 29.0 and larger |
| <i>Million board feet</i> |             |  |           |           |           |           |           |           |                 |
| <b>Softwood</b>           |             |  |           |           |           |           |           |           |                 |
| Shortleaf pine            | 350.7       | 69.6                                     | 79.3      | 131.5     | 29.1      | 12.7      | 7.2       | 21.4      | —               |
| Loblolly pine             | 125.7       | 29.7                                     | 15.9      | 29.2      | 20.8      | 20.1      | 10.0      | —         | —               |
| Virginia pine             | 634.8       | 181.4                                    | 211.9     | 118.3     | 87.9      | 5.1       | 30.3      | —         | —               |
| Pitch pine                | 361.4       | 47.0                                     | 86.5      | 95.6      | 62.1      | 38.5      | 31.7      | —         | —               |
| Table Mountain pine       | 50.3        | 3.4                                      | 6.8       | 13.9      | 26.3      | —         | —         | —         | —               |
| Eastern white pine        | 3,951.5     | 224.6                                    | 359.5     | 395.3     | 419.8     | 537.5     | 559.6     | 1,058.8   | 396.4           |
| Eastern hemlock           | 1,171.7     | 47.2                                     | 103.3     | 125.4     | 160.0     | 92.5      | 103.6     | 184.8     | 354.8           |
| Spruce and fir            | 160.2       | 18.7                                     | 21.4      | 25.7      | 5.7       | 37.2      | 6.3       | 45.3      | —               |
| Redcedars                 | 4.7         | —  | 4.7       | —         | —         | —         | —         | —         | —               |
| Total softwoods           | 6,810.9     | 621.5                                    | 889.3     | 934.9     | 811.6     | 743.5     | 748.7     | 1,310.4   | 751.1           |
| <b>Hardwood</b>           |             |  |           |           |           |           |           |           |                 |
| Select white oaks         | 1,530.5     | —  | 185.6     | 218.7     | 261.5     | 271.9     | 195.6     | 330.2     | 67.0            |
| Select red oaks           | 2,263.3     | —  | 167.6     | 204.5     | 261.4     | 246.6     | 287.1     | 776.0     | 320.1           |
| Other white oaks          | 3,632.7     | —  | 342.6     | 479.9     | 489.5     | 463.9     | 558.1     | 995.5     | 303.2           |
| Other red oaks            | 2,762.6     | —  | 342.1     | 477.3     | 438.6     | 453.3     | 340.3     | 619.5     | 91.4            |
| Hickory                   | 1,072.8     | —  | 181.0     | 241.1     | 233.4     | 188.2     | 32.9      | 196.3     | —               |
| Yellow birch              | 87.3        | —  | 29.9      | 18.4      | 16.0      | —         | —         | 23.0      | —               |
| Hard maple                | 371.3       | —  | 35.2      | 71.0      | 54.8      | 64.8      | 20.4      | 125.1     | —               |
| Soft maple                | 1,609.2     | —  | 278.5     | 361.2     | 346.1     | 178.0     | 126.6     | 241.2     | 77.7            |
| Beech                     | 276.0       | —  | 53.7      | 73.8      | 48.9      | 28.7      | 27.4      | 43.6      | —               |
| Sweetgum                  | 11.5        | —  | —         | 4.7       | 6.8       | —         | —         | —         | —               |
| Tupelo and blackgum       | 209.1       | —  | 30.5      | 40.1      | 75.5      | 26.0      | —         | 22.6      | 14.4            |
| Ash                       | 505.7       | —  | 53.4      | 57.7      | 62.5      | 64.8      | 52.0      | 215.3     | —               |
| Basswood                  | 416.1       | —  | 44.2      | 115.9     | 98.7      | 52.9      | 63.3      | 41.0      | —               |
| Yellow-poplar             | 7,631.6     | —  | 663.6     | 1,137.5   | 1,181.0   | 1,273.9   | 1,039.1   | 2,140.9   | 195.7           |
| Bay and magnolia          | 169.3       | —  | 37.2      | 57.7      | 12.3      | 32.4      | —         | 29.7      | —               |
| Black cherry              | 196.6       | —  | 13.1      | 33.2      | 36.2      | 7.4       | 32.6      | 74.2      | —               |
| Black walnut              | 36.2        | —  | 9.0       | 11.6      | 8.7       | 6.9       | —         | —         | —               |
| Sycamore                  | 14.8        | —  | 5.4       | —         | —         | —         | 9.4       | —         | —               |
| Black locust              | 296.1       | —  | 72.1      | 65.1      | 53.6      | 45.8      | 23.5      | 17.5      | 18.5            |
| Elm                       | 9.1         | —  | 5.5       | —         | 3.6       | —         | —         | —         | —               |
| Other Eastern hardwoods   | 1,024.2     | —  | 296.1     | 211.7     | 145.3     | 152.6     | 54.9      | 163.6     | —               |
| Total hardwoods           | 24,126.0    | —  | 2,846.3   | 3,880.9   | 3,834.3   | 3,558.0   | 2,863.1   | 6,055.2   | 1,088.1         |
| <b>All species</b>        | 30,936.9    | 621.5                                    | 3,735.6   | 4,815.8   | 4,645.9   | 4,301.5   | 3,611.8   | 7,365.6   | 1,839.2         |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 23—Volume of sawtimber on timberland by species, size class, and tree grade, Mountains of North Carolina, 2002**

| Species                   | All size classes |                |                |                |                |                | Trees ≥ 15.0 inches d.b.h. |                |                |                |                |              |
|---------------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------------------|----------------|----------------|----------------|----------------|--------------|
|                           | All grades       | Tree grade     |                |                |                |                | All grades                 | Tree grade     |                |                |                |              |
|                           |                  | 1              | 2              | 3              | 4              | 5              |                            | 1              | 2              | 3              | 4              | 5            |
| <i>Million board feet</i> |                  |                |                |                |                |                |                            |                |                |                |                |              |
| <b>Softwood</b>           |                  |                |                |                |                |                |                            |                |                |                |                |              |
| Shortleaf pine            | 350.7            | 198.4          | 115.7          | 36.6           | —              | —              | 70.4                       | 30.2           | 32.0           | 8.2            | —              | —            |
| Loblolly pine             | 125.7            | 52.5           | 29.5           | 43.7           | —              | —              | 50.9                       | 25.0           | 7.6            | 18.3           | —              | —            |
| Virginia pine             | 634.8            | 37.8           | 146.7          | 450.3          | —              | —              | 123.3                      | 26.0           | 39.8           | 57.6           | —              | —            |
| Pitch pine                | 361.4            | 62.5           | 69.6           | 229.2          | —              | —              | 132.2                      | 32.8           | 14.7           | 84.7           | —              | —            |
| Table Mountain pine       | 50.3             | 5.0            | 10.8           | 33.1           | —              | 1.5            | 26.3                       | 5.0            | 8.1            | 13.2           | —              | —            |
| Eastern white pine        | 3,951.5          | 1,331.1        | 1,463.8        | 936.4          | 215.2          | 5.0            | 2,972.0                    | 1,216.5        | 1,127.2        | 504.6          | 123.7          | —            |
| Eastern hemlock           | 1,171.7          | 342.3          | 310.9          | 354.1          | 153.4          | 11.0           | 895.7                      | 307.4          | 249.8          | 236.8          | 90.8           | 11.0         |
| Spruce and fir            | 160.2            | 28.6           | 7.1            | 117.2          | 7.2            | —              | 94.4                       | 21.7           | —              | 72.7           | —              | —            |
| Redcedars                 | 4.7              | —              | —              | 4.7            | —              | —              | —                          | —              | —              | —              | —              | —            |
| Total softwoods           | 6,810.9          | 2,058.3        | 2,154.2        | 2,205.3        | 375.7          | 17.4           | 4,365.2                    | 1,664.6        | 1,479.1        | 996.1          | 214.4          | 11.0         |
| <b>Hardwood</b>           |                  |                |                |                |                |                |                            |                |                |                |                |              |
| Select white oaks         | 1,530.5          | 340.7          | 372.5          | 589.7          | 179.0          | 48.7           | 1,126.2                    | 340.7          | 307.7          | 327.0          | 103.4          | 47.4         |
| Select red oaks           | 2,263.3          | 741.3          | 595.3          | 599.6          | 197.5          | 129.6          | 1,891.2                    | 741.3          | 515.2          | 391.8          | 119.5          | 123.4        |
| Other white oaks          | 3,632.7          | 949.5          | 1,105.8        | 981.9          | 448.4          | 147.0          | 2,810.2                    | 949.5          | 904.8          | 493.4          | 354.6          | 108.0        |
| Other red oaks            | 2,762.6          | 408.6          | 603.5          | 1,018.3        | 653.4          | 78.8           | 1,943.2                    | 408.6          | 501.8          | 546.7          | 423.6          | 62.6         |
| Hickory                   | 1,072.8          | 143.9          | 330.5          | 377.0          | 189.0          | 32.5           | 650.7                      | 143.9          | 246.8          | 165.2          | 69.6           | 25.3         |
| Yellow birch              | 87.3             | —              | —              | 51.9           | 32.8           | 2.5            | 39.0                       | —              | —              | 23.7           | 15.3           | —            |
| Hard maple                | 371.3            | 56.3           | 112.3          | 112.0          | 64.2           | 26.4           | 265.1                      | 56.3           | 87.5           | 49.5           | 48.1           | 23.7         |
| Soft maple                | 1,609.2          | 108.9          | 279.1          | 632.2          | 466.3          | 122.8          | 969.5                      | 108.9          | 198.9          | 293.3          | 267.2          | 101.2        |
| Beech                     | 276.0            | 3.3            | 50.1           | 67.0           | 132.2          | 23.3           | 148.6                      | 3.3            | 33.9           | 45.4           | 54.2           | 11.8         |
| Sweetgum                  | 11.5             | —              | 11.5           | —              | —              | —              | 6.8                        | —              | 6.8            | —              | —              | —            |
| Tupelo and blackgum       | 209.1            | 33.6           | 68.5           | 76.2           | 21.0           | 9.7            | 138.5                      | 33.6           | 58.3           | 21.5           | 15.3           | 9.7          |
| Ash                       | 505.7            | 254.3          | 90.6           | 109.4          | 15.1           | 36.4           | 394.7                      | 254.3          | 53.5           | 52.3           | 4.0            | 30.6         |
| Basswood                  | 416.1            | 100.2          | 180.3          | 79.1           | 3.8            | 52.6           | 256.0                      | 100.2          | 92.9           | 19.2           | —              | 43.7         |
| Yellow-poplar             | 7,631.6          | 2,856.3        | 2,124.2        | 1,702.1        | 800.4          | 148.6          | 5,830.5                    | 2,856.3        | 1,492.7        | 886.5          | 485.3          | 109.6        |
| Bay and magnolia          | 169.3            | —              | 16.1           | 67.2           | 80.9           | 5.0            | 74.4                       | —              | 5.4            | 30.3           | 38.6           | —            |
| Black cherry              | 196.6            | 82.4           | 39.0           | 21.3           | 8.1            | 45.8           | 150.4                      | 82.4           | 23.2           | 2.9            | —              | 41.9         |
| Black walnut              | 36.2             | —              | —              | 33.0           | 3.2            | —              | 15.6                       | —              | —              | 12.4           | 3.2            | —            |
| Sycamore                  | 14.8             | 9.4            | —              | 5.4            | —              | —              | 9.4                        | 9.4            | —              | —              | —              | —            |
| Black locust              | 296.1            | 31.1           | 36.1           | 124.1          | 65.6           | 39.2           | 158.8                      | 31.1           | 14.7           | 51.1           | 31.4           | 30.6         |
| Elm                       | 9.1              | —              | —              | 9.1            | —              | —              | 3.6                        | —              | —              | 3.6            | —              | —            |
| Other Eastern hardwoods   | 1,024.2          | 131.6          | 124.4          | 440.0          | 253.8          | 74.5           | 516.4                      | 131.6          | 76.4           | 146.5          | 111.6          | 50.4         |
| Total hardwoods           | 24,126.0         | 6,251.2        | 6,139.9        | 7,096.8        | 3,614.7        | 1,023.4        | 17,398.7                   | 6,251.2        | 4,620.5        | 3,562.5        | 2,144.8        | 819.7        |
| <b>All species</b>        | <b>30,936.9</b>  | <b>8,309.5</b> | <b>8,294.1</b> | <b>9,302.1</b> | <b>3,990.4</b> | <b>1,040.9</b> | <b>21,764.0</b>            | <b>7,915.9</b> | <b>6,099.6</b> | <b>4,558.6</b> | <b>2,359.2</b> | <b>830.7</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.



**Table 24—Volume of growing stock on timberland by county and species group, Mountains of North Carolina, 2002**

| County                    | All species    | Softwoods      |                |                | Hardwoods      |                |                |
|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                           |                | All softwood   | Yellow pine    | Other softwood | All hardwood   | Soft hardwood  | Hard hardwood  |
| <i>Million cubic feet</i> |                |                |                |                |                |                |                |
| Alleghany                 | 116.2          | 42.6           | 42.6           | —              | 73.6           | 20.3           | 53.3           |
| Ashe                      | 327.4          | 49.1           | 47.1           | 1.9            | 278.3          | 109.1          | 169.2          |
| Avery                     | 275.4          | 31.1           | 19.2           | 12.0           | 244.2          | 119.1          | 125.2          |
| Buncombe                  | 692.4          | 72.5           | 66.6           | 6.0            | 619.8          | 225.7          | 394.1          |
| Burke                     | 328.2          | 119.1          | 114.5          | 4.6            | 209.0          | 99.4           | 109.7          |
| Caldwell                  | 438.4          | 162.3          | 146.5          | 15.8           | 276.1          | 133.2          | 142.9          |
| Cherokee                  | 520.7          | 147.3          | 140.7          | 6.6            | 373.4          | 137.8          | 235.7          |
| Clay                      | 188.7          | 33.0           | 32.2           | 0.8            | 155.6          | 65.1           | 90.5           |
| Graham                    | 427.5          | 101.6          | 41.6           | 60.0           | 325.9          | 119.6          | 206.3          |
| Haywood                   | 534.0          | 78.1           | 57.6           | 20.5           | 455.9          | 189.6          | 266.3          |
| Henderson                 | 254.2          | 34.3           | 33.3           | 1.0            | 219.9          | 82.5           | 137.4          |
| Jackson                   | 558.5          | 100.8          | 50.9           | 49.9           | 457.7          | 160.0          | 297.7          |
| Macon                     | 580.5          | 60.8           | 46.5           | 14.3           | 519.7          | 233.8          | 285.9          |
| Madison                   | 505.0          | 66.6           | 44.9           | 21.6           | 438.4          | 245.6          | 192.8          |
| McDowell                  | 504.8          | 99.2           | 93.4           | 5.8            | 405.7          | 153.9          | 251.7          |
| Mitchell                  | 295.4          | 11.5           | 7.5            | 4.0            | 284.0          | 135.2          | 148.8          |
| Swain                     | 168.8          | 18.5           | 16.5           | 2.0            | 150.4          | 77.9           | 72.5           |
| Transylvania              | 509.3          | 106.7          | 90.8           | 15.9           | 402.5          | 177.7          | 224.8          |
| Watauga                   | 314.1          | 17.3           | 6.0            | 11.2           | 296.9          | 167.3          | 129.5          |
| Wilkes                    | 628.0          | 156.2          | 141.3          | 14.9           | 471.8          | 247.8          | 224.0          |
| Yancey                    | 334.9          | 37.9           | 11.3           | 26.6           | 296.9          | 125.8          | 171.1          |
| <b>Total</b>              | <b>8,502.3</b> | <b>1,546.4</b> | <b>1,251.1</b> | <b>295.3</b>   | <b>6,955.8</b> | <b>3,026.4</b> | <b>3,929.5</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 25—Volume of live trees on timberland by county and species group, Mountains of North Carolina, 2002**

| County                    | All species    | Softwoods      |                |                | Hardwoods      |                |                |
|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                           |                | All softwood   | Yellow pine    | Other softwood | All hardwood   | Soft hardwood  | Hard hardwood  |
| <i>Million cubic feet</i> |                |                |                |                |                |                |                |
| Alleghany                 | 136.9          | 45.5           | 45.5           | —              | 91.4           | 30.2           | 61.2           |
| Ashe                      | 405.0          | 53.6           | 51.7           | 1.9            | 351.4          | 140.3          | 211.0          |
| Avery                     | 335.4          | 34.2           | 19.2           | 15.1           | 301.2          | 145.1          | 156.1          |
| Buncombe                  | 758.8          | 73.6           | 67.3           | 6.4            | 685.1          | 262.8          | 422.3          |
| Burke                     | 351.8          | 120.4          | 115.7          | 4.7            | 231.4          | 109.8          | 121.6          |
| Caldwell                  | 470.9          | 163.8          | 147.6          | 16.3           | 307.1          | 143.3          | 163.8          |
| Cherokee                  | 565.1          | 152.7          | 145.5          | 7.2            | 412.4          | 148.5          | 263.9          |
| Clay                      | 200.3          | 33.2           | 32.3           | 0.9            | 167.1          | 68.9           | 98.3           |
| Graham                    | 447.9          | 103.3          | 41.7           | 61.6           | 344.5          | 126.1          | 218.5          |
| Haywood                   | 590.5          | 82.0           | 59.8           | 22.3           | 508.5          | 209.1          | 299.3          |
| Henderson                 | 280.2          | 34.5           | 33.6           | 1.0            | 245.6          | 87.1           | 158.5          |
| Jackson                   | 657.2          | 101.9          | 51.3           | 50.6           | 555.2          | 183.3          | 372.0          |
| Macon                     | 634.7          | 61.7           | 46.9           | 14.8           | 573.0          | 245.8          | 327.2          |
| Madison                   | 570.7          | 82.7           | 55.7           | 27.0           | 488.0          | 263.9          | 224.2          |
| McDowell                  | 530.7          | 99.7           | 93.9           | 5.8            | 431.0          | 161.2          | 269.8          |
| Mitchell                  | 315.4          | 12.7           | 8.4            | 4.3            | 302.7          | 140.9          | 161.8          |
| Swain                     | 174.8          | 18.9           | 17.0           | 2.0            | 155.9          | 79.3           | 76.6           |
| Transylvania              | 555.5          | 107.1          | 91.0           | 16.1           | 448.4          | 189.6          | 258.8          |
| Watauga                   | 366.7          | 18.8           | 6.1            | 12.7           | 347.9          | 181.3          | 166.6          |
| Wilkes                    | 685.1          | 159.5          | 143.1          | 16.4           | 525.6          | 264.0          | 261.6          |
| Yancey                    | 374.7          | 40.7           | 13.0           | 27.7           | 334.0          | 137.7          | 196.2          |
| <b>Total</b>              | <b>9,408.2</b> | <b>1,600.8</b> | <b>1,286.4</b> | <b>314.5</b>   | <b>7,807.4</b> | <b>3,318.1</b> | <b>4,489.3</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 26—Volume of sawtimber on timberland by county and species group, Mountains of North Carolina, 2002**

| County                    | Softwoods       |                |                | Hardwoods      |                 |                 |                 |
|---------------------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
|                           | All species     | All softwood   | Yellow pine    | Other softwood | All hardwood    | Soft hardwood   | Hard hardwood   |
| <i>Million board feet</i> |                 |                |                |                |                 |                 |                 |
| Alleghany                 | 357.3           | 138.2          | 138.2          | —              | 219.1           | 40.7            | 178.4           |
| Ashe                      | 1,113.1         | 197.5          | 195.6          | 2.0            | 915.6           | 339.9           | 575.7           |
| Avery                     | 947.3           | 146.5          | 98.1           | 48.4           | 800.8           | 428.1           | 372.7           |
| Buncombe                  | 2,727.9         | 312.2          | 283.1          | 29.1           | 2,415.7         | 897.5           | 1,518.3         |
| Burke                     | 1,082.0         | 421.3          | 405.8          | 15.5           | 660.7           | 319.6           | 341.1           |
| Caldwell                  | 1,486.2         | 675.9          | 617.9          | 58.1           | 810.3           | 364.3           | 446.0           |
| Cherokee                  | 1,812.5         | 660.4          | 640.6          | 19.8           | 1,152.1         | 470.5           | 681.5           |
| Clay                      | 641.6           | 135.6          | 134.0          | 1.7            | 506.0           | 233.8           | 272.2           |
| Graham                    | 1,621.9         | 563.4          | 223.8          | 339.6          | 1,058.5         | 355.0           | 703.5           |
| Haywood                   | 2,035.7         | 344.3          | 270.2          | 74.1           | 1,691.4         | 763.6           | 927.8           |
| Henderson                 | 925.8           | 146.1          | 142.3          | 3.8            | 779.7           | 308.1           | 471.6           |
| Jackson                   | 1,980.7         | 538.2          | 267.8          | 270.4          | 1,442.4         | 512.2           | 930.2           |
| Macon                     | 2,216.2         | 295.7          | 236.0          | 59.7           | 1,920.5         | 997.0           | 923.5           |
| Madison                   | 2,083.7         | 330.5          | 234.2          | 96.3           | 1,753.2         | 1,086.8         | 666.4           |
| McDowell                  | 1,811.2         | 377.8          | 360.7          | 17.1           | 1,433.5         | 574.1           | 859.4           |
| Mitchell                  | 1,155.0         | 40.4           | 23.9           | 16.5           | 1,114.5         | 607.3           | 507.2           |
| Swain                     | 563.0           | 63.5           | 58.6           | 4.9            | 499.5           | 321.9           | 177.6           |
| Transylvania              | 2,001.1         | 549.0          | 463.5          | 85.4           | 1,452.2         | 657.3           | 794.9           |
| Watauga                   | 1,027.8         | 53.4           | 23.8           | 29.5           | 974.4           | 603.7           | 370.7           |
| Wilkes                    | 2,090.3         | 649.5          | 595.3          | 54.2           | 1,440.8         | 775.0           | 665.8           |
| Yancey                    | 1,256.7         | 171.5          | 60.9           | 110.6          | 1,085.2         | 466.8           | 618.4           |
| <b>Total</b>              | <b>30,936.9</b> | <b>6,810.9</b> | <b>5,474.4</b> | <b>1,336.6</b> | <b>24,126.0</b> | <b>11,123.0</b> | <b>13,003.0</b> |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 27—Volume of timber on timberland by class of timber and species group, Mountains of North Carolina, 2002**

| Class of timber                 | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---------------------------------|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|                                 |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million cubic feet</i>       |             |              |             |                |              |               |               |
| <b>Sawtimber trees</b>          |             |              |             |                |              |               |               |
| Saw-log portion                 | 5,693.8     | 1,201.1      | 970.8       | 230.2          | 4,492.7      | 1,991.4       | 2,501.4       |
| Upper-stem portion <sup>a</sup> | 813.2       | 95.6         | 78.7        | 16.8           | 717.7        | 295.8         | 421.9         |
| Total                           | 6,507.0     | 1,296.6      | 1,049.6     | 247.1          | 5,210.4      | 2,287.2       | 2,923.2       |
| <b>Poletimber trees</b>         |             |              |             |                |              |               |               |
| All growing-stock trees         | 1,995.2     | 249.8        | 201.6       | 48.2           | 1,745.4      | 739.2         | 1,006.2       |
|                                 | 8,502.3     | 1,546.4      | 1,251.1     | 295.3          | 6,955.8      | 3,026.4       | 3,929.5       |
| <b>Rough trees</b>              |             |              |             |                |              |               |               |
| Sawtimber size                  | 501.3       | 41.0         | 25.4        | 15.6           | 460.3        | 151.6         | 308.7         |
| Poletimber size                 | 337.3       | 12.7         | 9.8         | 2.9            | 324.6        | 118.1         | 206.5         |
| Total                           | 838.5       | 53.7         | 35.2        | 18.5           | 784.8        | 269.7         | 515.2         |
| <b>Rotten trees</b>             |             |              |             |                |              |               |               |
| Sawtimber size                  | 62.9        | 0.7          | —           | 0.7            | 62.2         | 20.2          | 42.0          |
| Poletimber size                 | 4.5         | —            | —           | —              | 4.5          | 1.9           | 2.6           |
| Total                           | 67.4        | 0.7          | —           | 0.7            | 66.7         | 22.1          | 44.6          |
| <b>Salvable dead trees</b>      |             |              |             |                |              |               |               |
| Sawtimber size                  | 16.6        | 5.2          | 1.8         | 3.5            | 11.4         | —             | 11.4          |
| Poletimber size                 | 8.0         | —            | —           | —              | 8.0          | —             | 8.0           |
| Total                           | 24.7        | 5.2          | 1.8         | 3.5            | 19.4         | —             | 19.4          |
| <b>All classes</b>              | 9,432.9     | 1,606.1      | 1,288.1     | 317.9          | 7,826.8      | 3,318.1       | 4,508.7       |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> Includes cull sections in the saw-log portion.

**Table 28—Volume of live and growing-stock trees on timberland by ownership class and species group, Mountains of North Carolina, 2002**

| Ownership class                                 | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|   |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <b>Live trees (million cubic feet)</b>          |             |              |             |                |              |               |               |
| National forest                                 | 2,453.6     | 367.0        | 218.8       | 148.2          | 2,086.5      | 745.4         | 1,341.1       |
| Other public                                    | 297.5       | 38.5         | 36.0        | 2.4            | 259.1        | 109.3         | 149.7         |
| Forest industry                                 | 55.4        | 2.1          | 2.1         | —              | 53.3         | 18.2          | 35.2          |
| Nonindustrial private                           | 6,601.7     | 1,193.2      | 1,029.4     | 163.8          | 5,408.5      | 2,445.2       | 2,963.2       |
| All classes                                     | 9,408.2     | 1,600.8      | 1,286.4     | 314.5          | 7,807.4      | 3,318.1       | 4,489.3       |
| <b>Growing-stock trees (million cubic feet)</b> |             |              |             |                |              |               |               |
| National forest                                 | 2,251.8     | 358.6        | 214.6       | 144.0          | 1,893.2      | 698.1         | 1,195.0       |
| Other public                                    | 267.9       | 37.7         | 35.7        | 2.0            | 230.2        | 96.7          | 133.6         |
| Forest industry                                 | 50.3        | 2.1          | 2.1         | —              | 48.2         | 16.5          | 31.8          |
| Nonindustrial private                           | 5,932.2     | 1,148.0      | 998.8       | 149.3          | 4,784.2      | 2,215.1       | 2,569.1       |
| All classes                                     | 8,502.3     | 1,546.4      | 1,251.1     | 295.3          | 6,955.8      | 3,026.4       | 3,929.5       |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 29—Volume of sawtimber on timberland by ownership class, species group, and size class, Mountains of North Carolina, 2002**

| Ownership class  | All species | Softwoods    |             |                | Hardwoods    |               |               |
|--|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|  |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <b>All size classes (million board feet)</b>           |             |              |             |                |              |               |               |
| National forest  | 8,560.7     | 1,708.0      | 1,014.6     | 693.4          | 6,852.7      | 2,595.6       | 4,257.0       |
| Other public   | 954.2       | 161.6        | 153.6       | 8.0            | 792.6        | 335.4         | 457.2         |
| Forest industry  | 168.5       | 5.5          | 5.5         | —              | 163.0        | 56.8          | 106.1         |
| Nonindustrial private                                  | 21,253.6    | 4,935.8      | 4,300.6     | 635.1          | 16,317.8     | 8,135.2       | 8,182.6       |
| All classes  | 30,936.9    | 6,810.9      | 5,474.4     | 1,336.6        | 24,126.0     | 11,123.0      | 13,003.0      |
| <b>Trees ≥ 15.0 inches d.b.h. (million board feet)</b> |             |              |             |                |              |               |               |
| National forest  | 6,539.4     | 1,241.9      | 676.1       | 565.8          | 5,297.5      | 2,004.7       | 3,292.8       |
| Other public   | 650.4       | 71.9         | 71.9        | —              | 578.5        | 251.3         | 327.2         |
| Forest industry  | 112.2       | —            | —           | —              | 112.2        | 47.0          | 65.2          |
| Nonindustrial private                                  | 14,461.9    | 3,051.4      | 2,627.1     | 424.3          | 11,410.6     | 5,747.4       | 5,663.2       |
| All classes  | 21,764.0    | 4,365.2      | 3,375.1     | 990.1          | 17,398.7     | 8,050.3       | 9,348.4       |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 30—Volume of growing stock on timberland by forest-type group, stand origin, and species group, Mountains of North Carolina, 2002**

| Forest-type group<br>and stand origin | All<br>species | Softwoods       |                |                   | Hardwoods       |                  |                  |
|---------------------------------------|----------------|-----------------|----------------|-------------------|-----------------|------------------|------------------|
|                                       |                | All<br>softwood | Yellow<br>pine | Other<br>softwood | All<br>hardwood | Soft<br>hardwood | Hard<br>hardwood |
| <i>Million cubic feet</i>             |                |                 |                |                   |                 |                  |                  |
| <b>Softwood types</b>                 |                |                 |                |                   |                 |                  |                  |
| White-red-jack pine                   |                |                 |                |                   |                 |                  |                  |
| Planted                               | 130.4          | 124.8           | 123.7          | 1.1               | 5.6             | 3.2              | 2.4              |
| Natural                               | 549.7          | 389.3           | 343.6          | 45.7              | 160.5           | 67.8             | 92.6             |
| Total                                 | 680.1          | 514.1           | 467.3          | 46.8              | 166.1           | 71.1             | 95.0             |
| Spruce-fir                            |                |                 |                |                   |                 |                  |                  |
| Planted                               | —              | —               | —              | —                 | —               | —                | —                |
| Natural                               | 35.5           | 32.3            | —              | 32.3              | 3.2             | 0.5              | 2.7              |
| Total                                 | 35.5           | 32.3            | —              | 32.3              | 3.2             | 0.5              | 2.7              |
| Loblolly-shortleaf pine               |                |                 |                |                   |                 |                  |                  |
| Planted                               | 20.5           | 19.8            | 19.8           | —                 | 0.7             | 0.1              | 0.6              |
| Natural                               | 212.5          | 170.7           | 167.1          | 3.6               | 41.8            | 17.0             | 24.7             |
| Total                                 | 233.0          | 190.6           | 186.9          | 3.6               | 42.4            | 17.1             | 25.3             |
| Total softwoods                       | 948.6          | 736.9           | 654.3          | 82.7              | 211.7           | 88.7             | 123.0            |
| <b>Hardwood types</b>                 |                |                 |                |                   |                 |                  |                  |
| Oak-pine                              |                |                 |                |                   |                 |                  |                  |
| Planted                               | 6.9            | 4.0             | 4.0            | —                 | 3.0             | 1.9              | 1.1              |
| Natural                               | 731.9          | 341.4           | 327.0          | 14.5              | 390.5           | 161.9            | 228.5            |
| Total                                 | 738.8          | 345.4           | 330.9          | 14.5              | 393.4           | 163.8            | 229.6            |
| Oak-hickory                           |                |                 |                |                   |                 |                  |                  |
| Elm-ash-cottonwood                    | 2.8            | 0.3             | 0.3            | —                 | 2.5             | 2.5              | —                |
| Maple-beech-birch                     | 206.8          | 8.8             | —              | 8.8               | 198.0           | 37.0             | 161.0            |
| Total hardwoods                       | 7,553.7        | 809.5           | 596.9          | 212.6             | 6,744.1         | 2,937.7          | 3,806.5          |
| <b>Nonstocked</b>                     |                |                 |                |                   |                 |                  |                  |
|                                       | —              | —               | —              | —                 | —               | —                | —                |
| <b>All groups</b>                     | 8,502.3        | 1,546.4         | 1,251.1        | 295.3             | 6,955.8         | 3,026.4          | 3,929.5          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 31—Average basal area of live trees per acre on timberland by ownership class, species group, and d.b.h., Mountains of North Carolina, 2002**

| Ownership class<br>and species group | All tree<br>sizes | D.b.h. (inches) |          |           |       |
|--------------------------------------|-------------------|-----------------|----------|-----------|-------|
|                                      |                   | 1.0–4.9         | 5.0–10.9 | 11.0–14.9 | ≥15.0 |
| <i>Square feet/acre</i>              |                   |                 |          |           |       |
| <b>National forest</b>               |                   |                 |          |           |       |
| Softwood                             | 18.9              | 1.8             | 5.4      | 4.0       | 7.7   |
| Hardwood                             | 106.0             | 13.1            | 30.8     | 20.3      | 41.8  |
| Total                                | 124.9             | 14.9            | 36.3     | 24.3      | 49.4  |
| <b>Other public</b>                  |                   |                 |          |           |       |
| Softwood                             | 13.1              | 2.0             | 3.4      | 4.5       | 3.3   |
| Hardwood                             | 116.0             | 10.5            | 30.9     | 24.0      | 50.5  |
| Total                                | 129.1             | 12.4            | 34.3     | 28.5      | 53.8  |
| <b>Forest industry</b>               |                   |                 |          |           |       |
| Softwood                             | 3.4               | —               | 1.4      | 2.0       | —     |
| Hardwood                             | 86.2              | 15.8            | 30.3     | 18.5      | 21.7  |
| Total                                | 89.6              | 15.8            | 31.7     | 20.4      | 21.7  |
| <b>Nonindustrial private</b>         |                   |                 |          |           |       |
| Softwood                             | 21.9              | 2.2             | 7.9      | 5.2       | 6.5   |
| Hardwood                             | 96.8              | 12.0            | 30.7     | 21.3      | 32.8  |
| Total                                | 118.7             | 14.2            | 38.7     | 26.5      | 39.3  |
| <b>All classes</b>                   |                   |                 |          |           |       |
| Softwood                             | 20.6              | 2.1             | 7.0      | 4.8       | 6.7   |
| Hardwood                             | 100.1             | 12.3            | 30.8     | 21.1      | 36.0  |
| Total                                | 120.7             | 14.4            | 37.8     | 25.9      | 42.7  |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 32—Average net annual growth of growing stock on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species  | Softwoods    |             |                | Hardwoods    |               |               |
|---------------------------|--------------|--------------|-------------|----------------|--------------|---------------|---------------|
|                           |              | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million cubic feet</i> |              |              |             |                |              |               |               |
| Alleghany                 | 4.2          | 2.0          | 2.0         | —              | 2.2          | 1.1           | 1.1           |
| Ashe                      | 10.6         | 0.3          | 0.3         | —              | 10.3         | 4.9           | 5.4           |
| Avery                     | 4.9          | 0.6          | 0.3         | 0.4            | 4.2          | 3.3           | 0.9           |
| Buncombe                  | 9.8          | 1.7          | 1.1         | 0.5            | 8.2          | 4.0           | 4.2           |
| Burke                     | 15.3         | 7.1          | 6.9         | 0.3            | 8.2          | 4.8           | 3.4           |
| Caldwell                  | 15.1         | 5.9          | 5.4         | 0.5            | 9.2          | 5.1           | 4.1           |
| Cherokee                  | 13.9         | 5.3          | 4.7         | 0.6            | 8.6          | 3.9           | 4.6           |
| Clay                      | 4.5          | 1.3          | 1.3         | 0.0            | 3.2          | 1.3           | 1.9           |
| Graham                    | 8.3          | 0.5          | -0.7        | 1.2            | 7.9          | 4.6           | 3.2           |
| Haywood                   | 10.8         | 2.2          | 1.4         | 0.8            | 8.7          | 4.6           | 4.0           |
| Henderson                 | 3.5          | -0.4         | -0.5        | 0.1            | 3.9          | 2.6           | 1.3           |
| Jackson                   | 14.0         | 1.7          | 0.8         | 0.9            | 12.3         | 6.5           | 5.8           |
| Macon                     | 8.2          | -1.2         | -1.6        | 0.3            | 9.4          | 6.6           | 2.8           |
| Madison                   | 6.4          | -1.3         | -2.0        | 0.8            | 7.7          | 6.0           | 1.7           |
| McDowell                  | 8.3          | 2.3          | 2.3         | 0.1            | 5.9          | 2.8           | 3.2           |
| Mitchell                  | 7.3          | 0.0          | -0.4        | 0.5            | 7.2          | 4.1           | 3.1           |
| Swain                     | 3.4          | 0.4          | -0.2        | 0.6            | 3.1          | 2.0           | 1.0           |
| Transylvania              | 9.4          | 2.4          | 2.0         | 0.4            | 7.1          | 3.7           | 3.3           |
| Watauga                   | 7.1          | 0.9          | 0.3         | 0.6            | 6.3          | 4.4           | 1.8           |
| Wilkes                    | 17.1         | 4.1          | 3.8         | 0.3            | 13.0         | 8.4           | 4.6           |
| Yancey                    | 6.8          | -0.5         | -1.0        | 0.5            | 7.3          | 4.1           | 3.1           |
| <b>Total</b>              | <b>189.0</b> | <b>35.4</b>  | <b>26.1</b> | <b>9.3</b>     | <b>153.6</b> | <b>89.0</b>   | <b>65.0</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.



**Table 33—Average net annual growth of live trees on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species  | Softwoods    |             |                | Hardwoods    |               |               |
|---------------------------|--------------|--------------|-------------|----------------|--------------|---------------|---------------|
|                           |              | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million cubic feet</i> |              |              |             |                |              |               |               |
| Alleghany                 | 5.0          | 2.0          | 2.0         | —              | 2.9          | 1.7           | 1.3           |
| Ashe                      | 12.6         | 0.3          | 0.3         | —              | 12.3         | 6.3           | 6.0           |
| Avery                     | 5.0          | 0.7          | 0.3         | 0.4            | 4.4          | 3.2           | 1.2           |
| Buncombe                  | 9.4          | 1.7          | 1.2         | 0.5            | 7.6          | 4.2           | 3.4           |
| Burke                     | 16.0         | 7.2          | 6.9         | 0.3            | 8.8          | 5.1           | 3.7           |
| Caldwell                  | 16.1         | 6.3          | 5.8         | 0.5            | 9.8          | 5.1           | 4.7           |
| Cherokee                  | 13.8         | 5.6          | 5.0         | 0.6            | 8.2          | 3.9           | 4.2           |
| Clay                      | 4.2          | 1.3          | 1.3         | 0.0            | 2.9          | 1.2           | 1.7           |
| Graham                    | 7.9          | 0.5          | -0.7        | 1.2            | 7.4          | 4.5           | 2.9           |
| Haywood                   | 10.5         | 2.3          | 1.5         | 0.8            | 8.2          | 4.6           | 3.6           |
| Henderson                 | 3.2          | -0.4         | -0.5        | 0.1            | 3.6          | 2.5           | 1.1           |
| Jackson                   | 14.6         | 1.7          | 0.8         | 0.9            | 12.9         | 7.4           | 5.5           |
| Macon                     | 7.9          | -1.2         | -1.6        | 0.3            | 9.1          | 6.6           | 2.5           |
| Madison                   | 6.8          | -1.2         | -2.0        | 0.9            | 8.0          | 6.4           | 1.5           |
| McDowell                  | 8.6          | 2.5          | 2.3         | 0.2            | 6.1          | 2.8           | 3.3           |
| Mitchell                  | 7.3          | 0.0          | -0.4        | 0.5            | 7.2          | 4.1           | 3.2           |
| Swain                     | 3.4          | 0.5          | -0.1        | 0.6            | 2.9          | 1.9           | 1.0           |
| Transylvania              | 9.4          | 2.4          | 2.0         | 0.4            | 7.0          | 3.7           | 3.3           |
| Watauga                   | 7.6          | 0.9          | 0.4         | 0.6            | 6.7          | 4.5           | 2.2           |
| Wilkes                    | 17.3         | 4.2          | 3.9         | 0.3            | 13.2         | 8.3           | 4.9           |
| Yancey                    | 7.2          | -0.4         | -1.0        | 0.6            | 7.6          | 4.2           | 3.4           |
| <b>Total</b>              | <b>193.6</b> | <b>37.0</b>  | <b>27.2</b> | <b>9.7</b>     | <b>156.6</b> | <b>92.1</b>   | <b>64.5</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 34—Average net annual growth of sawtimber on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species  | Softwoods    |              |                | Hardwoods    |               |               |
|---------------------------|--------------|--------------|--------------|----------------|--------------|---------------|---------------|
|                           |              | All softwood | Yellow pine  | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million board feet</i> |              |              |              |                |              |               |               |
| Alleghany                 | 21.8         | 10.9         | 10.9         | —              | 10.9         | 5.8           | 5.2           |
| Ashe                      | 42.4         | 1.2          | 1.2          | —              | 41.1         | 21.1          | 20.0          |
| Avery                     | 25.6         | 3.8          | 2.1          | 1.7            | 21.8         | 15.5          | 6.4           |
| Buncombe                  | 52.2         | 8.8          | 5.5          | 3.3            | 43.5         | 20.4          | 23.1          |
| Burke                     | 62.5         | 34.0         | 32.9         | 1.1            | 28.5         | 14.8          | 13.7          |
| Caldwell                  | 58.1         | 22.5         | 20.0         | 2.5            | 35.6         | 15.5          | 20.2          |
| Cherokee                  | 57.8         | 28.7         | 27.0         | 1.7            | 29.1         | 12.6          | 16.5          |
| Clay                      | 20.8         | 8.6          | 8.4          | 0.2            | 12.2         | 6.6           | 5.6           |
| Graham                    | 42.8         | 3.6          | -2.9         | 6.5            | 39.1         | 21.9          | 17.2          |
| Haywood                   | 55.0         | 13.5         | 9.4          | 4.0            | 41.5         | 25.1          | 16.4          |
| Henderson                 | 19.2         | 2.5          | 2.1          | 0.5            | 16.6         | 11.9          | 4.7           |
| Jackson                   | 66.5         | 10.9         | 5.6          | 5.3            | 55.6         | 25.3          | 30.2          |
| Macon                     | 47.9         | -4.4         | -6.1         | 1.7            | 52.3         | 36.5          | 15.8          |
| Madison                   | 44.4         | 2.8          | -0.4         | 3.2            | 41.6         | 31.8          | 9.8           |
| McDowell                  | 43.3         | 11.6         | 11.6         | -0.0           | 31.7         | 12.3          | 19.4          |
| Mitchell                  | 37.4         | 1.8          | 0.0          | 1.8            | 35.6         | 21.4          | 14.2          |
| Swain                     | 18.9         | 3.5          | 2.6          | 0.9            | 15.4         | 11.9          | 3.5           |
| Transylvania              | 43.9         | 13.0         | 13.3         | -0.3           | 30.8         | 17.4          | 13.4          |
| Watauga                   | 33.2         | 4.2          | 1.9          | 2.4            | 29.0         | 21.9          | 7.1           |
| Wilkes                    | 99.7         | 37.6         | 34.6         | 3.0            | 62.1         | 47.0          | 15.1          |
| Yancey                    | 32.7         | 2.1          | -1.6         | 3.7            | 30.6         | 20.6          | 10.0          |
| <b>Total</b>              | <b>926.1</b> | <b>221.3</b> | <b>178.1</b> | <b>43.2</b>    | <b>704.8</b> | <b>417.5</b>  | <b>287.3</b>  |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 35—Average annual removals of growing stock on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---------------------------|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|                           |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million cubic feet</i> |             |              |             |                |              |               |               |
| Alleghany                 | 3.9         | 2.0          | 2.0         | —              | 2.0          | 1.3           | 0.7           |
| Ashe                      | 7.6         | 0.7          | 0.7         | —              | 6.9          | 2.9           | 4.1           |
| Avery                     | —           | —            | —           | —              | —            | —             | —             |
| Buncombe                  | 5.6         | 0.3          | 0.3         | —              | 5.4          | 2.3           | 3.1           |
| Burke                     | 13.3        | 8.2          | 8.2         | —              | 5.2          | 2.4           | 2.8           |
| Caldwell                  | 6.4         | 1.8          | 1.8         | —              | 4.6          | 1.6           | 3.0           |
| Cherokee                  | 6.6         | 5.6          | 5.6         | —              | 0.9          | —             | 0.9           |
| Clay                      | 1.0         | 0.5          | 0.5         | —              | 0.5          | 0.2           | 0.2           |
| Graham                    | 0.8         | —            | —           | —              | 0.8          | 0.1           | 0.7           |
| Haywood                   | 5.0         | 1.5          | 1.4         | 0.1            | 3.5          | 2.2           | 1.3           |
| Henderson                 | 2.1         | 0.7          | 0.5         | 0.2            | 1.4          | 0.2           | 1.1           |
| Jackson                   | 1.8         | —            | —           | —              | 1.8          | 0.5           | 1.3           |
| Macon                     | 1.6         | 0.1          | 0.1         | —              | 1.5          | 0.1           | 1.4           |
| Madison                   | 5.0         | 2.3          | 2.1         | 0.1            | 2.7          | 2.7           | —             |
| McDowell                  | 7.3         | 3.5          | 3.4         | 0.1            | 3.8          | 1.1           | 2.7           |
| Mitchell                  | 4.4         | 0.1          | 0.1         | —              | 4.2          | 2.5           | 1.7           |
| Swain                     | 0.4         | 0.1          | 0.1         | —              | 0.3          | —             | 0.3           |
| Transylvania              | —           | —            | —           | —              | —            | —             | —             |
| Watauga                   | 1.6         | —            | —           | —              | 1.6          | 1.0           | 0.6           |
| Wilkes                    | 18.5        | 10.2         | 10.2        | —              | 8.3          | 4.7           | 3.6           |
| Yancey                    | 2.8         | 0.3          | 0.3         | —              | 2.5          | 0.8           | 1.7           |
| <b>Total</b>              | <b>95.6</b> | <b>37.8</b>  | <b>37.3</b> | <b>0.5</b>     | <b>57.8</b>  | <b>26.6</b>   | <b>31.2</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 36—Average annual removals of live trees on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species  | Softwoods    |             |                | Hardwoods    |               |               |
|---------------------------|--------------|--------------|-------------|----------------|--------------|---------------|---------------|
|                           |              | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million cubic feet</i> |              |              |             |                |              |               |               |
| Alleghany                 | 4.1          | 2.0          | 2.0         | —              | 2.2          | 1.5           | 0.7           |
| Ashe                      | 7.9          | 0.7          | 0.7         | —              | 7.2          | 2.9           | 4.3           |
| Avery                     | —            | —            | —           | —              | —            | —             | —             |
| Buncombe                  | 6.6          | 0.3          | 0.3         | —              | 6.4          | 2.4           | 3.9           |
| Burke                     | 13.5         | 8.2          | 8.2         | —              | 5.4          | 2.4           | 3.0           |
| Caldwell                  | 7.0          | 1.8          | 1.8         | —              | 5.3          | 1.6           | 3.7           |
| Cherokee                  | 6.9          | 5.8          | 5.8         | —              | 1.1          | —             | 1.1           |
| Clay                      | 1.0          | 0.5          | 0.5         | —              | 0.5          | 0.2           | 0.2           |
| Graham                    | 0.8          | —            | —           | —              | 0.8          | 0.1           | 0.7           |
| Haywood                   | 5.8          | 1.5          | 1.4         | 0.1            | 4.3          | 2.5           | 1.9           |
| Henderson                 | 2.2          | 0.7          | 0.5         | 0.2            | 1.5          | 0.3           | 1.2           |
| Jackson                   | 2.0          | —            | —           | —              | 2.0          | 0.7           | 1.3           |
| Macon                     | 1.7          | 0.1          | 0.1         | —              | 1.6          | 0.1           | 1.5           |
| Madison                   | 5.0          | 2.3          | 2.1         | 0.1            | 2.7          | 2.7           | —             |
| McDowell                  | 7.5          | 3.5          | 3.4         | 0.1            | 4.0          | 1.2           | 2.7           |
| Mitchell                  | 4.4          | 0.1          | 0.1         | —              | 4.3          | 2.6           | 1.7           |
| Swain                     | 0.5          | 0.2          | 0.2         | —              | 0.3          | —             | 0.3           |
| Transylvania              | —            | —            | —           | —              | —            | —             | —             |
| Watauga                   | 1.6          | —            | —           | —              | 1.6          | 1.0           | 0.6           |
| Wilkes                    | 18.9         | 10.2         | 10.2        | —              | 8.7          | 4.9           | 3.8           |
| Yancey                    | 2.8          | 0.3          | 0.3         | —              | 2.5          | 0.8           | 1.7           |
| <b>Total</b>              | <b>100.2</b> | <b>38.0</b>  | <b>37.6</b> | <b>0.5</b>     | <b>62.2</b>  | <b>27.8</b>   | <b>34.4</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 37—Average annual removals of sawtimber on timberland by county and species group, Mountains of North Carolina, 1990–2001**

| County                    | All species  | Softwoods    |              |                | Hardwoods    |               |               |
|---------------------------|--------------|--------------|--------------|----------------|--------------|---------------|---------------|
|                           |              | All softwood | Yellow pine  | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <i>Million board feet</i> |              |              |              |                |              |               |               |
| Alleghany                 | 17.0         | 7.4          | 7.4          | —              | 9.6          | 6.1           | 3.5           |
| Ashe                      | 30.2         | 4.2          | 4.2          | —              | 26.0         | 9.4           | 16.6          |
| Avery                     | —            | —            | —            | —              | —            | —             | —             |
| Buncombe                  | 25.7         | 1.2          | 1.2          | —              | 24.5         | 12.6          | 11.9          |
| Burke                     | 52.8         | 39.5         | 39.5         | —              | 13.3         | 4.7           | 8.5           |
| Caldwell                  | 23.4         | 7.0          | 7.0          | —              | 16.3         | 4.9           | 11.4          |
| Cherokee                  | 26.7         | 21.9         | 21.9         | —              | 4.8          | —             | 4.8           |
| Clay                      | 3.8          | 2.4          | 2.4          | —              | 1.4          | 0.8           | 0.6           |
| Graham                    | 3.2          | —            | —            | —              | 3.2          | —             | 3.2           |
| Haywood                   | 20.7         | 5.7          | 5.4          | 0.3            | 15.0         | 10.0          | 5.0           |
| Henderson                 | 7.7          | 3.5          | 2.3          | 1.2            | 4.3          | 0.8           | 3.5           |
| Jackson                   | 6.8          | —            | —            | —              | 6.8          | 2.1           | 4.7           |
| Macon                     | 5.1          | 0.2          | 0.2          | —              | 4.9          | 0.7           | 4.3           |
| Madison                   | 25.7         | 11.8         | 11.8         | —              | 13.9         | 13.9          | —             |
| McDowell                  | 24.1         | 9.2          | 9.2          | —              | 14.9         | 3.0           | 11.9          |
| Mitchell                  | 19.1         | 0.9          | 0.9          | —              | 18.2         | 11.7          | 6.5           |
| Swain                     | 1.9          | 0.5          | 0.5          | —              | 1.4          | —             | 1.4           |
| Transylvania              | —            | —            | —            | —              | —            | —             | —             |
| Watauga                   | 5.7          | —            | —            | —              | 5.7          | 3.1           | 2.5           |
| Wilkes                    | 69.6         | 38.4         | 38.4         | —              | 31.1         | 17.7          | 13.4          |
| Yancey                    | 9.7          | 1.7          | 1.7          | —              | 7.9          | 3.2           | 4.8           |
| <b>Total</b>              | <b>378.7</b> | <b>155.5</b> | <b>154.0</b> | <b>1.5</b>     | <b>223.3</b> | <b>104.8</b>  | <b>118.5</b>  |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 38—Average net annual growth and average annual removals of live trees, growing stock, and sawtimber on timberland by species, Mountains of North Carolina, 1990–2001**

| Species                 | Live trees                |                 | Growing stock     |                 | Sawtimber                 |                 |
|-------------------------|---------------------------|-----------------|-------------------|-----------------|---------------------------|-----------------|
|                         | Net annual growth         | Annual removals | Net annual growth | Annual removals | Net annual growth         | Annual removals |
|                         | <i>Million cubic feet</i> |                 |                   |                 | <i>Million board feet</i> |                 |
| <b>Softwood</b>         |                           |                 |                   |                 |                           |                 |
| Shortleaf pine          | -1.1                      | 4.0             | -1.1              | 3.9             | 2.0                       | 17.3            |
| Loblolly pine           | 1.9                       | 0.5             | 1.9               | 0.5             | 9.3                       | 2.4             |
| Virginia pine           | 0.2                       | 12.0            | -0.1              | 11.9            | 7.9                       | 30.6            |
| Pitch pine              | -3.7                      | 1.0             | -3.8              | 1.0             | -7.6                      | 4.2             |
| Table Mountain pine     | 0.5                       | 0.7             | 0.5               | 0.7             | -0.3                      | 2.8             |
| Eastern white pine      | 29.4                      | 19.4            | 28.8              | 19.4            | 166.8                     | 96.6            |
| Eastern hemlock         | 9.4                       | 0.5             | 8.9               | 0.5             | 41.6                      | 1.5             |
| Spruce and fir          | 0.4                       | —               | 0.5               | —               | 1.7                       | —               |
| Redcedars               | -0.0                      | —               | -0.0              | —               | -0.1                      | —               |
| Total softwoods         | 37.0                      | 38.0            | 35.4              | 37.8            | 221.3                     | 155.5           |
| <b>Hardwood</b>         |                           |                 |                   |                 |                           |                 |
| Select white oaks       | 8.2                       | 5.4             | 8.7               | 5.1             | 40.7                      | 20.6            |
| Select red oaks         | 9.6                       | 4.4             | 10.4              | 4.3             | 57.0                      | 19.1            |
| Other white oaks        | 16.9                      | 4.9             | 17.2              | 4.8             | 84.9                      | 19.8            |
| Other red oaks          | 7.5                       | 7.4             | 7.5               | 7.2             | 52.2                      | 28.1            |
| Hickory                 | 4.2                       | 3.8             | 4.7               | 3.5             | 13.4                      | 11.2            |
| Yellow birch            | 0.5                       | 0.6             | 0.7               | 0.4             | 3.9                       | 1.6             |
| Hard maple              | 4.3                       | 0.6             | 4.2               | 0.6             | 14.5                      | 2.6             |
| Soft maple              | 21.6                      | 6.2             | 19.2              | 5.5             | 60.8                      | 14.9            |
| Beech                   | 1.6                       | 1.3             | 1.1               | 1.3             | 3.2                       | 3.4             |
| Sweetgum                | 0.4                       | 0.7             | 0.5               | 0.7             | 1.5                       | 1.1             |
| Tupelo and blackgum     | 1.8                       | 0.3             | 1.6               | 0.3             | 3.4                       | —               |
| Ash                     | 3.3                       | 1.3             | 3.0               | 1.3             | 15.0                      | 3.9             |
| Basswood                | 2.7                       | 1.4             | 2.6               | 1.3             | 12.7                      | 5.4             |
| Yellow-poplar           | 54.9                      | 16.1            | 54.3              | 16.0            | 292.2                     | 73.7            |
| Bay and magnolia        | 2.2                       | 0.1             | 2.1               | 0.1             | 6.7                       | 0.5             |
| Black cherry            | 3.0                       | 0.8             | 2.1               | 0.7             | 12.6                      | 2.4             |
| Black walnut            | 0.1                       | 0.3             | 0.1               | 0.3             | 1.0                       | 0.5             |
| Sycamore                | 0.2                       | —               | 0.2               | —               | 1.2                       | —               |
| Black locust            | -1.5                      | 3.1             | -0.8              | 2.8             | -1.1                      | 8.0             |
| Elm                     | 0.4                       | —               | 0.4               | —               | 0.2                       | —               |
| Other Eastern hardwoods | 14.9                      | 3.4             | 13.9              | 1.8             | 28.7                      | 6.4             |
| Total hardwoods         | 156.6                     | 62.2            | 153.6             | 57.8            | 704.8                     | 223.3           |
| <b>All species</b>      | 193.6                     | 100.2           | 189.0             | 95.6            | 926.1                     | 378.7           |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 39—Average annual removals of growing stock on timberland by species and diameter class, Mountains of North Carolina, 1990–2001**

| Species                   | Diameter class ( <i>inches at breast height</i> ) |         |         |          |           |           |           |           |           |           |                 |
|---------------------------|---|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|
|                           | All classes                                       | 5.0–6.9 | 7.0–8.9 | 9.0–10.9 | 11.0–12.9 | 13.0–14.9 | 15.0–16.9 | 17.0–18.9 | 19.0–20.9 | 21.0–28.9 | 29.0 and larger |
| <i>Million cubic feet</i> |   |         |         |          |           |           |           |           |           |           |                 |
| <b>Softwood</b>           |   |         |         |          |           |           |           |           |           |           |                 |
| Shortleaf pine            | 3.9   | —       | 0.1     | 1.0      | 1.9       | 0.4       | 0.5       | —         | —         | —         | —               |
| Loblolly pine             | 0.5   | —       | —       | 0.3      | —         | 0.1       | 0.1       | —         | —         | —         | —               |
| Virginia pine             | 11.9  | 0.7     | 3.5     | 4.2      | 2.0       | 1.0       | 0.3       | 0.2       | —         | —         | —               |
| Pitch pine                | 1.0   | —       | —       | 0.4      | 0.2       | 0.2       | —         | 0.2       | —         | —         | —               |
| Table Mountain pine       | 0.7   | —       | 0.1     | —        | 0.2       | 0.1       | 0.2       | —         | —         | —         | —               |
| Eastern white pine        | 19.4  | 0.6     | 1.1     | 1.3      | 1.7       | 3.3       | 2.7       | 1.9       | 1.6       | 5.0       | 0.2             |
| Eastern hemlock           | 0.5   | —       | 0.2     | —        | —         | 0.1       | 0.1       | 0.1       | —         | —         | —               |
| Total softwoods           | 37.8  | 1.3     | 5.1     | 7.3      | 5.9       | 5.1       | 3.9       | 2.3       | 1.6       | 5.0       | 0.2             |
| <b>Hardwood</b>           |   |         |         |          |           |           |           |           |           |           |                 |
| Select white oaks         | 5.1   | 0.1     | —       | 0.5      | 1.2       | 0.8       | 0.6       | 0.4       | 0.3       | 1.1       | 0.2             |
| Select red oaks           | 4.3   | 0.1     | 0.1     | 0.1      | 0.2       | 0.3       | 0.4       | 0.4       | 0.4       | 1.7       | 0.6             |
| Other white oaks          | 4.8   | —       | —       | 0.4      | 0.4       | 0.8       | 0.9       | 1.3       | 0.1       | 0.7       | 0.2             |
| Other red oaks            | 7.2   | 0.2     | 0.4     | 0.3      | 1.0       | 2.2       | 0.7       | 0.4       | 0.6       | 1.4       | —               |
| Hickory                   | 3.5   | 0.2     | 0.2     | 0.5      | 0.7       | 1.1       | 0.2       | 0.4       | 0.1       | 0.1       | —               |
| Yellow birch              | 0.4   | —       | —       | —        | —         | 0.4       | —         | —         | —         | —         | —               |
| Hard maple                | 0.6   | —       | 0.1     | —        | —         | —         | —         | 0.3       | —         | 0.3       | —               |
| Soft maple                | 5.5   | 0.7     | 0.5     | 0.5      | 1.4       | 1.2       | 0.6       | 0.3       | —         | 0.5       | —               |
| Beech                     | 1.3   | 0.2     | 0.1     | 0.1      | 0.3       | 0.1       | 0.3       | 0.2       | —         | —         | —               |
| Sweetgum                  | 0.7   | 0.1     | 0.1     | 0.2      | 0.1       | —         | 0.1       | —         | —         | —         | —               |
| Tupelo and blackgum       | 0.3   | 0.2     | —       | 0.1      | —         | —         | —         | —         | —         | —         | —               |
| Ash                       | 1.3   | 0.1     | 0.2     | 0.1      | 0.2       | —         | 0.1       | 0.4       | 0.2       | —         | —               |
| Basswood                  | 1.3   | —       | —       | —        | 0.3       | 0.3       | 0.1       | 0.2       | 0.4       | —         | —               |
| Yellow-poplar             | 16.0  | —       | 0.9     | 0.7      | 1.7       | 3.2       | 2.8       | 2.6       | 0.6       | 2.6       | 0.8             |
| Bay and magnolia          | 0.1   | —       | —       | —        | —         | 0.1       | —         | —         | —         | —         | —               |
| Black cherry              | 0.7   | —       | 0.1     | 0.1      | 0.1       | —         | —         | —         | 0.1       | 0.3       | —               |
| Black walnut              | 0.3   | 0.1     | —       | —        | —         | —         | —         | 0.1       | —         | —         | —               |
| Black locust              | 2.8   | 0.3     | 0.1     | 0.3      | 0.6       | 0.6       | 0.3       | 0.3       | 0.1       | 0.2       | —               |
| Other Eastern hardwoods   | 1.8   | 0.1     | 0.1     | —        | 0.1       | 0.4       | 0.6       | —         | 0.4       | —         | —               |
| Total hardwoods           | 57.8  | 2.2     | 2.9     | 3.9      | 8.4       | 11.6      | 7.8       | 7.3       | 3.3       | 8.8       | 1.7             |
| <b>All species</b>        | 95.6  | 3.6     | 8.0     | 11.2     | 14.3      | 16.7      | 11.7      | 9.6       | 4.9       | 13.8      | 1.9             |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 40—Average annual mortality of live trees, growing stock, and sawtimber on timberland by species, Mountains of North Carolina, 1990–2001**

| Species                 | Live trees                | Growing stock | Sawtimber                 |
|-------------------------|---------------------------|---------------|---------------------------|
|                         | <i>Million cubic feet</i> |               | <i>Million board feet</i> |
| <b>Softwood</b>         |                           |               |                           |
| Shortleaf pine          | 4.4                       | 4.3           | 15.4                      |
| Loblolly pine           | 0.1                       | 0.1           | 0.7                       |
| Virginia pine           | 11.9                      | 11.6          | 30.2                      |
| Pitch pine              | 8.5                       | 8.4           | 29.9                      |
| Table Mountain pine     | 0.6                       | 0.6           | 1.9                       |
| Eastern white pine      | 8.9                       | 8.8           | 38.8                      |
| Eastern hemlock         | 1.8                       | 1.5           | 6.0                       |
| Spruce and fir          | 0.3                       | 0.2           | 0.8                       |
| Redcedars               | 0.1                       | 0.1           | 0.4                       |
| Total softwoods         | 36.6                      | 35.7          | 124.2                     |
| <b>Hardwood</b>         |                           |               |                           |
| Select white oaks       | 3.7                       | 2.5           | 10.8                      |
| Select red oaks         | 6.9                       | 5.4           | 20.7                      |
| Other white oaks        | 7.0                       | 4.6           | 17.0                      |
| Other red oaks          | 12.6                      | 11.6          | 41.0                      |
| Hickory                 | 4.7                       | 3.9           | 14.5                      |
| Yellow birch            | 1.2                       | 0.7           | 1.4                       |
| Hard maple              | 0.8                       | 0.6           | 1.2                       |
| Soft maple              | 3.1                       | 1.7           | 3.0                       |
| Beech                   | 1.6                       | 1.5           | 5.4                       |
| Sweetgum                | 0.1                       | —             | —                         |
| Tupelo and blackgum     | 0.5                       | 0.1           | —                         |
| Ash                     | 0.9                       | 0.5           | 1.5                       |
| Basswood                | 0.7                       | 0.6           | 1.4                       |
| Yellow-poplar           | 4.4                       | 3.8           | 5.9                       |
| Bay and magnolia        | 0.1                       | 0.1           | —                         |
| Black cherry            | 1.5                       | 1.2           | 1.4                       |
| Black walnut            | 0.8                       | 0.4           | 0.7                       |
| Black locust            | 7.5                       | 5.0           | 12.8                      |
| Other Eastern hardwoods | 6.3                       | 1.7           | 3.2                       |
| Total hardwoods         | 64.4                      | 46.1          | 142.0                     |
| <b>All species</b>      | 101.0                     | 81.8          | 266.2                     |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.



**Table 41—Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Mountains of North Carolina, 1990–2001**

| Ownership class                                       | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|   |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <b>Average net annual growth (million cubic feet)</b> |             |              |             |                |              |               |               |
| National forest                                       | 43.9        | 5.9          | 1.5         | 4.4            | 37.9         | 20.0          | 17.9          |
| Other public  | 6.5         | 2.3          | 2.3         | —              | 4.2          | 2.8           | 1.5           |
| Forest industry                                       | 0.6         | 0.1          | 0.1         | —              | 0.6          | 0.4           | 0.1           |
| Nonindustrial private                                 | 137.7       | 27.1         | 22.2        | 4.9            | 110.6        | 65.4          | 45.1          |
| All classes   | 189.0       | 35.4         | 26.1        | 9.3            | 153.6        | 89.0          | 64.6          |
| <b>Average annual removals (million cubic feet)</b>   |             |              |             |                |              |               |               |
| National forest                                       | 8.6         | 3.0          | 2.9         | 0.1            | 5.6          | 1.6           | 4.0           |
| Other public  | 1.6         | 1.4          | 1.4         | —              | 0.2          | —             | 0.2           |
| Forest industry                                       | 0.6         | 0.1          | 0.1         | —              | 0.5          | 0.1           | 0.4           |
| Nonindustrial private                                 | 84.8        | 33.3         | 32.9        | 0.4            | 51.5         | 24.8          | 26.7          |
| All classes   | 95.6        | 37.8         | 37.3        | 0.5            | 57.8         | 26.6          | 31.2          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 42—Average net annual growth and average annual removals of live trees on timberland by ownership class and species group, Mountains of North Carolina, 1990–2001**

| Ownership class                                       | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|   |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <b>Average net annual growth (million cubic feet)</b> |             |              |             |                |              |               |               |
| National forest                                       | 41.1        | 5.9          | 1.5         | 4.3            | 35.3         | 19.6          | 15.6          |
| Other public  | 6.1         | 2.3          | 2.3         | —              | 3.8          | 2.4           | 1.4           |
| Forest industry                                       | 0.7         | 0.1          | 0.1         | —              | 0.6          | 0.4           | 0.2           |
| Nonindustrial private                                 | 145.1       | 28.7         | 23.3        | 5.4            | 116.4        | 69.1          | 47.3          |
| All classes   | 193.6       | 37.0         | 27.2        | 9.7            | 156.6        | 92.1          | 64.5          |
| <b>Average annual removals (million cubic feet)</b>   |             |              |             |                |              |               |               |
| National forest                                       | 8.7         | 3.0          | 2.9         | 0.1            | 5.8          | 1.6           | 4.1           |
| Other public  | 1.6         | 1.4          | 1.4         | —              | 0.2          | —             | 0.2           |
| Forest industry                                       | 0.6         | 0.1          | 0.1         | —              | 0.5          | 0.1           | 0.4           |
| Nonindustrial private                                 | 89.2        | 33.5         | 33.1        | 0.4            | 55.7         | 26.0          | 29.7          |
| All classes   | 100.2       | 38.0         | 37.6        | 0.5            | 62.2         | 27.8          | 34.4          |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 43—Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Mountains of North Carolina, 1990–2001**

| Ownership class                                       | All species | Softwoods    |             |                | Hardwoods    |               |               |
|---|-------------|--------------|-------------|----------------|--------------|---------------|---------------|
|   |             | All softwood | Yellow pine | Other softwood | All hardwood | Soft hardwood | Hard hardwood |
| <b>Average net annual growth (million board feet)</b> |             |              |             |                |              |               |               |
| National forest                                       | 213.1       | 37.4         | 18.7        | 18.7           | 175.7        | 94.5          | 81.2          |
| Other public  | 28.2        | 12.9         | 12.9        | —              | 15.2         | 9.2           | 6.0           |
| Forest industry                                       | 4.0         | 1.0          | 1.0         | —              | 3.0          | 2.2           | 0.8           |
| Nonindustrial private                                 | 678.5       | 170.0        | 145.5       | 24.4           | 508.5        | 309.2         | 199.3         |
| All classes   | 926.1       | 221.3        | 178.1       | 43.2           | 704.8        | 417.5         | 287.3         |
| <b>Average annual removals (million board feet)</b>   |             |              |             |                |              |               |               |
| National forest                                       | 35.5        | 13.7         | 13.7        | —              | 21.8         | 5.7           | 16.1          |
| Other public  | 6.5         | 5.4          | 5.4         | —              | 1.1          | —             | 1.1           |
| Forest industry                                       | 3.1         | 0.9          | 0.9         | —              | 2.2          | 0.7           | 1.5           |
| Nonindustrial private                                 | 333.7       | 135.5        | 134.0       | 1.5            | 198.2        | 98.4          | 99.8          |
| All classes   | 378.7       | 155.5        | 154.0       | 1.5            | 223.3        | 104.8         | 118.5         |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 44—Average net annual growth of growing stock on timberland by forest-type group, stand origin, and species group, Mountains of North Carolina, 1990–2001**

| Forest-type group<br>and stand origin <sup>a</sup> | All<br>species | Softwoods       |                |                   | Hardwoods       |                  |                  |
|--|----------------|-----------------|----------------|-------------------|-----------------|------------------|------------------|
|  |                | All<br>softwood | Yellow<br>pine | Other<br>softwood | All<br>hardwood | Soft<br>hardwood | Hard<br>hardwood |
| <i>Million cubic feet</i>                          |                |                 |                |                   |                 |                  |                  |
| <b>Softwood types</b>                              |                |                 |                |                   |                 |                  |                  |
| White-red-jack pine                                |                |                 |                |                   |                 |                  |                  |
| Planted  | 2.4            | 2.4             | 2.4            | —                 | 0.1             | 0.0              | 0.0              |
| Natural  | 13.8           | 10.2            | 9.5            | 0.8               | 3.6             | 2.3              | 1.2              |
| Total  | 16.2           | 12.6            | 11.8           | 0.8               | 3.6             | 2.4              | 1.3              |
| Spruce-fir   |                |                 |                |                   |                 |                  |                  |
| Planted  | —              | —               | —              | —                 | —               | —                | —                |
| Natural  | 0.6            | 0.6             | —              | 0.6               | -0.0            | —                | -0.0             |
| Total  | 0.6            | 0.6             | —              | 0.6               | -0.0            | —                | -0.0             |
| Loblolly-shortleaf pine                            |                |                 |                |                   |                 |                  |                  |
| Planted  | 1.1            | 1.1             | 1.1            | —                 | —               | —                | —                |
| Natural  | 5.1            | 0.1             | -0.1           | 0.2               | 5.0             | 2.9              | 2.1              |
| Total  | 6.2            | 1.1             | 1.0            | 0.2               | 5.0             | 2.9              | 2.1              |
| Total softwoods                                    | 23.3           | 14.3            | 12.8           | 1.5               | 9.0             | 5.6              | 3.4              |
| <b>Hardwood types</b>                              |                |                 |                |                   |                 |                  |                  |
| Oak-pine   |                |                 |                |                   |                 |                  |                  |
| Planted  | 0.1            | 0.1             | 0.1            | —                 | —               | —                | —                |
| Natural  | 21.0           | 9.0             | 8.3            | 0.7               | 12.0            | 7.5              | 4.5              |
| Total  | 21.1           | 9.1             | 8.4            | 0.7               | 12.0            | 7.5              | 4.5              |
| Oak-hickory  | 141.7          | 11.9            | 4.9            | 6.9               | 129.9           | 74.4             | 55.5             |
| Maple-beech-birch                                  | 3.0            | 0.2             | —              | 0.2               | 2.7             | 1.5              | 1.3              |
| Total hardwoods                                    | 165.8          | 21.2            | 13.3           | 7.9               | 144.6           | 83.4             | 61.3             |
| <b>Nonstocked</b>                                  | —              | —               | —              | —                 | —               | —                | —                |
| <b>All groups</b>                                  | 189.0          | 35.4            | 26.1           | 9.7               | 154.0           | 89.0             | 64.6             |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> Classifications at the beginning of the remeasurement period.

**Table 45—Average annual removals of growing stock on timberland by forest-type group, stand origin, and species group, Mountains of North Carolina, 1990–2001**

| Forest-type group<br>and stand origin <sup>a</sup> | All<br>species | Softwoods       |                |                   | Hardwoods       |                  |                  |
|--|----------------|-----------------|----------------|-------------------|-----------------|------------------|------------------|
|  |                | All<br>softwood | Yellow<br>pine | Other<br>softwood | All<br>hardwood | Soft<br>hardwood | Hard<br>hardwood |
| <i>Million cubic feet</i>                          |                |                 |                |                   |                 |                  |                  |
| <b>Softwood types</b>                              |                |                 |                |                   |                 |                  |                  |
| White-red-jack pine                                |                |                 |                |                   |                 |                  |                  |
| Planted  | 1.5            | 1.5             | 1.5            | —                 | —               | —                | —                |
| Natural  | 11.9           | 10.7            | 10.6           | 0.1               | 1.2             | 0.3              | 0.9              |
| Total  | 13.4           | 12.2            | 12.1           | 0.1               | 1.2             | 0.3              | 0.9              |
| Loblolly-shortleaf pine                            |                |                 |                |                   |                 |                  |                  |
| Planted  | —              | —               | —              | —                 | —               | —                | —                |
| Natural  | 14.5           | 14.0            | 14.0           | —                 | 0.5             | 0.2              | 0.3              |
| Total  | 14.5           | 14.0            | 14.0           | —                 | 0.5             | 0.2              | 0.3              |
| Total softwoods                                    | 27.9           | 26.2            | 26.1           | 0.1               | 1.7             | 0.5              | 1.2              |
| <b>Hardwood types</b>                              |                |                 |                |                   |                 |                  |                  |
| Oak-pine   |                |                 |                |                   |                 |                  |                  |
| Planted  | —              | —               | —              | —                 | —               | —                | —                |
| Natural  | 14.8           | 7.6             | 7.3            | 0.2               | 7.2             | 4.5              | 2.7              |
| Total  | 14.8           | 7.6             | 7.3            | 0.2               | 7.2             | 4.5              | 2.7              |
| Oak-hickory  | 49.1           | 4.0             | 3.9            | 0.1               | 45.1            | 19.9             | 25.2             |
| Maple-beech-birch                                  | 3.8            | —               | —              | —                 | 3.8             | 1.7              | 2.1              |
| Total hardwoods                                    | 67.7           | 11.6            | 11.2           | 0.4               | 56.1            | 26.1             | 30.0             |
| <b>Nonstocked</b>                                  | —              | —               | —              | —                 | —               | —                | —                |
| <b>All groups</b>                                  | 95.6           | 37.8            | 37.3           | 0.5               | 57.8            | 26.6             | 31.2             |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> Classifications at the beginning of the remeasurement period.

**Table 46—Fresh weight of live trees on timberland by ownership class, species group, and tree component, Mountains of North Carolina, 2002**

| Ownership class<br>and species group | All<br>components | All live<br>saplings | Component           |           |                               |            |          |                               |
|--------------------------------------|-------------------|----------------------|---------------------|-----------|-------------------------------|------------|----------|-------------------------------|
|                                      |                   |                      | Growing-stock trees |           |                               | Cull trees |          |                               |
|                                      |                   |                      | Total               | Boles     | Stumps,<br>tops, and<br>limbs | Total      | Boles    | Stumps,<br>tops, and<br>limbs |
| <i>Thousand tons</i>                 |                   |                      |                     |           |                               |            |          |                               |
| <b>National forest</b>               |                   |                      |                     |           |                               |            |          |                               |
| Softwood                             | 15,711.4          | 756.5                | 14,542.7            | 12,449.4  | 2,093.3                       | 412.3      | 305.1    | 107.2                         |
| Hardwood                             | 113,337.3         | 7,437.2              | 95,564.0            | 78,398.3  | 17,165.7                      | 10,336.2   | 8,004.8  | 2,331.4                       |
| Total                                | 129,048.7         | 8,193.6              | 110,106.6           | 90,847.7  | 19,259.0                      | 10,748.5   | 8,309.9  | 2,438.6                       |
| <b>Other public</b>                  |                   |                      |                     |           |                               |            |          |                               |
| Softwood                             | 1,598.7           | 92.2                 | 1,469.3             | 1,254.4   | 214.9                         | 37.2       | 29.7     | 7.5                           |
| Hardwood                             | 13,692.6          | 754.3                | 11,442.9            | 9,400.1   | 2,042.8                       | 1,495.5    | 1,169.7  | 325.8                         |
| Total                                | 15,291.3          | 846.5                | 12,912.2            | 10,654.5  | 2,257.7                       | 1,532.7    | 1,199.4  | 333.3                         |
| <b>Forest industry</b>               |                   |                      |                     |           |                               |            |          |                               |
| Softwood                             | 85.5              | —                    | 85.5                | 72.0      | 13.5                          | —          | —        | —                             |
| Hardwood                             | 3,001.6           | 315.9                | 2,418.9             | 1,988.1   | 430.9                         | 266.8      | 204.5    | 62.3                          |
| Total                                | 3,087.1           | 315.9                | 2,504.4             | 2,060.1   | 444.4                         | 266.8      | 204.5    | 62.3                          |
| <b>Nonindustrial private</b>         |                   |                      |                     |           |                               |            |          |                               |
| Softwood                             | 49,999.4          | 2,321.8              | 45,763.9            | 39,016.1  | 6,747.8                       | 1,913.7    | 1,614.4  | 299.3                         |
| Hardwood                             | 286,197.9         | 19,450.4             | 234,095.1           | 193,296.3 | 40,798.8                      | 32,652.4   | 25,586.0 | 7,066.5                       |
| Total                                | 336,197.2         | 21,772.2             | 279,859.0           | 232,312.4 | 47,546.6                      | 34,566.1   | 27,200.4 | 7,365.7                       |
| <b>All ownerships</b>                |                   |                      |                     |           |                               |            |          |                               |
| Softwood                             | 67,394.9          | 3,170.5              | 61,861.3            | 52,791.9  | 9,069.5                       | 2,363.2    | 1,949.2  | 414.0                         |
| Hardwood                             | 416,229.4         | 27,957.7             | 343,520.9           | 283,082.8 | 60,438.1                      | 44,750.9   | 34,965.0 | 9,785.9                       |
| Total                                | 483,624.3         | 31,128.1             | 405,382.2           | 335,874.6 | 69,507.6                      | 47,114.0   | 36,914.2 | 10,199.9                      |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

**Table 47—Area of timberland treated or disturbed annually and retained in timberland by treatment or disturbance and ownership class, Mountains of North Carolina, 1990 to 2002**

| Treatment or disturbance             | All classes | Ownership class |                 |                       |
|--------------------------------------|-------------|-----------------|-----------------|-----------------------|
|                                      |             | Public          | Forest industry | Nonindustrial private |
| <i>Thousand acres</i>                |             |                 |                 |                       |
| Final harvest                        | 9.4         | 1.6             | 0.2             | 7.7                   |
| Partial harvest <sup>a</sup>         | 17.3        | 0.8             | —               | 16.4                  |
| Seed tree/shelterwood                | 0.5         | —               | —               | 0.5                   |
| Commercial thinning                  | 1.1         | 0.5             | —               | 0.6                   |
| Other stand improvement              | 2.1         | —               | —               | 2.1                   |
| Site preparation                     | 2.0         | 0.4             | —               | 1.6                   |
| Artificial regeneration <sup>b</sup> | 1.3         | 0.1             | —               | 1.1                   |
| Natural regeneration <sup>b</sup>    | 15.9        | 0.9             | 0.2             | 14.8                  |
| Other treatment                      | 8.8         | 0.2             | —               | 8.6                   |
| Natural disturbance                  |             |                 |                 |                       |
| Disease                              | 2.1         | 0.3             | —               | 1.8                   |
| Insects                              | 10.1        | 4.2             | —               | 5.9                   |
| Fire                                 | 6.4         | 3.9             | —               | 2.5                   |
| Weather                              | 6.4         | 1.1             | —               | 5.3                   |
| Animals                              | —           | —               | —               | —                     |
| Other disturbances                   |             |                 |                 |                       |
| Grazing                              | 4.1         | —               | —               | 4.1                   |
| Other human-caused disturbance       | 11.2        | 0.3             | —               | 10.9                  |

Since some acres experience more than one treatment or disturbance, there are no column totals. Numbers in rows may not sum to totals due to rounding.

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

<sup>a</sup> Includes high-grading and some selective cutting.

<sup>b</sup> Includes establishment of trees for timber production on forest and nonforest land.

**Table 48—Area of timberland treated or disturbed annually and retained in timberland by treatment or disturbance and forest management type, Mountains of North Carolina, 1990 to 2002**

| Treatment or disturbance       | All types | Forest management type <sup>a</sup> |              |          |                 |                  |            |
|--------------------------------|-----------|-------------------------------------|--------------|----------|-----------------|------------------|------------|
|                                |           | Pine plantation                     | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Thousand acres</i>          |           |                                     |              |          |                 |                  |            |
| Final harvest                  | 9.4       | 0.1                                 | 3.1          | 0.5      | 5.8             | —                | —          |
| Partial harvest <sup>b</sup>   | 17.3      | —                                   | 2.5          | 2.2      | 12.6            | —                | —          |
| Seed tree/shelterwood          | 0.5       | —                                   | —            | —        | 0.5             | —                | —          |
| Commercial thinning            | 1.1       | 1.1                                 | —            | —        | —               | —                | —          |
| Other stand improvement        | 2.1       | 0.6                                 | 0.9          | 0.7      | —               | —                | —          |
| Site preparation               | 2.0       | 0.6                                 | 1.0          | —        | 0.4             | —                | —          |
| Other treatment                | 8.8       | 0.5                                 | 1.7          | 0.5      | 6.0             | —                | —          |
| Natural disturbance            |           |                                     |              |          |                 |                  |            |
| Disease                        | 2.1       | —                                   | 0.9          | —        | 1.3             | —                | —          |
| Insects                        | 10.1      | 0.5                                 | 5.1          | 2.5      | 2.0             | —                | —          |
| Fire                           | 6.4       | 0.6                                 | 1.0          | 0.3      | 4.5             | —                | —          |
| Weather                        | 6.4       | —                                   | 1.8          | 0.6      | 4.0             | —                | —          |
| Animals                        | —         | —                                   | —            | —        | —               | —                | —          |
| Other disturbances             |           |                                     |              |          |                 |                  |            |
| Grazing                        | 4.1       | —                                   | —            | 0.6      | 3.5             | —                | —          |
| Other human-caused disturbance | 11.2      | —                                   | 2.1          | 0.5      | 8.6             | —                | —          |

Since some acres experience more than one treatment or disturbance, there are no column totals. Numbers in rows may not sum to totals due to rounding.

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> Classification before treatment or disturbance.

<sup>b</sup> Includes high-grading and some selective cutting.

**Table 49—Area of timberland regenerated annually by type of regeneration and forest management type, Mountains of North Carolina, 2002**

| Type of regeneration                             | All types   | Forest management type <sup>a</sup> |              |            |                 |                  |            |
|--|-------------|-------------------------------------|--------------|------------|-----------------|------------------|------------|
|  |             | Pine plantation                     | Natural pine | Oak-pine   | Upland hardwood | Lowland hardwood | Nonstocked |
| <i>Thousand acres</i>                            |             |                                     |              |            |                 |                  |            |
| Artificial regeneration following harvest        | 1.0         | 0.4                                 | —            | —          | 0.6             | —                | —          |
| Natural regeneration following harvest           | 4.8         | —                                   | 0.7          | 0.2        | 3.9             | —                | —          |
| Other artificial regeneration on forest land     | 0.1         | 0.1                                 | —            | —          | —               | —                | —          |
| Other natural regeneration on forest land        | 4.5         | —                                   | —            | 0.6        | 3.8             | —                | —          |
| Artificial regeneration on former nonforest land | 0.6         | 0.6                                 | —            | —          | —               | —                | —          |
| Natural reversion of former nonforest land       | 6.6         | —                                   | 1.1          | 1.0        | 4.4             | —                | —          |
| <b>Total</b>                                     | <b>17.7</b> | <b>1.2</b>                          | <b>1.8</b>   | <b>1.9</b> | <b>12.8</b>     | <b>—</b>         | <b>—</b>   |

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of > 0.0 but < 0.05 for the cell.

<sup>a</sup> Classification after regeneration.





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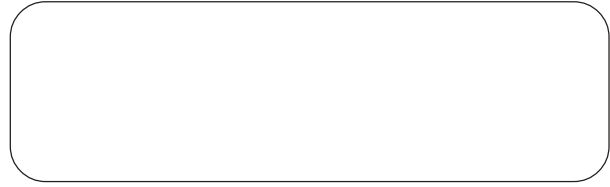
This report summarizes a 2002 inventory of the forest resources of a 21-county area of North Carolina. Major findings are highlighted in text and graphics; detailed data are presented in 49 tables.

**Keywords:** Forest ownership, timberland, timber growth, timber removals, timber volume.

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