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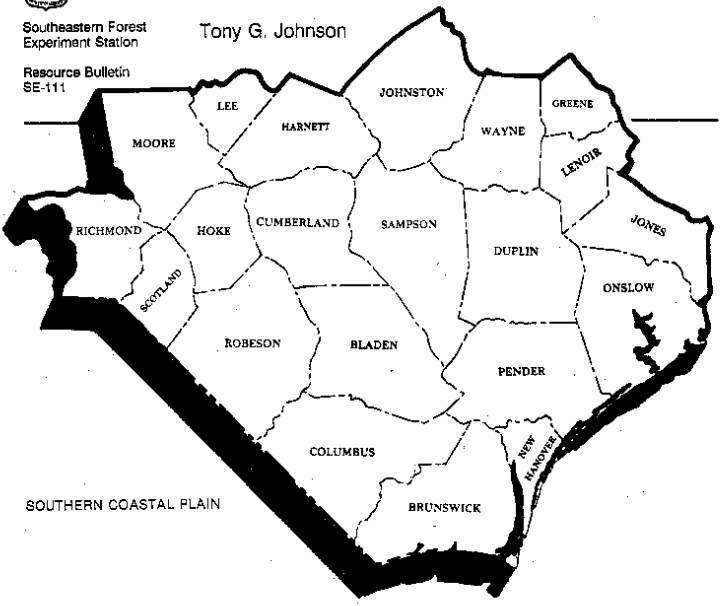
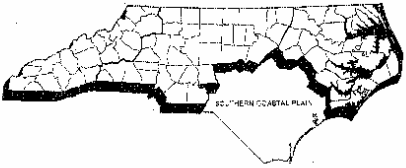
Forest Statistics for the Southern Coastal Plain of North Carolina, 1990

Tony G. Johnson



SOUTHERN COASTAL PLAIN



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Southeastern Forest Experiment Station
P.O. Box 2680
Asheville, North Carolina 28802

Forest Statistics for the Southern Coastal Plain of North Carolina, 1990

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

Foreword

This report highlights the principal findings of the sixth forest survey of the Southern Coastal Plain of North Carolina. Field work began in April 1989 and was completed in September 1989. Five previous surveys, completed in 1937, 1952, 1962, 1973, and 1983, provide statistics for measuring changes and trends over the past 53 years. The primary emphasis in this report is on the changes and trends since 1983. 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 Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These multiresource data help provide a basis for formulating forest policies and programs and for the orderly development and use of the resources. This report deals only with the extent and condition of forest land, associated timber volumes, and rates of timber growth and removals.

The 21-county area covered by this report is one of four survey units in North Carolina. A comparable report for the other three units will be issued as the statewide inventory progresses. When completed, the inventory will provide updated statistics on the timber resource for all of North Carolina.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the North Carolina Department of Environment, Health, and Natural Resources, Division of Forest 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.

Noel D. Cost
Project Leader

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Since 1983 in the Southern Coastal Plain of North Carolina--

• area of timberland decreased by 29,000 acres, or less than 1 percent. Timberland currently occupies 5.2 million acres, or 62 percent of the total land area in this 21-county region. Land use changes occurred on almost 206,000 acres. Nearly 118,000 acres of timberland were diverted to other land uses, while 88,000 acres were added to the timberland base. Most of the additions came from natural seeding and tree planting on former agricultural land. Forest clearing for urban development accounted for 50 percent of timberland diversions, with clearing for agriculture and water accounting for 37 and 4 percent, respectively. Ten percent, or more than 11,000 acres, was reclassified as reserved timberland.

• area of timberland controlled by nonindustrial private forest (NIPF) landowners has declined by 33,000 acres, or just under 1 percent. NIPF owners currently control 3.6 million acres, nearly 69 percent of the timberland in this area. Within the NIPF category, farmer-owned timberland decreased by 13 percent, or more than 220,000 acres. This continues a trend dating from 1952; farm ownership has fallen from 3.5 million acres to the current total of 1.5 million acres of timberland. In contrast to farm owners, other individuals increased timberland holdings by 6 percent to 1.7 million acres. Timberland held by other corporate owners increased by 25 percent to 432,000 acres. Timberland owned or leased by forest industry increased by less than 1 percent. Altogether, forest industry controls nearly 1.2 million acres, or 22 percent of the timberland. The area of timberland in public ownership declined by less than 1 percent to 478,000 acres. About 9 percent of the timberland is controlled by public agencies.

• area of timberland classified as a pine forest type declined by 194,000 acres, or almost 8 percent, and now totals 2.3 million acres. Area in pine plantations jumped by 25 percent to 954,000 acres and now accounts for 41 percent of pine stands in this region. Natural pine stands declined by 22 percent to 1.4 million acres. Area of loblolly pine type--the predominant forest type in the region--increased by 5 percent to 1.6 million acres. Area of longleaf pine type declined by 35 percent to 236,000 acres, while pond pine type dropped 23 percent to 348,000 acres. In contrast, acreage in oak-pine and most of the hardwood forest types increased during the remeasurement period. The oak-pine type increased 10 percent to 766,000 acres. Oak-gum-cypress, the dominant hardwood type in the region, increased by 7 percent to 1.3 million acres. Area classified as oak-hickory type increased by 11 percent to 715,000 acres.

• more than 109,000 acres annually were harvested and retained in timberland. This represents a 15-percent increase, or nearly 14,500 acres more per year, over that harvested between 1973 and 1983. Almost 73 percent of the harvested acres were on NIPF land, 25 percent on land controlled by forest industry, and the remaining 2 percent from public land. Together, natural pine stands and pine plantations accounted for more than half of the total annual harvest. Hardwood stands made up 35 percent and oak-pine stands 13 percent of the annual harvested acreage. In addition to final harvests, almost 62,000 acres annually experienced some form of partial harvest or intermediate cutting. This compares with approximately 50,000 acres yearly during the last remeasurement period. Natural disturbances such as weather, fire, insects, and disease damaged almost 38,000 acres yearly.

• artificial and natural regeneration increased 73 percent from an average of 75,000 to almost 131,000 acres annually. Newly planted and natural pine stands were established on more than 55,000 acres each year--an area equivalent to 97 percent of the pine stands harvested. Artificially regenerated acreage jumped 38 percent from 30,000 to nearly 42,000 acres annually, accounting for nearly one-third of the area regenerated. By ownership, forest industry accounted for 57 percent of the artificially regenerated area, NIPF land for 42 percent, and public land the remaining 1 percent. The rate of artificial regeneration on forest industry land increased 38 percent from 17,000 to nearly 24,000 acres annually. Artificial regeneration on NIPF land increased 77 percent from 10,000 to 18,000 acres annually and included 4,000 acres of new pine stands established each year on nonforest land. Planted pine stands currently account for nearly half of all forest industry timberland, as compared with 9 percent for NIPF land.

• average basal area of live trees 5.0 inches d.b.h. and larger increased from 66 to 68 square feet per acre. Current merchantable volume of softwoods and hardwoods averages 1,494 cubic feet per acre. Acreage in stands classed as fully stocked increased 7 percent to 2.3 million acres, whereas acreage in medium-stocked stands declined by 5 percent to 2.1 million acres. Together, fully stocked and medium-stocked stands make up 82 percent of the total timberland area. Poorly stocked stands dropped by 7 percent to 921,000 acres and now make up 18 percent of the total timberland area.

• volume of softwood growing stock increased by more than 6 percent to 3.8 billion cubic feet. Volume of loblolly pine--the species accounting for more than two-thirds of the softwood volume--increased by 11 percent to 2.6 billion cubic feet. Volume of slash pine increased 47 percent to 176 million cubic feet. Collectively, the volumes of longleaf, shortleaf, Virginia, and pond pines dropped by 9 percent to 828 million cubic feet. Volume of softwood growing stock increased in all diameter classes with the exception of the 6- and 12-inch diameter classes. Volume in each of these classes dropped by less than 2 percent. Volume in the 8- and 10-inch diameter classes, which account for nearly 34 percent of the softwood growing-stock volume, increased by 7 and 9 percent, respectively. Volume in trees larger than 15.0 inches d.b.h. increased nearly 14 percent to 1.0 billion cubic feet. More than half of the softwood increase occurred on forest industry land, where softwood inventory rose by 15 percent to 936 million cubic feet. Softwood volume on public land increased by 26 percent to 409 million cubic feet, whereas softwood volume on NIPF land remained stable at 2.5 billion cubic feet. Volume of softwood sawtimber increased by 8 percent to 14.0 billion board feet.

• volume of hardwood growing stock increased 4 percent to 3.6 billion cubic feet. Tupelo and blackgum, the dominant hardwood species group in this region, increased by 7 percent to 782 million cubic feet. Collectively, the inventory of oak species was up 8 percent to 979 million cubic feet, while sweetgum increased by 3 percent to 641 million cubic feet. These three groups accounted for 63 percent of the total gain in hardwood volume. Hardwood volume increased in all diameter classes except the 8- and 10-inch classes. Volume in trees 15.0 inches d.b.h. and larger increased almost 11 percent to 1.3 billion cubic feet. Hardwood volume increased across all ownership categories. NIPF land, which controls 79 percent of the hardwood volume, increased by 1 percent to 2.8 billion cubic feet. Public and forest industry land increased by 26 and 15 percent,

respectively. Volume of hardwood sawtimber rose 9 percent to 10.5 billion board feet.

• net annual growth of softwood growing stock increased 13 percent from 194 to 220 million cubic feet. Softwood net growth on NIPF land increased by 11 percent to 130 million cubic feet, while net growth on forest industry increased by an equal rate to 70 million cubic feet. Softwood net growth on public land increased by 46 percent to 20 million cubic feet. Across all ownerships, softwood net growth exceeded removals by 19 percent. As in the previous survey, most of the surplus growth occurred on forest industry land, where growth exceeded removals by 68 percent. In contrast, on NIPF land, removals exceeded growth by 6 percent due to the 28-percent overcut on farmer-owned timberlands. Net annual growth of hardwood growing stock increased 3 percent to 117 million cubic feet. This increase in hardwood growth occurred across all ownership categories, although most of the increase was on public-owned timberland. Across all ownerships, hardwood growth exceeded removals by 25 percent, as compared with 93 percent in 1982. Net annual growth for all species included 1.3 billion board feet of sawtimber. Net growth per acre for softwood and hardwood growing stock increased from 58 to 64 cubic feet per acre. So far, this is the highest growth rate per acre recorded for any survey unit during the sixth forest survey of the Southeast.

• annual removals of softwood growing stock increased 30 percent from 142 to 185 million cubic feet. Softwoods accounted for two-thirds of the total growing-stock removals and included 755 million board feet of sawtimber. By ownership, 75 percent of the softwood removals came from NIPF land, 22 percent from forest industry land, and the remaining 3 percent from public land. Softwood removals on NIPF and forest industry land were up 26 and 53 percent, respectively, but were down 5 percent on public land. Hardwood removals have jumped by 60 percent since the previous survey period, rising from 59 to 94 million cubic feet annually. Hardwood removals were up on all major ownership groups. Hardwood removals included 292 million board feet of sawtimber.

• annual mortality of softwood growing stock increased 2 percent to 25 million cubic feet. Softwood mortality reduced gross growth by 10 percent and included 54 million cubic feet of sawtimber. Annual mortality of hardwood growing stock increased 139 percent to 32 million cubic feet. Increases in hardwood mortality were recorded on all ownership classes. More than three-fourths of the hardwood mortality occurred on NIPF land. Hardwood mortality reduced gross growth by 22 percent and included 93 million board feet of sawtimber.

How the Inventory is Made

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

1. Initial estimates of forest and nonforest areas were based on the classification of 29,149 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 3,110 of the 16-point clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassification.

2. Estimates of timber volume and forest classification were based on measurements recorded at 1,904 ground sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

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

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

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 1,372 permanent sample plots established in the fifth survey.

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

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

Reliability of the Data

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

	Percent
Per million acres of timberland	1.08
Per billion cubic feet of growing stock	6.31
Per billion cubic feet of net annual growth	1.32
Per billion cubic feet of annual removals	3.27

Sampling errors for county and unit totals,[a] in terms of one standard error, Southern Coastal Plain of North Carolina, 1990

County	Timberland area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
		Sampling error[b]		
Bladen	1.84	9.44	8.82	22.93
Brunswick	1.28	10.25	7.20	20.53
Columbus	1.35	6.92	6.75	19.33
Cumberland	2.57	10.21	10.46	37.53
Duplin	1.86	9.78	8.75	23.70
Green	3.49	18.56	18.13	37.46
Harnett	1.96	11.89	12.41	32.22
Hoke	3.56	12.29	13.40	45.69
Johnston	2.24	9.45	8.63	24.79
Jones	1.92	10.51	10.97	26.05
Lee	3.44	16.30	15.55	37.77
Lenoir	3.09	15.02	12.62	54.58
Moore	1.75	8.13	8.50	24.85
New Hanover	9.61	27.11	26.57	68.52
Onslow	2.11	9.45	9.91	24.39
Pender	1.06	7.32	7.43	23.61
Richmond	1.83	9.90	11.78	27.58
Robeson	1.88	8.71	8.69	27.43
Sampson	1.22	9.24	8.69	22.15
Scotland	3.77	16.30	18.16	39.82
Wayne	3.40	14.35	12.92	25.59
Total	.45	2.31	2.26	6.19

[a]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.

[b]By random-sampling formula (in percent).

Definitions of Terms

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

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

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

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

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

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

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

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

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

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

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

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

Commercial forest land. (see: Timberland).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Oak-hickory. Forests in which upland oaks or hickory, singly or in combination, constitute a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine.

(Common associates include yellow-poplar, elm, maple, and black walnut.)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Industrial wood. All roundwood products except fuelwood.

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

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

Land area. The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river floodplains (omitting tidal flats below mean high tide), streams, sloughs, estuaries, and canals less than one-eighth of a statute mile in width, and lakes, reservoirs, and ponds less than 40 acres in area.

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

Live-tree volume. Volume (cubic feet) of wood above the ground line in live trees 1.0 inch d.b.h. and larger. The volume in twigs and lateral limbs smaller than 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Saplings. Live trees 1.0 to 5.0 inches d.b.h.

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

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

Saw-log top. The point on the bole of sawtimber trees above which a conventional saw log cannot be produced. The minimum saw-log top is 7.0 inches in diameter outside bark (d.o.b.) for softwoods and 9.0 inches (d.o.b.) for hardwoods.

Sawtimber-size trees. Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger.

Sawtimber volume. Growing-stock volume in the saw-log portion of sawtimber-size trees in board feet (International 1/4-inch rule).

Seedlings. Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive and develop.

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

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

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

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

Other softwoods. Cypress, eastern 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 live trees in the stand.

Sawtimber stands. Stands at least 16.7 percent stocked with live trees, with half or more of total stocking in sawtimber and poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands. Stands at least 16.7 percent stocked with live trees, of which half or more of total stocking is in poletimber and sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands. Stands at least 16.7 percent stocked with live trees of which more than half of total stocking is saplings and seedlings.

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

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

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

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

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

Timber products. Roundwood products and byproducts.

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

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

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

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

Unproductive forest land. (see: Woodland).

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

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

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

Stocking Standard

D.b.h. 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	60.5	61.0	68.2	60.0
8	68.4	68.1	76.0	68.4
10	73.4	73.1	81.4	73.4
12	76.7	76.7	85.2	76.4
14	79.2	79.4	88.2	78.4
16	80.9	81.6	90.4	79.8
18	82.2	83.3	92.3	80.8
20	83.4	84.8	93.8	81.5
22	84.3	86.0	95.1	82.1
24+	85.4	87.8	98.2	83.1
Average	74.8	74.4	87.9	74.4

Metric equivalents of units used in this report

1 acre = 4,046.86 square meters or 0.404686 hectare
1 cubic foot = 0.028317 cubic meter
1 inch = 2.54 centimeters or 0.0254 meter
Breast height (4.5 feet) = 1.4 meters above ground level
1 square foot = 929.03 square centimeters or 0.0929 square meter
1 square foot per acre basal area = 0.229568 square meter per hectare
1 pound = 0.454 kilogram
1 ton = 0.907 metric ton

County Tables

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

Table 1--Area, by county and land class, Southern Coastal Plain of North Carolina, 1990

County	All land[a]	Forest land				Nonforest land[b]
		Total	Timberland	Woodland	Reserved timberland	
	Acres					
Bladen	562,509	419,234	416,315	--	2,919	143,275
Brunswick	550,713	407,162	407,162	--	--	143,551
Columbus	600,602	422,278	420,770	--	1,508	178,324
Cumberland	420,646	233,566	233,266	--	300	187,080
Duplin	524,301	291,037	291,037	--	--	233,264
Green	170,477	78,228	78,228	--	--	92,249
Harnett	384,710	224,014	221,237	--	2,777	160,696
Hoke	250,342	162,983	162,933	--	50	87,359
Johnston	509,063	239,997	239,997	--	--	269,066
Jones	300,806	228,676	221,076	--	7,600	72,130
Lee	165,939	108,109	108,109	--	--	57,830
Lenoir	257,485	125,530	125,530	--	--	131,955
Moore	448,800	334,809	334,158	--	651	113,991
New Hanover	118,106	49,807	49,329	--	478	68,299
Onslow	488,070	343,837	343,657	--	180	144,233
Pender	559,885	459,507	459,450	--	57	100,378
Richmond	305,402	237,353	237,353	--	--	68,049
Robeson	607,482	280,949	280,949	--	--	326,533
Sampson	605,984	338,055	338,055	--	--	267,929
Scotland	204,371	123,144	123,144	--	--	81,227
Wayne	354,368	145,303	144,623	--	680	209,065
Total	8,390,061	5,253,578	5,236,378	--	17,200	3,136,483

[a]From U.S. Bureau of the Census, 1980.

[b]Includes 30,720 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2--Area of timberland, by county and ownership class, Southern Coastal Plain of North Carolina, 1990

County	All ownerships	Ownership class							
		National forest	Miscellaneous Federal	State	County and municipal	Forest industry[a]	Other private		
							Farmer	Corporate	Individual
					Acres				
Bladen	416,315	—	39	32,610	200	93,134	78,390	63,873	148,069
Brunswick	407,162	--	8,567	--	150	191,497	29,216	51,128	126,604
Columbus	420,770	—	40	84	116	182,108	92,190	6,358	139,874
Cumberland	233,266	--	31,852	46	775	7,928	87,301	30,104	75,260
Duplin	291,037	--	--	7,596	170	39,600	129,958	8,122	105,591
Green	78,228	--	--	20	21	349	37,478	5,766	34,594
Harnett	221,237	--	8,122	157	--	7,683	119,281	24,966	61,028
Hoke	162,933	--	84,909	1,812	18	4,152	20,012	18,011	34,019
Johnston	239,997	--	--	407	10	2,315	129,668	16,553	91,044
Jones	221,076	29,785	550	31,075	21	75,247	36,788	12,984	34,624
Lee	108,109	--	--	--	208	7,432	37,676	6,279	56,514
Lenoir	125,530	--	--	355	400	11,756	59,335	5,651	48,033
Moore	334,158	--	2,451	4,540	833	54,466	123,576	30,208	118,084
New Hanover	49,329	--	780	1,350	1,692	3,509	3,231	9,692	29,075
Onslow	343,657	--	59,029	46,474	473	110,104	22,964	5,103	99,510
Pender	459,450	--	20	62,398	150	232,742	39,170	13,057	111,913
Richmond	237,353	--	2,488	28,284	1,486	40,028	58,408	20,316	86,343
Robeson	280,949	--	--	614	284	34,127	84,459	32,293	129,172
Sampson	338,055	--	--	181	243	43,731	167,120	28,814	97,966
Scotland	123,144	--	3,227	18,467	925	10,548	46,204	9,727	34,046
Wayne	144,623	--	485	596	259	3,247	68,528	32,774	38,734
Total	5,236,378	29,785	202,559	237,066	8,436	1,155,703	1,470,953	431,779	1,700,097

[a]Includes 109,865 acres of other private land under long-term lease.

Table 3—Area of timberland, by county and forest-type group, Southern Coastal Plain of North Carolina, 1990

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					
Bladen	416,315	—	—	45,414	167,118	57,866	35,050	110,867	—	—
Brunswick	407,162	—	—	66,974	178,608	35,659	24,497	101,424	—	—
Columbus	420,770	—	—	25,400	166,783	31,789	46,471	150,327	—	—
Cumberland	233,266	—	—	22,657	83,728	48,867	27,870	50,144	—	—
Duplin	291,037	—	—	3,879	93,872	58,525	59,733	75,028	—	—
Green	78,228	—	—	—	17,319	8,649	23,083	29,177	—	—
Harnett	221,237	—	—	13,870	69,440	40,444	71,230	26,253	—	—
Hoke	162,933	—	—	30,262	30,099	58,403	16,028	28,141	—	—
Johnston	239,997	—	—	2,758	80,857	35,865	49,670	70,847	—	—
Jones	221,076	—	—	2,164	139,095	13,534	11,750	54,533	—	—
Lee	108,109	—	—	—	20,157	20,324	61,349	6,279	—	—
Lenoir	125,530	—	—	355	27,202	14,262	14,127	66,759	2,825	—
Moore	334,158	—	—	41,620	98,307	52,938	111,588	26,959	2,746	—
New Hanover	49,329	—	—	8,090	12,923	8,152	6,462	13,702	—	—
Onslow	343,657	—	—	20,515	181,637	38,619	21,454	81,432	—	—
Pender	459,450	—	—	31,343	236,046	56,659	14,920	116,751	3,731	—
Richmond	237,353	—	—	32,126	89,342	38,797	64,389	12,699	—	—
Robeson	280,949	—	—	3,098	76,533	40,278	35,063	125,977	—	—
Sampson	338,055	—	—	8,643	109,785	64,929	68,926	80,237	5,535	—
Scotland	123,144	—	—	22,525	45,959	19,545	30,251	4,864	—	—
Wayne	144,623	—	—	2,979	32,149	22,236	63,423	23,836	—	—
Total	5,236,378	—	—	384,672	1,956,959	766,340	857,334	1,256,236	14,837	—

Table 4--Area of timberland, by county and stand-size class, Southern Coastal Plain of North Carolina, 1990

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
		Acres			
Bladen	416,315	139,008	97,668	165,671	13,968
Brunswick	407,162	111,616	154,326	132,868	8,352
Columbus	420,770	204,243	117,193	96,560	2,774
Cumberland	233,266	104,446	65,218	63,602	--
Duplin	291,037	103,771	73,502	113,764	--
Green	78,228	37,478	14,784	25,966	--
Harnett	221,237	90,212	45,368	85,657	--
Hoke	162,933	80,620	30,129	52,184	--
Johnston	239,997	116,721	57,946	65,330	--
Jones	221,076	74,127	81,303	65,646	--
Lee	108,109	36,023	37,716	34,370	--
Lenoir	125,530	54,932	28,483	42,115	--
Moore	334,158	145,017	88,469	100,672	--
New Hanover	49,329	18,283	11,662	19,384	--
Onslow	343,657	139,005	69,636	129,650	5,346
Pender	459,450	178,217	130,709	148,659	1,865
Richmond	237,353	81,389	64,879	86,649	4,436
Robeson	280,949	164,384	29,591	86,974	--
Sampson	338,055	132,360	79,764	125,931	--
Scotland	123,144	54,609	14,343	54,192	--
Wayne	144,623	72,522	21,450	47,671	2,980
Total	5,236,378	2,138,983	1,314,159	1,743,515	39,721

Table 5--Area of timberland, by county and site class, Southern Coastal Plain of North Carolina, 1990

County	All classes	Site class (cubic feet per acre per year)				
		>164	120-164	85-119	50-84	20-49
		Acres				
Bladen	416,315	--	14,515	70,205	192,392	139,203
Brunswick	407,162	--	--	40,069	251,480	115,613
Columbus	420,770	--	6,035	169,540	233,694	11,501
Cumberland	233,266	--	3,010	62,508	88,710	79,038
Duplin	291,037	--	8,123	103,019	139,640	40,255
Green	78,228	--	2,883	14,415	57,677	3,253
Harnett	221,237	--	2,774	58,411	123,991	36,061
Hoke	162,933	--	--	24,140	82,351	56,442
Johnston	239,997	--	11,443	68,970	145,779	13,805
Jones	221,076	--	2,117	62,026	120,013	36,920
Lee	108,109	--	6,280	29,744	62,458	9,627
Lenoir	125,530	2,826	2,825	47,906	60,318	11,655
Moore	334,158	--	13,479	54,425	198,831	67,423
New Hanover	49,329	--	--	5,703	22,615	21,011
Onslow	343,657	2,552	8,695	62,244	178,819	91,347
Pender	459,450	--	5,616	68,201	217,429	168,204
Richmond	237,353	2,539	--	73,751	96,723	64,340
Robeson	280,949	--	4,969	84,992	175,800	15,188
Sampson	338,055	--	2,881	79,577	227,240	28,357
Scotland	123,144	--	2,432	22,669	53,062	44,981
Wayne	144,623	--	8,938	57,094	69,652	8,939
Total	5,236,378	7,917	107,015	1,259,609	2,798,674	1,063,163

Table 6--Area of timberland, by county and stocking class of growing-stock trees, Southern Coastal Plain of North Carolina, 1990

County	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
		Acres				
Bladen	416,315	25,237	154,080	140,966	76,258	19,774
Brunswick	407,162	32,359	153,594	146,132	56,463	18,614
Columbus	420,770	46,688	205,809	122,612	39,708	5,953
Cumberland	233,266	6,022	71,174	114,341	35,709	6,020
Duplin	291,037	14,711	129,644	114,023	32,659	--
Green	78,228	--	25,967	34,596	14,782	2,883
Harnett	221,237	13,870	90,055	75,538	25,130	16,644
Hoke	162,933	--	44,193	50,480	62,257	6,003
Johnston	239,997	24,829	88,284	104,803	22,081	--
Jones	221,076	24,445	96,861	64,551	33,055	2,164
Lee	108,109	12,558	42,133	43,791	9,627	--
Lenoir	125,530	14,528	42,382	51,932	16,688	--
Moore	334,158	33,515	88,384	158,820	39,708	13,731
New Hanover	49,329	1,692	16,432	15,052	12,922	3,231
Onslow	343,657	13,919	137,802	133,925	47,790	10,221
Pender	459,450	39,963	192,925	165,905	58,792	1,865
Richmond	237,353	27,434	75,702	72,164	53,181	8,872
Robeson	280,949	29,454	108,523	102,410	35,062	5,500
Sampson	338,055	11,542	98,639	165,930	61,944	--
Scotland	123,144	5,647	26,506	52,092	28,102	10,797
Wayne	144,623	8,938	44,169	64,698	23,838	2,980
Total	5,236,378	387,351	1,933,258	1,994,761	785,756	135,252

[a]See stocking standards on page 13.

Table 7--Volume of growing stock and sawtimber on timberland, by county and species group, Southern Coastal Plain of North Carolina, 1990

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet[a]					Thousand board feet				
Bladen	484,002	226,585	21,292	157,620	78,505	1,501,779	764,126	94,899	370,562	272,192
Brunswick	485,974	253,558	62,413	115,379	54,624	1,313,852	650,419	219,617	295,509	148,307
Columbus	798,361	376,392	24,557	293,691	103,721	2,549,688	1,283,832	112,532	860,454	292,870
Cumberland	324,289	196,314	14,161	71,944	41,870	1,117,974	828,373	57,744	157,023	74,834
Duplin	433,728	163,941	6,850	186,616	76,321	1,523,798	630,759	35,682	599,356	258,001
Green	99,140	32,358	5,345	25,464	35,973	343,322	131,774	31,244	77,836	102,468
Harnett	294,455	138,560	428	70,993	84,474	997,347	497,510	2,324	254,969	242,544
Hoke	168,322	109,531	1,219	40,806	16,766	636,242	472,514	5,437	113,045	45,246
Johnston	630,471	160,080	1,111	144,896	124,384	1,595,694	696,117	5,971	484,917	408,689
Jones	312,303	176,233	14,380	71,470	50,220	1,002,301	553,434	68,430	223,143	157,294
Lee	196,707	67,761	1,080	61,965	65,901	604,414	283,564	--	144,752	176,098
Lenoir	204,656	47,148	12,478	82,938	62,092	752,174	214,256	62,478	252,127	223,313
Moore	488,055	282,851	10,027	86,705	108,472	1,500,340	962,545	43,976	208,457	285,362
New Hanover	49,328	18,823	4,291	15,458	10,756	150,590	69,232	21,636	30,558	29,163
Onslow	457,801	249,681	5,834	141,386	60,900	1,515,272	898,583	24,163	372,289	220,237
Pender	589,286	340,097	27,725	143,911	77,553	1,846,173	1,063,479	130,274	400,535	251,885
Richmond	298,601	191,882	526	74,261	31,932	907,949	640,768	--	193,422	73,759
Robeson	524,105	153,604	28,516	272,581	69,404	1,840,946	700,925	130,258	806,240	203,523
Sampson	384,801	166,302	6,300	151,711	60,488	1,303,355	602,753	24,421	501,739	174,442
Scotland	147,815	102,877	6,550	30,100	8,288	583,673	437,750	24,999	101,167	19,757
Wayne	234,091	110,342	--	65,458	58,291	954,292	545,433	--	222,544	186,315
Total	7,406,291	3,564,920	255,083	2,305,353	1,280,935	24,541,175	12,928,146	1,096,085	6,670,645	3,846,299

[a]Factors for converting to cords are shown on page 13.

Table 8—Average net annual growth of growing stock and sawtimber on timberland, by county and species group, Southern Coastal Plain of North Carolina, 1983-1989

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Bladen	22,817	14,676	405	5,126	2,610	83,777	60,457	1,749	12,939	8,632
Brunswick	24,339	18,039	1,407	3,046	1,847	88,414	67,544	6,342	8,388	6,140
Columbus	35,536	23,430	439	7,817	3,850	160,261	111,637	2,781	27,594	18,249
Cumberland	14,117	8,751	338	2,748	2,280	52,951	36,778	1,412	6,768	7,993
Duplin	17,320	9,182	192	5,567	2,379	72,778	40,832	1,049	20,183	10,714
Green	3,770	1,700	124	772	1,174	19,549	10,003	776	3,548	5,222
Harnett	14,939	9,933	4	1,952	3,050	55,656	34,235	22	10,415	10,984
Hoke	7,142	5,100	55	1,124	863	30,688	22,607	331	5,120	2,630
Johnston	17,594	8,563	28	4,646	4,357	78,281	38,495	166	19,938	19,682
Jones	19,616	15,264	404	2,396	1,552	65,987	49,476	2,169	7,248	7,094
Lee	8,660	4,124	26	2,350	2,160	31,913	12,862	384	8,755	9,912
Lenoir	7,622	2,284	300	2,784	2,254	30,947	9,953	1,639	9,718	9,637
Moore	23,158	15,696	295	3,363	3,804	101,255	71,354	1,724	9,451	18,726
New Hanover	1,925	1,014	133	486	292	7,402	4,570	658	1,144	1,030
Onslow	20,553	13,597	125	5,073	1,758	78,329	54,918	352	15,177	7,882
Pender	29,739	22,195	543	4,701	2,300	104,622	76,557	2,763	14,225	11,077
Richmond	15,838	11,611	42	2,850	1,335	59,720	50,889	89	5,728	3,014
Robeson	17,385	7,873	602	6,203	2,707	74,329	36,618	3,717	23,194	10,800
Sampson	18,955	11,331	166	4,829	2,629	75,974	44,633	783	21,565	8,993
Scotland	7,199	6,018	97	706	378	30,179	23,973	381	3,102	2,723
Wayne	8,904	4,355	—	2,388	2,161	43,767	24,702	—	8,805	10,260
Total	337,128	214,736	5,725	70,927	45,740	1,346,779	883,093	29,287	243,005	191,394

Table 9—Average annual removals of growing stock and sawtimber on timberland, by county and species group, Southern Coastal Plain of North Carolina, 1983-1989

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Bladen	19,912	14,922	--	3,730	1,260	62,128	49,277	--	11,380	1,471
Brunswick	21,478	16,625	813	2,667	1,373	66,448	59,538	2,788	2,294	1,828
Columbus	23,216	12,985	480	5,871	4,280	77,070	38,787	1,788	19,681	16,814
Cumberland	8,326	6,342	--	1,095	889	28,482	24,745	--	848	2,889
Duplin	20,576	10,483	289	4,649	5,155	81,808	48,614	1,410	16,616	15,168
Green	7,769	3,645	123	2,713	1,288	31,274	15,953	334	9,988	4,999
Harnett	13,037	7,260	--	3,355	2,422	53,089	32,829	--	13,253	7,007
Hoke	3,076	1,952	--	869	255	10,629	7,398	--	2,967	264
Johnston	23,023	9,790	--	9,236	3,997	104,758	49,788	--	39,689	15,281
Jones	11,826	6,850	613	2,692	1,671	40,057	23,223	3,054	10,245	3,535
Lee	6,448	3,957	--	1,047	1,444	23,750	16,689	--	1,989	5,072
Lenoir	7,003	3,186	1,517	549	1,751	30,290	13,258	8,380	2,896	5,756
Moore	16,426	10,363	104	3,857	2,102	66,061	50,815	--	11,451	3,795
New Hanover	1,011	1,011	--	--	--	4,689	4,689	--	--	--
Onslow	11,937	9,659	--	1,654	624	35,446	29,423	--	4,858	1,165
Pender	16,675	12,685	--	2,523	1,467	56,458	46,101	--	6,307	4,050
Richmond	9,015	8,067	--	386	562	30,571	28,761	--	520	1,290
Robeson	17,379	10,102	137	5,822	1,318	71,365	44,070	679	21,547	5,069
Sampson	19,288	14,047	--	2,396	2,845	74,259	64,314	--	6,447	3,498
Scotland	3,970	3,853	117	--	--	15,721	14,994	727	--	--
Wayne	17,470	13,670	--	2,656	1,144	82,712	72,308	--	8,336	2,068
Total	278,861	181,054	4,193	57,767	35,847	1,047,065	735,574	19,160	191,312	101,019

Table 10--Area of timberland, by forest type and ownership class, Southern Coastal Plain of North Carolina, 1990

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
	Acres					
Softwood types						
White pine-hemlock	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--
Longleaf pine	236,136	--	93,992	14,152	4,109	123,883
Slash pine	148,536	--	6,689	70,260	21,529	50,058
Loblolly pine	1,587,873	10,972	82,174	489,180	77,013	928,534
Shortleaf pine	18,511	--	4,043	--	--	14,468
Virginia pine	2,539	--	--	--	--	2,539
Sand pine	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--
Pond pine	348,036	9,407	79,552	68,116	2,941	188,020
Spruce pine	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--
Total	2,341,631	20,379	266,450	641,708	105,592	1,307,502
Hardwood types						
Oak-pine	766,340	--	94,824	92,619	2,428	576,469
Oak-hickory	714,643	1,567	7,429	37,974	--	667,673
Chestnut oak	2,774	--	--	--	--	2,774
Southern scrub oak	139,917	--	10,753	11,018	--	118,146
Oak-gum-cypress	1,256,236	7,839	68,605	259,866	1,845	918,081
Elm-ash-cottonwood	14,837	--	--	2,653	--	12,184
Maple-beech-birch	--	--	--	--	--	--
Total	2,894,747	9,406	181,611	404,130	4,273	2,295,327
All types	5,236,378	29,785	448,061	1,045,838	109,865	3,602,829

Table 11--Area of timberland, by ownership and stocking classes of growing-stock trees, Southern Coastal Plain of North Carolina, 1990

Ownership class	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
			Acres			
National forest	29,785	3,136	15,674	6,272	4,703	--
Other public	448,061	9,114	119,816	175,031	141,776	2,324
Forest industry	1,045,838	126,006	450,828	342,870	91,610	34,524
Forest industry-leased	109,863	18,507	54,907	25,505	10,946	--
Other private	3,602,829	230,588	1,292,033	1,445,083	536,721	98,404
All ownerships	5,236,378	387,351	1,933,258	1,994,761	785,756	135,252

[a]See stocking standards on page 13.

Table 12--Area of timberland, by forest type and stand-size class, Southern Coastal Plain of North Carolina, 1990

Forest type	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
			Acres		
Softwood types					
White pine-hemlock	--	--	--	--	--
Spruce-fir	--	--	--	--	--
Longleaf pine	236,136	147,370	41,814	46,752	--
Slash pine	148,536	19,790	109,760	18,986	--
Loblolly pine	1,587,873	603,121	461,063	515,601	8,088
Shortleaf pine	18,511	6,946	6,279	5,286	--
Virginia pine	2,539	2,539	--	--	--
Sand pine	--	--	--	--	--
Eastern redcedar	--	--	--	--	--
Pond pine	348,036	128,928	105,519	103,483	10,106
Spruce pine	--	--	--	--	--
Pitch pine	--	--	--	--	--
Table Mountain pine	--	--	--	--	--
Total	2,341,831	908,894	724,435	690,108	18,194
Hardwood types					
Oak-pine	766,340	314,815	134,247	314,373	2,903
Oak-hickory	714,643	257,296	179,927	272,344	4,876
Chestnut oak	2,774	2,774	--	--	--
Southern scrub oak	139,917	5,726	21,608	110,043	2,540
Oak-gum-cypress	1,256,236	647,612	249,252	348,164	11,208
Elm-ash-cottonwood	14,837	1,866	4,690	8,281	--
Maple-beech-birch	--	--	--	--	--
Total	2,894,747	1,230,089	589,724	1,053,407	21,527
All types	5,236,378	2,138,983	1,314,159	1,743,515	39,721

Table 13--Area of timberland, by stand-age and broad management classes, all ownerships, Southern Coastal Plain of North Carolina, 1990

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	1,047,719	338,100	138,140	192,366	210,702	168,411
11-20	607,924	263,680	147,900	65,465	51,145	79,734
21-30	546,706	283,286	146,107	32,587	26,441	58,285
31-40	450,062	53,284	225,089	56,929	43,157	71,603
41-50	478,131	--	224,718	53,105	84,391	115,917
51-60	496,661	--	198,339	83,682	75,979	136,661
61-70	297,287	--	83,267	58,700	53,699	101,621
71-80	177,628	--	33,389	20,322	31,296	92,621
81+	234,452	--	12,969	28,599	25,243	167,641
No manageable stand	899,808	15,669	177,694	172,585	255,281	278,579
All classes	5,236,378	954,019	1,387,612	766,340	857,334	1,271,073

Table 14--Area of timberland, by stand-age and broad management classes, public ownerships, Southern Coastal Plain of North Carolina, 1990

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	30,520	15,785	6,770	4,061	1,504	2,400
11-20	45,194	15,509	21,730	5,556	--	2,399
21-30	36,558	23,742	6,699	3,623	170	2,324
31-40	33,989	8,806	22,495	2,092	596	--
41-50	44,406	--	36,798	338	--	7,270
51-60	49,827	--	37,270	3,472	3,473	5,612
61-70	61,658	--	27,536	11,779	1,567	20,776
71-80	33,897	--	14,746	7,165	409	11,577
81+	5,686	--	4,118	--	--	1,568
No manageable stand	136,111	--	44,825	56,738	12,030	22,518
All classes	477,846	63,842	222,987	94,824	19,749	76,444

Table 15--Area of timberland, by stand-age and broad management classes, forest industry,[a] Southern Coastal Plain of North Carolina, 1990

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	262,686	179,847	4,938	42,086	9,698	26,117
11-20	205,192	159,718	29,070	7,582	6,466	2,356
21-30	227,962	191,166	28,396	--	--	8,400
31-40	62,427	24,843	17,779	5,573	3,982	10,250
41-50	69,650	--	34,194	5,374	1,880	28,202
51-60	59,101	--	24,404	3,981	5,269	25,447
61-70	34,653	--	12,142	8,034	2,495	11,982
71-80	29,034	--	--	2,496	--	26,538
81+	72,386	--	2,959	8,034	2,496	58,897
No manageable stand	132,612	13,130	24,714	11,887	16,706	66,175
All classes	1,155,703	568,704	178,596	95,047	48,992	264,364

[a]Includes 109,865 acres of other private land under long-term lease.

Table 16--Area of timberland, by stand-age and broad management classes, other private ownerships,[a] Southern Coastal Plain of North Carolina, 1990

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	754,513	142,468	126,432	146,219	199,500	139,894
11-20	357,538	88,453	97,100	52,327	44,679	74,979
21-30	282,186	68,378	111,012	28,964	26,271	47,561
31-40	353,646	19,635	184,815	49,264	38,579	61,353
41-50	364,075	--	153,726	47,393	82,511	80,445
51-60	387,733	--	136,665	78,229	67,237	105,602
61-70	200,976	--	43,589	38,887	49,637	68,863
71-80	114,697	--	18,643	10,661	30,887	54,506
81+	156,380	--	5,892	20,565	22,747	107,176
No manageable stand	631,085	2,539	108,155	103,960	226,545	189,886
All classes	3,602,829	321,473	986,029	576,469	788,593	930,265

[a]Excludes 109,865 acres of other private land under long-term lease to forest industry.

Table 17--Area of timberland, by broad management and stand-volume classes, Southern Coastal Plain of North Carolina, 1990

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	954,019	413,292	141,097	134,295	98,196	167,139
Natural pine	1,387,612	329,959	211,973	209,704	204,504	431,472
Oak-pine	766,340	308,346	129,165	90,371	83,033	155,425
Upland hardwood	857,334	348,047	138,410	114,520	77,542	178,815
Lowland hardwood	1,271,073	332,163	156,605	140,853	131,832	509,620
All classes	5,236,378	1,731,807	777,250	689,743	595,107	1,442,471

Table 18--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Coastal Plain of North Carolina, 1990

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
			Thousand cubic feet								
Pine plantation											
Softwood	903,175	2,921	16,134	224,455	513,085	146,580	--	--	--	--	--
Hardwood	29,983	--	1,183	7,777	15,068	5,955	--	--	--	--	--
Total	933,158	2,921	17,317	232,232	528,153	152,535	--	--	--	--	--
Natural pine											
Softwood	1,949,616	82,550	26,401	87,334	194,203	435,009	450,175	439,967	141,185	66,382	26,410
Hardwood	258,310	1,263	9,106	10,007	21,314	54,780	63,974	68,830	18,073	9,196	1,767
Total	2,207,926	83,813	35,507	97,341	215,517	489,789	514,149	508,797	159,258	75,578	28,177
Oak-pine											
Softwood	493,468	61,660	22,014	22,433	17,515	49,290	68,877	102,140	80,604	28,313	40,622
Hardwood	396,528	17,054	14,142	15,593	20,396	35,628	81,848	97,121	57,247	22,392	35,107
Total	889,996	78,714	36,156	38,026	37,911	84,918	150,725	199,261	137,851	50,705	75,729
Upland hardwood											
Softwood	113,405	23,353	10,863	2,851	5,215	6,476	15,299	13,882	14,074	13,668	7,724
Hardwood	892,247	82,942	50,683	22,654	31,387	83,484	161,384	153,050	152,980	88,013	65,670
Total	1,005,652	106,295	61,546	25,505	36,602	89,960	176,683	166,932	167,054	101,681	73,394
Lowland hardwood											
Softwood	360,339	28,499	5,798	11,724	9,844	18,041	38,698	30,622	49,851	57,814	109,448
Hardwood	2,009,220	130,549	31,617	37,654	65,754	115,640	216,178	343,570	307,182	222,948	538,128
Total	2,369,559	159,048	37,415	49,378	75,598	133,681	254,876	374,192	357,033	280,762	647,576
All types											
Softwood	3,820,003	198,983	81,210	348,797	739,862	655,396	573,049	586,611	285,714	166,177	184,204
Hardwood	3,586,288	231,808	106,731	93,685	153,919	295,487	523,384	662,571	535,482	342,549	640,672
Total	7,406,291	430,791	187,941	442,482	893,781	950,883	1,096,433	1,249,182	821,196	508,726	824,876

Table 19--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Coastal Plain of North Carolina, 1983-1989

Broad management class[a] and species group	All classes	No manageable stand	Stand-age class[a] (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
	Thousand cubic feet										
Pine plantation											
Softwood	97,087	337	9,457	37,905	41,208	8,180	--	--	--	--	--
Hardwood	2,448	--	109	764	1,200	375	--	--	--	--	--
Total	99,535	337	9,566	38,669	42,408	8,555	--	--	--	--	--
Natural pine											
Softwood	88,019	3,220	2,472	10,147	15,226	21,757	16,134	13,322	3,909	1,277	555
Hardwood	13,650	52	349	754	1,517	3,215	3,633	2,568	1,140	339	83
Total	101,669	3,272	2,821	10,901	16,743	24,972	19,767	15,890	5,049	1,616	638
Oak-pine											
Softwood	20,492	2,847	1,845	2,080	1,124	2,383	2,556	3,593	2,579	611	874
Hardwood	14,924	693	666	844	861	2,107	3,062	3,353	1,763	533	1,042
Total	35,416	3,540	2,511	2,924	1,985	4,490	5,618	6,946	4,342	1,144	1,916
Upland hardwood											
Softwood	5,170	1,344	1,068	129	231	408	476	459	392	444	219
Hardwood	30,887	3,196	2,952	2,348	1,604	3,487	5,355	4,434	3,595	2,214	1,702
Total	36,057	4,540	4,020	2,477	1,835	3,895	5,831	4,893	3,987	2,658	1,921
Lowland hardwood											
Softwood	9,693	907	315	710	507	567	1,224	835	991	1,380	2,257
Hardwood	54,758	4,144	1,272	2,465	3,162	3,852	7,426	9,222	7,273	5,133	10,809
Total	64,451	5,051	1,587	3,175	3,669	4,419	8,650	10,057	8,264	6,513	13,066
All types											
Softwood	220,461	8,655	15,157	50,971	58,296	33,295	20,390	18,209	7,871	3,712	3,905
Hardwood	116,667	8,085	5,348	7,175	8,344	13,036	19,476	19,577	13,771	8,219	13,636
Total	337,128	16,740	20,505	58,146	66,640	46,331	39,866	37,786	21,642	11,931	17,541

[a]Classifications at the end of the remeasurement period.

Table 20—Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Coastal Plain of North Carolina, 1983-1989

Broad management class[a] and species group	All classes	No manageable stand	Stand-age class[a] (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
	Thousand cubic feet										
Pine plantation											
Softwood	29,351	186	319	12,843	14,985	—	—	1,018	—	—	—
Hardwood	287	—	—	287	—	—	—	—	—	—	—
Total	29,638	186	319	13,130	14,985	—	—	1,018	—	—	—
Natural pine											
Softwood	118,348	1,385	1,673	7,005	15,856	29,732	27,392	22,742	8,027	2,646	1,890
Hardwood	10,740	—	—	193	2,021	2,455	2,227	2,755	611	400	78
Total	129,088	1,385	1,673	7,198	17,877	32,187	29,619	25,497	8,638	3,046	1,968
Oak-pine											
Softwood	23,468	1,700	201	1,330	2,798	2,312	5,020	3,693	4,346	1,093	975
Hardwood	12,768	229	162	828	1,441	492	2,237	2,882	3,419	982	96
Total	36,236	1,929	363	2,158	4,239	2,804	7,251	6,575	7,765	2,075	1,071
Upland hardwood											
Softwood	5,261	615	474	285	395	240	1,560	891	128	673	—
Hardwood	21,201	465	1,681	1,055	2,128	2,930	6,434	3,519	1,767	646	576
Total	26,462	1,080	2,155	1,340	2,523	3,170	7,994	4,410	1,895	1,319	576
Lowland hardwood											
Softwood	8,819	897	—	323	465	211	1,275	1,047	618	3,060	923
Hardwood	48,618	760	356	246	1,460	2,433	9,203	12,575	6,168	7,626	7,791
Total	57,437	1,657	356	569	1,925	2,644	10,478	13,622	6,786	10,686	8,714
All types											
Softwood	185,247	4,783	2,667	21,786	34,499	32,495	35,247	29,391	13,119	7,472	3,788
Hardwood	93,614	1,454	2,199	2,609	7,050	8,310	20,101	21,731	11,965	9,654	8,541
Total	278,861	6,237	4,866	24,395	41,549	40,805	55,348	51,122	25,084	17,126	12,329

[a]Classifications before timber removals.

Table 21--Merchantable volume of live trees and growing stock on timberland, by forest-type and species groups, Southern Coastal Plain of North Carolina, 1990

Forest-type group	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
White pine-hemlock	--	--	--	--	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--	--	--	--	--
Longleaf-slash pine	492,721	479,119	--	5,357	8,245	488,272	478,537	--	5,357	4,378
Loblolly-shortleaf pine	2,689,740	2,373,485	8,016	183,196	125,043	2,652,812	2,367,225	7,029	172,218	106,340
Oak-pine	940,687	487,599	7,458	233,534	212,096	889,996	486,309	7,159	219,619	176,909
Oak-hickory	1,100,936	111,303	3,516	468,644	517,473	1,005,652	110,406	2,999	443,918	448,329
Oak-gum-cypress	2,585,108	122,015	247,889	1,599,349	615,855	2,356,207	122,015	237,896	1,456,366	539,930
Elm-ash-cottonwood	13,470	428	--	7,875	5,167	13,352	428	--	7,875	5,049
Maple-beech-birch	--	--	--	--	--	--	--	--	--	--
All types	7,822,662	3,573,949	266,879	2,497,955	1,483,879	7,406,291	3,564,920	255,083	2,305,353	1,280,935

Table 22--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class, Southern Coastal Plain of North Carolina, 1983 to 1990

Treatment or disturbance	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
		Acres[a]			
Final harvest	109,339	2,686	26,282	857	79,514
Partial harvest[b]	13,921	642	779	--	12,500
Commercial thinning	24,805	2,881	9,556	6,304	6,064
Other stand improvement	3,118	--	1,849	--	1,269
Site preparation	39,059	1,220	21,595	362	15,882
Artificial regeneration[c]	41,729	575	23,226	362	17,566
Natural regeneration[c]	88,959	2,101	9,092	288	77,478
Other treatment	20,093	3,598	2,337	--	14,158
Natural disturbance	37,731	4,282	9,633	2,132	21,684

[a]Since some acres experience more than one treatment or disturbance, there are no column totals.

[b]Includes high grading and some selective cutting.

[c]Includes establishment of trees for timber production on forest and nonforest land.

Table 23--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class, Southern Coastal Plain of North Carolina, 1983 to 1990

Treatment or disturbance	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres[b]				
Final harvest	109,339	5,729	51,438	14,371	13,657	24,144
Partial harvest[c]	13,921	--	6,611	1,665	1,597	4,048
Commercial thinning	24,805	20,447	3,928	430	--	--
Other stand improvement	3,118	696	2,017	--	--	405
Site preparation	39,059	5,062	17,729	2,340	7,373	6,555
Other treatment	20,093	783	6,598	4,306	5,008	3,398
Natural disturbance	37,731	6,200	13,475	1,948	2,686	13,422

[a]Classification before treatment or disturbance.

[b]Since some acres experience more than one treatment or disturbance, there are no column totals.

[c]Includes high grading and some selective cutting.

Table 24--Area of timberland regenerated annually, by type of regeneration and broad management class, Southern Coastal Plain of North Carolina, 1983 to 1990

Type of regeneration	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
Artificial regeneration following harvest	26,589	21,744	--	4,502	--	343
Natural regeneration following harvest	51,772	--	7,041	11,447	17,679	15,605
Other artificial regeneration on forest land	10,838	10,342	--	496	--	--
Other natural regeneration on forest land	30,144	--	7,927	8,212	5,552	8,453
Artificial regeneration on nonforest land	4,302	4,302	--	--	--	--
Natural reversion of nonforest land	7,043	--	3,954	1,635	949	505
Total	130,688	36,388	18,922	26,292	24,180	24,906

[a]Classification after regeneration.

Table 25--Area of timberland, by treatment opportunity and broad management classes, Southern Coastal Plain of North Carolina, 1990

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
Salvage	2,979	1,168	243	--	--	1,568
Harvest	299,015	--	67,686	50,139	42,319	138,871
Commercial thinning	213,453	117,792	69,420	5,518	10,941	9,782
Other stand improvement	344,583	18,010	93,170	76,522	68,949	87,932
Stand conversion	40,076	2,357	10,290	--	13,505	13,924
Regeneration	860,400	15,669	177,694	172,585	255,281	239,171
Stands in relatively good condition	3,290,811	799,023	961,839	458,830	464,835	606,284
Adverse sites[a]	185,061	--	7,270	2,746	1,504	173,541
All classes	5,236,378	954,019	1,387,612	766,340	857,334	1,271,073

[a]Areas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 26--Area of timberland, by treatment opportunity and ownership classes, Southern Coastal Plain of North Carolina, 1990

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
			Acres		
Salvage	2,979	1,811	--	1,168	--
Harvest	299,015	27,970	60,217	--	210,828
Commercial thinning	213,453	12,084	62,731	23,768	114,870
Other stand improvement	344,583	14,278	30,098	--	300,207
Stand conversion	40,076	--	15,526	--	24,550
Regeneration	860,400	132,593	108,629	5,701	613,477
Stands in relatively good condition	3,290,811	279,288	681,738	79,228	2,250,557
Adverse sites[a]	185,061	9,822	86,899	--	88,340
All classes	5,236,378	477,846	1,045,838	109,865	3,602,829

[a]Areas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 27--Merchantable volume of live trees and growing stock on timberland, by ownership class and species group, Southern Coastal Plain of North Carolina, 1990

Ownership class	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	109,124	56,031	6,394	28,060	18,639	103,940	55,437	5,973	26,598	15,932
Other public	500,150	344,333	4,259	95,875	55,683	481,905	343,702	3,928	90,393	43,882
Forest industry	1,366,056	668,057	86,238	457,227	154,534	1,313,626	666,269	82,561	424,056	140,740
Forest industry-leased	203,751	186,404	549	14,278	2,520	203,184	186,404	549	13,711	2,520
Other private	5,643,581	2,319,124	169,439	1,902,515	1,252,503	5,303,636	2,313,108	162,072	1,750,595	1,077,861
All ownerships	7,822,662	3,573,949	266,879	2,497,955	1,483,879	7,406,291	3,564,920	255,083	2,305,353	1,280,935

Table 28--Volume of sawtimber on timberland, by ownership class and species group, Southern Coastal Plain of North Carolina, 1990

Ownership class	Small sawtimber[a]					Large sawtimber[b]				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet									
National forest	167,595	133,820	8,911	15,248	9,616	247,542	120,411	17,927	63,941	45,263
Other public	942,504	817,567	1,777	76,972	46,188	772,211	482,660	19,036	161,462	109,053
Forest industry	1,907,854	1,280,037	92,194	426,572	109,051	1,858,924	470,157	270,383	768,667	349,717
Forest industry-leased	405,348	392,533	1,758	8,779	2,278	41,204	28,077	--	10,879	2,248
Other private	8,128,413	4,894,224	253,224	1,835,798	1,145,167	10,069,580	4,308,660	430,875	3,302,327	2,027,718
All ownerships	11,551,714	7,518,181	357,864	2,363,369	1,312,300	12,989,461	5,409,965	738,221	4,307,276	2,533,999

[a]Volume of sawtimber trees less than 15.0 inches at d.b.h.

[b]Volume of sawtimber trees 15.0 inches and larger at d.b.h.

Table 29—Average net annual growth and removals of growing stock on timberland, by ownership class and species group, Southern Coastal Plain of North Carolina, 1983-1989

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National forest	4,207	2,786	148	818	455	114	114	--	--	--
Other public	21,764	17,058	89	3,494	1,123	5,874	5,305	--	172	397
Forest industry	72,581	54,701	1,768	11,395	4,717	42,109	32,986	866	5,317	2,940
Forest industry-leased	14,651	13,800	26	686	139	7,950	7,871	--	--	79
Other private	223,925	126,391	3,694	54,534	39,306	222,814	134,778	3,327	52,278	32,431
All ownerships	337,128	214,736	5,725	70,927	45,740	278,861	181,056	4,193	57,767	35,847

Table 30—Average net annual growth and removals of sawtimber on timberland, by ownership class and species group, Southern Coastal Plain of North Carolina, 1983-1989

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet									
National forest	15,564	10,289	771	1,660	2,844	--	--	--	--	--
Other public	81,354	66,450	233	9,012	5,659	16,896	16,896	--	--	--
Forest industry	257,925	199,690	9,306	30,762	18,167	131,735	108,043	2,130	13,973	7,589
Forest industry-leased	65,543	64,155	61	1,047	280	14,126	14,126	--	--	--
Other private	926,393	542,509	18,916	200,524	164,444	884,308	596,509	17,030	177,339	93,430
All ownerships	1,346,779	883,093	29,287	243,005	191,394	1,047,065	735,574	19,160	191,312	101,019

Table 31--Volume of timber on timberland, by class of timber and species group, Southern Coastal Plain of North Carolina, 1990

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet				
Sawtimber trees					
Saw-log portion	4,534,480	2,367,259	204,689	1,244,427	718,105
Upper-stem portion[a]	609,020	233,976	20,406	229,670	124,968
Total	5,143,500	2,601,235	225,095	1,474,097	843,073
Poletimber trees	2,262,791	963,685	29,988	831,256	437,862
All growing-stock trees	7,406,291	3,564,920	255,083	2,305,353	1,280,935
Rough trees					
Sawtimber size	107,613	4,519	2,089	55,790	45,215
Poletimber size	224,101	4,112	2,401	76,914	140,674
Total	331,714	8,631	4,490	132,704	185,889
Rotten trees					
Sawtimber size	77,334	398	7,306	53,875	15,755
Poletimber size	7,323	--	--	6,023	1,300
Total	84,657	398	7,306	59,898	17,055
Salvable dead trees					
Sawtimber size	2,390	734	55	901	700
Poletimber size	1,958	952	73	582	351
Total	4,348	1,686	128	1,483	1,051
Total, all timber	7,827,010	3,575,635	267,007	2,499,438	1,484,930

[a]Includes cull sections in the saw-log portion.

Table 32--Number of live trees on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	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	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand trees												
Softwood													
Longleaf pine	65,769	24,588	11,720	8,579	5,400	6,198	4,163	2,853	1,566	474	153	75	--
Slash pine	49,561	4,707	11,420	16,560	12,076	3,724	746	312	16	--	--	--	--
Shortleaf pine	9,128	2,473	2,273	743	1,780	603	694	362	126	50	22	--	--
Loblolly pine	644,092	245,724	148,895	101,070	66,636	36,553	20,293	11,773	6,643	3,474	1,686	1,359	36
Pond pine	107,986	34,658	27,820	16,112	13,247	8,036	4,111	2,455	1,055	309	117	46	--
Virginia pine	3,212	1,224	1,075	424	198	227	24	40	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	6,619	986	650	762	782	569	692	718	382	336	239	390	113
Pondcypress	9,588	4,337	667	609	796	1,469	671	465	170	80	150	154	20
Cedars	19,042	8,001	5,241	3,067	1,465	782	231	42	57	65	72	19	--
Total softwoods	914,977	326,698	209,761	147,928	102,380	58,161	31,625	18,970	10,015	4,788	2,439	2,043	169
Hardwood													
Select white oaks	59,968	30,191	10,407	6,020	4,900	2,653	2,283	1,395	849	650	226	367	27
Select red oaks	7,716	3,197	1,220	1,574	460	369	410	315	46	45	29	45	6
Chestnut oak	884	166	166	186	245	--	26	44	27	--	10	14	--
Other white oaks	41,056	27,307	6,088	3,241	1,352	1,444	649	410	223	158	47	127	10
Other red oaks	314,076	209,255	49,788	23,545	11,523	8,065	4,730	2,872	1,828	1,131	493	737	109
Hickory	48,337	29,592	9,732	3,531	2,397	1,129	742	551	334	172	85	83	9
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	1,800	1,612	--	80	52	39	--	17	--	--	--	--	--
Soft maple	551,452	402,541	88,740	29,588	14,805	6,389	4,306	2,264	1,358	714	360	376	11
Beech	5,372	2,613	1,170	531	220	280	77	140	143	126	28	25	19
Sweetgum	425,922	297,553	67,927	27,355	13,417	8,103	4,721	2,989	1,659	1,011	555	603	29
Tupelo and blackgum	279,691	176,191	39,494	20,439	14,173	10,070	7,492	4,557	2,947	1,807	1,105	1,192	224
Ash	111,242	77,265	18,758	8,179	2,412	1,720	1,260	618	402	253	184	177	14
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	342	309	--	--	--	33	--	--	--	--	--	--	--
Yellow-poplar	56,244	28,838	10,881	4,518	3,109	2,884	1,928	1,191	1,082	897	401	467	48
Bay and magnolia	235,630	198,248	24,867	8,523	2,520	821	184	256	91	71	39	10	--
Black cherry	26,386	19,840	3,745	1,777	758	155	--	56	32	12	11	--	--
Black walnut	157	--	--	107	--	36	--	--	14	--	--	--	--
Sycamore	1,271	875	--	114	--	113	47	--	61	22	9	30	--
Black locust	164	164	--	--	--	--	--	--	--	--	--	--	--
Elm	15,415	9,496	3,185	412	983	461	209	283	210	40	59	63	14
Other eastern hardwoods	764,889	597,117	122,363	29,457	10,229	3,041	1,491	614	274	125	77	101	--
Total hardwoods	2,948,034	2,112,370	458,531	168,177	83,555	47,805	30,555	18,572	11,580	7,234	3,718	4,417	520
All species	3,863,011	2,439,068	668,292	317,105	185,935	105,966	62,180	37,542	21,595	12,022	6,157	6,460	689

Table 33--Number of growing-stock trees on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	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	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand trees												
Softwood													
Longleaf pine	63,389	22,527	11,563	8,579	5,261	6,198	4,163	2,837	1,566	474	153	68	—
Slash pine	48,624	4,364	11,088	16,298	12,076	3,724	746	312	16	—	—	—	—
Shortleaf pine	9,128	2,473	2,273	745	1,780	603	694	382	126	50	22	—	—
Loblolly pine	622,601	230,163	143,936	100,325	66,576	36,444	20,268	11,705	6,643	3,474	1,886	1,345	36
Pond pine	93,490	22,742	25,822	15,821	13,052	8,000	4,111	2,455	1,015	309	117	46	—
Virginia pine	3,059	1,224	922	424	198	227	24	40	—	—	—	—	—
Pitch pine	—	—	—	—	—	—	—	—	—	—	—	—	—
Table Mountain pine	—	—	—	—	—	—	—	—	—	—	—	—	—
Spruce pine	—	—	—	—	—	—	—	—	—	—	—	—	—
Sand pine	—	—	—	—	—	—	—	—	—	—	—	—	—
Eastern white pine	—	—	—	—	—	—	—	—	—	—	—	—	—
Eastern hemlock	—	—	—	—	—	—	—	—	—	—	—	—	—
Spruce and fir	—	—	—	—	—	—	—	—	—	—	—	—	—
Baldcypress	6,222	816	650	671	728	569	692	718	367	336	208	383	84
Pondcypress	9,516	4,337	687	609	796	1,417	671	465	170	80	150	148	6
Cedars	16,879	7,338	4,409	2,810	1,179	738	202	42	30	40	72	19	—
Total softwoods	872,908	295,984	201,330	146,282	101,646	57,920	31,571	18,936	9,933	4,763	2,408	2,009	126
Hardwood													
Select white oaks	49,101	20,714	9,565	5,722	4,758	2,653	2,251	1,354	849	639	226	346	24
Select red oaks	6,708	2,503	1,045	1,472	460	332	410	315	46	45	29	45	6
Chestnut oak	884	166	166	186	245	—	26	44	27	—	10	14	—
Other white oaks	29,827	17,956	4,587	3,048	1,352	1,402	649	348	208	110	47	114	6
Other red oaks	255,752	161,421	43,007	21,516	10,818	7,734	4,573	2,708	1,712	1,036	463	670	94
Hickory	34,249	17,630	8,082	3,351	2,222	1,083	685	551	334	172	57	73	9
Yellow birch	—	—	—	—	—	—	—	—	—	—	—	—	—
Hard maple	824	636	—	80	52	39	—	17	—	—	—	—	—
Soft maple	327,701	210,048	68,127	24,458	14,990	5,241	3,435	2,034	1,162	616	311	275	4
Beech	3,954	1,637	997	295	220	280	77	112	143	126	28	20	19
Sweetgum	331,841	217,343	56,708	25,598	13,106	7,840	4,669	2,911	1,597	965	555	546	23
Tupelo and blackgum	159,482	76,459	27,228	17,128	12,800	8,848	6,806	4,255	2,704	1,499	811	812	132
Ash	52,036	26,234	13,149	6,134	2,298	1,613	1,186	483	371	242	157	158	11
Cottonwood	—	—	—	—	—	—	—	—	—	—	—	—	—
Basswood	191	158	—	—	—	33	—	—	—	—	—	—	—
Yellow-poplar	51,100	24,798	10,217	4,304	3,109	2,805	1,873	1,170	1,050	897	392	445	40
Bay and magnolia	115,948	93,250	13,631	6,081	1,948	661	78	179	62	48	10	—	—
Black cherry	15,544	11,389	2,782	827	430	84	—	—	32	—	—	—	—
Black walnut	157	—	—	107	—	36	—	—	14	—	—	—	—
Sycamore	1,271	875	—	114	—	113	47	—	61	22	9	30	—
Black locust	—	—	—	—	—	—	—	—	—	—	—	—	—
Elm	10,447	5,695	2,361	173	983	421	183	283	193	40	59	42	14
Other eastern hardwoods	21,176	13,233	4,226	1,678	841	283	363	163	169	75	59	86	—
Total hardwoods	1,468,193	902,145	265,878	122,272	67,632	41,501	27,311	16,927	10,734	6,512	3,223	3,676	382
All species	2,341,101	1,198,129	467,208	268,554	169,278	99,421	58,882	35,863	20,667	11,275	5,631	5,685	508

Table 34--Merchantable volume of live trees on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
		Thousand cubic feet									
Softwood											
Longleaf pine	370,408	23,727	37,802	72,806	75,060	72,459	53,662	21,418	7,837	5,637	—
Slash pine	175,811	44,015	70,781	39,652	13,133	7,873	357	--	--	--	--
Shortleaf pine	57,578	1,820	13,132	8,131	13,808	10,771	5,348	2,922	1,646	--	--
Loblolly pine	2,566,290	250,744	405,623	433,208	393,565	346,061	275,375	193,964	122,377	138,510	6,763
Pond pine	396,834	41,917	75,053	86,887	70,770	59,738	36,740	14,458	6,767	4,504	--
Virginia pine	7,028	1,673	1,510	2,491	425	929	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	142,105	2,451	5,555	7,069	12,279	18,616	14,229	16,836	13,408	34,107	17,555
Pondcypress	84,347	2,020	5,217	17,161	12,306	11,576	6,571	3,906	8,087	13,840	3,663
Cedars	40,627	8,079	9,067	9,584	3,680	802	1,583	2,653	3,776	1,203	--
Total softwoods	3,840,828	376,446	623,740	676,989	595,126	528,825	393,865	256,157	163,898	197,801	27,981
Hardwood											
Select white oaks	282,071	18,213	29,041	32,555	42,783	37,458	32,418	33,199	14,895	35,268	6,241
Select red oaks	42,132	3,070	3,343	4,701	8,205	8,818	1,901	2,328	2,242	4,304	1,220
Chestnut oak	5,731	547	1,507	--	383	814	1,120	--	552	808	--
Other white oaks	80,746	7,541	7,657	15,351	10,111	8,817	7,162	5,911	3,969	13,025	2,102
Other red oaks	607,024	63,227	69,653	87,076	84,882	70,993	64,580	50,847	29,303	63,614	20,849
Hickory	95,523	8,986	12,894	12,741	13,109	14,152	12,325	8,087	4,446	7,470	1,313
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	2,044	321	495	458	--	770	--	--	--	--	--
Soft maple	511,799	88,701	95,181	70,588	74,302	58,470	44,456	29,907	20,210	28,898	1,086
Beech	33,331	1,641	1,432	4,095	1,248	3,801	6,357	6,632	2,131	2,240	3,754
Sweetgum	656,717	71,021	84,224	99,688	92,968	87,390	67,494	53,240	39,135	56,785	4,772
Tupelo and blackgum	859,972	57,421	89,685	108,617	137,379	120,544	101,859	79,587	53,934	81,843	29,103
Ash	161,513	19,163	17,878	22,563	25,702	15,738	14,490	12,932	12,288	18,391	2,368
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	284	--	--	284	--	--	--	--	--	--	--
Yellow-poplar	317,406	13,942	21,224	35,280	38,425	36,377	42,184	46,953	27,725	45,798	9,498
Bay and magnolia	64,258	24,709	14,665	8,565	2,271	6,039	2,753	2,792	1,786	678	--
Black cherry	14,303	5,310	4,572	1,309	--	1,100	1,047	459	506	--	--
Black walnut	1,359	240	--	614	--	--	505	--	--	--	--
Sycamore	8,992	388	--	1,562	877	--	2,098	929	619	2,519	--
Black locust	--	--	--	--	--	--	--	--	--	--	--
Elm	45,558	962	6,171	5,297	3,729	8,000	7,829	1,844	3,986	5,398	2,342
Other eastern hardwoods	191,071	62,883	46,343	24,434	20,163	11,928	8,243	4,981	4,262	7,834	--
Total hardwoods	3,981,834	452,286	505,965	535,778	556,537	491,209	418,821	340,628	221,089	374,873	84,648
All species	7,822,662	828,732	1,129,705	1,212,767	1,151,663	1,020,034	812,686	596,785	384,987	572,674	112,629

Table 35—Volume of growing stock on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	All classes	Diameter class (inches at breast height)									
		5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–28.9	29.0 and larger
		Thousand cubic feet									
Softwood											
Longleaf pine	369,343	23,727	37,336	72,806	75,060	72,225	53,662	21,418	7,837	5,272	—
Slash pine	175,463	43,667	70,781	39,652	13,133	7,873	357	—	—	—	—
Shortleaf pine	57,578	1,820	13,132	8,131	13,808	10,771	5,348	2,922	1,646	—	—
Loblolly pine	2,561,335	249,275	405,217	432,424	393,139	345,548	275,375	193,964	122,377	137,253	6,763
Pond pine	394,173	41,318	74,229	86,554	70,770	59,738	35,835	14,458	6,767	4,504	—
Virginia pine	7,028	1,673	1,510	2,491	425	929	—	—	—	—	—
Pitch pine	—	—	—	—	—	—	—	—	—	—	—
Table Mountain pine	—	—	—	—	—	—	—	—	—	—	—
Spruce pine	—	—	—	—	—	—	—	—	—	—	—
Sand pine	—	—	—	—	—	—	—	—	—	—	—
Eastern white pine	—	—	—	—	—	—	—	—	—	—	—
Eastern hemlock	—	—	—	—	—	—	—	—	—	—	—
Spruce and fir	—	—	—	—	—	—	—	—	—	—	—
Baldcypress	137,269	2,191	5,210	7,069	12,279	18,516	13,993	16,836	12,670	33,621	14,834
Pondcypress	81,256	2,020	5,217	16,894	12,306	11,576	6,571	3,906	8,087	13,436	1,241
Cedars	36,560	7,577	7,773	9,190	3,439	802	950	1,850	3,776	1,203	—
Total softwoods	3,820,003	373,268	620,405	675,211	594,359	528,078	392,091	255,354	163,110	195,289	22,838
Hardwood											
Select white oaks	277,153	17,357	28,427	32,555	42,443	36,967	32,418	32,747	14,895	33,650	5,694
Select red oaks	41,438	4,762	3,343	4,315	8,205	8,818	1,901	2,328	2,242	4,304	1,220
Chestnut oak	5,731	547	1,507	—	383	814	1,120	—	552	808	—
Other white oaks	76,719	7,145	7,657	15,243	10,111	8,360	6,904	4,399	3,069	12,247	1,584
Other red oaks	577,514	59,687	66,913	83,664	82,653	68,787	61,750	48,167	28,150	59,732	18,011
Hickory	91,720	8,513	12,129	12,276	12,405	14,152	12,325	8,087	3,480	7,040	1,313
Yellow birch	—	—	—	—	—	—	—	—	—	—	—
Hard maple	2,044	321	495	458	—	770	—	—	—	—	—
Soft maple	445,065	76,478	81,632	60,249	62,078	54,333	40,814	27,424	18,139	23,284	614
Beech	31,553	1,110	1,432	4,095	1,248	3,202	6,357	6,632	2,131	1,592	3,754
Sweetgum	640,993	67,514	82,425	97,860	92,736	86,147	66,574	50,836	39,135	53,803	3,963
Tupelo and blackgum	782,430	50,026	83,107	100,294	129,315	115,640	97,239	71,214	43,357	67,064	23,174
Ash	149,169	15,135	17,181	20,982	25,455	14,058	14,072	12,694	11,005	16,491	2,096
Cottonwood	—	—	—	—	—	—	—	—	—	—	—
Basswood	284	—	—	284	—	—	—	—	—	—	—
Yellow-poplar	311,171	13,427	21,224	34,757	37,522	36,255	41,402	46,953	27,477	43,966	8,188
Bay and magnolia	47,598	18,529	11,338	7,289	1,303	4,701	2,025	2,003	410	—	—
Black cherry	7,159	3,151	2,740	821	—	—	1,047	—	—	—	—
Black walnut	1,359	240	—	614	—	—	505	—	—	—	—
Sycamore	8,992	388	—	1,562	877	—	2,098	929	619	2,519	—
Black locust	—	—	—	—	—	—	—	—	—	—	—
Elm	43,290	627	6,171	4,957	3,341	8,000	7,535	1,844	3,986	4,487	2,342
Other eastern hardwoods	44,326	4,979	5,426	3,760	6,542	4,152	5,647	3,236	3,225	7,359	—
Total hardwoods	3,586,288	349,936	433,147	486,035	516,617	465,156	401,733	319,493	203,872	338,346	71,953
All species	7,406,291	723,204	1,053,552	1,161,246	1,110,976	993,234	793,824	574,847	366,982	533,635	94,791

Table 36--Volume of sawtimber on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

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
		Thousand board feet							
Softwood									
Longleaf pine	1,568,914	295,674	361,165	387,302	309,389	130,383	49,636	35,365	--
Slash pine	245,546	143,273	59,613	40,670	1,990	--	--	--	--
Shortleaf pine	205,792	30,533	62,953	54,814	30,134	17,232	10,126	--	--
Loblolly pine	9,580,707	1,554,170	1,770,962	1,784,435	1,556,541	1,169,741	773,559	921,759	49,540
Pond pine	1,312,265	327,599	324,019	306,077	199,148	84,813	41,617	28,992	--
Virginia pine	14,922	8,828	1,826	4,268	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	659,758	21,181	46,550	81,648	67,457	86,573	67,979	194,375	93,995
Pondcypress	335,767	53,934	48,195	51,798	31,644	20,417	43,634	77,988	8,157
Cedars	100,560	34,834	15,770	3,954	5,234	10,731	22,598	7,439	--
Total softwoods	14,024,231	2,470,026	2,691,053	2,714,966	2,201,537	1,519,890	1,009,149	1,265,918	151,692
Hardwood									
Select white oaks	900,886	--	165,903	149,044	145,760	158,534	76,461	188,254	36,930
Select red oaks	127,737	--	27,392	35,178	8,658	11,049	12,596	25,602	7,262
Chestnut oak	16,016	--	1,284	2,991	4,904	--	2,657	4,180	--
Other white oaks	219,551	--	36,097	34,846	32,235	21,664	15,707	69,451	9,551
Other red oaks	1,734,063	--	308,396	292,645	288,314	242,110	148,824	360,326	113,448
Hickory	260,403	--	42,502	57,432	55,463	39,330	18,067	39,627	7,982
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	3,176	--	--	3,176	--	--	--	--	--
Soft maple	913,940	--	199,715	208,120	172,018	124,054	86,952	119,673	3,408
Beech	99,069	--	4,531	12,213	24,825	26,287	8,629	6,586	15,998
Sweetgum	1,853,265	--	329,652	368,597	321,921	266,066	212,488	322,946	26,555
Tupelo and blackgum	2,392,249	--	425,385	452,677	427,473	340,604	229,304	370,245	146,561
Ash	414,298	--	82,730	55,270	60,708	59,318	34,767	88,864	12,641
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	--	--	--	--	--	--	--	--	--
Yellow-poplar	1,230,956	--	135,005	157,397	201,494	251,311	157,330	271,984	56,435
Bay and magnolia	41,634	--	4,428	18,086	8,371	8,861	1,888	--	--
Black cherry	4,744	--	--	--	4,744	--	--	--	--
Black walnut	1,922	--	--	--	1,922	--	--	--	--
Sycamore	33,313	--	2,996	--	8,942	4,415	3,144	13,816	--
Black locust	--	--	--	--	--	--	--	--	--
Elm	137,577	--	11,516	30,761	32,200	8,327	18,980	22,785	13,008
Other eastern hardwoods	132,145	--	23,157	16,547	24,350	14,574	15,307	38,210	--
Total hardwoods	10,516,944	--	1,780,689	1,894,980	1,824,302	1,576,504	1,068,101	1,922,549	449,819
All species	24,541,175	2,470,026	4,471,742	4,609,946	4,025,839	3,096,394	2,077,250	3,188,467	601,511

Table 37--Volume of sawtimber on timberland, by species, size class, and tree grade, Southern Coastal Plain of North Carolina, 1990

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades	Tree grade				All grades	Tree grade			
		1	2	3	4		1	2	3	4
	Thousand board feet									
Softwood										
Yellow pines[a]	12,928,146	2,960,893	3,145,077	6,822,176	--	5,409,965	2,065,012	1,441,147	1,903,806	—
Eastern white pine[b]	--	—	--	--	--	--	--	—	—	--
Spruce and fir[b]	--	--	--	--	--	--	--	--	--	--
Cypress[c]	995,525	377,431	299,914	267,806	50,374	692,219	377,431	232,586	68,852	13,350
Other eastern softwoods[b]	100,560	15,704	2,058	65,161	17,637	46,002	15,704	—	12,661	17,637
Total	14,024,231	3,354,028	3,447,049	7,155,143	68,011	6,148,186	2,458,147	1,673,733	1,985,319	30,987
Hardwood[c]										
Select white and red oaks	1,028,623	211,096	343,860	388,195	85,472	671,106	211,096	263,592	155,869	40,549
Other white and red oaks	1,969,630	258,326	509,326	842,639	359,339	1,293,371	258,326	419,566	433,848	181,631
Hickory	260,403	36,601	58,754	122,181	42,867	160,469	36,601	43,309	55,393	25,166
Yellow birch	--	—	--	--	--	--	--	—	—	--
Hard maple	3,176	—	3,176	--	--	--	--	--	--	--
Sweetgum	1,853,265	444,469	629,674	668,923	110,199	1,155,016	444,469	461,445	201,663	47,439
Ash, walnut, and black cherry	420,964	123,127	145,324	137,219	15,294	282,964	123,127	119,605	35,113	5,119
Yellow-poplar	1,230,956	289,741	497,367	362,233	121,615	938,554	289,741	377,391	183,175	88,247
Other eastern hardwoods	3,749,927	674,488	1,065,463	1,542,204	467,772	2,339,795	674,488	784,732	591,732	288,843
Total	10,516,944	2,037,848	3,212,944	4,063,594	1,202,558	6,841,275	2,037,848	2,469,640	1,656,793	676,994
All species	24,541,175	5,391,876	6,659,993	11,218,737	1,270,569	12,989,461	4,495,995	4,143,373	3,642,112	707,981

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

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

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

Table 38—Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

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
		Thousand cubic feet							
Softwood									
Longleaf pine	283,514	69,144	68,654	68,730	52,033	21,001	7,732	5,220	—
Slash pine	50,620	30,983	11,840	7,452	345	—	—	—	—
Shortleaf pine	39,108	6,586	12,570	10,224	5,220	2,879	1,629	—	—
Loblolly pine	1,238,131	336,729	352,981	326,989	267,138	190,783	121,146	135,871	6,694
Pond pine	252,482	70,468	64,738	56,965	34,908	14,245	6,700	4,658	—
Virginia pine	3,204	1,962	383	859	—	—	—	—	—
Pitch pine	—	—	—	—	—	—	—	—	—
Table Mountain pine	—	—	—	—	—	—	—	—	—
Spruce pine	—	—	—	—	—	—	—	—	—
Sand pine	—	—	—	—	—	—	—	—	—
Eastern white pine	—	—	—	—	—	—	—	—	—
Eastern hemlock	—	—	—	—	—	—	—	—	—
Spruce and fir	—	—	—	—	—	—	—	—	—
Baldcypress	119,406	5,039	10,345	16,720	12,939	15,813	11,967	32,217	14,366
Pondcypress	66,510	13,180	10,798	10,656	6,167	3,724	7,757	13,014	1,214
Cedars	18,773	7,287	3,118	750	917	1,807	3,707	1,187	—
Total softwoods	2,571,948	532,378	535,427	499,345	379,667	250,252	160,638	191,987	22,274
Hardwood									
Select white oaks	170,774	—	30,414	30,425	28,507	29,842	13,877	32,130	5,579
Select red oaks	23,971	—	5,818	7,096	1,638	2,054	2,106	4,095	1,164
Chestnut oak	3,146	—	283	650	991	—	506	756	—
Other white oaks	40,166	—	7,260	6,915	6,084	3,980	2,823	11,588	1,516
Other red oaks	312,597	—	59,845	56,510	53,839	43,388	25,831	56,002	17,182
Hickory	49,688	—	8,902	11,644	10,747	7,293	3,211	6,634	1,257
Yellow birch	—	—	—	—	—	—	—	—	—
Hard maple	650	—	—	650	—	—	—	—	—
Soft maple	181,890	—	41,612	43,267	34,616	24,088	18,321	21,411	575
Beech	21,561	—	882	2,625	5,440	5,790	1,995	1,448	3,381
Sweetgum	333,174	—	64,686	71,105	59,285	47,007	37,040	32,129	3,922
Tupelo and blackgum	461,727	—	92,274	94,065	84,308	64,120	41,647	62,938	22,255
Ash	80,914	—	17,715	11,572	12,250	11,483	10,198	13,657	2,039
Cottonwood	—	—	—	—	—	—	—	—	—
Basswood	—	—	—	—	—	—	—	—	—
Yellow-poplar	212,626	—	26,167	29,808	36,533	43,343	26,030	42,639	8,106
Bay and magnolia	8,812	—	938	3,871	1,781	1,838	384	—	—
Black cherry	907	—	—	—	907	—	—	—	—
Black walnut	426	—	—	—	426	—	—	—	—
Sycamore	6,114	—	612	—	1,757	825	565	2,355	—
Black locust	—	—	—	—	—	—	—	—	—
Elm	26,522	—	2,366	6,327	6,395	1,611	3,559	4,087	2,177
Other eastern hardwoods	24,827	—	4,516	3,217	4,725	2,822	2,931	6,616	—
Total hardwoods	1,962,532	—	364,240	379,747	350,429	289,484	188,934	320,475	69,223
All species	4,534,480	532,378	899,667	879,092	730,096	539,736	349,572	512,442	91,497

Table 39--Total volume of live trees on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Diameter class (inches at breast height)												
	Thousand cubic feet												
Softwood													
Longleaf pine	446,384	5,486	12,557	32,485	45,291	84,214	85,386	81,712	60,217	23,979	8,742	6,315	-
Slash pine	230,120	1,319	13,160	60,074	85,428	45,943	14,927	8,869	400	--	--	--	--
Shortleaf pine	70,116	556	2,664	2,518	15,820	9,425	15,746	12,204	6,030	3,286	1,847	--	--
Loblolly pine	3,229,336	54,898	147,623	356,083	495,153	505,122	450,470	392,214	310,473	217,882	137,194	154,857	7,937
Pond pine	502,660	7,455	26,940	56,103	90,469	101,215	81,347	68,200	41,783	16,398	7,659	5,091	--
Virginia pine	10,245	207	1,608	2,113	1,789	2,911	490	1,067	--	--	--	--	--
Pitch pine	--	--	--	--	-	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	174,773	267	1,075	3,745	7,171	8,754	14,972	22,505	17,164	20,201	16,175	40,945	21,799
Pondcypress	111,051	798	907	3,237	7,223	22,548	15,804	14,669	8,276	4,893	10,118	17,422	5,155
Cedars	59,513	1,688	7,954	11,293	11,158	11,367	4,297	934	1,924	3,082	4,415	1,401	--
Total softwoods	4,834,218	72,624	214,548	527,651	759,502	791,499	683,459	602,374	446,167	289,721	186,150	226,031	34,492
Hardwood													
Select white oaks	377,025	6,760	13,575	26,318	38,105	41,175	53,483	46,731	40,143	41,036	18,365	43,350	7,764
Select red oaks	56,246	959	2,107	7,162	6,295	5,890	10,195	10,894	2,341	2,862	2,753	5,208	1,488
Chestnut oak	7,403	93	248	737	1,926	--	469	994	1,361	--	668	977	--
Other white oaks	119,919	6,974	8,361	11,637	10,239	19,785	12,805	11,189	8,987	7,527	3,275	16,079	2,581
Other red oaks	897,534	45,159	64,599	102,392	93,349	111,366	106,731	88,532	80,339	63,313	36,331	79,286	26,087
Hickory	136,519	5,498	10,202	13,834	16,983	15,991	16,110	17,204	14,894	9,794	5,432	9,039	1,368
Yellow birch	--	--	--	--	--	--	--	--	--	-	--	--	--
Hard maple	2,938	382	--	432	627	570	--	927	--	--	--	--	--
Soft maple	868,397	90,293	133,971	127,026	120,622	86,645	89,972	70,168	53,548	35,801	24,180	36,772	1,409
Beech	43,972	765	1,353	2,476	1,882	5,182	1,369	4,707	7,838	8,161	2,615	2,785	4,643
Sweetgum	935,270	62,175	84,855	109,412	104,662	117,844	101,856	100,291	77,071	60,657	44,142	64,586	5,515
Tupelo and blackgum	1,179,412	46,171	51,245	84,920	115,917	135,493	168,832	146,938	124,123	97,588	66,840	103,642	37,385
Ash	247,774	19,968	24,012	27,939	21,887	24,633	29,889	18,187	16,611	14,806	14,037	21,034	2,731
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Sassafras	451	129	--	--	--	359	--	--	--	--	--	--	--
Yellow-poplar	384,659	6,638	15,022	18,930	25,210	40,667	43,337	41,192	47,542	57,720	31,102	51,457	10,842
Bay and magnolia	162,630	45,274	32,158	36,136	18,591	10,319	2,808	7,181	3,305	3,335	2,109	854	--
Black cherry	28,903	6,269	4,531	7,154	5,690	1,566	--	1,335	1,227	342	592	--	--
Black walnut	1,677	--	-	338	--	741	--	--	598	-	--	--	--
Sycamore	10,645	117	--	526	--	1,850	1,024	--	2,478	1,074	215	2,996	--
Black locust	55	55	--	--	--	--	--	--	--	--	--	--	--
Elm	60,368	1,785	3,879	1,369	7,795	6,409	4,454	9,458	9,215	2,137	4,657	6,448	2,350
Other eastern hardwoods	502,318	123,367	123,144	93,159	68,551	30,897	25,076	14,612	10,063	6,188	3,150	9,537	--
Total hardwoods	6,014,136	469,254	573,262	668,103	648,381	659,411	675,026	590,571	501,679	407,681	263,715	452,270	104,883
All species	10,848,354	541,878	787,810	1,195,754	1,407,883	1,450,910	1,358,485	1,192,895	947,796	697,402	449,865	678,301	139,375

Table 40--Green weight of forest biomass on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	All classes	1.0-3.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Diameter class (inches at breast height)												
	Hundred thousand pounds												
Softwood													
Longleaf pine	352,972	4,425	10,786	23,506	34,737	65,814	67,807	65,663	48,558	19,309	7,140	5,107	--
Slash pine	179,659	1,011	12,906	45,068	66,565	33,880	11,657	6,940	332	--	--	--	--
Shortleaf pine	48,956	298	1,612	1,520	10,757	6,634	11,359	8,757	4,363	2,361	1,315	--	--
Loblolly pine	2,323,907	27,200	87,157	254,255	363,414	371,423	331,111	287,594	225,492	152,976	99,113	111,742	5,410
Pond pine	356,801	4,116	15,200	38,071	65,009	72,780	58,621	49,310	30,089	11,619	5,455	3,531	--
Virginia pine	7,950	173	1,350	1,679	1,376	2,203	370	709	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	136,981	144	679	1,828	4,345	5,946	11,083	17,316	13,410	16,036	13,193	33,977	19,044
Pondcypress	76,244	311	567	1,498	3,965	13,905	10,536	10,286	3,958	3,646	7,651	13,553	4,368
Cedars	44,314	1,067	5,069	8,139	8,223	8,596	3,515	776	1,493	2,599	5,673	1,164	--
Total softwoods	3,525,784	38,745	134,626	376,564	560,411	583,181	506,139	447,441	329,695	213,526	137,560	169,074	28,822
Hardwood													
Select white oaks	309,623	5,322	10,173	18,731	30,577	33,447	44,052	38,981	33,781	34,626	15,600	37,440	6,893
Select red oaks	46,037	794	1,570	5,109	3,366	4,749	8,270	9,123	1,992	2,419	2,437	4,800	1,358
Chestnut oak	5,955	22	194	569	1,442	--	391	827	1,078	--	541	891	--
Other white oaks	96,859	5,133	5,808	8,081	7,932	15,861	10,613	9,506	7,659	6,522	3,270	14,174	2,300
Other red oaks	725,225	38,259	49,037	73,673	74,573	91,695	83,242	76,230	67,074	52,792	30,363	65,295	20,992
Hickory	112,503	4,708	9,037	9,804	13,613	12,625	13,066	14,378	12,326	8,363	4,808	8,018	1,457
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	2,403	317	--	355	495	467	--	769	--	--	--	--	--
Soft maple	629,391	68,415	95,334	87,257	89,078	63,757	65,840	51,433	39,163	26,232	17,334	24,535	993
Beech	34,922	649	1,163	1,466	1,455	3,828	1,304	3,942	6,253	6,540	2,115	2,429	3,796
Sweetgum	671,246	41,324	56,218	66,927	74,379	85,034	79,064	74,765	58,228	46,284	34,017	50,476	4,530
Tupelo and blackgum	798,705	31,147	34,829	44,291	69,772	86,148	111,003	100,263	87,556	70,770	50,543	80,793	31,590
Ash	149,679	12,135	15,193	21,089	14,708	16,689	17,926	11,102	9,751	8,291	7,632	10,777	1,330
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	365	88	--	--	--	277	--	--	--	--	--	--	--
Yellow poplar	273,903	4,925	10,015	11,436	17,398	28,582	31,004	29,322	34,389	38,485	22,708	37,754	7,975
Bay and magnolia	97,663	27,832	19,506	19,139	11,437	6,571	1,857	4,748	2,215	2,274	1,472	592	--
Black cherry	17,572	2,884	3,030	4,237	3,645	1,112	--	940	874	405	445	--	--
Black walnut	1,398	--	--	281	--	594	--	--	523	--	--	--	--
Sycamore	7,904	66	--	252	--	1,191	748	--	1,439	658	551	2,399	--
Black locust	49	49	--	--	--	--	--	--	--	--	--	--	--
Elm	39,262	1,290	2,779	879	4,689	3,974	2,883	6,008	6,062	1,455	3,066	4,279	1,948
Other eastern hardwoods	424,153	105,369	112,742	72,168	51,291	25,145	20,429	11,724	7,985	4,997	4,330	7,963	--
Total hardwoods	4,441,817	350,748	426,560	445,844	459,850	481,746	495,742	442,011	378,958	311,339	201,232	352,625	83,162
All species	7,967,601	389,493	561,186	822,408	1,030,261	1,064,927	1,001,881	889,452	708,653	524,865	338,792	521,699	113,984

Table 41--Average net annual growth and removals of live timber and growing stock on timberland, by species, Southern Coastal Plain of North Carolina, 1983-1989

Species	Live timber[a]		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	Thousand cubic feet			
Softwood				
Yellow pines	215,135	181,570	214,736	181,054
Eastern white pine	--	--	--	--
Spruce and fir	--	--	--	--
Cypress	4,453	3,607	4,421	3,607
Other eastern softwoods	1,340	586	1,304	586
Total softwoods	220,928	185,763	220,461	185,247
Hardwood				
Select white and red oaks	11,118	7,603	11,035	7,603
Other white and red oaks	25,866	23,750	25,373	22,619
Hickory	2,675	1,295	2,615	1,169
Yellow birch	--	--	--	--
Hard maple	68	194	68	194
Sweetgum	22,456	20,861	22,110	20,226
Ash, walnut, and black cherry	5,442	3,807	5,133	3,608
Yellow-poplar	13,853	14,337	13,675	13,946
Tupelo and blackgum	11,524	10,642	11,038	10,093
Bay and magnolia	2,705	1,482	2,251	1,036
Other eastern hardwoods	27,685	18,744	23,369	13,120
Total hardwoods	123,392	102,715	116,667	93,614
All species	344,320	288,478	337,128	278,861

[a]Merchantable portion only.

Table 42--Average net annual growth and removals of sawtimber on timberland, by species, Southern Coastal Plain of North Carolina, 1983-1989

Species	Net annual growth	Annual timber removals
	Thousand board feet	
Softwood		
Yellow pines	883,093	735,574
Eastern white pine	--	--
Spruce and fir	--	--
Cypress	23,990	18,091
Other eastern softwoods	5,297	1,069
Total softwoods	912,380	754,734
Hardwood		
Select white and red oaks	51,739	23,450
Other white and red oaks	104,709	60,925
Hickory	8,001	3,768
Yellow birch	--	--
Hard maple	159	--
Sweetgum	77,383	62,244
Ash, walnut, and black cherry	21,201	9,865
Yellow-poplar	63,867	67,479
Tupelo and blackgum	47,306	30,098
Bay and magnolia	1,810	1,636
Other eastern hardwoods	58,224	32,866
Total hardwoods	434,399	292,331
All species	1,346,779	1,047,065

Table 43--Average annual removals of growing stock on timberland, by species and diameter class, Southern Coastal Plain of North Carolina, 1990

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet										
Softwood											
Yellow pines	181,054	13,130	24,139	28,981	32,688	28,832	23,543	13,763	9,035	6,943	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Cypress	3,607	58	184	202	108	379	412	201	333	1,617	113
Other eastern softwoods	586	174	196	99	--	--	--	--	--	117	--
Total softwoods	185,247	13,362	24,519	29,282	32,796	29,211	23,955	13,964	9,368	8,677	113
Hardwood											
Select white and red oaks	7,603	431	864	866	1,713	1,042	944	787	--	811	145
Other white and red oaks	22,619	2,108	3,738	3,776	3,354	2,582	1,746	1,171	705	2,368	1,071
Hickory	1,169	54	96	175	105	206	171	362	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	194	--	78	116	--	--	--	--	--	--	--
Sweetgum	20,226	1,995	1,489	3,491	3,219	2,966	1,897	2,310	1,301	1,558	--
Ash, walnut, and black cherry	3,608	98	660	643	261	314	291	935	154	252	--
Yellow-poplar	13,946	464	504	538	924	1,255	1,677	3,373	1,141	3,598	472
Tupelo and blackgum	10,093	966	653	1,308	1,956	1,862	1,250	1,202	681	215	--
Bay and magnolia	1,036	254	128	260	--	109	192	93	--	--	--
Other eastern hardwoods	13,120	1,382	1,648	2,264	1,638	1,351	1,785	1,141	524	1,387	--
Total hardwoods	93,614	7,752	9,858	13,437	13,170	11,687	9,953	11,374	4,506	10,189	1,688
All species	278,861	21,114	34,377	42,719	45,966	40,898	33,908	25,338	13,874	18,866	1,801

Table 44--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, Southern Coastal Plain of North Caroline, 1983-1989

Species	Live timber[a]	Growing stock	Sawtimber
	Thousand cubic feet		Thousand board feet
Softwood			
Yellow pines	23,707	23,415	50,691
Eastern white pine	--	--	--
Spruce and fir	--	--	--
Cypress	702	643	2,597
Other eastern softwoods	1,181	1,134	774
Total softwoods	25,590	25,192	54,062
Hardwood			
Select white and red oaks	1,404	1,310	3,577
Other white and red oaks	10,041	8,762	28,145
Hickory	439	366	646
Yellow birch	--	--	--
Hard maple	--	--	--
Sweetgum	4,380	3,958	12,770
Ash, walnut, and black cherry	2,759	2,759	7,184
Yellow-poplar	2,833	2,533	9,925
Tupelo and blackgum	5,545	4,379	11,461
Bay and magnolia	948	457	1,286
Other eastern hardwoods	12,041	7,568	18,241
Total hardwoods	40,390	32,092	93,235
All species	65,980	57,284	147,297

[a]Merchantable portion only.

Table 45--Change in number of live trees on timberland, by species group, survey completion date, and diameter class, Southern Coastal Plain 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							
Yellow pine									
1983	915,258	328,979	222,128	154,452	94,300	51,683	30,423	17,132	16,161
1990	879,728	313,374	203,203	143,490	99,337	55,341	30,031	17,745	17,207
Change	-35,530	-15,605	-18,925	-10,962	+5,037	+3,658	-392	+613	+1,046
Other softwood									
1983	39,586	16,386	7,104	4,436	3,519	2,404	2,068	1,427	2,242
1990	35,249	13,324	6,558	4,438	3,043	2,820	1,594	1,225	2,247
Change	-4,337	-3,062	-546	-2	-476	+416	-474	-202	+5
Hardwood									
1983	3,198,206	2,323,000	488,071	177,340	86,640	48,232	31,132	18,134	25,667
1990	2,948,034	2,112,370	458,531	169,177	83,555	47,805	30,555	18,572	27,469
Change	-250,172	-210,630	-29,540	-8,163	-3,085	-427	-577	+438	+1,812

Table 46--Land area, by land use class, major forest type, and survey completion date, Southern Coastal Plain of North Carolina

Land use class	Survey completion date			Change
	1973	1983	1990	1983-1990
		Acres		
Forest land				
Timberland:				
Pine and oak-pine types	3,419,684	3,233,051	3,107,971	-125,080
Hardwood types	1,972,213	2,032,642	2,128,407	+95,765
Total	5,391,897	5,265,693	5,236,378	-29,315
Reserved timberland	5,738	6,640	17,200	+10,560
Woodland	--	--	--	--
Total forest land	5,397,635	5,272,333	5,253,578	-18,755
Nonforest land				
Cropland	2,098,231	2,092,389	2,112,464	+20,075
Pasture and range	166,791	165,658	132,932	-32,726
Other	678,400	805,270	860,367	+55,097
Total	2,943,422	3,063,317	3,105,763	+42,446
All land[a]	8,341,057	8,335,650	8,359,341	+23,691

[a]Excludes all water areas.

Table 47—Volume[a] of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, Southern Coastal Plain of North Carolina

Species group and year	All classes	Diameter class (inches at breast height) 5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0 and larger
					SAWTIMBER (in thousand board feet)					
Softwood										
1973	11,208,997	—	—	2,129,439	2,599,778	2,391,191	1,738,659	1,092,414	563,900	693,616
1983	13,028,263	—	—	2,273,290	2,747,328	2,615,542	2,024,394	1,389,865	885,452	1,092,392
1990	14,024,231	—	—	2,470,026	2,691,053	2,714,966	2,201,537	1,519,890	1,009,149	1,417,610
Hardwood										
1973	7,527,929	—	—	—	1,448,351	1,625,607	1,384,327	1,083,887	651,442	1,334,315
1983	9,622,787	—	—	—	1,748,734	1,811,879	1,698,108	1,388,128	930,412	2,045,526
1990	10,516,944	—	—	—	1,780,689	1,894,980	1,824,302	1,576,504	1,068,101	2,372,368
					GROWING STOCK (in thousand cubic feet)					
Softwood										
1973	3,126,922	342,575	476,988	578,822	572,155	465,283	309,871	183,171	91,081	106,976
1983	3,597,264	380,319	580,043	617,935	604,687	508,971	360,770	233,055	143,015	168,469
1990	3,820,003	373,268	620,405	675,211	594,359	528,078	392,091	255,354	163,110	218,127
Hardwood										
1973	2,908,637	311,515	423,118	449,436	426,139	405,521	310,372	222,860	126,017	233,659
1983	3,441,382	340,477	438,401	491,758	514,501	451,940	380,701	285,425	179,989	358,190
1990	3,586,288	349,936	433,147	486,035	516,617	465,156	401,733	319,493	203,872	410,299
					LIVE TIMBER[b] (in thousand cubic feet)					
Softwood										
1973	3,148,153	347,369	480,348	580,805	574,089	466,633	312,650	183,470	92,262	110,527
1983	3,622,538	384,164	584,801	619,978	606,672	510,454	364,038	233,458	144,836	174,137
1990	3,840,828	376,446	623,740	676,989	595,126	528,825	393,865	256,157	163,898	225,782
Hardwood										
1973	3,270,149	404,940	500,174	495,648	462,765	432,259	333,696	236,675	135,327	268,665
1983	3,862,414	443,573	518,236	542,604	558,751	481,639	409,314	303,102	193,342	411,853
1990	3,981,834	452,286	505,965	535,778	556,537	491,209	418,821	340,628	221,089	459,521

[a]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.

[b]Merchantable volume.

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Forest statistics for the Southern Coastal Plain of North Carolina, 1990. Resour. Bull. SE-111. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1990. 52 pp.

Since 1983, area of timberland in the Southern Coastal Plain of North Carolina has declined by less than 1 percent and currently totals 5.2 million acres. Nonindustrial private forest owners control 69 percent of the timberland in this region, including both artificial and natural regeneration, almost 131,000 acres have been regenerated each year, compared with more than 109,000 acres harvested annually. Volume of softwood growing stock increased 6 percent to 3.8 billion cubic feet. Volume of hardwood growing stock increased 4 percent to 3.6 billion cubic feet. Net annual growth of softwoods increased 13 percent to 220 million cubic feet and exceeded removals by 19 percent. Hardwood growth increased 3 percent to 117 million cubic feet. Annual removals of softwood growing stock increased 30 percent to 185 million cubic feet; hardwood removals were up 60 percent to 94 million cubic feet. Annual mortality of softwood growing stock increased 2 percent to 75 million cubic feet. Annual mortality of hardwood growing stock increased 139 percent to 32 million cubic feet.

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

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

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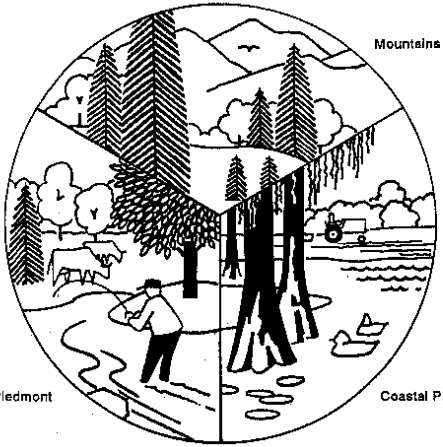

Southeastern Forest Experiment Station

Established 1921

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

RESEARCH MISSION:

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

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