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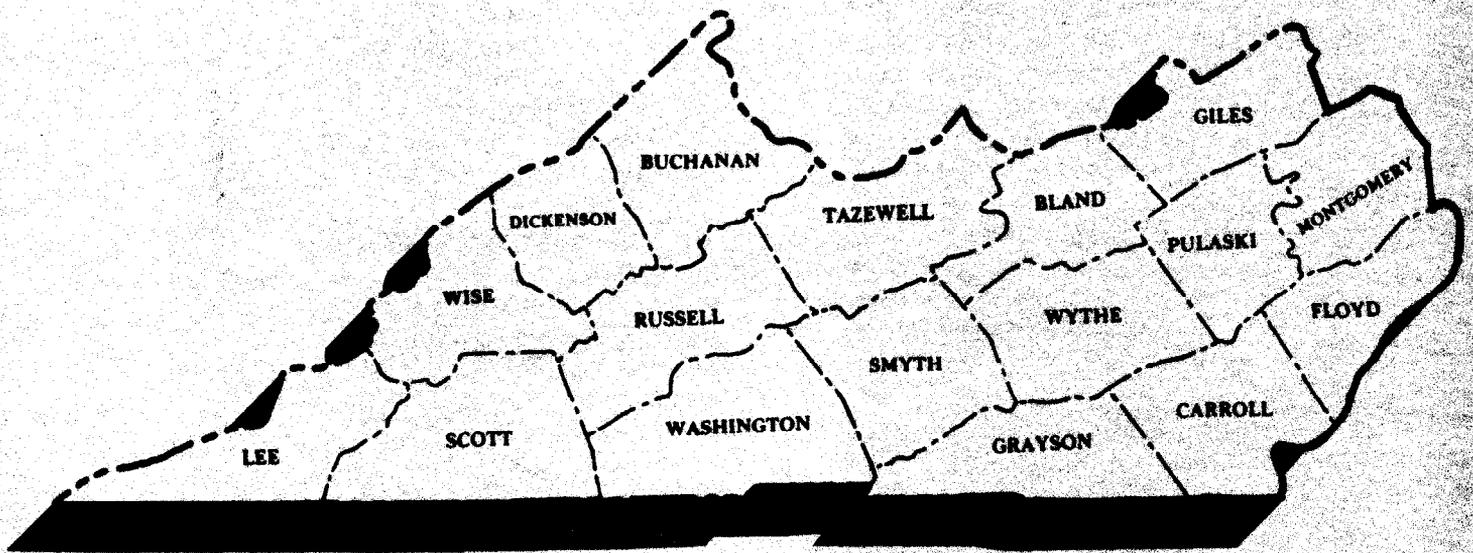


Southeastern Forest
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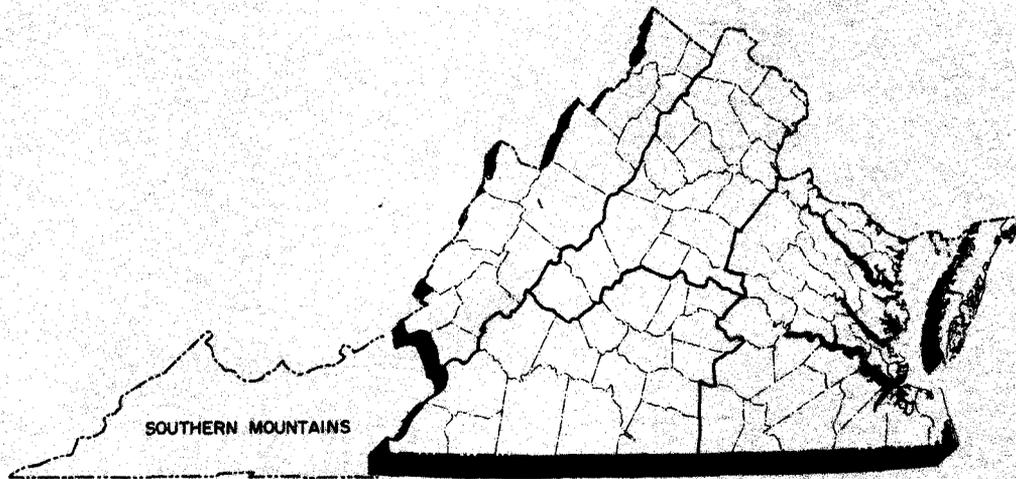
Resource Bulletin
SE-130

Forest Statistics for the Southern Mountains of Virginia, 1992

Michael T. Thompson



SOUTHERN MOUNTAINS



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July 1992

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P.O. Box 2680
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**Forest Statistics for
the Southern Mountains
of Virginia, 1992**

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Asheville, North Carolina

Foreword

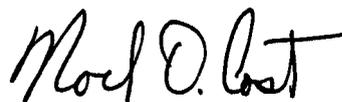
This report highlights the principal findings of the sixth forest survey in the Southern Mountains of Virginia. Field work began in November 1991 and was completed in January 1992. Five previous surveys, completed in 1940, 1957, 1966, 1977, and 1986, provide statistics for measuring changes and trends over the past 52 years. The primary emphasis in this report is on the changes and trends since 1986. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of forest resources are authorized by the Forest and Range-land Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These multiresource data help provide a basis for formulating forest policies and programs and for the orderly development and use of the resources. This report

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

The 17-county area covered by this report is one of five survey units in Virginia. Similar reports, USDA Forest Service Resource Bulletins SE-122, SE-124, SE-127, and SE-128, have been issued for the Coastal Plain, Southern Piedmont, Northern Piedmont, and Northern Mountains of Virginia. A report containing many of the State totals is being released with this report. An **indepth**, analytical report on the timber resource should be available in 1993.

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



Noel D. Cost
Project Leader

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

Trends in timberland area in 1986, as shown in this report, reflect a **1.4-percent** upward adjustment in the acreage of timberland estimated for 1986. The underestimate for 1986 was caused by incomplete and poor-quality aerial photography available for the 1986 survey and to the associated difficulties in photo interpretation of land use. For those desiring more information about the changes, please contact the FIA staff at:

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Since 1986 in the Southern Mountains of Virginia--

o area of timberland remained stable at 3.0 million acres. Timberland currently accounts for 63 percent of the total land area in this 17-county region. Land use changes occurred on over 112,000 acres. Over 50,000 acres were diverted to other land uses, while 62,000 acres were added to the timberland base. Nearly all of the additions were the result of natural seeding and tree planting on former agricultural land and strip-mined areas. Forest clearing for urban development accounted for 71 percent of the diversions and agriculture accounted for 27 percent.

• area of timberland held by nonindustrial private forest (NIPF) landowners remained stable at 2.5 million acres. NIPF owners presently control 83 percent of the timberland in the region. Within the NIPF category, area of farmer-owned timberland dropped by 10 percent to 759,000 acres. This decline was offset by a 9-percent increase in timberland owned by individuals who do not farm. Timberland controlled by corporations that do not manufacture forest products

remained stable at 467,000 acres. Publicly owned timberland, 88 percent of which is in National Forests, increased by 3 percent to 474,000 acres. Forest industry holdings declined by 31 percent and now total 45,000 acres.

• area of timberland classified as a hardwood forest type remained stable at 2.5 million acres. Hardwood types presently occupy 84 percent of the timberland in the region. Area of **oak-hickory**--the predominant forest-type group in the region--declined by 2 percent to 2.4 million acres. Acreage in pine and oak-pine types combined increased by 4 percent to over 465,000 acres. The area of white pine-hemlock **type**--the dominant softwood forest type group in the region--increased by 6 percent to 130,000 acres. Area of Virginia pine fell by 33 percent to **57,000** acres.

• more than 27,000 acres were harvested annually and retained in timberland. This harvest rate was more than twice the acreage harvested between 1977 and 1986. Of the acreage harvested, 82 percent was on NIPF land, 13 percent was on public land, and 5 percent occurred on land controlled by forest industry. Hardwood stands accounted for over two-thirds of the acreage harvested annually, while natural and planted pine stands together made up 21 percent, and oak-pine stands 13 percent. In addition to final harvests, some form of partial harvest or intermediate cutting occurred on 14,000 acres annually. Natural disturbances such as fire, insects, disease, and weather damaged some 47,000 acres per year.

. artificial and natural regeneration declined 10 percent from 19,000 to 17,000 acres annually. By ownership, 74 percent of the regeneration occurred on NIPF land, 19 percent on public land, and the remaining 7 percent on forest industry land. Natural regeneration--which accounts for over three-fourths

of the total--declined by 23 percent to 13,000 acres per year. Most natural regeneration resulted in new hardwood stands. Artificially regenerated acreage more than doubled to nearly 4,000 acres per year. The area of timberland harvested in the region exceeded the acreage artificially and naturally regenerated by 59 percent. However, recently cut hardwood stands make up a large percentage of the acreage harvested, and many of these stands have not had time to naturally regenerate themselves.

- average basal area of live trees 5.0 inches d.b.h. and larger remained stable at 87 square feet per acre. Merchantable net volume per acre currently averages 1,800 cubic feet per acre and includes 5,600 board feet of sawtimber. Acreage classified as fully stocked increased by 10 percent to 819,000 acres, whereas acreage in medium-stocked stands declined by 7 percent to 1.5 million acres. Together, fully stocked and medium-stocked stands make up 78 percent of the total timberland area. Area in poorly stocked stands increased by 7 percent to 657,000 acres, 22 percent of the timberland area.

- volume of hardwood growing stock increased by 5 percent from 4.5 to 4.8 billion cubic feet. The collective volume of all oaks, which accounts for 44 percent of the total hardwood volume, increased 3 percent to 2.1 billion cubic feet. Yellow-poplar volume increased by 7 percent to 916 million cubic feet; yellow-poplar remains the single most dominant species in the region in terms of hardwood volume. By ownership, the inventory of hardwood growing stock was up by 3 percent to 3.9 billion cubic feet on NIPF land. This ownership category now accounts for 81 percent of the hardwood inventory in the region. Hardwood volume increased by 14 percent to 822 million cubic feet on public land and by 92 million cubic feet on forest industry land. With the exception of the **6-, 8-, and 16-inch** diameter classes, the volume of hardwood growing stock

increased in all size categories. Volume in trees 18.0 inches d.b.h. and larger increased by 13 percent to 1.4 billion cubic feet, 28 percent of the current hardwood growing stock. Volume of hardwood sawtimber rose 9 percent to 14.4 billion board feet.

- volume of softwood growing stock declined by 4 percent from 640 to 617 million cubic feet. Volume of white pine--the predominant softwood species with 55 percent of the softwood volume--increased 6 percent to 338 million cubic feet. Volume of Virginia pine decreased 16 percent to 86 million cubic feet and accounted for 38 percent of the decline in softwood volume. The volume of softwood growing stock declined 4 percent to 499 million cubic feet on NIPF land, and dropped 6 percent to 93 million cubic feet on public land. In contrast, softwood volume increased by 40 percent to 25 million cubic feet on land controlled by forest industry. The volume of softwood growing stock in the **6-, 14-, and 18-inch** d.b.h. classes decreased by 20, 18, and 26 percent, respectively. These three diameter classes account for 79 percent of the decline in softwood volume. Volume of softwood sawtimber increased by 1 percent to 2.4 billion board feet.

- net annual growth of hardwood growing stock declined by 26 percent from 133 to 99 million cubic feet. Hardwood growth decreased across all ownership categories, dropping by 28 percent on NIPF land, 19 percent on public land, and 9 percent on forest industry land. Across all ownerships, hardwood net growth exceeded removals by a margin of 1.6 to 1; in contrast, hardwood growth was more than five times total removals in the previous survey period (1977-86). Net annual growth of softwood growing stock declined by 9 percent to 20 million cubic feet. Eighty-five percent of the softwood growth occurred on NIPF land, where softwood growth decreased 10 percent to 17 million cubic feet. Softwood

growth was also down on public land to 2 million cubic feet. Net annual growth of softwood growing stock increased by 10 percent to 993,000 cubic feet on land controlled by forest industry. Across all ownerships, softwood removals exceeded growth by 19 percent. Mean net growth per acre for softwoods and hardwoods combined declined by 25 percent to 40 cubic feet per acre. Net annual growth included 547 million board feet of sawtimber.

- annual removals of hardwood growing stock were 2.4 times removals between 1977 and 1986, and now total 61 million cubic feet. Hardwood growing-stock removals were up across all ownership categories. Ninety-two percent of hardwood removals came from NIPF land and nearly all of the remainder came from public land. Softwood removals currently total 23 million cubic feet, which is seven times the total in the previous period. Present rates of removal are more in line with regional norms than were the previous rates. By ownership,

85 percent of softwood removals came from NIPF land and the remaining 15 percent came from public land. Annual removals of softwoods and hardwoods combined included 343 million board feet of sawtimber.

- annual mortality of hardwood growing stock increased 38 percent from 26 to 36 million cubic feet. Seventy-eight percent of hardwood mortality occurred on NIPF land. Hardwood mortality reduced gross growth by 27 percent. Annual mortality of softwood growing stock averaged 7 million cubic feet, which was about the same amount as in the previous period. Slight increases in softwood mortality on NIPF and public land were offset by a decline on forest industry land. Softwood mortality reduced gross growth by 26 percent. Annual mortality of softwoods and hardwoods combined included 116 million board feet of sawtimber.

How the Inventory is Made

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

1. Initial estimates of forest and nonforest areas were based on the classification of 15,257 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 991 of the **16-point** clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassification.

2. Estimates of timber volume and forest classification were based on measurements recorded at 625 ground sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

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

4. Felled trees were measured at 10 active cutting operations. These data will supplement the standing-tree volume data and be used to generate utilization factors for product and species groups. Forest biomass estimates were made 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 635 permanent sample plots established in the fifth survey.

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

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

Reliability of the Data

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

	<u>Percent</u>
Per million acres of timberland	0.97
Per billion cubic feet of growing stock.	5.91
Per billion cubic feet of net annual growth.	0.99
Per billion cubic feet of annual removals.	4.11

Sampling errors for county and unit **totals,^a** in terms of one standard error, Southern Mountains of Virginia, **1992**

County	Timberland area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
		<u>Sampling error^b</u>		
Bland	1.94	9.28	11.34	51.86
Buchanan	.83	8.13	7.74	45.24
Carrol	2.01	14.13	20.02	44.41
Dickenson	1.22	10.80	10.30	38.80
Floyd	2.41	12.01	16.80	44.93
Giles	2.14	9.82	8.75	54.98
Grayson	1.92	11.34	12.40	58.47
Lee	2.76	12.28	10.26	65.73
Montgomery	2.58	10.72	10.40	51.48
Pulaski	3.22	11.95	12.35	.00
Russell	2.16	11.91	10.62	60.25
Scott	2.26	6.05	8.47	57.17
Smyth	2.05	11.04	11.11	65.75
Tazewell	2.96	9.04	8.81	46.69
Washington	2.46	10.19	10.17	45.08
Wise	3.30	11.50	10.11	32.80
Wythe	3.03	11.05	14.43	100.05
Total	.56	2.54	2.87	14.14

^aSampling 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.

^bBy random-sampling formula (in percent).

Definitions of Terms

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

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

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

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

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

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

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

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

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

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

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

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

Commercial forest land.(see: Timberland).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Industrial wood. All roundwood products except fuelwood.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

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

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

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

Stand-size class. A classification of forest land based on the diameter class distribution of live trees in the stand.

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

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

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

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

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

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

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

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

Timber products. Roundwood products and byproducts.

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

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

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

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

Unproductive forest land. (see: Woodland).

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

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

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

Stocking Standard

D.b.h. 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	68.9	68.1	76.0	68.4
10	73.8	73.1	81.4	73.4
12	76.9	76.7	85.2	76.4
14	78.9	79.4	88.2	78.4
16	80.7	81.6	90.4	79.8
18	81.6	83.3	92.3	80.8
20	82.7	84.8	93.8	81.5
22	83.2	86.0	95.1	82.1
24+	84.0	87.9	98.3	83.0
Average	76.0	73.0	85.8	75.3

Metric equivalents of units used in this report

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

County Tables

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

Table 1--Area, by county and land class, Southern Mountains of Virginia, 1992

County	All land ^a	Forest land			Nonforest land ^b	
		Total	Timberland	Woodland		Reserved timberland
				<u>Acres</u>		
Bland	229,446	179,477	173,503	394	5,580	49,969
Buchanan	322,355	290,585	290,585	--	--	31,770
Carroll	308,777	184,058	182,605	--	1,453	124,719
Dickenson	212,077	175,390	171,650		3,740	36,687
Floyd	243,981	143,873	141,181	--	2,692	100,108
Giles	231,654	176,775	167,121		9,654	54,879
Grayson	287,582	175,828	164,742		11,086	111,754
Lee	279,974	157,865	150,024	315	7,526	122,109
Montgomery	254,074	145,464	145,281	183	--	108,610
Pulaski	203,661	118,971	118,624		347	84,690
Russell	306,560	174,359	174,359		--	132,201
Scott	342,668	237,082	235,375	122	1,585	105,586
Smyth	289,325	177,224	172,279	90	4,855	112,101
Tazewell	332,832	213,914	207,871	--	6,043	118,918
Washington	367,366	189,483	189,398	--	85	177,883
Wise	263,417	178,535	178,114	121	300	84,882
Wythe	297,312	144,321	140,921		3,400	152,991
Total	4,773,061	3,063,204	3,003,633	1,225	58,346	1,709,857

^a From U.S. Bureau of the Census, 1980.

^b Includes 31,950 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table I--Area of timberland, by county and ownership class, Southern Mountains of Virginia, 1992

county	All ownerships	Ownership class							
		National forest	Miscellaneous Federal	State	County and municipal	Forest industry ^a	Other private		
							Farmer	Corporate	Individual
Acres									
Bland	173,503	65,730	--	660	--	4,473	66,414	6,038	30,188
Buchanan	290,585	--	--	46	204	3,452	14,839	79,140	192,904
Carroll	182,605	4,038	--	1,346	470	7,437	96,751	4,838	67,725
Dickenson	171,650	8,082	6,197	--	--	408	13,454	89,693	53,816
Floyd	141,181	--	--	70	46	3,891	55,886	5,081	76,207
Giles	167,121	52,408	--	361	353	5,545	29,578	4,930	73,946
Grayson	164,742	22,897	--	--	321	3,932	54,054	14,742	68,796
Lee	150,024	11,229	--	200	30	1,380	45,728	18,291	73,166
Montgomery	145,281	18,865	800	2,358	459	3,766	20,701	10,351	87,981
Pulaski	118,624	19,039	1,404	10	2,405	1,049	5,920	29,599	59,198
Russell	174,359	--	--	5,718	265	155	62,482	48,063	57,676
Scott	235,375	32,580	--	--	174	510	95,737	5,319	101,055
Smyth	172,279	67,941	--	10,000	269	528	51,448	--	42,093
Tazewell	207,871	3,191	--	4,641	176	1,661	39,640	73,618	84,944
Washington	189,398	19,481	74	9,283	104	--	51,760	5,176	103,520
Wise	178,114	42,830	843	15	3,814	150	8,997	71,979	49,486
Wythe	140,921	50,449	109	150	1,924	6,994	45,164	--	36,131
Total	3,003,633	418,760	9,427	34,858	11,014	45,331	758,553	466,858	1,258,832

^aIncludes 0 acres of other private land under long-term lease.

Table f--Area of timberland, by county and forest-type group, Southern Mountains of Virginia, 1992

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
Bland	173,503	6,038	--	--	4,108	28,258	135,099	--	--	--
Buchanan	290,585	--	--	--	--	9,892	255,962	--	--	24,731
Carroll	182,605	33,861	--	--	5,308	55,812	87,624	--	--	--
Dickenson	171,650	--	--	--	4,485	8,969	144,741	--	--	13,455
Floyd	141,181	29,292	--	--	15,288	20,392	76,209	--	--	--
Giles	167,121	--	--	--	4,929	10,221	141,758	--	--	10,213
Grayson	164,742	41,278	--	--	3,816	5,235	106,780	--	--	7,633
Lee	150,024	--	--	--	9,145	--	140,879	--	--	--
Montgomery	145,281	10,809	--	--	25,730	7,533	100,409	--	800	--
Pulaski	118,624	--	--	--	5,920	12,898	98,402	--	1,404	--
Russell	174,359	--	--	--	14,419	--	145,521	--	4,807	9,612
Scott	235,375	--	--	--	5,319	11,148	218,908	--	--	--
Smyth	172,279	--	--	--	7,177	17,235	143,190	--	--	4,677
Tazewell	207,871	--	--	--	--	--	190,882	--	--	16,989
Washington	189,398	--	--	--	--	15,528	168,694	--	--	5,176
Wise	178,114	4,499	--	--	--	--	159,275	--	843	13,497
Wythe	140,921	4,517	--	--	4,204	22,154	109,937	--	109	--
Total	3,003,633	130,294	--	--	109,848	225,275	2,424,270	--	7,963	105,983

Table 4--Area of timberland, by county and stand-size class, Southern Mountains of Virginia, 1992

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
<u>Acres</u>					
Bland	173,503	86,953	80,512	6,038	--
Buchanan	290,585	171,624	69,247	49,714	--
Carroll	182,605	98,099	28,694	50,974	4,838
Dickenson	171,650	108,866	31,393	26,906	4,485
Floyd	141,181	96,600	29,340	15,241	--
Giles	167,121	72,824	74,267	20,030	--
Grayson	164,742	109,820	28,386	26,536	--
Lee	150,024	70,002	56,957	23,065	--
Montgomery	145,281	82,067	47,688	15,526	--
Pulaski	118,624	35,662	65,202	17,760	--
Russell	174,359	106,159	33,645	34,555	--
Scott	235,375	161,825	64,158	9,392	--
Smyth	172,279	112,154	26,413	24,182	9,530
Tazewell	207,871	109,278	81,604	16,989	--
Washington	189,398	116,380	50,996	22,022	--
Wise	178,114	98,416	57,620	22,078	--
Wythe	140,921	83,933	38,923	18,065	--
Total	3,003,633	1,720,662	865,045	399,073	18,853

Table 5--Area of timberland, by county and site class, Southern Mountains of Virginia, 1992

County	All classes	Site class (cubic feet per acre per year)				
		>164	120-164	85-119	50-84	20-49
<u>Acres</u>						
Bland	173,503	6,038	14,253	24,150	100,246	28,816
Buchanan	290,585	--	14,839	103,871	148,637	23,238
Carroll	182,605	14,512	10,145	40,047	108,226	9,675
Dickenson	171,650	--	4,485	49,331	90,516	27,318
Floyd	141,181	19,132	46	25,472	86,371	10,160
Giles	167,121	4,929	--	31,788	102,973	27,431
Grayson	164,742	24,570	16,708	14,742	99,671	9,051
Lee	150,024	--	--	27,438	113,441	9,145
Montgomery	145,281	--	10,809	18,684	91,459	24,329
Pulaski	118,624	--	--	7,334	78,091	33,199
Russell	174,359	--	--	19,225	121,335	33,799
Scott	235,375	510	15,955	71,968	141,623	5,319
Smyth	172,279	528	--	33,414	114,277	24,060
Tazewell	207,871	--	11,326	56,629	121,332	18,584
Washington	189,398	--	10,352	51,760	113,765	13,521
Wise	178,114	--	--	36,401	141,563	150
Wythe	140,921	6,994	4,517	4,313	79,883	45,214
Total	3,003,633	77,213	113,435	616,567	1,853,409	343,009

Table 6--Area of timberland, by county and stocking class of growing-stock trees, Southern Mountains of Virginia, 1992

County	All classes	Stocking class (percent) ^a				
		>130	100-130	60-99	16.7-59	<16.7
		<u>Acres</u>				
Bland	173,503	6,038	28,507	112,571	26,387	--
Buchanan	290,585	9,893	92,484	128,648	54,614	4,946
Carroll	182,605	4,837	32,972	81,908	48,376	14,512
Dickenson	171,650	--	27,316	75,352	64,497	4,485
Floyd	141,181	8,971	25,402	81,337	25,471	--
Giles	167,121	4,930	57,321	89,719	10,221	4,930
Grayson	164,742	9,828	34,921	85,274	34,719	--
Lee	150,024	9,145	19,671	80,052	41,156	
Montgomery	145,281	5,634	56,782	43,626	39,239	
Pulaski	118,624	--	20,164	69,766	22,774	5,920
Russell	174,359	4,806	24,187	116,529	19,225	9,612
Scott	235,375	--	81,362	111,463	42,550	--
Smyth	172,279	4,677	45,297	89,121	23,654	9,530
Tazewell	207,871	16,989	59,820	97,084	33,978	--
Washington	189,398	13,447	47,138	92,477	36,336	--
Wise	178,114	--	31,209	101,076	36,831	8,998
Wythe	140,921	4,204	31,305	72,390	33,022	
Total	3,003,633	103,399	715,858	1,528,393	593,050	62,933

^aSee stocking standards on page 13.

Table 7--Volume of growing stock and sawtimber on timberland, by county and species group, Southern Mountains of Virginia, 1992

county	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	<u>Thousand cubic feet^a</u>					<u>Thousand board feet</u>				
Bland	294,218	13,356	31,098	86,735	163,029	819,568	44,089	140,990	227,972	406,517
Buchanan	551,581	--	19,721	230,110	301,750	1,723,549	--	91,924	670,431	961,194
Carroll	251,542	13,911	88,923	37,287	111,421	821,265	45,282	363,392	109,610	302,981
Dickenson	283,767	15,579	9,840	93,284	165,064	979,626	44,856	48,850	328,755	557,165
Floyd	249,027	12,719	73,228	64,823	98,257	708,665	30,066	247,386	177,665	253,548
Giles	330,477	10,743	10,825	99,084	209,825	1,013,525	33,634	60,527	339,720	579,644
Grays on	286,747	8,172	76,228	55,241	147,106	1,013,809	36,414	347,180	160,633	469,582
Lee	245,905	--	6,816	97,182	141,907	746,976	--	2,399	293) 535	451,042
	270,208	34,223	46,647	36,751	152,587	864,988	97,473	216,381	106,271	444,863
Pulaski	156,621	8,844	5,796	26,501	115,480	353,831	35,263	28,637	80,403	209,528
Russell	320,466	--	5,097	121,779	193,590	1,040,442	--	14,991	393,625	631,826
Scott	483,870	16,025	5,086	204,188	258,571	1,627,034	69,213	12,877	699,423	845,521
Smyth	333,688	16,078	15,486	66,066	236,058	1,131,540	52,257	76,279	197,996	805,008
Tazewell	419,629	--	2,485	160,065	257,079	1,195,415	--	8,489	470,819	716,107
Washington	397,699	9,651	7,728	171,805	208,515	1,245,298	35,377	26,021	588,489	595,411
Wise	288,051	1,698	9,237	132,582	144,534	912,666	7,834	42,577	415,673	446,582
Wythe	231,688	18,702	23,161	19,748	170,077	699,122	79,896	109,016	54,551	455,659
Total	5,395,184	179,701	437,402	1,703,231	3,074,850	16,897,319	611,654	1,837,916	5,315,571	9,132,178

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

Table 8--Average net annual growth of growing stock and sawtimber on timberland, by county and species group, Southern Mountains of Virginia, 1986-1991

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	<u>Thousand cubic feet</u>					<u>Thousand board feet</u>				
Bland	7,196	116	1,025	2,599	3,456	27,684	771	5,609	6,712	14,592
Buchanan	10,814	--	409	4,444	5,961	47,322	--	2,781	18,916	25,625
Carroll	7,377	342	3,980	1,047	2,008	48,453	3,906	26,961	3,901	13,685
Dickenson	5,165	306	299	1,855	2,705	25,411	1,690	1,265	8,787	13,669
Floyd	7,990	374	3,484	1,869	2,263	39,399	719	22,683	6,046	9,951
Giles	6,710	106	249	2,107	4,248	30,834	588	1,284	11,240	17,722
Grayson	7,171	205	2,533	1,783	2,650	39,059	299	14,412	9,096	15,252
Lee	5,462	--	508	2,157	2,797	19,003	--	496	7,958	10,549
Montgomery	6,346	719	1,382	975	3,270	29,131	4,009	7,894	3,737	13,491
Pulaski	4,074	170	265	987	2,652	16,188	660	1,092	3,044	11,392
Russell	7,643	--	469	3,468	3,706	31,718	--	441	13,941	17,336
Scott	9,095	324	117	4,332	4,322	37,939	1,885	177	16,635	19,242
Smyth	5,757	217	499	1,336	3,705	27,303	876	2,047	6,226	18,154
Tazewell	9,380	--	115	4,019	5,246	38,508	--	107	19,019	19,382
Washington	7,852	84	218	4,037	3,513	38,552	325	883	20,267	17,077
Wise	5,863	16	260	2,979	2,608	26,355	102	1,016	12,148	13,089
Wythe	4,627	110	942	573	3,002	24,607	664	7,069	1,161	15,713
Total	118,522	3,089	16,754	40,567	58,112	547,466	16,494	96,217	168,834	265,921

Table 9--Average annual removals of growing stock and sawtimber on timberland, by county and species group, Southern Mountains of Virginia, 1986-1991

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				
Bland	1,870	--	418	961	491	8,622	--	2,375	4,247	2,000
Buchanan	4,513	--	122	2,314	2,077	18,459	--	453	11,041	6,965
Carroll	11,774	1,080	7,074	--	3,620	48,511	2,162	34,999	--	11,350
Dickenson	7,047	--	141	1,958	4,948	28,234	--	693	10,594	16,947
Floyd	14,417	798	9,189	2,672	1,758	68,396	2,108	45,494	13,378	7,416
Giles	2,128	--	--	349	1,779	7,956	--	--	1,573	6,383
Grayson	4,645	--	404	1,188	3,053	19,882	--	2,151	5,270	12,461
Lee	3,111	--	--	2,212	899	9,873	--	--	7,878	1,995
Montgomery	2,500	--	--	--	2,500	9,567	--	--	--	9,567
Pulaski	--	--	--	--	--	--	--	--	--	--
Russell	3,385	--	219	368	2,798	14,344	--	1,331	1,067	11,946
Scott	3,150	--	--	2,043	1,107	10,008	--	--	7,795	2,213
Smyth	4,517	2,558	--	507	1,452	12,794	8,848	--	512	3,434
Tazewell	5,454	--	49	2,289	3,116	24,528	--	--	11,056	13,472
Washington	2,822	1,011	325	158	1,328	12,955	5,141	1,801	646	5,367
Wise	11,459	--	--	5,204	6,255	42,951	--	--	15,045	27,906
Wythe	1,694	135	--	49	1,510	6,095	760	--	--	5,335
Total	84,486	5,582	17,941	22,272	38,691	343,175	19,019	89,297	90,102	144,757

Unit Tables

Table 10--Area of timberland, by forest type and ownership class, Southern Mountains of Virginia, 1992

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry- leased	Other private
<u>Acres</u>						
Softwood types						
White pine-hemlock	130,294	--	459	5,857	--	123,978
Spruce-fir	--	--	--	--	--	--
Longleaf pine		--	--	--	--	--
Slash pine						
Loblolly pine			--	--	--	--
Shortleaf pine	--		--	--	--	--
Virginia pine	57,436	4,204	3,016		--	50,216
Sand pine	--	--				
Eastern redcedar	23,435				--	23,435
Pond pine	--		--	--	--	--
Spruce pine	--	--	--	--	--	--
Pitch pine	13,877	3,773		--	--	10,104
Table Mountain pine	15,100	7,924		1,256		5,920
Total	240,142	15,901	3,475	7,113	--	213,653
Hardwood types						
Oak-pine	225,275	13,165	7,544	16,518	--	188,048
Oak-hickory	2,125,788	301,829	27,915	11,366	--	1,784,678
Chestnut oak	298,482	80,232	12,856	10,334	--	195,060
Southern scrub oak	--	--	--	--	--	--
Oak-gum-cypress	--	--	--	--	--	--
Elm-ash-cottonwood	7,963	--	3,156	--	--	4,807
Maple-beech-birch	105,983	7,633	353	--	--	97,997
Total	2,763,491	402,859	51,824	38,218	--	2,270,590
All types	3,003,633	418,760	55,299	45,331	--	2,484,243

Table 11--Area of timberland, by ownership and stocking classes of growing-stock trees, Southern Mountains of Virginia, 1992

Ownership class	All classes	Stocking class (percent) ^a				
		>130	100-130	60-99	16.7-59	<16.7
		<u>Acres</u>				
National forest	418,760	4,204	117,013	270,989	21,701	4,853
Other public	55,299	3,554	9,345	27,426	14,974	--
Forest industry	45,331	3,891	16,086	21,863	3,491	--
Forest industry-leased	--	--	--	--	--	--
Other private	2,484,243	91,750	573,414	1,208,115	552,884	58,080
All ownerships	3,003,633	103,399	715,858	1,528,393	593,050	62,933

^aSee stocking standards on page 13.

Table 12--Area of timberland, by forest type and stand-size class, Southern Mountains of Virginia, 1992

Forest type	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
		<u>Acres</u>			
Softwood types					
White pine-hemlock	130,294	90,276	18,556	21,462	--
Spruce-fir	--	--	--	--	--
Longleaf pine	--	--	--	--	--
Slash pine	--	--	--	--	--
Loblolly pine	--	--	--	--	--
Shortleaf pine	--	--	--	--	--
Virginia pine	57,436	31,601	10,773	15,062	--
Sand pine	--	--	--	--	--
Eastern redcedar	23,435	4,806	9,379	4,573	4,677
Pond pine	--	--	--	--	--
Spruce pine	--	--	--	--	--
Pitch pine	13,877	13,877	--	--	--
Table Mountain pine	15,100	3,816	5,364	5,920	--
Total	240,142	144,376	44,072	47,017	4,677
Hardwood types					
Oak-pine	225,275	130,844	37,620	56,811	--
Oak-hickory	2,125,788	1,200,848	624,929	285,835	14,176
Chestnut oak	298,482	149,372	139,700	9,410	--
Southern scrub oak	--	--	--	--	--
Oak-gum-cypress	--	--	--	--	--
Elm-ash-cottonwood	7,963	3,156	4,807	--	--
Maple-beech-birch	105,983	92,066	13,917	--	--
Total	2,763,491	1,576,286	820,973	352,056	14,176
All types	3,003,633	1,720,662	865,045	399,073	18,853

Table 15--Area of timberland, by stand-age and broad management **classes**, forest industry,^a Southern Mountains of Virginia, 1992

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		<u>Acres</u>				
0-10	9,403	1,966	--	7,437	--	--
11-20	--	--	--	--	--	--
21-30	3,891	3,891	--	--	--	--
31-40	1,049	--	--	1,049	--	--
41-50	3,696	--	--	--	3,696	--
51-60	8,032	--	--	8,032	--	--
61-70	10,348	--	--	--	10,348	--
71-80	1,256	--	1,256	--	--	--
81+	4,165	--	--	--	4,165	--
No manageable stand	3,491	--	--	--	3,491	--
All classes	45,331	5,857	1,256	16,518	21,700	--

^aIncludes 0 acres of other private land under long-term lease.

Table 16--Area of timberland, by stand-age and broad management classes, **other** private **ownerships**,^a Southern Mountains of Virginia, 1992

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		<u>Acres</u>				
0-10	115,058	14,659	5,081	14,161	81,157	--
11-20	99,726	--	19,810	16,913	58,196	4,807
21-30	120,800	9,917	29,359	15,236	66,288	--
31-40	95,540	4,517	24,747	--	66,276	--
41-50	254,240	4,914	13,971	10,265	225,090	--
51-60	464,305	--	30,258	29,927	404,120	--
61-70	423,801	--	21,318	33,088	369,395	--
71-80	213,502	--	4,914	14,299	194,289	--
81+	289,142	--	4,837	28,780	255,525	--
No manageable stand	408,129	--	25,351	25,379	357,399	--
All classes	2,484,243	34,007	179,646	188,048	2,077,735	4,807

^aExcludes 0 acres of other private land under long-term lease to forest industry.

Table 17--Area of timberland, by broad management and stand-volume classes, Southern Mountains of Virginia, 1992

Broad management class	All classes	Stand-volume class (cubic feet of growing stock per acre)				
		0-499	500-999	1000-1499	1500-1999	2000+
		<u>Acres</u>				
Pine plantation	40,323	16,625	--	--	--	23,698
Natural pine	199,819	50,013	14,568	24,755	24,419	86,064
Oak-pine	225,275	38,617	38,528	43,185	30,609	74,336
Upland hardwood	2,530,253	317,906	277,463	401,678	442,175	1,091,031
Lowland hardwood	7,963	--	1,752	6,211	--	--
All classes	3,003,633	423,161	332,311	475,829	497,203	1,275,129

Table 18--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Mountains of Virginia, 1992

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)								
			0-10	11-20	21-30-	31-40	41-50	51-60	61-70	71-80	81+
<u>Thousand cubic feet</u>											
Pine plantation											
Softwood	96,495	--	--	--	52,582	10,977	32,936	--	--	--	--
Hardwood	10,581	--	--	--	3,250	324	7,007	--	--	--	--
Total	107,076	--	--	--	55,832	11,301	39,943	--	--	--	--
Natural pine											
Softwood	256,674	3,617	4,759	5,381	27,192	33,095	22,380	73,556	45,153	32,875	8,666
Hardwood	76,227	627	955	--	8,331	2,144	5,199	18,215	16,723	8,779	15,254
Total	332,901	4,244	5,714	5,381	35,523	35,239	27,579	91,771	61,876	41,654	23,920
Oak-pine											
Softwood	146,119	6,388	--	4,414	9,223	2,652	10,785	34,235	23,285	21,218	33,919
Hardwood	197,464	9,330	3,377	4,727	8,457	5,010	20,046	36,754	32,770	21,825	55,168
Total	343,583	15,718	3,377	9,141	17,680	7,662	30,831	70,989	56,055	43,043	89,087
Upland hardwood											
Softwood	117,815	15,454	2,419	2,882	2,991	1,969	12,318	16,352	28,926	17,521	16,983
Hardwood	4,481,699	262,437	16,698	25,660	88,021	100,045	478,982	1,052,480	1,131,231	526,249	799,896
Total	4,599,514	277,891	19,117	28,542	91,012	102,014	491,300	1,068,832	1,160,157	543,770	816,879
Lowland hardwood											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	12,110	5,842	--	6,268	--	--	--	--	--	--	--
Total	12,110	5,842	--	6,268	--	--	--	--	--	--	--
All types											
Softwood	617,103	25,459	7,178	12,677	91,988	48,693	78,419	124,143	97,364	71,614	59,568
Hardwood	4,778,081	278,236	21,030	36,655	108,059	107,523	511,234	1,107,449	1,180,724	556,853	870,318
Total	5,395,184	303,695	28,208	49,332	200,047	156,216	589,653	1,231,592	1,278,088	628,467	929,886

Table 19--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Mountains of Virginia, 1986-1991

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+
<u>Thousand cubic feet</u>											
Pine plantation											
Softwood	4,276	--	--	--	3,014	524	738	--	--	--	--
Hardwood	307	--	--	--	176	19	112	--	--	--	--
Total	4,583		--	--	3,190	543	850	--	--	--	--
Natural pine											
Softwood	8,242	135	201	446	1,804	1,258	758	2,223	920	339	158
Hardwood	1,912	13	91	--	319	108	161	499	354	140	227
Total	10,154	148	292	446	2,123	1,366	919	2,722	1,274	479	385
Oak-pine											
Softwood	3,595	150	--	165	551	78	267	683	538	437	726
Hardwood	4,153	214	89	282	231	257	395	957	532	434	762
Total	7,748	364	89	447	782	335	662	1,640	1,070	871	1,488
Upland hardwood											
Softwood	3,730	508	241	160	382	82	382	319	711	496	449
Hardwood	91,710	6,492	699	2,031	4,489	3,045	11,859	21,055	21,131	8,490	12,419
Total	95,440	7,000	940	2,191	4,871	3,127	12,241	21,374	21,842	8,986	12,868
Lowland hardwood											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	597	165	--	432	--	--	--	--	--	--	--
Total	597	165	--	432	--	--	--	--	--	--	--
All types											
Softwood	19,843	793	442	771	5,751	1,942	2,145	3,225	2,169	1,272	1,333
Hardwood	98,679	6,884	879	2,745	5,215	3,429	12,527	22,511	22,017	9,064	13,408
Total	118,522	7,677	1,321	3,516	10,966	5,371	14,672	25,736	24,186	10,336	14,741

^aClassifications at the end of the remeasurement period.

Table 20--Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, Southern Mountains of Virginia, 1986-1991

Species group	All classes	NO manageable stand	Stand-age class ^a (years)							71-80	81+
			0-10	11-20	21-30	31-40	41-50	51-60	61-70		
Thousand cubic feet											
Pine plantation											
Softwood	3,431	--	--	--	--	3,431	--	--	--	--	--
Hardwood	104	--	--	--	104	--	--	--	--	--	--
Total	3,535	--	--	--	3,535	--	--	--	--	--	--
Natural pine											
Softwood	15,353	--	985	162	440	1,869	7,203	3,111	1,583	--	
Hardwood	2,544	--	96	484	119	294	453	408	690	--	
Total	17,897	--	1,081	646	559	2,163	7,656	3,519	2,273	--	
Oak-pine											
Softwood	3,859	189	--	--	--	325	--	2,370	--	975	
Hardwood	3,881	346	--	--	--	--	--	2,535	--	1,000	
Total	7,740	535	--	--	--	325	--	4,905	--	1,975	
Upland hardwood											
Softwood	880	--	--	--	122	219	--	539	--	--	
Hardwood	52,673	3,374	148	2,484	4,146	3,247	12,760	16,642	2,253	7,619	
Total	53,553	3,374	148	2,484	4,268	3,466	12,760	17,181	2,253	7,619	
Lowland hardwood											
Softwood	--	--	--	--	--	--	--	--	--	--	
Hardwood	1,761	1,761	--	--	--	--	--	--	--	--	
Total	1,761	1,761	--	--	--	--	--	--	--	--	
All types											
Softwood	23,523	189	--	985	162	3,993	2,413	7,203	6,020	1,583	
Hardwood	60,963	5,481	148	2,968	4,369	3,541	13,213	19,585	2,943	8,619	
Total	84,486	5,670	148	1,081	3,130	8,362	5,954	20,416	25,605	4,526	

^aClassifications before timber removals.

Table 21--Merchantable volume of live trees and growing stock on **timberland**, by forest-type and species groups, Southern **Mountains** of Virginia, 1992

Forest-type group	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	<u>Thousand cubic feet</u>									
White pine-hemlock	300,904	5,905	227,525	24,800	42,674	284,981	5,580	223,440	22,051	33,910
Spruce-fir	--	--	--	--	--	--	--	--	--	--
Longleaf-slash pine	--	--	--	--	--	--	--	--	--	--
Loblolly-shortleaf pine	165,670	108,013	22,971	8,334	26,352	154,996	102,851	21,298	7,245	23,602
Oak-pine	382,969	40,047	109,629	71,358	161,935	343,583	37,104	109,015	63,521	133,943
Oak-hickory	4,853,649	35,422	71,556	1,659,108	3,087,563	4,343,941	34,166	69,548	1,542,643	2,697,584
Oak-gum-cypress	--	--	--	--	--	--	--	--	--	--
Elm-ash-cottonwood	19,521	--	--	19,214	307	12,110	--	--	11,803	307
Maple-beech-birch	290,999	--	14,101	63,376	213,522	255,573	--	14,101	55,968	185,504
All types	6,013,712	189,387	445,782	1,846,190	3,532,353	5,395,184	179,701	437,402	1,703,231	3,074,850

Table 22--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class, Southern Mountains of Virginia, 1986 to 1992

Treatment or disturbance	All ownerships	Ownership class				
		Public	Forest industry	Forest industry-leased	Other private	
			<u>Acres^a</u>			
Final harvest	27,563	3,460	1,399	--	22,704	
Partial harvest ^b	13,478	--	--	--	13,478	
Commercial thinning	819	--	--	--	819	
Other stand improvement	1,422	1,422	--	--	--	
Site preparation	5,991	1,540	--	--	4,451	
Artificial regeneration ^c	3,857	770	--	--	3,087	
Natural regeneration ^c	13,491	2,617	1,200	--	9,674	
Other treatment	15,575	1,778	--	--	13,797	
Natural disturbance	47,117	8,826	--	--	38,291	

^aSince some acres experience more than one treatment or disturbance, there are no column totals.

^bIncludes high grading and some selective cutting.

^cIncludes establishment of trees for timber production on forest and nonforest land.

Table 23--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class, Southern Mountains of Virginia, 1986 to 1992

Treatment or disturbance	All classes	Broad management class ^a					
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood	
			<u>Acres^b</u>				
Final harvest	27,563	780	4,873	3,569	18,341	--	
Partial harvest ^c	13,478	--	822	1,547	11,109	--	
Commercial thinning	819	--	--	--	819	--	
Other stand improvement	1,422	--	--	--	1,422	--	
Site preparation	5,991	--	1,589	770	3,632	--	
Other treatment	15,575	788	820	--	13,967	--	
Natural disturbance	47,117	--	2,074	3,321	41,722	--	

^aClassification before treatment or disturbance.

^bSince some acres experience more than one treatment or disturbance, there are no column totals.

^cIncludes high grading and some selective cutting.

Table 24--Area of timberland regenerated annually, by type of regeneration and broad management class, Southern Mountains of Virginia, 1986 to 1992

Type of regeneration	All classes	Broad management class ^a				
		Pine plantation	Natural pine	Oak- pine	Upland hardwood	Lowland hardwood
		<u>Acres</u>				
Artificial regeneration following harvest	3,038	1,545	--	1,493	--	--
Natural regeneration following harvest	6,988	--	--	1,980	5,008	--
Other artificial regeneration on forest land	--	--	--	--	--	--
Other natural regeneration on forest land	1,503	--	--	--	1,503	--
Artificial regeneration on nonforest land	819	819	--	--	--	--
Natural reversion of nonforest land	5,000	--	788	--	4,212	--
Total	17,348	2,364	788	3,473	10,723	--

^aClassification after regeneration.

Table 25--Area of timberland, by treatment opportunity and broad management classes, Southern Mountains of Virginia, 1992

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak- pine	Upland hardwood	Lowland hardwood
		<u>Acres</u>				
Salvage	5,176	--	--	--	5,176	--
farves t	154,312	--	3,773	25,657	124,882	--
Commercial thinning	34,078	18,325	4,914	--	10,839	--
Other stand improvement	80,004	--	9,887	15,713	54,404	--
S tend conversion	4,914	--	--	--	4,914	--
Regeneration	241,403	--	19,431	28,178	190,638	3,156
Stands in relatively good condition	1,021,813	16,918	101,390	97,525	801,173	4,807
Adverse sites ^a	1,461,933	5,080	60,424	58,202	1,338,227	--
All classes	3,003,633	40,323	199,819	225,275	2,530,253	7,963

^aAreas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 26--Area of timberland, by treatment opportunity and ownership classes, Southern Mountains of Virginia, 1992

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry- leased	Other private
			<u>Acres</u>		
Salvage	5,176	--	--	--	5,176
Harvest	154,312	49,413	--	--	104,899
Commercial thinning	34,078	--	3,891	--	30,187
Other stand improvement	80,004	17,398	1,848	--	60,758
Stand conversion	4,914	--	--	--	4,914
Regeneration	241,403	32,770	1,255	--	207,378
Stands in relatively good condition	1,021,813	257,904	21,393	--	742,516
Adverse sites ^a	1,461,933	116,574	16,944	--	1,328,415
All classes	3,003,633	474,059	45,331	--	2,484,243

^aAreas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 27--Merchantable **volume** of live trees and growing stock on timberland, by ownership class and species group, Southern Mountains of Virginia, 1992

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	831,025	46,758	16,928	190,188	577,151	746,445	45,693	15,390	174,355	511,007
Other public	202,379	14,749	17,714	45,610	124,306	168,569	14,260	17,714	36,391	100,204
Forest industry	136,842	5,837	19,885	19,383	91,737	116,930	5,159	19,885	16,082	75,804
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	4,843,466	122,043	391,255	1,591,009	2,739,159	4,363,240	114,589	384,413	1,476,403	2,387,835
All ownerships	6,013,712	189,387	445,782	1,846,190	3,532,353	5,395,184	179,701	437,402	1,703,231	3,074,850

Table 28--**Volume** of sawtimber on timberland, by ownership class and species group, Southern Mountains of Virginia, 1992

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	862,971	141,744	26,590	182,353	512,284	1,164,910	49,985	17,169	237,886	859,870
Other public	214,035	38,645	33,261	48,869	93,260	303,188	7,215	51,618	61,709	182,646
Forest industry	112,830	9,201	14,138	21,440	68,051	166,144	--	52,625	17,362	96,157
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	5,055,780	311,346	567,734	1,805,947	2,370,753	9,017,461	53,518	1,074,781	2,940,005	4,949,157
All ownerships	6,245,616	500,936	641,723	2,058,609	3,044,348	10,651,703	110,718	1,196,193	3,256,962	6,087,830

^aVolume of sawtimber trees less than 15.0 inches at d.b.h.

^bVolume of sawtimber trees 15.0 inches and larger at d.b.h.

Table 29--Average net annual growth and removals of growing stock on timberland, by ownership class and species group, Southern Mountains of Virginia, 1986-1991

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	<u>Thousand cubic feet</u>									
National forest	16,150	346	949	5,440	9,415	5,469	2,558	--	507	2,404
Other public	3,779	221	463	1,075	2,020	2,257	210	775	281	991
Forest industry	3,401	48	945	739	1,669	800	--	--	--	800
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	95,192	2,474	14,397	33,313	45,008	75,960	2,814	17,166	21,484	34,496
All ownerships	118,522	3,089	16,754	40,567	58,112	84,486	5,582	17,941	22,272	38,691

Table 30--Average net annual growth and removals of sawtimber on timberland, by ownership class and species group, Southern Mountains of Virginia, 1986-1991

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	<u>Thousand board feet</u>									
National forest	56,069	2,377	3,242	14,602	35,848	15,698	8,848	--	512	6,338
Other public	16,115	717	2,404	4,260	8,734	6,924	--	2,356	1,439	3,129
Forest industry	13,470	187	6,404	1,617	5,262	3,028	--	--	--	3,028
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	461,812	13,213	84,167	148,355	216,077	317,525	10,171	86,941	88,151	132,262
All ownerships	547,466	16,494	96,217	168,834	265,921	343,175	19,019	89,297	90,102	144,757

Table 31--Volume of timber on timberland, by class of timber and species group, Southern Mountains of Virginia, 1992

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
<u>Thousand cubic feet</u>					
Sawtimber trees					
Saw-log portion	3,221,748	123,773	327,938	975,953	1,794,084
Upper-stem portion ^a	556,999	14,409	28,247	190,166	324,177
Total	3,778,747	138,182	356,185	1,166,119	2,118,261
Poletimber trees	1,616,437	41,519	81,217	537,112	956,589
All growing-stock trees	5,395,184	179,701	437,402	1,703,231	3,074,850
Rough trees					
Sawtimber size	229,205	3,338	5,019	51,166	169,682
Poletimber size	270,458	6,348	1,741	56,798	205,571
Total	499,663	9,686	6,760	107,964	375,253
Rotten trees					
Sawtimber size	112,225	--	1,620	32,952	77,653
Poletimber size	6,640	--	--	2,043	4,597
Total	118,865	--	1,620	34,995	82,250
Salvable dead trees					
Sawtimber size	10,668	670	459	1,287	8,252
Poletimber size	6,846	578	287	869	5,112
Total	17,514	1,248	746	2,156	13,364
Total, all timber	6,031,226	190,635	446,528	1,848,346	3,545,717

^aIncludes cull sections in the saw-log portion.

Table 32--Number of live trees on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
Thousand trees													
Softwood													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	2,113	588	291	317	444	316	45	112	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	17,188	4,524	2,577	4,267	2,156	2,043	951	436	216	18	--	--	--
Pitch pine	5,811	563	1,135	963	707	710	1,146	364	130	60	33	--	--
Table Mountain pine	7,268	1,797	1,545	1,058	1,337	819	276	328	108	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	66,741	28,509	13,911	6,697	5,818	4,445	2,393	1,587	1,505	809	651	398	18
Eastern hemlock	26,371	13,337	7,663	1,472	1,458	777	633	271	313	119	93	165	70
Spruce and fir	1,372	1,100	--	--	106	--	137	29	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	19,327	9,861	5,474	2,987	829	78	45	--	53	--	--	--	--
Total softwoods	146,191	60,279	32,596	17,761	12,855	9,188	5,626	3,127	2,325	1,006	777	563	88
Hardwood													
Select white oaks	49,120	15,066	7,220	8,866	5,591	3,905	3,014	2,161	1,409	954	364	520	50
Select red oaks	37,228	9,576	5,404	4,969	3,472	3,892	2,812	2,412	1,759	1,003	708	1,086	135
Chestnut oak	99,582	21,071	19,171	16,664	16,134	9,986	6,241	3,979	2,127	1,761	951	1,339	158
Other white oaks	69	--	--	--	--	--	50	--	--	19	--	--	--
Other red oaks	61,129	15,549	6,068	10,082	9,452	8,128	4,774	2,775	1,721	1,089	736	741	14
Hickory	61,634	22,661	12,426	7,795	7,635	4,769	2,543	1,703	973	518	398	206	7
Yellow birch	4,421	2,533	542	691	79	282	--	135	25	40	51	43	--
Bard maple	104,703	67,678	19,838	8,092	3,619	2,185	1,080	982	557	259	170	208	35
Soft maple	296,919	190,185	56,073	23,453	12,182	6,246	4,145	2,377	951	559	310	417	21
Beech	54,081	34,265	9,195	3,523	1,622	1,331	1,115	874	676	624	241	565	50
Sweetgum	700	614	--	--	--	--	57	--	29	--	--	--	--
Tupelo and blackgum	96,167	75,017	12,564	4,542	1,863	660	656	388	204	132	53	81	7
Ash	26,995	11,885	6,848	3,541	1,723	1,453	637	380	119	124	129	123	33
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	13,889	4,630	2,292	1,598	1,522	1,294	886	507	527	266	148	190	29
Yellow-poplar	97,611	27,780	19,122	11,630	11,298	7,806	8,442	4,720	3,065	1,748	950	982	68
Bay and magnolia	14,153	8,222	2,043	1,631	647	1,029	204	272	73	--	--	32	--
Black cherry	25,038	13,476	5,997	2,949	1,110	412	455	311	126	100	36	44	22
Black walnut	3,908	824	561	446	492	779	141	327	77	81	135	35	10
Sycamore	2,859	1,752	291	--	491	72	139	40	28	--	19	27	--
Black locust	48,591	19,749	13,904	6,219	3,271	2,476	1,329	699	435	310	109	90	--
Elm	12,613	6,714	2,352	2,162	785	274	242	31	53	--	--	--	--
Other eastern hardwoods	482,424	333,160	91,940	34,213	11,043	5,769	3,046	1,447	775	547	273	175	36
Total hardwoods	1,593,834	882,407	293,851	153,066	94,031	62,748	42,008	26,520	15,709	10,134	5,781	6,904	675
All species	1,740,025	942,686	326,447	170,827	106,886	71,936	47,634	29,647	18,034	11,140	6,558	7,467	763

Table 33--Number of growing-stock trees on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)											
		1.0- 2.9	3.0- 4.9	5.0- 6.9	7.0- a.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 28.9	29.0 and larger
<u>Thousand trees</u>													
Softwood													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	1,948	588	291	317	444	196	--	112	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	14,207	3,435	1,730	3,476	1,959	1,986	951	436	216	18	--	--	--
Pitch pine	4,998	264	836	819	707	639	1,146	364	130	60	33	--	--
Table Mountain pine	4,541	297	927	1,058	832	750	276	293	108	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	62,913	25,554	13,607	6,558	5,727	4,269	2,262	1,587	1,505	789	651	386	18
Eastern hemlock	24,205	11,545	7,364	1,472	1,458	714	633	271	313	119	93	165	58
Spruce and fir	1,372	1,100	--	--	106	--	137	29	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	15,870	7,570	4,601	2,782	741	78	45	--	53	--	--	--	--
Total softwoods	130,054	50,353	29,356	16,482	11,974	8,632	5,450	3,092	2,325	986	777	551	76
Hardwood													
Select white oaks	38,894	7,247	6,354	8,060	5,482	3,762	2,868	2,126	1,306	863	347	449	30
Select red oaks	27,535	4,089	3,365	4,340	2,603	3,679	2,723	2,346	1,627	946	692	1,005	120
Chestnut oak	73,760	9,458	12,528	14,083	14,328	9,166	5,601	3,527	1,768	1,495	717	1,012	77
Other white oaks	69	--	--	--	--	--	50	--	--	19	--	--	--
Other red oaks	46,278	6,148	3,475	9,039	9,045	7,639	4,343	2,586	1,694	970	699	626	14
Hickory	44,844	9,542	10,137	7,664	7,135	4,414	2,354	1,585	945	494	382	185	7
Yellow birch	2,550	1,105	542	551	79	62	--	68	25	40	35	43	--
Bard maple	56,396	24,503	17,498	6,343	3,329	1,852	954	884	503	197	152	167	14
Soft maple	149,152	70,485	37,436	18,251	10,241	5,358	3,665	2,068	754	454	241	189	10
Beech	25,165	11,780	5,079	2,483	1,449	1,275	921	640	572	502	153	297	14
Sweetgum	700	614	--	--	--	--	57	--	29	--	--	--	--
Tupelo and blackgum	24,077	11,366	6,564	3,620	1,304	308	463	211	75	89	36	34	7
Ash	18,178	6,244	5,112	2,983	1,408	1,182	554	310	97	64	83	115	26
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	9,191	1,451	1,168	1,598	1,404	1,294	743	507	473	266	133	125	29
Yellow-poplar	86,483	21,417	16,758	10,625	10,442	7,659	8,309	4,582	3,039	1,704	950	946	52
Bay and magnolia	8,899	4,413	1,156	1,365	647	833	204	201	48	--	--	32	--
Black cherry	8,430	2,929	1,764	1,820	651	412	361	276	48	100	19	36	14
Black walnut	2,350	264	297	446	125	566	141	268	51	63	108	11	10
Sycamore	2,568	1,461	291	--	491	72	139	40	28	--	19	27	--
Black locust	24,196	8,996	6,474	3,583	1,925	1,400	815	388	333	185	73	24	--
Elm	6,786	2,362	1,448	1,972	578	274	94	31	27	--	--	--	--
Other eastern hardwoods	56,481	27,228	10,450	6,413	4,672	3,423	1,997	900	562	485	191	131	29
Total hardwoods	712,982	233,102	147,896	105,239	77,338	54,630	37,356	23,544	14,004	8,936	5,030	5,454	453
All species	843,036	283,455	177,252	121,721	89,312	63,262	42,806	26,636	16,329	9,922	5,807	6,005	529

Table 34--Merchantable volume of live trees on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
<u>Thousand cubic feet</u>											
Softwood											
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	9,979	1,147	2,388	3,299	482	2,663	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	89,935	12,382	14,775	25,165	17,651	11,854	7,266	842	--	--	--
Pitch pine	53,569	2,922	3,872	7,887	20,533	9,599	4,150	2,918	1,688	--	--
Table Mountain pine	35,904	3,163	7,218	8,491	4,804	8,611	3,617	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	344,412	19,958	39,586	48,210	39,999	37,732	50,578	36,083	36,761	31,913	3,592
Eastern hemlock	83,000	3,298	7,465	6,901	10,507	6,040	9,147	5,093	5,819	14,747	13,983
Spruce and fir	3,686	--	606	--	2,275	805	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--
Cedars	14,684	8,009	4,036	640	637	--	1,362	--	--	--	--
Total softwoods	635,169	50,879	79,946	100,593	96,888	77,304	76,120	44,936	44,268	46,660	17,575
Hardwood											
Select white oaks	400,659	26,631	36,223	47,583	54,732	60,270	52,473	46,342	23,356	45,596	7,453
Select red oaks	494,769	15,372	22,713	46,800	53,989	65,902	65,600	50,423	44,226	104,022	25,722
Chestnut oak	802,180	47,058	103,991	114,528	111,339	101,425	71,290	77,260	51,430	103,674	20,185
Other white oaks	1,642	--	--	--	845	--	--	797	--	--	--
Other red oaks	564,478	31,350	59,986	92,001	86,474	74,246	62,276	51,351	43,690	60,681	2,423
Hickory	342,367	20,113	48,309	58,037	50,975	47,626	40,256	27,842	29,095	18,790	1,324
Yellow birch	18,241	2,285	735	2,654	--	3,286	797	1,745	2,365	4,374	--
Hard maple	193,760	26,047	23,588	25,261	21,475	27,004	21,726	13,312	10,426	19,322	5,599
Soft maple	463,520	72,978	81,602	69,361	73,111	60,211	32,464	25,235	18,265	27,145	3,148
Beech	199,655	11,089	11,233	15,369	21,446	25,040	23,748	28,894	13,430	44,336	5,070
Sweetgum	1,658	--	--	--	853	--	805	--	--	--	--
Tupelo and blackgum	64,148	10,708	10,276	5,858	9,631	7,719	5,881	5,207	2,140	5,565	1,163
Ash	90,628	9,456	9,076	16,409	10,591	10,913	5,151	5,391	7,502	10,619	5,520
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	128,510	4,549	10,983	16,125	19,253	15,852	19,927	13,027	10,320	12,368	6,106
Yellow-poplar	931,894	38,586	81,015	98,985	175,216	142,082	130,750	95,420	66,068	93,278	10,494
Bay and magnolia	37,112	4,743	4,012	11,318	3,705	7,030	2,557	--	--	3,747	--
Black cherry	52,509	7,711	5,824	3,619	8,690	8,189	4,181	5,656	1,606	4,087	2,946
Black walnut	41,636	927	2,094	7,870	2,746	9,343	2,766	4,182	8,174	1,825	1,709
Sycamore	12,521	--	3,259	848	2,718	1,093	867	--	1,159	2,577	--
Black locust	125,865	14,873	17,246	24,955	20,739	14,100	13,420	11,776	4,490	4,266	--
Elm	19,305	5,249	3,903	3,471	4,094	987	1,601	--	--	--	--
Other eastern hardwoods	391,486	84,258	66,141	65,466	50,791	35,734	27,630	25,854	15,605	13,436	6,571
Total hardwoods	5,378,543	433,983	602,209	726,518	783,413	718,052	586,166	489,714	353,347	579,708	105,433
All species	6,013,712	484,862	682,155	827,111	880,301	795,356	662,286	534,650	397,615	626,368	123,008

Table 35--Volume of growing stock on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)										
		5.0-6.9	1.0-a.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger	
<u>Thousand cubic feet</u>												
Softwood												
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	8,20a	1,147	2,388	2,010	--	2,663	--	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	86,220	10,398	13,312	24,897	17,651	11,854	7,266	a42	--	--	--	--
Pitch pine	52,940	2,597	3,872	7,583	20,533	9,599	4,150	2,918	1,688	--	--	--
Table Mountain pine	32,333	3,163	4,642	8,002	4,804	8,105	3,617	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	338,500	19,570	39,081	46,464	38,339	37,732	50,578	35,258	36,761	31,125	3,592	--
Eastern hemlock	al. 380	3,298	7,465	6,819	10,507	6,040	9,147	5,093	5,819	14,747	12,445	--
Spruce and fir	3,686	--	606	--	2,275	805	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	13,836	7,643	3,554	640	637	--	1,362	--	--	--	--	--
Total softwoods	617,103	47,816	74,920	96,415	94,746	76,798	76,120	44,111	44,268	45,872	16,037	
Hardwood												
Select white oaks	382,470	24,786	35,718	46,331	53,288	59,723	49,838	43,407	22,443	42,014	4,922	--
Select red oaks	470,069	13,784	18,549	44,686	52,247	64,965	61,760	48,316	43,474	98,797	23,491	--
Chestnut oak	708,302	41,207	95,651	106,639	101,959	92,459	61,675	68,457	41,253	87,030	11,972	--
Other white oaks	1,642	--	--	--	845	--	--	797	--	--	--	--
Other red oaks	537,529	28,263	57,917	88,862	82,017	70,581	62,007	48,436	42,104	54,919	2,423	--
Hickory	327,128	19,712	45,601	54,851	47,981	45,324	39,483	27,270	28,358	17,224	1,324	--
Yellow birch	13,810	1,931	735	694	--	1,767	797	1,745	1,767	4,374	--	--
Hard maple	172,808	21,646	22,149	22,330	19,413	25,631	20,613	10,716	9,698	17,469	3,143	--
Soft maple	396,727	59,204	70,694	62,828	66,630	53,913	27,736	22,353	15,393	16,050	1,926	--
Beech	160,287	8,458	10,384	14,897	17,584	19,972	21,859	24,901	9,704	30,183	2,345	--
Sweetgum	1,658	--	--	--	853	--	805	--	--	--	--	--
Tupelo and blackgum	43,891	8,837	7,447	2,781	6,864	4,824	3,157	3,738	1,863	3,217	1,163	--
Ash	75,672	7,797	7,474	13,732	9,467	8,956	4,319	3,878	5,452	9,638	4,959	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	120,455	4,549	10,263	16,125	16,670	15,852	18,902	13,027	9,014	9,947	6,106	--
Yellow-poplar	915,763	35,501	76,412	97,995	173,233	140,603	130,347	94,128	66,068	92,312	9,164	--
Bay and magnolia	33,375	4,497	4,012	9,514	3,705	5,946	1,954	--	--	3,747	--	--
Black cherry	41,053	5,004	3,731	3,619	7,230	7,273	1,888	5,656	1,074	3,412	2,166	--
Black walnut	31,856	927	777	5,662	2,746	7,313	1,753	3,130	6,599	1,240	1,709	--
Sycamore	12,521	--	3,259	848	2,718	1,093	867	--	1,159	2,577	--	--
Black locust	83,657	9,363	11,665	15,741	13,862	8,916	10,585	7,964	3,795	1,766	--	--
Elm	15,803	4,993	2,980	3,471	2,338	987	1,034	--	--	--	--	--
Other eastern hardwoods	231,605	20,620	33,475	42,123	36,762	23,226	21,666	23,972	12,693	11,251	5,817	--
Total hardwoods	4,778,081	321,079	518, a93	653,729	718,412	659,324	543,045	451,891	321,911	507,167	82,630	
All species	5,395,184	368,895	593,813	750,144	813,158	736,122	619,165	496,002	366,179	553,039	98,667	

Table 36--Volume of sawtimber on timberland, by species and diameter class, Southern **Mountains** of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)								
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger	
<u>Thousand board feet</u>										
Softwood										
Longleaf pine	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	21,100	7,799	--	13,301	--	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--
Virginia pine	262,103	90,121	75,490	55,255	36,725	4,512	--	--	--	--
Pitch pine	211,566	26,336	88,388	47,199	22,440	17,011	10,192	--	--	--
Table Mountain pine	116,885	32,071	22,827	42,149	19,838	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--
Eastern white pine	1,435,741	167,960	170,173	186,809	271,697	201,024	219,009	194,505	24,564	--
Eastern hemlock	374,748	23,838	44,507	28,682	46,426	27,522	33,040	88,820	81,913	--
Spruce and fir	14,254	--	10,107	4,147	--	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--
Cedars	13,173	2,399	3,101	--	7,673	--	--	--	--	--
Total softwoods	2,449,570	350,524	414,593	377,542	404,799	250,069	262,241	283,325	106,477	
Hardwood										
Select white oaks	1,212,233	--	179,718	237,127	220,038	205,162	112,407	228,823	28,958	--
Select red oaks	1,733,974	--	174,829	248,527	259,899	216,053	204,364	500,099	130,203	--
Chestnut oak	1,978,387	--	337,886	354,810	260,312	311,702	197,515	448,937	67,225	--
Other white oaks	7,137	--	3,082	--	--	4,055	--	--	--	--
Other red oaks	1,590,677	--	283,242	283,280	273,909	229,775	212,927	293,121	14,423	--
Hickory	911,379	--	167,036	183,425	178,898	132,947	146,634	94,437	8,002	--
Yellow birch	49,767	--	--	6,950	3,511	8,048	8,441	22,817	--	--
Hard maple	463,901	--	73,091	104,560	89,268	48,784	45,503	86,330	16,365	--
Soft maple	806,209	--	215,655	205,102	116,704	101,648	73,507	82,433	11,160	--
Beech	498,556	--	64,488	75,790	85,052	98,949	39,281	125,051	9,945	--
Sweetgum	6,586	--	2,742	--	3,844	--	--	--	--	--
Tupelo and blackgum	102,985	--	20,880	18,188	13,884	17,091	9,042	17,244	6,656	--
Ash	209,391	--	29,728	34,658	19,199	18,231	27,193	50,917	29,465	--
Cottonwood	--	--	--	--	--	--	--	--	--	--
Basswood	394,765	--	57,057	62,966	82,085	60,616	44,199	52,128	35,714	--
Yellow-poplar	3,383,507	--	618,952	609,175	641,434	503,586	376,303	571,428	62,629	--
Bay and magnolia	63,945	--	11,562	23,065	8,606	--	--	20,712	--	--
Black cherry	131,695	--	25,113	29,953	8,821	28,824	5,582	19,698	13,704	--
Black walnut	95,071	--	9,370	26,698	6,674	12,437	26,875	5,328	7,689	--
Sycamore	36,000	--	9,092	3,879	3,650	--	5,674	13,705	--	--
Black locust	174,292	--	48,834	32,718	40,011	30,735	14,896	7,098	--	--
Elm	16,619	--	a,174	4,005	4,440	--	--	--	--	--
Other eastern hardwoods	580,673	--	125,254	92,296	94,537	112,034	62,464	57,626	36,462	--
Total hardwoods	14,447,749	--	2,465,785	2,637,172	2,414,776	2,140,677	1,612,807	2,697,932	478,600	
All species	16,897,319	350,524	2,880,378	3,014,714	2,819,575	2,390,746	1,875,048	2,981,257	585,077	

Table 37--Volume of sawtimber on timberland, by species, size class, and tree grade, Southern Mountains of Virginia, 1992

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
<u>Thousand board feet</u>										
Softwood										
Yellow pines ^a	611,654	21,613	108,007	482,034	--	110,718	11,035	9,877	89,806	--
Eastern white pine ^b	1,435,741	93,181	481,758	846,652	14,150	910,799	71,307	330,604	508,888	--
Spruce and fir	14,254	--	--	14,254	--	--	--	--	--	--
Cypress ^c	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods ^b	387,921	7,113	85,512	270,625	24,671	285,394	7,113	78,794	182,285	17,202
Total	2,449,570	121,907	675,277	1,613,565	38,821	1,306,911	89,455	419,275	780,979	17,202
Hardwood ^c										
Select white and red oaks	2,946,207	454,523	966,724	1,422,625	102,335	2,106,006	454,523	849,754	751,190	50,539
Other white and red oaks	3,576,201	282,992	980,366	2,018,573	294,270	2,313,901	282,992	791,955	1,081,090	157,864
Hickory	911,379	106,262	226,868	491,910	86,339	560,918	106,262	188,784	233,351	32,521
Yellow birch	49,767	--	3,694	30,781	15,292	42,817	--	3,694	23,831	15,292
Hard maple	463,901	10,151	126,475	268,750	58,525	286,250	10,151	97,429	155,509	23,161
Sweetgum	6,586	--	--	2,742	3,844	3,844	--	--	--	3,844
Ash, walnut, and black cherry	436,157	58,916	161,786	179,354	36,101	280,637	58,916	125,124	79,195	17,402
Yellow-poplar	3,383,507	685,233	1,279,427	1,249,187	169,660	2,155,380	685,233	981,399	409,046	79,702
Other eastern hardwoods	2,674,044	80,328	428,469	1,791,683	373,564	1,595,039	80,328	346,193	978,295	190,223
Total	14,447,749	1,678,405	4,173,809	7,455,605	1,139,930	9,344,792	1,678,405	3,384,332	3,711,507	570,548
All species	16,897,319	1,800,312	4,849,086	9,069,170	1,178,751	10,651,703	1,767,860	3,803,607	4,492,486	587,750

^aFor 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.

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

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

Table 38--Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
<u>Thousand cubic feet</u>									
Softwood									
Longleaf pine	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--
Shortleaf pine	4,184	1,671	--	2,513	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	54,590	20,003	15,842	11,019	6,915	811	--	--	--
Pitch pine	42,063	6,246	18,462	8,958	3,951	2,812	1,634	--	--
Table Mountain pine	22,936	6,973	4,539	7,869	3,555	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--
Eastern white pine	257,304	36,963	34,293	35,045	47,948	33,811	35,493	30,233	3,518
Eastern hemlock	65,498	5,346	9,260	5,558	8,571	4,838	5,575	14,235	12,115
Spruce and fir	2,780	--	2,023	757	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--
Cedars	2,356	478	580	--	1,298	--	--	--	--
Total softwoods	451,711	77,680	84,999	71,719	72,238	42,272	42,702	44,468	15,633
Hardwood									
Select white oaks	235,000	--	37,652	49,019	43,669	39,292	20,774	39,843	4,751
Select red oaks	331,090	--	37,292	51,790	51,962	41,745	38,229	88,632	21,440
Chestnut oak	395,668	--	74,113	75,969	53,579	61,527	37,756	81,333	11,391
Other white oaks	1,350	--	621	--	--	729	--	--	--
Other red oaks	307,255	--	59,137	57,970	53,981	43,598	38,847	51,393	2,329
Hickory	174,857	--	34,967	37,223	34,537	24,614	26,122	16,128	1,266
Yellow birch	9,424	--	--	1,436	700	1,568	1,613	4,107	--
Hard maple	91,463	--	14,092	21,057	18,015	9,732	8,972	16,560	3,035
Soft maple	161,235	--	44,973	42,659	23,503	19,692	13,830	14,760	1,818
Beech	107,773	--	12,891	16,179	18,584	21,812	8,673	27,470	2,164
Sweetgum	1,240	--	528	--	712	--	--	--	--
Tupelo and blackgum	20,195	--	4,483	3,850	2,753	3,316	1,690	3,002	1,101
Ash	39,930	--	6,334	7,292	3,821	3,516	5,057	9,099	4,811
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	77,116	--	12,114	13,135	16,542	11,776	8,315	9,355	5,879
Yellow-poplar	598,988	--	119,907	115,447	115,686	86,883	62,480	89,514	9,071
Bay and magnolia	12,629	--	2,390	4,846	1,738	--	--	3,655	--
Black cherry	24,326	--	5,313	6,001	1,657	5,123	979	3,193	2,060
Black walnut	20,670	--	1,992	5,901	1,479	2,735	5,855	1,129	1,579
Sycamore	6,792	--	1,849	793	721	--	1,043	2,386	--
Black locust	37,340	--	9,733	7,053	8,836	6,834	3,313	1,571	--
Elm	3,371	--	1,678	812	881	--	--	--	--
Other eastern hardwoods	112,325	--	24,874	18,655	18,915	21,793	11,824	10,575	5,689
Total hardwoods	2,770,037	--	506,933	537,087	472,271	406,285	295,372	473,705	78,384
All species	3,221,748	77,680	591,932	608,806	544,509	448,557	338,074	518,173	94,017

Table 39--Total volume of live trees on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

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
<u>Thousand cubic feet</u>													
Softwood													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	12,168	126	243	1,486	2,903	3,811	578	3,021	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	111,639	763	3,903	16,585	17,797	29,350	20,359	13,607	8,315	960	--	--	--
Pitch pine	63,656	199	1,098	3,733	4,639	9,185	23,725	11,042	4,761	3,342	1,932	--	--
Table Mountain pine	43,498	472	1,408	3,986	8,484	9,763	5,491	9,790	4,104	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	427,928	6,514	16,550	26,512	47,911	56,903	46,620	43,738	58,437	41,598	42,316	36,707	4,122
Eastern hemlock	109,372	3,591	8,857	4,592	9,154	8,195	12,186	6,962	10,493	5,823	6,636	16,843	16,040
Spruce and fir	4,636	274	--	--	754	--	--	2,672	936	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	30,191	2,168	7,593	12,035	5,207	796	769	--	1,623	--	--	--	--
Total softwoods	803,088	14,107	39,652	68,929	96,849	118,003	112,400	89,096	87,733	51,723	50,884	53,550	20,162
Hardwood													
Select white oaks	522,264	4,244	10,322	38,853	47,483	60,282	68,603	74,897	64,993	57,353	28,799	56,662	9,773
Select red oaks	626,636	2,260	8,589	21,378	29,139	58,608	66,994	81,649	80,955	62,111	54,452	128,473	32,028
Chestnut oak	1,031,232	4,949	28,770	65,744	132,325	142,267	136,604	123,782	87,059	94,250	62,890	127,092	25,500
Other white oaks	2,114	--	--	--	--	--	1,070	--	--	1,044	--	--	--
Other red oaks	721,944	3,736	9,673	44,350	77,473	115,621	107,597	91,735	76,702	63,385	53,717	74,974	2,981
Hickory	451,998	4,758	16,427	31,314	63,796	72,910	62,697	58,069	48,793	33,650	35,112	22,892	1,580
Yellow birch	24,160	833	496	3,112	919	3,314	--	4,051	972	2,125	2,985	5,353	--
Hard maple	283,525	15,424	26,101	36,551	29,865	31,186	26,048	32,832	26,269	16,105	12,587	23,364	7,193
Soft maple	723,425	49,106	94,390	103,941	102,618	84,846	88,217	72,198	38,811	30,273	21,831	33,266	3,928
Beech	275,353	7,720	10,763	16,964	14,786	19,618	26,816	31,385	29,563	36,175	16,970	57,190	7,403
Sweetgum	1,995	a4	--	--	--	--	994	--	917	--	--	--	--
Tupelo and blackgum	108,837	14,528	14,447	15,130	12,872	7,093	11,446	9,284	7,139	6,186	2,551	6,803	1,358
Ash	120,209	2,916	9,731	13,111	11,181	19,364	12,337	12,549	5,911	6,188	8,584	12,067	6,270
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	153,671	1,073	3,011	5,966	13,056	18,742	22,161	18,184	23,022	14,960	11,824	14,720	6,952
Yellow-poplar	1,103,205	7,275	29,239	50,760	96,288	114,190	199,471	160,787	147,328	107,318	74,162	104,575	11,812
Bay and magnolia	50,309	1,891	2,340	7,069	5,047	13,697	4,426	8,380	3,054	--	--	4,405	--
Black cherry	77,735	4,901	9,131	10,427	7,179	4,327	10,289	9,656	4,937	6,620	1,969	4,831	3,468
Black walnut	51,418	128	903	1,420	2,698	9,582	3,295	11,161	3,297	4,954	9,671	2,300	2,009
Sycamore	15,849	518	517	--	4,025	1,006	3,177	1,284	1,007	--	1,340	2,975	--
Black locust	180,948	5,624	17,137	21,032	21,922	30,712	25,443	17,547	16,226	14,444	5,504	5,357	--
Elm	29,428	1,654	3,079	7,660	4,935	4,191	4,864	1,162	1,883	--	--	--	--
Other eastern hardwoods	698,084	77,339	115,172	125,464	85,370	81,426	62,068	43,435	33,473	30,906	19,046	16,571	7,814
Total hardwoods	7,254,339	210,961	410,238	620,246	762,977	892,982	944,617	864,027	702,311	588,047	423,994	703,870	130,069
All species	8,057,427	225,068	449,890	689,175	859,826	1,010,985	1,057,017	953,123	790,044	639,770	474,878	757,420	150,231

Table 40--Green weight of forest biomass on timberland, by species and diameter class, Southern Mountains of Virginia, 1992

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
Hundred thousand pounds													
Softwood													
Longleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Slash pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	8,667	68	151	949	2,015	2,828	442	2,214					
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	84,515	658	3,132	13,187	13,390	21,935	15,240	10,016	6,242	715			
Pitch pine	43,172	178	1,014	2,390	3,180	6,287	16,030	7,346	3,241	2,211	1,295		
Table Mountain pine	27,330	385	1,295	2,152	5,039	6,005	3,497	6,305	2,652	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern white pine	274,434	2,607	7,505	17,515	31,706	38,435	31,610	29,279	38,082	26,612	26,576	22,239	2,268
Eastern hemlock	80,784	2,141	5,624	3,785	7,942	6,992	9,793	5,586	8,247	4,348	4,708	11,527	10,091
Spruce and fir	3,367	161	--	--	538	--	1,979	689	--	--	--	--	--
Baldcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Pondcypress	--	--	--	--	--	--	--	--	--	--	--	--	--
Cedars	20,873	1,306	4,771	8,398	4,014	578	580	--	1,226	--	--	--	--
Total softwoods	543,142	7,504	23,492	48,376	67,824	83,060	79,171	61,435	59,690	33,886	32,579	33,766	12,359
Hardwood													
Select white oaks	425,584	3,396	7,616	27,684	37,091	48,546	55,948	61,532	54,293	47,942	24,151	48,924	8,461
Select red oaks	510,199	1,929	6,342	15,841	23,855	48,441	55,068	67,170	66,733	50,681	44,457	103,961	25,721
Chestnut oak	80,742	4,521	22,226	46,619	99,978	108,179	106,282	97,604	69,455	75,813	51,006	104,189	21,557
Other white oaks	1,742	--	--	--	--	--	876	--	--	866	--	--	--
Other red oaks	623,255	2,906	7,027	36,646	68,086	101,714	94,303	79,600	66,330	54,281	46,274	63,599	2,489
Hickory	360,965	4,162	14,262	21,591	47,985	56,454	49,974	47,298	40,255	28,184	29,557	19,812	1,431
Yellow birch	19,479	720	433	2,332	704	2,669	--	3,234	842	1,768	2,448	4,329	--
Hard maple	230,873	12,710	21,905	26,197	23,563	25,212	21,345	27,224	21,895	13,600	10,755	20,143	6,324
Soft maple	523,984	37,300	66,604	71,377	76,135	62,933	64,656	53,059	28,388	21,728	15,366	23,768	2,670
Beech	220,525	6,356	9,093	9,924	10,957	15,130	21,623	24,943	24,527	29,881	14,224	47,740	6,127
Sweetgum	1,546	53	--	--	--	--	744	--	--	749	--	--	--
Tupelo and blackgum	74,713	11,329	10,774	8,455	7,938	4,643	7,645	6,476	5,055	4,431	1,906	5,046	1,015
Ash	76,273	1,758	6,093	10,206	8,480	12,887	7,864	7,501	3,376	3,603	4,882	6,510	3,113
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	103,939	713	2,093	3,433	8,426	12,378	14,552	12,258	15,786	10,492	8,156	10,571	5,081
Yellow-poplar	777,400	5,358	19,320	31,261	65,215	79,086	139,867	114,264	105,461	77,625	53,958	77,152	8,833
Bay and magnolia	30,634	1,157	1,493	3,962	3,127	8,513	2,667	5,135	1,878	--	--	2,702	--
Black cherry	52,188	2,481	6,121	6,297	4,746	3,020	6,936	6,686	3,528	4,695	1,415	3,591	2,672
Black walnut	44,374	98	743	1,034	2,372	8,260	2,797	9,543	2,854	4,269	8,464	2,101	1,839
Sycamore	10,913	357	354	--	2,339	655	2,270	882	764	--	1,016	2,276	--
Black locust	173,126	4,832	14,466	17,472	20,662	30,190	24,988	17,572	16,546	14,700	5,884	5,814	--
Elm	19,070	1,220	2,159	4,527	3,287	2,562	3,206	759	1,350	--	--	--	--
Other eastern hardwoods	513,858	63,187	91,292	83,430	60,264	57,092	44,506	31,790	24,519	23,668	14,962	13,527	5,621
Total hardwoods	5,602,069	166,543	310,416	428,288	575,210	688,564	728,117	674,530	554,584	468,227	338,881	565,755	102,954
All species	6,145,211	174,047	333,908	476,664	643,034	771,624	807,288	735,965	614,274	502,113	371,460	599,521	115,313

Table 41--Average net annual growth and removals of live timber and growing stock on timberland, by species, Southern Mountains of Virginia, 1986-1991

Species	Live timber ^a		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	<u>Thousand cubic feet</u>			
Softwood				
Yellow pines	3,089	5,733	3,089	5,582
Eastern white pine	13,351	15,172	13,351	14,987
Spruce and fir	49	--	49	--
Cypress	--	--	--	--
Other eastern softwoods	3,354	3,057	3,354	2,954
Total softwoods	19,843	23,962	19,843	23,523
Hardwood				
Select white and red oaks	16,069	10,127	16,028	9,375
Other white and red oaks	23,725	19,280	23,623	18,320
Hickory	4,651	3,451	4,643	3,075
Yellow birch	176	--	172	--
Hard maple	4,858	3,672	4,842	3,061
Sweetgum	5	549	5	549
Ash, walnut, and black cherry	4,707	3,097	4,619	2,625
Yellow-poplar	19,523	12,006	19,502	11,703
Tupelo and blackgum	622	422	604	377
Bay and magnolia	721	654	719	654
Other eastern hardwoods	24,406	15,691	23,922	11,224
Total hardwoods	99,463	68,949	98,679	60,963
All species	119,306	92,911	118,522	84,486

^aMerchantable portion only.

Table 42--Average net annual growth and removals of sawtimber on timberland, by species, Southern Mountains of Virginia, 1986-1991

Species	Net annual growth	Annual timber removals
	<u>Thousand board feet</u>	
Softwood		
Yellow pines	16,494	19,019
Eastern white pine	83,646	74,765
Spruce and fir	249	--
Cypress	--	--
Other eastern softwoods	12,322	14,532
Total softwoods	112,711	108,316
Hardwood		
Select white and red oaks	87,571	40,419
Other white and red oaks	113,517	69,160
Hickory	21,208	8,717
Yellow birch	439	--
Hard maple	17,049	10,078
Sweetgum	25	613
Ash, walnut, and black cherry	16,757	10,028
Yellow-poplar	100,182	57,562
Tupelo and blackgum	1,647	1,002
Bay and magnolia	2,676	672
Other eastern hardwoods	73,684	36,608
Total hardwoods	434,755	234,859
All species	547,466	343,175

Table 43--Average annual removals of growing stock on timberland, by species and diameter class, Southern Mountains of Virginia, 1986-1991

Species	All classes	Diameter class (inches at breast height)									
		5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 28.9	29.0 and larger
<u>Thousand cubic feet</u>											
Softwood											
Yellow pines	5,582	760	760	1,333	435	425	912	784	--	173	--
Eastern white pine	14,987	91	853	1,314	1,510	2,151	2,806	2,431	1,749	1,895	187
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Cypress	--	--	--	--	--	--	--	--	--	--	--
Other eastern softwoods	2,954	--	49	224	648	151	1,013	496	154	219	--
Total softwoods	23,523	851	1,662	2,871	2,593	2,727	4,731	3,711	1,903	2,287	187
Hardwood											
Select white and red oaks	9,375	96	334	--	678	1,205	1,843	1,503	1,031	2,537	148
Other white and red oaks	18,320	278	1,029	1,937	874	2,876	3,722	3,466	1,515	2,353	270
Hickory	3,075	--	640	381	646	346	546	312	--	204	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	3,061	374	123	293	164	638	182	216	680	391	--
Sweetgum	549	--	--	382	167	--	--	--	--	--	--
Ash, walnut, and black cherry	2,625	--	65	124	476	558	248	564	--	590	--
Yellow-poplar	11,703	--	--	478	673	2,738	1,966	2,204	2,193	1,451	--
Tupelo and blackgum	377	--	143	--	--	--	234	--	--	--	--
Bay and magnolia	654	--	200	252	202	--	--	--	--	--	--
Other eastern hardwoods	11,224	944	810	1,268	1,694	1,222	538	1,006	772	2,150	820
Total hardwoods	60,963	1,692	3,344	5,115	5,574	9,583	9,279	9,271	6,191	9,676	1,238
All species	84,486	2,543	5,006	7,986	8,167	12,310	14,010	12,982	8,094	11,963	1,425

Table 44--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, Southern Mountains of Virginia, 1986-1991

Species	Live timber ^a	Growing stock	Sawtimber
	<u>Thousand cubic feet</u>		<u>Thousand board feet</u>
Softwood			
Yellow pines	4,801	4,259	9,961
Eastern white pine	2,453	2,091	6,525
Spruce and fir	--	--	--
Cypress	--	--	--
Other eastern softwoods	457	457	753
Total softwoods	7,711	6,807	17,239
Hardwood			
Select white and red oaks	7,468	6,031	22,124
Other white and red oaks	15,678	12,661	32,841
Hickory	7,135	6,423	15,614
Yellow birch	--	--	--
Hard maple	1,473	667	2,944
Sweetgum	--	--	--
Ash, walnut, and black cherry	1,577	970	2,690
Yellow-poplar	3,446	2,513	6,683
Tupelo and blackgum	277	65	--
Bay and magnolia	335	335	1,330
Other eastern hardwoods	15,169	6,679	14,147
Total hardwoods	52,558	36,344	98,373
All species	60,269	43,151	115,612

^a **Merchantable** portion only.

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

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
<u>Thousand trees</u>									
Yellow pine									
1986	47,143	10,532	11,724	10,057	5,626	4,545	2,698	1,237	724
1992	32,380	7,472	5,548	6,605	4,644	3,888	2,418	1,240	565
Change	-14,763	-3,060	-6,176	-3,452	-982	-657	-280	+3	-159
Other softwood									
1986	108,128	54,114	18,394	13,075	8,097	4,706	3,385	2,591	3,766
1992	113,811	52,807	27,048	11,156	8,211	5,300	3,208	1,887	4,194
Change	+5,683	-1,307	+8,654	-1,919	+114	+594	-177	-704	+428
Hardwood									
1986	1,643,004	906,983	310,181	160,232	97,658	64,503	40,607	24,941	37,899
1992	1,593,834	882,407	293,851	153,066	94,031	62,748	42,008	26,520	39,203
Change	-49,170	-24,576	-16,330	-7,166	-3,627	-1,755	+1,401	+1,579	+1,304

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

Land use class	Survey completion date			Change 1986-1992
	1977	1986	1992	
	<u>Acres</u>			
Forest land				
Timberland:				
Pine and oak-pine types	436,705	447,972	465,417	+17,445
Hardwood types	2,576,387	2,544,550	2,538,216	-6,334
Total	3,013,092	2,992,522	3,003,633	+11,111
Reserved timberland	22,189	59,682	58,346	-1,336
Woodland	1,225	1,225	1,225	-
Total forest land	3,036,506	3,053,429	3,063,204	+9,775
Nonforest land				
Cropland	269,287	346,237	322,320	-23,917
Pasture and range	1,176,479	989,931	976,638	-13,293
Other	305,018	351,514	404,412	+52,898
Total	1,750,784	1,687,682	1,703,370	+15,688
All land^a	4,787,290	4,741,111	4,766,574	+25,463

^aExcludes all water areas.

Table 47--Volume^a of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, Southern Mountains of Virginia

Species group and year	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0 and larger
SAWTIMBER (in thousand board feet)										
Softwood										
1977	1,625,074	--	--	297,142	360,603	335,549	223,319	144,387	84,074	180,000
1986	2,422,424	--	--	321,923	428,862	457,164	373,122	331,106	175,462	334,785
1992	2,449,570	--	--	350,524	414,593	377,542	404,799	250,069	262,241	389,802
Hardwood										
1977	10,008,811	--	--	--	1,915,979	1,937,578	1,854,941	1,436,635	978,262	1,885,416
1986	13,212,373	--	--	--	2,309,699	2,402,985	2,448,545	1,986,818	1,440,587	2,623,739
1992	14,447,749	--	--	--	2,465,785	2,637,172	2,414,776	2,140,677	1,612,807	3,176,532
GROWING STOCK (in thousand cubic feet)										
Softwood										
1977	491,298	57,549	85,890	84,329	83,515	68,588	42,395	25,814	14,473	28,745
1986	639,752	59,816	82,092	91,371	99,317	93,455	70,838	59,198	30,202	53,463
1992	617,103	47,816	74,920	96,415	94,746	76,798	76,120	44,111	44,268	61,909
Hardwood										
1977	3,849,930	364,304	547,816	611,617	562,322	487,729	419,878	305,214	196,586	354,464
1986	4,544,590	334,051	526,101	642,476	677,951	604,926	554,286	422,083	289,478	493,238
1992	4,778,081	321,079	518,893	653,729	718,412	659,324	543,045	451,891	321,911	589,797
LIVE TIMBER^b (in thousand cubic feet)										
Softwood										
1977	509,706	60,254	89,303	91,034	85,039	70,008	43,054	26,905	14,472	29,637
1986	662,376	62,770	85,393	98,643	101,145	95,417	71,954	61,750	30,202	55,102
1992	635,169	50,879	79,946	100,593	96,888	77,304	76,120	44,936	44,268	64,235
Hardwood										
1977	4,538,402	499,139	663,593	720,503	631,262	556,031	465,802	333,387	227,775	440,910
1986	5,326,866	457,541	637,058	756,641	761,096	689,760	614,951	460,960	335,438	613,421
1992	5,378,543	433,983	602,209	726,518	783,413	718,052	586,166	489,714	353,347	685,141

^aTo provide a basis for valid comparisons, adjustments have been made to allow for differences in volume tables and sawtimber specifications used in previous surveys.

^bMerchantable volume.

Thompson, **Michael T.** 1992. Forest statistics for the Southern Mountains of Virginia, 1992. Resour. Bull. SE-130. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest **Experiment** Station. 50 pp.

Since 1986 the area of timberland remained stable at 3.0 million acres. Nonindustrial private forest **landowners** control 83 percent of the timberland in the region, **More** than **27,000** acres were harvested annually, while 17,000 acres were regenerated by artificial and natural means. **Volume** of hardwood **growing** stock increased by 5 percent to 4.8 billion cubic feet. Volume of **softwood** growing stock declined by 4 percent to 617 million cubic feet. Net annual growth of hardwood growing stock declined by 26 percent to 99 million cubic feet. Net annual growth of softwood growing stock declined by 9 percent to **20** million cubic feet. Annual removals of hardwood growing stock more than doubled and **now** total 61 million cubic feet. Softwood removals **were seven** times those in the previous period and **now** total 23 million cubic feet. Annual mortality of hardwoods increased 38 percent to 36 million cubic feet, whereas softwood mortality remained stable at 7 million cubic feet.

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

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