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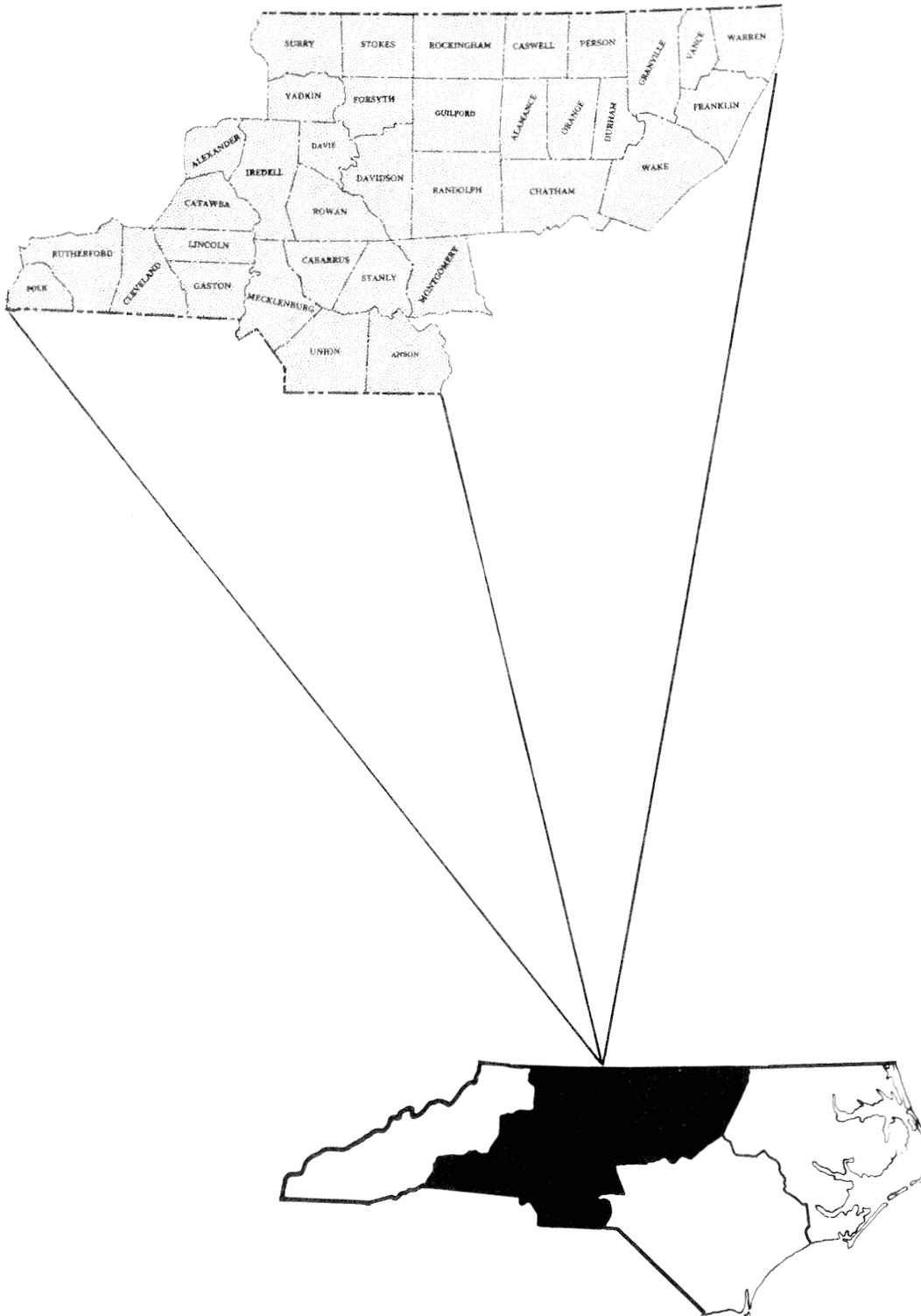


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# Forest Statistics for the Piedmont of North Carolina, 1984

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Southeastern Forest Experiment Station  
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**Forest Statistics for the  
Piedmont of North Carolina, 1984**

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## Foreword

This report highlights the principal findings of the fifth forest survey in the Piedmont of North Carolina. Fieldwork began in December 1983 and was completed in August 1984. Four previous surveys, completed in 1937, 1956, 1964, and 1975, provide statistics for measuring changes and trends over the past 47 years. The primary emphasis in this report is on the changes and trends since 1975. 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 Rangeland 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 Work 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 multi-resource 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 lands, associated timber volumes, and rates of timber growth and removals.

The 35-county area covered by this report is one of four survey units in North Carolina. Similar reports, USDA Forest Service Resource Bulletins SE-72 and SE-74 have been issued for the Southern Coastal Plain and Northern Coastal Plain of North Carolina, respectively. A comparable report for the Mountains of North Carolina will be issued upon final processing of collected data. When completed, this survey will provide updated statistics on the forest resource for all of North Carolina.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the North Carolina Forest Service of the State Department of Natural and Economic Resources 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.



JOE P. McCLURE  
Project Leader

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## Since 1975 in the Piedmont of North Carolina

■ area of commercial forest land declined by 513,000 acres, or almost 9 percent. Only 135,000 acres of new timberland were added, while 648,000 acres were diverted to other uses. Of the acres diverted, 44 percent was to urban and related uses, 38 percent was to agriculture, and the remaining 18 percent was to water and noncommercial forest. Commercial forests now occupy 5.5 million acres, or 53 percent of the land in this 35-county region.

■ area of nonindustrial private forest (NIPF) land decreased from more than 5.6 to 5.1 million acres, or 10 percent. Within the NIPF ownership, area of timberland owned by farmers declined by 1.1 million acres, while the area owned by other private individuals and corporations (other than forest industry) increased by 0.5 million acres. The other corporate ownership class was up by 25 percent and now totals almost 0.5 million acres. Acreage owned or leased by forest industry was up 19 percent, while the area of commercial forest in public ownership increased by 11 percent. In this region, NIPF ownerships still account for 92 percent of the timberland.

■ decreases in the acreage of pine and oak-pine forest types accounted for more than 80 percent of the net loss in timberland. The area with shortleaf pine type declined by more than 35 percent. The area of loblolly pine, the predominant softwood type in the region, increased by 5 percent. The proportion of total timberland occupied by hardwood types, excluding oak-pine, increased from 52 to 55 percent.

■ significant timber volume was removed from 105,000 acres of commercial forests each year, not including areas cleared to a nonforest land use. This rate reflects a 19 percent reduction compared with the previous remeasurement period. Final harvests occurred on about 77,000 acres annually; pine and oak-pine stands accounted for one-half this acreage. An additional 15,000 acres experienced selective cutting or high grading each year. The rate of commercial thinning averaged about 11,000 acres annually. Almost all the commercial thinning occurred in pine and oak-pine stands; selective cutting or high grading was concentrated in hardwood types.

■ acreage artificially regenerated with adequate stocking averaged 17,000 acres each year, up 44 percent over the previous remeasurement period. Nearly two-thirds of the artificial regeneration occurred on NIPF land. An additional 56,000 acres of

successful natural regeneration occurred each year. Across all owners and types, these statistics suggest the rate of regeneration averaged about 95 percent of the rate of final harvest. About 48 percent of the regeneration was to pine and oak-pine stands.

■ number of all live yellow pine trees declined up through the 8-inch diameter class. The decrease ranged from 51 percent in the 2-inch class down to 6 percent in the 8-inch class. Most of this decline in small pine trees occurred on NIPF lands. Except for the 2-inch class, there were sizable increases in the numbers of small pines on public and forest industry lands. The number of all live hardwood trees declined up through the 10-inch class. Again, most of the decline occurred on NIPF lands. The reduction in small pines on NIPF land is attributed to inadequate regeneration following harvest and a past slowdown in the rate of pine establishment. The reduction in small diameter hardwoods reflects an age distribution in hardwood stands skewed toward the older age classes.

■ average basal area of all live trees 5.0 inches d.b.h. and larger increased from 68 to 77 square feet per acre of commercial forest land. This increase in average stand density translates into a 16 percent increase in average volume per acre. Merchantable volume now averages 1,664 cubic feet per acre. About 95 percent of this volume is in growing-stock trees, and 38 percent is softwood.

■ volume of softwood growing stock remained about the same and now totals almost 3.5 billion cubic feet. A 43 percent increase in softwood volume on public land offset a 12 percent reduction on lands owned or leased by forest industry. There was little change on NIPF lands, which account for 91 percent of the softwood growing stock. Two of the three major softwood species increased in volume; the third decreased. Volume of loblolly pine and Virginia pine increased by 10 and 15 percent, respectively; volume of shortleaf pine was down 17 percent. The volume of softwood growing stock included 10.1 billion board feet of sawtimber, up 10 percent.

■ volume of hardwood growing stock increased from 4.8 to 5.3 billion cubic feet, or by 10 percent. Volume of hardwood on public and NIPF lands increased by 26 and 10 percent, respectively. There was little change on industry lands. NIPF lands account for 94 percent of the hardwood volume. Volume of yellow-poplar, the leading hardwood species, totaled 1.1 billion cubic feet, up 28 percent. Volume of select oaks

was up 10 percent, while the volume of other oaks was down by 3 percent. Red maple and sweetgum increased in volume, while hickory decreased. The volume of hardwood growing stock included 15.5 billion board feet of sawtimber, up 19 percent.

## In 1983

■ net annual growth of growing stock totaled 341 million cubic feet, down 19 percent from the previous survey. The net annual growth of softwood was down by a shocking 33 percent, while the net annual growth of hardwood was down by 6 percent. At least four factors contributed to the sharp decline in softwood growth: (1) the decline in pine acreage, (2) a 50 percent decrease in softwood ingrowth because of a past slowdown in pine regeneration, (3) a sharp increase in softwood mortality, and (4) an unexplained slowdown in tree diameter growth. When all species are grouped, net annual growth of growing stock per acre of commercial forest dropped from 70 to 62 cubic feet. The net annual growth of

growing stock included 1.4 billion board feet of sawtimber, about the same as in the previous survey.

■ annual removals of growing stock totaled 245 million cubic feet, down by less than 3 percent for both softwoods and hardwoods.

Although there was no increase in removals, the margin between net annual growth and removals of softwood narrowed significantly. In 1974, the net annual growth of softwood exceeded removals by 74 million cubic feet. In 1983, this margin had narrowed to less than 10 million cubic feet. The annual removals of growing stock in 1983 included almost 0.9 billion board feet of sawtimber, up 5 percent.

■ mortality of growing stock totaled 66 million cubic feet, up 45 percent from the previous survey. Softwoods accounted for 63 percent of the mortality. Insects accounted for 46 percent of the softwood mortality, and another 28 percent was attributed to suppression. About 44 percent of the hardwood mortality was attributed to disease. The annual mortality of growing stock included 125 million board feet of sawtimber, up 48 percent.

## 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 29,053 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 2,884 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 misclassifications.

2. Estimates of timber volume and forest classifications were based on measurements recorded at 1,605 ground sample locations systematically distributed within the commercial forest land. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, 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 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 on these standing trees required to construct volume equations.

4. Felled trees were measured at 29 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 using 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 1,275 permanent sample plots established in the fourth 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 on these lands.

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 commercial forest land . . . . .	0.96
Per billion cubic feet of growing stock . . . . .	5.38
Per billion cubic feet of net annual growth . . . . .	1.04
Per billion cubic feet of annual removals . . . . .	3.36

Sampling errors for county and unit totals,<sup>a</sup> in terms of one standard error, Piedmont of North Carolina, 1984

County	Commercial forest area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
		----- Sampling error <sup>b</sup> -----		
Alamance	2.90	9.58	9.37	43.63
Alexander	1.79	11.62	12.77	48.71
Anson	1.70	11.18	9.70	25.98
Cabarrus	3.07	14.77	17.58	53.81
Caswell	1.88	9.31	8.12	47.17
Catawba	3.53	16.32	14.82	47.74
Chatham	1.49	6.83	6.91	24.09
Cleveland	2.38	11.37	10.40	43.08
Davidson	2.53	11.81	10.58	26.78
Davie	3.32	15.57	14.26	69.06
Durham	2.87	10.76	12.28	52.95
Forsyth	3.59	10.17	9.76	56.50
Franklin	2.31	11.52	10.55	34.83
Gaston	3.25	12.10	12.28	40.15
Granville	1.79	9.27	8.52	25.33
Guilford	2.54	9.80	9.55	49.15
Iredell	2.67	13.42	13.74	27.61
Lincoln	2.63	15.06	14.32	52.52
Mecklenburg	2.99	10.82	12.51	36.92
Montgomery	1.38	7.74	7.10	28.73
Orange	2.40	9.97	9.82	43.78
Person	2.23	11.74	10.09	38.64
Polk	1.96	13.73	13.83	58.43
Randolph	1.38	8.19	7.62	26.24
Rockingham	1.75	8.35	8.73	41.71
Rowan	2.40	10.29	9.74	39.39
Rutherford	1.86	8.90	8.09	32.42
Stanly	3.37	14.80	14.53	38.16
Stokes	1.72	10.18	8.25	42.12
Surry	2.12	9.44	11.68	39.09
Union	3.41	11.38	10.29	45.84
Vance	3.00	13.61	13.01	50.08
Wake	2.52	7.68	7.39	25.57
Warren	1.76	10.46	9.49	43.94
Yadkin	2.86	14.14	14.22	70.78
Total	0.41	1.82	1.78	6.78

<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

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

**All live-tree volume.** Volume (cubic feet) of wood above the ground line in all 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.

**Allowable cut.** The volume of timber that could be cut on commercial forest land 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 all 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 commercial forest land 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.** 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.

**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., inclusive.

**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 himself 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 tropical. 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 either a log grade of 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 flood plains (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.

**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.** Commercial forest land at least 60 percent stocked with growing-stock trees that can be featured together under a management scheme.

**Merchantable portion.** That portion of all 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 all 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 forest land.** Forest land not considered commercial. Includes both unproductive forest land and productive-reserved forest land.

**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.** Commercial forest land 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 commercial forest.

**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.** All live trees at least 5.0 inches d.b.h. but smaller than sawtimber size.

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

**Quality class.** A classification of sawtimber volume by log or tree grades.

**Rangeland.** Land on which the natural vegetation is predominantly native grasses, grass-like plants, forbs, or shrubs valuable for forage, not qualifying as commercial forest and not developed for another land use. Rangeland includes natural grassland and savannah.

**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 all live trees of noncommercial species.

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

**Roundwood chipped.** Any timber cut primarily for pulpwood, delivered to nonpulpmills, chipped, and then sold to pulp mills as residues, including chipped tops, jump sections, whole trees and pulpwood sticks.

**Roundwood products.** Any primary product such as lumber, poles, pilings, pulp, or fuelwood 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 redcedar, 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 growing-stock trees in the stand.

Sawtimber stands. Stands at least 16.7 percent stocked with growing-stock 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 growing-stock 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 growing-stock 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.

**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.

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

**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.



Stocking Standard

D.b.h. class	Minimum number of trees per acre for full stocking	Minimum basal area per acre 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. class	All species	Pine	Other 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	76.5	76.7	85.2	76.4
14	78.8	79.4	88.2	78.4
16	80.3	81.6	90.4	79.8
18	81.3	83.3	92.3	80.8
20	82.0	84.8	93.8	81.5
22	82.5	86.0	95.1	82.1
24+	83.5	88.2	97.5	83.0
Average	73.8	72.3	78.7	74.6

Metric equivalents of units used in this report

1 acre = 4,046.86 square meters or 0.404686 hectares

1 cubic foot = 0.028317 cubic meters

1 inch = 2.54 centimeters or 0.0254 meters

Breast height = 1.4 meters above ground level

1 square foot = 929.03 square centimeters or 0.0929 square meters

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

1 pound = 0.454 kilograms

1 ton = 0.907 metric tons

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 4.

Table 1.--Area, by county and land class, Piedmont of North Carolina, 1984

County	All land <sup>a</sup>	Forest land			Nonforest land <sup>b</sup>
		Total	Commercial forest	Unproductive forest	
----- Acres -----					
Alamance	277,210	122,128	122,128	--	155,082
Alexander	165,530	106,855	106,848	--	58,675
Anson	341,210	225,612	225,612	--	115,598
Cabarrus	233,011	98,733	98,733	--	134,278
Caswell	273,606	166,954	166,954	--	106,652
Catawba	253,222	102,277	102,277	--	150,945
Chatham	439,090	301,224	301,223	--	137,866
Cleveland	299,642	132,555	132,555	--	167,087
Davidson	350,899	165,755	165,658	--	185,144
Davie	170,618	71,063	71,063	--	99,555
Durham	186,538	97,821	97,577	--	88,717
Forsyth	263,987	88,882	88,882	--	175,105
Franklin	316,403	178,596	178,596	--	137,807
Gaston	228,666	109,854	108,254	--	118,812
Granville	339,745	210,675	210,425	--	129,070
Guilford	416,493	156,589	156,449	--	259,904
Iredell	367,437	159,319	158,219	--	208,118
Lincoln	190,886	91,957	91,949	--	98,929
Mecklenburg	337,773	144,474	144,474	--	193,299
Montgomery	313,312	250,377	250,377	--	62,935
Orange	256,172	144,310	142,897	--	111,862
Person	252,533	138,329	138,329	--	114,204
Polk	152,512	113,960	113,960	--	38,552
Randolph	504,851	305,134	299,210	--	199,717
Rockingham	363,930	193,770	193,770	--	170,160
Rowan	332,173	142,508	142,508	--	189,665
Rutherford	363,277	256,952	256,952	--	106,325
Stanly	253,299	105,131	100,888	--	148,168
Stokes	289,305	170,352	164,189	--	118,953
Surry	345,178	174,605	169,717	--	170,573
Union	409,139	171,757	171,757	--	237,382
Vance	159,226	88,658	88,658	--	70,568
Wake	537,133	283,076	277,069	--	254,057
Warren	273,344	189,773	189,773	--	83,571
Yadkin	214,874	86,915	86,915	--	127,959
<b>Total</b>	<b>10,472,224</b>	<b>5,546,930</b>	<b>5,514,845</b>	<b>--</b>	<b>4,925,294</b>

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

<sup>b</sup>Includes 154,694 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2.--Area of commercial forest land, by county and ownership class, Piedmont of North Carolina, 1984

County	All ownerships	Ownership class											
		National Forest		Miscellaneous Federal		State		County and municipal		Forest industry <sup>a</sup>		Other private	
		Forest	Federal	State	County and municipal	Forest industry <sup>a</sup>	Farmer	Corporate	Individual				
Acres													
Alamance	122,128	--	--	197	1,275	1,914	46,871	6,250	65,621				
Alexander	106,848	--	--	7	--	6,509	45,605	4,561	50,166				
Anson	225,612	--	5,857	206	429	55,413	49,493	7,614	106,600				
Cabarrus	98,733	--	60	690	555	10	28,865	10,824	57,729				
Caswell	166,954	--	--	13,267	365	5,730	109,090	6,417	32,085				
Catawba	102,277	--	--	56	865	918	18,599	14,880	66,959				
Chatham	301,223	--	12,266	410	181	40,058	92,652	22,237	133,419				
Cleveland	132,555	--	--	--	635	5,997	59,464	13,991	52,468				
Davidson	165,658	959	--	106	753	4,804	38,169	12,723	108,144				
Davie	71,063	--	--	11	5	178	37,966	7,593	25,310				
Durham	97,577	--	7,891	5,239	2,510	1,001	22,074	22,073	36,789				
Forsyth	88,882	--	--	--	722	220	10,051	15,075	62,814				
Franklin	178,596	--	--	45	74	13,607	96,174	6,870	61,826				
Gaston	108,254	--	--	94	563	160	26,859	23,502	57,076				
Granville	210,425	--	5,716	6,889	25	8,790	140,953	--	48,052				
Guilford	156,449	--	--	424	4,695	--	53,098	7,965	90,267				
Iredell	158,219	--	--	58	120	1,448	59,252	25,393	71,948				
Lincoln	91,949	--	--	22	110	680	35,804	6,510	48,823				
Mecklenburg	144,474	--	--	677	1,650	--	30,735	19,209	92,203				
Montgomery	250,377	36,154	--	132	186	27,080	43,959	18,316	124,550				
Orange	142,897	--	340	2,483	1,556	2,851	62,333	3,667	69,667				
Person	138,329	--	--	--	734	8,136	55,482	7,398	66,579				
Polk	113,960	--	--	4,434	488	13,171	15,338	26,843	53,686				
Randolph	299,210	4,050	--	47	711	6,110	184,507	7,688	96,097				
Rockingham	193,770	--	--	384	973	1,638	122,438	17,084	51,253				
Rowan	142,508	--	23	473	645	2,334	37,576	11,273	90,184				
Rutherford	256,952	--	--	--	403	26,735	48,382	44,350	137,082				
Stanly	100,888	--	--	--	375	2,108	49,203	6,560	42,642				
Stokes	164,189	--	--	242	97	1,184	54,222	9,569	98,875				
Surry	169,717	--	--	200	690	90	63,675	6,367	98,695				
Union	171,757	--	--	55	911	2,702	91,048	10,506	66,535				
Vance	88,658	--	8,998	16	239	3,707	63,746	--	11,952				
Wake	277,069	--	11,286	2,650	1,885	4,443	83,190	43,404	130,211				
Warren	189,773	--	770	18	203	33,001	74,350	7,081	74,350				
Yadkin	86,915	--	--	66	20	175	48,526	--	38,128				
Total	5,514,845	41,163	53,207	39,598	25,648	282,902	2,099,749	453,793	2,518,785				

<sup>a</sup>Includes 32,525 acres of other private land under long-term lease.

Table 3.--Area of commercial forest land, by county and forest-type group, Piedmont of North Carolina, 1984

County	All type groups	Forest-type group								
		White pine-hemlock	Spruce-fir	Longleaf-slash	Loblolly-shortleaf	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
----- Acres -----										
Alamance	122,128	--	--	--	41,896	5,039	56,444	15,624	3,125	--
Alexander	106,848	--	--	--	43,836	13,680	49,332	--	--	--
Anson	225,612	--	--	--	123,992	23,134	75,850	--	2,636	--
Cabarrus	98,733	--	--	--	37,387	--	57,738	--	3,608	--
Caswell	166,954	--	--	--	61,764	34,602	54,545	3,208	12,835	--
Catawba	102,277	--	--	--	33,913	18,600	42,324	3,720	3,720	--
Chatham	301,223	--	--	--	112,770	50,314	120,887	6,134	11,118	--
Cleveland	132,555	--	--	--	45,722	13,992	72,841	--	--	--
Davidson	165,658	--	--	--	30,355	29,585	96,175	--	9,543	--
Davie	71,063	--	--	--	20,426	2,531	35,451	2,531	10,124	--
Durham	97,577	--	--	--	38,181	11,037	28,382	6,310	13,667	--
Forsyth	88,882	--	--	--	17,809	12,563	50,972	7,538	--	--
Franklin	178,596	--	--	--	72,045	27,478	68,694	3,509	6,870	--
Gaston	108,254	--	--	--	37,751	20,142	47,004	--	3,357	--
Granville	210,425	--	--	--	72,860	19,221	95,895	22,449	--	--
Guilford	156,449	--	--	--	56,179	5,310	74,337	2,655	17,968	--
Iredell	158,219	--	--	--	43,770	12,697	93,286	--	8,466	--
Lincoln	91,949	--	--	--	29,975	6,510	48,955	--	6,509	--
Mecklenburg	144,474	--	--	--	55,436	7,682	77,515	--	3,841	--
Montgomery	250,377	--	--	--	76,625	48,696	114,066	10,990	--	--
Orange	142,897	--	--	--	37,407	20,815	69,667	--	15,008	--
Person	138,329	--	--	--	35,014	14,796	72,989	11,831	3,699	--
Polk	113,960	--	--	--	30,208	33,381	50,371	--	--	--
Randolph	299,210	--	--	--	45,876	24,075	225,415	--	3,844	--
Rockingham	193,770	--	--	--	85,186	14,236	80,111	--	14,237	--
Rowan	142,508	--	--	--	49,015	18,788	70,947	--	3,758	--
Rutherford	256,952	--	--	--	83,967	60,280	100,609	--	12,096	--
Stanly	100,888	--	--	--	31,630	6,560	59,417	--	3,281	--
Stokes	164,189	--	--	--	46,078	15,947	98,974	--	3,190	--
Surry	169,717	3,184	--	--	35,802	25,471	102,076	--	3,184	--
Union	171,757	--	--	--	34,218	21,011	102,521	--	14,007	--
Vance	88,658	--	--	--	36,592	14,203	33,624	4,239	--	--
Wake	277,069	--	--	--	102,906	21,847	112,416	39,900	--	--
Warren	189,773	--	--	--	70,093	26,254	74,806	3,541	15,079	--
Yadkin	86,915	--	--	--	31,371	10,398	38,128	86	6,932	--
Total	5,514,845	3,184	--	--	1,808,055	690,875	2,652,764	144,265	215,702	--

Table 4.--Area of commercial forest land, by county and stand-size class, Piedmont of North Carolina, 1984

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
----- Acres -----					
Alamance	122,128	60,844	43,746	17,538	--
Alexander	106,848	52,025	39,281	15,542	--
Anson	225,612	98,379	78,621	44,805	3,807
Cabarrus	98,733	36,091	37,385	25,257	--
Caswell	166,954	79,156	49,295	35,294	3,209
Catawba	102,277	31,597	37,200	33,480	--
Chatham	301,223	151,462	103,332	46,429	--
Cleveland	132,555	68,708	37,488	26,359	--
Davidson	165,658	48,465	62,918	54,275	--
Davie	71,063	32,915	20,248	17,895	5
Durham	97,577	61,906	28,313	7,358	--
Forsyth	88,882	55,278	27,857	5,025	722
Franklin	178,596	51,567	59,481	67,548	--
Gaston	108,254	63,791	20,962	23,501	--
Granville	210,425	80,088	82,977	44,157	3,203
Guilford	156,449	84,343	42,902	29,204	--
Iredell	158,219	72,125	39,540	38,089	8,465
Lincoln	91,949	56,013	22,916	13,020	--
Mecklenburg	144,474	63,118	53,786	27,570	--
Montgomery	250,377	102,414	83,018	52,572	12,373
Orange	142,897	92,039	25,910	21,281	3,667
Person	138,329	56,216	60,907	21,206	--
Polk	113,960	47,198	37,216	25,711	3,835
Randolph	299,210	132,451	111,931	53,815	1,013
Rockingham	193,770	62,541	94,209	37,020	--
Rowan	142,508	77,964	41,832	22,712	--
Rutherford	256,952	120,757	83,575	52,620	--
Stanly	100,888	47,881	22,960	30,047	--
Stokes	164,189	76,550	62,026	25,516	97
Surry	169,717	54,121	86,852	28,744	--
Union	171,757	67,502	62,232	42,023	--
Vance	88,658	49,561	21,925	17,172	--
Wake	277,069	189,002	55,442	32,625	--
Warren	189,773	94,752	40,081	54,940	--
Yadkin	86,915	48,611	20,797	17,507	--
<b>Total</b>	<b>5,514,845</b>	<b>2,567,431</b>	<b>1,799,161</b>	<b>1,107,857</b>	<b>40,396</b>

Table 5.--Area of commercial forest land, by county and site class, Piedmont of North Carolina, 1984

County	All classes	Site class (cubic feet per acre per year)				
		> 164	120-164	85-119	50-84	20-49
----- Acres -----						
Alamance	122,128	--	3,124	31,249	84,630	3,125
Alexander	106,848	--	4,560	52,026	44,765	5,497
Anson	225,612	6,443	3,807	74,292	120,570	20,500
Cabarrus	98,733	--	--	14,432	73,467	10,834
Caswell	166,954	3,208	3,687	67,596	82,836	9,627
Catawba	102,277	--	3,719	20,006	63,672	14,880
Chatham	301,223	--	12,505	93,508	187,798	7,412
Cleveland	132,555	--	--	42,599	82,960	6,996
Davidson	165,658	--	753	44,635	101,186	19,084
Davie	71,063	--	2,531	35,623	30,378	2,531
Durham	97,577	--	3,679	33,573	60,325	--
Forsyth	88,882	--	--	55,276	33,606	--
Franklin	178,596	--	17,174	73,266	88,156	--
Gaston	108,254	3,358	--	50,614	44,210	10,072
Granville	210,425	--	3,204	60,893	139,921	6,407
Guilford	156,449	2,655	21,239	57,793	74,762	--
Iredell	158,219	--	4,352	59,309	77,629	16,929
Lincoln	91,949	3,255	3,255	39,737	45,702	--
Mecklenburg	144,474	3,842	11,525	49,945	52,269	26,893
Montgomery	250,377	--	7,327	85,725	126,949	30,376
Orange	142,897	--	3,667	51,949	87,281	--
Person	138,329	--	--	22,928	100,605	14,796
Polk	113,960	3,835	7,670	41,711	42,136	18,608
Randolph	299,210	--	11,532	48,706	203,630	35,342
Rockingham	193,770	--	14,235	85,325	88,515	5,695
Rowan	142,508	--	11,273	79,555	49,512	2,168
Rutherford	256,952	12,096	16,125	56,346	124,397	47,988
Stanly	100,888	--	--	14,704	65,978	20,206
Stokes	164,189	6,380	19,138	45,947	86,345	6,379
Surry	169,717	--	9,550	19,101	105,845	35,221
Union	171,757	--	--	27,778	115,964	28,015
Vance	88,658	--	2,249	29,895	51,294	5,220
Wake	277,069	--	21,702	145,742	98,774	10,851
Warren	189,773	--	10,621	73,967	105,185	--
Yadkin	86,915	--	--	24,349	55,634	6,932
<b>Total</b>	<b>5,514,845</b>	<b>45,072</b>	<b>234,203</b>	<b>1,810,100</b>	<b>2,996,886</b>	<b>428,584</b>

Table 6.--Area of commercial forest land, by county and stocking class of growing-stock trees, Piedmont of North Carolina, 1984

County	All classes	Stocking percentage <sup>a</sup>				
		> 130	100-130	60-99	16.7-59	< 16.7
----- Acres -----						
Alamance	122,128	3,124	50,060	62,695	6,249	--
Alexander	106,848	9,121	42,904	47,472	7,351	--
Anson	225,612	19,521	59,292	111,069	31,923	3,807
Cabarrus	98,733	3,608	29,420	58,489	7,216	--
Caswell	166,954	13,528	67,744	72,848	9,625	3,209
Catawba	102,277	11,593	22,319	57,205	11,160	--
Chatham	301,223	44,014	101,881	147,916	7,412	--
Cleveland	132,555	--	53,351	54,718	24,486	--
Davidson	165,658	12,722	50,191	90,023	12,722	--
Davie	71,063	--	40,674	22,791	7,593	5
Durham	97,577	12,498	48,338	36,741	--	--
Forsyth	88,882	7,757	25,129	52,761	2,513	722
Franklin	178,596	10,305	106,466	51,520	10,305	--
Gaston	108,254	10,326	40,290	50,923	6,715	--
Granville	210,425	24,809	108,736	64,067	9,610	3,203
Guilford	156,449	21,240	63,104	53,521	18,584	--
Iredell	158,219	9,855	55,196	67,773	16,930	8,465
Lincoln	91,949	7,190	48,824	29,293	6,642	--
Mecklenburg	144,474	15,367	49,945	74,643	4,519	--
Montgomery	250,377	--	86,989	110,324	40,691	12,373
Orange	142,897	14,908	76,656	40,334	7,332	3,667
Person	138,329	6,411	55,483	58,930	17,505	--
Polk	113,960	3,930	37,215	48,720	20,260	3,835
Randolph	299,210	3,844	78,445	169,781	46,127	1,013
Rockingham	193,770	15,875	60,770	97,191	19,934	--
Rowan	142,508	11,919	38,240	84,833	7,516	--
Rutherford	256,952	4,032	99,701	120,561	32,658	--
Stanly	100,888	6,560	28,351	49,577	16,400	--
Stokes	164,189	22,568	45,837	82,928	12,759	97
Surry	169,717	6,368	41,586	99,476	22,287	--
Union	171,757	16,307	52,929	81,510	21,011	--
Vance	88,658	7,968	52,800	27,890	--	--
Wake	277,069	25,319	110,430	110,539	30,781	--
Warren	189,773	29,551	79,484	61,565	19,173	--
Yadkin	86,915	6,933	31,195	38,387	10,400	--
<b>Total</b>	<b>5,514,845</b>	<b>419,071</b>	<b>2,039,975</b>	<b>2,489,014</b>	<b>526,389</b>	<b>40,396</b>

<sup>a</sup>See stocking standards on page 11.

Table 7.--Volume of sawtimber and growing stock on commercial forest land, by county and species group, Piedmont of North Carolina, 1984

County	Sawtimber				Growing stock					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
Alamance	617,591	192,601	--	168,686	256,304	209,047	67,835	815	61,689	78,708
Alexander	396,146	153,735	16,798	92,403	133,210	160,634	66,339	3,586	40,933	49,776
Anson	1,027,730	763,309	1,898	141,485	121,038	328,474	221,359	1,267	55,879	49,969
Cabarrus	364,092	109,612	5,760	86,883	161,837	135,663	48,308	3,476	32,233	51,646
Catawba	772,851	381,043	3,508	203,843	184,457	278,804	135,497	1,465	72,888	68,954
Chatham	308,848	74,234	30,333	32,208	172,073	127,865	50,428	8,164	14,390	54,883
Cleveland	1,654,372	770,320	11,545	408,772	463,735	554,968	257,477	7,463	140,378	149,650
Davidson	525,290	146,326	1,492	142,361	235,111	175,614	51,237	1,164	47,594	75,619
Davie	602,857	78,314	--	204,651	319,892	211,976	40,134	1,599	73,086	97,157
Durham	355,502	49,489	1,548	163,056	141,409	111,400	21,119	1,744	41,743	46,794
Forsyth	670,178	345,538	4,405	175,355	144,880	213,761	104,000	1,315	59,034	49,412
Franklin	472,319	110,808	3,397	162,860	195,254	160,184	41,378	1,205	55,701	61,900
Gaston	763,198	401,228	--	186,330	175,640	268,908	133,856	379	67,382	67,291
Granville	744,536	314,741	--	193,730	236,045	211,396	82,361	1,698	58,866	68,471
Guilford	1,071,592	398,091	2,020	375,006	296,475	384,855	143,404	1,783	127,107	112,561
Iredell	988,717	282,892	--	475,093	230,732	310,680	108,649	416	128,454	73,161
Lincoln	651,595	237,866	13,540	197,108	203,081	209,692	74,359	4,317	66,977	64,039
Mecklenburg	603,169	215,362	--	161,373	226,434	174,497	67,035	288	45,802	61,372
Montgomery	669,937	218,955	9,817	227,433	213,732	219,480	78,359	4,434	75,535	61,152
Orange	1,005,950	462,159	--	194,446	349,345	347,294	139,222	1,441	78,820	127,811
Person	1,036,101	422,811	--	355,703	257,587	311,782	109,559	1,410	113,044	87,769
Polk	488,896	168,389	8,475	124,012	188,020	179,502	58,741	2,779	51,353	66,629
Randolph	404,350	77,917	9,289	100,814	216,330	150,753	45,703	1,687	31,172	72,191
Rockingham	1,135,934	126,916	13,001	365,018	630,999	404,653	67,497	3,489	115,924	217,743
Rowan	624,114	225,085	--	165,880	233,149	291,487	139,042	--	64,895	87,550
Rutherford	693,608	309,148	4,192	181,470	198,798	234,580	90,570	2,871	65,037	76,102
Stanly	935,492	378,000	7,173	117,001	433,318	355,504	144,411	3,341	49,393	158,359
Stokes	451,842	207,348	--	94,730	149,764	145,887	71,036	453	27,429	46,969
Surry	669,768	234,358	2,747	184,998	247,665	260,685	92,937	842	74,565	92,341
Union	509,761	123,719	40,862	99,838	245,342	221,237	56,387	13,819	49,373	101,658
Vance	659,240	275,383	3,602	95,587	284,668	230,919	79,167	2,826	37,810	111,116
Wake	517,017	276,780	--	139,208	101,029	160,872	74,935	374	47,271	38,292
Warren	1,836,745	812,454	--	604,685	419,606	536,409	226,731	--	175,251	134,427
Yadkin	959,188	422,680	--	328,142	208,366	322,571	132,585	--	117,913	72,073
Yadkin	401,886	151,466	--	74,962	175,458	136,684	55,139	1,384	28,952	51,209
Total	25,590,412	9,919,077	195,402	7,025,150	8,450,783	8,738,717	3,376,796	83,294	2,393,873	2,884,754

<sup>a</sup> Factors for converting to cords are shown on page 11.

Table 8.--Net annual growth of sawtimber and growing stock on commercial forest land, by county and species group, Piedmont of North Carolina, 1983

County	Sawtimber				Growing stock					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	--- Thousand board feet	--- Thousand cubic feet								
Alamance	32,685	9,457	--	10,772	12,456	7,426	2,120	62	2,745	2,499
Alexander	21,411	6,821	836	8,155	5,599	6,375	2,725	121	2,024	1,505
Anson	56,710	41,403	59	8,291	6,957	14,711	9,633	37	2,880	2,161
Cabarrus	20,465	8,706	153	4,595	7,011	4,758	1,641	102	1,372	1,643
Caswell	45,855	20,696	226	16,848	8,085	10,755	4,723	33	3,528	2,471
Catawba	19,762	8,073	1,833	2,811	7,045	5,290	2,257	414	679	1,940
Chatham	92,628	46,861	773	21,642	23,352	22,055	10,605	344	6,241	4,865
Cleveland	26,529	8,368	34	9,075	9,052	6,069	1,915	43	1,920	2,191
Davidson	33,501	4,962	271	15,768	12,500	7,524	1,513	111	3,304	2,796
Davie	16,997	2,878	216	7,237	6,666	4,322	707	84	1,659	1,872
Durham	35,103	18,204	87	9,410	7,402	9,296	5,061	19	2,698	1,518
Forsyth	26,403	5,427	62	12,146	8,768	5,631	1,267	19	2,440	1,905
Franklin	44,704	27,083	--	8,763	8,858	11,579	5,966	7	3,040	2,566
Gaston	28,063	8,895	104	9,989	9,075	6,502	1,921	38	2,501	2,042
Granville	67,907	27,032	38	22,041	18,796	15,805	5,914	37	5,784	4,070
Guilford	55,673	18,339	202	25,383	11,749	11,396	3,590	54	5,328	2,424
Iredell	34,426	11,322	641	11,614	10,849	8,686	3,043	134	3,285	2,224
Lincoln	29,887	12,306	--	9,306	8,275	6,629	2,492	20	2,216	1,901
Mecklenburg	27,595	9,542	438	11,266	6,349	8,193	2,917	183	3,062	2,031
Montgomery	54,620	24,219	--	13,479	16,922	13,973	5,219	54	3,913	4,787
Orange	56,642	21,182	--	19,229	16,231	11,642	4,121	56	4,480	2,985
Person	26,383	7,198	197	9,997	8,991	6,884	2,110	122	2,235	2,417
Polk	20,526	5,997	330	4,998	9,201	6,230	2,550	48	1,198	2,434
Randolph	59,412	8,668	302	19,306	31,136	15,366	2,599	175	5,227	7,365
Rockingham	50,247	24,927	--	12,800	12,520	12,611	6,154	--	3,439	3,018
Rowan	32,253	11,337	231	9,600	11,085	8,758	2,060	198	3,277	3,223
Rutherford	48,160	22,257	417	5,692	19,794	12,835	5,144	190	2,462	5,039
Stanly	17,007	7,745	115	4,212	4,935	4,582	2,070	27	1,087	1,398
Stokes	46,788	16,373	217	17,579	12,619	10,565	3,694	26	3,804	3,041
Surry	39,342	10,148	2,405	11,725	15,064	9,876	2,494	669	2,922	3,791
Union	28,699	8,922	865	5,908	13,004	7,838	2,278	116	1,822	3,622
Vance	25,631	14,503	--	6,597	4,531	6,106	2,746	7	2,007	1,346
Wake	96,018	47,099	--	28,162	20,757	20,914	9,483	10	6,693	4,728
Warren	57,030	26,054	--	19,187	11,789	14,856	6,722	--	5,485	2,649
Yadkin	20,231	7,284	142	5,265	7,540	5,072	1,653	45	1,810	1,564
Total	1,395,293	560,288	11,194	418,848	404,963	341,110	130,907	3,605	108,567	98,031

Table 9.--Annual removals of sawtimber and growing stock on commercial forest land, by county and species group, Piedmont of North Carolina, 1983

County	Sawtimber				Growing stock					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
				Thousand board feet					Thousand cubic feet	
Alamance	16,230	2,139	--	6,904	7,187	3,492	665	--	1,399	1,428
Alexander	11,849	6,438	--	2,273	3,138	3,260	1,861	--	560	839
Anson	20,302	17,624	--	501	2,177	7,130	6,075	--	315	740
Cabarrus	11,514	1,854	812	613	8,235	3,395	541	166	458	2,230
Caswell	7,368	984	--	3,731	2,653	2,335	483	--	1,016	836
Catawba	31,421	12,639	--	15,133	3,649	7,350	3,642	--	2,741	967
Chatham	57,148	27,903	--	16,783	12,462	17,924	7,314	--	6,238	4,372
Cleveland	9,063	5,639	--	--	3,424	3,119	1,978	--	--	1,141
Davidson	20,571	10,477	--	549	9,545	6,822	2,658	--	1,310	2,854
Davie	4,737	1,066	--	3,671	--	1,457	179	--	1,278	--
Durham	19,116	3,214	--	5,323	10,579	4,462	499	--	1,412	2,551
Forsyth	3,687	526	--	745	2,416	1,229	118	--	362	749
Franklin	90,887	63,066	--	13,225	14,596	18,366	11,209	--	3,388	3,769
Gaston	5,978	2,097	--	2,708	1,173	1,858	953	--	689	216
Granville	31,852	16,048	--	11,024	4,780	10,006	5,221	--	3,020	1,765
Guilford	19,071	8,891	--	2,501	7,679	5,394	2,417	--	766	2,211
Iredell	53,975	16,581	--	19,066	18,328	15,115	5,169	--	5,575	4,371
Lincoln	19,437	14,444	--	1,488	3,505	4,773	3,595	--	365	813
Mecklenburg	42,699	23,867	--	1,653	17,179	9,691	5,799	--	476	3,416
Montgomery	41,312	25,534	--	7,534	8,244	11,422	6,546	77	1,568	3,231
Orange	18,219	16,462	--	--	1,757	5,410	3,844	--	163	1,403
Person	27,358	23,400	--	2,118	1,840	8,369	6,321	--	992	1,056
Polk	8,246	5,861	--	611	1,774	2,769	2,048	--	162	559
Randolph	40,820	11,607	--	4,137	25,076	10,943	3,316	--	1,558	6,069
Rockingham	20,439	1,088	--	9,906	9,445	7,388	1,199	--	3,392	2,797
Rowan	28,963	16,534	--	8,885	3,544	8,067	4,452	--	2,919	696
Rutherford	25,359	16,674	558	4,706	3,421	9,037	5,645	133	1,636	1,623
Stanly	19,463	8,424	510	929	9,600	5,544	2,902	117	272	2,253
Stokes	21,229	10,300	--	5,288	5,641	5,453	2,395	--	1,942	1,116
Surry	25,926	15,392	--	4,681	5,853	8,244	4,572	--	1,337	2,335
Union	6,681	4,589	--	--	2,092	5,130	3,243	--	129	1,758
Vance	24,780	22,792	--	1,988	--	8,026	6,286	--	1,325	415
Wake	58,602	26,808	--	20,952	10,842	16,634	8,020	--	4,875	3,739
Warren	5,865	3,341	--	1,249	1,275	3,394	2,325	--	352	717
Yadkin	5,095	2,830	--	--	2,265	2,210	1,172	--	197	841
Total	855,262	447,133	1,880	180,875	225,374	245,218	124,662	493	54,187	65,876

## Unit Tables

Table 10.--Area of commercial forest land, by forest type and ownership class, Piedmont of North Carolina, 1984

Forest type	All ownerships	Ownership class				
		National Forest	Other public	Forest industry	Forest industry- leased	Other private
----- Acres -----						
<b>Softwood types:</b>						
White pine-hemlock	3,184	--	--	--	--	3,184
Spruce-fir	--	--	--	--	--	--
Longleaf pine	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--
Loblolly pine	749,366	6,364	23,098	93,252	21,047	605,605
Shortleaf pine	448,267	2,893	5,661	21,695	--	418,018
Virginia pine	568,746	2,892	8,429	11,418	4,338	541,669
Sand pine	--	--	--	--	--	--
Eastern redcedar	30,430	--	--	--	3,879	26,551
Pond pine	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--
Pitch pine	8,062	--	--	--	--	8,062
Table Mountain pine	3,184	--	--	--	--	3,184
<b>Total</b>	<b>1,811,239</b>	<b>12,149</b>	<b>37,188</b>	<b>126,365</b>	<b>29,264</b>	<b>1,606,273</b>
<b>Hardwood types:</b>						
Oak-pine	690,875	9,204	12,358	43,640	1,012	624,661
Oak-hickory	2,578,656	16,918	49,418	57,586	2,249	2,452,485
Chestnut oak	70,444	2,892	--	10,307	--	57,245
Southern scrub oak	3,664	--	--	--	--	3,664
Oak-gum-cypress	144,265	--	11,824	1,845	--	130,596
Elm-ash-cottonwood	215,702	--	7,665	10,634	--	197,403
Maple-beech-birch	--	--	--	--	--	--
<b>Total</b>	<b>3,703,606</b>	<b>29,014</b>	<b>81,265</b>	<b>124,012</b>	<b>3,261</b>	<b>3,466,054</b>
<b>All types</b>	<b>5,514,845</b>	<b>41,163</b>	<b>118,453</b>	<b>250,377</b>	<b>32,525</b>	<b>5,072,327</b>

Table 11.--Area of commercial forest land, by ownership and stocking classes of growing-stock trees, Piedmont of North Carolina, 1984

Ownership class	All classes	Stocking percentage <sup>a</sup>				
		> 130	100-130	60-99	16.7-59	< 16.7
----- Acres -----						
National Forest	41,163	--	8,678	28,580	2,892	1,013
Other public	118,453	17,324	55,128	39,043	6,134	824
Forest industry	250,377	21,524	100,401	102,174	21,448	4,830
Forest industry-leased	32,525	1,546	16,353	9,735	1,012	3,879
Other private	5,072,327	378,677	1,859,415	2,309,482	494,903	29,850
All ownerships	5,514,845	419,071	2,039,975	2,489,014	526,389	40,396

<sup>a</sup>See stocking standards on page 11.

Table 12.--Area of commercial forest land, by stand-age and broad management classes, all ownerships, Piedmont of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
00-10	628,406	123,223	93,084	95,785	297,324	18,990
11-20	595,493	84,491	254,773	51,026	183,948	21,255
21-30	641,404	75,634	329,616	48,545	161,076	26,533
31-40	732,152	8,104	307,426	112,198	273,023	31,401
41-50	730,860	--	240,449	121,529	326,864	42,018
51-60	655,994	--	127,775	93,742	380,145	54,332
61-70	441,366	--	88,404	52,238	248,811	51,913
71-80	299,294	--	17,635	36,034	220,052	25,573
81+	271,260	--	13,700	20,272	218,944	18,344
No manageable stand	518,616	--	46,925	59,506	342,577	69,608
All classes	5,514,845	291,452	1,519,787	690,875	2,652,764	359,967

Table 13.--Area of commercial forest land, by stand-age and broad management classes, public ownerships, Piedmont of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
00-10	7,294	--	--	1,446	5,848	--
11-20	21,922	8,501	221	4,721	8,139	340
21-30	16,896	1,965	6,595	1,447	6,889	--
31-40	15,938	3,872	3,476	365	8,225	--
41-50	25,937	--	11,933	1,447	6,506	6,051
51-60	10,282	--	1,446	1,194	4,575	3,067
61-70	26,468	--	8,737	3,317	5,203	9,211
71-80	19,303	--	1,578	3,696	13,209	820
81+	6,821	--	--	2,483	4,338	--
No manageable stand	8,755	--	1,013	1,446	6,296	--
All classes	159,616	14,338	34,999	21,562	69,228	19,489

Table 14.--Area of commercial forest land, by stand-age and broad management classes, forest industry,<sup>a</sup> Piedmont of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
00-10	60,367	51,185	--	5,183	3,999	--
11-20	72,746	32,397	15,630	10,468	14,251	--
21-30	37,279	12,885	17,560	2,635	4,199	--
31-40	18,903	--	7,303	11,600	--	--
41-50	18,069	--	2,323	4,831	10,915	--
51-60	26,985	--	2,635	9,935	10,416	3,999
61-70	7,194	--	1,582	--	5,612	--
71-80	16,769	--	5,614	--	8,519	2,636
81+	3,999	--	--	--	--	3,999
No manageable stand	20,591	--	6,515	--	12,231	1,845
All classes	282,902	96,467	59,162	44,652	70,142	12,479

<sup>a</sup>Includes 32,525 acres of other private land under long-term lease.

Table 15.--Area of commercial forest land, by stand-age and broad management classes, other private ownerships,<sup>a</sup> Piedmont of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
00-10	560,745	72,038	93,084	89,156	287,477	18,990
11-20	500,825	43,593	238,922	35,837	161,558	20,915
21-30	587,229	60,784	305,461	44,463	149,988	26,533
31-40	697,311	4,232	296,647	100,233	264,798	31,401
41-50	686,854	--	226,193	115,251	309,443	35,967
51-60	618,727	--	123,694	82,613	365,154	47,266
61-70	407,704	--	78,085	48,921	237,996	42,702
71-80	263,222	--	10,443	32,338	198,324	22,117
81+	260,440	--	13,700	17,789	214,606	14,345
No manageable stand	489,270	--	39,397	58,060	324,050	67,763
All classes	5,072,327	180,647	1,425,626	624,661	2,513,394	327,999

<sup>a</sup>Excludes 32,525 acres of other private land under long-term lease to forest industry.

Table 16.--Area of commercial forest land, by broad management and stand-volume classes, Piedmont of North Carolina, 1984

Broad management class	All classes	Stand-volume class (cubic feet of growing stock per acre)				
		0-499	500-999	1000-1499	1500-1999	2000+
----- Acres -----						
Pine plantation	291,452	133,784	37,709	49,544	19,520	50,895
Natural pine	1,519,787	242,422	212,004	197,640	242,086	625,635
Oak-pine	690,875	142,272	73,516	162,548	121,494	191,045
Upland hardwood	2,652,764	526,301	355,246	505,552	454,617	811,048
Lowland hardwood	359,967	59,691	63,495	21,494	64,193	151,094
All classes	5,514,845	1,104,470	741,970	936,778	901,910	1,829,717

Table 17.--Volume of growing stock on commercial forest land, by broad management class, species group, and stand-age class, Piedmont of North Carolina, 1984

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)							Thousand cubic feet										
			0-10	11-20	21-30	31-40	41-50	51-60	61-70		71-80	81+								
<b>Pine plantation:</b>																				
Softwood	246,762	--	1,354	82,987	145,407	17,014	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	13,700	--	1,569	8,415	3,408	308	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	260,462	--	2,923	91,402	148,815	17,322	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Natural pine:</b>																				
Softwood	2,413,397	10,176	6,990	184,533	500,121	603,270	514,097	293,916	221,985	40,795	37,514									
Hardwood	346,092	1,467	1,221	15,508	56,534	69,232	78,663	56,452	50,649	5,830	10,536									
Total	2,759,489	11,643	8,211	200,041	556,655	672,502	592,760	350,368	272,634	46,625	48,050									
<b>Oak-pine:</b>																				
Softwood	476,834	19,071	13,813	11,451	26,909	83,687	114,467	91,904	52,992	44,836	17,704									
Hardwood	567,717	19,487	14,746	11,831	27,030	101,781	151,782	101,993	59,706	54,955	24,406									
Total	1,044,551	38,558	28,559	23,282	53,939	185,468	266,249	193,897	112,698	99,791	42,110									
<b>Upland hardwood:</b>																				
Softwood	296,358	18,462	5,561	17,375	21,483	40,292	49,629	53,985	34,667	37,540	17,364									
Hardwood	3,728,094	159,527	87,924	102,181	158,598	410,141	600,072	697,919	537,695	458,528	515,509									
Total	4,024,452	177,989	93,485	119,556	180,081	450,433	649,701	751,904	572,362	496,068	532,873									
<b>Lowland hardwood:</b>																				
Softwood	26,739	671	--	--	--	1,271	10,369	6,894	4,943	2,070	521									
Hardwood	623,024	40,221	3,466	12,253	26,738	60,337	94,220	140,022	136,919	64,915	43,933									
Total	649,763	40,892	3,466	12,253	26,738	61,608	104,589	146,916	141,862	66,985	44,454									
<b>All classes:</b>																				
Softwood	3,460,090	48,380	27,718	296,346	693,920	745,534	688,562	446,699	314,587	125,241	73,103									
Hardwood	5,278,627	220,702	108,926	150,188	272,308	641,799	924,737	996,386	784,969	584,228	594,384									
Total	8,738,717	269,082	136,644	446,534	966,228	1,387,333	1,613,299	1,443,085	1,099,556	709,469	667,487									

Table 18.--Net annual growth of growing stock on commercial forest land, by broad management class, species group, and stand-age class, Piedmont of North Carolina, 1983

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 -----											
<b>Pine plantation:</b>											
Softwood	14,150	--	803	5,583	6,990	774	--	--	--	--	--
Hardwood	904	--	58	504	331	11	--	--	--	--	--
Total	15,054	--	861	6,087	7,321	785	--	--	--	--	--
<b>Natural pine:</b>											
Softwood	95,538	560	524	14,835	23,902	23,129	17,158	8,969	4,943	927	591
Hardwood	17,995	44	37	1,861	3,322	3,610	4,052	2,537	2,060	162	310
Total	113,533	604	561	16,696	27,224	26,739	21,210	11,506	7,003	1,089	901
<b>Oak-pine:</b>											
Softwood	15,626	746	303	1,475	1,172	3,021	3,899	2,456	1,269	932	353
Hardwood	24,923	966	769	676	1,662	5,697	6,142	4,256	2,125	1,804	826
Total	40,549	1,712	1,072	2,151	2,834	8,718	10,041	6,712	3,394	2,736	1,179
<b>Upland hardwood:</b>											
Softwood	8,610	544	309	886	679	1,109	1,359	1,776	692	841	415
Hardwood	140,772	6,479	4,834	6,320	9,342	18,115	23,979	24,897	18,632	14,981	13,793
Total	149,382	7,023	5,143	7,206	10,021	19,224	25,338	26,673	18,724	15,822	14,208
<b>Lowland hardwood:</b>											
Softwood	588	2	--	--	--	23	222	187	90	52	12
Hardwood	22,004	2,039	121	581	1,385	2,290	3,422	4,898	4,415	1,809	1,044
Total	22,592	2,041	121	581	1,385	2,313	3,644	5,085	4,505	1,861	1,056
<b>All classes:</b>											
Softwood	134,512	1,852	1,939	22,779	32,743	28,056	22,638	13,388	6,994	2,752	1,371
Hardwood	206,598	9,528	5,819	9,942	16,042	29,723	37,595	36,588	26,632	18,756	15,973
Total	341,110	11,380	7,758	32,721	48,785	57,779	60,233	49,976	33,626	21,508	17,344

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

Table 19.--Annual removals of growing stock on commercial forest land, by broad management class, species group, and stand-age class, Piedmont of North Carolina, 1983

Broad management class <sup>a</sup> and species group	All classes	No manageable stand	Stand-age class <sup>a</sup> (years)							Thousand cubic feet	
			0-10	11-20	21-30	31-40	41-50	51-60	61-70		71-80
<b>Pine plantation:</b>											
Softwood	7,402	--	1,149	6,253	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	7,402	--	1,149	6,253	--	--	--	--	--	--	--
<b>Natural pine:</b>											
Softwood	98,056	81	469	6,871	12,348	26,197	12,630	19,774	8,287	9,854	1,545
Hardwood	11,706	--	--	177	1,642	1,430	2,124	5,378	398	557	--
Total	109,762	81	469	7,048	13,990	27,627	14,754	25,152	8,685	10,411	1,545
<b>Oak-pine:</b>											
Softwood	12,424	161	398	195	875	2,998	2,278	1,392	1,081	801	2,245
Hardwood	18,836	243	164	494	478	4,226	3,392	3,375	740	2,152	3,572
Total	31,260	404	562	689	1,353	7,224	5,670	4,767	1,821	2,953	5,817
<b>Upland hardwood:</b>											
Softwood	7,144	405	1,223	--	565	574	1,479	979	970	232	717
Hardwood	77,543	4,948	1,571	2,161	4,579	7,842	18,904	9,188	10,293	7,595	10,462
Total	84,687	5,353	2,794	2,161	5,144	8,416	20,383	10,167	11,263	7,827	11,179
<b>Lowland hardwood:</b>											
Softwood	129	--	--	--	--	--	--	129	--	--	--
Hardwood	11,978	2,441	--	--	555	2,191	1,660	3,481	1,439	211	--
Total	12,107	2,441	--	--	555	2,191	1,660	3,610	1,439	211	--
<b>All classes:</b>											
Softwood	125,155	647	3,239	13,319	13,788	29,769	16,387	22,274	10,338	10,887	4,507
Hardwood	120,063	7,632	1,735	2,832	7,254	15,689	26,080	21,422	12,870	10,515	14,034
Total	245,218	8,279	4,974	16,151	21,042	45,458	42,467	43,696	23,208	21,402	18,541

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

Table 20.--Merchantable volume of all live trees and growing stock on commercial forest land, by forest-type group, and species group, Piedmont of North Carolina, 1984

Forest-type group	All live trees							Growing stock			
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	
	7,900	2,563	5,337	--	--	7,900	2,563	5,337	--	--	
	--	--	--	--	--	Thousand cubic feet	--	--	--	--	
White pine-hemlock	3,063,925	2,629,749	31,585	245,120	157,471	3,012,051	2,624,144	28,115	231,534	128,258	
Spruce-fir	1,090,549	457,919	20,899	280,159	331,572	1,044,551	456,349	20,485	262,938	304,779	
Loblolly-shortleaf pine	4,300,822	269,980	31,712	1,565,553	2,433,577	4,024,452	267,979	28,379	1,466,507	2,261,587	
Oak-pine	340,827	14,925	--	248,845	77,057	314,143	14,925	--	229,024	70,194	
Oak-hickory	374,916	10,836	978	223,611	139,491	335,620	10,836	978	203,870	119,936	
Oak-gum-cypress	--	--	--	--	--	--	--	--	--	--	
Elm-ash-cottonwood	--	--	--	--	--	--	--	--	--	--	
Maple-beech-birch	--	--	--	--	--	--	--	--	--	--	
All types	9,178,939	3,385,972	90,511	2,563,288	3,139,168	8,738,717	3,376,796	83,294	2,393,873	2,884,754	

Table 21.--Area of commercial forest land treated or disturbed annually and retained in commercial forest land, by treatment or disturbance and ownership class, Piedmont of North Carolina, 1975 to 1984

Treatment or disturbance	All ownerships			Ownership class		
	Public	Forest industry	Other private	Public	Forest industry-leased	Other private
Final harvest	77,293	1,649	6,979	489	68,176	--
Selective cutting and high grading	14,601	21	--	--	14,580	--
Commercial thinning	10,666	610	788	813	8,455	--
Other stand improvement	2,850	180	178	--	2,492	--
Site preparation	16,033	263	5,288	906	9,576	--
Artificial regeneration <sup>b</sup>	16,966	--	5,466	489	11,011	--
Natural regeneration <sup>b</sup>	56,212	635	519	--	55,058	--
Other treatment	21,948	749	--	--	21,199	--
Natural disturbance	65,151	1,862	1,641	778	60,870	--
	Acres <sup>a</sup>					

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

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

Table 22.--Area of commercial forest land treated or disturbed annually and retained in commercial forest land, by treatment or disturbance and broad management class, Piedmont of North Carolina, 1975 to 1984

Treatment or disturbance	All classes	Broad management class <sup>a</sup>				
		Pine plantation	Natural pine	Oak- pine	Upland hardwood	Lowland hardwood
----- Acres <sup>b</sup> -----						
Final harvest	77,293	790	31,561	6,722	35,406	2,814
Selective cutting and high grading	14,601	--	3,573	2,102	7,970	956
Commercial thinning	10,666	4,815	4,634	551	666	--
Other stand improvement	2,850	203	969	409	1,269	--
Site preparation	16,033	--	5,580	744	9,709	--
Other treatment	21,948	409	5,290	3,627	11,597	1,025
Natural disturbance	65,151	3,799	27,293	6,992	20,738	6,329

<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.

Table 23.--Area of commercial forest land regenerated annually, by type of regeneration and broad management class, Piedmont of North Carolina, 1975 to 1984

Type of regeneration	All classes	Broad management class <sup>a</sup>				
		Pine plantation	Natural pine	Oak- pine	Upland hardwood	Lowland hardwood
----- Acres -----						
Artificial regeneration following harvest	12,559	9,746	--	2,096	717	--
Natural regeneration following harvest	35,231	--	3,403	4,449	26,968	411
Other artificial regen- eration on forest land	3,659	2,567	--	1,092	--	--
Other natural regen- eration on forest land	9,175	--	1,415	2,091	5,321	348
Artificial regeneration on nonforest land	748	748	--	--	--	--
Natural reversion of nonforest land	11,806	409	6,679	670	1,791	2,257
Total	73,178	13,470	11,497	10,398	34,797	3,016

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

Table 24.--Area of commercial forest land, by treatment opportunity and broad management classes, Piedmont of North Carolina, 1984

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
Salvage	16,032	--	10,059	3,125	--	2,848
Harvest	663,787	--	128,596	81,483	388,429	65,279
Commercial thinning	329,013	54,755	259,969	3,189	11,100	--
Other stand improvement	476,341	10,599	130,554	54,200	252,683	28,305
Stand conversion	71,377	3,720	--	10,524	57,133	--
Regeneration	492,533	--	46,925	59,506	320,111	65,991
Stands in relatively good condition	3,260,938	222,378	928,006	457,190	1,466,268	187,096
Adverse sites <sup>a</sup>	204,824	--	15,678	21,658	157,040	10,448
All classes	5,514,845	291,452	1,519,787	690,875	2,652,764	359,967

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

Table 25.--Area of commercial forest land, by treatment opportunity and ownership classes, Piedmont of North Carolina, 1984

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
----- Acres -----					
Salvage	16,032	3,317	--	--	12,715
Harvest	663,787	33,025	29,262	--	601,500
Commercial thinning	329,013	11,370	24,178	583	292,882
Other stand improvement	476,341	9,037	28,806	--	438,498
Stand conversion	71,377	--	--	--	71,377
Regeneration	492,533	8,267	15,782	3,879	464,605
Stands in relatively good condition	3,260,938	92,028	144,882	28,063	2,995,965
Adverse sites <sup>a</sup>	204,824	2,572	7,467	--	194,785
All classes	5,514,845	159,616	250,377	32,525	5,072,327

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

Table 26.--Merchantable volume of all live trees and growing stock on commercial forest land, by ownership class and species group, Piedmont of North Carolina, 1984

Ownership class	All live trees				Growing stock					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
						Thousand cubic feet				
National Forest	68,790	21,430	--	10,919	36,441	64,179	21,430	--	9,410	33,339
Other public	292,903	144,103	4,001	77,043	67,756	277,362	143,680	3,044	70,968	59,670
Forest industry	309,631	138,360	2,856	58,017	110,398	292,482	138,105	2,529	52,582	99,266
Forest industry-leased	4,455	4,094	361	--	--	4,455	4,094	361	--	--
Other private	8,503,160	3,077,985	83,293	2,417,309	2,924,573	8,100,239	3,069,487	77,360	2,260,913	2,692,479
All ownerships	9,178,939	3,385,972	90,511	2,563,288	3,139,168	8,738,717	3,376,796	83,294	2,393,873	2,884,754

Table 27.--Volume of sawtimber on commercial forest land, by ownership class and species group, Piedmont of North Carolina, 1984

Ownership class	Small sawtimber <sup>a</sup>				Large sawtimber <sup>b</sup>					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
						Thousand board feet				
National Forest	89,396	38,745	--	9,400	41,251	132,016	45,428	--	21,164	65,424
Other public	492,627	344,424	2,020	78,166	68,017	398,396	169,849	--	130,768	97,779
Forest industry	355,649	210,704	6,121	46,535	92,289	385,457	106,029	3,641	95,260	180,527
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	12,964,626	7,004,052	99,536	2,588,101	3,272,937	10,772,245	1,999,846	84,084	4,055,756	4,632,559
All ownerships	13,902,298	7,597,925	107,677	2,722,202	3,474,494	11,688,114	2,321,152	87,725	4,302,948	4,976,289

<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 30.--Volume of timber on commercial forest land, by class and species group, Piedmont of North Carolina, 1984

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
- - - - - Thousand cubic feet - - - - -					
<b>Sawtimber trees:</b>					
Saw-log portion	4,456,182	1,836,268	36,433	1,180,267	1,403,214
Upper-stem portion <sup>a</sup>	1,287,138	357,773	4,212	347,962	577,191
Total	5,743,320	2,194,041	40,645	1,528,229	1,980,405
Poletimber trees	2,995,397	1,182,755	42,649	865,644	904,349
All growing-stock trees	8,738,717	3,376,796	83,294	2,393,873	2,884,754
<b>Rough trees:</b>					
Sawtimber size	120,968	2,870	5,109	48,381	64,608
Poletimber size	275,099	6,306	1,980	95,461	171,352
Total	396,067	9,176	7,089	143,842	235,960
<b>Rotten trees:</b>					
Sawtimber size	36,682	--	--	20,831	15,851
Poletimber size	7,473	--	128	4,742	2,603
Total	44,155	--	128	25,573	18,454
<b>Salvable dead trees:</b>					
Sawtimber size	6,244	2,765	50	887	2,542
Poletimber size	8,339	5,768	192	874	1,505
Total	14,583	8,533	242	1,761	4,047
<b>Total, all timber</b>	<b>9,193,522</b>	<b>3,394,505</b>	<b>90,753</b>	<b>2,565,049</b>	<b>3,143,215</b>

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

Table 31.--Number of all live trees on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1984

Species	Diameter class (inches at breast height)														29.0 and larger							
	1.0-2.9		3.0-4.9		5.0-6.9		7.0-8.9		9.0-10.9		11.0-12.9		13.0-14.9			15.0-16.9		17.0-18.9		19.0-20.9		
All classes	Thousand trees																					
<b>Softwood:</b>																						
Longleaf pine	1,963	958	517	307	34	54	46	31	16													
Slash pine	36	--	--	--	--	--	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	232,715	55,590	55,823	42,797	37,393	23,056	11,237	4,785	325	1,588	90	31										
Loblolly pine	306,680	91,749	74,084	55,997	37,135	22,348	12,362	7,376	1,652	3,118	636	208	15									
Pond pine	249	--	189	--	--	60	--	--	--	--	--	--	--									
Virginia pine	350,819	129,106	98,389	53,531	38,449	21,345	6,957	2,401	124	505	12	21										
Pitch pine	2,107	209	606	409	340	238	189	79	16													
Table Mountain pine	611	--	--	367	131	42	53	--	18	--	--	--	--									
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--									
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--									
Eastern white pine	9,310	4,530	1,378	1,472	963	456	190	110	39	51	42	79										
Eastern hemlock	2,498	1,366	490	379	208	36	--	19	--	--	--	--	--									
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--									
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--									
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--									
Cedars	155,864	111,973	30,766	8,476	2,871	1,280	335	84	--	--	--	--	--									
<b>Total softwoods</b>	<b>1,062,852</b>	<b>395,481</b>	<b>262,242</b>	<b>163,735</b>	<b>117,524</b>	<b>68,915</b>	<b>31,405</b>	<b>14,866</b>	<b>5,362</b>	<b>2,168</b>	<b>780</b>	<b>339</b>	<b>35</b>									
<b>Hardwood:</b>																						
Select white oaks	184,903	84,684	35,426	23,368	13,529	8,608	8,363	4,642	2,847	1,624	811	912	89									
Select red oaks	46,253	21,099	12,115	3,677	2,696	1,968	1,702	1,315	724	370	300	272	15									
Chestnut oak	46,040	16,460	9,544	5,794	5,460	3,219	2,071	1,574	931	577	155	255	--									
Other white oaks	51,140	20,591	10,897	7,435	5,013	2,838	2,114	1,188	647	239	65	98	15									
Other red oaks	203,650	110,302	34,171	19,899	13,341	9,201	7,113	4,162	2,277	1,581	664	837	102									
Hickory	174,753	110,777	24,732	16,356	7,978	6,096	3,611	2,409	1,356	823	346	269	--									
Yellow birch	735	245	490	--	--	--	--	--	--	--	--	--	--									
Hard maple	20,087	16,920	1,232	1,096	301	307	96	114	21	--	--	--	--									
Soft maple	563,638	414,224	85,378	30,752	15,608	7,066	4,876	2,609	1,451	787	312	546	29									
Beech	27,117	14,903	5,312	2,832	897	749	832	500	373	284	189	226	20									
Sweetgum	447,668	292,976	87,383	31,043	15,833	9,467	4,862	2,924	1,761	675	409	318	17									
Tupelo and blackgum	134,544	101,606	17,997	6,510	4,371	2,072	1,179	411	122	191	34	36	15									
Ash	69,404	44,364	12,368	5,842	3,214	1,617	886	536	284	138	109	46	--									
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--									
Basswood	4,052	3,360	222	188	76	193	13	--	--	--	--	--	--									
Yellow-poplar	248,066	134,827	39,089	21,834	17,267	11,153	8,555	6,316	4,057	2,203	1,452	1,217	96									
Bay and magnolia	6,204	4,166	1,269	535	173	61	--	--	--	--	--	--	--									
Black cherry	95,481	76,889	13,295	3,349	1,102	815	31	--	--	--	--	--	--									
Black walnut	3,630	953	885	329	511	372	360	131	69	15	--	--	5									
Sycamore	7,228	2,525	1,763	832	646	142	353	410	230	116	83	88	40									
Black locust	5,559	1,965	1,192	405	506	725	440	163	67	27	49	20	--									
Elm	93,825	67,567	14,202	5,813	2,895	1,753	820	358	190	119	53	55	--									
Other eastern hardwoods	1,011,813	764,688	185,428	45,106	9,564	3,251	1,808	854	542	251	125	196	--									
<b>Total hardwoods</b>	<b>3,445,790</b>	<b>2,306,091</b>	<b>594,390</b>	<b>232,995</b>	<b>120,981</b>	<b>71,612</b>	<b>50,146</b>	<b>30,616</b>	<b>17,949</b>	<b>10,020</b>	<b>5,156</b>	<b>5,391</b>	<b>443</b>									
<b>All species</b>	<b>4,508,642</b>	<b>2,701,572</b>	<b>856,632</b>	<b>396,730</b>	<b>238,505</b>	<b>140,527</b>	<b>81,551</b>	<b>45,482</b>	<b>23,311</b>	<b>12,188</b>	<b>5,936</b>	<b>5,730</b>	<b>478</b>									

Table 32.--Number of growing-stock trees on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1984

Species	All classes	Diameter class (inches at breast height)													19.0- and larger
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9			
----- Thousand trees -----															
<b>Softwood:</b>															
Longleaf pine	1,435	517	430	307	34	54	46	31	--	--	16	--	--	--	
Slash pine	36	--	--	--	--	--	36	--	--	--	--	--	--	--	
Shortleaf pine	223,741	48,795	54,707	42,074	37,149	22,993	11,204	4,785	1,588	325	90	31	--	--	
Loblolly pine	297,451	86,257	70,878	55,554	37,135	22,301	12,321	7,376	3,118	1,652	636	208	15	--	
Pond pine	249	--	189	--	--	60	--	--	--	--	--	--	--	--	
Virginia pine	335,524	119,482	93,481	53,206	38,066	21,306	6,957	2,385	505	124	12	--	--	--	
Pitch pine	1,732	--	606	243	340	238	189	79	16	--	--	21	--	--	
Table Mountain pine	611	--	--	367	131	42	53	--	18	--	--	--	--	--	
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Eastern white pine	8,735	4,129	1,378	1,298	963	456	190	110	39	51	42	79	--	--	
Eastern hemlock	2,498	1,366	490	379	208	36	--	--	19	--	--	--	--	--	
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cedars	131,936	91,869	28,040	7,739	2,767	1,127	303	32	59	--	--	--	--	--	
<b>Total softwoods</b>	<b>1,003,948</b>	<b>352,415</b>	<b>250,199</b>	<b>161,167</b>	<b>116,793</b>	<b>68,613</b>	<b>31,299</b>	<b>14,798</b>	<b>5,362</b>	<b>2,168</b>	<b>780</b>	<b>339</b>	<b>15</b>	<b>15</b>	
<b>Hardwood:</b>															
Select white oaks	160,240	66,282	31,401	22,003	13,154	8,509	8,149	4,589	2,847	1,582	799	844	81	--	
Select red oaks	38,118	14,807	10,804	3,510	2,472	1,831	1,702	1,315	724	370	300	272	11	--	
Chestnut oak	35,698	9,560	7,898	5,123	5,045	2,908	1,973	1,513	888	446	155	189	--	--	
Other white oaks	40,107	12,659	9,112	6,910	4,679	2,678	1,974	1,163	547	207	65	98	15	--	
Other red oaks	168,415	80,244	30,579	19,263	13,132	8,973	6,992	4,037	2,193	1,551	597	787	67	--	
Hickory	132,630	73,752	22,395	14,513	7,393	6,056	3,532	2,318	1,349	761	322	239	--	--	
Yellow birch	735	245	490	--	--	--	--	--	--	--	--	--	--	--	
Hard maple	11,592	9,431	605	868	221	257	96	114	--	--	--	--	--	--	
Soft maple	308,492	202,728	59,037	22,155	11,308	4,808	3,902	2,049	1,188	675	251	370	21	--	
Beech	19,686	9,375	3,990	2,501	897	698	739	448	357	256	189	226	10	--	
Sweetgum	347,434	210,668	73,932	27,986	15,112	8,991	4,831	2,874	1,709	663	362	292	14	--	
Tupelo and blackgum	66,623	42,769	12,929	4,283	3,380	1,508	1,039	411	101	127	34	27	15	--	
Ash	41,932	22,608	9,566	4,108	2,584	1,283	819	422	284	138	74	46	--	--	
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Basswood	1,358	666	222	188	76	193	13	--	--	--	--	--	--	--	
Yellow-poplar	220,096	111,855	35,838	20,974	16,798	11,039	8,496	6,240	4,019	2,172	1,426	1,167	72	--	
Bay and magnolia	1,907	1,414	--	259	173	--	61	--	--	--	--	--	--	--	
Black cherry	48,150	37,071	7,729	1,780	925	614	31	--	--	--	--	--	--	--	
Black walnut	2,721	575	666	329	214	372	360	131	69	--	--	--	--	--	
Sycamore	5,990	1,706	1,763	601	568	142	353	391	175	102	71	78	40	--	
Black locust	4,238	1,584	830	146	506	522	367	141	46	27	49	20	--	--	
Elm	55,261	32,480	11,881	5,199	2,648	1,657	695	332	168	104	53	44	--	--	
Other eastern hardwoods	57,896	37,637	11,177	3,379	2,215	889	1,045	684	382	251	103	134	--	--	
<b>Total hardwoods</b>	<b>1,769,319</b>	<b>980,116</b>	<b>342,844</b>	<b>166,078</b>	<b>103,500</b>	<b>63,928</b>	<b>47,169</b>	<b>29,172</b>	<b>17,046</b>	<b>9,432</b>	<b>4,850</b>	<b>4,833</b>	<b>351</b>	<b>351</b>	
<b>All species</b>	<b>2,773,267</b>	<b>1,332,531</b>	<b>593,043</b>	<b>327,245</b>	<b>220,293</b>	<b>132,541</b>	<b>78,468</b>	<b>43,970</b>	<b>22,408</b>	<b>11,600</b>	<b>5,630</b>	<b>5,172</b>	<b>366</b>	<b>366</b>	

Table 33.--Merchantable volume of all live trees on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1984

Species	All classes	Diameter class (inches at breast height)												29.0 and larger			
		Thousand cubic feet															
		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						
<b>Softwood:</b>																	
Longleaf pine	3,514	531	208	811	736	630	598										
Slash pine	503				503												
Shortleaf pine	1,075,053	115,260	239,623	272,845	215,436	139,078	65,189	17,900	6,858	2,864							
Loblolly pine	1,365,553	150,124	227,833	258,389	238,389	214,339	123,736	86,464	42,177	21,062	3,040						
Pond pine	671			671													
Virginia pine	923,007	176,449	273,783	254,402	126,448	66,694	18,893	5,858	480								
Pitch pine	13,214	1,000	1,874	2,541	2,934	2,369	593		1,903								
Table Mountain pine	4,457	1,344	1,032	417	1,110		554										
Sand pine																	
Eastern white pine	31,426	3,803	5,301	4,573	2,613	2,419	1,234	2,362	2,294	6,827							
Eastern hemlock	2,429	504	855	348			722										
Spruce and fir																	
Baldcypress																	
Pondcypress																	
Cedars	56,656	19,815	14,479	11,248	5,369	1,605	1,732										2,408
<b>Total softwoods</b>	<b>3,476,483</b>	<b>468,830</b>	<b>764,988</b>	<b>806,245</b>	<b>593,538</b>	<b>427,134</b>	<b>212,653</b>	<b>113,182</b>	<b>51,809</b>	<b>32,656</b>							
<b>Hardwood:</b>																	
Select white oaks	856,137	61,151	84,117	100,704	159,349	125,811	106,113	78,292	48,184	76,440	15,976						
Select red oaks	212,049	11,427	17,185	23,580	32,365	37,081	27,450	18,029	17,808	25,197	1,927						
Chestnut oak	222,901	13,344	30,564	32,819	33,777	35,904	31,015	21,755	8,496	15,227							
Other white oaks	178,837	18,135	25,108	31,328	34,242	28,488	19,758	9,322	3,301	6,774	2,381						
Other red oaks	739,489	50,918	76,888	98,605	123,918	110,378	81,739	73,923	37,270	70,405	15,445						
Hickory	419,505	35,199	45,454	66,655	68,349	67,196	52,353	41,493	20,193	22,613							
Yellow birch																	
Hard maple	11,911	3,335	1,323	2,615	1,371	2,660	607										
Soft maple	508,392	84,121	85,696	68,126	77,963	58,785	45,591	31,129	16,835	36,640	3,506						
Beech	105,299	7,463	5,926	7,864	13,510	12,721	12,789	12,867	9,871	19,607	2,681						
Sweetgum	619,842	69,999	93,925	109,768	95,414	85,270	70,298	37,437	25,407	29,317	3,007						
Tupelo and blackgum	104,407	13,258	22,044	20,927	20,292	10,056	4,482	6,901	2,012	2,228	2,207						
Ash	107,402	15,608	18,518	17,581	15,410	12,968	10,669	6,921	5,570	4,157							
Cottonwood																	
Basswood	3,710	317	564	2,540	289												
Yellow-poplar	1,126,382	65,807	107,945	132,091	165,305	176,861	157,334	108,919	88,816	108,191	15,113						
Bay and magnolia	3,188	1,516	791		881												
Black cherry	23,110	8,178	5,825	8,352	755												
Black walnut	20,641	947	2,510	4,410	6,287	3,521	2,049	285									632
Sycamore	56,988	3,673	4,471	2,080	5,766	11,812	7,062	5,228	4,100	6,243	6,553						
Black locust	28,462	605	2,980	6,358	7,275	4,374	1,771	1,195	2,407	1,497							
Elm	91,385	11,648	16,742	19,115	15,738	9,152	6,884	5,500	2,742	3,864							
Other eastern hardwoods	262,419	92,586	42,736	28,086	28,031	21,411	16,819	11,656	6,482	14,612							
<b>Total hardwoods</b>	<b>5,702,456</b>	<b>569,235</b>	<b>691,312</b>	<b>783,604</b>	<b>906,287</b>	<b>814,449</b>	<b>654,783</b>	<b>470,852</b>	<b>299,494</b>	<b>443,012</b>	<b>69,428</b>						
<b>All species</b>	<b>9,178,939</b>	<b>1,038,065</b>	<b>1,456,300</b>	<b>1,589,849</b>	<b>1,499,825</b>	<b>1,241,583</b>	<b>867,436</b>	<b>584,034</b>	<b>351,303</b>	<b>475,668</b>	<b>74,876</b>						

Table 34.--Volume of growing stock on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1984

Species	Diameter class (inches at breast height)										All classes
	5.0-	7.0-	9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	29.0 and larger	
----- Thousand cubic feet -----											
<b>Softwood:</b>											
Longleaf pine	3,514	531	208	811	736	630	598	--	--	--	--
Slash pine	503	--	--	--	503	--	--	--	--	--	--
Shortleaf pine	1,071,696	114,037	238,379	272,437	214,954	139,078	65,189	17,900	6,858	2,864	--
Loblolly pine	1,363,479	149,288	227,833	257,642	237,898	214,339	123,736	86,464	42,177	21,062	3,040
Pond pine	671	--	--	671	--	--	--	--	--	--	--
Virginia pine	919,512	175,693	271,786	254,011	126,448	66,343	18,893	5,858	480	--	--
Pitch pine	12,964	750	1,874	2,541	2,934	2,369	593	--	--	1,903	--
Table Mountain pine	4,457	1,344	1,032	417	1,110	--	554	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	31,117	3,494	5,301	4,573	2,613	2,419	1,234	2,362	2,294	6,827	--
Eastern hemlock	2,429	504	855	348	--	--	722	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldecypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	49,748	18,244	14,251	9,897	4,837	787	1,732	--	--	--	--
<b>Total softwoods</b>	<b>3,460,090</b>	<b>463,885</b>	<b>761,519</b>	<b>803,348</b>	<b>592,033</b>	<b>425,965</b>	<b>212,653</b>	<b>113,182</b>	<b>51,809</b>	<b>32,656</b>	<b>3,040</b>
<b>Hardwood:</b>											
Select white oaks	839,351	58,040	82,270	99,533	156,394	124,868	106,113	76,721	47,512	72,492	15,408
Select red oaks	209,564	11,249	16,248	22,284	32,365	37,081	27,450	18,029	17,808	25,197	1,853
Chestnut oak	209,299	12,327	28,656	30,782	32,062	35,181	30,361	18,801	8,496	12,633	--
Other white oaks	168,785	16,700	23,111	29,903	32,887	28,061	17,504	8,463	3,301	6,774	2,381
Other red oaks	720,409	49,800	75,994	97,253	122,442	107,939	79,835	73,090	34,802	67,604	11,643
Hickory	405,956	32,374	43,270	66,283	67,668	65,075	52,133	38,836	19,316	21,001	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	9,964	2,688	1,055	2,190	1,371	2,660	--	--	--	--	--
Soft maple	409,714	64,320	66,406	49,645	66,822	49,672	39,923	27,897	14,003	28,153	2,873
Beech	99,435	6,808	5,926	7,355	12,442	11,693	12,204	11,982	9,871	19,607	1,547
Sweetgum	599,067	64,177	90,924	105,345	94,940	84,406	68,798	36,997	23,268	27,477	2,735
Tupelo and blackgum	86,684	9,001	18,075	15,991	18,105	10,056	3,844	5,529	2,012	1,864	2,207
Ash	92,130	11,691	15,352	14,288	14,323	10,562	10,669	6,921	4,167	4,157	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	3,710	317	564	2,540	289	--	--	--	--	--	--
Yellow-poplar	1,113,065	64,335	105,800	131,095	164,292	175,506	156,765	107,874	87,927	105,324	14,147
Bay and magnolia	2,519	847	791	--	881	--	--	--	--	--	--
Black cherry	17,661	4,840	5,210	6,856	755	--	--	--	--	--	--
Black walnut	19,108	947	1,262	4,410	6,287	3,521	2,049	--	--	--	632
Sycamore	53,459	2,992	4,073	2,080	5,766	11,545	5,982	4,830	3,832	5,906	6,553
Black locust	25,224	300	2,980	5,109	6,732	1,277	1,277	1,195	2,407	1,497	--
Elm	84,596	10,605	15,603	18,049	14,101	8,625	6,462	5,068	2,742	3,341	--
Other eastern hardwoods	108,927	8,593	13,294	9,180	18,095	17,912	13,007	11,656	5,830	11,360	--
<b>Total hardwoods</b>	<b>5,278,627</b>	<b>432,958</b>	<b>616,864</b>	<b>720,171</b>	<b>868,719</b>	<b>788,090</b>	<b>634,376</b>	<b>453,889</b>	<b>287,294</b>	<b>414,287</b>	<b>61,979</b>
<b>All species</b>	<b>8,738,717</b>	<b>896,843</b>	<b>1,378,383</b>	<b>1,523,519</b>	<b>1,460,752</b>	<b>1,214,055</b>	<b>847,029</b>	<b>567,071</b>	<b>339,103</b>	<b>446,943</b>	<b>65,019</b>

Table 35.--Volume of sawtimber on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1984

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		
<b>Softwood:</b>											
Longleaf pine	13,795	3,225	3,666	3,231	--	3,673	--	--	--	--	--
Slash pine	2,276	--	2,276	--	--	--	--	--	--	--	--
Shortleaf pine	3,229,421	1,010,631	973,672	713,952	363,240	106,422	42,979	18,525	--	--	--
Loblolly pine	4,729,537	918,019	1,069,621	1,101,274	693,474	518,673	265,273	140,868	22,335	--	--
Pond pine	2,318	--	--	--	--	--	--	--	--	--	--
Virginia pine	1,883,150	917,648	529,900	308,627	93,689	30,705	2,581	--	--	--	--
Pitch pine	48,321	8,326	12,350	12,020	3,293	--	--	12,332	--	--	--
Table Mountain pine	10,259	1,668	5,501	--	3,090	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	113,547	16,603	11,067	11,489	6,388	13,265	13,126	41,609	--	--	--
Eastern hemlock	5,104	1,312	--	--	3,792	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	76,751	39,707	23,507	3,992	9,545	--	--	--	--	--	--
<b>Total softwoods</b>	<b>10,114,479</b>	<b>2,919,457</b>	<b>2,631,560</b>	<b>2,154,585</b>	<b>1,176,511</b>	<b>672,738</b>	<b>323,959</b>	<b>213,334</b>	<b>22,335</b>	<b>213,334</b>	<b>22,335</b>
<b>Hardwood:</b>											
Select white oaks	2,574,544	--	533,066	493,931	466,542	362,803	237,405	388,445	92,352	--	--
Select red oaks	665,006	--	106,980	142,225	115,599	80,318	83,623	126,311	9,950	--	--
Chestnut oak	556,444	--	105,300	132,814	128,766	84,813	40,665	64,086	--	--	--
Other white oaks	431,743	--	118,706	118,419	82,076	42,494	17,008	38,411	14,629	--	--
Other red oaks	2,206,928	--	427,104	438,422	360,295	353,609	178,770	376,310	72,418	--	--
Hickory	1,131,634	--	231,153	260,822	234,022	189,827	99,142	116,668	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	15,222	--	4,646	10,576	--	--	--	--	--	--	--
Soft maple	928,878	--	215,767	189,035	170,204	126,204	67,417	144,021	16,230	--	--
Beech	313,178	--	45,436	44,379	47,621	47,731	39,957	81,474	6,580	--	--
Sweetgum	1,539,476	--	337,932	360,224	332,495	195,214	129,606	165,538	18,467	--	--
Tupelo and blackgum	172,893	--	59,248	38,499	16,332	25,234	10,073	10,147	13,360	--	--
Ash	209,082	--	46,211	40,408	46,652	32,546	20,439	22,826	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	1,017	--	1,017	--	--	--	--	--	--	--	--
Yellow-poplar	3,930,327	--	585,371	754,809	768,692	574,532	499,356	649,606	97,961	--	--
Bay and magnolia	2,937	--	2,937	--	--	--	--	--	--	--	--
Black cherry	2,757	--	2,757	--	--	--	--	--	--	--	--
Black walnut	44,538	--	21,097	12,791	7,840	--	--	--	2,810	--	--
Sycamore	200,688	--	18,523	44,756	25,382	22,542	19,113	31,054	39,318	--	--
Black locust	61,526	--	23,683	13,571	4,720	4,511	9,239	5,802	--	--	--
Elm	162,641	--	48,685	33,209	27,680	23,238	13,016	16,813	--	--	--
Other eastern hardwoods	324,474	--	62,227	69,960	55,289	51,751	27,183	58,064	--	--	--
<b>Total hardwoods</b>	<b>15,475,933</b>	<b>--</b>	<b>2,997,846</b>	<b>3,198,850</b>	<b>2,890,207</b>	<b>2,217,367</b>	<b>1,492,012</b>	<b>2,295,576</b>	<b>384,075</b>	<b>2,295,576</b>	<b>384,075</b>
<b>All species</b>	<b>25,590,412</b>	<b>2,919,457</b>	<b>5,629,406</b>	<b>5,353,435</b>	<b>4,066,718</b>	<b>2,890,105</b>	<b>1,815,971</b>	<b>2,508,910</b>	<b>406,410</b>	<b>2,508,910</b>	<b>406,410</b>

Table 36.--Volume of sawtimber on commercial forest land, by species, size class, and log grade, Piedmont of North Carolina, 1984

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades		Log grade			All grades		Log grade		
	1	2	3	4	1	2	3	4		
	----- Thousand board feet -----									
<b>Softwood:</b>										
Yellow pines <sup>a</sup>	9,919,077	1,574,364	1,388,670	6,956,043	(b)	2,321,152	510,654	324,961	1,485,537	(b)
Cypress <sup>c</sup>	195,402	2,345	1,187	111,935	79,935	87,725	2,345	782	22,585	62,013
Other eastern softwoods <sup>c</sup>	10,114,479	1,576,709	1,389,857	7,067,978	79,935	2,408,877	512,999	325,743	1,508,122	62,013
<b>Total</b>	3,239,550	668,007	684,732	1,329,459	557,352	1,963,348	668,007	465,889	590,849	238,603
<b>Hardwood:<sup>d</sup></b>										
Select white and red oaks	3,195,115	381,129	670,482	1,431,802	711,702	1,854,350	381,129	444,251	667,566	361,404
Other white and red oaks	1,131,634	140,725	196,319	491,513	303,077	639,659	140,725	147,122	211,087	140,725
Hickory	15,222	---	---	---	15,222	---	---	---	---	---
Hard maple	1,539,476	302,875	316,308	685,253	235,040	841,320	302,875	176,677	252,396	109,372
Sweetgum	256,377	54,576	47,775	129,325	24,701	133,113	54,576	29,285	31,947	17,305
Ash, walnut, and black cherry	3,930,327	777,044	710,165	1,577,544	865,574	2,590,147	777,044	388,522	880,650	543,931
Yellow-poplar	2,168,232	188,595	467,001	1,073,344	439,292	1,257,300	188,595	339,471	490,347	238,887
Other eastern hardwoods	15,475,933	2,512,951	3,092,782	6,718,240	3,151,960	9,279,237	2,512,951	1,991,217	3,124,842	1,650,227
<b>Total</b>	25,590,412	4,089,660	4,482,639	13,786,218	3,231,895	11,688,114	3,025,950	2,316,960	4,632,964	1,712,240
<b>All species</b>										

<sup>a</sup>Based on "Southern Pine Log Grades for Yard and Structural Lumber," Research Paper SE-39, published by the Southeastern Forest Experiment Station, Asheville, NC, 1968.

<sup>b</sup>Not applicable.

<sup>c</sup>Based on "Sawlog Grades for Eastern White Pine," Research Paper NE-205, published by the Northeastern Forest Experiment Station, Broomall, PA, 1971.

<sup>d</sup>Based on "A Guide to Hardwood Log Grading (revised)," General Technical Report NE-1, published by the Northeastern Forest Experiment Station, Broomall, PA, 1973.

Table 37.--Cubic volume in the merchantable saw-log portion of sawtimber trees, by species and diameter class, Piedmont of North Carolina, 1984

Species	All classes	Diameter class (inches at breast height)										Thousand cubic feet
		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			
<b>Softwood:</b>												
Longleaf pine	2,509	677	691	567	--	574	--	--	--	--	--	--
Slash pine	429	--	429	--	--	--	--	--	--	--	--	--
Shortleaf pine	607,100	212,027	183,635	125,224	60,044	16,898	6,541	2,731	--	--	--	--
Loblolly pine	847,960	192,601	201,730	193,161	114,630	82,342	40,368	20,210	2,918	--	--	--
Pond pine	486	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	367,346	192,521	99,936	54,134	15,486	4,876	393	--	--	--	--	--
Pitch pine	8,539	1,747	2,329	2,109	544	--	--	1,810	--	--	--	--
Table Mountain pine	1,899	350	1,038	511	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	19,817	3,601	2,258	2,177	1,140	2,250	2,091	6,300	--	--	--	--
Eastern hemlock	961	285	--	--	676	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	15,655	8,613	4,623	756	1,663	--	--	--	--	--	--	--
<b>Total softwoods</b>	<b>1,872,701</b>	<b>612,908</b>	<b>496,669</b>	<b>378,128</b>	<b>194,694</b>	<b>106,940</b>	<b>49,393</b>	<b>31,051</b>	<b>2,918</b>			
<b>Hardwood:</b>												
Select white oaks	426,562	--	99,686	86,242	76,561	57,138	36,277	57,414	13,244	--	--	--
Select red oaks	109,323	--	20,003	24,831	18,968	12,650	12,776	18,668	1,427	--	--	--
Chestnut oak	93,059	--	19,692	23,189	21,131	13,359	6,214	9,474	--	--	--	--
Other white oaks	73,414	--	22,197	20,678	13,469	6,693	2,600	5,679	2,098	--	--	--
Other red oaks	364,546	--	79,871	76,546	59,123	55,693	27,316	55,612	10,385	--	--	--
Hickory	189,453	--	43,226	45,538	38,403	29,897	15,149	17,240	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	2,715	--	868	1,847	--	--	--	--	--	--	--	--
Soft maple	157,490	--	40,586	33,441	28,459	20,254	10,557	21,878	2,315	--	--	--
Beech	50,666	--	8,495	7,748	7,813	7,519	6,106	12,041	944	--	--	--
Sweetgum	262,214	--	63,567	63,722	55,595	31,331	20,295	25,105	2,599	--	--	--
Tupelo and blackgum	30,645	--	11,573	6,901	2,730	4,079	1,615	1,628	2,119	--	--	--
Ash	34,975	--	8,642	7,055	7,654	5,127	3,123	3,374	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	191	--	191	--	--	--	--	--	--	--	--	--
Yellow-poplar	654,121	--	110,108	133,524	128,524	92,215	78,198	97,975	13,577	--	--	--
Bay and magnolia	552	--	552	--	--	--	--	--	--	--	--	--
Black cherry	519	--	519	--	--	--	--	--	--	--	--	--
Black walnut	7,868	--	3,945	2,233	1,287	--	--	--	403	--	--	--
Sycamore	32,582	--	3,484	7,918	4,244	3,619	2,993	4,717	5,607	--	--	--
Black locust	10,550	--	4,429	2,369	774	710	1,411	857	--	--	--	--
Elm	27,986	--	9,161	5,874	4,629	3,731	2,039	2,552	--	--	--	--
Other eastern hardwoods	54,050	--	11,651	12,249	9,127	8,182	4,169	8,672	--	--	--	--
<b>Total hardwoods</b>	<b>2,583,481</b>		<b>562,446</b>	<b>561,905</b>	<b>478,491</b>	<b>352,197</b>	<b>230,838</b>	<b>342,886</b>	<b>54,718</b>			
<b>All species</b>	<b>4,456,182</b>	<b>612,908</b>	<b>1,059,115</b>	<b>940,033</b>	<b>673,185</b>	<b>459,137</b>	<b>280,231</b>	<b>373,937</b>	<b>57,636</b>			





Table 40.--Net annual growth and removals of all live timber and growing stock on commercial forest land, by species, Piedmont of North Carolina, 1983

Species	All live timber <sup>a</sup>		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	----- Thousand cubic feet -----			
<b>Softwood:</b>				
Yellow pines	131,023	125,494	130,907	124,662
Eastern white pine	1,387	--	1,386	--
Spruce and fir	--	--	--	--
Cypress	--	--	--	--
Other eastern softwoods	2,236	586	2,219	493
<b>Total softwoods</b>	<b>134,646</b>	<b>126,080</b>	<b>134,512</b>	<b>125,155</b>
<b>Hardwood:</b>				
Select white and red oaks	37,145	25,535	36,947	24,023
Other white and red oaks	39,895	28,979	39,508	25,927
Hickory	10,568	7,967	10,465	7,530
Yellow birch	25	--	25	--
Hard maple	468	181	448	181
Sweetgum	26,747	11,197	26,400	10,341
Ash, walnut, and black cherry	5,744	5,053	5,446	4,159
Yellow-poplar	53,844	28,588	53,669	28,286
Tupelo and blackgum	2,463	3,194	2,353	2,712
Bay and magnolia	73	--	66	--
Other eastern hardwoods	35,025	23,534	31,271	16,904
<b>Total hardwoods</b>	<b>211,997</b>	<b>134,228</b>	<b>206,598</b>	<b>120,063</b>
<b>All species</b>	<b>346,643</b>	<b>260,308</b>	<b>341,110</b>	<b>245,218</b>

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

Table 41.--Net annual growth and removals of sawtimber on commercial forest land, by species, Piedmont of North Carolina, 1983

Species	Net annual growth	Annual timber removals
	Thousand board feet	
<b>Softwood:</b>		
Yellow pines	560,288	447,133
Eastern white pine	6,345	--
Spruce and fir	--	--
Cypress	--	--
Other eastern softwoods	4,849	1,880
<b>Total softwoods</b>	<b>571,482</b>	<b>449,013</b>
<b>Hardwood:</b>		
Select white and red oaks	158,893	84,009
Other white and red oaks	168,955	89,701
Hickory	37,237	24,773
Yellow birch	--	--
Hard maple	1,083	715
Sweetgum	84,161	23,477
Ash, walnut, and black cherry	16,620	14,296
Yellow-poplar	258,304	115,301
Tupelo and blackgum	6,591	7,336
Bay and magnolia	107	--
Other eastern hardwoods	91,860	46,641
<b>Total hardwoods</b>	<b>823,811</b>	<b>406,249</b>
<b>All species</b>	<b>1,395,293</b>	<b>855,262</b>

Table 42.--Annual removals of growing stock on commercial forest land, by species and diameter class, Piedmont of North Carolina, 1983

Species	All classes	Diameter class (inches at breast height)											Thousand cubic feet	
		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			
<b>Softwood:</b>														
Yellow pines	124,662	12,851	21,343	27,071	23,727	17,477	8,723	6,869	2,871	3,730				
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods	493	77	--	250	166	--	--	--	--	--	--	--	--	--
<b>Total softwoods</b>	<b>125,155</b>	<b>12,928</b>	<b>21,343</b>	<b>27,321</b>	<b>23,893</b>	<b>17,477</b>	<b>8,723</b>	<b>6,869</b>	<b>2,871</b>	<b>3,730</b>				
<b>Hardwood:</b>														
Select white and red oaks	24,023	1,120	1,970	2,803	3,643	3,203	2,878	2,069	1,095	3,760	1,482			
Other white and red oaks	25,927	1,590	1,842	3,056	4,139	5,655	3,284	1,564	1,450	1,709	1,638			
Hickory	7,530	785	1,274	165	880	1,317	1,688	206	433	486	296			
Yellow birch	--	--	--	--	--	--	--	--	--	--	--			
Hard maple	181	--	--	--	--	181	--	--	--	--	--			
Sweetgum	10,341	1,774	914	2,668	1,502	1,633	188	753	416	493	--			
Ash, walnut, and black cherry	4,159	535	268	295	323	330	631	463	937	377	--			
Yellow-poplar	28,286	712	1,597	3,199	5,000	5,136	2,634	2,785	3,388	3,835	--			
Tupelo and blackgum	2,712	275	397	157	695	791	220	--	--	177	--			
Bay and magnolia	--	--	--	--	--	--	--	--	--	--	--			
Other eastern hardwoods	16,904	1,960	2,629	1,481	2,718	2,132	1,717	1,254	641	2,372	--			
<b>Total hardwoods</b>	<b>120,063</b>	<b>8,751</b>	<b>10,891</b>	<b>13,824</b>	<b>18,900</b>	<b>20,378</b>	<b>13,240</b>	<b>9,094</b>	<b>8,360</b>	<b>13,209</b>	<b>3,416</b>			
<b>All species</b>	<b>245,218</b>	<b>21,679</b>	<b>32,234</b>	<b>41,145</b>	<b>42,793</b>	<b>37,855</b>	<b>21,963</b>	<b>15,963</b>	<b>11,231</b>	<b>16,939</b>	<b>3,416</b>			

Table 43.--Mortality of all live timber, growing stock, and sawtimber on commercial forest land, by species, Piedmont of North Carolina, 1983

Species	All live timber <sup>a</sup>	Growing stock	Sawtimber
	Thousand cubic feet		Thousand board feet
<b>Softwood:</b>			
Yellow pines	41,665	40,825	59,048
Eastern white pine	156	156	--
Spruce and fir	--	--	--
Cypress	--	--	--
Other eastern softwoods	1,109	1,004	1,161
<b>Total softwoods</b>	<b>42,930</b>	<b>41,985</b>	<b>60,209</b>
<b>Hardwood:</b>			
Select white and red oaks	3,488	2,549	6,368
Other white and red oaks	11,125	9,147	25,372
Hickory	3,369	2,668	6,418
Yellow birch	--	--	--
Hard maple	--	--	--
Sweetgum	2,910	2,690	7,541
Ash, walnut, and black cherry	1,470	718	2,213
Yellow-poplar	1,650	1,306	2,539
Tupelo and blackgum	346	138	--
Bay and magnolia	--	--	--
Other eastern hardwoods	11,797	5,287	14,711
<b>Total hardwoods</b>	<b>36,155</b>	<b>24,503</b>	<b>65,162</b>
<b>All species</b>	<b>79,085</b>	<b>66,488</b>	<b>125,371</b>

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

Table 44.--Change in number of all live trees on commercial forest land, by species group, survey completion date, and diameter class, Piedmont of North Carolina

Species group and year	All classes	Diameter class (inches at breast height)							
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0 and larger
----- Thousand trees -----									
<b>Yellow pine</b>									
1975	1,368,783	566,691	371,247	196,617	120,654	65,809	28,535	11,957	7,273
1984	895,180	277,612	229,608	153,408	113,482	67,143	30,880	14,672	8,375
Change	-473,603	-289,079	-141,639	-43,209	-7,172	+1,334	+2,345	+2,715	+1,102
<b>Other softwood</b>									
1975	202,743	151,919	35,470	9,882	2,972	1,575	535	124	266
1984	167,672	117,869	32,634	10,327	4,042	1,772	525	194	309
Change	-35,071	-34,050	-2,836	+445	+1,070	+197	-10	+70	+43
<b>Hardwood</b>									
1975	3,810,771	2,600,404	664,996	244,684	121,561	74,935	45,988	26,438	31,765
1985	3,445,790	2,306,091	594,390	232,995	120,981	71,612	50,146	30,616	38,959
Change	-364,981	-294,313	-70,606	-11,689	-580	-3,323	+4,158	+4,178	+7,194

Table 45.--Land area, by class, major forest type, and survey completion date, Piedmont of North Carolina

Land use class	Survey completion date			Change 1975-1984
	1964	1975	1984	
----- Acres -----				
<b>Forest land:</b>				
Commercial forest land:				
Pine and oak-pine types	3,404,379	2,923,225	2,502,114	-421,111
Hardwood types	2,611,487	3,104,768	3,012,731	-92,037
Total	<u>6,015,866</u>	<u>6,027,993</u>	<u>5,514,845</u>	<u>-513,148</u>
Noncommercial forest land:				
Productive-reserved	15,902	20,242	32,085	+11,843
Unproductive	--	--	--	--
Total	<u>15,902</u>	<u>20,242</u>	<u>32,085</u>	<u>+11,843</u>
<b>Nonforest land:</b>				
Cropland	2,800,295	2,187,494	2,220,132	+32,638
Pasture and range	798,089	966,306	905,776	-60,530
Other	864,716	1,245,516	1,644,692	+399,176
Total	<u>4,463,100</u>	<u>4,399,316</u>	<u>4,770,600</u>	<u>+371,284</u>
<b>All land<sup>a</sup></b>	<u>10,494,868</u>	<u>10,447,551</u>	<u>10,317,530</u>	<u>-130,021</u>

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

Table 46.--Volume<sup>a</sup> of sawtimber, growing stock, and all live timber on commercial forest land, by species group, survey completion date, and diameter class, Piedmont of North Carolina

Species group and year	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>										
1964	6,709,695	--	2,157,113	1,892,405	1,290,048	675,873	388,232	161,559	144,465	
1975	9,172,361	--	2,854,870	2,436,442	1,751,080	1,019,953	553,951	272,456	283,609	
1984	10,114,479	--	2,919,457	2,631,560	2,154,585	1,176,511	672,738	323,959	235,669	
<b>Hardwood</b>										
1964	9,382,801	--	--	2,082,150	2,055,843	1,640,971	1,188,496	813,073	1,602,268	
1975	13,015,370	--	--	2,749,674	2,762,693	2,421,181	1,824,582	1,090,561	2,166,679	
1984	15,475,933	--	--	2,997,846	3,198,850	2,890,207	2,217,367	1,492,012	2,679,651	
<b>GROWING STOCK (in thousand cubic feet)</b>										
<b>Softwood</b>										
1964	2,657,188	507,891	639,729	593,592	425,738	255,051	122,153	65,315	25,837	21,882
1975	3,430,423	585,380	801,047	785,600	548,131	346,200	184,340	93,195	43,572	42,958
1984	3,460,090	463,885	761,519	803,348	592,033	425,965	212,653	113,182	51,809	35,696
<b>Hardwood</b>										
1964	3,650,393	383,096	507,679	604,940	603,347	506,490	360,178	243,295	156,571	284,797
1975	4,806,387	455,213	619,810	753,895	796,776	680,634	531,427	373,507	210,006	385,119
1984	5,278,627	432,958	616,864	720,171	868,719	788,090	634,376	453,889	287,294	476,266
<b>ALL LIVE TIMBER<sup>b</sup> (in thousand cubic feet)</b>										
<b>Softwood</b>										
1964	2,669,923	512,409	642,732	595,706	426,743	255,697	122,153	65,315	25,837	23,331
1975	3,447,248	590,587	804,805	788,393	549,423	347,087	184,340	93,195	43,572	45,846
1984	3,476,483	468,830	764,988	806,245	593,538	427,134	212,653	113,182	51,809	38,104
<b>Hardwood</b>										
1964	3,975,198	502,447	568,539	657,811	629,252	523,328	371,731	252,383	163,233	306,474
1975	5,214,329	597,029	694,113	819,789	831,003	703,251	548,440	387,480	218,883	414,341
1984	5,702,456	569,235	691,312	783,604	906,287	814,449	654,783	470,852	299,494	512,440

<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.



Hutchins, Cecil C., Jr.

Forest statistics for the Piedmont of North Carolina, 1984. Resour. Bull. SE-76. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1985. 46 pp.

Since 1975 the area of commercial forest land declined by 9 percent, or 513,000 acres, in the Piedmont of North Carolina. Acreage of pine and oak-pine forest accounted for 80 percent of the loss. Basal area increased from 68 to 77 square feet per acre. Volume of softwood growing stock remained the same, 3.5 billion cubic feet, while hardwood increased 10 percent to 5.3 billion cubic feet. Net annual growth of growing stock totaled 341 million cubic feet, down 19 percent from the previous survey. Annual removals of growing stock totaled 245 million cubic feet, down less than 3 percent. Mortality of growing stock totaled 66 million cubic feet, up 45 percent from the previous survey.

KEYWORDS: Commercial forest land, forest ownership, timber volume, timber growth, timber removals, forest trends.

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