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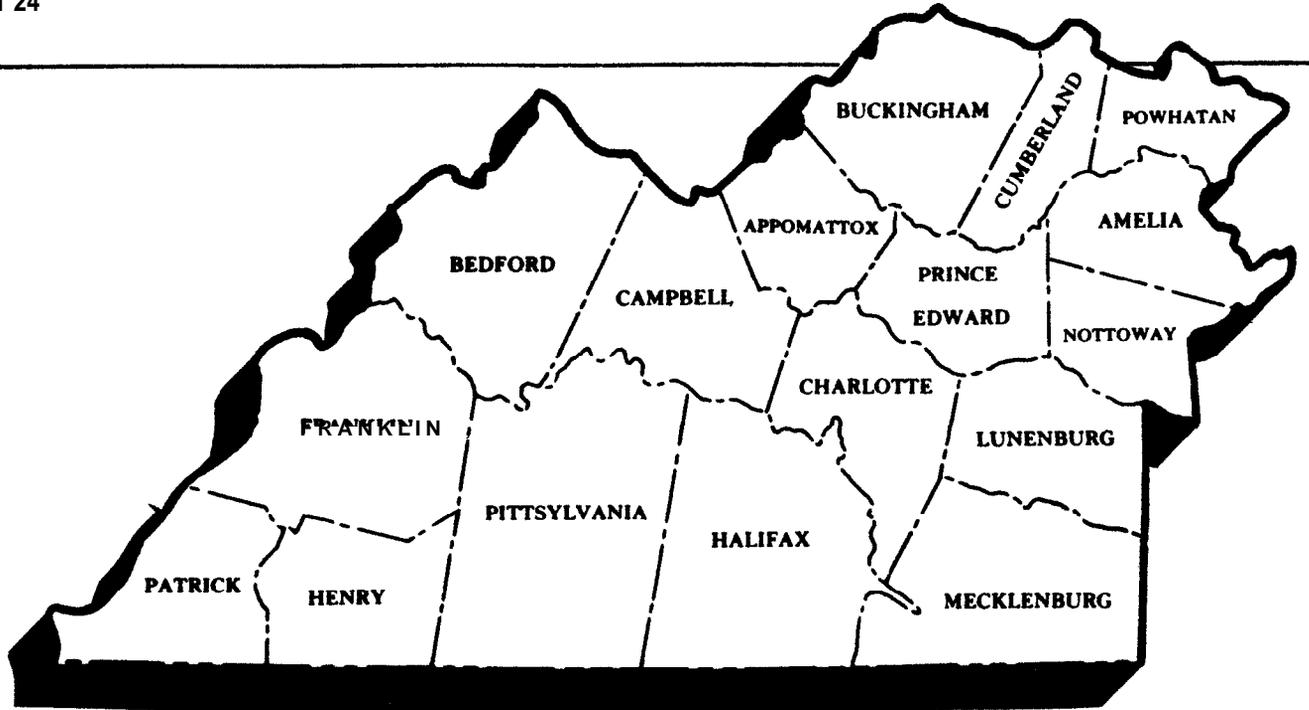


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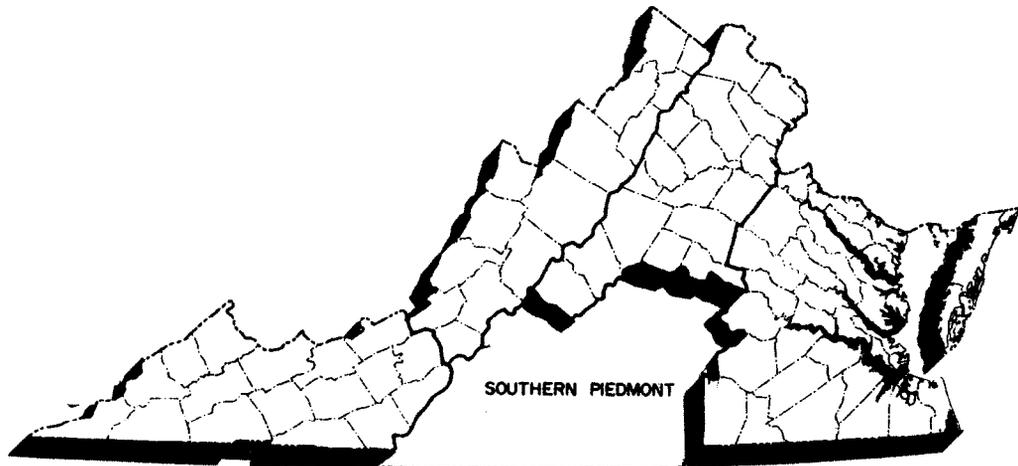
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# Forest Statistics for the Southern Piedmont of Virginia, 1991

Tony G. Johnson



**SOUTHERN PIEDMONT**



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**Southeastern Forest Experiment Station  
P.O. Box 2880  
Asheville, North Carolina 28802**

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the Southern Piedmont  
of Virginia, 1991**

**Tony G. Johnson**, Forester  
Forest inventory and Analysis  
Asheville, North Carolina



## Foreword

This report highlights the principal findings of the sixth forest survey of the Southern Piedmont of Virginia. Field work began in March 1991 and was completed in June 1991. Five previous surveys, completed in 1940, 1957, 1965, 1976, and 1985, provide statistics for measuring changes and trends over the past 51 years. The primary emphasis in this report is on the changes and trends since 1985. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of the forest resource are authorized by the Forest and Range-land Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey 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. This report

deals only with the extent and condition of forest land, associated timber volumes, and rates of timber growth and removals.

The **17-county** area covered by this report is one of five survey units in Virginia. A similar report, USDA Forest Service Resource Bulletin SE-122, has been issued for the Coastal Plain of Virginia. A comparable report for the other three units will be issued as the statewide inventory progresses. When completed, the inventory will provide updated statistics on the timber resource for all of Virginia.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the Virginia Division of Forestry in collecting field data. Appreciation is also expressed for the excellent cooperation of other public agencies, forest industry, and other private landowners in providing information and access to the sample locations.



Noel D. Cost  
Project Leader



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\* Tables 1-12, 27, 29-33, 35-38, 41, 42, and 44 are common to all Forest Inventory and Analysis forest resource statistical reports of the Eastern United States.

Since 1985 in the Southern Piedmont of Virginia--

. area of timberland remained stable at 3.8 million acres. Timberland currently accounts for nearly 68 percent of the total land area in this 17-county region. Land use changes occurred on 144,000 acres. Almost 75,000 acres of timberland were diverted to other land uses, while more than 69,000 acres were added to the timberland base. All of the additions came from natural seeding or planting on land formerly used for agriculture. Of the diverted acreage, 52 percent went to agricultural uses and 31 percent to urban development. Nearly 13,000 acres, or 17 percent, were reclassified as reserved timberland.

• area of timberland controlled by nonindustrial private forest (NIPF) landowners increased by 109,000 acres, or nearly 4 percent. NIPF owners currently control 3.1 million acres, or 82 percent of the timberland in this area. Within the NIPF category, farmer-owned timberland declined 7 percent, or nearly 87,000 acres. The decline in farm ownership was 32 percent for the previous (1976-1985) survey period. Since 1965, farm ownership of timberland has fallen from 2.1 to 1.2 million acres. In contrast, timberland held by corporations that do not manufacture forest products increased 47 percent to 249,000 acres. Timberland held by other individuals increased nearly 8 percent to 1.6 million acres. Forest industry holdings declined almost 17 percent to 533,000 acres and account for about 14 percent of the timberland. The area of timberland in public ownership declined by more than 5 percent to 144,000 acres. About 4 percent of the timberland is controlled by public agencies.

• area of timberland classified as a hardwood forest type declined nearly 59,000 acres, or almost 3 percent.

Still, at 2.3 million acres, hardwood forest types make up 60 percent of the timberland. Area of oak-hickory--the predominant forest-type group in the region--declined almost 3 percent to 2.1 million acres. In contrast, acreage in oak-pine increased 12 percent to 417,000 acres. Area of timberland classified as a pine type declined less than 1 percent and remains at 1.1 million acres. Area of loblolly pine, now the dominant pine forest type, increased 25 percent from 451,000 to 563,000 acres. In contrast, the Virginia and shortleaf pine forest types each declined 16 percent to 406,000 and 103,000 acres, respectively. Acreage in planted pine jumped 30 percent from 397,000 to 515,000 acres and accounts for nearly 47 percent of all the pine stands in this region.

• more than 61,000 acres were harvested annually and retained in timberland. This harvest rate is 4 percent lower than the acreage harvested between 1976 and 1985. Of the harvested acreage, 80 percent was on NIPF land; 18 percent was on forest industry land; and 2 percent was on public timberland. Hardwood stands accounted for 53 percent of the acreage harvested annually, while natural and planted pine stands each made up 34 percent, and oak-pine stands 13 percent. In addition to final harvests, some form of partial harvest or intermediate cutting occurred on more than 18,000 acres annually. Natural disturbances such as insects, disease, weather, and fire damaged nearly 25,000 acres annually.

• artificial and natural regeneration increased nearly 22 percent from an average of 57,000 to 70,000 acres annually. By ownership, 76 percent of the regeneration occurred on NIPF land, 22 percent on forest industry land, and the remaining 2 percent on public land. Artificially regenerated acreage increased slightly to 28,000 acres per

year and accounted for nearly 41 percent of the acreage regenerated. One-third of the artificially regenerated acreage supported sufficient hardwood stocking to be classified as an oak-pine or a hardwood forest type. The rate of planting on NIPF land increased by 45 percent to nearly 17,000 acres per year, but it declined on forest industry land by 22 percent to 11,000 acres annually. Currently, planted pine stands account for 45 percent of all forest industry timberland. Both artificially and naturally regenerated pine and oak-pine stands were established on nearly 39,000 acres each year, exceeding the acreage of pine and oak-pine stands harvested by 34 percent.

- average basal area of live trees 5.0 inches d.b.h. and larger increased from 70 to 73 square feet per acre. Merchantable net volume per acre of softwoods and hardwoods combined currently averages 1,680 cubic feet per acre and includes 4,300 board feet. Stands dominated by sawtimber-size trees increased 3 percent to nearly 1.5 million acres, or 38 percent of the region's total timberland area. Acreage in stands classed as fully stocked increased 9 percent to 1.8 million acres, while acreage in medium-stocked stands declined almost 7 percent to 1.6 million acres. Together, fully stocked and medium-stocked stands make up 89 percent of the total timberland area. Area in poorly stocked stands declined 9 percent to 0.4 million acres, 11 percent of the timberland area.

- volume of hardwood growing stock increased 8 percent from 3.8 to 4.1 billion cubic feet. In comparison, hardwood volume increased 16 percent between 1976 and 1985 and 29 percent between 1965 and 1976. By ownership, hardwood volume on NIPF land was up nearly 10 percent to 3.5 billion cubic feet. This ownership category accounts for 84 percent of the hardwood volume in the region. Hardwood volume on forest industry land declined 9 percent to 365 million cubic feet, while hardwood volume on publicly owned timberland increased nearly 19 percent to 280 million cubic feet. Most of the major hardwood species in the region registered significant gains. Collectively, the

oaks, which account for 42 percent of the hardwood volume, increased 5 percent to 1.7 billion cubic feet. Yellow-poplar volume increased nearly 13 percent to 917 million cubic feet. This species accounts for 22 percent of the hardwood volume; it is the single most dominant species in the region. With the exception of the 8- and 10-inch diameter classes, hardwood growing-stock volume increased across all diameter classes. Volume in trees 15.0 inches d.b.h. and larger increased 24 percent to 1.4 billion cubic feet and represents more than a third of the hardwood growing stock. Volume of hardwood sawtimber rose nearly 17 percent to 11.7 billion board feet.

- volume of softwood growing stock increased more than 10 percent from 1.7 to 1.9 billion cubic feet. Softwood volume on NIPF land increased nearly 12 percent to 1.4 billion cubic feet and accounts for nearly three-fourths of the total softwood volume. Softwood volume on forest industry land increased 10 percent to 384 million cubic feet but fell by almost 4 percent to 101 million cubic feet on public land. Volume of Virginia pine--the predominant softwood species accounting for 43 percent of the softwood volume--increased 1 percent to 819 million cubic feet. Volume of **lob-lolly** pine increased 46 percent to 634 million cubic feet, whereas that of shortleaf pine dropped 8 percent to 346 million cubic feet. Softwood volume increased across all diameter classes, with more than three-fourths of the gain measured in the 8-, 12-, and 14-inch diameter classes. Volume of softwood sawtimber increased more than 16 percent to 4.5 billion board feet.

- net annual growth of hardwood growing stock increased more than 5 percent from 134 to 141 million cubic feet. Hardwood net growth was up 8 percent on NIPF land and 6 percent on public land but fell nearly 16 percent on land controlled by forest industry. Across all ownerships, hardwood net growth exceeded removals by nearly 57 percent. Softwood net annual growth increased nearly 59 percent from 67 to 106 million cubic feet. More than two-thirds of the softwood net growth occurred on NIPF land, where softwood

growth increased 63 percent to 71 million cubic feet. Softwood net growth increased 46 percent on forest industry land and 70 percent on public land. Softwood growth in pine plantations more than doubled and accounted for 47 percent of the total softwood net growth. Across all ownerships, softwood net growth exceeded removals by 39 percent. Mean net annual growth per acre for softwoods and hardwoods combined jumped 23 percent from 53 to 65 cubic feet per acre. Net annual growth for both softwoods and hardwoods included 871 million board feet of sawtimber.

- annual removals of hardwood growing stock increased 9 percent from 82 to 90 million cubic feet. Hardwoods accounted for 54 percent of the total **growing-stock** removals and included 289 million board feet of sawtimber. By ownership, 85 percent of the hardwood removals came from NIPF land; the remaining 15 percent came from forest industry land. Hardwood removals declined 91 percent on public land and 40 percent on forest industry land, but were up on NIPF land by 31 percent to 76 million cubic feet. Softwood growing-stock removals increased nearly 25 percent to 76 million cubic

feet. All ownership categories recorded an increase in softwood removals, with removals on NIPF land up 24 percent, forest industry land up 12 percent, and removals on public land up nearly 88 percent. Almost 68 percent of the softwood removals occurred on NIPF land, 23 percent on forest industry land, and the remaining 9 percent on public land. Softwood removals included 203 million board feet of sawtimber.

- annual mortality of hardwood growing stock increased 36 percent from 14 to 19 million cubic feet. Nearly 87 percent of the hardwood mortality occurred on NIPF land. Hardwood mortality, which reduced gross growth by 12 percent, included 39 million board feet of sawtimber. In contrast to hardwood mortality, annual mortality of softwoods declined nearly 24 percent from 18 to 14 million cubic feet. Declines in softwood mortality were recorded on all ownership categories. More than 89 percent of the softwood mortality occurred on NIPF land. Softwood mortality, which reduced gross growth by 12 percent, included 29 million board feet of sawtimber.

## How the Inventory is Made

The method of the inventory is a sampling procedure designed to provide reliable statistics primarily at the State and Survey Unit levels. Individual county statistics are presented so that any combination of counties may be added together until a total is large enough to meet the desired degree of reliability. Procedures were as follows:

1. Initial estimates of forest and nonforest areas were based on the classification of 17,505 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 1,533 of the 16-point clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassification.

2. Estimates of timber volume and forest classification were based on measurements recorded at 1,010 ground sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

3. Equations prepared from detailed measurements collected on standing trees in this Survey Unit, and similar measurements taken throughout the Southeast, were used to compute the volume of individual tally trees. A mirror caliper and sectional aluminum poles were used to obtain the additional measurements required to construct volume equations.

4. Felled trees were measured at 41 active cutting operations. These data will supplement the standing-tree volume data and be used to generate utilization factors for product and species groups. Forest biomass estimates were made from equations developed by the Utilization of Southern Timber Research Work Unit of the Southeastern Forest Experiment Station in Athens, GA.

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 1,025 permanent sample plots established in the fifth survey.

6. Ownership information was collected from correspondence, public records, and local contacts. In those counties where the sample missed a particular ownership class, temporary sample plots were added.

7. All field data were sent to Asheville for editing and were entered into disk and magnetic-tape storage for processing. Final estimates were based on statistical summaries of the data.

## Reliability of the Data

Statistical analysis of these data indicates the following sampling errors in terms of one standard error (two times out of three):

|   | <u>Percent</u> |
|---|----------------|
| Per million acres of timberland . . . . .         | 0 81           |
| Per billion cubic feet of growing stock. ....     | 6 00           |
| Per billion cubic feet of net annual growth. .... | 1 24           |
| Per billion cubic feet of annual removals. ....   | 3 70           |

Sampling errors for county and unit **totals,<sup>a</sup>** in terms of one standard error, Southern Piedmont of Virginia, **1991**

| County        | Timberland area | Cubic-foot volume of growing stock |        |          |
|---------------|-----------------|------------------------------------|--------|----------|
|               |                 | Inventory                          | Growth | Removals |
|               |                 | <u>Sampling error<sup>b</sup></u>  |        |          |
| Amelia        | 1.68            | 13.22                              | 10.07  | 32.17    |
| Appomattox    | 2.62            | 14.17                              | 16.91  | 40.24    |
| Bedford       | 2.01            | 7.61                               | 7.21   | 33.71    |
| Buckingham    | 1.03            | 10.75                              | 11.30  | 33.71    |
| Campbell      | 2.04            | 8.99                               | 10.96  | 44.29    |
| Charlotte     | 1.61            | 10.77                              | 10.51  | 51.21    |
| Cumberland    | 1.54            | 15.68                              | 16.52  | 40.08    |
| Franklin      | 1.86            | 6.70                               | 8.42   | 32.94    |
| Halifax       | 1.10            | 8.62                               | 8.22   | 24.96    |
| Henry         | 2.22            | 13.58                              | 10.89  | 42.36    |
| Lunenburg     | 1.53            | 10.58                              | 9.55   | 31.53    |
| Mecklenburg   | 2.19            | 8.93                               | 8.62   | 31.68    |
| Nottoway      | 2.24            | 15.35                              | 17.41  | 43.20    |
| Patrick       | 1.40            | 8.04                               | 7.93   | 34.76    |
| Pittsylvania  | 1.10            | 7.02                               | 7.24   | 40.03    |
| Powhatan      | 1.50            | 11.72                              | 12.69  | 50.66    |
| Prince Edward | 2.31            | 13.82                              | 11.86  | 39.32    |
| Total         | <b>.42</b>      | 2.45                               | 2.51   | 9.08     |

<sup>a</sup>Sampling error of breakdowns of county and unit totals may be computed with the following formula:

$$E = \frac{(SE) \sqrt{(\text{Specified volume or area})}}{\sqrt{(\text{Volume or area total in question})}}$$

Where: E = Sampling error of the volume or area total in question

SE = Specified sampling error in table.

<sup>b</sup>By random-sampling formula (in percent).

## Definitions of Terms

**Allowable cut.** The volume of timber that could be cut on timberland during a given period under specified management plans aimed at sustained production of timber products.

**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 as square feet of basal area per acre.

**Biomass.** The aboveground green 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 diameter outside bark (d.o.b.) in trees 5.0 inches d.b.h. and larger.

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

**Pine plantation.** Stands that have been artificially regenerated by planting or direct seeding and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

**Natural pine.** Stands that have not been artificially regenerated and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

**Oak-pine.** Stands with a forest type of oak-pine.

**Upland hardwood.** Stands with a forest type of oak-hickory, chestnut oak, southern scrub oak, or maple-beech-birch.

**Lowland hardwood.** Stands with a forest type of oak-gum-cypress, elm-ash-cottonwood, palm, or other tropical.

**Bureau of Land Management lands.** Federal lands administered by the Bureau of Land Management.

**Census water.** Streams, sloughs, estuaries, canals, and other moving bodies of water one-eighth of a statute mile in width and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 40 acres in area and greater.

**Commercial forest land.** (see: Timberland).

**Commercial species.** Tree species conventionally regarded as being able to develop into trees suitable for the manufacture of industrial timber products. Species that typically exhibit small size, poor form, or inferior quality are excluded.

**Cropland.** Land under cultivation within the past 24 months, including orchards and land in soil-improving crops but excluding land cultivated in developing improved pasture. Also includes idle farmland,

**D.b.h.** Tree diameter (outside bark) at breast height (4.5 feet above the ground).

**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.

**Farm.** Land on which agricultural operations are being conducted and sale of agricultural products totaled \$1,000 or more during the year.

**Farm operator.** A person who operates a farm, either doing the work or directly supervising the work.

Farmer-owned land. (see: Other private land).

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

Forest industry-leased land. Land leased or under management contracts to forest industry from other owners for periods of one forest rotation or longer. Land under cutting contracts is not included.

Forest land. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use.

Forest type. A classification of forest land based on the species forming a plurality of live-tree stocking.

White pine-hemlock. 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.)

Palm, other tropicals. Forests in which palms and other tropicals constitute a plurality of the stocking.

Gross growth. Annual increase in merchantable volume of trees in the absence of cutting and mortality. (Gross growth includes survivor growth, ingrowth,

growth on ingrowth, growth on removals prior to removal, and growth on mortality prior to death.)

Growing-stock trees. Live sawtimber-size trees of commercial species containing at least a 12-foot log, or two noncontiguous saw logs each 8 feet or longer, meeting minimum grade requirements (hardwoods must qualify as a log grade of either 3 or 4; softwoods must qualify as a log grade 3) with at least one-third of the gross board-foot volume (International 1/4-inch rule) between a 1-foot stump and the minimum saw-log top being sound, or a live tree below sawtimber size that will prospectively qualify under the above standards.

Desirable tree. A tree that qualifies as growing stock and has no serious defects in quality limiting present or prospective use; is of relatively high vigor (30 percent or more live crown ratio); is compatible with the site and physiographic class; has a total board-foot loss not to exceed 15 percent in softwoods or 25 percent in hardwoods as a result of severe sweep, crook, or lean; and has a relatively clear bole.

Acceptable tree. A tree that qualifies as growing stock but does not meet the minimum requirements to qualify as a desirable tree. Included are sawtimber-size trees that do not contain a 12-foot saw log because of excessive, natural taper in the butt log but have the potential to produce a 12-foot saw log as diameter increases.

Growing-stock volume. Volume (cubic feet) of solid wood in growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum 4.0-inch top diameter, outside bark, on the central stem. Volume of solid wood in primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Hardwoods. Angiosperms; dicotyledonous trees (including all palm species which are monocotyledonous), usually broadleaf and deciduous.

Soft hardwoods. Soft-textured hardwoods such as boxelder, red and silver maples, hackberry, loblolly-bay, sweetgum, yellow-poplar, magnolia, sweetbay, water tupelo, blackgum, sycamore, cottonwood, black cherry, willow, basswood, and elm.

Hard hardwoods. Hard-textured hardwoods such as sugar maple, birch, hickory, dogwood, persimmon (forest grown), black locust, beech, ash, honeylocust, holly, black walnut, mulberry, and all commercial oaks.

Idle farmland. Land including former cropland, orchard, improved pasture, and farm sites not tended within the past 2 years, and currently less than 16.7 percent stocked with live trees.

Improved pasture. Land currently improved for grazing by cultivation, seeding, irrigation, or clearing of trees or brush.

Indian land. All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

Industrial wood. All roundwood products except fuelwood.

Ingrowth. The number or net volume of trees that grow large enough during a specified year to qualify as saplings, poletimber, or sawtimber.

Inhibiting vegetation. Cover sufficiently dense to prevent the establishment of tree seedlings.

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 one-eighth of a statute mile in width, and lakes, reservoirs, and ponds less than 40 acres in area.

Live trees. All trees 1.0 inch d.b.h. and larger which are not dead at the time of inventory.

Live-tree volume, Volume (cubic feet) of wood above the ground line in live trees 1.0 inch d.b.h. and larger. The volume in twigs and lateral limbs smaller than 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.

Log grade. A classification of logs based on external characteristics as indicators of quality or value.

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

Logging slash. The unmerchantable portion of growing-stock trees (including saplings) plus all cull trees 1.0 inch d.b.h. and larger cut or destroyed during logging operations and not used.

Manageable stand. Timberland at least 60 percent stocked with growing-stock trees that can be featured together under a management scheme.

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

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

Miscellaneous Federal land. Federal land other than national forests, land administered by the Bureau of Land Management, and land administered by the Bureau of Indian Affairs.

Miscellaneous private land. (see: Other private land).

Mortality. The merchantable volume in trees that have died from natural causes during a specified period.

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.

Net annual growth. The net change in merchantable volume for a specific year in the absence of cutting (gross growth minus mortality for that specified year).

Net volume. Gross volume of wood less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality which 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.

Nonindustrial private forest (NIPF) land. (see: Other private land).

Nonstocked forest land. Timberland less than 16.7 percent stocked with growing-stock trees.

Other private land. Privately owned land excluding forest industry land or forest industry-leased land. Also referred to as nonindustrial private forest (NIPF) land.

Farmer-owned land. Owned by farm operators, excluding incorporated farm ownerships.

Other individual land. Owned by individuals other than farm operators.

Other corporate land. Owned by corporations, including incorporated farm ownerships.

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 that result in the removal of the trees from the timberland.

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

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

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

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

Unused plant residues. Residues (coarse or fine) that are not used for any product, including fuel.

Poletimber-size trees. Live trees at least 5.0 inches d.b.h. but smaller than sawtimber size.

Productive-reserved forest land. (see: Reserved timberland).

Quality class A classification of saw-timber volume by log or tree grades.

Rangeland. Land on which the natural vegetation is predominantly native grasses, grasslike plants, forbs, or shrubs valuable for forage, not qualifying as timberland and not developed for another land use. Rangeland includes natural grassland and Savannah.

Reserved timberland. Forest land sufficiently productive to qualify as timberland, but withdrawn from timber utilization through statute or administrative designation.

Rotten trees. Live trees of commercial species that do not contain 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 that do not contain 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 **non-pulpmills**, chipped, and then sold to pulpmills 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** which is produced from roundwood.

Salvable dead trees. Standing or down dead trees considered utilizable by Forest Inventory and Analysis standards.

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, and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods).

Saw-log portion. That part of the bole of sawtimber trees between a 1-foot stump and the saw-log top, including the portion of forks large enough to contain a saw log.

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 in diameter outside bark (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. Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive and develop.

Site class. A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands, by annual production capacity.

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

Softwoods. Gymnosperms; in the order Coniferales, usually evergreen (includes the genus Taxodium which is deciduous), having needles or scalelike leaves.

Pines. Yellow pine species which include loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, sand, spruce, and Table Mountain pines.

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

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 16.7 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 16.7 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 16.7 percent stocked with live trees of which more than half of total stocking is saplings and seedlings.

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.

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.

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

Survivor growth. The merchantable volume increment on trees 5.0 inches d.b.h. and larger in the inventory at the beginning of the year and surviving to its end.

Timberland. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, not currently developed for nonforest use, capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization by legislative action.

Timber products. Roundwood products and byproducts.

Timber removals. The merchantable volume of trees removed from the inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use.

Top. The portion of the main stem and forks from a **4.0-inch** diameter outside bark to the tips of the main stem and forks, plus all other limbs above the **4.0-inch** top at least 0.5 inch in diameter at their point of occurrence.

Treatment opportunity. A classification of the management or treatment that would most improve for timber production the existing condition of the stand being sampled.

Tree grade. A classification of sawtimber trees based on the log grade of the butt log in the tree.

Unproductive forest land. (see: Woodland).

Upper-stem portion. That 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.

Urban and other areas. Areas developed for residential, industrial, or recreational purposes, school yards, cemeteries, roads, railroads, airports, beaches, powerlines and other rights-of-way, or other nonforest land not included in any other specified land use class.

Woodland. Forest land incapable of producing 20 cubic feet per acre per year of industrial wood under natural conditions, because of adverse site conditions.

## Stocking Standard

| D.b.h.<br>class | Minimum number of<br>trees per acre<br>for full stocking | Minimum basal area<br>per acre<br>for full stocking |
|-----------------|--|---|
| 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   |

### Conversion factors

Cubic feet of wood per average cord  
(excluding bark)

| D.b.h.<br>class | All<br>species | Pine | Other<br>softwood | Hardwood |
|-----------------|----------------|------|-------------------|----------|
| 6               | 60.6           | 61.0 | 68.2              | 60.0     |
| 8               | 68.4           | 68.1 | 76.0              | 68.4     |
| 10              | 73.3           | 73.1 | 81.4              | 73.4     |
| 12              | 76.6           | 76.7 | 85.2              | 76.4     |
| 14              | 78.7           | 79.4 | 88.2              | 78.4     |
| 16              | 80.1           | 81.6 | 90.4              | 79.8     |
| 18              | 81.2           | 83.3 | 92.3              | 80.8     |
| 20              | 81.9           | 84.8 | 93.8              | 81.5     |
| 22              | 82.3           | 86.0 | 95.1              | 82.1     |
| <b>24+</b>      | 83.5           | 87.8 | 96.7              | 83.0     |
| Average         | 73.5           | 70.6 | 82.5              | 74.6     |

### Metric equivalents of units used in this report

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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 (4.5 feet) = 1.4 meters above ground level  
 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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County Tables

The county tables are intended for use in compiling forest resource estimates for groups of counties. Because the sampling procedure used by the Forest Survey was intended primarily to furnish inventory data for the survey unit as a whole, individual county estimates have limited and variable accuracy. As county totals are broken down by various subdivisions, the possibility of error increases and is greatest for the smallest items. The order of this increase can be computed with the formula on page 5.

Table 1--Area, by county and land class, Southern Piedmont of Virginia, 1991

| County        | All<br>land <sup>a</sup> | Forest land      |                  |           | Nonforest<br>land <sup>b</sup> |                        |
|---------------|--------------------------|------------------|------------------|-----------|--------------------------------|------------------------|
|               |                          | Total            | Timberland       | Woodland  |                                | Reserved<br>timberland |
| <u>Acres</u>  |                          |                  |                  |           |                                |                        |
| Amelia        | 228,410                  | 169,531          | 169,355          | --        | 176                            | 58,879                 |
| Appomattox    | 215,078                  | 153,357          | 151,559          | --        | 1,798                          | 61,721                 |
| Bedford       | 482,618                  | 288,607          | 276,133          | --        | 12,474                         | 194,011                |
| Buckingham    | 373,401                  | 301,661          | 300,672          | --        | 989                            | 71,740                 |
| Campbell      | 355,040                  | 205,236          | 205,236          | --        | --                             | 149,804                |
| Charlotte     | 304,960                  | 209,194          | 209,194          | --        | --                             | 95,766                 |
| Cumberland    | 191,712                  | 133,642          | 131,624          | --        | 2,018                          | 58,070                 |
| Franklin      | 437,248                  | 284,099          | 279,964          | --        | 4,135                          | 153,149                |
| Halifax       | 525,818                  | 352,976          | 351,662          | --        | 1,314                          | 172,842                |
| Henry         | 251,712                  | 179,127          | 176,780          | --        | 2,347                          | 72,585                 |
| Lunenburg     | 276,627                  | 209,807          | 209,807          | --        | --                             | 66,820                 |
| Mecklenburg   | 394,330                  | 265,852          | 263,242          | --        | 2,610                          | 128,478                |
| Nottoway      | 202,502                  | 137,331          | 137,331          | --        | --                             | 65,171                 |
| Patrick       | 307,885                  | 220,534          | 212,148          | --        | 8,386                          | 87,351                 |
| Pittsylvania  | 647,731                  | 405,446          | 405,446          | --        | --                             | 242,285                |
| Powhatan      | 167,162                  | 132,471          | 132,471          | --        | --                             | 34,691                 |
| Prince Edward | 226,253                  | 166,832          | 165,647          | --        | 1,185                          | 59,421                 |
| <b>Total</b>  | <b>5,588,487</b>         | <b>3,815,703</b> | <b>3,778,271</b> | <b>--</b> | <b>37,432</b>                  | <b>1,772,784</b>       |

<sup>a</sup>From U.S. Bureau of the Census, 1980.

<sup>b</sup>Includes 15,780 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2--Area of timberland, by county and ownership class, Southern Piedmont of Virginia, 1991

| County        | All<br>ownerships | Ownership class    |                          |               |                         |                                 |                  |                |                  |
|---------------|-------------------|--------------------|--------------------------|---------------|-------------------------|---------------------------------|------------------|----------------|------------------|
|               |                   | National<br>forest | Miscellaneous<br>Federal | State         | County and<br>municipal | Forest<br>industry <sup>a</sup> | Other private    |                |                  |
|               |                   |                    |                          |               |                         |                                 | Farmer           | Corporate      | Individual       |
| Acres         |                   |                    |                          |               |                         |                                 |                  |                |                  |
| Amelia        | 169,355           | --                 | --                       | 1,270         | 518                     | 42,332                          | 45,540           | 3,795          | 75,900           |
| Appomattox    | 151,559           | --                 | --                       | 8,768         | 318                     | 37,709                          | 29,334           | 8,381          | 67,049           |
| Bedford       | 276,133           | 13,298             | --                       | 1,540         | 2,104                   | 22,989                          | 97,069           | 25,885         | 113,248          |
| Buckingham    | 300,672           | --                 | --                       | 12,493        | 126                     | 79,168                          | 30,383           | 18,990         | 159,512          |
| Campbell      | 205,236           | --                 | --                       | 25            | 691                     | 24,523                          | 57,446           | 15,319         | 107,232          |
| Charlotte     | 209,194           | --                 | 1,835                    | --            | 11                      | 41,610                          | 91,156           | 16,574         | 58,008           |
| Cumberland    | 131,624           | --                 | --                       | 14,022        | 112                     | 27,988                          | 36,614           | 12,205         | 40,683           |
| Franklin      | 279,964           | --                 | 2,748                    | 158           | 471                     | 14,056                          | 77,215           | 15,443         | 169,873          |
| Halifax       | 351,662           | --                 | 10,218                   | 25            | 255                     | 31,059                          | 180,895          | 25,842         | 103,368          |
| Henry         | 176,780           | --                 | 688                      | 432           | 620                     | 20,199                          | 31,762           | 27,792         | 95,287           |
| Lunenburg     | 209,807           | --                 | --                       | --            | 600                     | 52,726                          | 60,676           | 6,387          | 89,418           |
| Mecklenburg   | 263,242           | --                 | 23,680                   | 237           | 337                     | 17,249                          | 106,435          | 17,739         | 97,565           |
| Nottoway      | 137,331           | --                 | 14,683                   | 297           | 421                     | 24,959                          | 50,594           | 8,432          | 37,945           |
| Patrick       | 212,148           | --                 | 1,948                    | 5,279         | 4,254                   | 18,664                          | 52,001           | 7,429          | 122,573          |
| Pittsylvania  | 405,446           | --                 | --                       | 1,715         | 1,382                   | 47,457                          | 230,302          | 26,428         | 98,162           |
| Powhatan      | 132,471           | --                 | --                       | 6,853         | 70                      | 14,642                          | 15,297           | --             | 95,609           |
| Prince Edward | 165,647           | --                 | --                       | 8,692         | 945                     | 15,182                          | 56,331           | 12,071         | 72,426           |
| <b>Total</b>  | <b>3,778,271</b>  | <b>13,298</b>      | <b>55,800</b>            | <b>61,806</b> | <b>13,235</b>           | <b>532,512</b>                  | <b>1,249,050</b> | <b>248,712</b> | <b>1,603,858</b> |

<sup>a</sup>Includes 17,366 acres of other private land under long-term lease.



**Table 4--Area of timberland, by county and stand-size class, Southern Piedmont of Virginia, 1991**

| County        | All stands       | Stand-size class |                  |                  | Nonstocked areas |
|---------------|------------------|------------------|------------------|------------------|------------------|
|               |                  | Saw timber       | Pole timber      | Sapling-seedling |                  |
| <u>Acres</u>  |                  |                  |                  |                  |                  |
| Amelia        | 169,355          | 58,892           | 56,144           | 46,729           | 7,590            |
| Appomattox    | 151,559          | 43,558           | 52,191           | 55,810           | --               |
| Bedford       | 276,133          | 155,161          | 70,650           | 50,322           | --               |
| Buckingham    | 300,672          | 77,188           | 96,549           | 126,935          | --               |
| Campbell      | 205,236          | 74,226           | 85,816           | 45,194           | --               |
| Charlotte     | 209,194          | 65,056           | 75,157           | 68,981           | --               |
| Cumberland    | 131,624          | 36,992           | 46,813           | 43,751           | 4,068            |
| Franklin      | 279,964          | 154,140          | 93,131           | 32,693           | --               |
| Halifax       | 351,662          | 122,223          | 123,966          | 101,782          | 3,691            |
| Henry         | 176,780          | 61,526           | 51,730           | 59,553           | 3,971            |
| Lunenburg     | 209,807          | 83,245           | 64,277           | 54,697           | 7,588            |
| Mecklenburg   | 263,242          | 117,530          | 70,318           | 66,525           | 8,869            |
| Nottoway      | 137,331          | 48,000           | 46,314           | 43,017           | --               |
| Patrick       | 212,148          | 87,948           | 89,179           | 35,021           | --               |
| Pittsylvania  | 405,446          | 164,113          | 149,187          | 92,146           | --               |
| Powhatan      | 132,471          | 56,950           | 40,528           | 34,993           | --               |
| Prince Edward | 165,647          | 42,767           | 61,473           | 57,384           | 4,023            |
| <b>Total</b>  | <b>3,778,271</b> | <b>1,449,515</b> | <b>1,273,423</b> | <b>1,015,533</b> | <b>39,800</b>    |

Table 5--Area of timberland, by county and eite class,  
Southern Piedmont of Virginia, 1991

| County        | All<br>classes   | Site class (cubic feet per acre per year) |                |                |                  |                |
|---------------|------------------|---|----------------|----------------|------------------|----------------|
|               |                  | >164                                      | 120-164        | 85-119         | 50-84            | 20-49          |
|               |                  | <u>Acres</u>                              |                |                |                  |                |
| Amelia        | 169,355          | --  | 7,590          | 59,980         | 101,785          | --             |
| Appomattox    | 151,559          | --  | 318            | 43,241         | 99,619           | 8,381          |
| Bedford       | 276,133          | --  | 6,471          | 84,781         | 141,866          | 43,015         |
| Buckingham    | 300,672          | --  | 11,520         | 50,476         | 210,889          | 27,787         |
| Campbell      | 205,236          | --  | 11,490         | 44,428         | 122,511          | 26,807         |
| Charlotte     | 209,194          | 4,144                                     | 11             | 23,316         | 158,404          | 23,319         |
| Cumberland    | 131,624          | --  | 6,873          | 25,938         | 98,813           | --             |
| Franklin      | 279,964          | --  | 10,470         | 77,215         | 144,303          | 47,976         |
| Halifax       | 351,662          | --  | --             | 69,297         | 274,981          | 7,384          |
| Henry         | 176,780          | 7,941                                     | 3,971          | 66,670         | 94,228           | 3,970          |
| Lunenburg     | 209,807          | --  | 3,193          | 31,146         | 169,082          | 6,386          |
| Mecklenburg   | 263,242          | --  | --             | 36,218         | 204,850          | 22,174         |
| Nottoway      | 137,331          | --  | 421            | 33,706         | 90,555           | 12,649         |
| Patrick       | 212,148          | 3,714                                     | 6,381          | 50,854         | 118,276          | 32,923         |
| Pittsylvania  | 405,446          | 7,550                                     | 40,213         | 121,667        | 215,369          | 20,647         |
| Powhatan      | 132,471          | --  | --             | 49,232         | 78,358           | 4,881          |
| Prince Edward | 165,647          | --  | --             | 34,719         | 118,857          | 12,071         |
| <b>Total</b>  | <b>3,778,271</b> | <b>23,349</b>                             | <b>108,922</b> | <b>902,884</b> | <b>2,442,746</b> | <b>300,370</b> |

**Table 6--Area of timberland, by county and stocking class of growing-stock trees, Southern Piedmont of Virginia, 1991**

| County        | All classes      | Stocking class (percent) <sup>a</sup> |                  |                  |                |               |
|---------------|------------------|---------------------------------------|------------------|------------------|----------------|---------------|
|               |                  | >130                                  | 100-130          | 60-99            | 16.7-59        | <16.7         |
|               |                  | <u>Acres</u>                          |                  |                  |                |               |
| Amelia        | 169,355          | 12,474                                | 73,295           | 66,440           | 9,556          | 7,590         |
| Appomattox    | 151,559          | 4,191                                 | 62,098           | 69,271           | 15,999         | --            |
| Bedford       | 276,133          | 16,180                                | 81,241           | 142,525          | 36,187         | --            |
| Buckingham    | 300,672          | 15,792                                | 131,230          | 136,656          | 13,196         | 3,798         |
| Campbell      | 205,236          | 16,856                                | 70,080           | 95,321           | 22,979         | --            |
| Charlotte     | 209,194          | 16,091                                | 93,078           | 89,139           | 10,886         | --            |
| Cumberland    | 131,624          | 12,206                                | 64,616           | 42,598           | 8,136          | 4,068         |
| Franklin      | 279,964          | 22,053                                | 102,657          | 108,926          | 46,328         | --            |
| Halifax       | 351,662          | 16,116                                | 141,411          | 142,452          | 44,300         | 7,383         |
| Henry         | 176,780          | 15,882                                | 63,642           | 70,290           | 22,995         | 3,971         |
| Lunenburg     | 209,807          | 18,369                                | 81,443           | 82,043           | 20,364         | 7,588         |
| Mecklenburg   | 263,242          | 14,293                                | 131,422          | 90,918           | 17,740         | 8,869         |
| Nottoway      | 137,331          | 10,530                                | 59,009           | 38,279           | 25,297         | 4,216         |
| Patrick       | 212,148          | 12,735                                | 40,349           | 125,735          | 33,329         | --            |
| Pittsylvania  | 405,446          | 31,973                                | 211,367          | 135,678          | 26,428         | --            |
| Powhatan      | 132,471          | --                                    | 72,249           | 53,056           | 7,166          | --            |
| Prince Edward | 165,647          | 8,048                                 | 75,617           | 65,888           | 12,071         | 4,023         |
| <b>Total</b>  | <b>3,778,271</b> | <b>243,789</b>                        | <b>1,554,804</b> | <b>1,555,215</b> | <b>372,957</b> | <b>51,506</b> |

<sup>a</sup>See stocking standards on page 13.

**Table 7--Volume of growing stock and sawtimber on timberland, by county and species group, Southern Piedm**

| County        | Growing stock                    |                  |                |                  |                  |                   | All species      | Pine |
|---------------|----------------------------------|------------------|----------------|------------------|------------------|-------------------|------------------|------|
|               | All species                      | Pine             | Other softwood | Soft hardwood    | Hard hardwood    | All species       |                  |      |
|               | Thousand cubic feet <sup>a</sup> |                  |                |                  |                  |                   |                  | Th   |
| Amelia        | 257,378                          | 125,953          | 1,629          | 45,605           | 84,191           | 766,373           | 340,443          |      |
| Appomattox    | 203,365                          | 68,484           | 1,189          | 34,397           | 99,295           | 461,212           | 127,926          |      |
| Bedford       | 505,405                          | 112,818          | 8,127          | 164,036          | 220,424          | 1,565,422         | 330,931          |      |
| Buckingham    | 365,041                          | 135,150          | 1,058          | 67,938           | 160,895          | 801,250           | 219,548          |      |
| Campbell      | 346,044                          | 100,001          | --             | 84,273           | 161,770          | 864,759           | 199,561          |      |
| Charlotte     | 331,886                          | 150,238          | 3,719          | 70,417           | 107,512          | 821,854           | 264,319          |      |
| Cumberland    | 175,570                          | 66,605           | 396            | 46,833           | 61,736           | 412,471           | 121,874          |      |
| Franklin      | 550,970                          | 69,330           | 26,053         | 232,474          | 223,113          | 1,574,618         | 139,768          |      |
| Halifax       | 516,970                          | 191,898          | 3,868          | 138,700          | 182,504          | 1,327,747         | 476,639          |      |
| Henry         | 231,955                          | 99,644           | 21,928         | 39,471           | 70,912           | 584,413           | 236,311          |      |
| Lunenburg     | 313,426                          | 138,002          | 1,838          | 76,631           | 96,955           | 910,432           | 455,143          |      |
| Mecklenburg   | 502,474                          | 117,732          | 2,493          | 158,860          | 223,389          | 1,410,066         | 309,632          |      |
| Nottoway      | 198,340                          | 91,601           | --             | 49,064           | 57,675           | 594,942           | 255,162          |      |
| Patrick       | 340,996                          | 40,474           | 17,214         | 136,738          | 146,570          | 913,389           | 92,948           |      |
| Pittsylvania  | 735,259                          | 203,456          | 2,570          | 247,086          | 282,147          | 2,026,942         | 492,164          |      |
| Powhatan      | 231,934                          | 35,378           | --             | 79,397           | 117,159          | 679,742           | 69,686           |      |
| Prince Edward | 211,440                          | 70,542           | 965            | 59,820           | 80,113           | 520,664           | 87,678           |      |
| <b>Total</b>  | <b>6,018,453</b>                 | <b>1,817,306</b> | <b>93,047</b>  | <b>1,731,740</b> | <b>2,376,360</b> | <b>16,236,296</b> | <b>4,219,733</b> |      |

<sup>a</sup>Factors for converting to cords are shown on page 13.

Table 8--Average net annual growth of growing stock and sawtimber on timberland, by county and species group, Southern Piedmont of Virginia, 1985-1990

| County        | Growing stock       |                |                |               |               | Saw timber          |                |                |                |                |
|---------------|---------------------|----------------|----------------|---------------|---------------|---------------------|----------------|----------------|----------------|----------------|
|               | All species         | Pine           | Other softwood | Soft hardwood | Hard hardwood | All species         | Pine           | Other softwood | Soft hardwood  | Hard hardwood  |
|               | Thousand cubic feet |                |                |               |               | Thousand board feet |                |                |                |                |
| Amelia        | 12,870              | 7,712          | 62             | 2,005         | 3,091         | 51,647              | 29,135         | 114            | 8,620          | 13,778         |
| Appomattox    | 9,325               | 5,026          | 99             | 1,172         | 3,028         | 38,545              | 17,952         | --             | 7,598          | 12,995         |
| Bedford       | 16,781              | 3,921          | 333            | 5,463         | 7,064         | 71,452              | 13,920         | 1,499          | 27,909         | 28,124         |
| Buckingham    | 19,793              | 10,259         | 74             | 2,924         | 6,536         | 52,057              | 24,681         | 163            | 10,698         | 16,515         |
| Campbell      | 13,863              | 6,234          | --             | 2,900         | 4,729         | 48,840              | 19,383         | --             | 11,951         | 17,506         |
| Charlotte     | 14,394              | 8,817          | 122            | 2,510         | 2,945         | 42,450              | 21,469         | 278            | 9,008          | 11,695         |
| Cumberland    | 10,217              | 5,380          | 5              | 1,974         | 2,858         | 23,624              | 9,521          | --             | 7,025          | 7,078          |
| Franklin      | 18,415              | 2,946          | 965            | 8,137         | 6,367         | 77,181              | 10,019         | 3,953          | 37,063         | 26,146         |
| Halifax       | 21,599              | 9,892          | 229            | 5,830         | 5,648         | 85,670              | 36,027         | 43             | 19,505         | 30,095         |
| Henry         | 10,242              | 4,838          | 989            | 2,061         | 2,354         | 26,765              | 10,778         | 3,909          | 5,562          | 6,516          |
| Lunenburg     | 13,464              | 7,438          | 142            | 2,789         | 3,095         | 49,367              | 28,258         | 350            | 8,145          | 12,614         |
| Mecklenburg   | 18,560              | 6,619          | 157            | 5,104         | 6,680         | 67,303              | 17,260         | 115            | 20,539         | 29,389         |
| Nottoway      | 10,097              | 6,493          | 33             | 1,546         | 2,025         | 27,708              | 16,069         | --             | 5,780          | 5,859          |
| Patrick       | 12,560              | 1,448          | 758            | 5,524         | 4,830         | 47,048              | 6,341          | 4,222          | 18,781         | 17,704         |
| Pittsylvania  | 27,193              | 8,767          | 114            | 8,593         | 9,719         | 100,977             | 19,512         | 405            | 35,675         | 45,385         |
| Powhatan      | 8,049               | 2,212          | 10             | 2,580         | 3,247         | 34,549              | 4,075          | --             | 13,883         | 16,591         |
| Prince Edward | 9,015               | 3,675          | 92             | 2,595         | 2,653         | 26,039              | 8,466          | 13             | 7,073          | 10,487         |
| <b>Total</b>  | <b>246,437</b>      | <b>101,677</b> | <b>4,184</b>   | <b>63,707</b> | <b>76,869</b> | <b>871,222</b>      | <b>292,866</b> | <b>15,064</b>  | <b>254,815</b> | <b>308,477</b> |

Table 9--Average annual removal of growing stock and sawtimber on timberland, by county and species group, Southern Piedmont of Virginia, 1985-1990

| County        | Growing stock       |                  |                |                  |                  | Sawtimber           |         |                |               |               |
|---------------|---------------------|------------------|----------------|------------------|------------------|---------------------|---------|----------------|---------------|---------------|
|               | All species         | Pine             | Other softwood | Soft hardwood    | Hard hardwood    | All species         | Pine    | Other softwood | Soft hardwood | Hard hardwood |
|               | Thousand cubic feet |                  |                |                  |                  | Thousand board feet |         |                |               |               |
| Amelia        | 13,467              | 4,523            | --             | 2,646            | 6,298            | 39,610              | 9,807   | --             | 9,819         | 19,984        |
| Appomattox    | <del>7,386</del>    | <del>4,428</del> | <del>239</del> | <del>3,599</del> | <del>3,086</del> | 17,555              | 5,847   | 454            | --            | 11,254        |
| Buckingham    | 11,651              | 7,000            | --             | 1,170            |                  | 34,017              | 1,032   | 1,243          | 12,945        | 18,797        |
| Campbell      | 5,326               | 3,492            | --             | 401              | <del>3,483</del> | 27,456              | 14,350  | --             | 4,166         | 8,940         |
| Charlotte     | 7,456               | 3,958            | 77             | 2,909            | 512              | 12,244              | 10,190  |                | 1,028         | 1,026         |
| Franklin      | <del>8,050</del>    | <del>5,032</del> | 88             | 1,533            | 998              | 25,715              | 11,839  | 318            | 12,360        | 1,198         |
| Halifax       | 22,552              | 7,123            | 1,328          | 1,506            | 3,050            | 18,364              | 9,690   | 341            | 4,425         | 3,908         |
| Henry         | 7,940               | 3,465            | --             | 9,072            | 6,357            | 32,870              | 12,649  | 6,288          | 5,149         | 8,784         |
| Lunenburg     | 13,523              | 2,347            | --             | <del>3,880</del> | 1,498            | 66,047              | 16,909  | --             | 27,533        | 21,605        |
| Mecklenburg   | 8,406               | 4,524            | 166            | 534              | 5,296            | 21,526              | 7,138   | --             | 10,129        | 4,259         |
| Nottoway      | 11,549              | 10,755           | --             | 140              | <del>3,152</del> | 44,108              | 6,090   | --             | 19,337        | 18,681        |
| Patrick       | 4,390               | 803              |                |                  |                  | 20,145              | 11,331  | --             | 590           | 8,224         |
| Pittsylvania  | 12,810              | 7,392            | 777            | <del>2,012</del> | 868              | 42,704              | 39,390  |                |               | 3,314         |
| Powhatan      | 4,562               | 1,814            | 102            | 735              | 2,808            | 12,643              | 960     | 3,295          | 5,298         | 3,090         |
| Prince Edward | 7,131               | 1,830            | --             | 1,103            | 1,911            | 44,576              | 24,742  |                | 9,047         | 10,787        |
|               |                     |                  |                |                  | 4,198            | 10,847              | 4,022   | --             | 875           | 5,950         |
|               |                     |                  |                |                  |                  | 21,691              | 4,727   | --             | 4,869         | 12,095        |
| Total         | 165,911             | 73,294           | 2,892          | 38,947           | 50,778           | 492,118             | 190,713 | 11,939         | 127,570       | 161,896       |

Unit Tables

Table 10--Area of timberland, by forest type and ownership class, Southern Piedmont of Virginia, 1991

| Forest type             | All<br>ownerships | Ownership class    |                 |                    |                                      |                  |
|-------------------------|-------------------|--------------------|-----------------|--------------------|--------------------------------------|------------------|
|                         |                   | National<br>forest | Other<br>public | Forest<br>industry | Forest<br><b>industry-</b><br>leased | Other<br>private |
|                         |                   | <u>Acres</u>       |                 |                    |                                      |                  |
| Softwood types          |                   |                    |                 |                    |                                      |                  |
| White pine-hemlock      | 11,663            | --                 | 3,722           |                    |                                      | 7,941            |
| Spruce-fir              |                   |                    |                 |                    |                                      |                  |
| <b>Longleaf</b> pine    |                   |                    |                 |                    |                                      |                  |
| Slash pine              |                   | --                 | --              |                    | --                                   | --               |
| Loblolly pine           | 563,447           | --                 | 20,372          | 236,665            | <b>7,922</b>                         | <b>298,488</b>   |
| Shortleaf pine          | 103,123           | --                 | 4,016           | <b>4,394</b>       |                                      | 94,713           |
| Virginia pine           | <b>406,293</b>    | --                 | 16,565          | 23,406             |                                      | 366,322          |
| Sand pine               |                   | --                 | --              | --                 | --                                   | --               |
| Eastern <b>redcedar</b> | 15,189            | --                 | --              |                    | --                                   | 15,189           |
| Pond pine               |                   |                    |                 | --                 |                                      |                  |
| Spruce pine             |                   | --                 | --              |                    | --                                   | --               |
| Pitch pine              |                   | --                 | --              |                    | --                                   | --               |
| Table Mountain pine     |                   | --                 | --              |                    | --                                   | --               |
| <b>Total</b>            | <b>1,099,715</b>  | --                 | 44,675          | 264,465            | 7,922                                | 782,653          |
| Hardwood types          |                   |                    |                 |                    |                                      |                  |
| Oak-pine                | 416,755           | --                 | 13,540          | 63,933             | --                                   | 339,282          |
| Oak-hickory             | <b>1,942,768</b>  | 8,865              | 67,610          | 154,178            | 9,444                                | <b>1,702,671</b> |
| Chestnut oak            | 174,452           | 4,433              | 2,499           | 15,581             | --                                   | 151,939          |
| Southern scrub oak      | --                | --                 | --              | --                 | --                                   | --               |
| Oak-gum-cypress         | 51,677            | --                 | 2,044           | 4,393              | --                                   | 45,240           |
| Elm-ash-cottonwood      | 92,904            | --                 | 473             | 12,596             | --                                   | 79,835           |
| Maple-beech-birch       | --                | --                 | --              | --                 | --                                   | --               |
| <b>Total</b>            | <b>2,678,556</b>  | 13,298             | 86,166          | 250,681            | 9,444                                | <b>2,318,967</b> |
| <b>All types</b>        | <b>3,778,271</b>  | 13,298             | 130,841         | 515,146            | 17,366                               | <b>3,101,620</b> |

Table 11--Area of timberland, by ownership and stocking **classes** of growing-stock trees, Southern Piedmont of Virginia, 1991

| Ownership class        | All classes      | Stocking class (percent) <sup>a</sup> |                  |                  |         |        |
|------------------------|------------------|---------------------------------------|------------------|------------------|---------|--------|
|                        |                  | >130                                  | 100-130          | 60-99            | 16.7-59 | <16.7  |
|                        |                  | <u>Acres</u>                          |                  |                  |         |        |
| National forest        | 13,298           | --                                    | 8,865            | 4,433            | —       | --     |
| Other public           | 130,841          | 9,459                                 | 62,804           | 52,679           | 5,899   | --     |
| Forest industry        | 515,146          | 49,770                                | 265,055          | 154,691          | 41,236  | 4,394  |
| Forest industry-leased | 17,366           | 2,003                                 | 15,363           | --               | --      | —      |
| Other private          | <b>3,101,620</b> | 182,557                               | <b>1,202,717</b> | <b>1,343,412</b> | 325,822 | 47,112 |
| All ownerships         | <b>3,778,271</b> | 243,789                               | <b>1,554,804</b> | <b>1,555,215</b> | 372,957 | 51,506 |

<sup>a</sup>See stocking standards on page 13.

Table 12--Area of timberland, by forest **type and** stand-size class, Southern Piedmont of Virginia, 1991

| Forest type             | All stands       | Stand-size class |                  |                  | Nonstocked areas |
|-------------------------|------------------|------------------|------------------|------------------|------------------|
|                         |                  | Sawtimber        | Poletimber       | Sapling-seedling |                  |
|                         |                  | <u>Acres</u>     |                  |                  |                  |
| Softwood types          |                  |                  |                  |                  |                  |
| White pine-hemlock      | 11,663           | 11,663           | --               | —                | --               |
| Spruce-fir              | --               | --               | --               | --               | --               |
| <b>Longleaf</b> pine    | --               | --               | --               | --               | --               |
| Slash pine              | --               | --               | —                | --               | —                |
| Loblolly pine           | 563,447          | 89,329           | 229,505          | 235,784          | 8,829            |
| Shortleaf pine          | 103,123          | 60,913           | 29,591           | 12,619           | --               |
| Virginia pine           | 406,293          | 127,832          | 172,491          | 101,999          | 3,971            |
| Sand pine               | --               | --               | --               | --               | —                |
| Eastern <b>redcedar</b> | 15,189           | —                | --               | 11,166           | 4,023            |
| Pond pine               | --               | --               | --               | —                | --               |
| Spruce pine             | --               | --               | --               | —                | --               |
| Pitch pine              | --               | --               | --               | --               | --               |
| Table Mountain pine     | --               | --               | —                | --               | --               |
| Total                   | <b>1,099,715</b> | 289,737          | 431,587          | 361,568          | 16,823           |
| Hardwood types          |                  |                  |                  |                  |                  |
| Oak-pine                | 416,755          | 104,277          | 111,021          | 197,389          | 4,068            |
| Oak-hickory             | <b>1,942,768</b> | 891,164          | 609,074          | 431,107          | 11,423           |
| Chestnut oak            | 174,452          | 79,404           | <b>87,143</b>    | 7,905            | --               |
| Southern scrub oak      | --               | --               | --               | —                | --               |
| Oak-gum--cypress        | 51,677           | 29,264           | 15,424           | 3,194            | 3,795            |
| Elm-ash-cottonwood      | 92,904           | 55,669           | 19,174           | 14,370           | 3,691            |
| Maple-beech-birch       | --               | —                | --               | --               | --               |
| Total                   | <b>2,678,556</b> | <b>1,159,778</b> | 841,836          | 653,965          | 22,977           |
| All types               | <b>3,778,271</b> | <b>1,449,515</b> | <b>1,273,423</b> | <b>1,015,533</b> | 39,800           |

Table 13--Area of timberland, by stand-age and broad management classes, all ownerships, Southern Piedmont of Virginia, 1991

| Stand-age class<br>(years) | All<br>classes   | Broad management class |                 |          |                    |                     |
|----------------------------|------------------|------------------------|-----------------|----------|--------------------|---------------------|
|                            |                  | Pine<br>plantation     | Natural<br>pine | Oak-pine | Upland<br>hardwood | Lowland<br>hardwood |
|                            |                  | <u>Acres</u>           |                 |          |                    |                     |
| 0-10                       | 606,507          | 215,041                | 37,290          | 111,807  | 235,745            | 6,624               |
| 11-20                      | 477,061          | 166,390                | 76,795          | 73,998   | 159,878            | --                  |
| 21-30                      | 358,027          | 99,418                 | 102,403         | 40,772   | 110,937            | 4,497               |
| 31-40                      | 376,038          | 31,234                 | 114,967         | 36,042   | 190,103            | 3,692               |
| 41-50                      | 440,625          | 3,236                  | 134,705         | 33,047   | 257,686            | 11,951              |
| 51-60                      | 455,131          | --                     | 70,254          | 34,189   | 330,385            | 20,303              |
| 61-70                      | 344,414          | --                     | 14,598          | 26,662   | 287,541            | 15,613              |
| 71-80                      | 181,127          | --                     | 5,941           | 11,117   | 154,509            | 9,560               |
| <b>81+</b>                 | 193,745          | --                     | 7,384           | 7,573    | 170,600            | 8,188               |
| No manageable stand        | 345,596          | --                     | 20,059          | 41,548   | 219,836            | 64,153              |
| <b>All classes</b>         | <b>3,778,271</b> | 515,319                | 584,396         | 416,755  | <b>2,117,220</b>   | 144,581             |

Table 14--Area of timberland, by stand-age and broad management classes, public ownerships, Southern Piedmont of Virginia, 1991

| Stand-age class<br>(years) | All<br>classes | Broad management class |                 |          |                    |                     |
|----------------------------|----------------|------------------------|-----------------|----------|--------------------|---------------------|
|                            |                | Pine<br>plantation     | Natural<br>pine | Oak-pine | Upland<br>hardwood | Lowland<br>hardwood |
|                            |                | <u>Acres</u>           |                 |          |                    |                     |
| <b>0-10</b>                | 14,346         | 7,347                  | --              | --       | <b>6,999</b>       | --                  |
| 11-20                      | 16,833         | 9,775                  | 2,043           | 2,499    | 2,516              | --                  |
| 21-30                      | 27,049         | 1,677                  | 16,781          | --       | 8,118              | 473                 |
| 31-40                      | 4,206          | --                     | 3,330           | 876      | --                 | --                  |
| 41-50                      | 20,192         | --                     | 974             | 5,783    | 13,435             | --                  |
| 51-60                      | 4,495          | --                     | --              | --       | 4,495              | --                  |
| 61-70                      | 19,617         | --                     | --              | 2,097    | 17,520             | --                  |
| 71-80                      | 8,862          | --                     | 2,748           | --       | 4,070              | 2,044               |
| <b>81+</b>                 | 23,614         | --                     | --              | --       | 23,614             | --                  |
| No manageable stand        | 4,925          | --                     | --              | 2,285    | 2,640              | --                  |
| <b>All classes</b>         | 144,139        | 18,799                 | 25,876          | 13,540   | 83,407             | 2,517               |

Table 15--Area of timberland, by stand-age and broad management classes, forest **industry,**<sup>a</sup> Southern Piedmont of Virginia, 1991

| Stand-age class<br>(years) | All<br>classes | Broad management class |                 |                 |                    |                     |
|----------------------------|----------------|------------------------|-----------------|-----------------|--------------------|---------------------|
|                            |                | Pine<br>plantation     | Natural<br>pine | <b>Oak-pine</b> | Upland<br>hardwood | Lowland<br>hardwood |
|                            |                |                        |                 | <u>Acres</u>    |                    |                     |
| 0-10                       | 129,856        | <b>79,622</b>          | --              | 18,117          | <b>29,517</b>      | 2,600               |
| 11-20                      | 118,809        | 91,664                 | 4,394           | 5,959           | 16,792             | --                  |
| 21-30                      | 75,986         | 54,313                 | 3,143           | 10,417          | 8,113              | --                  |
| 31-40                      | 31,684         | 12,864                 | 5,545           | 3,831           | 9,444              | --                  |
| 41-50                      | 30,434         | --                     | 6,029           | 3,065           | 16,941             | 4,399               |
| 51-60                      | 25,280         | --                     | 6,025           | 6,594           | 7,064              | 5,597               |
| 61-70                      | 53,935         | --                     | 4,394           | 5,547           | 43,994             | --                  |
| 71-80                      | 20,218         | --                     | --              | 6,974           | 13,244             | --                  |
| <b>81+</b>                 | 25,330         | --                     | --              | 3,429           | 17,508             | 4,393               |
| No manageable stand        | 20,980         | --                     | 4,394           | --              | 16,586             | --                  |
| All classes                | 532,512        | 238,463                | 33,924          | 63,933          | 179,203            | 16,989              |

<sup>a</sup>Includes 17,366 acres of other private land under long-term lease.

Table 16--Area of timberland, by stand-age and broad management classes, other private **ownerships,**<sup>a</sup> Southern Piedmont of Virginia, 1991

| Stand-age class<br>(years) | All<br>classes   | Broad management class |                 |                 |                    |                     |
|----------------------------|------------------|------------------------|-----------------|-----------------|--------------------|---------------------|
|                            |                  | Pine<br>plantation     | Natural<br>pine | <b>Oak-pine</b> | Upland<br>hardwood | Lowland<br>hardwood |
|                            |                  |                        |                 | <u>Acres</u>    |                    |                     |
| 0-10                       | 462,305          | 128,072                | 37,290          | 93,690          | 199,229            | 4,024               |
| 11-20                      | 341,419          | 64,951                 | 70,358          | 65,540          | 140,570            | --                  |
| 21-30                      | 254,992          | 43,428                 | 82,479          | 30,355          | 94,706             | 4,024               |
| 31-40                      | 340,148          | 18,370                 | 106,092         | 31,335          | 180,659            | 3,692               |
| 41-50                      | 389,999          | 3,236                  | 127,702         | 24,199          | 227,310            | 7,552               |
| 51-60                      | 425,356          | --                     | 64,229          | 27,595          | 318,826            | 14,706              |
| 61-70                      | 270,862          | --                     | 10,204          | 19,018          | 226,027            | 15,613              |
| 71-80                      | 152,047          | --                     | 3,193           | 4,143           | 137,195            | 7,516               |
| <b>81+</b>                 | 144,801          | --                     | 7,384           | 4,144           | 129,478            | 3,795               |
| No manageable stand        | 319,691          | --                     | 15,665          | 39,263          | 200,610            | 64,153              |
| All classes                | <b>3,101,620</b> | 258,057                | 524,596         | 339,282         | <b>1,854,610</b>   | 125,075             |

<sup>a</sup>Excludes 17,366 acres of other private land under long-term lease to forest industry.

Table 17--Area of timberland, by broad management and stand-volume classes, Southern Piedmont of Virginia, 1991

| Broad management class | All classes      | Stand-volume class<br>(cubic feet of growing stock per acre> |         |           |           |                  |
|------------------------|------------------|--|---------|-----------|-----------|------------------|
|                        |                  | 0-499  | 500-999 | 1000-1499 | 1500-1999 | 2000+            |
|                        |                  | <u>Acres</u>   |         |           |           |                  |
| Pine plantation        | 515,319          | 247,741  | 68,529  | 55,941    | 42,678    | 100,430          |
| Natural pine           | 584,396          | 104,815  | 46,561  | 65,294    | 75,791    | 291,935          |
| Oak-pine               | 416,755          | 197,241  | 37,082  | 51,540    | 29,881    | 101,011          |
| Upland hardwood        | <b>2,117,220</b> | 387,062  | 246,515 | 252,246   | 358,043   | 873,354          |
| Lowland hardwood       | 144,581          | 33,840   | 33,718  | 7,384     | 22,912    | 46,727           |
| All classes            | <b>3,778,271</b> | 970,699  | 432,405 | 432,405   | 529,305   | <b>1,413,457</b> |

Table 18--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Piedmont of Virginia, 1991

| Broad management class and species group | All classes | No manageable stand | Stand-age class (years) |         |         |         |           |           |         |         |         |
|--|-------------|---------------------|-------------------------|---------|---------|---------|-----------|-----------|---------|---------|---------|
|  |             |                     | 0-10                    | 11-20   | 21-30   | 31-40   | 41-50     | 51-60     | 61-70   | 71-80   | 81+     |
| <u>Thousand cubic feet</u>               |             |                     |                         |         |         |         |           |           |         |         |         |
| Pine plantation                          |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 493,777     | --                  | 6,084                   | 149,331 | 233,409 | 88,964  | 15,989    | --        | --      | --      | --      |
| Hardwood                                 | 22,584      | --                  | 5,891                   | 4,875   | 9,562   | 2,256   | --        | --        | --      | --      | --      |
| Total                                    | 516,361     | --                  | 11,975                  | 154,206 | 242,971 | 91,220  | 15,989    | --        | --      | --      | --      |
| Natural pine                             |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 1,021,741   | 278                 | 2,227                   | 38,081  | 140,086 | 241,452 | 348,238   | 188,271   | 45,228  | 5,019   | 12,861  |
| Hardwood                                 | 136,456     | --                  | 600                     | 7,356   | 14,934  | 40,413  | 29,407    | 23,844    | 6,712   | 3,601   | 9,589   |
| Total                                    | 1,158,197   | 278                 | 2,827                   | 45,437  | 155,020 | 281,865 | 377,645   | 212,115   | 51,940  | 8,620   | 22,450  |
| Oak-pine                                 |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 203,379     | 3,930               | 5,722                   | 14,562  | 26,548  | 27,281  | 35,477    | 35,042    | 32,453  | 8,906   | 13,458  |
| Hardwood                                 | 250,424     | 3,490               | 9,621                   | 12,270  | 25,058  | 40,817  | 53,875    | 34,649    | 45,994  | 13,607  | 11,043  |
| Total                                    | 453,803     | 7,420               | 15,343                  | 26,832  | 51,606  | 68,098  | 89,352    | 69,691    | 78,447  | 22,513  | 24,501  |
| Upland hardwood                          |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 190,378     | 7,902               | 2,291                   | 10,999  | 10,263  | 27,439  | 36,506    | 35,498    | 22,157  | 17,519  | 19,804  |
| Hardwood                                 | 3,492,738   | 118,510             | 72,460                  | 78,364  | 103,370 | 291,230 | 551,543   | 778,334   | 697,284 | 371,807 | 429,836 |
| Total                                    | 3,683,116   | 126,412             | 74,751                  | 89,363  | 113,633 | 318,669 | 588,049   | 813,832   | 719,441 | 389,326 | 449,640 |
| Lowland hardwood                         |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 1,078       | --                  | --                      | --      | --      | 1,078   | --        | --        | --      | --      | --      |
| hardwood                                 | 205,898     | 32,534              | --                      | --      | 8,270   | 3,702   | 26,206    | 50,204    | 31,844  | 28,509  | 24,629  |
| Total                                    | 206,976     | 32,534              | --                      | --      | 8,270   | 4,780   | 26,206    | 50,204    | 31,844  | 28,509  | 24,629  |
| All types                                |             |                     |                         |         |         |         |           |           |         |         |         |
| Softwood                                 | 1,910,353   | 12,110              | 16,324                  | 212,973 | 410,306 | 386,214 | 436,210   | 258,811   | 99,838  | 31,444  | 46,123  |
| Hardwood                                 | 4,108,100   | 154,534             | 88,572                  | 102,865 | 161,194 | 378,418 | 661,031   | 887,031   | 781,834 | 417,524 | 475,097 |
| Total                                    | 6,018,453   | 166,644             | 104,896                 | 315,838 | 571,500 | 764,632 | 1,097,241 | 1,145,842 | 881,672 | 448,968 | 521,220 |

**Table 19--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Piedmont of Virginia, 1985-1990**

| Broad management class <sup>a</sup> and species group | All classes    | No manageable stand | Stand-age class <sup>a</sup> (years) |               |               |               |               |               |               |               |               |
|---|----------------|---------------------|--------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   |                |                     | 0-10                                 | 11-20         | 21-30         | 31-40         | 41-50         | 51-60         | 61-70         | 71-80         | 81+           |
| <b>Thousand cubic feet</b>                            |                |                     |                                      |               |               |               |               |               |               |               |               |
| <b>Pine plantation</b>                                |                |                     |                                      |               |               |               |               |               |               |               |               |
| Softwood  | 50,027         | --                  | 5,702                                | 23,347        | 16,265        | 4,032         | 681           | --            | --            | --            | --            |
| Hardwood  | 1,901          | --                  | 240                                  | 845           | 695           | 121           | --            | --            | --            | --            | --            |
| <b>Total</b>  | <b>51,928</b>  |                     | <b>5,942</b>                         | <b>24,192</b> | <b>16,960</b> | <b>4,153</b>  | <b>681</b>    | <b>--</b>     | <b>--</b>     | <b>--</b>     | <b>--</b>     |
| <b>Natural pine</b>                                   |                |                     |                                      |               |               |               |               |               |               |               |               |
| Softwood  | 41,328         | 10                  | 306                                  | 4,731         | 9,611         | 9,981         | 11,219        | 4,396         | 814           | 103           | 157           |
| Hardwood  | 6,654          | --                  | 37                                   | 376           | 970           | 2,032         | 1,549         | 903           | 326           | 130           | 331           |
| <b>Total</b>  | <b>47,982</b>  | <b>10</b>           | <b>343</b>                           | <b>5,107</b>  | <b>10,581</b> | <b>12,013</b> | <b>12,768</b> | <b>5,299</b>  | <b>1,140</b>  | <b>233</b>    | <b>488</b>    |
| <b>Oak-pine</b>                                       |                |                     |                                      |               |               |               |               |               |               |               |               |
| Softwood  | 8,558          | 395                 | 710                                  | 1,595         | 1,876         | 1,270         | 766           | 865           | 675           | 193           | 213           |
| Hardwood  | 10,752         | 205                 | 579                                  | 1,427         | 1,424         | 1,453         | 1,927         | 1,549         | 1,711         | 289           | 188           |
| <b>Total</b>  | <b>19,310</b>  | <b>600</b>          | <b>1,289</b>                         | <b>3,022</b>  | <b>3,300</b>  | <b>2,723</b>  | <b>2,693</b>  | <b>2,414</b>  | <b>2,386</b>  | <b>482</b>    | <b>401</b>    |
| <b>Upland hardwood</b>                                |                |                     |                                      |               |               |               |               |               |               |               |               |
| softwood  | 5,874          | 364                 | 145                                  | 484           | 463           | 924           | 1,292         | 812           | 492           | 404           | 494           |
| Hardwood  | 115,379        | 5,265               | 3,565                                | 5,503         | 6,822         | 13,096        | 19,854        | 23,691        | 18,981        | 9,075         | 9,527         |
| <b>Total</b>  | <b>121,253</b> | <b>5,629</b>        | <b>3,710</b>                         | <b>5,987</b>  | <b>7,285</b>  | <b>14,020</b> | <b>21,146</b> | <b>24,503</b> | <b>19,473</b> | <b>9,479</b>  | <b>10,021</b> |
| <b>Lowland hardwood</b>                               |                |                     |                                      |               |               |               |               |               |               |               |               |
| Softwood  | 74             | --                  | --                                   | --            | --            | 74            | --            | --            | --            | --            | --            |
| Hardwood  | 5,890          | 1,292               | --                                   | --            | 394           | 314           | 833           | 1,145         | 784           | 649           | 479           |
| <b>Total</b>  | <b>5,964</b>   | <b>1,292</b>        | <b>--</b>                            | <b>--</b>     | <b>394</b>    | <b>388</b>    | <b>833</b>    | <b>1,145</b>  | <b>784</b>    | <b>649</b>    | <b>479</b>    |
| <b>All types</b>                                      |                |                     |                                      |               |               |               |               |               |               |               |               |
| Softwood  | 105,861        | 769                 | 6,863                                | 30,157        | 28,215        | 16,281        | 13,958        | 6,073         | 1,981         | 700           | 864           |
| Hardwood  | 140,576        | 6,762               | 4,421                                | 8,151         | 10,305        | 17,016        | 24,163        | 27,288        | 21,802        | 10,143        | 10,525        |
| <b>Total</b>  | <b>246,437</b> | <b>7,531</b>        | <b>11,284</b>                        | <b>38,308</b> | <b>38,520</b> | <b>33,297</b> | <b>38,121</b> | <b>33,361</b> | <b>23,783</b> | <b>10,843</b> | <b>11,389</b> |

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

Table 20--Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Piedmont of Virginia, 1985-1990

| Broad management class <sup>a</sup> and species group | All classes | NO manageable stand | Stand-age class <sup>a</sup> (years) |        |        |        |        |        |        |        |        |
|---|-------------|---------------------|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|   |             |                     | 0-10                                 | 11-20  | 21-30  | 31-40  | 41-50  | 51-60  | 61-70  | 71-80  | 81+    |
| Thousand cubic feet                                   |             |                     |                                      |        |        |        |        |        |        |        |        |
| Pine plantation                                       |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | 16,253      | --                  | -                                    | 6,279  | 9,974  | --     | --     | --     | --     | --     | --     |
| Hardwood  | 202         | --                  | --                                   | 202    | --     | --     | --     | --     | --     | --     | --     |
| Total   | 16,455      | --                  | --                                   | 6,481  | 9,974  | --     | --     | --     | --     | --     | --     |
| Natural pine  |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | 44,775      | --                  | 109                                  | 3,706  | 3,198  | 11,824 | 13,329 | 11,141 | 1,468  | --     | --     |
| Hardwood  | 5,353       | --                  | --                                   | 850    | 430    | 867    | 1,667  | 1,341  | 198    | --     | --     |
| Total   | 50,128      | --                  | 109                                  | 4,556  | 3,628  | 12,691 | 14,996 | 12,482 | 1,666  | --     | --     |
| Oak-pine  |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | 8,082       | 348                 | --                                   | 400    | 1,344  | 1,361  | 1,518  | 1,645  | 852    | 614    | --     |
| Hardwood  | 9,062       | 131                 | --                                   | 110    | 1,031  | 1,867  | 1,525  | 2,181  | 1,112  | 1,105  | --     |
| Total   | 17,144      | 479                 | --                                   | 510    | 2,375  | 3,228  | 3,043  | 3,826  | 1,964  | 1,719  | --     |
| Upland hardwood                                       |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | 7,076       | 123                 | 316                                  | 573    | 282    | 1,388  | 815    | 1,388  | 1,274  | 583    | 334    |
| Hardwood  | 68,463      | 2,873               | 978                                  | 1,174  | 1,250  | 7,590  | 11,018 | 10,554 | 11,142 | 8,608  | 13,276 |
| Total   | 75,539      | 2,996               | 1,294                                | 1,747  | 1,532  | 8,978  | 11,833 | 11,942 | 12,416 | 9,191  | 13,610 |
| Lowland hardwood                                      |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | --          | --                  | --                                   | --     | --     | --     | --     | --     | --     | --     | --     |
| Hardwood  | 6,645       | 609                 | --                                   | --     | --     | --     | 1,610  | 4,426  | --     | --     | --     |
| Total   | 6,645       | 609                 | --                                   | --     | --     | --     | 1,610  | 4,426  | --     | --     | --     |
| All types   |             |                     |                                      |        |        |        |        |        |        |        |        |
| Softwood  | 76,186      | 471                 | 425                                  | 10,958 | 14,798 | 14,573 | 15,662 | 14,174 | 3,594  | 1,197  | 334    |
| Hardwood  | 89,725      | 3,613               | 978                                  | 2,336  | 2,711  | 10,324 | 15,820 | 18,502 | 12,452 | 9,713  | 13,276 |
| Total   | 165,911     | 4,084               | 1,403                                | 13,294 | 17,509 | 24,897 | 31,482 | 32,676 | 16,046 | 10,910 | 13,610 |

<sup>a</sup>Classifications before timber removals.

Table 21--~~Merchantable~~ volume of live trees and growing stock on timberland, by forest-type and species groups, Southern Piedmont of Virginia, 1991

| Forest-type group       | Live trees                 |                  |                |                  |                  | Growing stock    |                  |                |                  |                  |
|-------------------------|----------------------------|------------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|
|                         | All species                | Pine             | Other softwood | Soft hardwood    | Hard hardwood    | All species      | Pine             | Other softwood | Soft hardwood    | Hard hardwood    |
|                         | <u>Thousand cubic feet</u> |                  |                |                  |                  |                  |                  |                |                  |                  |
| White pine-hemlock      | 35,188                     | 3,050            | 23,142         | 635              | 8,361            | 33,339           | 3,050            | 23,142         | 635              | 6,512            |
| Spruce-fir              | --                         | --               | --             | --               | --               | --               | --               | --             | --               | --               |
| Longleaf-slash pine     | --                         | --               | --             | --               | --               | --               | --               | --             | --               | --               |
| Loblolly-shortleaf pine | <b>1,669,510</b>           | <b>1,488,652</b> | 9,546          | 95,617           | 75,695           | <b>1,641,219</b> | <b>1,480,018</b> | 9,308          | 90,046           | 61,847           |
| Oak-pine                | 470,069                    | 188,556          | 16,168         | 110,028          | 155,317          | 453,803          | 187,441          | 15,938         | 106,365          | 144,059          |
| Oak-hickory             | <b>3,938,564</b>           | 146,847          | 46,423         | <b>1,516,192</b> | <b>2,229,102</b> | <b>3,683,116</b> | 145,719          | 44,659         | <b>1,435,136</b> | <b>2,057,602</b> |
| Oak-gum-cypress         | 106,637                    | 1,078            | --             | 44,387           | 61,172           | 97,721           | 1,078            | --             | 41,502           | 55,141           |
| Elm-ash-cottonwood      | 125,790                    | --               | 1,058          | 67,307           | 57,425           | 109,255          | --               | --             | 58,056           | 51,199           |
| Maple-beech-birch       | --                         | --               | --             | --               | --               | --               | --               | --             | --               | --               |
| All types               | <b>6,345,758</b>           | <b>1,828,183</b> | 96,337         | <b>1,834,166</b> | <b>2,587,072</b> | <b>6,018,453</b> | <b>1,817,306</b> | 93,047         | <b>1,731,740</b> | <b>2,376,360</b> |

Table 22--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class, Southern Piedmont of Virginia, 1985 to 1991

| Treatment or disturbance             | All ownerships | Ownership class |                 |                        |                          |
|--------------------------------------|----------------|-----------------|-----------------|------------------------|--------------------------|
|                                      |                | Public          | Forest industry | Forest industry-leased | Other private            |
|                                      |                |                 |                 |                        | <b>Acres<sup>a</sup></b> |
| Final harvest                        | 61,488         | 1,242           | 11,152          | --                     | <b>49,094</b>            |
| Partial harvest <sup>b</sup>         | 9,601          | —               | --              | --                     | 9,601                    |
| Commercial thinning                  | 7,320          | 277             | 3,860           | --                     | 3,183                    |
| Other stand improvement              | 1,305          | --              | 710             | --                     | 595                      |
| Site preparation                     | 31,707         | 1,242           | 9,860           | --                     | 20,605                   |
| Artificial regeneration <sup>c</sup> | 28,337         | 452             | 11,341          | --                     | 16,544                   |
| Natural regeneration <sup>c</sup>    | 41,334         | 1,128           | 3,747           | --                     | 36,459                   |
| Other treatment                      | 25,745         | 719             | 649             | --                     | 24,377                   |
| Natural disturbance                  | 24,490         | 980             | 2,962           | --                     | 20,548                   |

<sup>a</sup>Since some acres experience more than one treatment or disturbance, there are no column totals.

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

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

Table 23--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class, Southern Piedmont of Virginia, 1985 to 1991

| Treatment or disturbance     | All classes | Broad management class <sup>a</sup> |              |          |                 |                          |
|------------------------------|-------------|-------------------------------------|--------------|----------|-----------------|--------------------------|
|                              |             | Pine plantation                     | Natural pine | Oak-pine | Upland hardwood | Lowland hardwood         |
|                              |             |                                     |              |          |                 | <b>Acres<sup>b</sup></b> |
| Final harvest                | 61,488      | 5,157                               | 15,517       | 8,099    | 30,521          | 2,194                    |
| Partial harvest <sup>c</sup> | 9,601       | --                                  | 1,286        | 644      | 7,671           | --                       |
| Commercial thinning          | 7,320       | 5,032                               | 1,689        | 599      | —               | --                       |
| Other stand improvement      | 1,305       | 595                                 | --           | --       | 710             | --                       |
| Site preparation             | 31,707      | 2,672                               | 9,813        | 3,693    | 15,529          | --                       |
| Other treatment              | 25,745      | 617                                 | 1,786        | 1,796    | 20,360          | 1,186                    |
| Natural disturbance          | 24,490      | 1,920                               | 6,073        | 2,271    | 11,652          | 2,574                    |

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

<sup>b</sup>Since some acres experience more than one treatment or disturbance, there are no column totals.

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

Table 24--Area of timberland regenerated annually, by type of regeneration and broad management class, Southern Piedmont of Virginia, 1985 to 1991

| Type<br>of<br>regeneration                        | All<br>classes | Broad management class <sup>a</sup> |                 |               |                    |                     |
|---|----------------|-------------------------------------|-----------------|---------------|--------------------|---------------------|
|   |                | Pine<br>plantation                  | Natural<br>pine | Oak-<br>pine  | Upland<br>hardwood | Lowland<br>hardwood |
|   |                | <u>Acres</u>                        |                 |               |                    |                     |
| Artificial regeneration<br>following harvest      | 16,211         | 9,167                               | --              | 5,052         | 1,992              | --                  |
| Natural regeneration<br>following harvest         | 23,937         | --                                  | 1,276           | 2,330         | 19,256             | 1,075               |
| Other artificial regener-<br>ation on forest land | 10,233         | 7,787                               | --              | 1,736         | 710                | --                  |
| Other natural regener-<br>ation on forest land    | 10,128         | --                                  | 2,415           | 680           | 7,033              | --                  |
| Artificial regeneration<br>on nonforest land      | 1,893          | 1,893                               | --              | --            | —                  | --                  |
| Natural reversion of<br>nonforest land            | 7,269          | --                                  | 3,160           | 3,109         | 1,000              | --                  |
| <b>Total</b>                                      | <b>69,671</b>  | <b>18,847</b>                       | <b>6,851</b>    | <b>12,907</b> | <b>29,991</b>      | <b>1,075</b>        |

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

Table 25--Area of timberland, by treatment opportunity and broad management classes, Southern Piedmont of Virginia, 1985 to 1991

| Treatment<br>opportunity<br>class      | All<br>classes   | Broad management class |                 |                |                    |                     |
|--|------------------|------------------------|-----------------|----------------|--------------------|---------------------|
|  |                  | Pine<br>plantation     | Natural<br>pine | Oak-<br>pine   | Upland<br>hardwood | Lowland<br>hardwood |
|  |                  | <u>Acres</u>           |                 |                |                    |                     |
| Salvage                                | 10,840           | --                     | 7,620           | —              | 3,220              | --                  |
| Harvest                                | 224,637          | --                     | 14,005          | 14,547         | 172,184            | 23,901              |
| Commercial thinning                    | 250,975          | 123,030                | 116,577         | 3,775          | 7,593              | --                  |
| Other stand improvement                | 380,493          | 31,126                 | 49,734          | 62,939         | 233,002            | 3,692               |
| Stand conversion                       | 41,870           | --                     | 7,670           | 7,018          | 27,182             | —                   |
| Regeneration                           | 304,971          | --                     | 20,059          | 37,834         | 194,734            | 52,344              |
| Stands in relatively<br>good condition | 2,407,451        | 361,163                | 368,731         | 283,214        | 1,341,508          | 52,835              |
| Adverse sites <sup>a</sup>             | 157,034          | --                     | --              | 7,428          | 137,797            | 11,809              |
| <b>All classes</b>                     | <b>3,778,271</b> | <b>515,319</b>         | <b>584,396</b>  | <b>416,755</b> | <b>2,117,220</b>   | <b>144,581</b>      |

<sup>a</sup>Areas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 26--Area of timberland, by treatment opportunity and ownership classes, Southern Piedmont of Virginia, 1991

| Treatment opportunity class         | All ownerships   | Ownership class |                 |                                |                  |
|-------------------------------------|------------------|-----------------|-----------------|--------------------------------|------------------|
|                                     |                  | Public          | Forest industry | Forest <b>industry-</b> leased | Other private    |
|                                     |                  |                 | <u>Acres</u>    |                                |                  |
| Salvage                             | 10,840           | 3,220           | --              | --                             | 7,620            |
| Harvest                             | 224,637          | 19,888          | 45,090          | --                             | 159,659          |
| Commercial thinning                 | 250,975          | 4,017           | 75,103          | 2,003                          | 169,852          |
| Other stand improvement             | 380,493          | 14,154          | 33,165          | --                             | 333,174          |
| Stand conversion                    | 41,870           | --              | 8,796           | --                             | 33,074           |
| Regeneration                        | 304,971          | 4,925           | 20,980          | --                             | 279,066          |
| Stands in relatively good condition | <b>2,407,451</b> | <b>92,528</b>   | 314,931         | 15,363                         | <b>1,984,629</b> |
| Adverse <b>sites</b> <sup>a</sup>   | 157,034          | 5,407           | 17,081          | --                             | 134,546          |
| All classes                         | <b>3,778,271</b> | 144,139         | 515,146         | 17,366                         | <b>3,101,620</b> |

<sup>a</sup> **Areas** where management opportunities are severely limited because of steep slopes or poor drainage.

Table 27--Merchantable **volume** of live trees and growing stock on timberland, by ownership class and species group, **Southern** Piedmont of Virginia, 1991

| Ownership class        | Live trees                 |                  |                |                  |                  | Growing stock    |                  |                |                  |                  |
|------------------------|----------------------------|------------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|
|                        | All species                | Pine             | Other softwood | Soft hardwood    | Hard hardwood    | All species      | Pine             | Other softwood | Soft hardwood    | Hard hardwood    |
|                        | <u>Thousand cubic feet</u> |                  |                |                  |                  |                  |                  |                |                  |                  |
| National forest        | 31,034                     | --               | 492            | --               | 30,542           | 27,214           | --               | 492            | --               | 26,722           |
| Other public           | 373,689                    | 95,659           | 6,160          | 109,590          | 162,280          | 354,277          | 95,426           | 5,573          | 103,406          | 149,872          |
| Forest industry        | 739,775                    | 363,883          | 2,035          | 169,968          | 203,889          | 720,875          | 361,927          | 2,035          | 163,762          | 193,151          |
| Forest industry-leased | 28,232                     | 20,363           | --             | 3,783            | 4,086            | 28,232           | 20,363           | --             | 3,783            | 4,086            |
| Other private          | <b>5,173,028</b>           | <b>1,348,278</b> | 87,650         | <b>1,550,825</b> | <b>2,186,275</b> | <b>4,887,855</b> | <b>1,339,590</b> | 84,947         | <b>1,460,789</b> | <b>2,002,529</b> |
| All ownerships         | <b>6,345,758</b>           | <b>1,828,183</b> | 96,337         | <b>1,834,166</b> | <b>2,587,072</b> | <b>6,018,453</b> | <b>1,817,306</b> | 93,047         | <b>1,731,740</b> | <b>2,376,360</b> |

Table 28--Volume of sawtimber on timberland, by ownership class and species group, Southern Piedmont of Virginia, 1991

| Ownership class        | Small <b>sawtimber<sup>a</sup></b> |                  |                |                  |                  | Large <b>sawtimber<sup>b</sup></b> |         |                |                  |                  |
|------------------------|------------------------------------|------------------|----------------|------------------|------------------|------------------------------------|---------|----------------|------------------|------------------|
|                        | All species                        | Pine             | Other softwood | Soft hardwood    | Hard hardwood    | All species                        | Pine    | Other softwood | Soft hardwood    | Hard hardwood    |
|                        | <u>Thousand board feet</u>         |                  |                |                  |                  |                                    |         |                |                  |                  |
| National forest        | 18,033                             | --               | 2,086          | --               | 15,947           | 95,417                             | --      | --             | --               | 95,417           |
| Other public           | 422,353                            | 141,333          | 4,528          | 125,957          | 150,535          | 619,597                            | 88,196  | 15,758         | 181,913          | 333,730          |
| Forest industry        | <b>1,028,045</b>                   | 627,294          | 5,811          | 174,623          | 220,317          | 763,898                            | 96,996  | --             | 354,753          | 312,149          |
| Forest industry-leased | 51,244                             | 41,327           | --             | 3,226            | 6,691            | 4,035                              | --      | --             | 4,035            | --               |
| Other private          | 7,114,081                          | 2,834,405        | 129,919        | <b>1,865,973</b> | <b>2,283,784</b> | <b>6,119,593</b>                   | 390,182 | 171,455        | <b>2,327,910</b> | <b>3,230,046</b> |
| All ownerships         | <b>8,633,756</b>                   | <b>3,644,359</b> | 142,344        | <b>2,169,779</b> | <b>2,677,274</b> | <b>7,602,540</b>                   | 575,374 | 187,213        | <b>2,868,611</b> | <b>3,971,342</b> |

<sup>a</sup>Volume of sawtimber trees less than 15.0 inches at d.b.h.

<sup>b</sup>Volume of sawtimber trees 15.0 inches and larger at d.b.h.

Table 29--Average net annual growth and removals of growing stock on timberland, by ownership **class** and species group, Southern Piedmont of Virginia, 1985-1990

| Ownership class        | Net annual growth          |         |                |               |               | Annual timber removals |        |                |               |               |
|------------------------|----------------------------|---------|----------------|---------------|---------------|------------------------|--------|----------------|---------------|---------------|
|                        | All species                | Pine    | Other softwood | Soft hardwood | Hard hardwood | All species            | Pine   | Other softwood | Soft hardwood | Hard hardwood |
|                        | <u>Thousand cubic feet</u> |         |                |               |               |                        |        |                |               |               |
| National forest        | 624                        | --      | 22             | —             | 602           | --                     | --     | --             | --            | --            |
| Other public           | 13,839                     | 5,653   | 292            | 3,606         | 4,288         | 6,788                  | 6,533  | 88             | --            | 167           |
| Forest industry        | 40,126                     | 27,506  | 82             | 5,608         | 6,930         | 31,082                 | 17,674 | 294            | 6,874         | 6,240         |
| Forest industry-leased | 1,382                      | 936     | --             | 157           | 289           | --                     | --     | --             | --            | --            |
| Other private          | 190,466                    | 67,582  | 3,788          | 54,336        | 64,760        | 128,041                | 49,087 | 2,510          | 32,073        | 44,371        |
| All ownerships         | 246,437                    | 101,677 | 4,184          | 63,707        | 76,869        | 165,911                | 73,294 | 2,892          | 38,947        | 50,778        |

Table 30--Average net annual growth and removals of sawtimber on timberland, by ownership class and species group, Southern Piedmont of Virginia, 1985-1990

| Ownership class        | Net annual growth          |         |                |               |               | Annual timber removals |         |                |               |               |
|------------------------|----------------------------|---------|----------------|---------------|---------------|------------------------|---------|----------------|---------------|---------------|
|                        | All species                | Pine    | Other softwood | Soft hardwood | Hard hardwood | All species            | Pine    | Other softwood | Soft hardwood | Hard hardwood |
|                        | <u>Thousand board feet</u> |         |                |               |               |                        |         |                |               |               |
| National forest        | 3,807                      | --      | 105            | --            | 3,702         | --                     | --      | --             | --            | --            |
| Other public           | 45,752                     | 14,520  | 982            | 14,886        | 15,364        | 14,374                 | 13,126  | 341            | --            | 907           |
| Forest industry        | 121,466                    | 73,477  | 79             | 25,301        | 22,609        | 68,993                 | 29,595  | 772            | 22,992        | 15,634        |
| Forest industry-leased | 7,935                      | 6,997   | --             | 428           | 510           | --                     | --      | --             | --            | --            |
| Other private          | 692,262                    | 197,872 | 13,898         | 214,200       | 266,292       | 408,751                | 147,992 | 10,826         | 104,578       | 145,355       |
| All ownerships         | 871,222                    | 292,866 | 15,064         | 254,815       | 308,477       | 492,118                | 190,713 | 11,939         | 127,570       | 161,896       |

Table 31--Volume of **timber** on timberland, by class of timber and species group, Southern Piedmont of Virginia, 1991

| Class of timber                 | All species      | Pine             | Other softwood | Soft hardwood    | Hard hardwood    |
|---------------------------------|------------------|------------------|----------------|------------------|------------------|
| <u>Thousand cubic feet</u>      |                  |                  |                |                  |                  |
| Sawtimber trees                 |                  |                  |                |                  |                  |
| <i>Saw-log</i> portion          | <b>3,153,423</b> | 856,398          | 59,165         | 928,261          | <b>1,309,599</b> |
| Upper-stem portion <sup>a</sup> | 583,256          | 133,176          | 5,487          | 185,122          | 259,471          |
| Total                           | <b>3,736,679</b> | 989,574          | 64,652         | <b>1,113,383</b> | <b>1,569,070</b> |
| Poletimber trees                | <b>2,281,774</b> | 827,732          | 28,395         | 618,357          | 807,290          |
| All growing-stock trees         | <b>6,018,453</b> | <b>1,817,306</b> | 93,047         | <b>1,731,740</b> | <b>2,376,360</b> |
| Rough trees                     |                  |                  |                |                  |                  |
| Sawtimber size                  | <b>100,739</b>   | 6,654            | 1,366          | 42,028           | 50,691           |
| Poletimber size                 | 193,216          | 4,223            | 1,924          | 47,018           | 140,051          |
| Total                           | <b>293,955</b>   | 10,877           | 3,290          | 89,046           | 190,742          |
| Rotten trees                    |                  |                  |                |                  |                  |
| Sawtimber size                  | 29,084           | --               | --             | 11,484           | 17,600           |
| Poletimber size                 | 4,266            | --               | --             | 1,896            | 2,370            |
| Total                           | 33,350           | --               | --             | 13,380           | 19,970           |
| Salvable dead trees             |                  |                  |                |                  |                  |
| Sawtimber size                  | 4,168            | 1,854            | 39             | 416              | 1,859            |
| Poletimber size                 | 4,611            | 2,030            | 42             | 564              | 1,975            |
| Total                           | <b>8,779</b>     | 3,884            | 81             | 980              | 3,834            |
| Total, all timber               | <b>6,354,537</b> | <b>1,832,067</b> | 96,418         | <b>1,835,146</b> | <b>2,590,906</b> |

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

Table 32--Number of live trees on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| Species                 | All classes      | Diameter class (inches at breast height) |                |                |                |               |               |               |               |               |               |               |                    |
|-------------------------|------------------|--|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|
|                         |                  | 1.0-<br>2.9                              | 3.0-<br>4.9    | 5.0-<br>6.9    | 7.0-<br>8.9    | 9.0-<br>10.9  | 11.0-<br>12.9 | 13.0-<br>14.9 | 15.0-<br>16.9 | 17.0-<br>18.9 | 19.0-<br>20.9 | 21.0-<br>28.9 | 29.0 and<br>larger |
| Thousand trees          |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| Softwood                |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| Longleaf pine           | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Slash pine              | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Shortleaf pine          | 60,443           | 12,222                                   | 13,749         | 13,228         | 9,547          | 6,052         | 3,550         | 1,394         | 563           | 98            | 40            | --            | --                 |
| Loblolly pine           | 226,327          | 54,600                                   | 69,225         | 50,632         | 32,863         | 12,628        | 4,004         | 1,436         | 486           | 210           | 196           | 47            | --                 |
| Pond pine               | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Virginia pine           | 313,926          | 136,263                                  | 80,174         | 43,090         | 29,428         | 15,970        | 6,619         | 1,954         | 351           | 67            | --            | 10            | --                 |
| Pitch pine              | 1,612            | --                                       | 424            | --             | 573            | 160           | 222           | 147           | 59            | 18            | --            | 9             | --                 |
| Table Mountain pine     | 331              | 237                                      | --             | --             | --             | --            | 65            | 29            | --            | --            | --            | --            | --                 |
| Spruce pine             | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Sand pine               | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Eastern white pine      | 20,174           | 10,263                                   | 4,551          | 1,659          | 1,307          | 920           | 607           | 320           | 156           | 221           | 74            | 96            | --                 |
| Eastern hemlock         | 1,616            | 800                                      | 400            | 179            | 133            | --            | 67            | --            | 24            | 13            | --            | --            | --                 |
| Spruce and fir          | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Baldcypress             | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Pondcypress             | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Cedars                  | 95,512           | 69,633                                   | 19,996         | 4,135          | 1,140          | 361           | 180           | 48            | 19            | --            | --            | --            | --                 |
| <b>Total softwoods</b>  | <b>719,941</b>   | <b>284,018</b>                           | <b>188,519</b> | <b>112,923</b> | <b>74,991</b>  | <b>36,091</b> | <b>15,314</b> | <b>5,328</b>  | <b>1,658</b>  | <b>627</b>    | <b>310</b>    | <b>162</b>    | <b>--</b>          |
| Hardwood                |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| Select white oaks       | 156,787          | 74,700                                   | 30,658         | 18,657         | 9,684          | 9,135         | 6,237         | 3,338         | 2,274         | 1,074         | 458           | 517           | 55                 |
| Select red oaks         | 55,384           | 32,697                                   | 10,299         | 4,560          | 2,099          | 1,533         | 1,520         | 805           | 615           | 523           | 358           | 351           | 24                 |
| Chestnut oak            | 82,632           | 34,368                                   | 15,482         | 10,810         | 8,879          | 4,998         | 3,652         | 1,938         | 1,268         | 681           | 283           | 227           | 46                 |
| Other white oaks        | 15,261           | 8,432                                    | 3,222          | 914            | 1,178          | 692           | 403           | 208           | 80            | 81            | 28            | 21            | 2                  |
| Other red oaks          | 136,740          | 82,740                                   | 22,424         | 9,617          | 7,481          | 4,917         | 3,732         | 2,252         | 1,563         | 980           | 493           | 491           | 50                 |
| Hickory                 | 131,138          | 77,797                                   | 24,744         | 11,545         | 6,023          | 5,162         | 2,662         | 1,692         | 730           | 370           | 216           | 183           | 14                 |
| Yellow birch            | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Hard maple              | 1,962            | 871                                      | 682            | 140            | 89             | 60            | 73            | 26            | 21            | --            | --            | --            | --                 |
| Soft maple              | 436,619          | 326,983                                  | 62,175         | 22,345         | 11,375         | 5,592         | 3,739         | 2,398         | 895           | 462           | 386           | 240           | 29                 |
| Beech                   | 36,375           | 25,888                                   | 4,412          | 1,130          | 1,487          | 1,086         | 662           | 699           | 387           | 245           | 188           | 185           | 6                  |
| Sweetgum                | 190,703          | 128,793                                  | 35,576         | 12,508         | 5,473          | 3,985         | 2,108         | 1,249         | 368           | 294           | 190           | 140           | 19                 |
| Tupelo and blackgum     | 142,208          | 116,739                                  | 15,028         | 4,161          | 2,825          | 1,792         | 942           | 354           | 258           | 34            | 11            | 64            | --                 |
| Ash                     | 35,419           | 20,634                                   | 4,939          | 5,039          | 2,007          | 1,075         | 931           | 412           | 217           | 46            | 63            | 52            | 4                  |
| Cottonwood              | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Basswood                | 674              | --                                       | 212            | 318            | --             | 49            | 29            | 25            | --            | 16            | 13            | 12            | --                 |
| Yellow-poplar           | 210,378          | 117,262                                  | 36,611         | 17,278         | 10,917         | 8,857         | 7,199         | 5,559         | 3,585         | 1,656         | 774           | 643           | 37                 |
| Bay and magnolia        | 4,404            | 3,143                                    | 234            | 112            | 509            | 250           | 75            | 24            | 42            | 15            | --            | --            | --                 |
| Black cherry            | 52,368           | 44,408                                   | 6,038          | 1,134          | 490            | 54            | 209           | 25            | --            | --            | --            | 10            | --                 |
| Black walnut            | 3,434            | 937                                      | 690            | 612            | 471            | 281           | 191           | 105           | 106           | 33            | --            | 8             | --                 |
| Sycamore                | 8,282            | 2,550                                    | 2,488          | 1,084          | 681            | 469           | 174           | 208           | 290           | 159           | 42            | 132           | 5                  |
| Black locust            | 24,153           | 16,510                                   | 1,292          | 2,208          | 1,101          | 1,417         | 950           | 221           | 285           | 114           | 25            | 30            | --                 |
| Elm                     | 27,890           | 17,703                                   | 5,397          | 2,909          | 667            | 575           | 382           | 105           | 59            | 49            | 24            | 20            | --                 |
| Other eastern hardwoods | 605,939          | 475,315                                  | 88,717         | 26,144         | 9,043          | 3,642         | 1,556         | 916           | 353           | 117           | 95            | 41            | --                 |
| <b>Total hardwoods</b>  | <b>2,358,750</b> | <b>1,608,470</b>                         | <b>371,320</b> | <b>153,225</b> | <b>82,479</b>  | <b>55,621</b> | <b>37,426</b> | <b>22,559</b> | <b>13,396</b> | <b>6,949</b>  | <b>3,647</b>  | <b>3,367</b>  | <b>291</b>         |
| <b>All species</b>      | <b>3,078,691</b> | <b>1,892,488</b>                         | <b>559,839</b> | <b>266,148</b> | <b>157,470</b> | <b>91,712</b> | <b>52,740</b> | <b>27,887</b> | <b>15,054</b> | <b>7,576</b>  | <b>3,957</b>  | <b>3,529</b>  | <b>291</b>         |

Table 33--Number of growing-stock trees on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| Species                    | All classes      | Diameter class (inches at breast height) |                |                |                |               |               |               |               |               |               |               |                    |
|----------------------------|------------------|--|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|
|                            |                  | 1.0-<br>2.9                              | 3.0-<br>4.9    | 5.0-<br>6.9    | 7.0-<br>8.9    | 9.0-<br>10.9  | 11.0-<br>12.9 | 13.0-<br>14.9 | 15.0-<br>16.9 | 17.0-<br>18.9 | 19.0-<br>20.9 | 21.0-<br>28.9 | 29.0 and<br>larger |
| <u>Thousand trees</u>      |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| <b>Softwood</b>            |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| Longleaf pine              | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Slash pine                 | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Shortleaf pine             | 58,679           | 10,832                                   | 13,527         | 13,228         | 9,449          | 5,998         | 3,550         | 1,394         | 563           | 98            | 40            | --            | --                 |
| Loblolly pine              | 223,025          | 52,524                                   | 68,294         | 50,487         | 32,795         | 12,563        | 4,004         | 1,436         | 469           | 210           | 196           | 47            | --                 |
| Pond pine                  | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Virginia pine              | 298,251          | 124,840                                  | 76,895         | 42,680         | 29,075         | 15,862        | 6,586         | 1,925         | 329           | 49            | --            | 10            | --                 |
| Pitch pine                 | 1,353            | --                                       | 212            | --             | 573            | 160           | 222           | 100           | 59            | 18            | --            | 9             | --                 |
| Table Mountain pine        | 94               | --                                       | --             | --             | --             | --            | 65            | 29            | --            | --            | --            | --            | --                 |
| Spruce pine                | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Sand pine                  | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Eastern white pine         | 19,612           | 10,063                                   | 4,314          | 1,659          | 1,223          | 879           | 607           | 320           | 156           | 221           | 74            | 96            | --                 |
| Eastern hemlock            | 1,616            | 800                                      | 400            | 179            | 133            | --            | 67            | --            | 24            | 13            | --            | --            | --                 |
| Spruce and fir             | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Baldcypress                | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Pondcypress                | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Cedars                     | 84,732           | 62,316                                   | 17,291         | 3,451          | 1,140          | 361           | 106           | 48            | 19            | --            | --            | --            | --                 |
| <b>Total softwoods</b>     | <b>687,362</b>   | <b>261,375</b>                           | <b>180,933</b> | <b>111,684</b> | <b>74,388</b>  | <b>35,823</b> | <b>15,207</b> | <b>5,252</b>  | <b>1,619</b>  | <b>609</b>    | <b>310</b>    | <b>162</b>    | <b>--</b>          |
| <b>Hardwood</b>            |                  |  |                |                |                |               |               |               |               |               |               |               |                    |
| Select white oaks          | 133,451          | 58,236                                   | 26,302         | 17,364         | 9,224          | 8,692         | 6,051         | 3,338         | 2,274         | 1,042         | 432           | 465           | 31                 |
| Select red oaks            | 46,523           | 24,813                                   | 9,607          | 4,560          | 1,947          | 1,494         | 1,482         | 775           | 615           | 523           | 358           | 330           | 19                 |
| Chestnut oak               | 70,334           | 25,365                                   | 13,692         | 10,468         | 8,305          | 4,753         | 3,539         | 1,829         | 1,213         | 666           | 269           | 217           | 18                 |
| Other white oaks           | 13, so9          | 7,081                                    | 2,989          | 794            | 1,178          | 692           | 403           | 183           | 80            | 68            | 28            | 11            | 2                  |
| Other red oaks             | 111,820          | 62,723                                   | 18,156         | 9,267          | 7,414          | 4,875         | 3,697         | 2,227         | 1,540         | 934           | 480           | 465           | 42                 |
| Hickory                    | 103,156          | 54,714                                   | 21,338         | 10,580         | 5,767          | 4,944         | 2,630         | 1,692         | 730           | 370           | 216           | 161           | 14                 |
| Yel low birch              | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Hard maple                 | 1,478            | 447                                      | 682            | 140            | 89             | 60            | 39            | --            | 21            | --            | --            | --            | --                 |
| Soft maple                 | 263,107          | 180,274                                  | 43,888         | 17,327         | 10,221         | 4,822         | 2,871         | 2,053         | 799           | 374           | 288           | 179           | 11                 |
| Beech                      | 29,371           | 19,739                                   | 3,939          | 1,130          | 1,346          | 979           | 632           | 699           | 365           | 245           | 175           | 116           | 6                  |
| Sweetgum                   | 150,951          | 97,583                                   | 28,514         | 11,406         | 5,286          | 3,876         | 2,068         | 1,221         | 368           | 280           | 190           | 140           | 19                 |
| Tupelo and blackgum        | 66,401           | 47,793                                   | 9,612          | 3,328          | 2,590          | 1,469         | 942           | 354           | 237           | 34            | 11            | 31            | --                 |
| Ash                        | 20,745           | 8,429                                    | 4,293          | 4,160          | 1,610          | 763           | 752           | 381           | 217           | 46            | 38            | 52            | 4                  |
| Cottonwood                 | --               | --                                       | --             | --             | --             | --            | --            | --            | --            | --            | --            | --            | --                 |
| Basswood                   | 256              | --                                       | --             | 173            | --             | --            | 29            | 25            | --            | 16            | 13            | --            | --                 |
| Yellow poplar              | 190,303          | 101,049                                  | 34,634         | 16,486         | 10,504         | 8,487         | 7,063         | 5,532         | 3,568         | 1,604         | 746           | 620           | 10                 |
| Bay and magnolia           | 2,866            | 1,834                                    | 234            | 112            | 423            | 162           | 41            | 24            | 21            | 15            | --            | --            | --                 |
| Black cherry               | 28,756           | 23,064                                   | 4,047          | 1,134          | 319            | --            | 167           | 2s            | --            | --            | --            | --            | --                 |
| Black walnut               | 2,378            | 234                                      | 690            | 493            | 365            | 172           | 191           | 105           | a7            | 33            | --            | 8             | --                 |
| Sycamore                   | 6,010            | 1,356                                    | 2,076          | 539            | 618            | 469           | 174           | 208           | 269           | 142           | 42            | 112           | 5                  |
| Black locust               | 13,623           | 8,375                                    | 400            | 1,670          | 782            | 1,186         | 727           | 192           | 208           | 64            | --            | 19            | --                 |
| Elm                        | 16,541           | 8,270                                    | 4,256          | 2,377          | 494            | 526           | 382           | 105           | 38            | 49            | 24            | 20            | --                 |
| Other eastern<br>hardwoods | 20,807           | 10,212                                   | 2,583          | 2,631          | 2,235          | 1,159         | a53           | 652           | 271           | a7            | a3            | 41            | --                 |
| <b>Total hardwoods</b>     | <b>1,292,386</b> | <b>741,591</b>                           | <b>231,932</b> | <b>116,139</b> | <b>70,717</b>  | <b>49,580</b> | <b>34,733</b> | <b>21,620</b> | <b>12,921</b> | <b>6,592</b>  | <b>3,393</b>  | <b>2,987</b>  | <b>181</b>         |
| <b>All species</b>         | <b>1,979,748</b> | <b>1,002,966</b>                         | <b>412,865</b> | <b>227,823</b> | <b>145,105</b> | <b>85,403</b> | <b>49,940</b> | <b>26,872</b> | <b>14,540</b> | <b>7,201</b>  | <b>3,703</b>  | <b>3,149</b>  | <b>181</b>         |

Table 34--Merchantable volume of live trees on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| 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 |
| <u>Thousand cubic feet</u> |                  |  |                  |                  |                  |                |                |                |                |                |                 |
| Softwood                   |                  |  |                  |                  |                  |                |                |                |                |                |                 |
| Longleaf pine              | --               |  |                  | --               |                  |                |                |                | --             |                | --              |
| Slash pine                 | --               | --                                       | --               | --               | --               | --             | --             | --             | --             |                | --              |
| Shortleaf pine             | 346,698          | 40,828                                   | 70,561           | 83,169           | 74,773           | 44,437         | 24,473         | 5,280          | 3,177          | --             | --              |
| Loblolly pine              | 635,973          | 126,002                                  | 201,857          | 144,365          | 76,061           | 41,264         | 18,213         | 10,614         | 12,281         | 5,316          | --              |
| Pond pine                  | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Virginia pine              | 826,044          | 155,720                                  | 233,807          | 221,719          | 138,999          | 57,856         | 13,914         | 3,169          | --             | 860            | --              |
| Pitch pine                 | 17,026           | --                                       | 3,180            | 1,981            | 3,938            | 3,635          | 2,377          | 958            | --             | 957            | --              |
| Table Mountain pine        | 2,442            | --                                       | --               | --               | 1,592            | 850            | --             | --             | --             | --             | --              |
| Spruce pine                | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Sand pine                  | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Eastern white pine         | 68,378           | 4,398                                    | 8,108            | 9,270            | 9,284            | 7,410          | 5,492          | 10,281         | 4,911          | 9,224          | --              |
| Eastern hemlock            | 3,234            | 265                                      | 811              | --               | 1,012            | --             | 522            | 624            | --             | --             | --              |
| Spruce and fir             | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Baldcypress                | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Pondcypress                | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Cedars                     | 24,725           | 10,554                                   | 6,183            | 3,549            | 2,334            | 1,310          | 795            | --             | --             | --             | --              |
| Total softwoods            | <b>1,924,520</b> | <b>337,167</b>                           | <b>524,507</b>   | <b>464,053</b>   | <b>307,993</b>   | <b>156,762</b> | <b>65,786</b>  | <b>30,926</b>  | <b>20,369</b>  | <b>16,357</b>  | <b>--</b>       |
| Hardwood                   |                  |  |                  |                  |                  |                |                |                |                |                |                 |
| Select white oaks          | 690,473          | 52,985                                   | 69,013           | 114,357          | 121,518          | 95,972         | 93,632         | 56,923         | 30,599         | 46,203         | 9,271           |
| Select red oaks            | 214,255          | 14,189                                   | 14,688           | 20,223           | 29,559           | 23,156         | 23,562         | 28,177         | 24,227         | 32,430         | 4,044           |
| Chestnut oak               | 368,565          | 28,852                                   | 57,755           | 54,409           | 60,847           | 47,742         | 43,079         | 31,895         | 16,441         | 20,316         | 7,229           |
| Other white oaks           | 41,353           | 3,084                                    | 7,086            | 7,765            | 7,260            | 5,486          | 3,206          | 3,644          | 1,681          | 1,278          | 863             |
| Other red oaks             | 461,871          | 29,673                                   | 49,847           | 58,089           | 68,414           | 62,794         | 58,368         | 48,650         | 31,204         | 45,505         | 9,327           |
| Hickory                    | 325,013          | 28,164                                   | 39,701           | 64,744           | 53,744           | 51,949         | 30,005         | 20,629         | 15,737         | 17,732         | 2,608           |
| Yellow birch               | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Hard maple                 | 2,806            | 431                                      | 453              | 503              | 696              | 154            | 569            | --             | --             | --             | --              |
| Soft maple                 | 418,854          | 65,433                                   | 72,826           | 65,283           | 61,743           | 58,133         | 31,292         | 19,394         | 20,975         | 19,808         | 3,367           |
| Beech                      | 107,458          | 3,780                                    | 9,231            | 11,221           | 11,818           | 19,012         | 13,990         | 12,465         | 11,369         | 13,508         | 1,064           |
| Sweetgum                   | 261,181          | 29,947                                   | 34,953           | 52,240           | 45,308           | 35,859         | 15,979         | 15,798         | 13,680         | 13,685         | 3,132           |
| Tupelo and blackgum        | 85,541           | 9,972                                    | 16,699           | 18,963           | 16,501           | 8,753          | 8,140          | 1,457          | 672            | 4,384          | --              |
| Ash                        | 92,270           | 14,922                                   | 12,788           | 13,831           | 17,631           | 11,692         | 9,306          | 2,301          | 3,922          | 4,964          | 913             |
| Cottonwood                 | --               | --                                       | --               | --               | --               | --             | --             | --             | --             | --             | --              |
| Basswood                   | 4,550            | 629                                      | --               | 335              | 826              | 440            | --             | 868            | 905            | 547            | --              |
| Yellow-poplar              | 935,420          | 53,653                                   | 78,524           | 115,818          | 152,034          | 172,672        | 151,596        | 87,695         | 53,145         | 63,852         | 6,431           |
| Bay and magnolia           | 10,082           | 399                                      | 2,646            | 3,235            | 1,294            | 672            | 1,186          | 650            | --             | --             | --              |
| Black cherry               | 13,129           | 3,605                                    | 3,233            | 398              | 4,641            | 640            | --             | --             | --             | 612            | --              |
| Black walnut               | 18,599           | 1,408                                    | 3,165            | 2,853            | 3,269            | 2,751          | 3,330          | 1,134          | --             | 689            | --              |
| Sycamore                   | 57,726           | 3,754                                    | 6,085            | 6,295            | 3,675            | 5,965          | 10,011         | 8,350          | 2,792          | 10,029         | 770             |
| Black locust               | 56,225           | 4,193                                    | 5,584            | 12,113           | 13,847           | 5,344          | 8,389          | 4,285          | 746            | 1,724          | --              |
| Elm                        | 36,261           | 7,193                                    | 3,096            | 7,929            | 7,288            | 3,092          | 1,885          | 2,352          | 1,692          | 1,734          | --              |
| Other eastern hardwoods    | 219,606          | 59,986                                   | 45,806           | 36,947           | 28,005           | 22,756         | 11,789         | 5,614          | 5,484          | 3,219          | --              |
| Total hardwoods            | <b>4,421,238</b> | <b>416,252</b>                           | <b>533,179</b>   | <b>667,551</b>   | <b>709,918</b>   | <b>635,634</b> | <b>519,314</b> | <b>352,281</b> | <b>235,271</b> | <b>302,219</b> | <b>49,619</b>   |
| All species                | <b>6,345,758</b> | <b>754,019</b>                           | <b>1,057,686</b> | <b>1,131,604</b> | <b>1,017,911</b> | <b>792,396</b> | <b>585,100</b> | <b>383,207</b> | <b>255,640</b> | <b>318,576</b> | <b>49,619</b>   |

Table 35--Volume of growing stock on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| 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 |           |
| Thousand cubic feet     |                  |  |                |                  |                |                |                |                |                |                |                 |           |
| Softwood                |                  |  |                |                  |                |                |                |                |                |                |                 |           |
| Longleaf pine           | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Slash pine              | 345,946          | 40,828                                   | 70,328         | 82,650           | 74,773         | 44,437         | 24,473         | 5,280          | 3,177          | --             | --              | --        |
| Shortleaf pine          | 634,007          | 125,553                                  | 201,429        | 143,850          | 76,061         | 41,264         | 17,639         | 10,614         | 12,281         | 5,316          | --              | --        |
| Loblolly pine           | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Pond pine               | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Virginia pine           | 818,964          | 155,002                                  | 231,412        | 220,364          | 138,258        | 57,274         | 13,296         | 2,498          | --             | 860            | --              | --        |
| Pitch pine              | 15,947           | --                                       | 3,180          | 1,981            | 3,938          | 2,556          | 2,377          | 958            | --             | 957            | --              | --        |
| Table Mountain pine     | 2,442            | --                                       | --             | --               | 1,592          | 850            | --             | --             | --             | --             | --              | --        |
| Spruce pine             | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Sand pine               | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Eastern white pine      | 67,711           | 4,398                                    | 7,777          | 8,934            | 9,284          | 7,410          | 5,492          | 10,281         | 4,911          | 9,224          | --              | --        |
| Eastern hemlock         | 3,234            | 265                                      | 811            | --               | 1,012          | --             | 522            | 624            | --             | --             | --              | --        |
| Spruce and fir          | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Baldcypress             | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Pondcypress             | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Cedars                  | 22,102           | 8,961                                    | 6,183          | 3,549            | 1,304          | 1,310          | 795            | --             | --             | --             | --              | --        |
| <b>Total softwoods</b>  | <b>1,910,353</b> | <b>335,007</b>                           | <b>521,120</b> | <b>461,328</b>   | <b>306,222</b> | <b>155,101</b> | <b>64,594</b>  | <b>30,255</b>  | <b>20,369</b>  | <b>16,357</b>  | <b>--</b>       | <b>--</b> |
| Hardwood                |                  |  |                |                  |                |                |                |                |                |                |                 |           |
| Select white oaks       | 671,297          | 49,855                                   | 67,422         | 110,915          | 119,431        | 95,972         | 93,632         | 54,960         | 29,650         | 43,183         | 6,277           | --        |
| Select red oaks         | 209,652          | 14,189                                   | 13,857         | 19,488           | 28,954         | 22,381         | 23,562         | 28,177         | 24,227         | 31,505         | 3,312           | --        |
| Chestnut oak            | 352,037          | 27,789                                   | 54,845         | 52,307           | 59,683         | 45,480         | 41,435         | 31,204         | 16,033         | 19,721         | 3,540           | --        |
| Other white oaks        | 39,409           | 2,778                                    | 7,086          | 7,765            | 7,260          | 5,019          | 3,206          | 3,018          | 1,681          | 733            | 863             | --        |
| Other red oaks          | 455,352          | 28,619                                   | 49,370         | 57,708           | 67,965         | 62,417         | 57,969         | 47,485         | 30,907         | 44,502         | 8,410           | --        |
| Hickory                 | 318,754          | 26,605                                   | 38,576         | 62,955           | 53,036         | 51,949         | 30,005         | 20,629         | 15,737         | 16,654         | 2,608           | --        |
| Yellow birch            | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Hard maple              | 2,433            | 431                                      | 453            | 503              | 477            | --             | 569            | --             | --             | --             | --              | --        |
| Soft maple              | 364,102          | 54,698                                   | 68,308         | 58,770           | 49,833         | 53,142         | 28,317         | 17,298         | 17,111         | 14,887         | 1,738           | --        |
| Beech                   | 100,611          | 3,780                                    | 8,574          | 10,675           | 11,769         | 19,012         | 13,173         | 12,465         | 11,321         | 8,778          | 1,064           | --        |
| Sweetgum                | 255,235          | 26,992                                   | 33,851         | 51,345           | 45,090         | 35,645         | 15,979         | 15,236         | 13,680         | 13,685         | 3,732           | --        |
| Tupelo and blackgum     | 77,872           | 8,413                                    | 15,335         | 16,604           | 16,501         | 8,753          | 7,571          | 1,457          | 672            | 2,566          | --              | --        |
| Ash                     | 80,050           | 12,444                                   | 10,786         | 10,086           | 15,247         | 11,285         | 9,306          | 2,301          | 2,718          | 4,964          | 913             | --        |
| Cotton wood             | --               | --                                       | --             | --               | --             | --             | --             | --             | --             | --             | --              | --        |
| Basswood                | 3,353            | 314                                      | --             | --               | 826            | 440            | --             | 868            | 905            | --             | --              | --        |
| Yellow poplar           | 917,326          | 52,162                                   | 76,031         | 112,794          | 150,194        | 171,909        | 151,465        | 86,579         | 51,905         | 61,953         | 2,334           | --        |
| Bay and magnolia        | 7,466            | 399                                      | 2,451          | 1,944            | 657            | 672            | 693            | 650            | --             | --             | --              | --        |
| Black cherry            | 10,417           | 3,605                                    | 2,091          | --               | 4,081          | 640            | --             | --             | --             | --             | --              | --        |
| Black walnut            | 16,378           | 1,005                                    | 2,652          | 1,847            | 3,269          | 2,751          | 3,031          | 1,134          | --             | 689            | --              | --        |
| Sycamore                | 53,274           | 2,259                                    | 5,458          | 6,295            | 3,675          | 5,965          | 9,882          | 7,522          | 2,792          | 8,656          | 770             | --        |
| Black locust            | 46,658           | 3,429                                    | 4,471          | 10,621           | 11,909         | 4,886          | 6,909          | 3,159          | --             | 1,274          | --              | --        |
| Elm                     | 33,083           | 5,925                                    | 2,215          | 7,161            | 7,288          | 3,092          | 1,624          | 2,352          | 1,692          | 1,734          | --              | --        |
| Other eastern hardwoods | 93,341           | 8,373                                    | 14,917         | 13,051           | 17,357         | 17,769         | 9,652          | 4,128          | 4,875          | 3,219          | --              | --        |
| <b>Total hardwoods</b>  | <b>4,108,100</b> | <b>334,064</b>                           | <b>478,749</b> | <b>612,834</b>   | <b>674,502</b> | <b>619,179</b> | <b>507,980</b> | <b>340,622</b> | <b>225,906</b> | <b>278,703</b> | <b>35,561</b>   | <b>--</b> |
| <b>All species</b>      | <b>6,018,453</b> | <b>669,071</b>                           | <b>999,869</b> | <b>1,074,162</b> | <b>980,724</b> | <b>774,280</b> | <b>572,574</b> | <b>370,877</b> | <b>246,275</b> | <b>295,060</b> | <b>35,561</b>   | <b>--</b> |

Table 36-Volume of sawtimber on timberland, by species and diameter class, Southern Piedmont of Virginia

| Species                    | All classes       | Diameter class (inches at breast height) |                  |                  |                  |                  |                 |
|----------------------------|-------------------|--|------------------|------------------|------------------|------------------|-----------------|
|                            |                   | 9.0-<br>10.9                             | 11.0-<br>12.9    | 13.0-<br>14.9    | 15.0-<br>16.9    | 17.0-<br>18.9    | 19.0-<br>20.9   |
| <u>Thousand board feet</u> |                   |  |                  |                  |                  |                  |                 |
| <b>Softwood</b>            |                   |  |                  |                  |                  |                  |                 |
| Longleaf pine              | --                | --                                       | --               | --               | --               | --               | -               |
| Slash pine                 | --                | --                                       | --               | --               | --               | --               | -               |
| Shortleaf pine             | 1,063,274         | 308,376                                  | 337,421          | 229,663          | 136,541          | 31,538           | 19,73           |
| Loblolly pine              | 1,341,957         | 513,086                                  | 338,866          | 212,436          | 99,365           | 63,672           | 77,78           |
| Pond pine                  | --                | --                                       | --               | --               | --               | --               | -               |
| Virginia pine              | 1,741,956         | 799,881                                  | 588,206          | 268,482          | 67,199           | 13,292           | -               |
| Pitch pine                 | 60,436            | 6,912                                    | 16,140           | 12,780           | 12,862           | 5,489            | -               |
| Table Mountain pine        | 12,110            | --                                       | 7,739            | 4,371            | --               | --               | -               |
| Spruce pine                | --                | --                                       | --               | --               | --               | --               | -               |
| Sand pine                  | --                | --                                       | --               | --               | --               | --               | -               |
| Eastern white pine         | 286,730           | 32,530                                   | 40,430           | 37,158           | 29,793           | 58,687           | 29,43           |
| Eastern hemlock            | 10,320            | --                                       | 4,306            | --               | 2,584            | 3,430            | -               |
| Spruce and fir             | --                | --                                       | --               | --               | --               | --               | -               |
| Baldcypress                | --                | --                                       | --               | --               | --               | --               | -               |
| Pondcypress                | --                | --                                       | --               | --               | --               | --               | -               |
| Cedars                     | 32,507            | 14,561                                   | 6,264            | 7,095            | 4,587            | --               | -               |
| <b>Total softwoods</b>     | <b>4,549,290</b>  | <b>1,675,346</b>                         | <b>1,339,372</b> | <b>771,985</b>   | <b>352,931</b>   | <b>176,108</b>   | <b>126,95</b>   |
| <b>Hardwood</b>            |                   |  |                  |                  |                  |                  |                 |
| Select white oaks          | 1,876,745         | --                                       | 404,664          | 379,676          | 413,818          | 260,314          | 148,73          |
| Select red oaks            | 698,087           | --                                       | 97,107           | 86,263           | 99,065           | 126,371          | 113,71          |
| Chestnut oak               | 888,900           | --                                       | 197,597          | 174,466          | 175,469          | 142,039          | 77,10           |
| Other white oaks           | 96,999            | --                                       | 26,226           | 21,689           | 15,190           | 15,028           | 8,88            |
| Other red oaks             | 1,431,473         | --                                       | 234,492          | 254,772          | 257,534          | 229,462          | 157,77          |
| Hickory                    | 819,026           | --                                       | 181,853          | 211,757          | 134,814          | 100,612          | 81,06           |
| Yellow birch               | --                | --                                       | --               | --               | --               | --               | -               |
| Hard maple                 | 4,090             | --                                       | 1,625            | --               | 2,465            | --               | -               |
| Soft maple                 | 732,890           | --                                       | 161,949          | 204,168          | 119,822          | 78,594           | 82,14           |
| Beech                      | 301,916           | --                                       | 42,881           | 71,888           | 51,273           | 49,606           | 45,73           |
| Sweetgum                   | 656,434           | --                                       | 163,550          | 152,397          | 77,020           | 79,826           | 76,02           |
| Tupelo and blackgum        | 140,509           | --                                       | 52,943           | 32,820           | 31,542           | 6,628            | 3,28            |
| Ash                        | 192,005           | --                                       | 50,036           | 44,350           | 40,704           | 10,860           | 13,58           |
| Cottonwood                 | --                | --                                       | --               | --               | --               | --               | -               |
| Basswood                   | 13,175            | --                                       | 3,041            | 1,688            | --               | 3,952            | 4,49            |
| Yellow poplar              | 3,190,251         | --                                       | 539,196          | 750,114          | 742,849          | 463,086          | 295,89          |
| Bay and magnolia           | 10,814            | --                                       | 2,080            | 2,699            | 2,948            | 3,087            | -               |
| Black cherry               | 17,791            | --                                       | 15,207           | 2,584            | --               | --               | -               |
| Black walnut               | 39,891            | --                                       | 10,875           | 9,938            | 11,585           | 4,500            | -               |
| Sycamore                   | 176,457           | --                                       | 12,045           | 22,837           | 41,785           | 35,282           | 13,80           |
| Black locust               | 103,049           | --                                       | 41,713           | 17,893           | 26,119           | 12,240           | -               |
| Elm                        | 71,621            | --                                       | 24,918           | 12,097           | 7,076            | 10,689           | 8,13            |
| Other eastern hardwoods    | 224,883           | --                                       | 60,563           | 68,396           | 40,294           | 18,078           | 22,65           |
| <b>Total hardwoods</b>     | <b>11,687,006</b> | <b>--</b>                                | <b>2,324,561</b> | <b>2,522,492</b> | <b>2,291,372</b> | <b>1,650,254</b> | <b>1,153,01</b> |
| <b>All species</b>         | <b>16,236,296</b> | <b>1,675,346</b>                         | <b>3,663,933</b> | <b>3,294,477</b> | <b>2,644,303</b> | <b>1,826,362</b> | <b>1,280,01</b> |

Table 37--Volume of sawtimber on timberland, by species, size class, and tree grade, Southern Piedmont of Virginia, 1991

| Species                       | All size classes  |                  |                  |                  |                  | Trees 15.0 inches d.b.h. and larger |                  |                  |                  |                |
|-------------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------------------------|------------------|------------------|------------------|----------------|
|                               | All grades        | Tree grade       |                  |                  |                  | All grades                          | Tree grade       |                  |                  |                |
|                               |                   | 1                | 2                | 3                | 4                |                                     | 1                | 2                | 3                | 4              |
| Thousand board feet           |                   |                  |                  |                  |                  |                                     |                  |                  |                  |                |
| Softwood                      |                   |                  |                  |                  |                  |                                     |                  |                  |                  |                |
| Yellow pines <sup>a</sup>     | 4,219,733         | 428,232          | 809,514          | 2,981,987        | --               | 575,374                             | 184,412          | 125,689          | 265,273          | --             |
| Eastern white pineb           | 286,730           | 46,410           | 49,053           | 191,267          | --               | 176,612                             | 46,410           | 38,947           | 91,255           | --             |
| Spruce and firb               | --                | --               | --               | --               | --               | --                                  | --               | --               | --               | --             |
| Cypress <sup>c</sup>          | --                | --               | --               | --               | --               | --                                  | --               | --               | --               | --             |
| Other eastern softwoodsb      | 42,827            | --               | 2,584            | 38,287           | 1,956            | 10,601                              | --               | 2,584            | 8,017            | --             |
| <b>Total</b>                  | <b>4,549,290</b>  | <b>474,642</b>   | <b>861,151</b>   | <b>3,211,541</b> | <b>1,956</b>     | <b>762,587</b>                      | <b>230,822</b>   | <b>167,220</b>   | <b>364,545</b>   | <b>--</b>      |
| <b>Hardwood<sup>c</sup></b>   |                   |                  |                  |                  |                  |                                     |                  |                  |                  |                |
| Select white and red oaks     | 2,574,832         | 365,646          | 848,604          | 1,197,918        | 162,664          | 1,607,122                           | 365,646          | 654,487          | 525,376          | 61,613         |
| Other white and red oaks      | 2,417,372         | 297,145          | 689,637          | 1,073,155        | 357,435          | 1,508,130                           | 297,145          | 594,884          | 468,282          | 147,819        |
| Hickory                       | 819,026           | 66,770           | 237,092          | 459,145          | 56,019           | 425,416                             | 66,770           | 183,550          | 153,778          | 21,318         |
| Yellow birch                  | --                | --               | --               | --               | --               | --                                  | --               | --               | --               | --             |
| Hard maple                    | 4,090             | --               | --               | 4,090            | --               | 2,465                               | --               | --               | 2,465            | --             |
| Sweetgum                      | 656,434           | 100,230          | 276,830          | 247,132          | 32,242           | 340,487                             | 100,230          | 179,597          | 44,564           | 16,096         |
| Ash, walnut, and black cherry | 249,687           | 32,890           | 86,687           | 122,893          | 7,217            | 116,697                             | 32,890           | 63,443           | 20,364           | --             |
| Yellow-poplar                 | 3,190,251         | 571,921          | 1,202,592        | 1,261,963        | 153,775          | 1,900,941                           | 571,921          | 808,791          | 470,266          | 49,963         |
| Other eastern hardwoods       | 1,775,314         | 64,066           | 364,620          | 981,270          | 365,358          | 938,695                             | 64,066           | 265,632          | 457,396          | 151,601        |
| <b>Total</b>                  | <b>11,687,006</b> | <b>1,498,668</b> | <b>3,706,062</b> | <b>5,347,566</b> | <b>1,134,710</b> | <b>6,839,953</b>                    | <b>1,498,668</b> | <b>2,750,384</b> | <b>2,142,491</b> | <b>448,410</b> |
| All species                   | 16,236,296        | 1,973,310        | 4,567,213        | 8,559,107        | 1,136,666        | 7,602,540                           | 1,729,490        | 2,917,604        | 2,507,036        | 448,410        |

<sup>a</sup>For yellow pines, tree grade is based on "Southern Pine Tree Grades for Yard and Structural Lumber," Research Paper SE-40, published by the Southeastern Forest Experiment Station, Asheville, NC, 1968. Tree grade 4 does not apply to yellow pine.

<sup>b</sup>For other softwoods (excluding cypress), tree grade is based on "Tree Grades for Eastern White Pine," Research Paper NE-214, published by the Northeastern Forest Experiment Station, Radnor, PA, 1971.

<sup>c</sup>For hardwoods and cypress, tree grades 1, 2, and 3 are based on "Hardwood Tree Grades for Factory Lumber," Research Paper NE-333, published by the Northeastern Forest Experiment Station, Radnor, PA, 1976. Grade 4 trees are sawtimber trees not qualifying as tree grades 1, 2, or 3. The butt log of these trees qualify as construction (tie and timber) logs based on "A Guide to Hardwood Log Grading (revised)," General Technical Report NE-1, published by the Northeastern Forest Experiment Station, Radnor, PA, 1971.

Table 38--Cubic volume in the merchantable saw-log portion of **sawtimber** trees on timberland, by **species** and diameter **class**, Southern Piedmont of Virginia, 1991

| 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 |
| <u>Thousand cubic feet</u> |                  |  |                |                |                |                |                |                |                 |
| <b>Softwood</b>            |                  |  |                |                |                |                |                |                |                 |
| Longleaf pine              | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Slash pine                 | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Shortleaf pine             | 208,771          | 66,441                                   | 67,758         | 42,384         | 23,829         | 5,213          | 3,146          | --             | --              |
| Loblolly pine              | 263,292          | 111,377                                  | 67,960         | 39,009         | 17,098         | 10,432         | 12,153         | 5,263          | --              |
| Pond pine                  | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Virginia pine              | 370,356          | 177,364                                  | 123,764        | 53,339         | 12,649         | 2,403          | --             | 837            | --              |
| Pitch pine                 | 11,640           | 1,640                                    | 3,486          | 2,394          | 2,264          | 921            | --             | 935            | --              |
| Table Mountain pine        | 2,339            | --                                       | 1,516          | 823            | --             | --             | --             | --             | --              |
| Spruce pine                | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Sand pine                  | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Eastern white pine         | 51,120           | 7,175                                    | 8,240          | 6,905          | 5,215          | 9,861          | 4,745          | 8,979          | --              |
| Eastern hemlock            | 1,977            | --                                       | 896            | --             | 486            | 595            | --             | --             | --              |
| Spruce and fir             | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Baldcypress                | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Pondcypress                | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Cedars                     | 6,068            | 2,892                                    | 1,177          | 1,237          | 762            | --             | --             | --             | --              |
| <b>Total softwoods</b>     | <b>915,563</b>   | <b>366,889</b>                           | <b>274,797</b> | <b>146,091</b> | <b>62,303</b>  | <b>29,425</b>  | <b>20,044</b>  | <b>16,014</b>  | <b>--</b>       |
| <b>Hardwood</b>            |                  |  |                |                |                |                |                |                |                 |
| Select white oaks          | 369,673          | --                                       | 84,864         | 78,538         | 82,096         | 49,798         | 27,464         | 40,842         | 6,071           |
| Select red oaks            | 135,301          | --                                       | 20,713         | 17,925         | 19,804         | 24,372         | 21,294         | 28,179         | 3,014           |
| Chestnut oak               | 181,278          | --                                       | 43,316         | 37,361         | 36,055         | 28,038         | 14,695         | 18,425         | 3,388           |
| Other white oaks           | 18,171           | --                                       | 5,269          | 4,230          | 2,844          | 2,737          | 1,559          | 689            | 843             |
| Other red oaks             | 272,254          | --                                       | 47,991         | 51,501         | 50,524         | 43,113         | 28,719         | 42,295         | 8,111           |
| Hickory                    | 158,363          | --                                       | 38,095         | 42,863         | 26,147         | 18,625         | 14,477         | 15,654         | 2,502           |
| Yellow birch               | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Hard maple                 | 831              | --                                       | 335            | --             | 496            | --             | --             | --             | --              |
| Soft maple                 | 146,277          | --                                       | 33,843         | 42,415         | 24,068         | 15,230         | 15,402         | 13,689         | 1,630           |
| Beech                      | 64,858           | --                                       | 8,418          | 15,276         | 11,208         | 10,939         | 10,100         | 7,936          | 981             |
| Sweetgum                   | 119,766          | --                                       | 32,150         | 29,415         | 14,209         | 14,092         | 12,946         | 13,261         | 3,693           |
| Tupelo and blackgum        | 29,053           | --                                       | 11,405         | 6,950          | 6,423          | 1,289          | 611            | 2,375          | --              |
| Ash                        | 38,411           | --                                       | 10,746         | 9,285          | 8,158          | 2,091          | 2,524          | 4,716          | 891             |
| Cottonwood                 | --               | --                                       | --             | --             | --             | --             | --             | --             | --              |
| Basswood                   | 2,619            | --                                       | 646            | 356            | --             | 778            | 839            | --             | --              |
| Yellow-poplar              | 571,881          | --                                       | 104,510        | 141,798        | 134,200        | 79,907         | 49,096         | 60,059         | 2,311           |
| Bay and magnolia           | 2,202            | --                                       | 434            | 563            | 604            | 601            | --             | --             | --              |
| Black cherry               | 3,690            | --                                       | 3,167          | 523            | --             | --             | --             | --             | --              |
| Black walnut               | 8,630            | --                                       | 2,252          | 2,191          | 2,567          | 990            | --             | 630            | --              |
| Sycamore                   | 33,213           | --                                       | 2,437          | 4,622          | 8,234          | 6,638          | 2,521          | 8,025          | 736             |
| Black locust               | 21,658           | --                                       | 8,192          | 3,848          | 5,767          | 2,723          | --             | 1,128          | --              |
| Elm                        | 14,136           | --                                       | 5,115          | 2,478          | 1,394          | 2,059          | 1,515          | 1,575          | --              |
| Other eastern hardwoods    | 45,595           | --                                       | 11,933         | 14,196         | 8,280          | 3,723          | 4,434          | 3,029          | --              |
| <b>Total hardwoods</b>     | <b>2,237,860</b> | <b>--</b>                                | <b>475,831</b> | <b>506,354</b> | <b>443,079</b> | <b>297,742</b> | <b>208,496</b> | <b>262,507</b> | <b>34,171</b>   |
| <b>All species</b>         | <b>3,153,423</b> | <b>366,889</b>                           | <b>750,628</b> | <b>652,425</b> | <b>505,381</b> | <b>337,168</b> | <b>228,240</b> | <b>278,521</b> | <b>34,171</b>   |

Table 39--Total volume of live trees on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| Species                 | All classes      | Diameter class (inches at breast height) |                |                  |                  |                  |                  |                |                |                |                |                |                    |
|-------------------------|------------------|--|----------------|------------------|------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|--------------------|
|                         |                  | 1.0-<br>2.9                              | 3.0-<br>4.9    | 5.0-<br>6.9      | 7.0-<br>a.9      | 9.0-<br>10.9     | 11.0-<br>12.9    | 13.0-<br>14.9  | 15.0-<br>16.9  | 17.0-<br>18.9  | 19.0-<br>20.9  | 21.0-<br>28.9  | 29.0 and<br>larger |
| Thousand cubic feet     |                  |  |                |                  |                  |                  |                  |                |                |                |                |                |                    |
| <b>Softwood</b>         |                  |  |                |                  |                  |                  |                  |                |                |                |                |                |                    |
| Longleaf pine           | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Slash pine              | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Shortleaf pine          | 430,654          | 3,241                                    | 17,064         | 55,862           | 85,118           | 96,504           | 85,444           | 50,323         | 27,597         | 5,938          | 3,563          | --             |                    |
| Loblolly pine           | 859,419          | 13,933                                   | 65,999         | 178,653          | 246,348          | 168,444          | 87,107           | 46,769         | 20,530         | 11,926         | 13,762         | 5,948          |                    |
| Pond pine               | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Virginia pine           | 1,138,071        | 31,153                                   | 113,527        | 207,098          | 280,374          | 258,625          | 160,394          | 66,388         | 15,910         | 3,622          | --             | 980            |                    |
| Pitch pine              | 20,128           | --                                       | 356            | --               | 3,808            | 2,306            | 4,557            | 4,181          | 2,729          | 1,098          | --             | 1,093          |                    |
| Table Mountain pine     | 2, a20           | 39                                       | --             | --               | --               | --               | 1,814            | 967            | --             | --             | --             | --             |                    |
| Spruce pine             | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Sand pine               | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Eastern white pine      | 88,090           | 2,441                                    | 5,159          | 5,930            | 9,771            | 10,925           | 10,829           | 8,584          | 6,342          | 11,854         | 5,653          | 10,602         |                    |
| Eastern hemlock         | 4,633            | 275                                      | 500            | 398              | 975              | --               | 1,174            | --             | 599            | 712            | --             | --             |                    |
| Spruce and fir          | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Baldcypress             | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Pondcypress             | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             |                    |
| Cedars                  | 73,123           | 15,448                                   | 23,785         | 16,259           | 7,937            | 4,366            | 2,817            | 1,565          | 946            | --             | --             | --             |                    |
| <b>Total softwoods</b>  | <b>2,616,938</b> | <b>66,530</b>                            | <b>226,390</b> | <b>464,200</b>   | <b>634,331</b>   | <b>541,170</b>   | <b>354,136</b>   | <b>178,777</b> | <b>74,653</b>  | <b>35,150</b>  | <b>22,970</b>  | <b>18,623</b>  | <b>--</b>          |
| <b>Hardwood</b>         |                  |  |                |                  |                  |                  |                  |                |                |                |                |                |                    |
| Select white oaks       | 932,151          | 15,434                                   | 39,244         | 78,270           | 90,185           | 144,983          | 151,975          | 119,211        | 115,754        | 70,242         | 37,874         | 57,272         | 11,707             |
| Select red oaks         | 290,503          | 7,376                                    | 15,541         | 19,744           | 18,763           | 25,271           | 36,683           | 28,633         | 29,081         | 34,684         | 29,780         | 39,989         | 4,958              |
| Chestnut oak            | 488,566          | 7,239                                    | 21,656         | 40,592           | 73,499           | 67,588           | 74,785           | 58,332         | 52,455         | 38,730         | 20,000         | 24,650         | 9,040              |
| Other white oaks        | 59,782           | 1,696                                    | 4,684          | 4,439            | 9,422            | 9,978            | 9,195            | 6,962          | 4,008          | 4,547          | 2,094          | 1,677          | 1,080              |
| Other red oaks          | 633,914          | 19,186                                   | 31,850         | 44,822           | 65,115           | 73,327           | 85,099           | 77,524         | 71,854         | 59,740         | 38,281         | 55,757         | 11,359             |
| Hickory                 | 457,650          | 15,448                                   | 29,890         | 45,204           | 52,252           | 81,180           | 66,036           | 63,123         | 36,315         | 24,830         | 18,896         | 21,332         | 3,144              |
| Yellow birch            | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             | --                 |
| Hard maple              | 5,002            | 151                                      | 1,133          | 613              | 585              | 626              | 931              | 279            | 684            | --             | --             | --             | --                 |
| Soft maple              | 697,692          | 78,378                                   | 94,725         | 94,300           | 91,821           | 79,770           | 74,816           | 70,492         | 37,414         | 23,230         | 25,076         | 23,550         | 4,120              |
| Beech                   | 148,551          | 6,363                                    | 5,687          | 5,644            | 12,329           | 14,402           | 14,893           | 23,634         | 17,327         | 15,479         | 14,119         | 17,373         | 1,301              |
| <b>Sweetgum</b>         | <b>385,917</b>   | <b>28,337</b>                            | <b>42,542</b>  | <b>44,833</b>    | <b>43,518</b>    | <b>61,648</b>    | <b>52,482</b>    | <b>41,187</b>  | <b>18,219</b>  | <b>17,953</b>  | <b>15,494</b>  | <b>15,476</b>  | <b>4,228</b>       |
| Tupelo and blackgum     | 145,317          | 21,816                                   | 18,092         | 14,438           | 20,696           | 22,941           | 19,554           | 10,337         | 9,634          | 1,700          | 782            | 5,327          | --                 |
| Ash                     | 123,425          | 4,389                                    | 7,717          | 20,908           | 15,712           | 16,336           | 20,517           | 13,451         | 10,639         | 2,621          | 4,463          | 5,639          | 1,033              |
| cottonwood              | --               | --                                       | --             | --               | --               | --               | --               | --             | --             | --             | --             | --             | --                 |
| Basswood                | 5,671            | --                                       | 328            | 833              | --               | 389              | 948              | 504            | --             | 990            | 1,031          | 648            | --                 |
| Yellow-poplar           | 1,159,615        | 26,061                                   | 50,237         | 71,537           | 93,501           | 133,526          | 173,107          | 195,187        | 170,825        | 98,726         | 59,801         | 71,703         | 7,404              |
| Bay and magnolia        | 13,309           | 646                                      | 315            | 536              | 3,379            | 3,908            | 1,546            | 791            | 1,428          | 760            | --             | --             | --                 |
| Black cherry            | 39,803           | 14,874                                   | 8,494          | 5,003            | 3,980            | 481              | 5,502            | 754            | --             | --             | --             | 715            | --                 |
| Black walnut            | 23,354           | 106                                      | 492            | 1,956            | 3,963            | 3,481            | 3,918            | 3,282          | 3,968          | 1,370          | --             | 818            | --                 |
| Sycamore                | 73,669           | 1,084                                    | 3,991          | 5,286            | 7,424            | 7,489            | 4,305            | 6,942          | 11,710         | 9,700          | 3,236          | 11,615         | 887                |
| Black locust            | 75,671           | 3,542                                    | 1,640          | 5,948            | 7,102            | 15,197           | 17,090           | 6,479          | 10,332         | 5,190          | 1,005          | 2,146          | --                 |
| Elm                     | 57,046           | 3,955                                    | 7,469          | 10,744           | 3,960            | 9,572            | 8,670            | 3,650          | 2,278          | 2,751          | 1,976          | 2,021          | --                 |
| Other eastern hardwoods | 500,079          | 103,204                                  | 106,147        | 89,415           | 60,133           | 46,471           | 34,842           | 28,020         | 14,412         | 6,815          | 6,655          | 3,965          | --                 |
| <b>Total hardwoods</b>  | <b>6,316,687</b> | <b>359,285</b>                           | <b>499,874</b> | <b>605,065</b>   | <b>677,339</b>   | <b>818,564</b>   | <b>856,894</b>   | <b>758,774</b> | <b>618,337</b> | <b>420,058</b> | <b>280,563</b> | <b>361,673</b> | <b>60,261</b>      |
| <b>All species</b>      | <b>8,933,625</b> | <b>425,815</b>                           | <b>726,264</b> | <b>1,069,265</b> | <b>1,311,670</b> | <b>1,135,734</b> | <b>1,211,030</b> | <b>937,551</b> | <b>692,990</b> | <b>455,208</b> | <b>303,541</b> | <b>380,296</b> | <b>60,261</b>      |

Table 40—Green weight of forest biomass on timberland, by species and diameter class, Southern Piedmont of Virginia, 1991

| Species                        | All classes      | Diameter class (inches at breast height) |                |                |                |                  |                |                |                |                |                |                |               |
|--------------------------------|------------------|--|----------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|
|                                |                  | 1.0-                                     | 3.0-           | 5.0-           | 7.0-           | 9.0-             | 11.0-          | 13.0-          | 15.0-          | 17.0-          | 19.0-          | 21.0-          | 29.0 and      |
|                                |                  | 2.9                                      | 4.9            | 6.9            | a.9            | 10.9             | 12.9           | 14.9           | 16.9           | 1a.9           | 20.9           | 28.9           | larger        |
| <b>Hundred thousand pounds</b> |                  |  |                |                |                |                  |                |                |                |                |                |                |               |
| <b>Softwood</b>                |                  |  |                |                |                |                  |                |                |                |                |                |                |               |
| Longleaf pine                  | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Slash pine                     | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Shortleaf pine                 | 294,827          | 1,855                                    | 10,335         | 33,322         | 57,755         | <b>67,863</b>    | 60,921         | 36,098         | 19,814         | 4,318          | 2,546          | --             | --            |
| Loblolly pine                  | 616,710          | 7,278                                    | 39,054         | 127,919        | <b>181,388</b> | 124,325          | 63,966         | 34,391         | 15,137         | 8,753          | 10,169         | 4,330          | --            |
| Pond pine                      | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Virginia pine                  | 848,242          | 27,070                                   | 92,227         | 154,336        | 205,379        | 188,820          | 117,108        | 48,353         | 11,600         | 2,646          | --             | 703            | --            |
| Pitch pine                     | 13,520           | --                                       | 329            | --             | 2,587          | 1,548            | 3,036          | 2,851          | 1,773          | 706            | --             | 690            | --            |
| Table Mountain pine            | 1,798            | 26                                       | --             | --             | --             | --               | 1,152          | 620            | --             | --             | --             | --             | --            |
| Spruce pine                    | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Sand pine                      | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Eastern white pine             | 56,244           | 985                                      | 2,353          | 3,957          | 6,744          | 7,556            | 7,445          | 5,828          | 4,130          | 7,519          | 3,426          | 6,301          | --            |
| Eastern hemlock                | 3,710            | 171                                      | 321            | 329            | 869            | --               | 985            | --             | 509            | 526            | --             | --             | --            |
| Spruce and fir                 | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Baldcypress                    | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Pondcypress                    | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Cedars                         | 48,540           | 9,275                                    | 15,108         | 11,207         | 5,854          | 3,164            | 2,167          | 1,111          | 654            | --             | --             | --             | --            |
| <b>Total softwoods</b>         | <b>1,883,591</b> | <b>46,660</b>                            | <b>159,727</b> | <b>331,070</b> | <b>460,576</b> | <b>393,276</b>   | <b>256,780</b> | <b>129,252</b> | <b>53,617</b>  | <b>24,468</b>  | <b>16,141</b>  | <b>12,024</b>  | --            |
| <b>Hardwood</b>                |                  |  |                |                |                |                  |                |                |                |                |                |                |               |
| Select white oaks              | 744,891          | 11,943                                   | 29,113         | 55,794         | 69,949         | 115,051          | 122,739        | 97,119         | 94,949         | 58,063         | 31,463         | 48,617         | 10,091        |
| Select red oaks                | 233,835          | 6,176                                    | 11,563         | 14,541         | 15,361         | 20,738           | 30,083         | 23,418         | 23,844         | 28,022         | 23,959         | 32,111         | 4,019         |
| Chestnut oak                   | 381,961          | 6,639                                    | 16,875         | 29,043         | 55,408         | 52,180           | 58,998         | 46,278         | 41,938         | 30,894         | 16,095         | 19,879         | 7,734         |
| Other white oaks               | 47,134           | 1,164                                    | 3,224          | 3,159          | 7,319          | 7,842            | 7,367          | 5,730          | 3,288          | 3,849          | 1,767          | 1,449          | 976           |
| Other red oaks                 | 531,878          | 14,548                                   | 23,792         | 32,049         | 54,838         | 61,110           | 72,343         | 66,040         | 61,412         | 51,943         | 33,300         | 49,913         | 10,590        |
| Hickory                        | 363,376          | 13,367                                   | 26,203         | 30,304         | 39,264         | 62,754           | 52,347         | 51,013         | 29,910         | 20,762         | 15,910         | 18,618         | 2,924         |
| Yellow birch                   | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Hard maple                     | 4,382            | 118                                      | <b>938</b>     | 477            | 510            | 564              | 866            | 244            | 665            | --             | --             | --             | --            |
| Soft maple                     | 509,037          | 59,500                                   | 67,375         | 64,528         | 69,044         | 58,258           | 55,761         | 52,397         | 27,351         | 17,032         | 18,088         | 16,794         | 2,909         |
| Beech                          | 119,579          | 5,287                                    | 4,792          | 3,398          | 8,890          | 11,528           | 11,904         | 19,178         | 14,438         | 12,656         | 11,746         | 14,695         | 1,067         |
| <b>Sweetgum</b>                | <b>274,219</b>   | <b>1a,995</b>                            | <b>28,332</b>  | <b>28,796</b>  | <b>30,461</b>  | <b>44,061</b>    | <b>38,113</b>  | <b>30,728</b>  | <b>13,618</b>  | <b>13,717</b>  | <b>11,823</b>  | <b>12,110</b>  | <b>3,465</b>  |
| Tupelo and blackgum            | 98,197           | 16,969                                   | 13,413         | 7,899          | 12,970         | 14,526           | 12,974         | 7,027          | 6,712          | 1,220          | 570            | 3,917          | --            |
| Ash                            | 78,329           | 2,579                                    | <b>4,819</b>   | 15,146         | 11,054         | 10,346           | 12,698         | 8,079          | 6,072          | 1,503          | 2,526          | 3,011          | 496           |
| Cottonwood                     | --               | --                                       | --             | --             | --             | --               | --             | --             | --             | --             | --             | --             | --            |
| Basswood                       | 4,013            | --                                       | 227            | 536            | --             | 329              | 619            | 392            | --             | 67a            | 731            | 501            | --            |
| Yellow-poplar                  | all,678          | 19,263                                   | 38,381         | 43,602         | 62,907         | 92,212           | 121,198        | 138,772        | 122,403        | 71,547         | 43,406         | 52,492         | 5,495         |
| Bay and magnolia               | 8,231            | 390                                      | 199            | 336            | 2,121          | 2,358            | 953            | 493            | 896            | 485            | --             | --             | --            |
| Black cherry                   | 23,152           | 7,144                                    | 5,663          | 2,737          | 2,536          | 341              | 3,680          | 518            | --             | --             | --             | 533            | --            |
| Black walnut                   | 20,285           | 67                                       | 420            | 1,686          | 3,273          | 3,039            | 3,347          | 2,831          | 3,578          | 1,272          | --             | 772            | --            |
| Sycamore                       | 51,201           | 761                                      | 2,737          | 2,345          | 4,353          | 4,627            | 2,977          | 4,987          | 8,657          | 7,244          | 2,426          | 9,329          | 758           |
| Black locust                   | 73,657           | 2,922                                    | 1,386          | 5,314          | 6,796          | 15,240           | 16,644         | 6,339          | 10,383         | 5,359          | 1,052          | 2,222          | --            |
| Elm                            | 36,108           | 2,873                                    | 5,178          | 5,889          | 2,563          | 5,685            | 5,513          | 2,341          | 1,515          | 1,863          | 1,313          | 1,375          | --            |
| Other eastern hardwoods        | 383,363          | 83,727                                   | 85,279         | 62,734         | 44,061         | 32,917           | 25,576         | 22,183         | 11,869         | 5,824          | 5,640          | 3,553          | --            |
| <b>Total hardwoods</b>         | <b>4,798,506</b> | <b>274,432</b>                           | <b>369,909</b> | <b>410,313</b> | <b>503,678</b> | <b>615,706</b>   | <b>656,700</b> | <b>586,107</b> | <b>483,498</b> | <b>333,933</b> | <b>221,815</b> | <b>291,891</b> | <b>50,524</b> |
| <b>All species</b>             | <b>6,682,097</b> | <b>321,092</b>                           | <b>529,636</b> | <b>741,383</b> | <b>964,254</b> | <b>1,008,982</b> | <b>913,480</b> | <b>715,359</b> | <b>537,115</b> | <b>358,401</b> | <b>237,956</b> | <b>303,915</b> | <b>50,524</b> |

Table 41--Average net annual growth and removals of live timber and growing stock on timberland, by species, Southern Piedmont of Virginia, 1985-1990

| Species                       | Live timber <sup>a</sup>   |                        | Growing stock     |                        |
|-------------------------------|----------------------------|------------------------|-------------------|------------------------|
|                               | Net annual growth          | Annual timber removals | Net annual growth | Annual timber removals |
|                               | <u>Thousand cubic feet</u> |                        |                   |                        |
| <b>Softwood</b>               |                            |                        |                   |                        |
| Yellow pines                  | 102,176                    | 74,173                 | 101,677           | 73,294                 |
| Eastern white pine            | 2,801                      | 2,344                  | 2,773             | 2,344                  |
| Spruce and fir                | --                         | ^                      | --                | --                     |
| Cypress                       | --                         | --                     | --                | --                     |
| Other eastern softwoods       | 1,508                      | 548                    | 1,411             | 548                    |
| <b>Total softwoods</b>        | <b>106,485</b>             | <b>77,065</b>          | <b>105,861</b>    | <b>76,186</b>          |
| <b>Hardwood</b>               |                            |                        |                   |                        |
| Select white and red oaks     | 29,630                     | 21,884                 | 29,285            | 21,806                 |
| Other white and red oaks      | <b>29,932</b>              | 19,741                 | <b>29,589</b>     | 18,790                 |
| Hickory                       | 9,058                      | 5,878                  | 8,941             | 5,642                  |
| Yellow birch                  | --                         | --                     | --                | --                     |
| Hard maple                    | 182                        | --                     | 182               | --                     |
| <b>Sweetgum</b>               | 8,778                      | 6,677                  | 8,534             | 6,454                  |
| Ash, walnut, and black cherry | 3,619                      | 1,767                  | 3,313             | 1,620                  |
| Yellow-poplar                 | 36,772                     | 22,876                 | 36,490            | 22,413                 |
| Tupelo and <b>blackgum</b>    | 1,671                      | 1,401                  | 1,558             | 1,401                  |
| Bay and magnolia              | 314                        | --                     | 285               | --                     |
| Other eastern hardwoods       | 26,032                     | 15,375                 | 22,399            | 11,599                 |
| <b>Total hardwoods</b>        | <b>145,988</b>             | <b>95,599</b>          | <b>140,576</b>    | <b>89,725</b>          |
| <b>All species</b>            | <b>252,473</b>             | <b>172,664</b>         | <b>246,437</b>    | <b>165,911</b>         |

<sup>a</sup>Merchantable portion only.

Table 42--Average net annual growth and removals of sawtimber on timberland, by species, Southern Piedmont of Virginia, 1985-1990

| Species                          | Net<br>annual growth       | Annual<br>timber removals |
|----------------------------------|----------------------------|---------------------------|
|                                  | <u>Thousand board feet</u> |                           |
| Softwood                         |                            |                           |
| Yellow pines                     | 292,866                    | 190,713                   |
| Eastern white pine               | 13,073                     | 10,826                    |
| Spruce and fir                   | --                         | --                        |
| Cypress                          | --                         | --                        |
| Other eastern softwoods          | 1,991                      | 1,113                     |
|                                  | <b>307.930</b>             | 202.652                   |
| Hardwood                         |                            |                           |
| Select white and<br>red oaks     | 131,381                    | <b>66,936</b>             |
| Other white and<br>red oaks      | 107,423                    | 64,741                    |
| Hickory                          | 37,525                     | 18,538                    |
| Yellow birch                     | --                         | --                        |
| Hard maple                       | 139                        | --                        |
| <b>Sweetgum</b>                  | 28,016                     | 17,338                    |
| Ash, walnut, and<br>black cherry | 11,102                     | 3,446                     |
| Yellow-poplar                    | 169,882                    | 87,351                    |
| Tupelo and <b>blackgum</b>       | 3,515                      | 2,383                     |
| Bay and magnolia                 | 478                        | --                        |
| Other eastern hardwoods          | 73,831                     | 28,733                    |
|                                  | 563,292                    | 289,466                   |
| All species                      | 871,222                    | 492,118                   |

Table 43—Average annual removals of growing stock on timberland, by species and diameter class, Southern Piedmont of Virginia, 1985-1990

| 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 |
| <u>Thousand cubic feet</u>    |               |  |               |               |               |               |               |              |              |              |                 |
| Softwood                      |               |  |               |               |               |               |               |              |              |              |                 |
| Yellow pines                  | 73,294        | 10,914                                   | 18,841        | 17,516        | 13,570        | 6,573         | 3,515         | 1,875        | 342          | 148          | --              |
| Eastern white pine            | 2,344         | 76                                       | 241           | 184           | 448           | 134           | --            | 433          | 413          | 415          | --              |
| Spruce and fir                | --            | --                                       | --            | --            | --            | --            | --            | --           | --           | --           | --              |
| Cypress                       | --            | --                                       | --            | --            | --            | --            | --            | --           | --           | --           | --              |
| Other eastern softwoods       | 548           | 163                                      | 105           | <b>280</b>    | --            | --            | --            | --           | --           | --           | --              |
| Total softwoods               | <u>76,186</u> | <u>11,153</u>                            | <u>19,187</u> | <u>17,980</u> | <u>14,018</u> | <u>6,707</u>  | <u>3,515</u>  | <u>2,308</u> | <u>755</u>   | <u>563</u>   | <u>--</u>       |
| Hardwood                      |               |  |               |               |               |               |               |              |              |              |                 |
| Select white and red oaks     | 21,806        | 1,415                                    | 2,380         | 2,465         | 3,467         | 3,568         | 2,251         | 2,069        | 1,562        | 2,429        | 200             |
| Other white and red oaks      | 18,790        | 544                                      | 1,765         | 1,539         | 3,172         | 2,881         | 3,581         | 1,875        | 941          | 2,350        | 142             |
| Hickory                       | 5,642         | 594                                      | 493           | 319           | 1,013         | 1,048         | 683           | 677          | 344          | 471          | --              |
| Yellow birch                  | --            | --                                       | --            | --            | --            | --            | --            | --           | --           | --           | --              |
| Hard maple                    | --            | --                                       | --            | --            | --            | --            | --            | --           | --           | --           | --              |
| <b>Sweetgum</b>               | 6,454         | 741                                      | 810           | 1,034         | 1,319         | 1,048         | 596           | 244          | 145          | 517          | --              |
| Ash, walnut, and black cherry | 1,620         | 191                                      | 325           | 153           | 488           | 330           | --            | 133          | --           | --           | --              |
| Yellow-poplar                 | 22,413        | 1,502                                    | 1,236         | 1,393         | 3,633         | 4,369         | 3,635         | 2,672        | 2,165        | 1,808        | --              |
| Tupelo and <b>blackgum</b>    | 1,401         | 103                                      | 218           | 441           | 234           | 149           | 256           | --           | --           | --           | --              |
| Bay and magnolia              | --            | --                                       | --            | --            | --            | --            | --            | --           | --           | --           | --              |
| Other eastern hardwoods       | 11,599        | 1,017                                    | 1,783         | 1,875         | 1,321         | 1,396         | 1,385         | 718          | 591          | 1,361        | 152             |
| Total hardwoods               | <u>89,725</u> | <u>6,107</u>                             | <u>9,010</u>  | <u>9,219</u>  | <u>14,647</u> | <u>14,789</u> | <u>12,387</u> | <u>8,388</u> | <u>5,748</u> | <u>8,936</u> | <u>494</u>      |
| All species                   | 165,911       | 17,260                                   | 28,197        | 27,199        | 28,665        | 21,496        | 15,902        | 10,696       | 6,503        | 9,499        | 494             |

Table 44--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, Southern Piedmont of Virginia, 1985-1990

| Species                       | Live <b>timber</b> <sup>a</sup> | Growing stock | Sawtimber                  |
|-------------------------------|---------------------------------|---------------|----------------------------|
|                               | <u>Thousand cubic feet</u>      |               | <u>Thousand board feet</u> |
| Softwood                      |                                 |               |                            |
| Yellow pines                  | 14,073                          | 13,627        | 28,476                     |
| Eastern white pine            | 136                             | 136           | 818                        |
| Spruce and fir                | --                              | --            | --                         |
| Cypress                       | --                              | --            | --                         |
| Other eastern softwoods       | 258                             | 148           | --                         |
|                               |                                 |               |                            |
| Total softwoods               | 14,467                          | 13,911        | 29,294                     |
|                               |                                 |               |                            |
| Hardwood                      |                                 |               |                            |
| Select white and red oaks     | 3,227                           | 2,691         | 7,409                      |
| Other white and red oaks      | 9,078                           | 8,485         | 16,881                     |
| Hickory                       | 1,300                           | 1,218         | 3,038                      |
| Yellow birch                  | --                              | --            | --                         |
| Hard maple                    | --                              | --            | --                         |
| <b>Sweetgum</b>               | 1,010                           | 843           | 877                        |
| Ash, walnut, and black cherry | 1,091                           | 804           | --                         |
| Yellow-poplar                 | 1,553                           | 1,413         | 3,207                      |
| Tupelo and <b>blackgum</b>    | 358                             | --            | --                         |
| Bay and magnolia              | --                              | --            | --                         |
| Other eastern hardwoods       | 7,884                           | 4,036         | 7,266                      |
|                               |                                 |               |                            |
| Total hardwoods               | 25,501                          | 19,490        | 38,678                     |
|                               |                                 |               |                            |
| All species                   | 39,968                          | 33,401        | 67,972                     |

<sup>a</sup>Merchantable portion only.

Table 45--Change in number of live trees on timberland, by species group, survey completion date, and diameter class, Southern Piedmont of Virginia

| Species group<br>and<br>year | All<br>classes | Diameter class (inches at breast height) |             |             |             |              |               |               |                    |
|------------------------------|----------------|--|-------------|-------------|-------------|--------------|---------------|---------------|--------------------|
|                              |                | 1.0-<br>2.9                              | 3.0-<br>4.9 | 5.0-<br>6.9 | 7.0-<br>8.9 | 9.0-<br>10.9 | 11.0-<br>12.9 | 13.0-<br>14.9 | 15.0 and<br>larger |
| <u>Thousand trees</u>        |                |  |             |             |             |              |               |               |                    |
| Yellow pine                  |                |  |             |             |             |              |               |               |                    |
| 1985                         | 586,903        | 209,028                                  | 152,037     | 109,697     | 64,371      | 33,318       | 12,301        | 4,281         | 1,870              |
| 1991                         | 602,639        | 203,322                                  | 163,572     | 106,950     | 72,411      | 34,810       | 14,460        | 4,960         | 2,154              |
| Change                       | +15,736        | -5,706                                   | +11,535     | -2,747      | +8,040      | +1,492       | +2,159        | +679          | +284               |
| Other softwood               |                |  |             |             |             |              |               |               |                    |
| 1985                         | 118,265        | 81,839                                   | 25,516      | 4,960       | 2,983       | 1,656        | 367           | 342           | 602                |
| 1991                         | 117,302        | 80,696                                   | 24,947      | 5,973       | 2,580       | 1,281        | 854           | 368           | 603                |
| Change                       | -963           | -1,143                                   | -569        | +1,013      | -403        | -375         | +487          | +26           | +1                 |
| Hardwood                     |                |  |             |             |             |              |               |               |                    |
| 1985                         | 2,330,327      | 1,558,965                                | 383,788     | 158,172     | 89,769      | 56,925       | 36,480        | 22,385        | 23,843             |
| 1991                         | 2,358,750      | 1,608,470                                | 371,320     | 153,225     | 82,479      | 55,621       | 37,426        | 22,559        | 27,650             |
| Change                       | +28,423        | +49,505                                  | -12,468     | -4,947      | -7,290      | -1,304       | +946          | +174          | +3,807             |

Table 46--Land area, by land use class, major forest type, and survey completion date, Southern Piedmont of Virginia

| Land use class               | Survey completion date |           |           | Change<br>1985-1991 |
|------------------------------|------------------------|-----------|-----------|---------------------|
|                              | 1976                   | 1985      | 1991      |                     |
|                              | <u>Acres</u>           |           |           |                     |
| Forest land                  |                        |           |           |                     |
| Timberland:                  |                        |           |           |                     |
| Pine and oak-pine types      | 1,520,338              | 1,463,021 | 1,516,470 | +53,449             |
| Hardwood types               | 2,258,054              | 2,320,589 | 2,261,801 | -58,788             |
| Total                        | 3,778,392              | 3,783,610 | 3,778,271 | -5,339              |
| Reserved timberland          | 18,039                 | 24,934    | 37,432    | +12,498             |
| Woodland                     | --                     | --        | --        | --                  |
| Total forest land            | 3,796,431              | 3,808,544 | 3,815,703 | +7,159              |
| Nonforest land               |                        |           |           |                     |
| <b>Cropland</b>              | 790,551                | 782,219   | 807,804   | +25,585             |
| Pasture and range            | 645,284                | 565,097   | 512,926   | -52,171             |
| Other                        | 345,696                | 406,553   | 436,274   | +29,721             |
| Total                        | 1,781,531              | 1,753,869 | 1,757,004 | +3,135              |
| All <b>land</b> <sup>a</sup> | 5,577,962              | 5,562,413 | 5,572,707 | +10,294             |

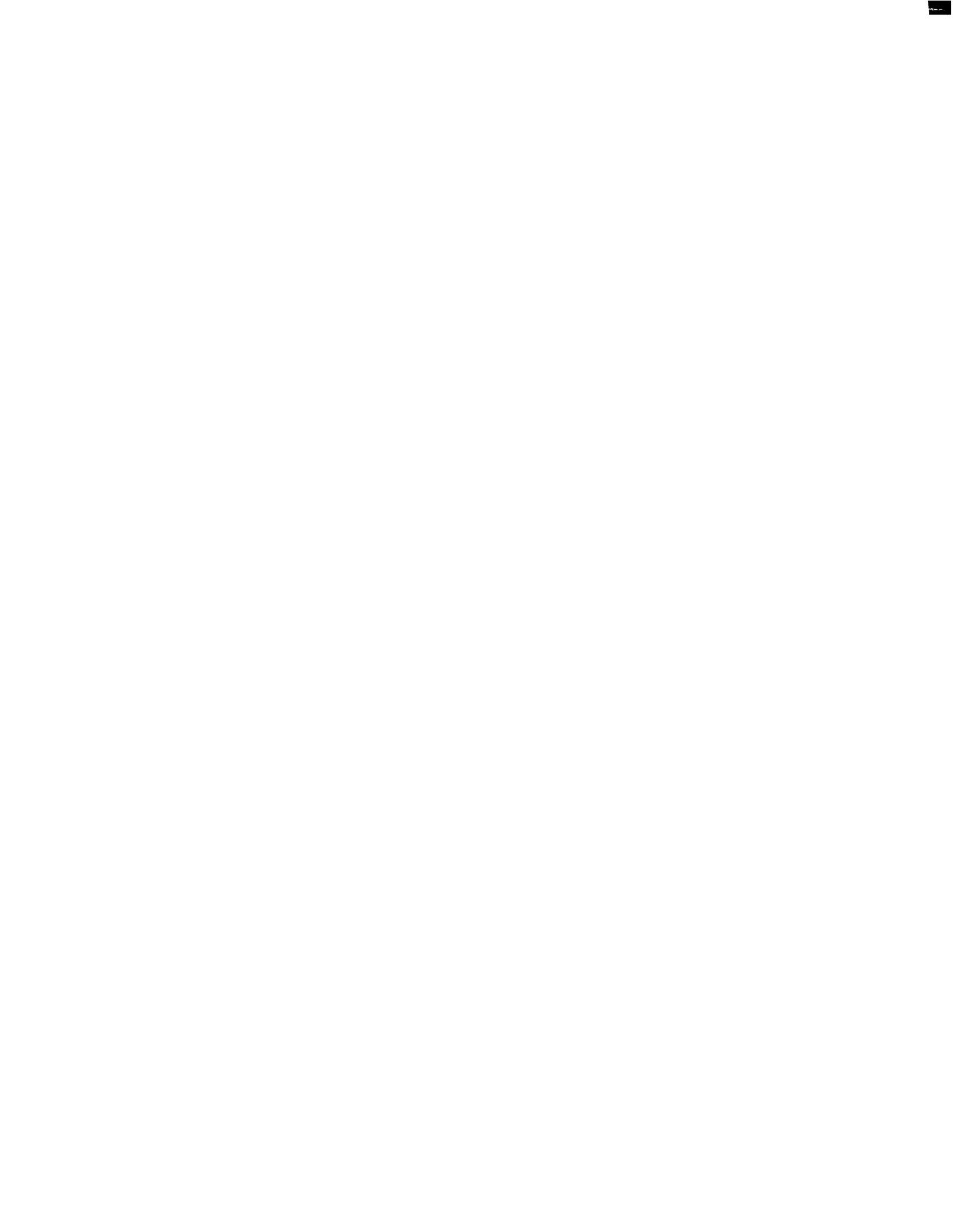
<sup>a</sup>Excludes all water areas.

Table 47--Volume<sup>a</sup> of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, Southern Piedmont of Virginia

| Species group and year                                  | 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 and larger |
| <b>SAWTIMBER (in thousand board feet)</b>               |             |  |         |           |           |           |           |           |           |                 |
| <b>Softwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 3,282,107   | --                                       | --      | 1,318,998 | 908,502   | 576,651   | 253,966   | 122,130   | 58,184    | 43,676          |
| 1985  | 3,908,571   | --                                       | --      | 1,573,048 | 1,067,737 | 635,660   | 330,222   | 154,628   | 50,273    | 67,003          |
| 1991  | 4,549,290   | --                                       | --      | 1,675,346 | 1,339,372 | 771,985   | 352,931   | 176,108   | 126,958   | 106,590         |
| <b>Hardwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 8,067,850   | --                                       | --      | --        | 1,950,746 | 2,002,650 | 1,517,366 | 1,029,046 | 617,796   | 950,246         |
| 1985  | 10,020,616  | --                                       | --      | --        | 2,209,951 | 2,392,797 | 1,917,872 | 1,356,933 | 830,956   | 1,312,107       |
| 1991  | 11,687,006  | --                                       | --      | --        | 2,324,561 | 2,522,492 | 2,291,372 | 1,650,254 | 1,153,058 | 1,745,269       |
| <b>GROWING STOCK (in thousand cubic feet)</b>           |             |  |         |           |           |           |           |           |           |                 |
| <b>Softwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 1,546,582   | 324,214                                  | 433,487 | 372,557   | 212,510   | 118,199   | 47,339    | 21,381    | 9,818     | 7,077           |
| 1985  | 1,729,785   | 327,585                                  | 464,773 | 444,356   | 249,739   | 130,302   | 61,555    | 27,071    | 13,546    | 10,858          |
| 1991  | 1,910,353   | 335,007                                  | 521,120 | 461,328   | 306,222   | 155,101   | 64,594    | 30,255    | 20,369    | 16,357          |
| <b>Hardwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 3,283,496   | 315,950                                  | 469,388 | 568,843   | 574,477   | 499,747   | 342,296   | 215,581   | 123,120   | 174,094         |
| 1985  | 3,798,588   | 325,918                                  | 488,241 | 613,598   | 650,752   | 597,155   | 432,644   | 284,264   | 165,616   | 240,400         |
| 1991  | 4,108,100   | 334,064                                  | 478,749 | 612,834   | 674,502   | 619,179   | 507,980   | 340,622   | 225,906   | 314,264         |
| <b>LIVE TIMBER<sup>b</sup> (in thousand cubic feet)</b> |             |  |         |           |           |           |           |           |           |                 |
| <b>Softwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 1,565,664   | 330,961                                  | 437,387 | 376,072   | 214,014   | 120,698   | 48,256    | 21,381    | 9,818     | 7,077           |
| 1985  | 1,750,313   | 333,869                                  | 469,325 | 448,383   | 251,464   | 133,064   | 62,733    | 27,071    | 13,546    | 10,858          |
| 1991  | 1,924,520   | 337,767                                  | 524,507 | 464,053   | 307,993   | 156,762   | 65,786    | 30,926    | 20,369    | 16,357          |
| <b>Hardwood</b>   |             |  |         |           |           |           |           |           |           |                 |
| 1976  | 3,624,188   | 413,290                                  | 543,298 | 617,195   | 619,167   | 520,783   | 354,156   | 226,594   | 128,517   | 201,188         |
| 1985  | 4,177,528   | 425,931                                  | 564,929 | 665,977   | 701,245   | 622,440   | 447,531   | 298,803   | 172,895   | 277,777         |
| 1991  | 4,421,238   | 416,252                                  | 533,179 | 667,551   | 709,918   | 635,634   | 519,314   | 352,281   | 235,271   | 351,838         |

<sup>a</sup>To provide a basis for valid comparisons, adjustments have been made to allow for differences in volume tables and sawtimber specifications used in previous surveys.

<sup>b</sup>Merchantable volume.



Johnson, Tony G. 1991. Forest statistics for the Southern Piedmont of Virginia, 1991. Resour. Bull. SE-124. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. 53 pp.

Since 1985, area of timberland in the Southern Piedmont of Virginia remained stable at 3.8 million acres. Nonindustrial private forest landowners control 82 percent of the timberland in this area. More than 61,000 acres were harvested annually, while 70,000 acres per year were regenerated by both artificial and natural means. Volume of hardwood growing stock increased 8 percent to 4.1 billion cubic feet. Volume of softwood growing stock increased more than 10 percent to 1.9 billion cubic feet. Net annual growth of hardwood growing stock increased 5 percent to 141 million cubic feet. Softwood growth increased nearly 59 percent to 106 million cubic feet. Annual removals of hardwood growing stock increased 9 percent to 90 million cubic feet; softwood removals were up 25 percent to 76 million cubic feet. Annual mortality of hardwood growing stock increased 36 percent to 19 million cubic feet, while annual softwood mortality was down 24 percent to 14 million cubic feet.

KEYWORDS: Timberland, forest ownership, timber volume, timber growth, timber removals.

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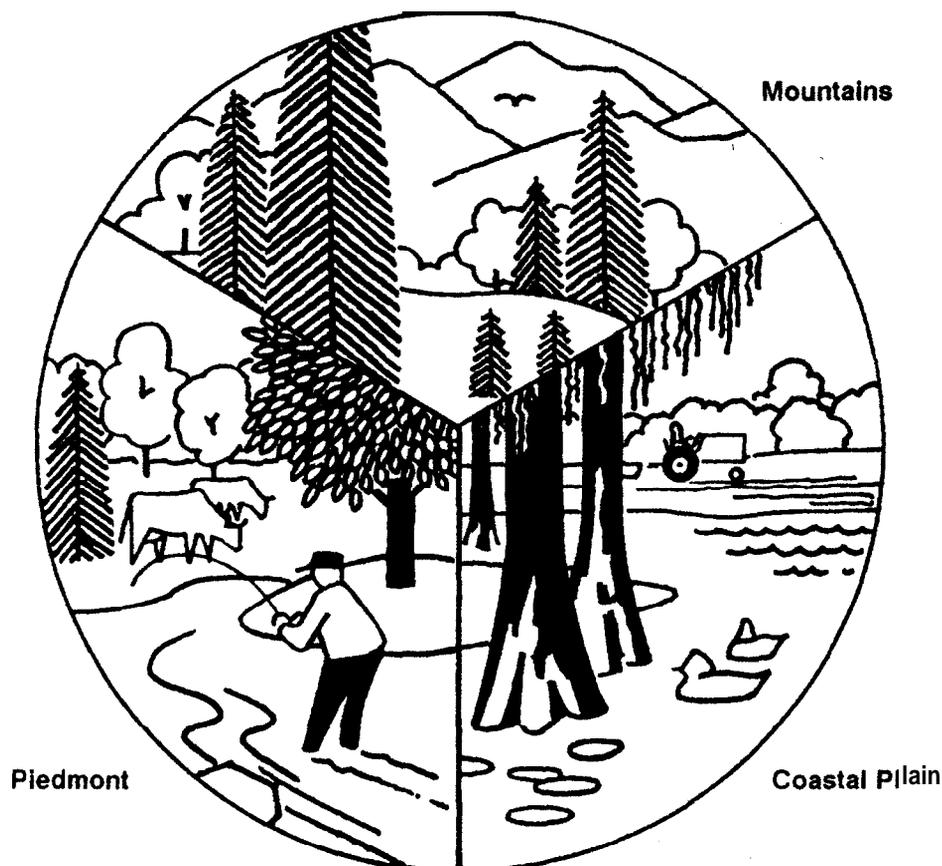






**The Forest Service, U.S. Department of Agriculture, is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives-as directed by Congress-to provide increasingly greater service to a growing Nation.**

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## Southeastern Forest Experiment Station

Established 1921

The Southeastern Forest Experiment Station, headquartered in Asheville, North Carolina, is one of the eight regional Experiment Stations, and the Forest Products Laboratory, that make up the Forest Service research organization.

### RESEARCH MISSION:

To acquire the knowledge, develop the technology, and disseminate the research findings required to manage the Southeast's forest resources in ways that satisfy demands of goods and services while maintaining a quality environment.

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### EXPERIMENTAL FORESTS:

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