United States
Department of
Agriculture

Forest Service

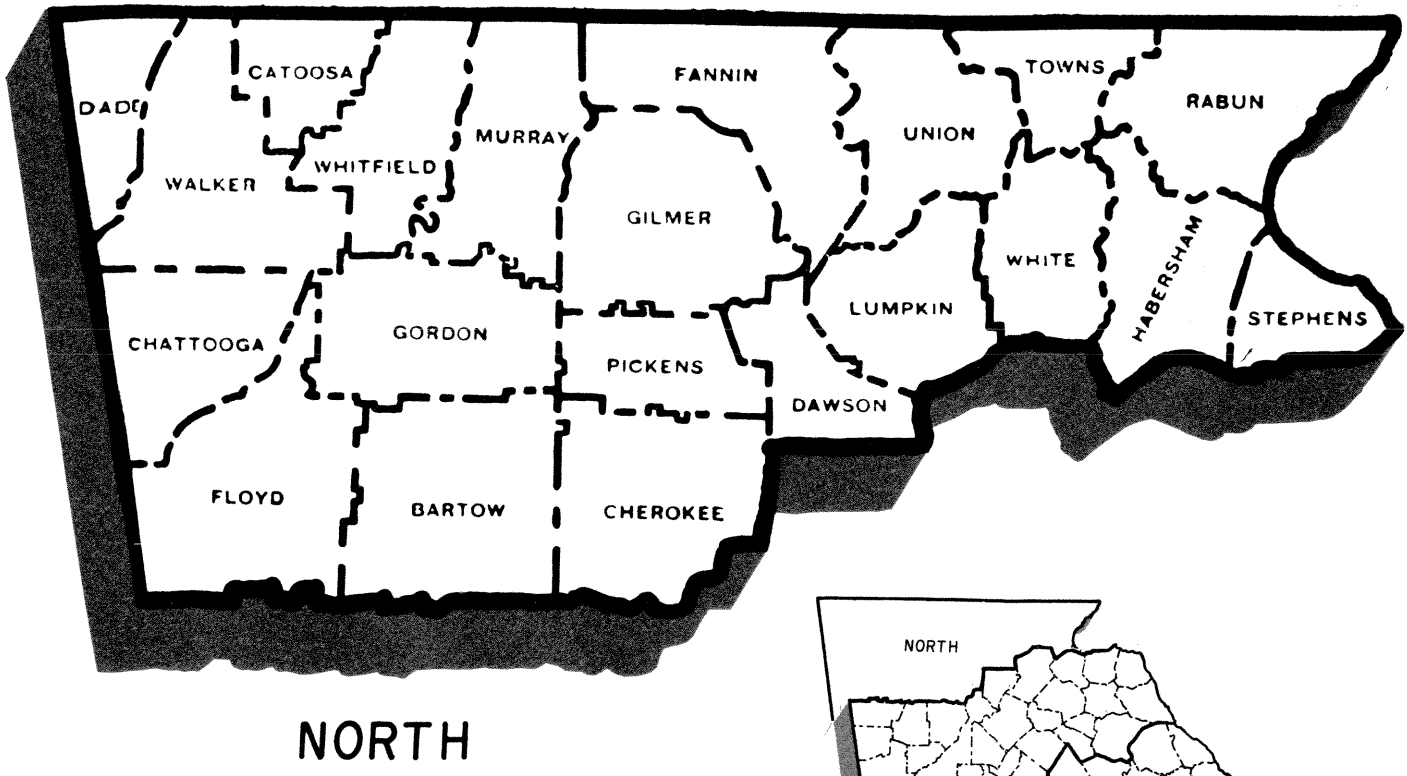
Southeastern Forest
Experiment Station

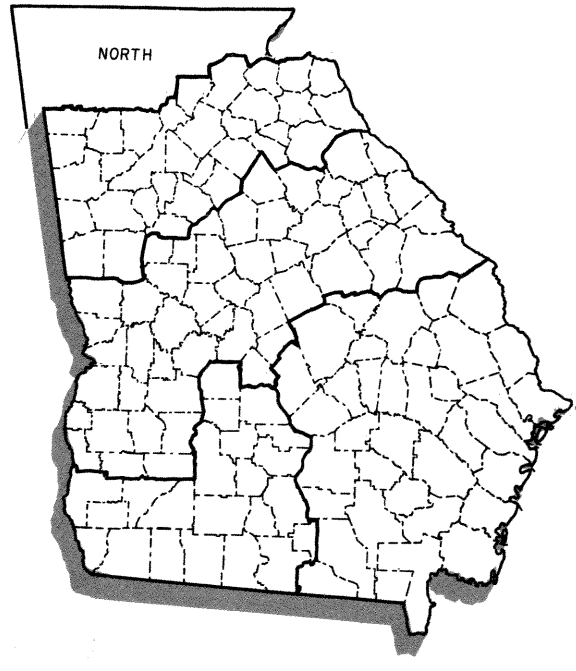
Resource Bulletin
SE-107

Forest Statistics for North Georgia, 1989

Mark J. Brown

Michael T. Thompson





July 1989

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

Forest Statistics for North Georgia, 1989

Mark J. Brown, Forester
and
Michael T. Thompson, Forester
Forest Inventory and Analysis
Asheville, North Carolina

Foreword

This report highlights the principal findings of the sixth forest survey in North Georgia. Field work began in December 1988 and was completed in February 1989. Five previous surveys, completed in 1936, 1953, 1961, 1972, and 1983, provide statistics for measuring changes and trends over the past 53 years. The primary emphasis in this report is on the changes and trends since 1983. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of the forest resource are authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These multiresource data help provide a basis for formulating forest policies and programs and for the orderly development and use of the resources. This report deals only with the extent and condition of forest land, associated timber volumes, and rates of timber growth and removals. The 21-county area covered by this report is one of five Survey Units in Georgia. Similar reports, USDA Forest Service Resource Bulletins SE-102, SE-104, and SE-105, have been issued for Southwest, Southeast, and Central Georgia, respectively. A comparable report for North Central Georgia is presently underway. When completed, the inventory will provide updated statistics on the timber resource for all of Georgia.

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

Noel D. Cost
Acting Project Leader

Page

Since 1983 in North Georgia..... 1
How the Inventory Is Made..... 3
Reliability of the Data..... 3
Definitions of Terms..... 5

County Tables*

1. Area, by county and land class.. 12

2. Area of timberland, by county and ownership class..... 13

3. Area of timberland, by county and forest-type group..... 14

4. Area of timberland, by county and stand-size class..... 15

5. Area of timberland, by county and site class..... 16

6. Area of timberland, by county and stocking class of growing-stock trees..... 17

7. Volume of growing stock and sawtimber on timberland, by county and species group..... 18

8. Average net annual growth of growing stock and sawtimber on timberland, by county and species group..... 19

9. Average annual removals of growing stock and sawtimber on timberland, by county and species group..... 20

Unit Tables*

10. Area of timberland, by forest type and ownership class..... 21

11. Area of timberland, by ownership and stocking classes of growing-stock trees..... 22

12. Area of timberland, by forest type and stand-size class..... 23

13. Area of timberland, by stand-age and broad management classes, all ownerships..... 24

Page

14. Area of timberland, by stand-age and broad management classes, public ownerships..... 24

15. Area of timberland, by stand-age and broad management classes, forest industry..... 25

16. Area of timberland, by stand-age and broad management classes, other private ownerships..... 25

17. Area of timberland, by broad management and stand-volume classes 26

18. Volume of growing stock on timberland, by broad management class, species group, and stand-age class.. 27

19. Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class..... 28

20. Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class..... 29

21. Merchantable volume of live trees and growing stock on timberland, by forest-type and species groups..... 30

22. Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class..... 31

23. Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class..... 31

24. Area of timberland regenerated annually, by type of regeneration and broad management class..... 32

25. Area of timberland, by treatment opportunity and broad management classes..... 33

26. Area of timberland, by treatment opportunity and ownership classes... 33

Page

27. Merchantable volume of live trees and growing stock on timberland, by ownership class and species group..... 34

28. Volume of sawtimber on timberland, by ownership class and species group..... 34

29. Average net annual growth and removals of growing stock on timberland, by ownership class and species group..... 35

30. Average net annual growth and removals of sawtimber on timberland, by ownership class and species group 35

31. Volume of timber on timberland, by class of timber and species group 36

32. Number of live trees on timberland, by species and diameter class 37

33. Number of growing-stock trees on timberland, by species and diameter class..... 38

34. Merchantable volume of live trees on timberland, by species and diameter class..... 39

35. Volume of growing stock on timberland, by species and diameter class..... 40

36. Volume of sawtimber on timberland, by species and diameter class 41

37. Volume of sawtimber on timberland, by species, size class, and tree grade..... 42

Page

38. Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class..... 43

39. Total volume of live trees on timberland, by species and diameter class..... 44

40. Green weight of forest biomass on timberland, by species and diameter class..... 45

41. Average net annual growth and removals of live timber and growing stock on timberland, by species..... 46

42. Average net annual growth and removals of sawtimber on timberland, by species..... 47

43. Average annual removals of growing stock on timberland, by species and diameter class..... 48

44. Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species..... 49

45. Change in number of live trees on timberland, by species group, survey completion date, and diameter class..... 50

46. Land area, by land use class, major forest type, and survey completion date..... 51

47. Volume of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class 52

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

Since 1983 in North Georgia

• area of timberland decreased by nearly 5 percent, or 144,000 acres. Timberland now covers less than 3.0 million acres--70 percent of the land in this 21-county area. Almost 208,000 acres were diverted to other land uses, while only 64,000 acres of new timberland were added. Urban and related land uses claimed the largest share of the timberland diversions with 38 percent. Agricultural uses were next, taking 29 percent of the diverted timberland, followed by reserved timberland with 24 percent. Approximately 43,000 acres of timberland were reclassified to reserved timberland, primarily because of new additions to wilderness on the Chattahoochee National Forest. Natural reversions and tree planting on former agricultural land accounted for all of the acres added to the timberland base.

• area of national forest timberland decreased by 2 percent to less than 644,000 acres. This decrease is largely due to increases in reserved timberland. Overall, the area of public timberland increased about 1 percent to 721,000 acres, primarily because of increases in State, county, and municipal holdings. Nonindustrial private forest (NIPF) acreage dropped by more than 7 percent to less than 2.0 million acres. Most of this decline was caused by a 30-percent drop in farmer-owned timberland to 347,000 acres. Timberland held by other individuals declined 3 percent to less than 1.3 million acres. Other corporations offset some of the losses with a 16-percent increase to 325,000 acres. NIPF timberland accounts for two-thirds of the total timberland. Forest industry holdings remained fairly stable at 269,000 acres.

• area harvested and retained in timberland averaged 47,000 acres annually. Seventy percent of the harvested acreage came from NIPF ownerships. Both forest industry and public ownerships each accounted for 15 percent of the area experiencing a final harvest. Partial harvests and other intermediate cuttings took place on another 20,000 acres each year. Natural disturbances such as fire, insects, diseases, and weather damaged some 22,000 acres annually.

• area artificially regenerated averaged 22,000 acres annually, a fourfold increase over the previous rate. Artificial regeneration increased on all major ownership categories, but the greatest percentage increase occurred on NIPF lands, up from less than 1,000 to more than 7,000 acres annually. Forest industry accounts for about one-half of the current planting, NIPF for one-third, and public for the remainder. An additional 38,000 acres were regenerated annually by natural means. Seventy-six percent of the natural regeneration occurred on NIPF lands. Natural reversion and planting of nonforest land averaged more than 8,000 acres annually. Altogether, more than 60,000 acres were regenerated annually, exceeding acres harvested by 28 percent.

• average basal area of live trees 5.0 inches d.b.h. and larger has changed little, averaging 75 square feet per acre. The number of sapling-size trees per acre has decreased by almost 10 percent to 549. Stands classified as fully stocked have increased by 11 percent to almost 1.1 million acres. Medium stocked stands have decreased by 7 percent to 1.5 million acres, and poorly stocked stands have dropped by 25 percent to less than 0.4 million acres.

• volume of softwood growing stock has dropped more than 6 percent from 2.1 to 1.9 billion cubic feet. Softwoods account for 40 percent of the entire growing-stock inventory volume. Decreases in volume occurred across all diameter classes except for the 18- and 22-inch and larger diameter classes. Volume of Virginia pine, the most predominant softwood species, increased 12 percent to 634 million cubic feet. Volume in loblolly and shortleaf pines declined to 525 and 426 million cubic feet, respectively. Volume of softwood growing stock includes 6.4 billion board feet of sawtimber, up less than 2 percent.

• volume of hardwood growing stock has increased more than 7 percent, from 2.7 to 2.9 billion cubic feet. All diameter classes increased in volume except the 6-, 12-, and 16-inch classes, all of which dropped slightly. Collectively, oak species make up 59 percent of the hardwood volume in North Georgia. More than half of the oaks are in the white oak group. Chestnut oak contains the most volume of any hardwood species with 475 million cubic feet, and yellow-poplar ranks next with 441 million cubic feet. Hickories contain 323 million cubic feet. Volume of hardwood growing stock includes 8.3 billion board feet of sawtimber, up 14 percent.

• net annual growth of softwood growing stock decreased by 26 percent to 65 million cubic feet, a continuation of the trend recorded in the previous survey. Two-thirds of the softwood net growth occurred on NIPF land; the remainder was about equally divided between public and forest industry land. Net annual growth of hardwood growing stock was down by 4 percent to 77 million cubic feet. For the first time in North Georgia, hardwood growth exceeded softwood growth. About 68 percent of hardwood growth occurred on NIPF land, 27 percent on public land, and only 5 percent on forest industry holdings. For softwoods and hardwoods combined, net annual growth included 597 million board feet of sawtimber.

• annual removals of softwood growing stock were up by 67 percent to 86 million cubic feet. Softwoods comprise two-thirds of the total annual volume removed. NIPF lands provided two-thirds of the softwood removals; forest industry and public lands each supplied about 17 percent. Annual removals of hardwood growing stock more than doubled to 45 million cubic feet. The national forest acreage removed from timberland accounted for one-third of the hardwood removals. Because of the wilderness withdrawals, more than one-half of the hardwood removals came from public land. Another 41 percent came from NIPF, and the remainder came from forest industry. All ownerships combined, removals of softwoods exceeded growth by 32 percent. In contrast, hardwood growth exceeded removals by 69 percent. Removals of growing stock included 291 million board feet for softwoods and 130 million board feet for hardwoods.

• annual mortality of growing stock increased for both hardwoods and softwoods, totaling 36 million cubic feet. Softwood mortality rose 22 percent to 19 million cubic feet, whereas hardwood mortality increased by 47 percent to 18 million cubic feet. Insects caused more than half of the softwood mortality. Disease was the leading identifiable cause of death to hardwoods with 27 percent. For softwoods and hardwoods combined, annual mortality included 80 million board feet of sawtimber.

Recently, the FIA Unit reviewed its data processing procedures. During this process, a computer error was discovered that led to inflated estimates of annual removals, net annual growth, and annual mortality for the 1972-1982 remeasurement period in Georgia. Therefore, the preceding discussion of trends for these components of change is based on revised data for this period. If you desire further information about these changes, please contact the FIA staff at:

Forest Inventory and Analysis
Southeastern Forest Experiment Station
P.O. Box 2680
Asheville, NC 28802

Phone: 704-257-4350

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 20,938 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 874 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 606 ground sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

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

4. Felled trees were measured at 5 active cutting operations. These data will supplement the standing-tree volume data and be used to generate utilization factors for product and species groups. Forest biomass estimates were made from equations developed by the Utilization of Southern Timber Research Work Unit of the Southeastern Forest Experiment Station in Athens, GA.

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 620 permanent sample plots established in the fifth survey.

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

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

Reliability of the Data

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

	Percent
Per million acres of timberland	0.68
Per billion cubic feet of growing stock	6.39
Per billion cubic feet of net annual growth	1.11
Per billion cubic feet of annual removals	3.91

Sampling errors for county and unit totals,[a] in terms of one standard error, North Georgia, 1989

County	Timberland area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
		Sampling error[b]		
Bartow	1.67	16.94	14.76	31.11
Catoosa	4.09	30.59	22.89	47.29
Chattooga	1.26	17.68	16.80	38.69
Cherokee	1.30	8.93	8.97	42.54
Dade	2.95	11.33	17.18	100.04
Dawson	1.42	12.25	15.31	100.01
Fannin	1.58	9.88	10.30	51.34
Floyd	1.88	11.55	10.42	31.47
Gilmer	.75	8.24	8.47	35.93
Gordon	2.16	20.06	20.92	42.00
Habersham	1.94	12.26	14.37	49.80
Lumpkin	.83	13.35	13.83	42.12
Murray	1.49	13.82	13.09	64.95
Pickens	1.36	13.15	12.92	47.91
Rabun	1.87	8.90	8.19	55.27
Stephens	2.26	16.40	17.90	100.03
Towns	1.90	19.93	18.59	41.99
Union	1.41	12.42	12.51	47.46
Walker	1.77	11.28	11.71	45.37
White	2.23	9.24	9.49	67.20
Whitfield	2.51	19.11	16.40	44.10
Total	.38	2.90	2.93	10.78

[a]Sampling error of breakdowns of county and unit totals may be computed with the following formula:

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

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

SE = Specified sampling error in table.

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

Definitions of Terms

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

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

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

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

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

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

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

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

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

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

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

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

Commercial forest land. (see: Timberland).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Desirable tree. A tree that qualifies as growing stock and has no serious defects in quality limiting present or prospective use; is of relatively high vigor (30 percent or more live crown ratio); is compatible with the site and

physiographic class; has a total board-foot loss not to exceed 15 percent in softwoods or 25 percent in hardwoods as a result of severe sweep, crook, or lean; and has a relatively clear bole.

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

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

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

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

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

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

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

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

Industrial wood. All roundwood products except fuelwood.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

Softwoods. Gymnosperms; in the order Coniferales, usually evergreen (includes

the genus Taxodium which is deciduous), having needles or scalelike leaves.

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

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

Stand-size class. A classification of forest land based on the diameter class distribution of 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.

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

Timber products. Roundwood products and byproducts.

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

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

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

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

Unproductive forest land. (see: Woodland).

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

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

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

Stocking Standard

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

Conversion factors

Cubic feet of wood per average cord (excluding bark)

D.b.h. class	All species	Pine	Other softwood	Hardwood
6	60.5	61.0	68.2	60.0
8	68.5	68.1	76.0	68.4
10	73.4	73.1	81.4	73.4
12	76.8	76.7	85.2	76.4
14	79.0	79.4	88.2	78.4
16	80.7	81.6	90.4	79.8
18	82.3	83.3	92.3	80.8
20	83.1	84.8	93.8	81.5
22	84.4	86.0	95.1	82.1
24+	86.3	87.8	97.3	82.9
Average	74.6	72.8	89.1	74.5

Metric equivalents of units used in this report

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

County Tables

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

Table 1.--Area, by county and land class, North Georgia, 1989

County	All land[a]	Forest land				Nonforest land[b]
		Total	Timberland	Woodland	Reserved timberland	
			Acres			
Bartow	291,917	193,361	193,361	--	--	98,556
Catoosa	103,930	50,874	47,729	--	3,145	53,056
Chattooga	200,570	143,719	143,719	--	--	56,851
Cherokee	271,341	191,418	191,418	--	--	79,923
Dade	112,429	78,851	77,879	--	972	33,578
Dawson	134,419	111,375	111,375	--	--	23,044
Fannin	245,888	211,198	178,004	--	33,194	34,690
Floyd	331,942	204,337	204,337	--	--	127,605
Gilmer	273,530	242,326	231,727	--	10,599	31,204
Gordon	227,181	126,858	126,858	--	--	100,323
Habersham	178,086	124,281	120,690	--	3,591	53,805
Lumpkin	183,750	159,616	158,088	--	1,528	24,134
Murray	220,576	163,072	156,942	--	6,130	57,504
Pickens	148,551	118,158	118,158	--	--	30,393
Rabun	237,050	208,455	196,279	--	12,176	28,595
Stephens	113,357	77,622	77,406	--	216	35,735
Towns	105,517	88,870	71,965	--	16,905	16,647
Union	204,736	160,900	151,196	--	9,704	43,836
Walker	285,421	184,508	182,759	--	1,749	100,913
White	154,906	122,982	113,616	--	9,366	31,924
Whitfield	186,125	99,460	99,460	--	--	86,665
Total	4,211,222	3,062,241	2,952,966	--	109,275	1,148,981

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

[b]Includes 841 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2.--Area of timberland, by county and ownership class, North Georgia, 1989

County	All ownerships	Ownership class							
		National forest	Miscellaneous Federal	State	County and municipal	Forest industry[a]	Other private		
							Farmer	Corporate	Individual
					Acres				
Bartow	193,361	--	7,812	200	262	39,597	43,108	37,720	64,662
Catoosa	47,729	6	1,538	--	125	3,404	--	6,094	36,562
Chattooga	143,719	20,712	--	204	10	17,531	21,052	10,526	73,684
Cherokee	191,418	--	9,496	10	434	41,061	4,681	32,764	102,972
Dade	77,879	--	--	1,559	115	10,634	17,883	5,961	41,727
Dawson	111,375	6,921	1,199	5,747	10,061	8,701	4,632	9,264	64,850
Fannin	178,004	72,829	306	--	80	392	43,957	5,495	54,945
Floyd	204,337	6,618	--	712	355	26,773	37,751	28,313	103,815
Gilmer	231,727	44,168	3,805	--	35	13,124	23,694	37,910	108,991
Gordon	126,858	8,070	56	25	145	29,100	19,880	--	69,582
Habersham	120,690	36,433	--	124	47	2,592	4,527	13,582	63,385
Lumpkin	158,088	55,129	223	640	56	7,514	19,693	11,816	63,017
Murray	156,942	44,598	1,178	1,912	8,202	23,504	6,462	6,462	64,624
Pickens	118,158	--	--	2	148	20,044	15,468	25,780	56,716
Rabun	196,279	135,448	--	1,318	70	--	3,302	23,117	33,024
Stephens	77,406	21,923	1,140	--	518	2,835	22,662	11,331	16,997
Towns	71,965	40,093	335	14	30	217	--	--	31,276
Union	151,196	87,577	815	487	60	3,060	10,763	5,382	43,052
Walker	182,759	18,475	--	13,462	143	6,084	43,817	26,290	74,488
White	113,616	32,773	--	981	69	624	4,167	12,500	62,502
Whitfield	99,460	11,765	8	10	1,238	12,386	--	14,811	59,242
Total	2,952,966	643,538	27,911	27,407	22,203	269,177	347,499	325,118	1,290,113

[a]Includes 11,801 acres of other private land under long-term lease.

Table 3.--Area of timberland, by county and forest-type group, North Georgia, 1989

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					
Bartow	193,361	--	--	--	86,548	53,885	52,928	--	--	--
Catoosa	47,729	--	--	--	9,622	--	36,569	1,538	--	--
Chattooga	143,719	--	--	--	40,761	25,606	77,352	--	--	--
Cherokee	191,418	--	--	--	76,930	34,896	74,912	--	4,680	--
Dade	77,879	--	--	--	13,596	9,506	48,816	--	5,961	--
Dawson	111,375	--	--	--	21,401	36,893	53,081	--	--	--
Fannin	178,004	4,855	--	--	32,635	20,701	119,813	--	--	--
Floyd	204,337	--	--	--	87,532	9,437	97,930	--	9,438	--
Gilmer	231,727	9,478	--	--	25,556	63,590	128,364	--	4,739	--
Gordon	126,858	--	--	--	44,781	32,184	39,953	9,940	--	--
Habersham	120,690	--	--	--	25,230	29,920	65,540	--	--	--
Lumpkin	158,088	10,829	--	--	34,278	40,647	72,334	--	--	--
Murray	156,942	6,463	--	--	64,450	21,844	64,185	--	--	--
Pickens	118,158	--	--	--	36,236	25,418	56,504	--	--	--
Rabun	196,279	29,446	--	--	31,549	48,544	86,740	--	--	--
Stephens	77,406	--	--	--	29,119	12,471	35,816	--	--	--
Towns	71,965	--	--	--	15,683	10,760	45,522	--	--	--
Union	151,196	9,731	--	--	35,649	20,553	85,263	--	--	--
Walker	182,759	--	--	--	49,979	22,382	110,398	--	--	--
White	113,616	3,642	--	--	28,643	28,187	48,977	--	4,167	--
Whitfield	99,460	--	--	--	48,193	5,890	45,377	--	--	--
Total	2,952,966	74,444	--	--	838,371	553,314	1,446,374	11,478	28,985	--

Table 4.--Area of timberland, by county and stand-size class, North Georgia, 1989

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
			Acres		
Bartow	193,361	76,747	44,853	71,761	--
Catoosa	47,729	19,826	15,591	12,312	--
Chattooga	143,719	38,389	45,051	57,917	2,362
Cherokee	191,418	117,179	60,197	14,042	--
Dade	77,879	30,933	34,909	6,076	5,961
Dawson	111,375	55,954	37,456	17,965	--
Fannin	178,004	123,307	38,215	16,482	--
Floyd	204,337	96,926	61,000	41,692	4,719
Gilmer	231,727	132,934	82,546	16,247	--
Gordon	126,858	38,034	39,441	49,383	--
Habersham	120,690	60,935	29,756	29,999	--
Lumpkin	158,088	107,594	19,512	27,044	3,938
Murray	156,942	94,845	32,861	29,236	--
Pickens	118,158	56,646	36,092	25,420	--
Rabun	196,279	140,460	38,082	17,737	--
Stephens	77,406	29,742	27,047	20,617	--
Towns	71,965	51,487	13,498	6,980	--
Union	151,196	107,406	8,214	35,576	--
Walker	182,759	100,234	44,674	37,851	--
White	113,616	64,634	44,359	4,623	--
Whitfield	99,460	44,714	19,748	30,061	4,937
Total	2,952,966	1,588,926	773,102	569,021	21,917

Table 5.--Area of timberland, by county and site class, North Georgia, 1989

County	All classes	Site class (cubic feet per acre per year)				
		>164	120-164	85-119	50-84	20-49
		Acres				
Bartow	193,361	5,389	5,388	27,706	144,101	10,777
Catoosa	47,729	--	1,538	9,498	24,505	12,188
Chattooga	143,719	--	--	11,077	132,642	--
Cherokee	191,418	--	4,680	80,139	99,785	6,814
Dade	77,879	--	5,961	21,427	42,971	7,520
Dawson	111,375	--	9,264	38,783	63,328	--
Fannin	178,004	14,872	16,484	10,351	131,050	5,247
Floyd	204,337	--	--	34,932	157,602	11,803
Gilmer	231,727	33,340	4,739	65,680	118,490	9,478
Gordon	126,858	2,420	9,940	2,363	87,527	24,608
Habersham	120,690	--	9,055	27,842	83,793	--
Lumpkin	158,088	25,598	3,938	57,149	71,403	--
Murray	156,942	5,637	--	17,384	119,625	14,296
Pickens	118,158	5,156	15,106	25,928	66,812	5,156
Rabun	196,279	24,272	20,969	26,306	109,652	15,080
Stephens	77,406	--	5,666	35,406	36,334	--
Towns	71,965	8,486	--	24,490	25,490	13,499
Union	151,196	5,681	15,112	40,989	89,414	--
Walker	182,759	--	4,381	26,291	95,670	56,417
White	113,616	3,642	25,000	23,950	49,575	11,449
Whitfield	99,460	--	--	13,942	80,581	4,937
Total	2,952,966	134,493	157,221	621,633	1,830,350	209,269

Table 6.--Area of timberland, by county and stocking class of growing-stock trees, North Georgia, 1989

County	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
			Acres			
Bartow	193,361	19,894	62,908	85,539	25,020	--
Catoosa	47,729	--	15,716	25,920	6,093	--
Chattooga	143,719	--	54,293	65,808	21,256	2,362
Cherokee	191,418	9,795	81,360	81,541	18,722	--
Dade	77,879	--	15,582	50,375	5,961	5,961
Dawson	111,375	4,632	18,528	55,556	32,659	--
Fannin	178,004	4,855	37,186	108,490	27,473	--
Floyd	204,337	9,438	54,196	112,390	23,594	4,719
Gilmer	231,727	9,646	54,326	127,687	40,068	--
Gordon	126,858	12,304	26,627	83,200	4,727	--
Habersham	120,690	4,527	51,830	55,277	9,056	--
Lumpkin	158,088	18,705	36,651	86,978	11,816	3,938
Murray	156,942	17,384	38,234	81,481	19,843	--
Pickens	118,158	148	30,936	61,294	25,780	--
Rabun	196,279	5,889	73,604	104,292	12,494	--
Stephens	77,406	--	37,474	31,432	8,500	--
Towns	71,965	8,486	8,852	32,425	22,202	--
Union	151,196	--	50,719	90,230	10,247	--
Walker	182,759	4,381	63,120	102,113	13,145	--
White	113,616	11,974	57,287	32,382	11,973	--
Whitfield	99,460	4,060	36,758	48,768	4,937	4,937
Total	2,952,966	146,118	906,187	1,523,178	355,566	21,917

[a]See stocking standards on page 11.

Table 7.--Volume of growing stock and sawtimber on timberland, by county and species group, North Georgia, 1989

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet[a]					Thousand board feet				
Bartow	249,639	146,487	--	20,687	82,465	728,129	440,140	--	64,039	223,950
Catoosa	63,353	9,227	--	17,120	37,006	198,803	45,165	--	47,656	105,982
Chattooga	141,930	49,224	--	28,893	63,813	398,289	156,146	--	82,574	159,569
Cherokee	348,572	155,678	--	84,924	107,970	1,099,125	560,043	--	223,028	316,054
Dade	115,375	15,663	2,624	31,381	65,707	286,886	40,260	6,367	55,790	184,469
Dawson	190,640	79,238	1,725	27,262	82,415	504,263	193,438	3,204	61,486	246,135
Fannin	323,869	63,276	35,246	36,352	188,995	1,032,744	190,219	170,833	82,361	589,331
Floyd	284,648	154,131	--	21,602	108,915	842,135	605,450	--	36,894	199,791
Gilmer	405,424	70,321	38,681	103,170	193,252	1,259,741	184,283	198,212	304,953	572,293
Gordon	149,846	91,912	--	9,419	48,515	359,127	191,295	--	17,109	150,723
Habersham	220,260	70,904	6,708	38,177	104,471	655,759	232,715	33,530	98,536	290,978
Lumpkin	291,867	89,667	36,004	38,014	128,182	940,751	251,156	170,552	104,150	414,893
Murray	240,977	86,267	21,104	24,974	108,632	658,767	233,022	95,259	42,796	287,690
Pickens	149,270	55,696	--	27,818	65,756	428,997	153,033	--	82,750	193,214
Rabun	433,672	97,949	102,442	64,864	168,417	1,529,623	347,497	535,504	154,417	492,205
Stephens	142,838	68,924	--	16,598	57,316	399,753	190,869	--	39,727	169,157
Towns	126,500	45,531	3,153	23,736	54,080	415,510	134,084	16,216	58,802	206,408
Union	298,213	67,383	24,846	40,004	165,980	1,023,400	208,425	126,345	101,983	586,647
Walker	241,331	69,869	463	29,750	141,249	682,992	212,338	--	84,957	385,697
White	268,871	97,344	7,103	61,686	102,738	755,311	218,109	36,750	205,425	295,027
Whitfield	141,930	55,976	--	27,185	58,769	449,334	200,505	--	71,125	177,704
Total	4,829,025	1,640,667	280,099	773,616	2,134,643	14,649,439	4,988,192	1,392,772	2,020,558	6,247,917

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

Table 8.--Average net annual growth of growing stock and sawtimber on timberland, by county and species group, North Georgia, 1983-1988

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Bartow	7,845	4,963	--	721	2,161	30,684	20,113	--	1,721	8,850
Catoosa	1,300	215	--	314	771	6,580	1,721	--	2,553	2,306
Chattooga	4,713	1,540	--	1,221	1,952	19,215	7,025	--	3,300	8,890
Cherokee	12,333	6,074	--	2,816	3,443	50,724	27,032	--	9,828	13,864
Dade	3,325	652	188	1,283	1,202	11,570	2,134	403	4,830	4,203
Dawson	6,278	2,861	89	1,024	2,304	31,703	18,184	268	5,519	7,732
Fannin	8,043	2,112	961	886	4,084	33,941	9,559	6,106	2,118	16,158
Floyd	8,797	4,452	--	931	3,414	41,008	27,402	--	1,742	11,864
Gilmer	11,596	2,392	1,449	3,436	4,319	46,804	9,388	7,763	13,601	16,052
Gordon	7,387	5,645	--	431	1,311	18,358	13,278	--	786	4,294
Habersham	7,079	2,180	225	1,579	3,095	37,026	10,801	1,440	8,056	16,729
Lumpkin	7,866	2,819	1,240	1,079	2,728	37,725	14,407	7,414	3,915	11,989
Murray	7,791	3,816	797	770	2,408	30,303	13,159	3,080	2,606	11,458
Pickens	5,392	2,851	--	999	1,542	20,327	12,239	--	3,560	4,528
Rabun	10,931	1,659	3,001	2,178	4,093	48,532	11,133	17,781	5,728	13,890
Stephens	3,590	1,749	--	459	1,382	18,166	8,347	--	2,343	7,476
Towns	3,062	1,132	109	829	992	11,211	4,534	378	2,334	3,965
Union	6,560	1,529	906	1,111	3,014	27,175	8,203	4,125	3,165	11,682
Walker	7,485	2,735	113	977	3,660	26,773	12,517	--	2,790	11,466
White	6,910	2,833	145	1,542	2,390	29,520	14,089	928	7,571	6,932
Whitfield	3,520	1,728	--	665	1,127	19,845	12,522	--	1,455	5,868
Total	141,803	55,937	9,223	25,251	51,392	597,190	257,787	49,686	89,521	200,196

Table 9.--Average annual removals of growing stock and sawtimber on timberland, by county and species group, North Georgia, 1983-1988

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Bartow	9,969	8,822	--	424	723	28,253	24,381	--	1,655	2,217
Catoosa	2,501	855	--	337	1,309	6,511	3,434	--	--	3,077
Chattooga	7,468	4,436	--	306	2,726	20,487	11,248	--	821	8,418
Cherokee	10,280	8,279	--	170	1,831	39,220	34,255	--	782	4,183
Dade	908	--	--	279	629	4,545	--	--	1,681	2,864
Dawson	124	--	--	124	--	--	--	--	--	--
Fannin	5,490	2,850	1,133	342	1,165	15,526	4,084	6,594	--	4,848
Floyd	11,231	8,997	--	460	1,774	34,818	28,067	--	2,289	4,462
Gilmer	8,514	379	1,240	3,448	3,447	29,413	780	6,323	11,552	10,758
Gordon	6,473	4,824	--	136	1,513	11,204	11,204	--	--	--
Habersham	5,932	5,183	--	--	749	23,647	20,673	--	--	2,974
Lumpkin	7,316	5,258	--	457	1,601	22,898	14,056	--	3,143	5,699
Murray	7,073	6,582	--	173	318	22,764	22,031	--	733	--
Pickens	10,220	6,534	840	1,568	1,278	42,211	26,664	5,071	5,855	4,621
Rabun	3,419	650	185	1,214	1,370	12,187	1,664	1,237	3,858	5,428
Stephens	1,187	1,187	--	--	--	4,901	4,901	--	--	--
Towns	8,630	3,105	--	1,346	4,179	25,393	10,243	--	4,541	10,609
Union	9,345	374	1,599	1,993	5,379	29,961	1,648	9,924	5,855	12,534
Walker	4,019	3,024	119	309	567	9,390	6,944	459	840	1,147
White	952	765	--	--	187	2,926	2,926	--	--	--
Whitfield	10,614	9,006	--	951	657	35,397	32,536	--	2,272	589
Total	131,665	81,110	5,116	14,037	31,402	421,652	261,739	29,608	45,877	84,428

Table 10.--Area of timberland, by forest type and ownership class, North Georgia, 1989

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
		Acres				
Softwood types						
White pine-hemlock	74,444	54,565	--	--	--	19,879
Spruce-fir	--	--	--	--	--	--
Longleaf pine	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--
Loblolly pine	372,129	7,836	12,255	117,951	11,801	222,286
Shortleaf pine	124,048	19,512	2,883	6,519	--	95,134
Virginia pine	320,288	38,302	12,675	23,371	--	245,940
Sand pine	--	--	--	--	--	--
Eastern redcedar	5,961	--	--	--	--	5,961
Pond pine	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--
Pitch pine	11,778	11,778	--	--	--	--
Table Mountain pine	4,167	--	--	--	--	4,167
Total	912,815	131,993	27,813	147,841	11,801	593,367
Hardwood types						
Oak-pine	553,314	142,853	7,004	42,621	--	360,836
Oak-hickory	1,405,564	360,591	41,166	66,914	--	936,893
Chestnut oak	40,810	8,101	--	--	--	32,709
Southern scrub oak	--	--	--	--	--	--
Oak-gum-cypress	11,478	--	1,538	--	--	9,940
Elm-ash-cottonwood	28,985	--	--	--	--	28,985
Maple-beech-birch	--	--	--	--	--	--
Total	2,040,151	511,545	49,708	109,535	--	1,369,363
All types	2,952,966	643,538	77,521	257,376	11,801	1,962,730

Table 11.--Area of timberland, by ownership and stocking classes of growing-stock trees, North Georgia, 1989

Ownership class	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
		Acres				
National forest	643,538	35,655	191,960	363,298	52,625	--
Other public	77,521	844	15,589	50,788	10,300	--
Forest industry	257,376	9,891	87,605	131,047	26,471	2,362
Forest industry-leased	11,801	--	3,479	8,322	--	--
Other private	1,962,730	99,728	607,554	969,723	266,170	19,555
All ownerships	2,952,966	146,118	906,187	1,523,178	355,566	21,917

[a]See stocking standards on page 11.

Table 12.--Area of timberland, by forest type and stand-size class, North Georgia, 1989

Forest type	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
		Acres			
Softwood types					
White pine-hemlock	74,444	65,936	--	8,508	--
Spruce-fir	--	--	--	--	--
Longleaf pine	--	--	--	--	--
Slash pine	--	--	--	--	--
Loblolly pine	372,129	147,763	61,261	158,168	4,937
Shortleaf pine	124,048	83,209	36,311	4,528	--
Virginia pine	320,288	167,328	97,960	55,000	--
Sand pine	--	--	--	--	--
Eastern redcedar	5,961	--	--	5,961	--
Pond pine	--	--	--	--	--
Spruce pine	--	--	--	--	--
Pitch pine	11,778	11,778	--	--	--
Table Mountain pine	4,167	--	4,167	--	--
Total	912,815	476,014	199,699	232,165	4,937
Hardwood types					
Oak-pine	553,314	280,887	149,635	122,792	--
Oak-hickory	1,405,564	790,620	388,281	209,683	16,980
Chestnut oak	40,810	26,301	10,128	4,381	--
Southern scrub oak	--	--	--	--	--
Oak-gum-cypress	11,478	1,538	9,940	--	--
Elm-ash-cottonwood	28,985	13,566	15,419	--	--
Maple-beech-birch	--	--	--	--	--
Total	2,040,151	1,112,912	573,403	336,856	16,980
All types	2,952,966	1,588,926	773,102	569,021	21,917

Table 13.--Area of timberland, by stand-age and broad management classes, all ownerships, North Georgia, 1989

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	395,750	119,805	66,993	79,979	128,973	--
11-20	245,793	46,771	69,099	59,970	60,013	9,940
21-30	168,617	11,142	32,921	32,767	81,107	10,680
31-40	423,907	14,633	197,687	98,452	108,396	4,739
41-50	425,541	--	157,922	69,949	193,503	4,167
51-60	371,216	--	77,451	77,044	212,041	4,680
61-70	254,439	--	54,016	34,545	164,340	1,538
71-80	198,477	--	37,062	28,131	133,284	--
81+	150,839	--	2,883	23,561	124,395	--
No manageable stand	318,387	--	24,430	48,916	240,322	4,719
All classes	2,952,966	192,351	720,464	553,314	1,446,374	40,463

Table 14.--Area of timberland, by stand-age and broad management classes, public ownerships, North Georgia, 1989

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	78,915	15,105	16,056	22,842	24,912	--
11-20	44,326	--	9,531	21,442	13,353	--
21-30	15,679	--	8,748	--	6,931	--
31-40	30,380	--	9,603	9,032	11,745	--
41-50	60,929	--	10,744	18,842	31,343	--
51-60	133,460	--	17,919	35,263	80,278	--
61-70	118,406	--	43,336	5,889	67,643	1,538
71-80	103,180	--	25,881	11,756	65,543	--
81+	87,734	--	2,883	14,869	69,982	--
No manageable stand	48,050	--	--	9,922	38,128	--
All classes	721,059	15,105	144,701	149,857	409,858	1,538

Table 15.--Area of timberland, by stand-age and broad management classes, forest industry,[a] North Georgia, 1989

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	79,893	64,177	3,404	12,312	--	--
11-20	65,888	41,383	5,424	15,225	3,856	--
21-30	28,354	11,142	10,398	--	6,814	--
31-40	34,123	6,949	11,350	5,907	9,917	--
41-50	30,435	--	3,052	6,814	20,569	--
51-60	9,452	--	2,363	2,363	4,726	--
61-70	--	--	--	--	--	--
71-80	3,467	--	--	--	3,467	--
81+	9,950	--	--	--	9,950	--
No manageable stand	7,615	--	--	--	7,615	--
All classes	269,177	123,651	35,991	42,621	66,914	--

[a]Includes 11,801 acres of other private land under long-term lease.

Table 16.--Area of timberland, by stand-age and broad management classes, other private ownerships,[a] North Georgia, 1989

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
0-10	236,942	40,523	47,533	44,825	104,061	--
11-20	135,579	5,388	54,144	23,303	42,804	9,940
21-30	124,584	--	13,775	32,767	67,362	10,680
31-40	359,404	7,684	176,734	83,513	86,734	4,739
41-50	334,177	--	144,126	44,293	141,591	4,167
51-60	228,304	--	57,169	39,418	127,037	4,680
61-70	136,033	--	10,680	28,656	96,697	--
71-80	91,830	--	11,181	16,375	64,274	--
81+	53,155	--	--	8,692	44,463	--
No manageable stand	262,722	--	24,430	38,994	194,579	4,719
All classes	1,962,730	53,595	539,772	360,836	969,602	38,925

[a]Excludes 11,801 acres of other private land under long-term lease to forest industry.

Table 17.--Area of timberland, by broad management and stand-volume classes, North Georgia, 1989

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	192,351	144,324	10,987	17,474	5,458	14,108
Natural pine	720,464	96,511	60,657	47,075	149,389	366,832
Oak-pine	553,314	106,427	91,259	102,925	89,840	162,863
Upland hardwood	1,446,374	186,702	236,218	287,993	288,964	446,497
Lowland hardwood	40,463	--	9,940	9,438	10,700	10,385
All classes	2,952,966	533,964	409,061	464,905	544,351	1,000,685

Table 18.--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, North Georgia, 1989

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	120,233	--	3,337	23,761	37,225	55,910	--	--	--	--	--
Hardwood	14,597	--	2,122	1,238	414	10,823	--	--	--	--	--
Total	134,830	--	5,459	24,999	37,639	66,733	--	--	--	--	--
Natural pine											
Softwood	1,264,816	6,135	6,208	52,727	73,641	423,745	347,596	165,435	113,465	64,882	10,982
Hardwood	231,941	1,938	1,991	7,841	7,256	51,820	68,403	42,321	29,024	18,535	2,812
Total	1,496,757	8,073	8,199	60,568	80,897	475,565	415,999	207,756	142,489	83,417	13,794
Oak-pine											
Softwood	370,405	20,684	6,854	18,346	17,335	89,380	64,376	64,817	23,170	31,613	33,830
Hardwood	426,960	18,092	10,367	13,232	22,503	103,873	75,013	72,061	34,777	39,055	37,987
Total	797,365	38,776	17,221	31,578	39,838	193,253	139,389	136,878	57,947	70,668	71,817
Upland hardwood											
Softwood	157,690	12,905	1,214	4,942	9,028	13,892	41,752	28,672	21,535	11,125	12,625
Hardwood	2,162,185	174,473	33,797	41,346	57,768	171,619	350,154	414,683	349,617	288,006	280,722
Total	2,319,875	187,378	35,011	46,288	66,796	185,511	391,906	443,355	371,152	299,131	293,347
Lowland hardwood											
Softwood	7,622	--	--	--	2,029	--	--	--	5,593	--	--
Hardwood	72,576	5,219	--	4,501	15,736	8,272	12,023	10,773	16,052	--	--
Total	80,198	5,219	--	4,501	17,765	8,272	12,023	10,773	21,645	--	--
All types											
Softwood	1,920,766	39,724	17,613	99,776	139,258	582,927	453,724	258,924	163,763	107,620	57,437
Hardwood	2,908,259	199,722	48,277	68,158	103,677	346,407	505,593	539,838	429,470	345,596	321,521
Total	4,829,025	239,446	65,890	167,934	242,935	929,334	959,317	798,762	593,233	453,216	378,958

Table 19.--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, North Georgia, 1983-1988

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	8,983	--	598	4,095	2,777	1,513	--	--	--	--	--
Hardwood	671	--	78	129	96	368	--	--	--	--	--
Total	9,654	--	676	4,224	2,873	1,881	--	--	--	--	--
Natural pine											
Softwood	38,692	235	466	2,793	3,781	14,526	9,069	3,814	2,497	1,350	161
Hardwood	6,809	114	59	283	357	1,915	2,025	1,051	546	377	82
Total	45,501	349	525	3,076	4,138	16,441	11,094	4,865	3,043	1,727	243
Oak-pine											
Softwood	12,496	909	420	1,326	896	3,039	1,982	2,105	615	777	427
Hardwood	13,048	601	489	726	818	3,532	2,111	2,031	1,095	782	863
Total	25,544	1,510	909	2,052	1,714	6,571	4,093	4,136	1,710	1,559	1,290
Upland hardwood											
Softwood	4,827	384	54	198	245	509	1,423	917	516	330	251
Hardwood	53,705	4,772	883	1,626	2,992	5,653	9,951	9,583	7,163	6,018	5,064
Total	58,532	5,156	937	1,824	3,237	6,162	11,374	10,500	7,679	6,348	5,315
Lowland hardwood											
Softwood	162	--	--	--	86	--	--	--	76	--	--
Hardwood	2,410	238	--	226	725	382	329	223	287	--	--
Total	2,572	238	--	226	811	382	329	223	363	--	--
All types											
Softwood	65,160	1,528	1,538	8,412	7,785	19,587	12,474	6,836	3,704	2,457	839
Hardwood	76,643	5,725	1,509	2,990	4,988	11,850	14,416	12,888	9,091	7,177	6,009
Total	141,803	7,253	3,047	11,402	12,773	31,437	26,890	19,724	12,795	9,634	6,848

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

Table 20.--Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, North Georgia, 1983-1988

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	5,676	--	--	2,668	3,008	--	--	--	--	--	--
Hardwood	189	--	--	189	--	--	--	--	--	--	--
Total	5,865	--	--	2,857	3,008	--	--	--	--	--	--
Natural pine											
Softwood	68,290	280	414	4,965	13,352	30,542	6,776	7,935	160	1,360	2,506
Hardwood	4,688	349	--	91	120	2,258	1,392	318	--	160	--
Total	72,978	629	414	5,056	13,472	32,800	8,168	8,253	160	1,520	2,506
Oak-pine											
Softwood	8,109	274	--	1,621	--	540	1,554	1,071	1,076	--	1,973
Hardwood	6,974	1,151	--	496	--	218	1,074	736	1,695	--	1,604
Total	15,083	1,425	--	2,117	--	758	2,628	1,807	2,771	--	3,577
Upland hardwood											
Softwood	4,151	104	329	592	374	605	447	477	198	840	185
Hardwood	31,204	1,275	363	3,657	1,850	1,256	3,246	1,710	8,500	6,596	2,751
Total	35,355	1,379	692	4,249	2,224	1,861	3,693	2,187	8,698	7,436	2,936
Lowland hardwood											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	2,384	--	--	1,035	--	--	--	1,349	--	--	--
Total	2,384	--	--	1,035	--	--	--	1,349	--	--	--
All types											
Softwood	86,226	658	743	9,846	16,734	31,687	8,777	9,483	1,434	2,200	4,664
Hardwood	45,439	2,775	363	5,468	1,970	3,732	5,712	4,113	10,195	6,756	4,355
Total	131,665	3,433	1,106	15,314	18,704	35,419	14,489	13,596	11,629	8,956	9,019

[a]Classifications before timber removals.

Table 21.--Merchantable volume of live trees and growing stock on timberland, by forest-type and species groups, North Georgia, 1989

Forest-type group	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
White pine-hemlock	259,598	23,774	166,216	30,018	39,590	243,294	23,774	166,216	25,627	27,677
Spruce-fir	--	--	--	--	--	--	--	--	--	--
Longleaf-slash pine	--	--	--	--	--	--	--	--	--	--
Loblolly-shortleaf pine	1,430,292	1,192,956	11,684	96,864	128,788	1,388,293	1,183,375	11,684	89,441	103,793
Oak-pine	859,226	303,872	70,308	123,353	361,693	797,365	300,097	70,308	113,616	313,344
Oak-hickory	2,516,249	126,829	31,891	521,967	1,835,562	2,319,875	125,799	31,891	490,277	1,671,908
Oak-gum-cypress	27,876	5,593	--	19,082	3,201	26,146	5,593	--	17,352	3,201
Elm-ash-cottonwood	61,122	2,029	--	41,408	17,685	54,052	2,029	--	37,303	14,720
Maple-beech-birch	--	--	--	--	--	--	--	--	--	--
All types	5,154,363	1,655,053	280,099	832,692	2,386,519	4,829,025	1,640,667	280,099	773,616	2,134,643

Table 22.--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class, North Georgia, 1983 to 1989

Treatment or disturbance	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
		Acres[a]			
Final harvest	47,030	7,059	6,644	532	32,795
Partial harvest[b]	11,961	742	1,599	--	9,620
Commercial thinning	1,529	55	--	--	1,474
Other stand improvement	4,034	2,315	--	--	1,719
Site preparation	17,245	2,583	8,699	532	5,431
Artificial regeneration[c]	22,234	4,021	10,369	532	7,312
Natural regeneration[c]	38,001	8,655	540	--	28,806
Other treatment	2,909	--	--	--	2,909
Natural disturbance	22,127	4,676	364	637	16,450

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

[b]Includes high grading and some selective cutting.

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

Table 23.--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class, North Georgia, 1983 to 1989

Treatment or disturbance	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres[b]				
Final harvest	47,030	2,295	23,448	7,351	13,936	--
Partial harvest[c]	11,961	--	4,461	3,371	3,392	737
Commercial thinning	1,529	--	1,529	--	--	--
Other stand improvement	4,034	--	--	719	3,315	--
Site preparation	17,245	1,147	7,916	3,746	3,895	541
Other treatment	2,909	--	651	737	1,521	--
Natural disturbance	22,127	637	11,466	2,847	6,440	737

[a]Classification before treatment or disturbance.

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

[c]Includes high grading and some selective cutting.

Table 24.--Area of timberland regenerated annually, by type of regeneration and broad management class, North Georgia, 1983 to 1989

Type of regeneration	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		Acres				
Artificial regeneration following harvest	13,461	9,221	--	4,240	--	--
Natural regeneration following harvest	18,194	--	1,405	4,994	11,795	--
Other artificial regeneration on forest land	5,829	4,735	--	375	719	--
Other natural regeneration on forest land	14,500	--	4,321	3,954	6,225	--
Artificial regeneration on nonforest land	2,944	2,944	--	--	--	--
Natural reversion of nonforest land	5,307	--	3,049	--	2,258	--
Total	60,235	16,900	8,775	13,563	20,997	--

[a]Classification after regeneration.

Table 25.--Area of timberland, by treatment opportunity and broad management classes, North Georgia, 1989

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
Salvage	6,294	--	2,355	--	3,939	--
Harvest	118,410	--	40,874	10,069	67,467	--
Commercial thinning	102,289	12,412	89,877	--	--	--
Other stand improvement	242,825	3,464	37,415	73,133	114,154	14,659
Stand conversion	13,175	--	--	--	13,175	--
Regeneration	242,357	--	24,430	30,647	182,561	4,719
Stands in relatively good condition	1,561,081	176,475	433,053	324,323	606,145	21,085
Adverse sites[a]	666,535	--	92,460	115,142	458,933	--
All classes	2,952,966	192,351	720,464	553,314	1,446,374	40,463

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

Table 26.--Area of timberland, by treatment opportunity and ownership classes, North Georgia, 1989

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
			Acres		
Salvage	6,294	2,355	--	--	3,939
Harvest	118,410	47,976	--	--	70,434
Commercial thinning	102,289	--	13,619	--	88,670
Other stand improvement	242,825	39,260	34,877	--	168,688
Stand conversion	13,175	--	3,856	--	9,319
Regeneration	242,357	22,607	7,615	--	212,135
Stands in relatively good condition	1,561,081	262,250	187,459	11,801	1,099,571
Adverse sites[a]	666,535	346,611	9,950	--	309,974
All classes	2,952,966	721,059	257,376	11,801	1,962,730

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

Table 27.--Merchantable volume of live trees and growing stock on timberland, by ownership class and species group, North Georgia, 1989

Ownership class	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National forest	1,324,527	187,742	181,201	183,481	772,103	1,220,556	186,687	181,201	171,445	681,223
Other public	172,749	61,819	1,243	43,707	65,980	165,274	61,819	1,243	42,248	59,964
Forest industry	291,099	165,999	--	26,984	98,116	277,345	165,999	--	24,295	87,051
Forest industry-leased	12,864	12,864	--	--	--	12,419	12,419	--	--	--
Other private	3,353,124	1,226,629	97,655	578,520	1,450,320	3,153,431	1,213,743	97,655	535,628	1,306,405
All ownerships	5,154,363	1,655,053	280,099	832,692	2,386,519	4,829,025	1,640,667	280,099	773,616	2,134,643

Table 28.--Volume of sawtimber on timberland, by ownership class and species group, North Georgia, 1989

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	1,537,750	466,710	233,590	213,899	623,551	2,773,353	163,261	703,325	263,032	1,643,735
Other public	246,818	119,479	4,550	39,775	83,014	295,667	152,935	--	69,944	72,788
Forest industry	394,526	279,947	--	20,578	94,001	201,128	57,447	--	19,745	123,936
Forest industry-leased	40,534	40,534	--	--	--	--	--	--	--	--
Other private	5,305,518	2,884,959	104,575	613,129	1,702,855	3,854,145	822,920	346,732	780,456	1,904,037
All ownerships	7,525,146	3,791,629	342,715	887,381	2,503,421	7,124,293	1,196,563	1,050,057	1,133,177	3,744,496

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

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

Table 29.--Average net annual growth and removals of growing stock on timberland, by ownership class and species group, North Georgia, 1983-1988

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	27,235	4,046	5,339	4,642	13,208	32,055	4,958	3,578	6,402	17,117
Other public	4,076	1,340	93	891	1,752	5,873	5,873	--	--	--
Forest industry	14,115	10,426	14	1,268	2,407	17,525	13,908	119	2,379	1,119
Forest industry-leased	609	609	--	--	--	1,005	1,005	--	--	--
Other private	95,768	39,516	3,777	18,450	34,025	75,207	55,366	1,419	5,256	13,166
All ownerships	141,803	55,937	9,223	25,251	51,392	131,665	81,110	5,116	14,037	31,402

Table 30.--Average net annual growth and removals of sawtimber on timberland, by ownership class and species group, North Georgia, 1983-1988

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	120,541	21,611	29,546	16,821	52,563	109,603	20,259	21,047	19,179	49,118
Other public	22,953	9,302	527	3,989	9,135	26,424	26,424	--	--	--
Forest industry	38,560	29,407	--	2,137	7,016	49,384	39,185	459	9,185	555
Forest industry-leased	3,421	3,421	--	--	--	1,483	1,483	--	--	--
Other private	411,715	194,046	19,613	66,574	131,482	234,758	174,388	8,102	17,513	34,755
All ownerships	597,190	257,787	49,686	89,521	200,196	421,652	261,739	29,608	45,877	84,428

Table 31.--Volume of timber on timberland, by class of timber and species group, North Georgia, 1989

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet				
Sawtimber trees					
Saw-log portion	2,811,567	980,661	237,132	369,578	1,224,196
Upper-stem portion[a]	451,613	127,875	15,381	74,676	233,681
Total	3,263,180	1,108,536	252,513	444,254	1,457,877
Poletimber trees	1,565,845	532,131	27,586	329,362	676,766
All growing-stock trees	4,829,025	1,640,667	280,099	773,616	2,134,643
Rough trees					
Sawtimber size	84,449	6,612	--	15,320	62,517
Poletimber size	187,351	7,774	--	25,792	153,785
Total	271,800	14,386	--	41,112	216,302
Rotten trees					
Sawtimber size	44,905	--	--	13,945	30,960
Poletimber size	8,633	--	--	4,019	4,614
Total	53,538	--	--	17,964	35,574
Salvable dead trees					
Sawtimber size	5,882	2,051	128	342	3,361
Poletimber size	5,617	2,395	48	457	2,717
Total	11,499	4,446	176	799	6,078
Total, all timber	5,165,862	1,659,499	280,275	833,491	2,392,597

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

Table 32.--Number of live trees on timberland, by species and diameter class, North Georgia, 1989

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	691	290	290	--	--	--	94	--	--	--	17	--	--
Slash pine	287	287	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	69,430	16,994	12,460	12,895	12,394	7,596	4,735	1,486	602	185	68	15	--
Loblolly pine	126,097	52,220	26,522	17,101	13,600	6,664	4,845	2,792	1,522	475	240	116	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	156,394	54,790	37,264	23,060	19,287	13,947	5,470	1,890	568	90	18	10	--
Pitch pine	3,758	313	1,052	547	380	558	246	310	207	97	--	48	--
Table Mountain pine	2,015	837	243	386	266	110	97	60	--	16	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	51,983	31,080	11,328	1,432	2,385	1,334	1,278	808	638	646	344	662	48
Eastern hemlock	14,735	10,161	2,076	1,286	339	273	318	205	29	--	17	25	6
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	14,363	10,143	3,292	853	--	75	--	--	--	--	--	--	--
Total softwoods	439,753	177,115	94,527	57,560	48,651	30,557	17,083	7,551	3,566	1,509	704	876	54
Hardwood													
Select white oaks	91,418	39,216	23,323	10,073	5,445	4,680	3,204	2,754	1,152	713	482	352	24
Select red oaks	24,384	11,746	2,882	3,512	1,585	711	1,272	739	648	398	342	526	23
Chestnut oak	85,710	24,361	21,184	14,989	7,497	5,877	4,176	3,460	1,754	1,142	525	688	57
Other white oaks	32,334	16,383	7,248	2,620	3,294	1,403	651	378	237	110	--	10	--
Other red oaks	129,652	50,878	31,583	13,929	10,625	7,814	6,035	4,131	2,312	1,284	535	513	13
Hickory	129,090	75,112	25,606	10,289	6,312	5,284	2,538	1,962	1,131	481	155	220	--
Yellow birch	314	314	--	--	--	--	--	--	--	--	--	--	--
Hard maple	7,579	5,603	1,731	--	87	158	--	--	--	--	--	--	--
Soft maple	235,130	176,841	34,965	12,243	5,537	2,307	1,867	665	278	227	109	82	9
Beech	9,369	6,327	1,604	672	318	65	56	70	61	44	58	94	--
Sweetgum	63,224	40,849	11,906	5,238	2,207	1,680	543	474	107	110	73	37	--
Tupelo and blackgum	104,528	85,448	11,643	3,106	2,733	534	419	333	155	82	31	44	--
Ash	10,729	6,848	1,167	803	394	775	286	395	--	20	16	25	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	1,044	--	584	--	106	61	259	--	25	--	--	9	--
Yellow-poplar	96,806	53,936	13,926	8,804	6,147	5,374	3,311	2,392	1,508	628	429	336	15
Bay and magnolia	1,050	930	--	--	120	--	--	--	--	--	--	--	--
Black cherry	41,142	29,239	7,785	2,538	990	420	83	26	34	--	--	27	--
Black walnut	1,043	615	281	--	111	--	--	36	--	--	--	--	--
Sycamore	1,980	--	926	329	231	287	59	104	--	--	18	19	7
Black locust	6,696	3,970	820	814	405	410	106	--	108	20	32	11	--
Elm	18,589	14,868	1,977	553	793	312	--	40	--	46	--	--	--
Other eastern hardwoods	550,413	402,882	102,182	30,407	10,019	2,697	1,200	701	214	40	71	--	--
Total hardwoods	1,642,224	1,046,366	303,323	120,919	64,956	40,849	26,065	18,660	9,724	5,345	2,876	2,993	148
All species	2,081,977	1,223,481	397,850	178,479	113,607	71,406	43,148	26,211	13,290	6,854	3,580	3,869	202

Table 33.--Number of growing-stock trees on timberland, by species and diameter class, North Georgia, 1989

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	691	290	290	--	--	--	94	--	--	--	17	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	65,157	14,047	11,549	12,580	12,294	7,596	4,735	1,486	602	185	68	15	--
Loblolly pine	121,038	49,066	25,343	16,597	13,464	6,591	4,845	2,792	1,522	475	240	103	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	148,894	49,338	36,060	22,748	19,016	13,730	5,470	1,890	534	90	18	--	--
Pitch pine	3,758	313	1,052	547	380	558	246	310	207	97	--	48	--
Table Mountain pine	1,772	837	--	386	266	110	97	60	--	16	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	49,634	29,287	10,772	1,432	2,385	1,334	1,278	808	638	646	344	662	48
Eastern hemlock	13,893	9,587	1,808	1,286	339	273	318	205	29	--	17	25	6
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	13,190	8,970	3,292	853	--	75	--	--	--	--	--	--	--
Total softwoods	418,027	161,735	90,166	56,429	48,144	30,267	17,083	7,551	3,532	1,509	704	853	54
Hardwood													
Select white oaks	77,144	28,616	21,077	9,308	5,337	4,498	3,059	2,720	1,077	679	421	328	24
Select red oaks	21,657	9,980	2,343	3,297	1,585	711	1,272	669	619	352	325	481	23
Chestnut oak	70,145	16,162	17,369	13,953	6,484	5,458	3,798	3,217	1,618	983	468	592	43
Other white oaks	27,674	14,942	5,237	2,029	2,891	1,403	523	348	208	83	--	10	--
Other red oaks	110,373	37,654	28,481	12,918	10,049	7,285	5,662	3,966	2,233	1,186	481	451	7
Hickory	100,601	51,602	21,448	9,834	6,182	5,216	2,488	1,962	1,046	462	155	206	--
Yellow birch	314	314	--	--	--	--	--	--	--	--	--	--	--
Hard maple	3,441	2,036	1,160	--	87	158	--	--	--	--	--	--	--
Soft maple	146,773	103,151	26,174	8,750	4,489	1,738	1,434	594	190	147	58	48	--
Beech	6,899	3,986	1,604	672	318	65	56	37	61	21	18	61	--
Sweetgum	48,779	29,140	9,433	5,018	2,207	1,680	543	474	83	110	54	37	--
Tupelo and blackgum	53,360	39,916	7,737	2,176	2,384	392	334	255	80	43	31	12	--
Ash	8,719	5,053	1,167	803	283	704	286	362	--	20	16	25	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	345	--	--	--	--	61	259	--	25	--	--	--	--
Yellow-poplar	92,255	50,260	13,358	8,804	6,147	5,237	3,311	2,322	1,477	605	413	313	8
Bay and magnolia	740	620	--	--	120	--	--	--	--	--	--	--	--
Black cherry	23,078	15,502	4,846	1,739	435	420	83	26	--	--	--	27	--
Black walnut	317	--	281	--	--	--	--	36	--	--	--	--	--
Sycamore	1,883	--	926	329	231	229	59	65	--	--	18	19	7
Black locust	4,887	3,343	566	419	274	203	53	--	29	--	--	--	--
Elm	11,027	7,913	1,685	553	553	261	--	40	--	22	--	--	--
Other eastern hardwoods	17,991	12,443	2,072	1,505	984	295	329	104	186	18	55	--	--
Total hardwoods	828,402	432,633	166,964	82,107	51,040	36,014	23,549	17,197	8,932	4,731	2,513	2,610	112
All species	1,246,429	594,368	257,130	138,536	99,184	66,281	40,632	24,748	12,464	6,240	3,217	3,463	166

Table 34.--Merchantable volume of live trees on timberland, by species and diameter class, North Georgia, 1989

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	2,888	--	--	--	1,917	--	--	--	971	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	428,264	41,721	94,967	105,568	99,539	44,591	26,170	9,819	4,834	1,055	--
Loblolly pine	528,457	44,707	96,130	86,124	99,076	81,979	64,404	26,329	17,548	12,160	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	642,900	89,428	164,406	193,139	111,424	55,899	22,082	4,418	903	1,201	--
Pitch pine	42,521	1,343	2,421	6,332	5,371	9,667	7,963	5,195	--	4,229	--
Table Mountain pine	10,023	2,127	2,655	1,436	1,644	1,592	--	569	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	251,556	4,368	15,932	14,486	25,336	23,111	25,843	37,209	24,521	71,054	9,696
Eastern hemlock	26,099	3,183	2,246	2,759	6,350	5,427	1,210	--	1,192	2,435	1,297
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	2,444	1,857	--	587	--	--	--	--	--	--	--
Total softwoods	1,935,152	188,734	378,757	410,431	350,657	222,266	147,672	83,539	49,969	92,134	10,993
Hardwood											
Select white oaks	406,097	28,161	35,161	56,714	59,742	78,258	45,414	36,424	30,164	31,925	4,134
Select red oaks	195,519	12,204	10,353	8,680	22,846	18,362	23,914	19,836	22,294	51,686	5,344
Chestnut oak	505,044	40,230	44,796	65,919	71,224	87,347	57,760	49,512	27,932	53,895	6,429
Other white oaks	71,898	7,892	17,048	15,879	10,741	8,664	7,028	3,842	--	804	--
Other red oaks	623,344	37,459	72,194	84,632	106,655	107,806	82,000	60,021	31,496	39,663	1,418
Hickory	329,426	26,689	39,446	61,690	46,110	53,604	43,240	26,485	11,215	20,947	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	2,147	--	561	1,586	--	--	--	--	--	--	--
Soft maple	174,253	40,769	33,544	24,332	30,272	16,513	8,256	8,764	5,266	5,749	788
Beech	23,832	1,873	2,318	881	764	2,029	2,369	1,822	2,781	8,995	--
Sweetgum	94,528	15,158	13,876	20,271	11,116	14,420	4,861	6,568	4,681	3,577	--
Tupelo and blackgum	51,698	7,165	14,526	4,824	6,770	6,418	3,843	2,929	1,918	3,305	--
Ash	34,725	2,192	2,955	9,765	5,655	10,446	--	968	1,027	1,717	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	7,793	--	466	1,065	4,586	--	1,214	--	--	462	--
Yellow-poplar	447,306	28,575	46,223	71,197	70,320	71,634	61,815	32,912	28,573	33,646	2,411
Bay and magnolia	731	--	731	--	--	--	--	--	--	--	--
Black cherry	21,770	7,476	5,029	4,161	1,338	538	784	--	--	2,444	--
Black walnut	1,490	--	736	--	--	754	--	--	--	--	--
Sycamore	13,775	1,702	2,091	2,509	1,120	2,470	--	--	1,191	1,715	977
Black locust	12,867	1,707	2,261	3,865	1,316	--	2,352	307	443	616	--
Elm	12,690	1,275	4,760	4,196	--	882	--	1,577	--	--	--
Other eastern hardwoods	188,278	68,087	49,824	24,659	19,888	13,788	7,210	1,264	3,558	--	--
Total hardwoods	3,219,211	328,614	398,899	466,825	470,463	493,933	352,060	253,231	172,539	261,146	21,501
All species	5,154,363	517,348	777,656	877,256	821,120	716,199	499,732	336,770	222,508	353,280	32,494

Table 35.--Volume of growing stock on timberland, by species and diameter class, North Georgia, 1989

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	2,888	--	--	--	1,917	--	--	--	971	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	426,372	40,515	94,281	105,568	99,539	44,591	26,170	9,819	4,834	1,055	--
Loblolly pine	525,181	43,281	95,685	85,613	99,076	81,979	64,404	26,329	17,548	11,266	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	633,682	88,543	161,280	190,163	111,424	55,899	21,052	4,418	903	--	--
Pitch pine	42,521	1,343	2,421	6,332	5,371	9,667	7,963	5,195	--	4,229	--
Table Mountain pine	10,023	2,127	2,655	1,436	1,644	1,592	--	569	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	251,556	4,368	15,932	14,486	25,336	23,111	25,843	37,209	24,521	71,054	9,696
Eastern hemlock	26,099	3,183	2,246	2,759	6,350	5,427	1,210	--	1,192	2,435	1,297
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	2,444	1,857	--	587	--	--	--	--	--	--	--
Total softwoods	1,920,766	185,217	374,500	406,944	350,657	222,266	146,642	83,539	49,969	90,039	10,993
Hardwood											
Select white oaks	393,275	25,685	34,599	55,018	58,488	77,342	43,989	35,145	27,839	31,036	4,134
Select red oaks	188,115	11,652	10,353	8,680	22,846	17,044	23,564	18,020	21,729	48,883	5,344
Chestnut oak	474,783	38,436	41,010	62,651	66,725	82,898	54,724	45,737	26,578	50,273	5,751
Other white oaks	66,203	6,214	15,695	15,879	9,259	8,204	6,358	3,790	--	804	--
Other red oaks	600,467	35,204	69,600	81,422	103,487	105,640	80,169	57,273	29,990	36,615	1,067
Hickory	323,491	25,766	38,916	61,151	45,538	53,604	41,127	25,800	11,215	20,374	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	2,147	--	561	1,586	--	--	--	--	--	--	--
Soft maple	142,736	31,146	29,475	19,927	25,168	15,505	6,845	6,782	3,616	4,272	--
Beech	18,086	1,873	2,318	881	764	1,031	2,369	1,044	1,179	6,627	--
Sweetgum	93,134	14,884	13,876	20,271	11,116	14,420	4,045	6,568	4,377	3,577	--
Tupelo and blackgum	41,853	5,168	13,434	4,405	5,494	5,631	2,698	2,107	1,918	998	--
Ash	32,805	2,192	2,311	9,031	5,655	9,904	--	968	1,027	1,717	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	6,865	--	--	1,065	4,586	--	1,214	--	--	--	--
Yellow-poplar	441,224	28,575	46,223	69,951	70,320	71,098	61,221	32,141	27,516	32,400	1,779
Bay and magnolia	731	--	731	--	--	--	--	--	--	--	--
Black cherry	16,838	5,562	2,795	4,161	1,338	538	--	--	--	2,444	--
Black walnut	754	--	--	--	--	754	--	--	--	--	--
Sycamore	12,855	1,702	2,091	2,458	1,120	1,601	--	--	1,191	1,715	977
Black locust	7,348	1,116	1,885	2,520	817	--	1,010	--	--	--	--
Elm	10,474	1,275	3,763	3,735	--	882	--	819	--	--	--
Other eastern hardwoods	34,075	4,909	6,391	3,950	6,627	2,427	6,342	556	2,873	--	--
Total hardwoods	2,908,259	241,359	336,027	428,742	439,348	468,523	335,675	236,750	161,048	241,735	19,052
All species	4,829,025	426,576	710,527	835,686	790,005	690,789	482,317	320,289	211,017	331,774	30,045

Table 36.--Volume of sawtimber on timberland, by species and diameter class, North Georgia, 1989

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	15,352	--	9,196	--	--	--	6,156	--	--
Slash pine	--	--	--	--	--	--	--	--	--
Shortleaf pine	1,318,462	395,212	452,133	229,614	146,828	57,991	29,906	6,778	--
Loblolly pine	1,881,765	306,246	445,473	420,031	363,878	159,142	110,857	76,138	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	1,554,565	685,908	471,872	262,779	105,666	23,400	4,940	--	--
Pitch pine	193,517	19,791	23,722	48,530	43,391	30,363	--	27,720	--
Table Mountain pine	24,531	5,584	7,319	8,219	--	3,409	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	1,292,522	51,828	112,071	114,140	139,209	212,549	146,494	450,459	65,772
Eastern hemlock	97,793	9,410	26,960	25,849	6,016	--	6,626	14,476	8,456
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--
Cedars	2,457	2,457	--	--	--	--	--	--	--
Total softwoods	6,380,964	1,476,436	1,548,746	1,109,162	804,988	486,854	304,979	575,571	74,228
Hardwood									
Select white oaks	1,200,585	--	197,411	308,261	195,150	166,950	140,426	167,982	24,405
Select red oaks	699,033	--	75,794	63,982	99,389	80,776	102,756	246,592	29,744
Chestnut oak	1,396,472	--	219,362	318,446	232,369	208,130	127,496	258,390	32,279
Other white oaks	121,944	--	33,891	34,710	29,656	18,935	--	4,752	--
Other red oaks	1,777,603	--	357,406	427,065	358,824	277,528	152,904	197,354	6,522
Hickory	858,397	--	157,322	217,916	186,143	125,740	58,048	113,228	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--
Soft maple	239,077	--	80,822	59,497	28,797	30,590	17,399	21,972	--
Beech	52,231	--	2,776	3,908	9,169	4,149	4,745	27,484	--
Sweetgum	200,635	--	40,015	60,165	19,718	34,776	24,484	21,477	--
Tupelo and blackgum	74,217	--	17,200	21,183	11,857	9,568	9,352	5,057	--
Ash	74,649	--	17,897	37,849	--	4,520	5,141	9,242	--
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	20,336	--	14,964	--	5,372	--	--	--	--
Yellow-poplar	1,409,449	--	253,652	310,229	301,848	171,734	157,148	202,796	12,042
Bay and magnolia	--	--	--	--	--	--	--	--	--
Black cherry	20,883	--	4,811	2,332	--	--	--	13,740	--
Black walnut	2,797	--	--	2,797	--	--	--	--	--
Sycamore	30,523	--	3,334	6,240	--	--	5,832	9,436	5,681
Black locust	6,690	--	2,871	--	3,819	--	--	--	--
Elm	7,149	--	--	3,455	--	3,694	--	--	--
Other eastern hardwoods	75,805	--	23,583	9,656	26,608	2,406	13,552	--	--
Total hardwoods	8,268,475	--	1,503,111	1,887,691	1,508,719	1,139,496	819,283	1,299,502	110,673
All species	14,649,439	1,476,436	3,051,857	2,996,853	2,313,707	1,626,350	1,124,262	1,875,073	184,901

Table 37.--Volume of sawtimber on timberland, by species, size class, and tree grade, North Georgia, 1989

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades	Tree grade				All grades	Tree grade			
		1	2	3	4		1	2	3	4
	Thousand board feet									
Softwood										
Yellow pines[a]	4,988,192	671,696	1,070,924	3,245,572	--	1,196,563	264,581	337,898	594,084	--
Eastern white pine[b]	1,292,522	149,820	337,013	795,510	10,179	1,014,483	130,781	298,665	577,791	7,246
Spruce and fir[b]	--	--	--	--	--	--	--	--	--	--
Cypress[c]	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods[b]	100,250	7,822	21,126	71,302	--	35,574	7,822	21,126	6,626	--
Total	6,380,964	829,338	1,429,063	4,112,384	10,179	2,246,620	403,184	657,689	1,178,501	7,246
Hardwood[c]										
Select white and red oaks	1,899,618	392,187	513,344	732,265	261,822	1,254,170	392,187	410,968	342,438	108,577
Other white and red oaks	3,296,019	382,225	872,311	1,543,478	498,005	1,905,139	382,225	697,374	610,012	215,528
Hickory	858,397	130,461	299,945	347,106	80,885	483,159	130,461	235,569	94,581	22,548
Yellow birch	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--
Sweetgum	200,635	62,887	16,627	107,508	13,613	100,455	62,887	6,209	31,359	--
Ash, walnut, and black cherry	98,329	18,881	20,071	51,660	7,717	32,643	18,881	9,242	--	4,520
Yellow-poplar	1,409,449	289,898	433,111	556,008	130,432	845,568	289,898	307,126	192,824	55,720
Other eastern hardwoods	506,028	34,209	83,601	298,130	90,088	256,539	34,209	62,509	116,983	42,838
Total	8,268,475	1,310,748	2,239,010	3,636,155	1,082,562	4,877,673	1,310,748	1,728,997	1,388,197	449,731
All species	14,649,439	2,140,086	3,668,073	7,748,539	1,092,741	7,124,293	1,713,932	2,386,686	2,566,698	456,977

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

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

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

Table 38.--Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class, North Georgia, 1989

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	2,711	--	1,753	--	--	--	958	--	--
Slash pine	--	--	--	--	--	--	--	--	--
Shortleaf pine	259,062	85,109	90,452	42,485	25,511	9,676	4,785	1,044	--
Loblolly pine	349,648	66,464	88,893	77,383	62,473	25,908	17,373	11,154	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	328,830	152,066	99,545	52,101	19,999	4,246	873	--	--
Pitch pine	35,569	4,904	4,871	9,066	7,589	5,008	--	4,131	--
Table Mountain pine	4,841	1,221	1,515	1,542	--	563	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	218,038	11,436	22,636	21,454	24,514	35,692	23,685	69,129	9,492
Eastern hemlock	18,605	2,129	5,603	4,999	1,128	--	1,138	2,347	1,261
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--
Cedars	489	489	--	--	--	--	--	--	--
Total softwoods	1,217,793	323,818	315,268	209,030	141,214	81,093	48,812	87,805	10,753
Hardwood									
Select white oaks	234,779	--	41,383	63,640	38,644	31,879	25,834	29,404	3,995
Select red oaks	132,839	--	16,163	13,414	19,847	15,583	19,147	43,804	4,881
Chestnut oak	281,764	--	48,110	68,145	47,670	41,086	24,341	46,942	5,470
Other white oaks	23,424	--	6,796	6,820	5,596	3,443	--	769	--
Other red oaks	345,065	--	73,324	86,539	70,170	51,939	27,724	34,368	1,001
Hickory	165,817	--	32,942	44,160	35,955	23,284	10,335	19,141	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--
Soft maple	48,154	--	16,848	12,367	5,802	5,953	3,257	3,927	--
Beech	11,373	--	541	834	1,997	915	1,048	6,038	--
Sweetgum	36,915	--	7,877	11,697	3,618	6,103	4,152	3,468	--
Tupelo and blackgum	15,062	--	3,719	4,476	2,343	1,863	1,743	918	--
Ash	15,286	--	3,832	7,994	--	876	954	1,630	--
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	4,228	--	3,155	--	1,073	--	--	--	--
Yellow-poplar	251,191	--	49,185	58,654	54,383	29,654	26,045	31,509	1,761
Bay and magnolia	--	--	--	--	--	--	--	--	--
Black cherry	3,745	--	1,013	457	--	--	--	2,275	--
Black walnut	620	--	--	620	--	--	--	--	--
Sycamore	5,538	--	672	1,260	--	--	1,072	1,606	928
Black locust	1,414	--	570	--	844	--	--	--	--
Elm	1,423	--	--	708	--	715	--	--	--
Other eastern hardwoods	15,137	--	4,566	1,973	5,516	503	2,579	--	--
Total hardwoods	1,593,774	--	310,696	383,758	293,458	213,796	148,231	225,799	18,036
All species	2,811,567	323,818	625,964	592,788	434,672	294,889	197,043	313,604	28,789

Table 39.--Total volume of live trees on timberland, by species and diameter class, North Georgia, 1989

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	4,183	140	780	--	--	--	2,180	--	--	--	1,083	--	--
Slash pine	44	44	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	524,305	4,627	14,283	57,161	114,444	122,462	113,679	50,504	29,502	11,038	5,423	1,182	--
Loblolly pine	662,338	11,760	26,814	64,388	117,123	100,451	113,393	92,957	72,589	29,567	19,668	13,628	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	831,918	14,547	52,101	117,603	196,782	225,399	128,629	64,159	25,259	5,043	1,030	1,366	--
Pitch pine	50,700	111	1,324	1,734	2,886	7,403	6,200	11,129	9,133	5,950	--	4,830	--
Table Mountain pine	12,002	130	190	2,583	3,109	1,654	1,881	1,811	--	644	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	314,930	8,664	13,978	5,737	19,312	17,098	29,531	26,795	29,851	42,893	28,225	81,707	11,139
Eastern hemlock	36,014	2,700	2,221	4,471	2,768	3,259	7,363	6,243	1,388	--	1,360	2,770	1,471
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	9,702	2,597	3,480	2,905	--	720	--	--	--	--	--	--	--
Total softwoods	2,446,136	45,320	115,171	256,582	456,424	478,446	402,856	253,598	167,722	95,135	56,789	105,483	12,610
Hardwood													
Select white oaks	558,704	10,880	31,669	42,530	46,229	71,875	74,913	97,172	56,267	45,013	37,432	39,646	5,078
Select red oaks	251,298	2,762	4,150	16,948	13,262	10,881	28,372	22,808	29,607	24,497	27,494	63,901	6,616
Chestnut oak	665,097	5,674	30,204	56,937	57,259	81,773	87,440	106,605	70,401	60,507	34,220	66,061	8,016
Other white oaks	107,043	3,933	8,624	11,613	23,067	20,383	13,686	10,985	8,831	4,912	--	1,009	--
Other red oaks	851,350	14,059	46,602	57,243	94,616	107,370	133,041	133,295	100,943	74,160	38,855	49,352	1,814
Hickory	460,510	14,673	29,345	42,055	51,892	77,384	56,748	65,250	52,572	31,959	13,458	25,174	--
Yellow birch	53	53	--	--	--	--	--	--	--	--	--	--	--
Hard maple	6,188	1,529	2,004	--	703	1,952	--	--	--	--	--	--	--
Soft maple	318,129	40,846	55,791	57,074	42,524	29,999	36,718	19,811	10,024	10,740	6,524	7,050	1,028
Beech	34,009	1,453	1,588	2,983	3,045	1,115	956	2,515	2,926	2,362	3,667	11,399	--
Sweetgum	138,876	9,186	14,290	22,402	17,197	23,979	12,883	16,557	5,536	7,450	5,358	4,038	--
Tupelo and blackgum	95,346	16,924	13,823	10,387	18,171	5,850	8,034	7,733	4,682	3,511	2,233	3,998	--
Ash	44,094	1,463	1,503	3,173	3,589	11,515	6,561	12,072	--	1,103	1,168	1,947	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	9,915	--	799	--	576	1,233	5,301	--	1,386	--	--	620	--
Yellow-poplar	547,925	13,071	18,809	38,601	54,992	82,081	79,997	81,057	69,644	37,004	32,083	37,817	2,769
Bay and magnolia	1,291	366	--	--	925	--	--	--	--	--	--	--	--
Black cherry	48,703	10,253	10,902	10,225	6,298	5,005	1,582	637	936	--	--	2,865	--
Black walnut	2,240	107	320	--	917	--	--	896	--	--	--	--	--
Sycamore	18,159	--	1,748	2,191	2,530	3,017	1,314	2,875	--	--	1,378	1,979	1,127
Black locust	18,427	992	575	2,493	2,877	4,850	1,675	--	3,015	483	647	820	--
Elm	21,329	2,365	3,217	1,804	5,977	5,080	--	1,039	--	1,847	--	--	--
Other eastern hardwoods	478,680	95,971	125,898	103,016	65,779	31,258	24,777	17,243	8,778	1,562	4,398	--	--
Total hardwoods	4,677,366	246,560	401,861	481,675	512,425	576,600	573,998	598,550	425,548	307,110	208,915	317,676	26,448
All species	7,123,502	291,880	517,032	738,257	968,849	1,055,046	976,854	852,148	593,270	402,245	265,704	423,159	39,058

Table 40.--Green weight of forest biomass on timberland, by species and diameter class, North Georgia, 1989

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	3,333	125	626	--	--	--	1,709	--	--	--	873	--	--
Slash pine	20	20	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	360,590	2,636	8,657	33,876	77,487	86,184	81,333	36,465	21,202	7,971	3,906	873	--
Loblolly pine	470,965	5,854	15,777	44,177	83,829	72,687	82,578	67,939	52,577	21,523	14,214	9,810	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	613,664	12,726	42,428	87,020	142,448	164,246	94,172	46,819	18,397	3,664	765	979	--
Pitch pine	33,730	100	1,199	1,139	1,963	4,885	4,075	7,280	6,037	3,882	--	3,170	--
Table Mountain pine	7,298	81	177	1,445	1,804	1,023	1,187	1,152	--	429	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	188,848	3,651	6,343	3,847	12,699	11,479	19,284	17,142	18,715	25,937	16,851	46,874	6,026
Eastern hemlock	26,406	1,590	1,417	3,520	2,171	2,677	5,594	4,788	965	--	910	1,850	924
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	6,511	1,621	2,225	2,099	--	566	--	--	--	--	--	--	--
Total softwoods	1,711,365	28,404	78,849	177,123	322,401	343,747	289,932	181,585	117,893	63,406	37,519	63,556	6,950
Hardwood													
Select white oaks	449,363	8,622	23,365	29,099	36,143	57,631	60,961	79,755	46,501	37,524	31,549	33,752	4,461
Select red oaks	202,907	2,356	3,097	12,231	10,751	8,868	23,571	18,917	24,422	19,977	22,285	51,211	5,221
Chestnut oak	521,984	5,166	23,507	40,043	43,410	63,413	68,540	84,256	56,658	48,609	27,718	53,822	6,842
Other white oaks	84,181	2,828	6,031	8,236	17,884	16,157	11,137	9,216	7,593	4,175	--	924	--
Other red oaks	710,230	11,056	34,689	40,860	76,409	90,641	113,918	114,139	87,370	63,941	33,469	42,226	1,512
Hickory	371,304	12,621	25,758	28,494	39,641	61,069	45,985	53,779	43,821	26,726	11,414	21,996	--
Yellow birch	42	42	--	--	--	--	--	--	--	--	--	--	--
Hard maple	5,140	1,290	1,692	--	576	1,582	--	--	--	--	--	--	--
Soft maple	231,645	30,929	39,510	39,658	32,215	22,161	27,220	14,606	7,342	7,722	4,611	4,966	705
Beech	26,700	1,197	1,374	1,624	2,199	850	865	2,025	2,328	1,919	2,947	9,372	--
Sweetgum	97,692	6,148	9,526	13,840	12,296	17,324	9,431	12,094	4,108	5,633	4,095	3,197	--
Tupelo and blackgum	65,355	13,251	10,171	5,619	11,301	3,835	5,341	5,407	3,373	2,524	1,605	2,928	--
Ash	27,629	862	954	2,252	2,453	7,363	4,011	7,284	--	632	660	1,158	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	6,647	--	550	--	380	777	3,562	--	940	--	--	438	--
Yellow-poplar	382,559	9,663	12,588	22,604	36,682	56,465	56,075	57,866	50,311	26,925	23,508	27,886	1,986
Bay and magnolia	809	241	--	--	568	--	--	--	--	--	--	--	--
Black cherry	29,977	5,050	7,279	5,886	4,173	3,249	1,114	470	682	--	--	2,074	--
Black walnut	2,006	85	275	--	777	--	--	869	--	--	--	--	--
Sycamore	12,455	--	1,187	1,139	1,515	2,042	887	2,154	--	--	1,037	1,595	899
Black locust	17,324	839	502	2,012	2,652	4,591	1,636	--	3,067	500	712	813	--
Elm	14,062	1,681	2,215	1,178	3,777	3,118	--	731	--	1,362	--	--	--
Other eastern hardwoods	370,316	82,656	105,031	71,286	48,112	22,349	17,525	11,264	7,367	1,203	3,523	--	--
Total hardwoods	3,630,327	196,583	309,301	326,061	383,914	443,485	451,779	474,832	345,883	249,372	169,133	258,358	21,626
All species	5,341,692	224,987	388,150	503,184	706,315	787,232	741,711	656,417	463,776	312,778	206,652	321,914	28,576

Table 41.--Average net annual growth and removals of live timber and growing stock on timberland, by species, North Georgia, 1983-1988

Species	Live timber[a]		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	Thousand cubic feet			
Softwood				
Yellow pines	55,937	81,495	55,937	81,110
Eastern white pine	7,774	4,151	7,774	4,151
Spruce and fir	--	--	--	--
Cypress	--	--	--	--
Other eastern softwoods	1,449	965	1,449	965
Total softwoods	65,160	86,611	65,160	86,226
Hardwood				
Select white and red oaks	13,973	11,392	13,840	11,199
Other white and red oaks	30,508	16,857	30,142	15,659
Hickory	5,392	2,754	5,365	2,488
Yellow birch	--	--	--	--
Hard maple	114	--	114	--
Sweetgum	2,781	962	2,769	801
Ash, walnut, and black cherry	1,645	1,162	1,534	985
Yellow-poplar	14,111	8,926	14,065	8,384
Tupelo and blackgum	993	136	963	136
Bay and magnolia	25	684	25	684
Other eastern hardwoods	9,747	8,395	7,826	5,103
Total hardwoods	79,289	51,268	76,643	45,439
All species	144,449	137,879	141,803	131,665

[a]Merchantable portion only.

Table 42.--Average net annual growth and removals of sawtimber on timberland, by species, North Georgia, 1983-1988

Species	Net annual growth	Annual timber removals
	Thousand board feet	
Softwood		
Yellow pines	257,787	261,739
Eastern white pine	44,788	24,620
Spruce and fir	--	--
Cypress	--	--
Other eastern softwoods	4,898	4,988
Total softwoods	307,473	291,347
Hardwood		
Select white and red oaks	58,055	32,810
Other white and red oaks	114,539	43,349
Hickory	21,900	6,163
Yellow birch	--	--
Hard maple	--	--
Sweetgum	10,570	934
Ash, walnut, and black cherry	3,341	456
Yellow-poplar	65,251	33,235
Tupelo and blackgum	1,481	--
Bay and magnolia	--	826
Other eastern hardwoods	14,580	12,532
Total hardwoods	289,717	130,305
All species	597,190	421,652

Table 43.--Average annual removals of growing stock on timberland, by species and diameter class, North Georgia, 1983-1988

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	81,110	7,418	16,788	19,461	16,169	10,130	6,139	2,343	1,182	1,480	--
Eastern white pine	4,151	--	--	165	158	371	522	651	231	1,765	288
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Cypress	--	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods	965	--	--	119	157	136	176	--	192	--	185
Total softwoods	86,226	7,418	16,788	19,745	16,484	10,637	6,837	2,994	1,605	3,245	473
Hardwood											
Select white and red oaks	11,199	1,183	1,445	1,009	2,046	1,552	1,520	552	508	1,039	345
Other white and red oaks	15,659	1,257	1,397	3,031	2,642	1,120	3,089	1,153	842	819	309
Hickory	2,488	186	480	510	273	197	115	156	--	571	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	801	349	--	246	--	206	--	--	--	--	--
Ash, walnut, and black cherry	985	--	613	239	133	--	--	--	--	--	--
Yellow-poplar	8,384	757	404	524	970	1,607	1,945	639	432	838	268
Tupelo and blackgum	136	--	--	136	--	--	--	--	--	--	--
Bay and magnolia	684	529	--	--	--	--	--	--	--	155	--
Other eastern hardwoods	5,103	798	611	786	711	140	1,099	445	158	355	--
Total hardwoods	45,439	5,059	4,950	6,481	6,775	4,822	7,768	2,945	1,940	3,777	922
All species	131,665	12,477	21,738	26,226	23,259	15,459	14,605	5,939	3,545	7,022	1,395

Table 44.--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, North Georgia, 1983-1988

Species	Live timber[a]	Growing stock	Sawtimber
	Thousand cubic feet		Thousand board feet
Softwood			
Yellow pines	18,536	17,854	36,115
Eastern white pine	617	617	1,924
Spruce and fir	--	--	--
Cypress	--	--	--
Other eastern softwoods	93	93	394
Total softwoods	19,246	18,564	38,433
Hardwood			
Select white and red oaks	3,417	2,805	6,512
Other white and red oaks	12,544	10,256	26,236
Hickory	2,979	2,248	5,656
Yellow birch	--	--	--
Hard maple	--	--	--
Sweetgum	88	--	--
Ash, walnut, and black cherry	41	--	--
Yellow-poplar	1,243	1,090	1,966
Tupelo and blackgum	775	605	1,593
Bay and magnolia	--	--	--
Other eastern hardwoods	3,140	585	--
Total hardwoods	24,227	17,589	41,963
All species	43,473	36,153	80,396

[a]Merchantable portion only.

Table 45.--Change in number of live trees on timberland, by species group, survey completion date, and diameter class, North Georgia

Species group and year	All classes	Diameter class (inches at breast height)							
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0 and larger
		Thousand trees							
Yellow pine									
1983	454,245	139,811	118,740	74,076	60,523	33,242	16,950	6,754	4,149
1989	358,672	125,731	77,831	53,989	45,927	28,875	15,487	6,538	4,294
Change	-95,573	-14,080	-40,909	-20,087	-14,596	-4,367	-1,463	-216	+145
Other softwood									
1983	68,742	45,895	11,673	2,192	2,802	1,686	1,371	949	2,174
1989	81,081	51,384	16,696	3,571	2,724	1,682	1,596	1,013	2,415
Change	+12,339	+5,489	+5,023	+1,379	-78	-4	+225	+64	+241
Hardwood									
1983	1,865,887	1,223,087	340,199	132,081	64,777	42,845	27,084	15,944	19,870
1989	1,642,224	1,046,366	303,323	120,919	64,956	40,849	26,065	18,660	21,086
Change	-223,663	-176,721	-36,876	-11,162	+179	-1,996	-1,019	+2,716	+1,216

Table 46.--Land area, by land use class, major forest type, and survey completion date, North Georgia

Land use class	Survey completion date			Change 1983-1989
	1972	1983	1989	
		Acres		
Forest land				
Timberland:				
Pine and oak-pine types	1,698,424	1,536,595	1,466,129	-70,466
Hardwood types	1,494,074	1,560,140	1,486,837	-73,303
Total	3,192,498	3,096,735	2,952,966	-143,769
Reserved timberland	16,230	66,249	109,275	+43,026
Woodland	--	--	--	--
Total forest land	3,208,728	3,162,984	3,062,241	-100,743
Nonforest land				
Cropland	278,587	293,712	248,301	-45,411
Pasture and range	435,559	399,001	473,127	+74,126
Other	271,230	338,113	426,712	+88,599
Total	985,376	1,030,826	1,148,140	+117,314
All land[a]	4,194,104	4,193,810	4,210,381	+16,571

[a]Excludes all water areas.

Table 47.--Volume[a] of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, North Georgia

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										
1972	4,880,217	--	--	1,340,458	1,241,834	855,311	535,826	3,104,475	220,429	375,884
1983	6,278,788	--	--	1,510,382	1,559,093	1,110,728	809,378	409,182	338,552	541,473
1989	6,380,964	--	--	1,476,436	1,548,746	1,109,162	804,988	486,854	304,979	649,799
Hardwood										
1972	6,122,421	--	--		1,328,098	1,401,150	1,095,944	869,995	565,745	861,489
1983	7,260,111	--	--	--	1,512,793	1,555,912	1,479,863	916,389	657,338	1,137,816
1989	8,268,475	--	--	--	1,503,111	1,887,691	1,508,719	1,139,496	819,283	1,410,175
				--						
					GROWING STOCK (in thousand cubic feet)					
Softwood										
1972	1,858,936	331,254	428,851	382,423	289,016	174,761	100,323	54,482	37,507	60,319
1983	2,053,927	226,505	438,925	430,869	362,851	226,929	151,539	71,807	57,609	86,893
1989	1,920,766	185,217	374,500	406,944	350,657	222,266	146,642	83,539	49,969	101,032
Hardwood										
1972	2,382,823	218,881	310,944	380,770	399,917	357,631	251,904	185,898	114,903	161,975
1983	2,711,202	242,825	309,153	423,192	455,551	397,127	340,133	195,806	133,506	213,909
1989	2,908,259	241,359	336,027	428,742	439,348	468,523	335,675	236,750	161,048	260,787
					LIVE TIMBER[b] (in thousand cubic feet)					
Softwood										
1972	1,870,129	335,378	429,496	386,880	289,016	176,083	100,968	54,482	37,507	60,319
1983	2,065,316	229,442	439,749	435,901	362,851	228,602	152,462	71,807	57,609	86,893
1989	1,935,152	188,734	378,757	410,431	350,657	222,266	147,672	83,539	49,969	103,127
Hardwood										
1972	2,680,693	299,908	374,820	417,362	431,020	381,627	265,583	201,864	125,885	182,624
1983	3,042,279	332,214	372,606	464,033	491,101	423,698	358,594	212,596	146,252	241,185
1989	3,219,211	328,614	398,899	466,825	470,463	493,933	352,060	253,231	172,539	282,647

[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.

Brown, Mark J.; Thompson, Michael T.

Forest statistics for North Georgia, 1989. Resour. Bull. SE-107. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1989. 52 pp.

Since 1983, area of timberland in North Georgia has decreased by 5 percent and now totals almost 3.0 million acres. Nonindustrial private owners account for two-thirds of the region's timberland. The annual rate of planting experienced a fourfold increase over the previous rate and averaged 22,000 acres each year. Volume of softwood growing stock fell by 6 percent to 1.9 billion cubic feet. Volume of hardwood growing stock increased by more than 7 percent to 2.9 billion cubic feet. Net annual growth of softwood growing stock decreased by 26 percent to 65 million cubic feet. Hardwood growth was down by 4 percent to 77 million cubic feet. Softwood removals increased 67 percent, exceeding growth by 32 percent. Hardwood removals averaged 45 million cubic feet and exceeded growth by 69 percent. Annual mortality of growing stock increased for both softwoods and hardwoods and now totals 36 million cubic feet.

KEYWORDS: Timberland, land use trends, timberland ownership, timber volume, timber growth, timber removals.

Brown, Mark J.; Thompson, Michael T.

Forest statistics for North Georgia, 1989. Resour. Bull. SE-107. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1989. 52 pp.

Since 1983, area of timberland in North Georgia has decreased by 5 percent and now totals almost 3.0 million acres. Nonindustrial private owners account for two-thirds of the region's timberland. The annual rate of planting experienced a fourfold increase over the previous rate and averaged 22,000 acres each year. Volume of softwood growing stock fell by 6 percent to 1.9 billion cubic feet. Volume of hardwood growing stock increased by more than 7 percent to 2.9 billion cubic feet. Net annual growth of softwood growing stock decreased by 26 percent to 65 million cubic feet. Hardwood growth was down by 4 percent to 77 million cubic feet. Softwood removals increased 67 percent, exceeding growth by 32 percent. Hardwood removals averaged 45 million cubic feet and exceeded growth by 69 percent. Annual mortality of growing stock increased for both softwoods and hardwoods and now totals 36 million cubic feet.

KEYWORDS: Timberland, land use trends, timberland ownership, timber volume, timber growth, timber removals.

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

USDA policy prohibits discrimination because of race, color, national origin, sex, age, religion, or handicapping condition. Any person who believes he or she has been discriminated against in any USDA-related activity should immediately contact the Secretary of Agriculture, Washington, DC 20250.