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Forest Statistics for the Mountains of North Carolina, 1984

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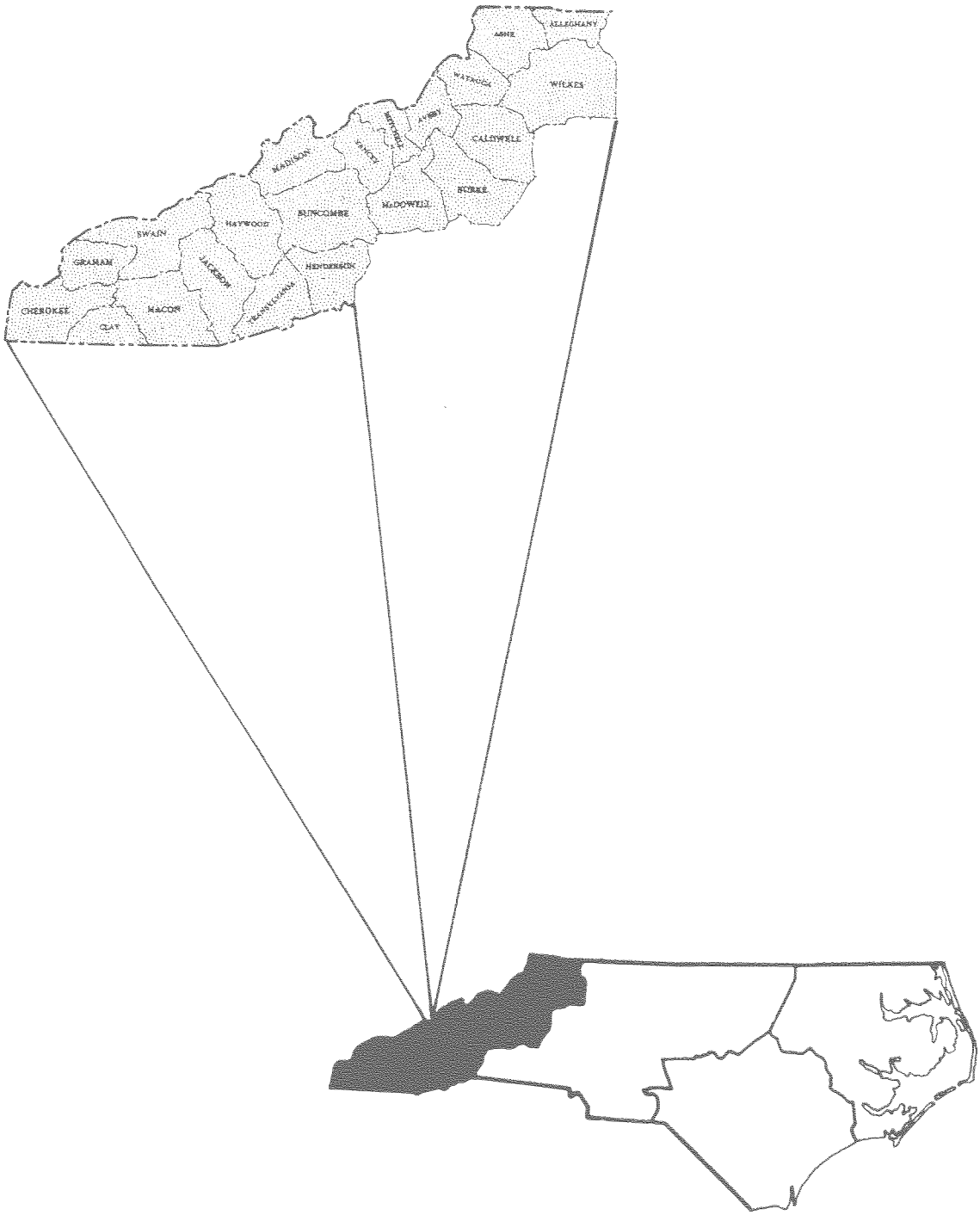

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Southeastern Forest Experiment Station
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Forest Statistics for the Mountains of North Carolina, 1984

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Foreword

This report highlights the principal findings of the fifth forest survey in the Mountains of North Carolina. Fieldwork began in April 1984 and was completed in September 1984. Four previous surveys, completed in 1938, 1955, 1964, and 1974, provide statistics for measuring changes and trends over the past 46 years. The primary emphasis in this report is on the changes and trends since 1974. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of the forest resource are authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Work Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These 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 lands, 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. Similar reports, USDA Forest Service Resource Bulletins SE-72 and SE-74 have been issued for the Southern Coastal Plain and Northern Coastal Plain. A report for the Piedmont region should be issued about the date that this publication is issued. These inventories 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 Forest Service of the State Department of Natural and Economic Resources and the Tennessee Valley Authority in collecting field data. Appreciation is also expressed for the excellent cooperation of other public agencies, forest industry, and other private landowners in providing information and access to the sample locations.

Joe P. McClure

JOE P. McCLURE
Project Leader

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Since 1974 in the Mountains of North Carolina

- area of commercial forest land decreased by over 106,000 acres, or by almost 3 percent. More than 176,000 acres were diverted to other land uses. Of the acreage diverted, 47 percent was to urban and other uses and 36 percent was to agricultural uses. The remaining 17 percent was diverted to noncommercial forest. Commercial forests now account for 69 percent, or 3.9 million acres, of the total land area in the 21 counties that make up the Mountain Unit of North Carolina.
- area of commercial forest land owned by nonindustrial private forest (NIPF) landowners decreased by almost 7 percent from 3.0 to 2.8 million acres. Although this decrease appears rather small, it masks a more dramatic decline in farmer-owned lands, one of three ownership categories in the NIPF class. In a continuing trend that dates from at least to the early 1950's, farmer-owned forest lands decreased--this time by over 50 percent, from almost 1.2 to less than 0.6 million acres. Acreage owned by other individuals increased from 1.4 to 1.8 million acres, while that in the other corporate category remained at 0.4 million acres. Forest industry ownership declined by over 12 percent and remains the smallest ownership category in the Unit at less than 113,000 acres. Public ownership increased by more than 11 percent to over 1 million acres. National Forests contain almost 89 percent of the publicly owned commercial forest acreage.
- over 23,000 acres annually were harvested and retained in commercial forest. Over 80 percent of the acreage undergoing a final harvest was in other private ownership, 15 percent was in public ownership, and the remainder was owned by forest industry. About 14,600 acres annually experienced some form of partial cutting, thinning, or other stand improvement. Insects, diseases, and other natural agents damaged over 32,000 acres annually.
- 739,000 acres, or about 19 percent of the total commercial forest acreage, were classed as mature stands with a harvest treatment opportunity. However, almost 70 percent of this acreage occurs on sites with slopes of 40 percent or more. About 796,000 acres were classed as needing some intermediate silvicultural treatment. Almost 2.4 million acres, or 61 percent of the commercial forest acreage, were identified as being in relatively good condition and not in need of any treatment at the time the survey was made.
- numbers of all live yellow pines in the 2- through 10-inch diameter classes and all live hardwoods in the 2- through 6-inch diameter classes have declined significantly. The number of yellow pines in the 2-inch class dropped by 55 percent; pine declines of 34, 23, 8, and 4 percent were noted in the 4- through 10-inch classes. Although not as extensive, the declines in hardwood stem numbers were 14, 15, and 8 percent in the 2-, 4-, and 6-inch classes, respectively.
- average basal area of all live trees 5.0 inches d.b.h. and larger has increased from 80 to 93 square feet per acre of commercial forest land. Increases in basal area have occurred across all major forest types. Whereas fully stocked stands occupied only 17 percent of the commercial forest acreage in 1974, they now occupy 36 percent--some 1.4 million acres. Medium-stocked stands total 2.0 million acres and poorly stocked stands 0.5 million acres. Average merchantable volume per acre has increased from 1,644 to 2,000 cubic feet.
- volume of softwood growing stock has increased 17 percent and now totals 1.5 billion cubic feet. Increases in the volume in the 12-inch and larger diameter classes more than offset declines in the smaller diameter classes. Volume of white pine, the predominant softwood species in the mountains, increased by 35 percent to 561 million cubic feet. Increases in volume of softwood growing stock were noted across all major ownership groups. Volume of softwood sawtimber increased by 29 percent from 4.4 to 5.6 billion board feet.
- volume of hardwood growing stock has increased 19 percent and now totals 5.7 billion cubic feet. The increase was 31 percent between 1964 and 1974. Increases occurred across all diameter classes

except the 6-inch class, which decreased by 8 percent. Increases were noted across all major ownership groups except forest industry, in which there was a decrease of 9 percent. The current inventory of hardwood growing stock includes 17.6 billion board feet of sawtimber, an increase of 28 percent.

In 1983

- net annual growth of growing stock averaged 53 cubic feet per acre of commercial forest land and totaled 209 million cubic feet. This is a 7 percent decrease from the 224 million cubic feet in 1973. This reduction is due in large part to increases in mortality in both softwoods and hardwoods. As in other upland regions of the Southeast, an unexplained reduction in diameter growth rates for some species (southern yellow pines in particular) also contributed to the decrease in net annual growth. A third factor was a decline in ingrowth for both softwoods and hardwoods. Net annual growth of yellow pine growing stock decreased by 42 percent from 31 million cubic feet in 1973 to 18 million cubic feet in 1983. Other softwood growth declined by 16 percent, soft hardwood increased by 10 percent, and hard hardwood net annual growth of growing stock decreased by 4 percent. Across all species, net growth included 983 million board feet of sawtimber.

- annual removals of growing stock totaled almost 86 million cubic feet and included 333 million board feet of sawtimber. Annual removals of growing stock increased by 9 percent since 1973 for all species. By species group, yellow pine removals declined by 30 percent, other softwood removals increased by 56 percent, and soft hardwood removals (primarily yellow-poplar) increased by 45 percent. Net growth still exceeds removals by 26 percent for softwoods and by 221 percent for hardwoods. Although publicly owned forests accounted for 27 percent of the net growth, they only provided 9 percent of the removals. In contrast, NIPF land, which accounted for 69 percent of the net growth, provided 86 percent of the annual removals. Sawtimber removals were up 29 percent since 1973.
- mortality of growing stock totaled 47 million cubic feet, up 72 percent. This mortality included 113 million board feet of sawtimber. Softwood mortality increased more than 2.7-fold. Approximately 48 percent of the current softwood mortality can be attributed to insects, primarily southern pine bark beetles. The remaining softwood mortality is fairly evenly distributed among disease, weather, and suppression as causes of death. Hardwood mortality totals 24 million cubic feet, and approximately 53 percent of this can be attributed to disease. Across all species, mortality reduced gross growth by 18 percent.

How the Inventory is Made

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

1. Initial estimates of forest and nonforest areas were based on the classification of 13,981 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 1,085 of the 16-point clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassifications.

2. Estimates of timber volume and forest classifications were based on measurements recorded at 810 ground sample locations systematically distributed within the commercial forest land. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

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

4. Felled trees were measured at 10 active cutting operations. These data will supplement the standing-tree volume data and be used to generate utilization factors for product and species groups. Forest biomass estimates were made using equations developed by the Utilization of Southern Timber Research Work Unit of the Southeastern Forest Experiment Station in Athens, GA.

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 549 permanent sample plots established in the fourth survey.

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

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

Reliability of the Data

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

	Percent
Per million acres of commercial forest land	0.81
Per billion cubic feet of growing stock	5.47
Per billion cubic feet of net annual growth	1.01
Per billion cubic feet of annual removals	3.70

Sampling errors for county and unit totals,[a] in terms of one standard error, Mountains of North Carolina, 1984

County	Commercial forest area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
	- - - - - - - Sampling error[b] - - - - - - -			
Alleghany	4.24	17.38	16.20	61.94
Ashe	3.82	10.01	11.81	100.07
Avery	2.41	8.64	10.84	81.00
Buncombe	1.79	7.43	9.25	47.16
Burke	1.22	11.71	12.19	32.69
Caldwell	1.51	8.67	8.28	39.31
Cherokee	1.37	8.19	9.21	50.14
Clay	2.05	11.12	15.08	100.02
Graham	1.11	10.35	10.76	53.22
Haywood	2.17	9.95	11.01	60.51
Henderson	2.45	8.17	9.29	84.82
Jackson	1.35	7.60	7.18	58.25
McDowell	1.23	9.41	9.03	45.01
Macon	1.06	7.41	8.19	55.82
Madison	1.56	8.86	10.82	40.56
Mitchell	3.86	10.48	11.27	51.58
Swain	1.96	14.87	17.32	69.10
Transylvania	0.95	6.33	6.99	100.00
Watauga	4.65	11.27	13.97	53.77
Wilkes	1.03	6.05	6.15	33.34
Yancey	1.68	11.52	10.35	60.62
Total	0.40	2.04	2.21	12.65

[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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Gross growth. Annual increase in merchantable volume of trees in the absence of cutting and mortality. (Gross growth includes survivor growth, ingrowth, growth on ingrowth, growth on removals prior to removal, and growth on mortality prior to death.)

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

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

Acceptable tree. A tree that qualifies as growing stock but does not meet the minimum requirements to qualify as a desirable tree. Included are sawtimber-size

trees that do not contain a 12-foot saw log because of excessive, natural taper in the butt log, but have the potential to produce a 12-foot saw log as diameter increases.

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

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

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

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

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

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

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

Industrial wood. All roundwood products except fuelwood.

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

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

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

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

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

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

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

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

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

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

Miscellaneous private land (see: Other private land).

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

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

Net annual growth. The net change in merchantable volume for a specific year in the

absence of cutting (gross growth minus mortality for that specified year.)

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

Noncommercial forest land. Forest land not considered commercial. Includes both unproductive forest land and productive-reserved forest land.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Roundwood chipped. Any timber cut primarily for pulpwood, delivered to nonpulpmills, chipped, and then sold to 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 growing-stock trees in the stand.

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

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

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

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

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

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

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

Timber products. Roundwood products and byproducts.

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

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

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

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

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

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

Stocking Standard

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

Conversion factors

Cubic feet of wood per average cord (excluding bark)

D.b.h. class	All species	Pine	Other softwood	Hardwood
6	60.7	61.0	68.2	60.0
8	68.9	68.1	76.0	68.4
10	73.8	73.1	81.4	73.4
12	77.0	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	83.2	84.8	93.8	81.5
22	84.0	86.0	95.1	82.1
24+	85.3	87.9	97.9	83.1
Average	76.2	72.5	87.3	75.4

Metric equivalents of units used in this report

1 acre = 4,046.86 square meters or 0.404686 hectares

1 cubic foot = 0.028317 cubic meters

1 inch = 2.54 centimeters or 0.0254 meters

Breast height = 1.4 meters above ground level

1 square foot = 929.03 square centimeters or 0.0929 square meters

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

1 pound = 0.454 kilograms

1 ton = 0.907 metric tons

County Tables

The county tables are intended for use in compiling forest resource estimates for groups of counties. Because the sampling procedure used by the Forest Survey was intended primarily to furnish inventory data for the survey unit as a whole, individual county estimates have limited and variable accuracy. As county totals are broken down by various subdivisions, the possibility of error increases and is greatest for the smallest items. The order of this increase can be computed with the formula on page 4.

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

County	All land[a]	Forest land				Nonforest land[b]
		Total	Commercial forest	Unproductive forest	Productive-reserved	
	Acres					
Alleghany	150,093	77,141	70,821	--	6,320	72,952
Ashe	272,742	156,214	154,383	--	1,831	116,528
Avery	158,125	116,771	114,830	50	1,891	41,354
Buncombe	421,971	271,878	265,106	1,220	5,552	150,093
Burke	322,848	246,949	229,317	73	17,559	75,899
Caldwell	301,549	228,343	228,173	--	170	73,206
Cherokee	289,171	248,954	248,945	7	2	40,217
Clay	136,902	112,935	106,432	512	5,991	23,967
Graham	184,762	175,961	162,332	497	13,132	8,801
Haywood	355,104	262,683	173,726	953	88,004	92,421
Henderson	239,610	145,810	145,615	29	166	93,800
Jackson	313,933	268,602	262,094	527	5,981	45,331
McDowell	279,930	231,381	229,681	346	1,354	48,549
Macon	330,611	280,709	271,589	2,619	6,501	49,902
Madison	288,838	214,618	214,566	52	--	74,220
Mitchell	142,080	103,362	102,445	426	491	38,718
Swain	336,627	322,202	110,777	451	210,974	14,425
Transylvania	242,099	210,215	206,641	2,596	978	31,884
Watauga	200,992	118,750	110,055	--	8,695	82,242
Wilkes	481,414	354,454	339,601	--	14,853	126,960
Yancey	200,704	164,685	161,265	884	2,536	36,019
Total	5,650,105	4,312,617	3,908,394	11,242	392,981	1,337,488

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

[b]Includes 6,546 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

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

County	All ownerships	Ownership class							
		National Forest	Miscellaneous Federal	State	County and municipal	Forest industry[a]	Other private		
							Farmer	Corporate	Individual
	Acres								
Alleghany	70,821	--	--	6	55	168	17,648	--	52,944
Ashe	154,383	327	5	150	20	1,407	44,845	4,485	103,144
Avery	114,830	26,095	--	450	188	279	9,758	43,909	34,151
Buncombe	265,106	29,988	--	200	22,270	285	24,693	14,816	172,854
Burke	229,317	36,798	--	6,737	980	11,010	23,172	52,138	98,482
Caldwell	228,173	49,269	--	160	1,231	20,418	9,819	4,909	142,367
Cherokee	248,945	92,145	4,740	--	1,605	5,367	27,636	20,727	96,725
Clay	106,432	57,303	--	--	2	751	4,397	8,796	35,183
Graham	162,332	98,337	2,200	--	6	434	8,180	8,181	44,994
Haywood	173,726	39,818	--	119	8,827	6,433	33,866	5,644	79,019
Henderson	145,615	17,138	--	1,222	98	2,412	24,949	9,980	89,816
Jackson	262,094	64,553	17,427	352	1,881	4,026	33,805	33,805	106,245
McDowell	229,681	66,436	--	431	512	13,533	28,794	19,196	100,779
Macon	271,589	141,864	--	--	28	1,091	25,721	19,291	83,594
Madison	214,566	50,186	--	14	1,429	1,366	101,559	4,616	55,396
Mitchell	102,445	17,084	--	--	2,849	850	25,519	--	56,143
Swain	110,777	20,855	28,756	--	705	--	8,061	16,123	36,277
Transylvania	206,641	82,744	--	--	411	8,946	6,363	50,907	57,270
Watauga	110,055	393	--	359	73	3,043	30,339	25,283	50,565
Wilkes	339,601	--	2,279	6,986	403	26,082	58,089	8,937	236,825
Yancey	161,265	35,255	--	34	26	4,925	33,007	5,501	82,517
Total	3,908,394	926,588	55,407	17,220	43,599	112,826	580,220	357,244	1,815,290

[a]Includes 141 acres of other private land under long-term lease.

3.9835 (mil.)

1.3904

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

County	All type groups	Forest-type group								
		White pine-hemlock	Spruce-fir	Longleaf-slash	Loblolly-shortleaf	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Acres									
Alleghany	70,821	17,648	--	--	--	--	53,173	--	--	--
Ashe	154,383	--	--	--	4,485	17,937	114,021	--	--	17,940
Avery	114,830	--	--	--	--	11,590	91,838	--	--	11,402
Buncombe	265,106	200	--	--	14,815	12,436	234,473	--	--	3,182
Burke	229,317	37,512	--	--	33,336	45,797	112,672	--	--	--
Caldwell	228,173	34,669	--	--	15,959	34,929	142,616	--	--	--
Cherokee	248,945	13,818	--	--	44,346	42,548	144,227	--	--	4,006
Clay	106,432	--	--	--	21,999	8,804	66,813	--	--	8,816
Graham	162,332	9,699	--	--	9,266	--	123,751	--	--	19,616
Haywood	173,726	7,199	3,982	--	--	19,252	128,789	--	--	14,504
Henderson	145,615	14,969	--	--	9,979	17,479	103,188	--	--	--
Jackson	262,094	--	--	--	4,829	21,395	216,552	--	--	19,318
McDowell	229,681	9,598	--	--	27,012	27,903	160,369	--	4,799	--
Macon	271,589	4,433	--	--	5,525	17,294	239,903	--	--	4,434
Madison	214,566	5,988	--	--	20,386	18,465	159,534	--	--	10,193
Mitchell	102,445	--	--	--	5,104	5,696	72,895	--	--	18,750
Swain	110,777	--	--	--	21,851	4,031	84,895	--	--	--
Transylvania	206,641	12,726	--	--	--	22,072	171,843	--	--	--
Watauga	110,055	5,057	5,057	--	--	834	94,051	--	--	5,056
Wilkes	339,601	22,475	--	--	64,836	64,578	187,712	--	--	--
Yancey	161,265	5,535	9,418	--	3,917	14,343	107,632	--	--	20,420
Total	3,908,394	201,526	18,457	--	307,645	407,383	2,810,947	--	4,799	157,637

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

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
	Acres				
Alleghany	70,821	44,349	22,060	4,412	--
Ashe	154,383	114,022	31,392	8,969	--
Avery	114,830	84,919	20,153	9,758	--
Buncombe	265,106	188,751	52,567	23,788	--
Burke	229,317	105,310	63,870	60,137	--
Caldwell	228,173	132,231	60,346	35,596	--
Cherokee	248,945	138,382	100,762	9,801	--
Clay	106,432	79,253	22,020	5,159	--
Graham	162,332	104,129	39,670	13,357	5,176
Haywood	173,726	124,076	49,650	--	--
Henderson	145,615	110,686	34,929	--	--
Jackson	262,094	172,116	71,766	18,212	--
McDowell	229,681	131,390	61,681	32,702	3,908
Macon	271,589	182,685	80,037	8,867	--
Madison	214,566	154,854	31,054	28,658	--
Mitchell	102,445	74,077	20,416	7,952	--
Swain	110,777	57,645	45,070	8,062	--
Transylvania	206,641	133,157	60,758	12,726	--
Watauga	110,055	73,827	36,228	--	--
Wilkes	339,601	214,526	102,602	22,473	--
Yancey	161,265	94,502	35,340	31,423	--
Total	3,908,394	2,514,887	1,042,371	342,052	9,084

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

County	All classes	Site class (cubic feet per acre per year)				
		> 164	120-164	85-119	50-84	20-49
	Acres					
Alleghany	70,821	13,236	4,412	17,871	30,890	4,412
Ashe	154,383	4,484	4,485	63,109	68,851	13,454
Avery	114,830	--	6,711	46,283	52,078	9,758
Buncombe	265,106	200	38,319	81,009	126,156	19,422
Burke	229,317	25,926	43,303	50,133	91,010	18,945
Caldwell	228,173	15,857	28,630	69,759	93,319	20,608
Cherokee	248,945	38,551	20,532	70,907	114,949	4,006
Clay	106,432	--	2	40,382	35,202	30,846
Graham	162,332	14,776	32,328	52,287	57,765	5,176
Haywood	173,726	--	24,132	47,092	92,876	9,626
Henderson	145,615	4,989	4,989	48,543	64,261	22,833
Jackson	262,094	9,659	27,065	78,242	106,323	40,805
McDowell	229,681	4,799	3,908	44,426	149,915	26,633
Macon	271,589	--	37,051	77,135	85,351	72,052
Madison	214,566	15,220	31,056	60,011	92,511	15,768
Mitchell	102,445	--	13,055	40,013	41,425	7,952
Swain	110,777	260	21,337	20,153	59,783	9,244
Transylvania	206,641	12,726	11,283	35,293	120,347	26,992
Watauga	110,055	--	73	22,901	56,742	30,339
Wilkes	339,601	38,027	26,808	118,199	150,080	6,487
Yancey	161,265	4,959	13,335	57,346	73,873	11,752
Total	3,908,394	203,669	392,814	1,141,094	1,763,707	407,110

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

County	All classes	Stocking percentage[a]				
		> 130	100-130	60-99	16.7-59	< 16.7
	Acres					
Alleghany	70,821	9,053	4,412	44,120	13,236	--
Ashe	154,383	6,066	49,331	76,565	22,421	--
Avery	114,830	--	39,365	60,828	14,637	--
Buncombe	265,106	200	58,592	156,128	50,186	--
Burke	229,317	12,566	63,528	118,465	34,758	--
Caldwell	228,173	9,979	75,216	123,036	19,942	--
Cherokee	248,945	17,825	42,558	173,640	14,922	--
Clay	106,432	--	30,815	53,608	22,009	--
Graham	162,332	--	47,414	70,812	38,930	5,176
Haywood	173,726	11,289	46,710	85,187	30,540	--
Henderson	145,615	6,211	41,625	73,536	24,243	--
Jackson	262,094	--	60,503	153,203	48,388	--
McDowell	229,681	13,506	78,204	101,740	32,323	3,908
Macon	271,589	17,294	93,341	121,494	39,460	--
Madison	214,566	29,068	63,851	103,180	18,467	--
Mitchell	102,445	21,006	47,377	34,062	--	--
Swain	110,777	260	24,889	58,570	27,058	--
Transylvania	206,641	6,363	73,452	116,702	10,124	--
Watauga	110,055	5,057	33,375	56,455	15,168	--
Wilkes	339,601	42,494	134,025	147,160	15,922	--
Yancey	161,265	11,036	65,177	70,132	14,920	--
Total	3,908,394	219,273	1,173,760	1,998,623	507,654	9,084

[a]See stocking standards on page 11.

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

County	Sawtimber					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet					Thousand cubic feet[a]				
Alleghany	329,201	3,329	84,664	71,209	169,999	109,051	1,433	23,968	28,262	55,388
Ashe	832,582	8,452	92,941	245,745	485,444	268,936	6,933	19,683	80,779	161,541
Avery	712,848	--	78,429	239,624	394,795	232,651	984	14,999	91,297	125,371
Buncombe	1,527,083	37,625	48,670	446,852	993,936	439,190	14,906	10,665	123,256	290,363
Burke	954,808	231,281	371,406	142,798	209,323	307,987	82,979	82,575	57,482	84,951
Caldwell	1,410,133	153,364	364,523	303,707	588,539	407,470	42,199	78,463	96,084	190,724
Cherokee	1,209,018	293,929	263,954	137,847	513,288	407,677	96,763	57,460	62,164	191,290
Clay	488,371	170,257	10,597	51,307	256,210	162,927	59,668	2,383	17,566	83,310
Graham	1,078,074	125,492	236,020	262,013	454,549	313,077	29,237	44,886	98,055	140,899
Haywood	1,196,924	51,778	194,750	418,941	531,455	363,073	14,692	54,245	109,227	184,909
Henderson	997,929	82,335	162,709	198,636	554,249	296,371	33,776	36,468	61,606	164,521
Jackson	1,308,356	30,444	123,961	321,872	832,079	421,129	7,144	27,752	105,487	280,746
McDowell	1,360,269	134,510	121,378	242,026	862,355	423,253	54,514	26,159	89,387	253,193
Macon	1,628,122	107,082	128,038	434,674	958,328	503,881	26,102	25,558	134,628	317,593
Madison	1,459,806	103,821	215,553	480,813	659,619	424,124	35,515	51,484	135,791	201,334
Mitchell	783,382	6,469	58,111	336,093	382,709	250,079	3,394	14,027	100,516	132,142
Swain	595,112	69,469	--	206,438	319,205	192,062	31,527	513	61,299	98,723
Transylvania	1,275,932	44,001	109,928	292,568	829,435	391,076	11,406	30,037	102,366	247,267
Watauga	642,288	--	54,696	251,671	335,921	216,973	--	14,406	89,375	113,192
Wilkes	2,223,462	531,422	498,447	534,644	658,949	721,124	193,395	109,806	192,698	225,225
Yancey	1,235,710	15,505	181,601	321,890	716,714	347,414	6,431	39,452	93,116	208,415
Total	23,249,410	2,200,565	3,400,376	5,941,368	11,707,101	7,199,525	752,998	764,989	1,930,441	3,751,097

[a]Factors for converting to cords are shown on page 11.

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

County	Sawtimber					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet					Thousand cubic feet				
Alleghany	17,230	117	4,330	6,702	6,081	3,466	25	1,014	1,034	1,393
Ashe	36,333	1,746	3,820	12,897	17,870	8,968	254	828	3,356	4,530
Avery	35,561	--	2,293	21,545	11,723	7,144	19	401	3,917	2,807
Buncombe	57,407	1,997	1,792	24,297	29,321	12,515	496	442	4,963	6,614
Burke	50,650	14,393	18,584	8,643	9,030	10,671	2,602	3,162	2,589	2,318
Caldwell	55,898	3,180	14,348	18,127	20,243	11,477	881	2,408	3,976	4,212
Cherokee	49,461	10,709	11,543	8,517	18,692	11,992	2,032	1,958	3,144	4,858
Clay	26,034	15,762	549	3,029	6,694	4,303	1,575	88	706	1,934
Graham	39,887	2,472	7,243	18,082	12,090	8,666	355	927	4,041	3,343
Haywood	56,694	1,562	13,099	20,618	21,415	10,449	218	1,766	3,587	4,878
Henderson	39,282	3,339	8,842	10,945	16,156	7,873	791	1,170	2,014	3,898
Jackson	53,046	447	5,117	18,688	28,794	11,779	106	819	3,816	7,038
McDowell	48,026	3,506	4,556	14,407	25,557	12,553	2,316	756	3,588	5,893
Macon	68,073	2,166	3,326	25,361	37,220	13,919	398	516	5,199	7,806
Madison	58,613	2,805	10,902	27,979	16,927	12,232	719	1,644	5,344	4,525
Mitchell	42,584	297	3,063	22,644	16,580	7,517	82	413	3,897	3,125
Swain	27,972	3,558	--	15,927	8,487	5,157	602	27	2,165	2,363
Transylvania	47,067	809	5,566	16,219	24,473	11,315	232	1,259	3,985	5,839
Watauga	30,721	--	1,590	16,333	12,798	6,932	--	394	3,442	3,096
Wilkes	104,337	24,311	19,798	34,793	25,435	20,943	4,351	3,477	7,772	5,343
Yancey	38,139	355	4,661	14,416	18,707	9,146	102	862	3,590	4,592
Total	983,015	93,531	145,022	360,169	384,293	209,017	18,156	24,331	76,125	90,405

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

County	Sawtimber					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet					Thousand cubic feet				
Alleghany	11,504	--	3,008	1,281	7,215	2,791	--	671	312	1,808
Ashe	4,598	--	--	--	4,598	1,133	--	--	222	911
Avery	4,966	--	--	3,575	1,391	1,935	--	--	958	977
Buncombe	22,021	9,238	--	5,583	7,200	5,269	2,450	--	963	1,856
Burke	34,141	19,287	3,639	2,128	9,087	10,362	5,121	731	1,287	3,223
Caldwell	30,355	3,060	5,292	5,975	16,028	7,595	1,006	987	1,785	3,817
Cherokee	6,772	3,427	1,416	--	1,929	2,049	1,010	272	--	767
Clay	5,451	5,451	--	--	--	1,700	1,700	--	--	--
Graham	14,148	1,642	--	6,480	6,026	2,710	419	--	1,111	1,180
Haywood	16,950	1,827	5,993	4,556	4,574	3,901	315	1,091	1,191	1,304
Henderson	18,502	--	13,053	3,847	1,602	3,969	--	2,016	637	1,316
Jackson	12,595	--	--	8,506	4,089	3,174	--	--	1,648	1,526
McDowell	8,785	2,584	1,677	--	4,524	2,579	541	286	491	1,261
Macon	3,936	1,110	--	1,643	1,183	1,168	363	--	304	501
Madison	43,932	--	38,346	3,171	2,415	11,224	460	6,890	591	3,283
Mitchell	9,720	--	2,722	1,429	5,569	2,716	--	496	312	1,908
Swain	4,449	--	--	2,175	2,274	781	--	--	336	445
Transylvania	1,711	--	--	1,038	673	686	--	--	480	206
Watauga	10,063	--	5,755	--	4,308	2,086	--	1,044	--	1,042
Wilkes	43,072	2,141	21,085	11,536	8,310	11,535	1,330	4,089	3,291	2,825
Yancey	25,657	--	1,766	4,774	19,117	6,288	--	472	1,548	4,268
Total	333,328	49,767	103,752	67,697	112,112	85,651	14,715	19,045	17,467	34,424

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

Forest type	All ownerships	Ownership class				
		National Forest	Other public	Forest industry	Forest industry-leased	Other private
	Acres					
Softwood types:						
White pine-hemlock	201,526	24,539	248	11,845	132	164,762
Spruce-fir	18,457	7,899	--	--	--	10,558
Longleaf pine	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--
Loblolly pine	5,388	4,408	980	--	--	--
Shortleaf pine	36,914	4,006	--	--	--	32,908
Virginia pine	204,663	3,908	3,770	7,294	--	189,691
Sand pine	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--
Pitch pine	53,093	28,684	9,499	1,091	--	13,819
Table Mountain pine	7,587	7,587	--	--	--	--
Total	527,628	81,031	14,497	20,230	132	411,738
Hardwood types:						
Oak-pine	407,383	89,777	3,208	19,357	--	295,041
Oak-hickory	2,622,150	609,838	84,768	57,521	9	1,870,014
Chestnut oak	188,797	88,601	10,571	12,361	--	77,264
Southern scrub oak	--	--	--	--	--	--
Oak-gum-cypress	--	--	--	--	--	--
Elm-ash-cottonwood	4,799	--	--	--	--	4,799
Maple-beech-birch	157,637	57,341	3,182	3,216	--	93,898
Total	3,380,766	845,557	101,729	92,455	9	2,341,016
All types	3,908,394	926,588	116,226	112,685	141	2,752,754

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

Ownership class	All classes	Stocking percentage[a]				
		> 130	100-130	60-99	16.7-59	< 16.7
	Acres					
National Forest	926,588	18,042	279,643	503,633	116,186	9,084
Other public	116,226	5,385	13,790	56,796	40,255	--
Forest industry	112,685	2,932	59,862	45,807	4,084	--
Forest industry-leased	141	--	--	141	--	--
Other private	2,752,754	192,914	820,465	1,392,246	347,129	--
All ownerships	3,908,394	219,273	1,173,760	1,998,623	507,654	9,084

[a]See stocking standards on page 11.

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

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
00-10	215,358	--	20,229	31,242	163,887	--
11-20	151,925	14,272	53,906	23,223	60,524	--
21-30	215,998	14,236	75,983	4,730	116,250	4,799
31-40	397,299	6,909	85,491	61,375	243,524	--
41-50	624,560	3,982	105,932	86,554	428,092	--
51-60	597,081	--	36,487	66,413	494,181	--
61-70	570,063	--	50,084	64,354	455,625	--
71-80	335,508	--	9,141	28,005	298,362	--
81+	408,824	--	47,059	23,877	337,888	--
No manageable stand	391,778	--	3,917	17,610	370,251	--
All classes	3,908,394	39,399	488,229	407,383	2,968,584	4,799

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

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
00-10	33,537	--	--	7,428	26,109	--
11-20	18,122	980	10,614	--	6,528	--
21-30	22,560	4,656	--	261	17,643	--
31-40	61,854	--	6,187	6,622	49,045	--
41-50	104,430	3,982	13,824	18,263	68,361	--
51-60	149,644	--	9,153	18,548	121,943	--
61-70	171,381	--	17,532	15,035	138,814	--
71-80	109,101	--	--	5,474	103,627	--
81+	223,512	--	24,683	17,446	181,383	--
No manageable stand	148,673	--	3,917	3,908	140,848	--
All classes	1,042,814	9,618	85,910	92,985	854,301	--

Table 14.--Area of commercial forest land, by stand-age and broad management classes, forest industry,[a] Mountains of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
00-10	9,688	--	--	--	9,688	--
11-20	1,921	--	132	1,789	--	--
21-30	5,970	3,217	2,753	--	--	--
31-40	15,946	--	4,237	6,488	5,221	--
41-50	30,192	--	5,939	6,155	18,098	--
51-60	5,317	--	--	--	5,317	--
61-70	29,511	--	--	4,925	24,586	--
71-80	12,492	--	4,084	--	8,408	--
81+	--	--	--	--	--	--
No manageable stand	1,789	--	--	--	1,789	--
All classes	112,826	3,217	17,145	19,357	73,107	--

[a]Includes 141 acres of other private land under long-term lease.

Table 15.--Area of commercial forest land, by stand-age and broad management classes, other private ownerships,[a] Mountains of North Carolina, 1984

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
00-10	172,133	--	20,229	23,814	128,090	--
11-20	131,882	13,292	43,160	21,434	53,996	--
21-30	187,468	6,363	73,230	4,469	98,607	4,799
31-40	319,499	6,909	75,067	48,265	189,258	--
41-50	489,938	--	86,169	62,136	341,633	--
51-60	442,120	--	27,334	47,865	366,921	--
61-70	369,171	--	32,552	44,394	292,225	--
71-80	213,915	--	5,057	22,531	186,327	--
81+	185,312	--	22,376	6,431	156,505	--
No manageable stand	241,316	--	--	13,702	227,614	--
All classes	2,752,754	26,564	385,174	295,041	2,041,176	4,799

[a]Excludes 141 acres of other private land under long-term lease to forest industry.

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

Broad management class	All classes	Stand-volume class (cubic feet of growing stock per acre)				
		0-499	500-999	1000-1499	1500-1999	2000+
	Acres					
Pine plantation	39,399	4,412	--	4,412	4,468	26,107
Natural pine	488,229	42,482	63,805	44,042	90,889	247,011
Oak-pine	407,383	30,408	70,907	88,785	75,462	141,821
Upland hardwood	2,968,584	269,053	403,802	567,623	502,826	1,225,280
Lowland hardwood	4,799	--	--	--	--	4,799
All classes	3,908,394	346,355	538,514	704,862	673,645	1,645,018

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

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	85,671	--	--	25,898	36,547	9,832	13,394	--	--	--	--
Hardwood	14,172	--	--	1,032	7,645	1,014	4,481	--	--	--	--
Total	99,843	--	--	26,930	44,192	10,846	17,875	--	--	--	--
Natural pine:											
Softwood	838,892	594	5,127	22,891	118,728	186,120	218,449	66,766	123,000	15,471	81,746
Hardwood	170,125	--	5,301	5,289	16,086	21,239	34,639	22,412	30,992	6,888	27,279
Total	1,009,017	594	10,428	28,180	134,814	207,359	253,088	89,178	153,992	22,359	109,025
Oak-pine:											
Softwood	318,940	8,550	7,602	6,643	5,083	50,149	69,921	67,559	55,678	23,879	23,876
Hardwood	345,895	5,756	5,337	7,635	2,717	57,483	64,626	73,486	74,744	25,574	28,537
Total	664,835	14,306	12,939	14,278	7,800	107,632	134,547	141,045	130,422	49,453	52,413
Upland hardwood:											
Softwood	274,484	21,098	6,303	3,970	3,754	17,922	42,977	52,209	60,286	29,238	36,727
Hardwood	5,142,009	235,468	45,574	44,060	140,170	404,144	707,770	1,088,017	1,053,266	694,291	729,249
Total	5,416,493	256,566	51,877	48,030	143,924	422,066	750,747	1,140,226	1,113,552	723,529	765,976
Lowland hardwood:											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	9,337	--	--	--	9,337	--	--	--	--	--	--
Total	9,337	--	--	--	9,337	--	--	--	--	--	--
All classes:											
Softwood	1,517,987	30,242	19,032	59,402	164,112	264,023	344,741	186,534	238,964	68,588	142,349
Hardwood	5,681,538	241,224	56,212	58,016	175,955	483,880	811,516	1,183,915	1,159,002	726,753	785,065
Total	7,199,525	271,466	75,244	117,418	340,067	747,903	1,156,257	1,370,449	1,397,966	795,341	927,414

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

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	4,042	--	--	1,632	1,556	357	497	--	--	--	--
Hardwood	530	--	--	69	283	30	148	--	--	--	--
Total	4,572	--	--	1,701	1,839	387	645	--	--	--	--
Natural pine:											
Softwood	23,291	19	93	2,023	3,573	5,820	5,988	1,621	2,614	348	1,192
Hardwood	6,036	--	202	255	669	830	1,308	660	1,119	238	755
Total	29,327	19	295	2,278	4,242	6,650	7,296	2,281	3,733	586	1,947
Oak-pine:											
Softwood	8,375	179	305	236	110	1,641	1,948	1,718	1,440	385	413
Hardwood	12,166	114	152	324	100	2,145	2,361	2,968	2,511	866	625
Total	20,541	293	457	560	210	3,786	4,309	4,686	3,951	1,251	1,038
Upland hardwood:											
Softwood	6,779	564	274	117	170	562	836	1,470	1,174	862	750
Hardwood	147,551	7,182	1,827	1,933	5,787	15,201	22,865	31,862	26,940	17,069	16,885
Total	154,330	7,746	2,101	2,050	5,957	15,763	23,701	33,332	28,114	17,931	17,635
Lowland hardwood:											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	247	--	--	--	247	--	--	--	--	--	--
Total	247	--	--	--	247	--	--	--	--	--	--
All classes:											
Softwood	42,487	762	672	4,008	5,409	8,380	9,269	4,809	5,228	1,595	2,355
Hardwood	166,530	7,296	2,181	2,581	7,086	18,206	26,682	35,490	30,570	18,173	18,265
Total	209,017	8,058	2,853	6,589	12,495	26,586	35,951	40,299	35,798	19,768	20,620

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

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

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	1,700	--	--	1,700	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	1,700	--	--	1,700	--	--	--	--	--	--	--
Natural pine:											
Softwood	16,389	--	--	--	286	9,273	4,712	419	1,699	--	--
Hardwood	3,932	--	577	--	209	1,193	1,619	--	334	--	--
Total	20,321	--	577	--	495	10,466	6,331	419	2,033	--	--
Oak-pine:											
Softwood	3,277	367	--	--	227	--	221	1,378	404	680	--
Hardwood	4,148	--	--	--	--	222	891	2,214	329	258	234
Total	7,425	367	--	--	227	222	1,112	3,592	733	938	234
Upland hardwood:											
Softwood	12,394	492	--	330	--	1,037	969	7,164	2,199	203	--
Hardwood	43,811	1,409	933	--	922	7,146	12,683	7,912	3,769	2,781	6,256
Total	56,205	1,901	933	330	922	8,183	13,652	15,076	5,968	2,984	6,256
Lowland hardwood:											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--
All classes:											
Softwood	33,760	859	--	2,030	513	10,310	5,902	8,961	4,302	883	--
Hardwood	51,891	1,409	1,510	--	1,131	8,561	15,193	10,126	4,432	3,039	6,490
Total	85,651	2,268	1,510	2,030	1,644	18,871	21,095	19,087	8,734	3,922	6,490

[a]Classifications before timber removals occurred.

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

Forest-type group	All live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
White pine-hemlock	491,442	41,815	343,535	29,998	76,094	468,963	41,012	339,687	26,869	61,395
Spruce-fir	26,726	--	17,543	--	9,183	23,143	--	16,972	--	6,171
Longleaf-slash pine	--	--	--	--	--	--	--	--	--	--
Loblolly-shortleaf pine	634,538	496,091	34,769	42,923	60,755	616,754	492,123	34,769	42,602	47,260
Oak-pine	726,102	127,447	197,337	108,435	292,883	664,835	125,608	193,332	100,107	245,788
Oak-hickory	5,537,469	95,552	158,517	1,735,503	3,547,897	5,069,488	94,255	156,650	1,652,531	3,166,052
Oak-gum-cypress	--	--	--	--	--	--	--	--	--	--
Elm-ash-cottonwood	10,312	--	--	6,997	3,315	9,337	--	--	6,415	2,922
Maple-beech-birch	387,275	--	24,097	110,848	252,330	347,005	--	23,579	101,917	221,509
All types	7,813,864	760,905	775,798	2,034,704	4,242,457	7,199,525	752,998	764,989	1,930,441	3,751,097

Table 21.--Area of commercial forest land treated or disturbed annually and retained in commercial forest land, by treatment or disturbance and ownership class, Mountains of North Carolina, 1974 to 1984

Treatment or disturbance	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
	Acres[a]				
Final harvest	23,059	3,525	961	--	18,573
Selective cutting and high grading	10,338	2,251	118	1	7,968
Commercial thinning	2,454	1,386	--	--	1,068
Other stand improvement	1,852	563	273	--	1,016
Site preparation	2,125	1,171	29	--	925
Artificial regeneration[b]	835	364	29	--	442
Natural regeneration[b]	21,349	3,887	932	--	16,530
Other treatment	15,912	445	139	--	15,328
Natural disturbance	32,269	6,612	272	--	25,385

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

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

Table 22.--Area of commercial forest land treated or disturbed annually and retained in commercial forest land, by treatment or disturbance and broad management class, Mountains of North Carolina, 1974 to 1984

Treatment or disturbance	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres[b]					
Final harvest	23,059	--	4,420	1,874	16,765	--
Selective cutting and high grading	10,338	--	485	1,584	8,269	--
Commercial thinning	2,454	450	405	--	1,599	--
Other stand improvement	1,852	--	836	--	1,016	--
Site preparation	2,125	--	29	806	1,290	--
Other treatment	15,912	--	1,935	1,394	12,583	--
Natural disturbance	32,269	--	11,449	5,449	15,371	--

[a]Classification before treatment or disturbance.

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

Table 23.--Area of commercial forest land regenerated annually, by type of regeneration and broad management class, Mountains of North Carolina, 1974 to 1984

Type of regeneration	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
Artificial regeneration following harvest	393	--	--	--	393	--
Natural regeneration following harvest	12,984	--	949	2,089	9,946	--
Other artificial regeneration on forest land	442	--	--	442	--	--
Other natural regeneration on forest land	6,291	--	1,550	--	4,741	--
Artificial regeneration on nonforest land	--	--	--	--	--	--
Natural reversion of nonforest land	2,074	--	--	--	2,074	--
Total	22,184	--	2,499	2,531	17,154	--

[a]Classification after regeneration.

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

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
Salvage	21,146	--	11,689	4,989	4,468	--
Harvest	225,382	--	31,847	22,536	170,999	--
Commercial thinning	53,742	5,696	39,470	--	8,576	--
Other stand improvement	155,777	--	50,736	35,083	69,958	--
Stand conversion	9,423	--	--	--	9,423	--
Regeneration	163,347	--	--	12,994	150,353	--
Stands in relatively good condition	1,088,193	15,183	180,284	159,049	728,878	4,799
Adverse sites[a]	2,191,384	18,520	174,203	172,732	1,825,929	--
All classes	3,908,394	39,399	488,229	407,383	2,968,584	4,799

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

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

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
	Acres				
Salvage	21,146	--	2,752	--	18,394
Harvest	225,382	62,226	--	--	163,156
Commercial thinning	53,742	1,488	--	--	52,254
Other stand improvement	155,777	12,764	--	132	142,881
Stand conversion	9,423	4,433	--	--	4,990
Regeneration	163,347	32,983	--	--	130,364
Stands in relatively good condition	1,088,193	209,161	39,201	--	839,831
Adverse sites[a]	2,191,384	719,759	70,732	9	1,400,884
All classes	3,908,394	1,042,814	112,685	141	2,752,754

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

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

Ownership class	All live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National Forest	2,105,143	129,048	161,965	464,373	1,349,757	1,903,793	128,360	157,570	433,606	1,184,257
Other public	191,695	24,130	333	33,533	133,699	173,181	24,130	333	30,379	118,339
Forest industry	297,929	37,935	57,722	72,252	130,020	280,065	37,132	55,986	68,800	118,147
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	5,219,097	569,792	555,778	1,464,546	2,628,981	4,842,486	563,376	551,100	1,397,656	2,330,354
All ownerships	7,813,864	760,905	775,798	2,034,704	4,242,457	7,199,525	752,998	764,989	1,930,441	3,751,097

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

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	2,033,141	327,714	166,287	502,055	1,037,085	4,449,356	133,695	604,868	784,221	2,926,572
Other public	165,295	33,548	--	18,999	112,748	346,566	16,295	--	75,132	255,139
Forest industry	388,451	80,547	101,746	107,774	98,384	475,461	8,941	115,105	83,323	268,092
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	6,428,900	1,363,972	742,905	1,817,212	2,504,811	8,962,240	235,853	1,669,465	2,552,652	4,504,270
All ownerships	9,015,787	1,805,781	1,010,938	2,446,040	3,753,028	14,233,623	394,784	2,389,438	3,495,328	7,954,073

[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 28.--Net annual growth and removals of growing stock on commercial forest land, by ownership class and species group, Mountains of North Carolina, 1983

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	50,839	2,709	3,972	16,661	27,497	7,187	3,920	272	989	2,006
Other public	5,186	1,153	54	1,332	2,647	326	--	--	--	326
Forest industry	9,078	1,030	1,993	2,976	3,079	4,502	--	680	1,872	1,950
Forest industy-leased	--	--	--	--	--	--	--	--	--	--
Other private	143,914	13,264	18,312	55,156	57,182	73,636	10,795	18,093	14,606	30,142
All ownerships	209,017	18,156	24,331	76,125	90,405	85,651	14,715	19,045	17,467	34,424

Table 29.--Net annual growth and removals of sawtimber on commercial forest land, by ownership class and species group, Mountains of North Carolina, 1983

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	227,981	14,838	26,306	70,508	116,329	25,889	13,104	1,416	5,108	6,261
Other public	24,987	7,499	--	3,821	13,667	1,331	--	--	--	1,331
Forest industry	38,783	4,923	12,366	11,912	9,582	18,131	--	3,804	7,742	6,585
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	691,264	66,271	106,350	273,928	244,715	287,977	36,663	98,532	54,847	97,935
All ownerships	983,015	93,531	145,022	360,169	384,293	333,328	49,767	103,752	67,697	112,112

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

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet				
Sawtimber trees:					
Saw-log portion	3,909,092	410,924	587,192	1,005,051	1,905,925
Upper-stem portion[a]	1,282,699	95,723	65,069	324,954	796,953
Total	5,191,791	506,647	652,261	1,330,005	2,702,878
Poletimber trees	2,007,734	246,351	112,728	600,436	1,048,219
All growing-stock trees	7,199,525	752,998	764,989	1,930,441	3,751,097
Rough trees:					
Sawtimber size	171,735	2,459	3,421	29,565	136,290
Poletimber size	323,665	5,448	1,271	44,507	272,439
Total	495,400	7,907	4,692	74,072	408,729
Rotten trees:					
Sawtimber size	110,597	--	6,117	27,361	77,119
Poletimber size	8,342	--	--	2,830	5,512
Total	118,939	--	6,117	30,191	82,631
Salvable dead trees:					
Sawtimber size	9,139	2,658	1,144	841	4,496
Poletimber size	8,076	3,956	750	835	2,535
Total	17,215	6,614	1,894	1,676	7,031
Total, all timber	7,831,079	767,519	777,692	2,036,380	4,249,488

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

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

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	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	21,375	4,987	3,232	3,129	3,469	3,581	2,018	641	213	41	50	14	--
Loblolly pine	4,971	--	575	1,699	2,134	362	140	36	25	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	95,430	28,986	19,240	18,887	15,319	7,474	3,707	1,577	178	45	17	--	--
Pitch pine	31,951	6,285	8,343	5,784	4,097	3,496	1,929	1,125	521	233	83	55	--
Table Mountain pine	5,218	1,678	2,254	--	397	276	279	260	56	--	18	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	131,661	72,273	23,552	11,558	7,962	4,874	3,324	2,569	2,095	1,531	856	947	120
Eastern hemlock	71,023	43,292	12,150	7,812	2,624	1,158	1,253	791	756	468	244	424	51
Spruce and fir	9,083	4,630	1,630	1,143	773	294	355	172	55	24	--	--	7
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	4,376	2,622	1,218	266	97	75	98	--	--	--	--	--	--
Total softwoods	375,088	164,753	72,194	50,278	36,872	21,590	13,103	7,171	3,899	2,342	1,268	1,440	178
Hardwood:													
Select white oaks	85,331	35,259	20,115	10,866	6,423	3,636	2,955	2,309	1,453	932	534	708	141
Select red oaks	53,537	14,265	10,346	7,174	4,320	4,583	3,391	2,739	2,153	1,681	972	1,630	283
Chestnut oak	125,377	37,436	24,483	17,776	15,229	9,570	6,974	4,759	3,427	2,307	1,392	1,734	290
Other white oaks	5,129	2,954	1,228	152	321	219	140	65	28	22	--	--	--
Other red oaks	122,250	41,836	19,220	17,779	12,642	10,623	7,763	5,043	3,516	1,907	1,051	801	69
Hickory	104,069	51,646	22,273	10,518	6,595	5,067	3,039	2,335	1,022	705	341	505	23
Yellow birch	14,814	5,963	3,027	2,541	1,326	630	274	369	370	86	47	157	24
Hard maple	41,556	23,795	9,298	3,114	1,898	1,091	695	497	548	262	202	117	39
Soft maple	367,615	231,821	68,299	31,430	15,072	8,175	6,483	2,745	1,640	1,026	432	461	31
Beech	56,973	39,207	7,693	3,097	2,705	1,684	695	864	455	293	135	145	--
Sweetgum	2,658	1,483	299	406	336	--	94	40	--	--	--	--	--
Tupelo and blackgum	122,381	91,484	20,120	5,327	2,186	1,074	1,100	513	152	233	65	127	--
Ash	18,539	10,404	2,520	1,382	1,257	1,104	461	403	441	319	118	124	6
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	18,331	9,564	2,716	778	1,573	1,176	996	518	583	186	137	96	8
Yellow-poplar	153,568	68,521	24,004	15,029	12,329	8,838	9,411	6,499	4,378	2,173	1,263	1,074	49
Bay and magnolia	15,452	8,618	2,016	1,813	1,766	537	535	75	79	--	--	13	--
Black cherry	20,961	11,625	3,954	1,940	1,713	1,039	219	200	74	130	18	49	--
Black walnut	4,759	890	829	1,407	699	329	339	101	102	21	--	42	--
Sycamore	1,332	596	--	--	211	268	102	59	81	--	15	--	--
Black locust	44,723	16,289	6,958	5,330	5,631	4,369	2,811	1,509	977	485	140	219	5
Elm	1,463	599	286	510	--	--	38	30	--	--	--	--	--
Other eastern hardwoods	860,623	575,943	178,775	61,283	24,341	10,840	4,594	2,660	1,080	446	266	367	28
Total hardwoods	2,241,441	1,280,198	428,459	199,652	118,573	74,852	53,109	34,332	22,559	13,214	7,128	8,369	996
All species	2,616,529	1,444,951	500,653	249,930	155,445	96,442	66,212	41,503	26,458	15,556	8,396	9,809	1,174

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

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	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	20,058	4,396	2,598	3,129	3,377	3,581	2,018	641	213	41	50	14	--
Loblolly pine	4,971	--	575	1,699	2,134	362	140	36	25	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	89,999	27,204	16,873	17,733	15,191	7,474	3,707	1,577	178	45	17	--	--
Pitch pine	27,971	4,773	6,351	5,416	4,097	3,434	1,883	1,125	521	233	83	55	--
Table Mountain pine	5,200	1,678	2,254	--	397	276	279	260	56	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	124,071	66,170	22,403	11,410	7,962	4,797	3,274	2,531	2,095	1,531	837	947	114
Eastern hemlock	65,149	38,642	11,569	7,394	2,624	1,082	1,201	791	731	444	244	381	46
Spruce and fir	8,931	4,630	1,630	1,143	645	294	355	172	55	--	--	--	7
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	3,197	1,756	905	266	97	75	98	--	--	--	--	--	--
Total softwoods	349,547	149,249	65,158	48,190	36,524	21,375	12,955	7,133	3,874	2,294	1,231	1,397	167
Hardwood:													
Select white oaks	62,428	19,611	16,320	9,124	5,882	3,225	2,731	2,176	1,378	847	447	595	92
Select red oaks	44,219	8,727	8,568	6,232	4,107	4,244	3,247	2,665	2,051	1,681	955	1,522	220
Chestnut oak	92,433	17,281	18,456	15,110	14,049	8,800	6,334	4,262	3,190	2,144	1,215	1,378	214
Other white oaks	2,812	1,442	618	--	321	219	97	65	28	22	--	--	--
Other red oaks	95,956	25,199	15,007	15,783	11,161	9,713	7,326	4,936	3,246	1,803	999	740	43
Hickory	71,795	24,992	19,415	9,194	5,795	4,991	2,853	2,152	993	620	341	434	15
Yellow birch	10,888	3,724	2,463	2,075	1,162	551	189	271	241	65	47	100	--
Hard maple	31,156	15,312	7,898	3,114	1,483	1,091	643	497	548	262	202	81	25
Soft maple	226,507	115,298	53,272	25,725	13,325	7,439	6,109	2,441	1,336	906	317	326	13
Beech	38,957	23,924	6,283	2,735	2,257	1,479	521	864	404	251	135	104	--
Sweetgum	1,474	299	299	406	336	--	94	40	--	--	--	--	--
Tupelo and blackgum	49,562	26,466	14,649	3,937	2,012	993	833	374	78	147	33	40	--
Ash	11,096	4,280	1,675	986	1,257	1,104	461	370	416	319	118	110	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	12,788	4,517	2,403	778	1,461	1,176	955	518	583	186	137	66	8
Yellow-poplar	136,705	56,340	20,499	14,655	12,006	8,626	9,302	6,422	4,378	2,130	1,245	1,059	43
Bay and magnolia	12,507	6,327	1,730	1,635	1,576	537	535	75	79	--	--	13	--
Black cherry	11,880	5,209	2,492	1,563	1,025	967	219	134	74	130	18	49	--
Black walnut	4,500	890	829	1,407	614	329	199	101	102	--	--	29	--
Sycamore	927	298	--	--	104	268	102	59	81	--	15	--	--
Black locust	27,424	6,684	4,712	3,503	4,272	3,264	2,382	1,127	823	395	140	117	5
Elm	1,150	286	286	510	--	--	38	30	--	--	--	--	--
Other eastern hardwoods	113,771	52,056	21,842	17,390	10,146	5,585	2,889	1,968	952	427	216	287	13
Total hardwoods	1,060,935	419,162	219,716	135,862	94,351	64,601	48,059	31,547	20,981	12,335	6,580	7,050	691
All species	1,410,482	568,411	284,874	184,052	130,875	85,976	61,014	38,680	24,855	14,629	7,811	8,447	858

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

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet										
Softwood:											
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	162,655	9,256	22,985	47,615	43,902	21,235	9,662	2,149	4,295	1,556	--
Loblolly pine	22,602	3,182	11,302	3,590	2,729	851	948	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	381,159	61,300	104,879	91,074	72,131	42,279	6,192	2,304	1,000	--	--
Pitch pine	176,372	14,237	22,186	37,559	33,137	29,839	18,287	10,243	5,938	4,946	--
Table Mountain pine	18,117	--	2,472	2,587	4,625	5,938	1,807	--	688	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	564,480	30,697	48,325	53,275	57,752	66,718	72,406	70,839	53,347	87,262	23,859
Eastern hemlock	188,444	15,784	11,840	9,107	19,449	18,933	27,435	20,343	15,514	37,177	12,862
Spruce and fir	18,941	2,671	3,084	2,140	4,939	3,200	1,441	292	--	--	1,174
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	3,933	556	1,042	771	1,564	--	--	--	--	--	--
Total softwoods	1,536,703	137,683	228,115	247,718	240,228	188,993	138,178	106,170	80,782	130,941	37,895
Hardwood:											
Select white oaks	413,315	28,045	39,765	38,979	52,405	59,962	50,733	41,003	28,888	54,122	19,413
Select red oaks	614,796	21,381	25,879	48,035	61,646	68,731	71,598	76,623	53,926	141,167	45,810
Chestnut oak	874,176	42,191	84,554	96,592	114,561	110,014	109,626	91,824	63,689	122,306	38,819
Other white oaks	8,980	630	1,677	1,914	1,569	1,358	660	1,172	--	--	--
Other red oaks	826,117	44,690	72,183	114,518	132,441	126,657	118,418	85,794	58,926	62,621	9,869
Hickory	366,695	22,719	38,251	54,857	52,478	60,164	37,583	33,101	20,440	43,859	3,243
Yellow birch	57,733	6,408	7,336	5,391	3,597	6,815	10,407	2,784	2,567	9,498	2,930
Hard maple	120,935	8,805	11,359	12,910	12,611	14,114	20,041	12,089	11,503	8,903	8,600
Soft maple	577,879	89,358	87,187	86,225	109,287	64,041	48,434	41,062	20,197	28,629	3,459
Beech	125,605	9,366	14,588	18,571	12,336	23,304	15,288	12,568	7,365	12,219	--
Sweetgum	5,359	778	2,060	--	1,568	953	--	--	--	--	--
Tupelo and blackgum	75,140	11,260	9,934	9,795	15,432	9,117	4,329	7,057	2,610	5,606	--
Ash	93,248	3,501	8,285	13,415	9,309	10,331	15,077	16,012	6,881	10,180	257
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	114,948	2,244	10,491	15,782	21,365	15,267	23,359	8,977	9,032	7,779	652
Yellow-poplar	1,061,667	46,466	80,479	106,519	182,455	193,486	171,900	105,169	76,570	91,822	6,801
Bay and magnolia	32,174	4,571	9,515	5,284	8,370	1,391	2,356	--	--	687	--
Black cherry	49,928	4,395	9,195	10,760	4,945	5,088	2,828	6,646	1,328	4,743	--
Black walnut	24,519	3,115	4,051	3,643	4,528	2,588	3,177	815	--	2,602	--
Sycamore	10,368	--	1,266	2,602	1,514	1,645	2,675	--	666	--	--
Black locust	223,769	12,074	26,680	41,494	44,177	30,612	28,191	18,194	6,928	14,413	1,006
Elm	2,783	1,264	--	--	852	667	--	--	--	--	--
Other eastern hardwoods	597,027	145,372	127,968	105,321	68,641	58,163	32,962	17,757	13,058	24,194	3,591
Total hardwoods	6,277,161	508,633	672,703	792,607	916,087	864,468	769,642	578,647	384,574	645,350	144,450
All species	7,813,864	646,316	900,818	1,040,325	1,156,315	1,053,461	907,820	684,817	465,356	776,291	182,345

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

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet										
Softwood:											
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	162,046	9,256	22,376	47,615	43,902	21,235	9,662	2,149	4,295	1,556	--
Loblolly pine	22,602	3,182	11,302	3,590	2,729	851	948	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	377,151	58,075	104,096	91,074	72,131	42,279	6,192	2,304	1,000	--	--
Pitch pine	173,770	13,406	22,186	36,907	32,018	29,839	18,287	10,243	5,938	4,946	--
Table Mountain pine	17,429	--	2,472	2,587	4,625	5,938	1,807	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	560,720	30,223	48,325	52,956	57,051	65,882	72,406	70,839	52,542	87,262	23,234
Eastern hemlock	181,966	15,266	11,840	8,855	19,069	18,933	26,716	19,835	15,514	34,632	11,306
Spruce and fir	18,370	2,671	2,805	2,140	4,939	3,200	1,441	--	--	--	1,174
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	3,933	556	1,042	771	1,564	--	--	--	--	--	--
Total softwoods	1,517,987	132,635	226,444	246,495	238,028	188,157	137,459	105,370	79,289	128,396	35,714
Hardwood:											
Select white oaks	382,751	24,896	37,232	36,149	49,464	57,401	48,915	38,649	26,264	48,837	14,944
Select red oaks	589,280	18,781	24,817	45,311	60,042	67,387	68,991	76,623	53,471	134,460	39,397
Chestnut oak	804,973	37,296	79,652	90,323	107,116	100,886	103,446	87,316	59,559	106,910	32,469
Other white oaks	8,209	--	1,677	1,914	1,428	1,358	660	1,172	--	--	--
Other red oaks	788,078	40,397	66,971	107,417	127,972	125,522	113,318	82,576	56,797	59,812	7,296
Hickory	348,542	20,688	34,752	54,422	50,118	57,049	36,856	30,894	20,440	40,811	2,512
Yellow birch	44,729	5,828	6,622	5,145	2,749	4,794	7,041	2,326	2,567	7,657	--
Hard maple	112,969	8,805	8,806	12,910	11,850	14,114	20,041	12,089	11,503	7,110	5,741
Soft maple	520,275	75,483	79,690	79,902	104,159	58,820	42,777	37,759	16,303	23,241	2,141
Beech	111,325	7,907	12,597	16,250	9,179	23,304	14,048	11,407	7,365	9,268	--
Sweetgum	5,359	778	2,060	--	1,568	953	--	--	--	--	--
Tupelo and blackgum	58,774	8,444	9,043	9,384	12,392	7,421	2,377	5,262	1,585	2,866	--
Ash	90,242	2,623	8,285	13,415	9,309	9,383	14,752	16,012	6,881	9,582	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	112,386	2,244	9,587	15,782	20,859	15,267	23,359	8,977	9,032	6,627	652
Yellow-poplar	1,052,939	45,885	79,162	105,736	180,886	192,346	171,900	104,024	75,551	91,107	6,342
Bay and magnolia	30,804	4,178	8,538	5,284	8,370	1,391	2,356	--	--	687	--
Black cherry	43,973	3,785	5,459	10,162	4,945	4,077	2,828	6,646	1,328	4,743	--
Black walnut	20,751	3,115	3,451	3,643	3,007	2,588	3,177	--	--	1,770	--
Sycamore	9,786	--	684	2,602	1,514	1,645	2,675	--	666	--	--
Black locust	188,507	8,389	22,642	32,472	40,076	25,719	25,218	16,491	6,928	9,566	1,006
Elm	2,783	1,264	--	--	852	667	--	--	--	--	--
Other eastern hardwoods	354,103	50,672	64,357	62,890	47,495	46,282	30,492	17,609	11,509	20,860	1,937
Total hardwoods	5,681,538	371,458	566,084	711,113	855,350	818,374	735,227	555,832	367,749	585,914	114,437
All species	7,199,525	504,093	792,528	957,608	1,093,378	1,006,531	872,686	661,202	447,038	714,310	150,151

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

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand board feet								
Softwood:									
Longleaf pine	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--
Shortleaf pine	590,560	178,099	198,993	109,818	53,843	12,817	26,919	10,071	--
Loblolly pine	33,195	12,090	11,715	4,139	5,251	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	873,962	324,546	305,173	196,135	30,601	12,051	5,456	--	--
Pitch pine	630,365	122,639	134,248	145,627	99,426	59,701	36,722	32,002	--
Table Mountain pine	72,483	10,268	21,890	30,401	9,924	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	2,514,175	191,219	247,502	319,211	378,325	390,579	302,621	531,972	152,746
Eastern hemlock	815,233	29,624	78,794	88,822	136,141	107,474	88,294	209,982	76,102
Spruce and fir	60,284	7,786	21,458	15,838	7,555	--	--	--	7,647
Baldcypress	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--
Cedars	10,684	3,066	7,618	--	--	--	--	--	--
Total softwoods	5,600,941	879,337	1,027,391	909,991	721,066	582,622	460,012	784,027	236,495
Hardwood:									
Select white oaks	1,279,807	--	170,942	228,352	215,333	182,955	131,485	262,823	87,917
Select red oaks	2,223,404	--	200,848	256,157	286,562	341,133	249,253	673,192	216,259
Chestnut oak	2,585,210	--	352,097	384,836	436,487	396,099	283,881	548,981	182,829
Other white oaks	19,767	--	4,961	5,793	3,083	5,930	--	--	--
Other red oaks	2,495,787	--	439,565	503,624	504,096	395,365	287,564	322,141	43,432
Hickory	1,065,478	--	171,917	231,227	166,323	150,232	105,041	225,689	15,049
Yellow birch	121,617	--	9,542	18,813	30,340	10,734	12,492	39,696	--
Hard maple	364,149	--	44,211	58,162	86,850	54,532	54,100	35,153	31,141
Soft maple	1,119,892	--	335,911	223,803	180,003	171,378	77,695	118,947	12,155
Beech	291,089	--	33,557	88,740	54,749	45,527	29,781	38,735	--
Sweetgum	9,515	--	5,684	3,831	--	--	--	--	--
Tupelo and blackgum	122,377	--	37,967	28,323	9,971	23,839	7,590	14,687	--
Ash	291,618	--	30,365	36,259	63,639	75,511	34,457	51,387	--
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	353,106	--	72,470	59,702	99,607	41,213	43,192	33,355	3,567
Yellow-poplar	3,905,559	--	647,012	834,597	839,623	553,235	429,637	558,513	42,942
Bay and magnolia	46,360	--	27,112	5,325	10,341	--	--	3,582	--
Black cherry	110,426	--	18,482	17,015	12,589	31,166	6,510	24,664	--
Black walnut	38,855	--	9,927	9,342	12,144	--	--	7,442	--
Sycamore	25,591	--	4,506	6,587	11,180	--	3,318	--	--
Black locust	458,309	--	141,203	93,364	93,563	62,228	26,502	37,388	4,061
Elm	5,846	--	3,129	2,717	--	--	--	--	--
Other eastern hardwoods	714,707	--	160,794	180,297	129,987	78,881	53,360	101,577	9,811
Total hardwoods	17,648,469	--	2,922,202	3,276,866	3,246,470	2,619,958	1,835,858	3,097,952	649,163
All species	23,249,410	879,337	3,949,593	4,186,857	3,967,536	3,202,580	2,295,870	3,881,979	885,658

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

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades	Log grade				All grades	Log grade			
		1	2	3	4		1	2	3	4
	Thousand board feet									
Softwood:										
Yellow pines[a]	2,200,565	744,245	186,207	1,270,113	(b)	394,784	130,279	23,687	240,818	(b)
Eastern white pines[c]	2,514,175	193,187	183,571	1,263,367	874,050	1,756,243	193,187	122,937	702,497	737,622
Cypress[c]	--	--	--	--	--	--	--	--	--	--
Spruce and fir[c]	60,284	--	2,568	34,630	23,086	15,202	--	1,216	5,777	8,209
Other eastern softwoods[c]	825,917	--	55,678	367,908	402,331	617,993	--	49,440	234,837	333,716
Total	5,600,941	937,432	428,024	2,936,018	1,299,467	2,784,222	323,466	197,280	1,183,929	1,079,547
Hardwood:[d]										
Select white and red oaks	3,503,211	635,528	1,048,165	1,488,964	330,554	2,646,912	635,528	917,989	890,662	202,733
Other white and red oaks	5,100,764	815,035	1,345,597	1,955,661	984,471	3,409,888	815,035	1,112,784	982,773	499,296
Hickory	1,065,478	192,077	258,306	462,762	152,333	662,334	192,077	165,583	245,064	59,610
Yellow birch	121,617	19,585	35,231	45,723	21,078	93,262	19,585	29,844	29,844	13,989
Hard maple	364,149	54,973	90,934	156,453	61,789	261,776	54,973	83,768	83,768	39,267
Sweetgum	9,515	--	1,903	5,899	1,713	--	--	--	--	--
Ash, walnut, and black cherry	440,899	67,097	142,302	175,077	56,423	319,509	67,097	102,243	102,243	47,926
Yellow-poplar	3,905,559	848,383	852,468	1,733,317	471,391	2,423,950	848,383	630,227	799,903	145,437
Other eastern hardwoods	3,137,277	342,672	808,212	1,365,250	621,143	1,631,770	342,672	522,166	522,166	244,766
Total	17,648,469	2,975,350	4,583,118	7,389,106	2,700,895	11,449,401	2,975,350	3,564,604	3,656,423	1,253,024
All species	23,249,410	3,912,782	5,011,142	10,325,124	4,000,362	14,233,623	3,298,816	3,761,884	4,840,352	2,232,571

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

[b]Not applicable.

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

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

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

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet								
Softwood:									
Longleaf pine	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--
Shortleaf pine	110,680	37,366	37,530	19,262	8,901	2,036	4,093	1,492	--
Loblolly pine	6,339	2,536	2,209	726	868	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	167,851	68,090	57,555	34,402	5,059	1,914	831	--	--
Pitch pine	112,797	25,730	25,321	25,542	16,435	9,481	5,597	4,691	--
Table Mountain pine	13,257	2,155	4,129	5,332	1,641	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	435,581	41,474	50,489	60,492	67,492	66,242	48,207	80,486	20,699
Eastern hemlock	137,999	6,425	16,073	16,831	24,288	18,227	14,065	31,778	10,312
Spruce and fir	11,446	1,688	4,377	2,997	1,348	--	--	--	1,036
Baldcypress	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--
Cedars	2,166	665	1,501	--	--	--	--	--	--
Total softwoods	998,116	186,129	199,184	165,584	126,032	97,900	72,793	118,447	32,047
Hardwood:									
Select white oaks	207,527	--	31,964	39,873	35,334	28,815	20,091	38,843	12,607
Select red oaks	351,641	--	37,559	44,725	47,027	53,730	38,088	99,500	31,012
Chestnut oak	417,778	--	65,842	67,193	71,627	62,387	43,377	81,136	26,216
Other white oaks	3,378	--	927	1,011	506	934	--	--	--
Other red oaks	412,896	--	82,195	87,932	82,722	62,270	43,939	47,610	6,228
Hickory	175,041	--	32,148	40,373	27,292	23,663	16,050	33,357	2,158
Yellow birch	19,514	--	1,784	3,285	4,979	1,691	1,908	5,867	--
Hard maple	59,195	--	8,269	10,156	14,252	8,589	8,267	5,197	4,465
Soft maple	192,343	--	63,185	39,589	30,097	27,505	12,167	18,067	1,733
Beech	48,196	--	6,275	15,493	8,983	7,170	4,551	5,724	--
Sweetgum	1,747	--	1,069	678	--	--	--	--	--
Tupelo and blackgum	21,100	--	7,177	5,009	1,667	3,826	1,189	2,232	--
Ash	47,206	--	5,679	6,329	10,444	11,894	5,265	7,595	--
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	59,803	--	13,633	10,560	16,655	6,615	6,764	5,067	509
Yellow-poplar	656,364	--	121,701	147,642	140,384	88,796	67,282	84,480	6,079
Bay and magnolia	8,314	--	5,099	942	1,729	--	--	544	--
Black cherry	18,357	--	3,476	3,010	2,104	5,002	1,019	3,746	--
Black walnut	6,581	--	1,857	1,631	1,993	--	--	1,100	--
Sycamore	4,402	--	847	1,165	1,870	--	520	--	--
Black locust	78,018	--	26,406	16,301	15,352	9,801	4,050	5,526	582
Elm	1,070	--	589	481	--	--	--	--	--
Other eastern hardwoods	120,505	--	30,123	31,621	21,530	12,523	8,197	15,104	1,407
Total hardwoods	2,910,976	--	547,804	574,999	536,547	415,211	282,724	460,695	92,996
All species	3,909,092	186,129	746,988	740,583	662,579	513,111	355,517	579,142	125,043

Table 38.--Total volume of all live trees on commercial forest land, by species and diameter class, Mountains of North Carolina, 1984

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 cubic feet												
Softwood:													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	194,264	877	3,433	12,524	27,697	55,381	50,291	24,121	10,932	2,425	4,834	1,749	--
Loblolly pine	28,202	--	542	4,464	13,801	4,218	3,136	969	1,072	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	490,791	6,113	27,441	80,899	126,276	106,858	83,587	48,718	7,114	2,641	1,144	--	--
Pitch pine	218,822	1,560	8,662	18,219	26,720	44,309	38,791	34,781	21,257	11,894	6,899	5,730	--
Table Mountain pine	23,066	446	1,822	--	2,899	2,982	5,288	6,766	2,053	--	810	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	706,509	17,325	26,731	41,399	58,304	62,812	67,358	77,414	83,809	81,800	61,523	100,482	27,552
Eastern hemlock	249,838	10,032	16,159	22,767	14,575	10,796	22,727	21,920	31,679	23,432	17,825	43,071	14,855
Spruce and fir	25,933	930	1,805	3,820	3,832	2,570	5,829	3,740	1,678	364	--	--	1,365
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	7,047	520	1,424	943	1,313	955	1,892	--	--	--	--	--	--
Total softwoods	1,944,472	37,803	88,019	185,035	275,417	290,881	278,899	218,429	159,594	122,556	93,035	151,032	43,772
Hardwood:													
Select white oaks	562,283	8,741	28,922	41,108	52,016	49,406	65,503	74,482	62,831	50,849	35,980	67,731	24,714
Select red oaks	797,898	5,123	16,799	29,919	33,569	60,886	77,517	86,120	89,619	95,552	67,385	176,744	58,665
Chestnut oak	1,130,607	8,462	29,598	60,801	108,961	120,806	141,840	135,413	134,316	112,393	78,483	151,163	48,371
Other white oaks	14,301	783	1,696	892	2,249	2,481	2,146	1,729	858	1,467	--	--	--
Other red oaks	1,074,377	8,815	26,069	64,959	94,298	144,324	164,972	156,706	146,393	105,624	72,474	77,293	12,450
Hickory	499,675	11,400	26,302	35,566	50,339	69,142	64,841	73,772	45,775	40,355	24,797	53,381	4,005
Yellow birch	79,678	1,655	4,389	9,591	9,467	6,791	4,424	8,363	12,765	3,453	3,102	11,833	3,845
Hard maple	167,566	5,357	12,725	12,409	14,481	15,993	15,415	17,111	24,236	14,596	13,896	10,930	10,417
Soft maple	896,065	55,831	112,241	129,548	111,159	105,958	132,432	77,215	58,803	49,241	24,377	34,931	4,329
Beech	183,794	11,966	11,552	14,138	19,580	23,549	15,423	28,778	18,974	15,560	9,053	15,221	--
Sweetgum	7,238	295	289	1,172	2,564	--	1,819	1,099	--	--	--	--	--
Tupelo and blackgum	132,802	16,678	21,968	16,213	12,514	11,814	18,602	11,071	5,130	8,547	3,166	7,099	--
Ash	114,709	2,193	3,264	5,041	10,148	15,799	10,801	11,892	17,320	18,288	7,865	11,703	395
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	139,622	2,373	4,018	2,894	12,548	18,340	24,692	17,540	26,794	10,301	10,331	9,047	744
Yellow-poplar	1,274,080	16,609	35,433	62,089	96,207	123,689	208,774	219,916	194,733	118,929	86,395	103,555	7,751
Bay and magnolia	45,511	2,469	2,808	6,620	11,985	6,398	9,996	1,658	2,773	--	--	804	--
Black cherry	70,265	3,673	6,200	6,325	11,452	12,856	5,785	6,024	3,283	7,680	1,530	5,457	--
Black walnut	31,859	379	828	4,544	5,089	4,445	5,508	3,107	3,788	968	--	3,203	--
Sycamore	12,488	234	--	--	1,552	3,101	1,785	1,922	3,120	--	774	--	--
Black locust	305,398	3,249	9,826	17,727	36,049	53,861	56,796	39,365	36,115	23,410	8,812	18,875	1,313
Elm	4,082	129	344	1,800	--	--	1,010	799	--	--	--	--	--
Other eastern hardwoods	1,160,913	141,997	229,776	218,027	168,075	133,539	85,689	71,503	39,877	21,546	16,122	30,038	4,724
Total hardwoods	8,705,211	308,411	585,047	741,383	864,302	983,178	1,115,770	1,045,585	927,503	698,759	464,542	789,008	181,723
All species	10,649,683	346,214	673,066	926,418	1,139,719	1,274,059	1,394,669	1,264,014	1,087,097	821,315	557,577	940,040	225,495

Table 39.--Green weight of forest biomass on commercial forest land, by species and diameter class, Mountains of North Carolina, 1984

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
	Hundred thousand pounds												
Softwood:													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	134,424	463	2,082	7,347	18,924	39,306	35,552	16,931	7,635	1,687	3,313	1,184	--
Loblolly pine	21,001	--	320	3,421	10,287	3,196	2,282	713	782	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	369,916	5,216	21,996	60,957	94,994	81,413	62,073	35,485	5,128	1,842	812	--	--
Pitch pine	151,642	1,273	7,981	12,299	18,250	29,238	26,274	23,852	14,953	8,552	4,939	4,031	--
Table Mountain pine	15,269	370	1,687	--	1,829	1,887	3,352	4,241	1,270	--	633	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	444,095	7,224	12,890	26,040	40,346	43,445	45,890	51,073	54,389	51,378	37,742	58,587	15,091
Eastern hemlock	189,670	6,218	10,147	19,275	12,748	9,533	18,526	17,069	23,681	17,569	12,898	32,003	10,003
Spruce and fir	19,210	566	1,152	2,463	2,948	1,987	4,437	2,956	1,296	475	--	--	930
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	4,672	320	853	585	818	713	1,383	--	--	--	--	--	--
Total softwoods	1,349,899	21,650	59,108	132,387	201,144	210,718	199,769	152,320	109,134	81,503	60,337	95,805	26,024
Hardwood:													
Select white oaks	474,557	6,919	21,019	28,978	40,750	40,914	56,933	63,965	53,830	44,003	31,794	61,589	23,863
Select red oaks	675,633	3,747	11,628	21,640	26,939	51,622	64,952	73,013	76,600	79,981	57,481	152,533	55,497
Chestnut oak	927,891	7,766	23,523	41,428	81,721	94,079	118,070	113,506	111,002	93,514	67,837	131,802	43,643
Other white oaks	12,129	562	1,169	631	1,771	2,009	2,281	1,570	887	1,249	--	--	--
Other red oaks	953,166	7,656	19,275	52,774	81,588	127,475	149,637	141,152	133,120	94,103	64,528	69,515	12,343
Hickory	419,141	10,255	22,904	25,187	38,190	54,267	52,302	62,206	39,452	36,315	22,426	51,325	4,312
Yellow birch	77,500	1,437	3,618	6,927	8,014	6,137	4,321	8,461	12,839	3,718	2,940	13,568	5,520
Hard maple	144,722	4,548	10,639	8,656	11,285	12,798	13,606	15,199	21,466	13,008	12,648	10,941	9,928
Soft maple	673,233	42,970	77,418	84,482	82,831	79,732	104,381	61,664	48,664	38,343	19,537	29,265	3,946
Beech	147,025	7,477	7,419	8,325	14,579	18,804	13,475	24,614	16,747	13,838	7,787	13,960	--
Sweetgum	5,181	185	198	786	1,765	--	1,417	830	--	--	--	--	--
Tupelo and blackgum	100,179	13,653	16,191	8,849	7,922	7,746	13,713	9,448	3,993	7,612	2,896	8,156	--
Ash	70,536	1,297	2,080	3,392	6,797	10,121	6,760	7,451	10,651	10,308	4,462	6,647	570
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	94,900	1,588	2,745	1,632	7,738	12,250	16,807	11,920	18,351	7,249	7,098	6,959	563
Yellow-poplar	900,864	12,004	23,961	36,691	64,043	87,348	148,629	156,697	139,853	86,520	62,677	76,108	6,333
Bay and magnolia	28,799	1,560	1,688	3,428	7,371	4,155	7,053	1,215	1,831	--	--	498	--
Black cherry	45,533	1,694	3,937	3,617	7,321	8,470	3,619	4,414	2,261	5,241	1,038	3,921	--
Black walnut	30,099	336	711	3,558	4,390	3,834	5,722	3,016	3,797	965	--	3,770	--
Sycamore	8,809	161	--	--	904	2,114	1,319	1,426	2,293	--	592	--	--
Black locust	311,140	2,687	8,197	14,761	34,544	52,689	61,035	43,160	38,285	24,795	8,836	20,764	1,387
Elm	2,692	96	244	1,070	--	--	671	611	--	--	--	--	--
Other eastern hardwoods	893,837	120,384	184,919	136,378	119,489	100,626	72,004	60,988	32,564	17,959	14,239	28,454	5,833
Total hardwoods	6,997,566	248,982	443,483	493,190	649,952	777,190	918,707	866,526	768,486	578,721	388,816	689,775	173,738
All species	8,347,465	270,632	502,591	625,577	851,096	987,908	1,118,476	1,018,846	877,620	660,224	449,153	785,580	199,762

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

Species	All live timber[a]		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	- - - - - Thousand cubic feet - - - - -			
Softwood:				
Yellow pines	18,156	14,715	18,156	14,715
Eastern white pine	19,546	18,294	19,546	18,294
Spruce and fir	572	--	572	--
Cypress	--	--	--	--
Other eastern softwoods	4,213	751	4,213	751
Total softwoods	42,487	33,760	42,487	33,760
Hardwood:				
Select white and red oaks	23,107	10,183	23,084	9,661
Other white and red oaks	38,026	17,141	37,991	16,141
Hickory	6,463	4,100	6,458	3,940
Yellow birch	1,178	--	1,177	--
Hard maple	3,278	--	3,273	--
Sweetgum	122	--	122	--
Ash, walnut, and black cherry	5,413	912	5,397	563
Yellow-poplar	44,786	11,690	44,767	11,690
Tupelo and blackgum	1,285	421	1,281	421
Bay and magnolia	1,454	--	1,451	--
Other eastern hardwoods	41,816	13,482	41,529	9,475
Total hardwoods	166,928	57,929	166,530	51,891
All species	209,415	91,689	209,017	85,651

[a]Merchantable portion only.

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

Species	Net annual growth	Annual timber removals
	Thousand board feet	
Softwood:		
Yellow pines	93,531	49,767
Eastern white pine	120,297	100,793
Spruce and fir	2,336	--
Cypress	--	--
Other eastern softwoods	22,389	2,959
Total softwoods	238,553	153,519
Hardwood:		
Select white and red oaks	108,401	34,917
Other white and red oaks	176,197	52,111
Hickory	27,587	13,120
Yellow birch	2,370	--
Hard maple	11,569	--
Sweetgum	239	--
Ash, walnut, and black cherry	26,189	1,779
Yellow-poplar	240,272	50,948
Tupelo and blackgum	3,213	2,004
Bay and magnolia	4,378	--
Other eastern hardwoods	144,047	24,930
Total hardwoods	744,462	179,809
All species	983,015	333,328

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

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	14,715	1,049	2,138	4,852	2,703	2,770	888	315	--	--	--
Eastern white pine	18,294	--	--	215	2,057	1,787	5,006	3,267	1,696	3,169	1,097
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Cypress	--	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods	751	142	--	--	297	--	--	--	312	--	--
Total softwoods	33,760	1,191	2,138	5,067	5,057	4,557	5,894	3,582	2,008	3,169	1,097
Hardwood:											
Select white and red oaks	9,661	128	974	1,096	483	1,549	1,014	804	593	3,020	--
Other white and red oaks	16,141	573	1,535	2,965	1,167	1,811	3,199	1,398	1,340	1,435	718
Hickory	3,940	172	213	722	198	303	1,607	725	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	--	--	--	--	--	--	--	--	--	--	--
Ash, walnut, and black cherry	563	--	--	--	563	--	--	--	--	--	--
Yellow-poplar	11,690	387	823	351	2,111	2,844	1,419	1,530	275	1,385	565
Tupelo and blackgum	421	--	--	--	--	--	--	421	--	--	--
Bay and magnolia	--	--	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	9,475	656	1,337	1,679	1,446	1,108	598	858	643	1,150	--
Total hardwoods	51,891	1,916	4,882	6,813	5,968	7,615	7,837	5,736	2,851	6,990	1,283
All species	85,651	3,107	7,020	11,880	11,025	12,172	13,731	9,318	4,859	10,159	2,380

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

Species	All live timber[a]	Growing stock	Sawtimber
	Thousand cubic feet		Thousand board feet
Softwood:			
Yellow pines	18,119	17,590	31,798
Eastern white pine	3,868	3,868	10,163
Spruce and fir	619	619	3,160
Cypress	--	--	--
Other eastern softwoods	552	552	1,702
Total softwoods	23,158	22,629	46,823
Hardwood:			
Select white and red oaks	5,098	2,680	8,308
Other white and red oaks	14,059	10,216	29,498
Hickory	2,336	1,829	6,935
Yellow birch	317	211	--
Hard maple	1,072	902	2,689
Sweetgum	--	--	--
Ash, walnut, and black cherry	1,044	866	3,175
Yellow-poplar	1,571	1,571	1,693
Tupelo and blackgum	72	--	--
Bay and magnolia	157	--	--
Other eastern hardwoods	14,861	5,712	13,566
Total hardwoods	40,587	23,987	65,864
All species	63,745	46,616	112,687

[a]Merchantable portion only.

Table 44.--Change in number of all live trees on commercial forest land, by species group, survey completion date, and diameter class, Mountains 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									
1974	236,461	93,432	50,899	38,236	27,562	15,831	6,354	2,792	1,355
1984	158,945	41,936	33,644	29,499	25,416	15,189	8,073	3,639	1,549
Change	-77,516	-51,496	-17,255	-8,737	-2,146	-642	+1,719	+847	+194
Other softwood									
1974	166,636	94,785	29,334	13,361	11,054	6,590	3,531	3,104	4,877
1984	216,143	122,817	38,550	20,779	11,456	6,401	5,030	3,532	7,578
Change	+49,507	+28,032	+9,216	+7,418	+402	-189	+1,499	+428	+2,701
Hardwood									
1974	2,507,045	1,485,483	506,636	216,463	115,779	70,465	45,250	28,621	38,348
1984	2,241,441	1,280,198	428,459	199,652	118,573	74,852	53,109	34,332	52,266
Change	-265,604	-205,285	-78,177	-16,811	+2,794	+4,387	+7,859	+5,711	+13,918

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

Land use class	Survey completion date			Change 1974-1984
	1964	1974	1984	
	Acres			
Forest land:				
Commercial forest land:				
Pine and oak-pine types	1,056,946	806,565	935,011	+128,446
Hardwood types	2,988,249	3,208,001	2,973,383	-234,618
Total	4,045,195	4,014,566	3,908,394	-106,172
Noncommercial forest land:				
Productive-reserved	353,200	406,056	392,981	-13,075
Unproductive	10,603	12,058	11,242	-816
Total	363,803	418,114	404,223	-13,891
Nonforest land:				
Cropland	425,502	301,712	383,673	+81,961
Pasture and range	535,234	583,610	531,001	-52,609
Other	262,750	313,814	416,268	+102,454
Total	1,223,486	1,199,136	1,330,942	+131,806
All land[a]	5,632,484	5,631,816	5,643,559	+11,743

[a]Excludes all water areas.

Table 46.--Volume[a] of sawtimber, growing stock, and all live timber on commercial forest land, by species group, survey completion date, and diameter class, Mountains 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										
1964	3,033,872	--	--	687,900	696,913	490,777	306,183	191,729	202,925	457,445
1974	4,353,532	--	--	912,906	774,851	748,221	512,036	339,779	347,923	717,816
1984	5,600,941	--	--	879,337	1,027,391	909,991	721,066	582,622	460,012	1,020,522
Hardwood										
1964	10,091,755	--	--	--	1,873,457	1,890,425	1,700,089	1,340,327	1,045,984	2,241,473
1974	13,786,639	--	--	--	2,489,776	2,731,617	2,315,326	1,878,157	1,346,188	3,025,575
1984	17,648,469	--	--	--	2,922,202	3,276,866	3,246,470	2,619,958	1,835,858	3,747,115
					GROWING STOCK (in thousand cubic feet)					
Softwood										
1964	968,464	125,636	185,448	192,851	161,472	101,484	58,365	34,677	34,975	73,556
1974	1,297,801	136,004	237,169	255,931	179,530	154,719	97,605	61,454	59,966	115,423
1984	1,517,987	132,635	226,444	246,495	238,028	188,157	137,459	105,370	79,289	164,110
Hardwood										
1964	3,653,746	353,478	457,524	524,362	548,436	472,134	384,984	284,329	209,532	418,967
1974	4,793,417	402,137	552,750	669,529	728,857	682,222	524,304	398,421	269,669	565,528
1984	5,681,538	371,458	566,084	711,113	855,350	818,374	735,227	555,832	367,749	700,351
					ALL LIVE TIMBER[b] (in thousand cubic feet)					
Softwood										
1964	981,112	130,599	186,907	193,786	162,954	101,960	58,689	34,949	35,614	75,654
1974	1,314,091	141,376	239,033	257,169	181,192	155,419	98,133	61,921	61,098	118,750
1984	1,536,703	137,683	228,115	247,718	240,228	188,993	138,178	106,170	80,782	168,836
Hardwood										
1964	4,089,705	485,189	543,367	584,420	587,345	498,740	403,060	296,020	219,091	472,473
1974	5,339,355	551,981	656,467	746,224	780,563	720,677	548,888	414,779	281,997	637,779
1984	6,277,161	508,633	672,703	792,607	916,087	864,468	769,642	578,647	384,574	789,800

[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.

Craver, Gerald C.
Forest statistics for the Mountains of North Carolina, 1984. Resour. Bull. SE-77. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1985. 50 pp.

Since 1974 the area of commercial forest land in the Mountains of North Carolina declined by over 106,000 acres, or by almost 3 percent. Over 23,000 acres were annually harvested and retained in commercial forest. Numbers of yellow pines 1 through 11 inches in diameter and numbers of hardwoods 1 through 7 inches in diameter declined significantly. Volume of softwood growing stock increased 17 percent, and that of hardwoods increased 19 percent. Net annual growth of growing stock averaged 53 cubic feet per acre. This value was down slightly, mainly because of higher mortality and an unexplained reduction in diameter growth rates for some species. Mortality of growing stock totaled 47 million cubic feet, up 72 percent. Net growth still exceeds removals by 26 percent for softwoods and by 221 percent for hardwoods.

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

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