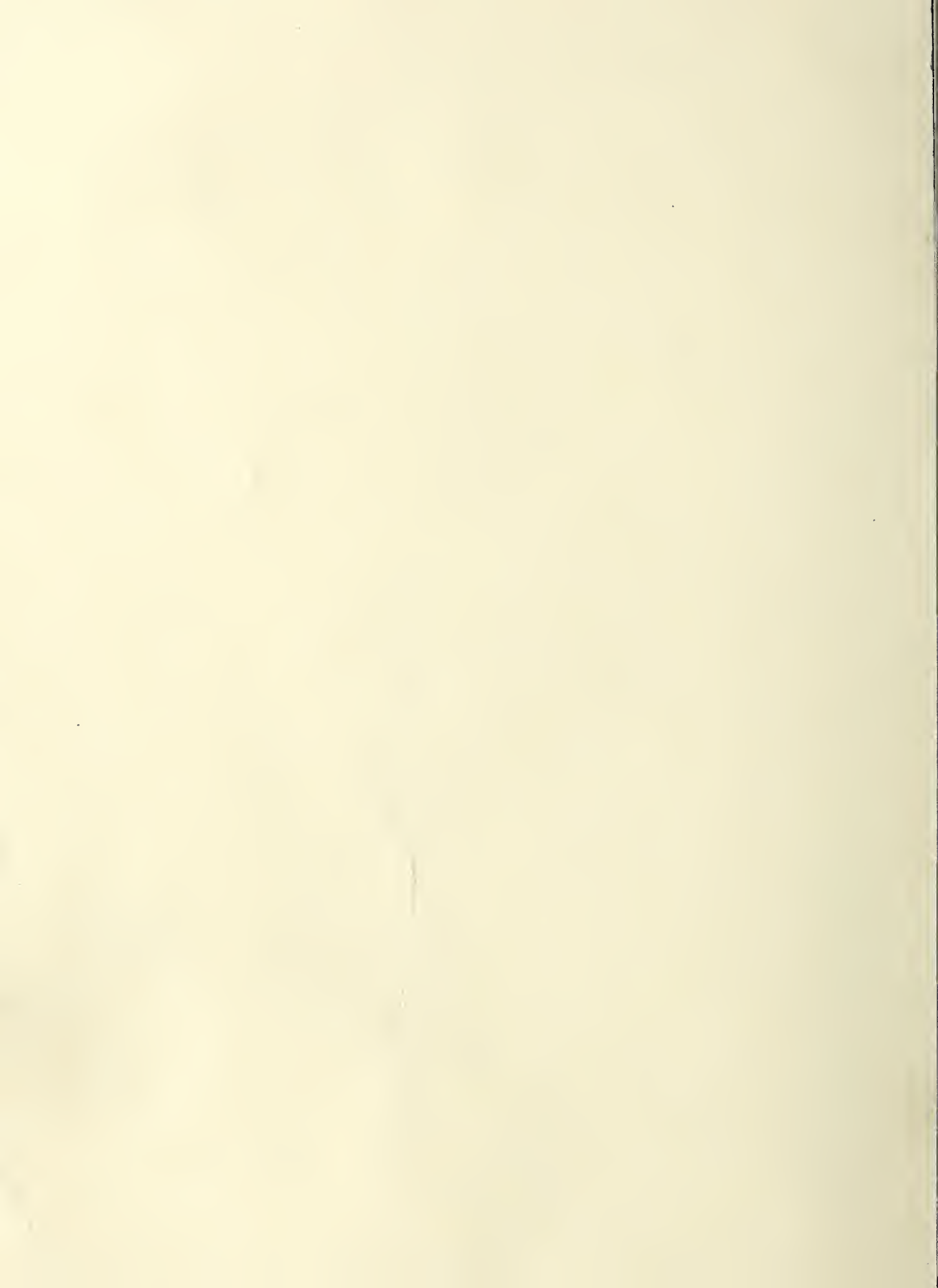


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FOREST STATISTICS

FOR THE

MOUNTAIN REGION OF VIRGINIA, 1957

by

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U. S. Department of Agriculture
Forest Service

Southeastern Forest Experiment Station

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in cooperation with the
Virginia

Department of Conservation and Development
Division of Forestry

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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics Research, Southeastern Forest Experiment Station, Asheville, North Carolina.

The fivefold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

ACKNOWLEDGMENTS

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| | |
|-------------------------------|----------------------------------|
| Chesapeake Corp. of Virginia | Mead Corporation |
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Personnel of the George Washington National Forest, the Jefferson National Forest, and Region 7 Timber Management Surveys cooperated in collecting field data on national forest lands. The Station also wishes to acknowledge cooperation of the Tennessee Valley Authority in conducting the field work in Russell, Smyth, and Washington Counties.

The Division of Forest Economics Research at the Southeastern Station is under the direction of J. F. McCormack. Collection of field data was supervised by Ronald C. Froelich, and aerial photo interpretation was done by W. H. B. Haines. Other staff assistance was as follows:

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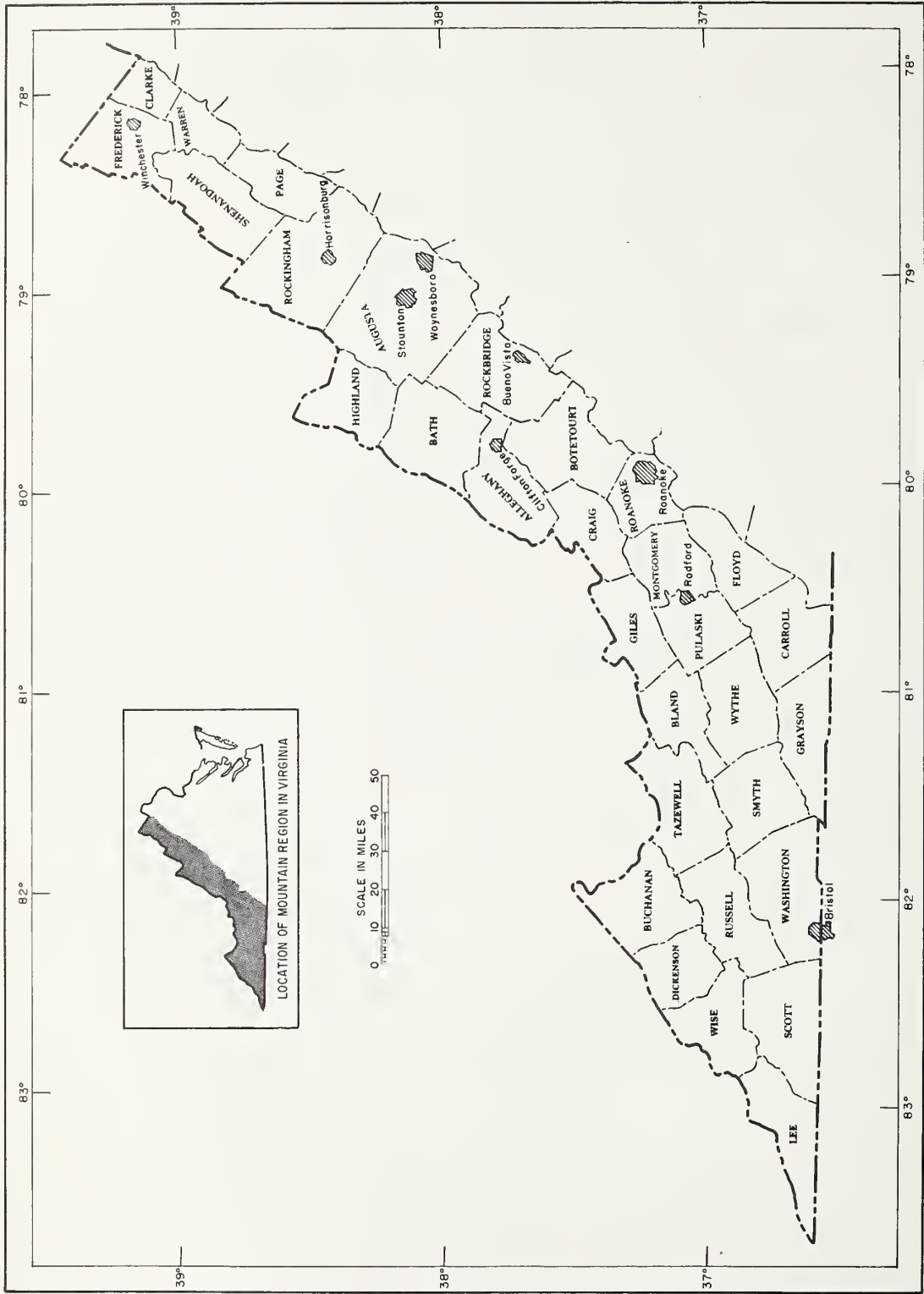


Figure 1.--Counties and independent cities in the Virginia Mountain Region.

FOREST STATISTICS FOR THE MOUNTAIN REGION OF VIRGINIA, 1957

The Mountain Region of Virginia includes 31 counties in the western part of the State within the Appalachian Mountains. Its total area is a little over 9 million acres. The Blue Ridge runs the full length of the region along the eastern edge, and the Cumberlands extend into the southwestern portion where the State borders on Kentucky. Much of the region is made up of valleys and numerous small ridges forming the headwaters of several major rivers. The region is more than half forested, but such sections as the Shenandoah Valley and the Winchester area are well known for their livestock farms, apple orchards, and other agriculture. For purposes of analysis the Mountain Region is divided near Roanoke into northern and southern subregions known as Survey Units 4 and 5, respectively (fig. 1).

Late in the spring of 1956, a forest resource survey of Virginia was begun to obtain current statistics on forest area, timber volume, and timber growth and cut. The survey was started in the coastal plain and progressed through the piedmont to the mountains, where the field work was completed in June 1957. This is the final progress report to be issued by physiographic region. A statistical report for the entire State will be published later this year.

During 1940, a similar survey was made of Virginia's forest resources. Certain comparisons of area and volume determined by the two surveys are presented in the next few pages to point out changes that have occurred during the 17-year period.

THE PRESENT FOREST SITUATION AND RECENT CHANGES

Land-use pattern has changed materially.--Total forest area has increased by 650,000 acres, or 13 percent, in the Virginia mountains since 1940 (fig. 2). During that period the land actively cultivated

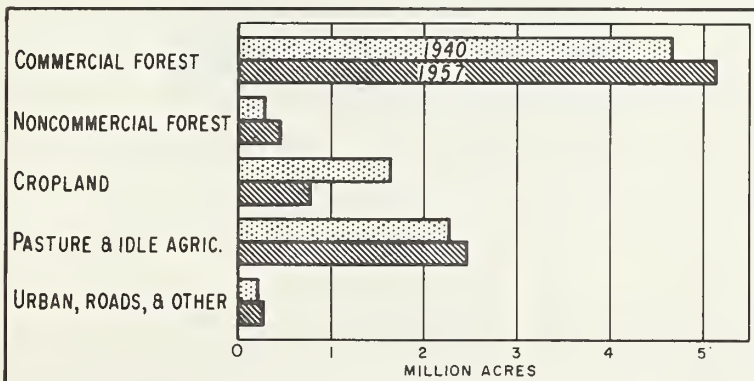


Figure 2.--Comparison of land areas by class of use, 1940 and 1957.

in field crops and orchards dropped 860,000 acres to a little less than half the former area. Some of this land has been converted to improved pasture, while other areas are idle or abandoned and gradually reverting to forest. A more strict interpretation of the definition for nonproductive forest land on national forests is the principal reason for a buildup of almost 60 percent in area of noncommercial forest. Some extremely steep slopes and heads of drains were added to this classification because harvesting of timber would subject the land to excessive erosion and increase the occurrence of land slides. Expansion of the system of highways, spreading urban areas, and suburban development accounted for an increase of nearly 3^r percent in non-forest and nonagricultural land uses.

Forest ownership pattern little changed since 1940.--Forest area by class of ownership apparently has changed only slightly in the past 17 years, but differences in sources of ownership data for the two surveys make precise comparisons impossible. Comparison of Census of Agriculture figures shows a small increase (3 percent) in farm woodland area between 1939 and 1954. Few significant changes in public ownership have taken place during recent years in the Virginia mountains.

The resurvey reveals that approximately one-half of the commercial forest land is on farms (fig. 3). Wood-using industries hold only one percent of the commercial forest, and miscellaneous other private owners have 27 percent. The latter group owns one-third of the commercial forest land in the southern subregion, where mining companies have large holdings. National forests account for 22 percent of the commercial forest land and one percent is in State, county, or municipal ownership. More than two-thirds of the national forest land is in the northern subregion, where about 35 percent of the forest land is in public ownership.

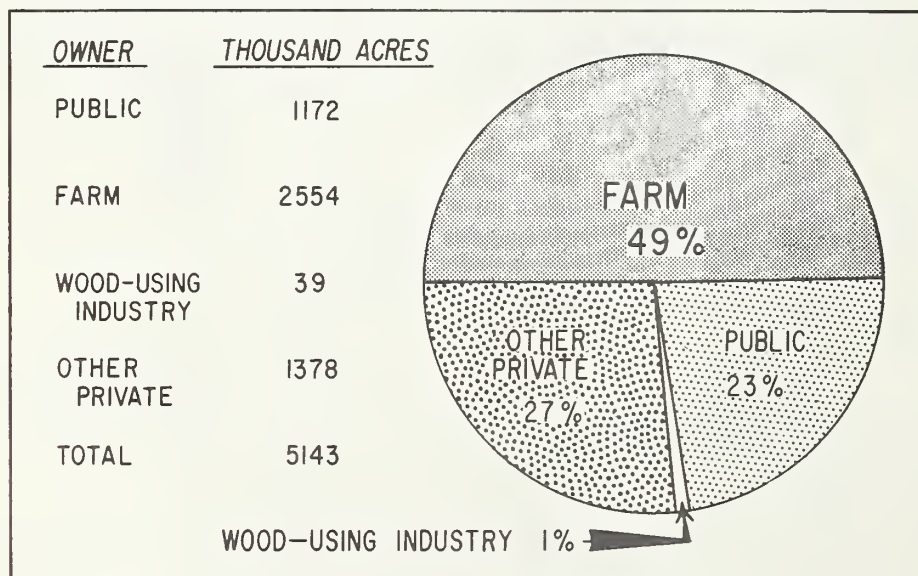


Figure 3.--Ownership of commercial forest land, 1957.

Proportion of area in hardwood types has increased.--The hardwood types, which predominated with 77 percent of the commercial forest area in 1940, have spread to 82 percent in 1957. The Virginia pine type has almost doubled in area during the past 17 years, but the white pine-hemlock type has dropped about one-half and the shortleaf pine type (including pitch and Table-Mountain pine) has decreased by one-fourth (fig. 4). The net change in area of softwood types amounted to a drop of 11 percent, while hardwood types expanded 16 percent. This may have resulted as much from increased stocking of hardwoods in mixed stands as from the removal of softwoods from such stands by cutting. Comparisons were made using 1940 forest type definitions, which included pine-hardwood types with pine types.

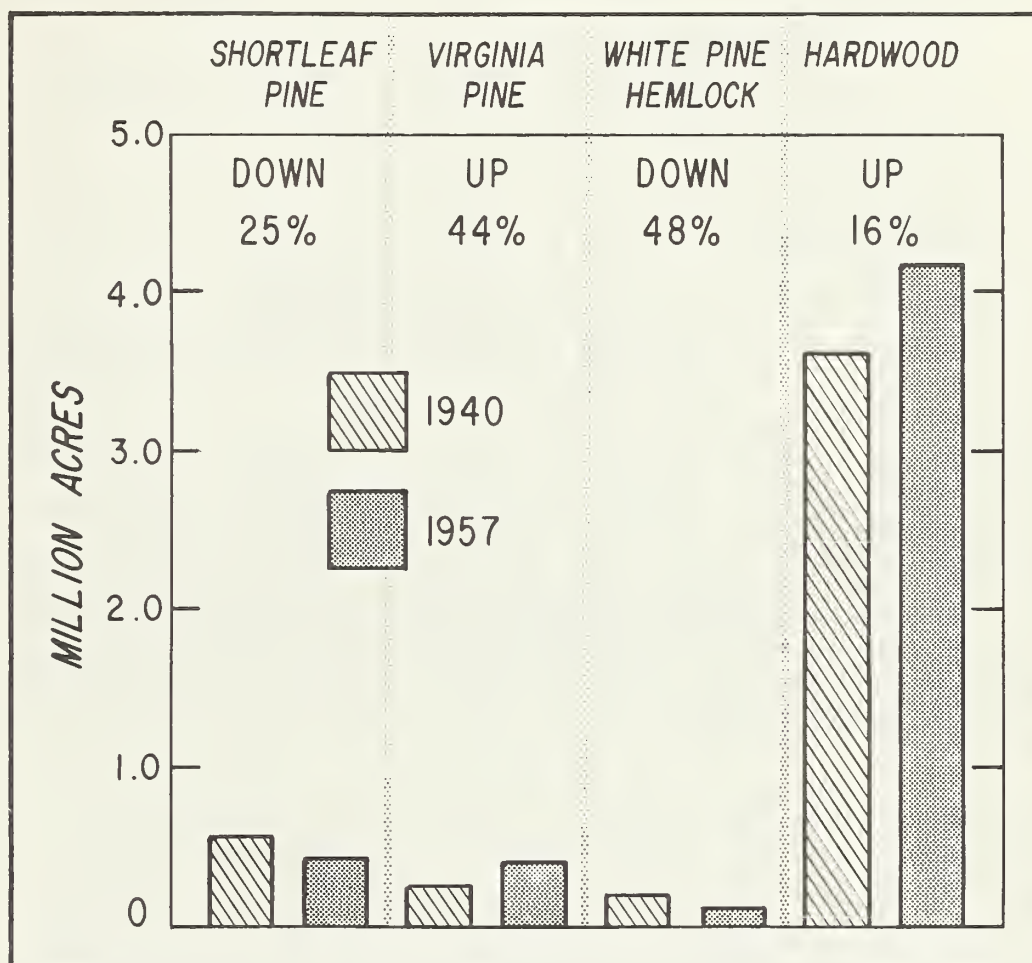


Figure 4.--Change in commercial forest area by forest type, 1940 to 1957.

Volume of each species group increased between surveys.--Cubic volume of sound trees 5.0 inches d.b.h. or larger increased in all four of the broad groups of species. Yellow pines made the modest climb of 8 percent, while other softwoods increased 49 percent, soft hardwoods 79 percent, and hard hardwoods 40 percent (table A). Closer examination

of the yellow-pine data reveals that the increase was all in Virginia pine, amounting to 38 percent, as the other yellow pines decreased 4 percent. An encouraging detail in the hardwood situation is the rapid expansion of yellow-poplar growing stock. Cubic volume of that species has more than doubled in the past 17 years. It now makes up over half of the soft hardwood volume, compared to about 43 percent in 1940.

Table A.--Comparison of volumes^{1/} in all trees 5.0 inches d.b.h. or larger, 1940 and 1957

| Class of material and species group | 1940 | 1957 | Change | |
|-------------------------------------|------------------------|------------------------|------------------------|----------------|
| | <u>Million cu. ft.</u> | <u>Million cu. ft.</u> | <u>Million cu. ft.</u> | <u>Percent</u> |
| Growing stock: | | | | |
| Yellow pines | 236 | 255 | +19 | +8 |
| Other softwoods | 132 | 197 | +65 | +49 |
| Soft hardwoods | 303 | 542 | +239 | +79 |
| Hard hardwoods | 1,495 | 2,089 | +594 | +40 |
| All species | 2,166 | 3,083 | +917 | +42 |
| All live trees: | | | | |
| Softwoods | 418 | 573 | +155 | +37 |
| Hardwoods | 2,466 | 3,856 | +1,390 | +56 |
| All live trees | 2,884 | 4,429 | +1,545 | +54 |

^{1/} Species computation procedures have been used to eliminate differences resulting from changes in standards and definitions between surveys. Thus, estimates shown will not agree with other published figures.

Figure 5 points out the volume supremacy of hardwoods over softwoods in the Mountain Region and shows the rapid gain made by hardwoods in recent years. Enormous volume increases occurred in hardwood pole timber, and a fairly large gain extended up through the 18-inch diameter class. Only slight decreases appear in the larger diameters. Softwood growing stock changed little except for a moderate increase in the smaller diameters.

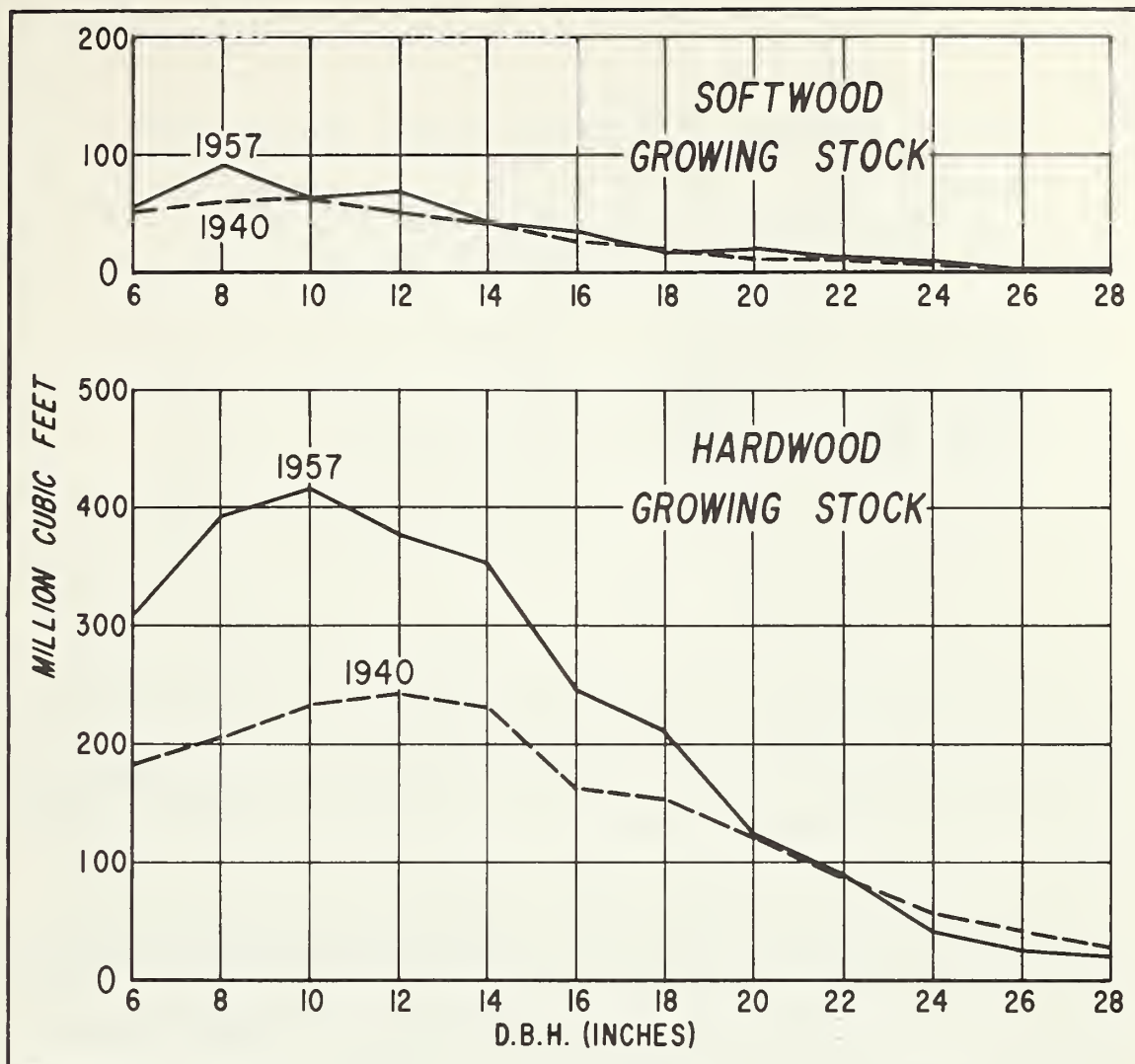


Figure 5.--Comparison of growing stock volume by tree diameter, 1940 and 1957.

Sawtimber volume is 26 percent above the 1940 level.--All the major species of the Virginia Mountain Region have increased in board-foot volume since 1940. The increase ranged from 2 percent in yellow pines to 84 percent for yellow-poplar, with an overall change of 26 percent (table B).

Table B.--Comparison of sawtimber volumes, 1940 and 1957^{1/}

| Species group | 1940 | 1957 | Change | |
|---------------|----------------------------------|----------------------------------|----------------------------------|----------------|
| | <u>Million</u> <u>bd.-ft.</u> | <u>Million</u> <u>bd.-ft.</u> | <u>Million</u> <u>bd.-ft.</u> | <u>Percent</u> |
| Yellow pines | 613 | 625 | +12 | +2 |
| White pine | 353 | 425 | +72 | +20 |
| Oaks | 3,285 | 3,761 | +476 | +14 |
| Yellow-poplar | 463 | 854 | +391 | +84 |
| Other species | 1,761 | 2,517 | +756 | +43 |
| Total | 6,475 | 8,182 | +1,707 | +26 |

^{1/} See footnote 1, table A.

The average sound-tree volume per acre of commercial forest land now runs 1,726 board-feet, 645 cubic feet, or 8.8 cords in the Mountain Region. Average volumes vary by ownership from 710 cubic feet per acre on public lands to 641 on farms and 600 on other private ownerships. The softwood component in the stands is 22 percent of total cubic volume on public lands, 12 percent on farms, and 13 percent on other private lands.

Nine-tenths of the annual volume increase is in hardwoods.--The net increase in cubic-foot volume of growing stock is about 2.4 percent per year, with nine-tenths of the volume gain in hardwoods (table 21). Annual growth after reduction for mortality amounts to more than twice the present rate of cutting. The ratio of growth to cut, however, is far less favorable in the species and sizes in demand commercially. Much of the volume increase is in trees that are small, of poor quality, or of species with little value.

Table 1.--Gross area^{1/} by broad use class, 1957

| Class of use | Area | | | | | |
|--------------------------------|-----------------------|----------------|-----------------------|----------------|-----------------------|----------------|
| | Mountain Region | | Northern subregion | | Southern subregion | |
| | <u>Thousand acres</u> | <u>Percent</u> | <u>Thousand acres</u> | <u>Percent</u> | <u>Thousand acres</u> | <u>Percent</u> |
| Forest land: | | | | | | |
| Commercial | 5,143.0 | 56.4 | 2,398.0 | 55.7 | 2,745.0 | 57.0 |
| Noncommercial: | | | | | | |
| Productive-reserved | 117.6 | 1.3 | 103.4 | 2.4 | 14.2 | 0.3 |
| Unproductive | 345.9 | 3.8 | 275.2 | 6.4 | 70.7 | 1.4 |
| Total forest | 5,606.5 | 61.5 | 2,776.6 | 64.5 | 2,829.9 | 58.7 |
| Nonforest land: | | | | | | |
| Agriculture | 3,217.3 | 35.3 | 1,384.7 | 32.1 | 1,832.6 | 38.1 |
| Urban and other ^{2/} | 267.9 | 2.9 | 136.5 | 3.2 | 131.4 | 2.7 |
| Total nonforest | 3,485.2 | 38.2 | 1,521.2 | 35.3 | 1,964.0 | 40.8 |
| Total land area | 9,091.7 | 99.7 | 4,297.8 | 99.8 | 4,793.9 | 99.5 |
| Total water area ^{3/} | 30.8 | 0.3 | 8.1 | 0.2 | 22.7 | 0.5 |
| All classes | 9,122.5 | 100.0 | 4,305.9 | 100.0 | 4,816.6 | 100.0 |

^{1/} From U. S. Bureau of the Census, 1950.

^{2/} Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

^{3/} Includes 19,800 acres of water reported by the U. S. Bureau of the Census in 1950 and 11,000 acres reported as land by the Bureau of the Census but defined as water by Forest Survey.

Table 2.--Ownership of commercial forest land, 1957

| Class of ownership | Commercial forest land | | | | | |
|-----------------------|------------------------|----------------|-----------------------|----------------|-----------------------|----------------|
| | Mountain Region | | Northern subregion | | Southern subregion | |
| | <u>Thousand acres</u> | <u>Percent</u> | <u>Thousand acres</u> | <u>Percent</u> | <u>Thousand acres</u> | <u>Percent</u> |
| Public land: | | | | | | |
| National forest | 1,114.3 | 21.6 | 799.1 | 33.3 | 315.2 | 11.5 |
| Indian | -- | -- | -- | -- | -- | -- |
| Other Federal | 3.1 | 0.1 | 1.8 | 0.1 | 1.3 | (<u>1</u> /) |
| Total Federal | 1,117.4 | 21.7 | 800.9 | 33.4 | 316.5 | 11.5 |
| State | 26.3 | 0.5 | 7.2 | 0.3 | 19.1 | 0.7 |
| County and municipal | 28.2 | 0.6 | 23.3 | 1.0 | 4.9 | 0.2 |
| Total public | 1,171.9 | 22.8 | 831.4 | 34.7 | 340.5 | 12.4 |
| Private land: | | | | | | |
| Farm | 2,554.1 | 49.6 | 1,089.8 | 45.4 | 1,464.3 | 53.3 |
| Wood-using industries | 39.2 | 0.8 | 4.1 | 0.2 | 35.1 | 1.3 |
| Other | 1,377.8 | 26.8 | 472.7 | 19.7 | 905.1 | 33.0 |
| Total private | 3,971.1 | 77.2 | 1,566.6 | 65.3 | 2,404.5 | 87.6 |
| All classes | 5,143.0 | 100.0 | 2,398.0 | 100.0 | 2,745.0 | 100.0 |

1/ Less than 0.05 percent.

Table 3.--Commercial forest area by forest type and stand-size class, 1957

(In thousand acres)

MOUNTAIN REGION

| Forest type ^{1/} | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
|---------------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|----------------|
| Softwood types: | | | | | | |
| Shortleaf pine | 20.0 | 86.1 | 217.5 | 55.4 | 4.0 | 383.0 |
| Virginia pine | -- | 36.1 | 155.5 | 51.0 | 16.9 | 259.5 |
| White pine | 34.2 | 29.4 | 24.2 | 3.9 | 4.0 | 95.7 |
| Total | 54.2 | 151.6 | 397.2 | 110.3 | 24.9 | 738.2 |
| Hardwood types: | | | | | | |
| Oak-pine | 14.7 | 40.9 | 187.0 | 39.0 | -- | 281.6 |
| Maple-beech-birch | 20.4 | 10.0 | 14.8 | -- | 2.8 | 48.0 |
| Oak-hickory | 858.2 | 757.6 | 1,858.0 | 435.3 | 114.4 | 4,023.5 |
| Oak-gum-cypress | 18.5 | -- | 11.0 | 11.0 | 11.2 | 51.7 |
| Total | 911.8 | 808.5 | 2,070.8 | 485.3 | 128.4 | 4,404.8 |
| All types | 966.0 | 960.1 | 2,468.0 | 595.6 | 153.3 | 5,143.0 |
| Percent | 18.8 | 18.6 | 48.0 | 11.6 | 3.0 | 100.0 |

NORTHERN SUBREGION

| | | | | | | |
|------------------------|--------------|--------------|----------------|--------------|-------------|----------------|
| Softwood types: | | | | | | |
| Shortleaf pine | 14.0 | 53.3 | 153.8 | 25.1 | 4.0 | 250.2 |
| Virginia pine | -- | 27.5 | 100.9 | 32.3 | 12.5 | 173.2 |
| White pine | 22.4 | 11.0 | 6.4 | -- | -- | 39.8 |
| Total | 36.4 | 91.8 | 261.1 | 57.4 | 16.5 | 463.2 |
| Hardwood types: | | | | | | |
| Oak-pine | 11.4 | 13.0 | 148.0 | 21.6 | -- | 194.0 |
| Maple-beech-birch | 5.3 | -- | 3.6 | -- | -- | 8.9 |
| Oak-hickory | 330.7 | 399.2 | 805.7 | 129.3 | 42.8 | 1,707.7 |
| Oak-gum-cypress | 13.9 | -- | 3.4 | 3.4 | 3.5 | 24.2 |
| Total | 361.3 | 412.2 | 960.7 | 154.3 | 46.3 | 1,934.8 |
| All types | 397.7 | 504.0 | 1,221.8 | 211.7 | 62.8 | 2,398.0 |
| Percent | 16.6 | 21.0 | 51.0 | 8.8 | 2.6 | 100.0 |

SOUTHERN SUBREGION

| | | | | | | |
|------------------------|--------------|--------------|----------------|--------------|-------------|----------------|
| Softwood types: | | | | | | |
| Shortleaf pine | 6.0 | 32.8 | 63.7 | 30.3 | -- | 132.8 |
| Virginia pine | -- | 8.6 | 54.6 | 18.7 | 4.4 | 86.3 |
| White pine | 11.8 | 18.4 | 17.8 | 3.9 | 4.0 | 55.9 |
| Total | 17.8 | 59.8 | 136.1 | 52.9 | 8.4 | 275.0 |
| Hardwood types: | | | | | | |
| Oak-pine | 3.3 | 27.9 | 39.0 | 17.4 | -- | 87.6 |
| Maple-beech-birch | 15.1 | 10.0 | 11.2 | -- | 2.8 | 39.1 |
| Oak-hickory | 527.5 | 358.4 | 1,052.3 | 306.0 | 71.6 | 2,315.8 |
| Oak-gum-cypress | 4.6 | -- | 7.6 | 7.6 | 7.7 | 27.5 |
| Total | 550.5 | 396.3 | 1,110.1 | 331.0 | 82.1 | 2,470.0 |
| All types | 568.3 | 456.1 | 1,246.2 | 383.9 | 90.5 | 2,745.0 |
| Percent | 20.7 | 16.6 | 45.4 | 14.0 | 3.3 | 100.0 |

^{1/} See description of forest type and stand-size class under "Definition of Terms."

Table 4.--Net volume^{1/} of sawtimber by species and stand-size class,
Mountain Region, 1957
(In million board-feet)

| Species ^{2/} | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
|-----------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|---------------|
| Softwoods: | | | | | | |
| Shortleaf pine | 93.2 | 247.2 | 209.7 | 16.1 | 3.5 | 569.7 |
| Virginia pine | 19.3 | 95.8 | 60.0 | 0.4 | -- | 175.5 |
| Total | 112.5 | 343.0 | 269.7 | 16.5 | 3.5 | 745.2 |
| White pine | 236.2 | 152.1 | 37.1 | 2.6 | -- | 428.0 |
| Hemlock | 342.7 | 39.3 | 10.7 | -- | -- | 392.7 |
| Redcedar | -- | 21.6 | 2.1 | -- | -- | 23.7 |
| Total sftwds. | 691.4 | 556.0 | 319.6 | 19.1 | 3.5 | 1,589.6 |
| Hardwoods: | | | | | | |
| Blackgum | 70.9 | 50.2 | 18.5 | 3.2 | 0.6 | 143.4 |
| Yellow-poplar | 552.3 | 224.7 | 83.6 | 7.8 | -- | 868.4 |
| Soft maple | 71.1 | 37.5 | 23.6 | 5.2 | -- | 137.4 |
| Basswood-cucumber | 179.6 | 71.8 | 32.6 | 1.9 | -- | 285.9 |
| Other soft hdwds. | 150.9 | 17.8 | 35.2 | -- | 2.4 | 206.3 |
| Total | 1,024.8 | 402.0 | 193.5 | 18.1 | 3.0 | 1,641.4 |
| White oak | 356.2 | 291.4 | 151.5 | 7.4 | 1.9 | 808.4 |
| Other white oaks | 657.8 | 398.8 | 269.8 | 17.8 | 6.3 | 1,350.5 |
| Northern red oak | 550.1 | 186.2 | 76.0 | 0.4 | -- | 812.7 |
| Other red oaks | 557.7 | 405.8 | 194.4 | 13.3 | 6.6 | 1,177.8 |
| Hickory | 549.6 | 222.9 | 120.5 | 29.1 | 1.4 | 923.5 |
| Ash | 40.2 | 11.9 | 12.2 | -- | -- | 64.3 |
| Hard maple | 105.9 | 36.2 | 14.7 | 2.7 | -- | 159.5 |
| Black walnut | 48.3 | 36.1 | 11.6 | 2.3 | 2.2 | 100.5 |
| Other hard hdwds. | 154.1 | 48.5 | 33.9 | 1.5 | 9.5 | 247.5 |
| Total | 3,019.9 | 1,637.8 | 884.6 | 74.5 | 27.9 | 5,644.7 |
| Total hdwds. | 4,044.7 | 2,039.8 | 1,078.1 | 92.6 | 30.9 | 7,286.1 |
| All species | 4,736.1 | 2,595.8 | 1,397.7 | 111.7 | 34.4 | 8,875.7 |
| Percent | 53.4 | 29.2 | 15.7 | 1.3 | 0.4 | 100.0 |

^{1/} Log scale, International 1/4-inch rule.

^{2/} See "Definition of Terms" for species combined with others.

Table 5.--Net volume^{1/} of sawtimber by species and diameter class,
Mountain Region, 1957

| Species | 10-12 | 14-18 | 20-24 | 26+ | All diameters | |
|-------------------|----------------------|---------|---------|--------|--------------------|---------|
| | inches ^{2/} | inches | inches | inches | Million bd.-ft. | Percent |
| Softwoods: | | | | | | |
| Shortleaf pine | 299.5 | 226.1 | 44.1 | -- | 569.7 | 6.4 |
| Virginia pine | 148.7 | 23.4 | 3.4 | -- | 175.5 | 2.0 |
| Total | 448.2 | 249.5 | 47.5 | -- | 745.2 | 8.4 |
| White pine | 141.1 | 174.2 | 105.3 | 7.4 | 428.0 | 4.8 |
| Hemlock | 43.2 | 75.3 | 95.7 | 178.5 | 392.7 | 4.4 |
| Redcedar | 17.7 | 6.0 | -- | -- | 23.7 | 0.3 |
| Total sftwds. | 650.2 | 505.0 | 248.5 | 185.9 | 1,589.6 | 17.9 |
| Hardwoods: | | | | | | |
| Blackgum | 24.0 | 74.7 | 32.7 | 12.0 | 143.4 | 1.6 |
| Yellow-poplar | 196.3 | 472.5 | 140.6 | 59.0 | 868.4 | 9.8 |
| Soft maple | 51.4 | 67.7 | 18.3 | -- | 137.4 | 1.6 |
| Basswood-cucumber | 72.5 | 182.0 | 31.4 | -- | 285.9 | 3.2 |
| Other soft hdwds. | 35.6 | 104.2 | 44.6 | 21.9 | 206.3 | 2.3 |
| Total | 379.8 | 901.1 | 267.6 | 92.9 | 1,641.4 | 18.5 |
| White oak | 169.0 | 432.5 | 171.8 | 35.1 | 808.4 | 9.1 |
| Other white oaks | 319.9 | 674.0 | 273.4 | 83.2 | 1,350.5 | 15.2 |
| Northern red oak | 108.8 | 419.2 | 219.3 | 65.4 | 812.7 | 9.2 |
| Other red oaks | 334.0 | 644.3 | 149.3 | 50.2 | 1,177.8 | 13.3 |
| Hickory | 234.0 | 522.1 | 132.6 | 34.8 | 923.5 | 10.4 |
| Ash | 18.5 | 37.7 | 8.1 | -- | 64.3 | 0.7 |
| Hard maple | 26.2 | 86.8 | 27.2 | 19.3 | 159.5 | 1.8 |
| Black walnut | 24.2 | 68.6 | 7.7 | -- | 100.5 | 1.1 |
| Other hard hdwds. | 49.9 | 131.8 | 58.4 | 7.4 | 247.5 | 2.8 |
| Total | 1,284.5 | 3,017.0 | 1,047.8 | 295.4 | 5,644.7 | 63.6 |
| Total hdwds. | 1,664.3 | 3,918.1 | 1,315.4 | 388.3 | 7,286.1 | 82.1 |
| All species | 2,314.5 | 4,423.1 | 1,563.9 | 574.2 | 8,875.7 | 100.0 |
| Percent | 26.1 | 49.8 | 17.6 | 6.5 | 100.0 | -- |

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5a.--Net volume^{1/} of sawtimber by species and diameter class,
northern subregion, 1957

| Species | 10-12 | 14-18 | 20-24 | 26+ | All diameters | |
|-------------------|----------------------|---------|--------|--------|--------------------|---------|
| | inches ^{2/} | inches | inches | inches | Million bd.-ft. | Percent |
| Softwoods: | | | | | | |
| Shortleaf pine | 210.1 | 126.3 | 29.1 | -- | 365.5 | 8.3 |
| Virginia pine | 105.5 | 18.0 | 3.4 | -- | 126.9 | 2.9 |
| Total | 315.6 | 144.3 | 32.5 | -- | 492.4 | 11.2 |
| White pine | 64.6 | 120.5 | 58.2 | 7.4 | 250.7 | 5.7 |
| Hemlock | 13.8 | 38.8 | 35.1 | 106.5 | 194.2 | 4.5 |
| Redcedar | -- | -- | -- | -- | -- | -- |
| Total sftwds. | 394.0 | 303.6 | 125.8 | 113.9 | 937.3 | 21.4 |
| Hardwoods: | | | | | | |
| Blackgum | 6.7 | 20.8 | 12.1 | 12.0 | 51.6 | 1.2 |
| Yellow-poplar | 62.2 | 207.9 | 20.3 | 17.0 | 307.4 | 7.0 |
| Soft maple | 25.5 | 10.8 | 6.3 | -- | 42.6 | 0.9 |
| Basswood-cucumber | 17.9 | 25.6 | 9.7 | -- | 53.2 | 1.2 |
| Other soft hwdws. | 12.5 | 51.8 | 22.5 | -- | 86.8 | 2.0 |
| Total | 124.8 | 316.9 | 70.9 | 29.0 | 541.6 | 12.3 |
| White oak | 98.1 | 287.4 | 108.0 | 18.8 | 512.3 | 11.7 |
| Other white oaks | 231.3 | 456.4 | 175.8 | 64.8 | 928.3 | 21.2 |
| Northern red oak | 39.4 | 161.1 | 69.2 | 6.7 | 276.4 | 6.3 |
| Other red oaks | 184.6 | 308.9 | 89.4 | 24.6 | 607.5 | 13.9 |
| Hickory | 103.9 | 243.9 | 51.7 | -- | 399.5 | 9.1 |
| Ash | 6.6 | 18.0 | -- | -- | 24.6 | 0.6 |
| Hard maple | 9.6 | 41.5 | 5.6 | -- | 56.7 | 1.3 |
| Black walnut | 17.1 | 33.5 | -- | -- | 50.6 | 1.1 |
| Other hard hwdws. | 11.4 | 36.9 | -- | -- | 48.3 | 1.1 |
| Total | 702.0 | 1,587.6 | 499.7 | 114.9 | 2,904.2 | 66.3 |
| Total hwdws. | 826.8 | 1,904.5 | 570.6 | 143.9 | 3,445.8 | 78.6 |
| All species | 1,220.8 | 2,208.1 | 696.4 | 257.8 | 4,383.1 | 100.0 |
| Percent | 27.8 | 50.4 | 15.9 | 5.9 | 100.0 | -- |

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5b.--Net volume^{1/} of sawtimber by species and diameter class,
southern subregion, 1957

| Species | 10-12 | 14-18 | 20-24 | 26+ | All diameters | |
|-------------------|----------------------|---------|--------|--------|--------------------|---------|
| | inches ^{2/} | inches | inches | inches | Million bd.-ft. | Percent |
| Softwoods: | | | | | | |
| Shortleaf pine | 89.4 | 99.8 | 15.0 | -- | 204.2 | 4.5 |
| Virginia pine | 43.2 | 5.4 | -- | -- | 48.6 | 1.1 |
| Total | 132.6 | 105.2 | 15.0 | -- | 252.8 | 5.6 |
| White pine | 76.5 | 53.7 | 47.1 | -- | 177.3 | 4.0 |
| Hemlock | 29.4 | 36.5 | 60.6 | 72.0 | 198.5 | 4.4 |
| Redcedar | 17.7 | 6.0 | -- | -- | 23.7 | 0.5 |
| Total sftwds. | 256.2 | 201.4 | 122.7 | 72.0 | 652.3 | 14.5 |
| Hardwoods: | | | | | | |
| Blackgum | 17.3 | 53.9 | 20.6 | -- | 91.8 | 2.0 |
| Yellow-poplar | 134.1 | 264.6 | 120.3 | 42.0 | 561.0 | 12.5 |
| Soft maple | 25.9 | 56.9 | 12.0 | -- | 94.8 | 2.1 |
| Basswood-cucumber | 54.6 | 156.4 | 21.7 | -- | 232.7 | 5.2 |
| Other soft hwdws. | 23.1 | 52.4 | 22.1 | 21.9 | 119.5 | 2.7 |
| Total | 255.0 | 584.2 | 196.7 | 63.9 | 1,099.8 | 24.5 |
| White oak | 70.9 | 145.1 | 63.8 | 16.3 | 296.1 | 6.6 |
| Other white oaks | 88.6 | 217.6 | 97.6 | 18.4 | 422.2 | 9.4 |
| Northern red oak | 69.4 | 258.1 | 150.1 | 58.7 | 536.3 | 11.9 |
| Other red oaks | 149.4 | 335.4 | 59.9 | 25.6 | 570.3 | 12.7 |
| Hickory | 130.1 | 278.2 | 80.9 | 34.8 | 524.0 | 11.7 |
| Ash | 11.9 | 19.7 | 8.1 | -- | 39.7 | 0.9 |
| Hard maple | 16.6 | 45.3 | 21.6 | 19.3 | 102.8 | 2.3 |
| Black walnut | 7.1 | 35.1 | 7.7 | -- | 49.9 | 1.1 |
| Other hard hwdws. | 38.5 | 94.9 | 58.4 | 7.4 | 199.2 | 4.4 |
| Total | 582.5 | 1,429.4 | 548.1 | 180.5 | 2,740.5 | 61.0 |
| Total hwdws. | 837.5 | 2,013.6 | 744.8 | 244.4 | 3,840.3 | 85.5 |
| All species | 1,093.7 | 2,215.0 | 867.5 | 316.4 | 4,492.6 | 100.0 |
| Percent | 24.4 | 49.3 | 19.3 | 7.0 | 100.0 | -- |

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 6.--Net volume^{1/} of sawtimber by forest type and stand-size class, 1957
(In million board-feet)

| MOUNTAIN REGION | | | | | | |
|--------------------|------------------------|------------------------|--------------------|---------------------------|---|------------|
| Forest type | Large sawtimber stands | Small sawtimber stands | Pole-timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
| Softwood types: | | | | | | |
| Shortleaf pine | 57.9 | 224.6 | 130.8 | 8.1 | -- | 421.4 |
| Virginia pine | -- | 114.3 | 68.6 | 0.4 | -- | 183.3 |
| White pine | 421.2 | 88.1 | 11.3 | -- | -- | 520.6 |
| Total | 479.1 | 427.0 | 210.7 | 8.5 | -- | 1,125.3 |
| Hardwood types: | | | | | | |
| Oak-pine | 63.3 | 85.2 | 89.5 | 1.0 | -- | 239.0 |
| Maple-beech-birch | 64.0 | 19.1 | 5.7 | -- | 0.2 | 89.0 |
| Oak-hickory | 4,039.5 | 2,064.5 | 1,090.8 | 102.2 | 34.2 | 7,331.2 |
| Oak-gum-cypress | 90.2 | -- | 1.0 | -- | -- | 91.2 |
| Total | 4,257.0 | 2,168.8 | 1,187.0 | 103.2 | 34.4 | 7,750.4 |
| All types | 4,736.1 | 2,595.8 | 1,397.7 | 111.7 | 34.4 | 8,875.7 |
| Percent | 53.4 | 29.2 | 15.7 | 1.3 | 0.4 | 100.0 |
| NORTHERN SUBREGION | | | | | | |
| Softwood types: | | | | | | |
| Shortleaf pine | 35.4 | 127.2 | 95.4 | 3.5 | -- | 261.5 |
| Virginia pine | -- | 90.9 | 45.1 | 0.4 | -- | 136.4 |
| White pine | 267.5 | 28.6 | 2.4 | -- | -- | 298.5 |
| Total | 302.9 | 246.7 | 142.9 | 3.9 | -- | 696.4 |
| Hardwood types: | | | | | | |
| Oak-pine | 49.2 | 27.4 | 74.3 | 1.0 | -- | 151.9 |
| Maple-beech-birch | 9.7 | -- | -- | -- | -- | 9.7 |
| Oak-hickory | 1,699.5 | 1,126.9 | 573.6 | 46.7 | 9.0 | 3,455.7 |
| Oak-gum-cypress | 68.4 | -- | 1.0 | -- | -- | 69.4 |
| Total | 1,826.8 | 1,154.3 | 648.9 | 47.7 | 9.0 | 3,686.7 |
| All types | 2,129.7 | 1,401.0 | 791.8 | 51.6 | 9.0 | 4,383.1 |
| Percent | 48.6 | 31.9 | 18.1 | 1.2 | 0.2 | 100.0 |
| SOUTHERN SUBREGION | | | | | | |
| Softwood types: | | | | | | |
| Shortleaf pine | 22.5 | 97.4 | 35.4 | 4.6 | -- | 159.9 |
| Virginia pine | -- | 23.4 | 23.5 | -- | -- | 46.9 |
| White pine | 153.7 | 59.5 | 8.9 | -- | -- | 222.1 |
| Total | 176.2 | 180.3 | 67.8 | 4.6 | -- | 428.9 |
| Hardwood types: | | | | | | |
| Oak-pine | 14.1 | 57.8 | 15.2 | -- | -- | 87.1 |
| Maple-beech-birch | 54.3 | 19.1 | 5.7 | -- | 0.2 | 79.3 |
| Oak-hickory | 2,340.0 | 937.6 | 517.2 | 55.5 | 25.2 | 3,875.5 |
| Oak-gum-cypress | 21.8 | -- | -- | -- | -- | 21.8 |
| Total | 2,430.2 | 1,014.5 | 538.1 | 55.5 | 25.4 | 4,063.7 |
| All types | 2,606.4 | 1,194.8 | 605.9 | 60.1 | 25.4 | 4,492.6 |
| Percent | 58.0 | 26.6 | 13.5 | 1.3 | 0.6 | 100.0 |

^{1/} Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, Mountain Region, 1957

| YELLOW PINES | | | | | | |
|-----------------|------------------------------|---------|--------------------|---------|--------------------|---------|
| Log grade | 10 - 14 inches ^{1/} | | 16+ inches | | All trees | |
| | Million bd.-ft. | Percent | Million bd.-ft. | Percent | Million bd.-ft. | Percent |
| Grade 1 | -- | -- | -- | -- | -- | -- |
| Grade 2 | 10.6 | 1.8 | 61.0 | 38.3 | 71.6 | 9.6 |
| Grade 3 | 472.1 | 80.6 | 62.4 | 39.1 | 534.5 | 71.7 |
| Grade 4 | 103.1 | 17.6 | 36.0 | 22.6 | 139.1 | 18.7 |
| Total | 585.8 | 100.0 | 159.4 | 100.0 | 745.2 | 100.0 |
| OTHER SOFTWOODS | | | | | | |
| Grade 1 | -- | -- | 29.3 | 5.3 | 29.3 | 3.5 |
| Grade 2 | -- | -- | 34.2 | 6.2 | 34.2 | 4.0 |
| Grade 3 | 249.0 | 85.2 | 379.3 | 68.7 | 628.3 | 74.4 |
| Grade 4 | 43.3 | 14.8 | 109.3 | 19.8 | 152.6 | 18.1 |
| Total | 292.3 | 100.0 | 552.1 | 100.0 | 844.4 | 100.0 |
| SOFT HARDWOODS | | | | | | |
| Grade 1 | -- | -- | 85.3 | 9.7 | 85.3 | 5.2 |
| Grade 2 | 75.3 | 9.9 | 223.5 | 25.4 | 298.8 | 18.2 |
| Grade 3 | 112.0 | 14.7 | 115.3 | 13.1 | 227.3 | 13.8 |
| Grade 4 | 574.2 | 75.4 | 455.8 | 51.8 | 1,030.0 | 62.8 |
| Total | 761.5 | 100.0 | 879.9 | 100.0 | 1,641.4 | 100.0 |
| HARD HARDWOODS | | | | | | |
| Grade 1 | -- | -- | 655.9 | 21.4 | 655.9 | 11.6 |
| Grade 2 | 105.8 | 4.1 | 493.5 | 16.1 | 599.3 | 10.6 |
| Grade 3 | 389.5 | 15.1 | 655.9 | 21.4 | 1,045.4 | 18.5 |
| Grade 4 | 2,084.5 | 80.8 | 1,259.6 | 41.1 | 3,344.1 | 59.3 |
| Total | 2,579.8 | 100.0 | 3,064.9 | 100.0 | 5,644.7 | 100.0 |

^{1/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 8.--Net volume^{1/} of all timber by species and stand-size class,
 Mountain Region, 1957
 (In thousand cords)

| GROWING STOCK | | | | | | |
|----------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|---------------|
| Species | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
| Softwoods: | | | | | | |
| Shortleaf pine | 261 | 953 | 1,267 | 66 | 33 | 2,580 |
| Virginia pine | 101 | 425 | 1,041 | 5 | 6 | 1,578 |
| Total | 362 | 1,378 | 2,308 | 71 | 39 | 4,158 |
| White pine | 479 | 590 | 189 | 17 | 1 | 1,276 |
| Hemlock | 665 | 191 | 63 | -- | -- | 919 |
| Redcedar | 3 | 78 | 64 | -- | -- | 145 |
| Total sftwds. | 1,509 | 2,237 | 2,624 | 88 | 40 | 6,498 |
| Hardwoods: | | | | | | |
| Blackgum | 226 | 198 | 177 | 30 | 2 | 633 |
| Yellow-poplar | 1,714 | 932 | 1,057 | 31 | 1 | 3,735 |
| Soft maple | 414 | 228 | 374 | 19 | -- | 1,035 |
| Basswood-cucumber | 589 | 293 | 294 | 5 | -- | 1,181 |
| Other soft hwdws. | 453 | 149 | 376 | -- | 10 | 988 |
| Total | 3,396 | 1,800 | 2,278 | 85 | 13 | 7,572 |
| White oak | 1,151 | 1,504 | 1,389 | 37 | 6 | 4,087 |
| Other white oaks | 2,293 | 2,474 | 3,203 | 63 | 23 | 8,056 |
| Northern red oak | 1,632 | 745 | 896 | 44 | -- | 3,317 |
| Other red oaks | 2,047 | 1,901 | 3,047 | 70 | 24 | 7,089 |
| Hickory | 2,197 | 1,105 | 1,317 | 107 | 5 | 4,731 |
| Ash | 256 | 141 | 93 | -- | -- | 490 |
| Hard maple | 374 | 237 | 143 | 10 | 1 | 765 |
| Black walnut | 154 | 156 | 159 | 49 | 8 | 526 |
| Dogwood, holly | 37 | 12 | 36 | 5 | -- | 90 |
| Other hard hwdws. | 725 | 297 | 536 | 34 | 31 | 1,623 |
| Total | 10,866 | 8,572 | 10,819 | 419 | 98 | 30,774 |
| Total hwdws. | 14,262 | 10,372 | 13,097 | 504 | 111 | 38,346 |
| All species | 15,771 | 12,609 | 15,721 | 592 | 151 | 44,844 |
| Percent | 35.2 | 28.1 | 35.1 | 1.3 | 0.3 | 100.0 |

| OTHER MATERIAL | | | | | | |
|-----------------------------|--------------|--------------|--------------|------------|------------|---------------|
| Sound culls: | | | | | | |
| Softwoods | 57 | 147 | 709 | 90 | 49 | 1,052 |
| Hardwoods | 3,267 | 2,269 | 5,662 | 759 | 336 | 12,293 |
| Rotten culls | 496 | 365 | 504 | 83 | 11 | 1,459 |
| Total other material | 3,820 | 2,781 | 6,875 | 932 | 396 | 14,804 |

^{1/} Sound wood and bark.

Table 9.--Net volume^{1/} of all timber by species and diameter class,
 Mountain Region, 1957
 (In thousand cords)

| GROWING STOCK | | | | | | | |
|-------------------|----------------|----------|-----------|-----------|--------------|------------|---------------|
| Species | Diameter class | | | | | | All diameters |
| | 6 inches | 8 inches | 10 inches | 12 inches | 14-18 inches | 20+ inches | |
| Softwoods: | | | | | | | |
| Shortleaf pine | 242 | 516 | 550 | 542 | 631 | 99 | 2,580 |
| Virginia pine | 462 | 553 | 300 | 193 | 62 | 8 | 1,578 |
| Total | 704 | 1,069 | 850 | 735 | 693 | 107 | 4,158 |
| White pine | 104 | 246 | 172 | 199 | 360 | 195 | 1,276 |
| Hemlock | 36 | 97 | 54 | 84 | 174 | 474 | 919 |
| Redcedar | 62 | 34 | 25 | 14 | 10 | -- | 145 |
| Total sftwds. | 906 | 1,446 | 1,101 | 1,032 | 1,237 | 776 | 6,498 |
| Hardwoods: | | | | | | | |
| Blackgum | 71 | 66 | 69 | 94 | 232 | 101 | 633 |
| Yellow-poplar | 373 | 550 | 623 | 566 | 1,197 | 426 | 3,735 |
| Soft maple | 240 | 189 | 182 | 183 | 194 | 47 | 1,035 |
| Basswood-cucumber | 103 | 100 | 237 | 206 | 465 | 70 | 1,181 |
| Other soft hdwds. | 60 | 188 | 168 | 136 | 288 | 148 | 988 |
| Total | 847 | 1,093 | 1,279 | 1,185 | 2,376 | 792 | 7,572 |
| White oak | 428 | 715 | 583 | 601 | 1,231 | 529 | 4,087 |
| Other white oaks | 1,264 | 1,525 | 1,178 | 1,176 | 1,977 | 936 | 8,056 |
| Northern red oak | 391 | 396 | 300 | 368 | 1,160 | 702 | 3,317 |
| Other red oaks | 1,050 | 1,333 | 1,257 | 1,128 | 1,835 | 486 | 7,089 |
| Hickory | 471 | 789 | 825 | 783 | 1,469 | 394 | 4,731 |
| Ash | 44 | 91 | 166 | 61 | 108 | 20 | 490 |
| Hard maple | 67 | 159 | 79 | 94 | 249 | 117 | 765 |
| Black walnut | 52 | 60 | 111 | 87 | 197 | 19 | 526 |
| Dogwood, holly | 67 | 23 | -- | -- | -- | -- | 90 |
| Other hard hdwds. | 334 | 236 | 315 | 186 | 378 | 174 | 1,623 |
| Total | 4,168 | 5,327 | 4,814 | 4,484 | 8,604 | 3,377 | 30,774 |
| Total hdwds. | 5,015 | 6,420 | 6,093 | 5,669 | 10,980 | 4,169 | 38,346 |
| All species | 5,921 | 7,866 | 7,194 | 6,701 | 12,217 | 4,945 | 44,844 |
| Percent | 13.2 | 17.5 | 16.0 | 15.0 | 27.3 | 11.0 | 100.0 |

| OTHER MATERIAL | | | | | | | |
|----------------------|-------|-------|-------|-------|-------|-------|--------|
| Sound culls: | | | | | | | |
| Softwoods | 218 | 232 | 269 | 164 | 116 | 53 | 1,052 |
| Hardwoods | 1,553 | 1,567 | 1,699 | 1,338 | 3,345 | 2,791 | 12,293 |
| Rotten culls | 153 | 173 | 257 | 56 | 320 | 500 | 1,459 |
| Total other material | 1,924 | 1,972 | 2,225 | 1,558 | 3,781 | 3,344 | 14,804 |

^{1/} Sound wood and bark.

Table 9a.--Net volume^{1/} of all timber by species and diameter class,
 northern subregion, 1957
 (In thousand cords)

| Species | Diameter class | | | | | | All diameters |
|-------------------|----------------|----------|-----------|-----------|--------------|------------|---------------|
| | 6 inches | 8 inches | 10 inches | 12 inches | 14-18 inches | 20+ inches | |
| GROWING STOCK | | | | | | | |
| Softwoods: | | | | | | | |
| Shortleaf pine | 177 | 427 | 400 | 365 | 354 | 65 | 1,788 |
| Virginia pine | 346 | 350 | 208 | 138 | 48 | 8 | 1,098 |
| Total | 523 | 777 | 608 | 503 | 402 | 73 | 2,886 |
| White pine | 43 | 97 | 73 | 99 | 245 | 113 | 670 |
| Hemlock | 20 | 27 | 9 | 33 | 91 | 235 | 415 |
| Redcedar | 17 | 28 | -- | -- | -- | -- | 45 |
| Total sftwds. | 603 | 929 | 690 | 635 | 738 | 421 | 4,016 |
| Hardwoods: | | | | | | | |
| Blackgum | 38 | 38 | 40 | 26 | 66 | 53 | 261 |
| Yellow-poplar | 52 | 69 | 131 | 185 | 527 | 79 | 1,043 |
| Soft maple | 60 | 90 | 145 | 90 | 31 | 16 | 432 |
| Basswood-cucumber | 11 | 31 | 30 | 50 | 70 | 22 | 214 |
| Other soft hwdws. | 43 | 69 | 69 | 48 | 139 | 54 | 422 |
| Total | 204 | 297 | 415 | 399 | 833 | 224 | 2,372 |
| White oak | 251 | 403 | 378 | 350 | 817 | 324 | 2,523 |
| Other white oaks | 823 | 949 | 751 | 853 | 1,340 | 631 | 5,347 |
| Northern red oak | 221 | 198 | 217 | 134 | 452 | 189 | 1,411 |
| Other red oaks | 614 | 880 | 768 | 612 | 895 | 277 | 4,046 |
| Hickory | 239 | 356 | 251 | 348 | 684 | 125 | 2,003 |
| Ash | 23 | 54 | 92 | 23 | 50 | -- | 242 |
| Hard maple | 26 | 62 | 40 | 34 | 122 | 15 | 299 |
| Black walnut | 24 | 21 | 55 | 61 | 94 | -- | 255 |
| Dogwood, holly | 24 | -- | -- | -- | -- | -- | 24 |
| Other hard hwdws. | 100 | 9 | 100 | 43 | 107 | -- | 359 |
| Total | 2,345 | 2,932 | 2,652 | 2,458 | 4,561 | 1,561 | 16,509 |
| Total hwdws. | 2,549 | 3,229 | 3,067 | 2,857 | 5,394 | 1,785 | 18,881 |
| All species | 3,152 | 4,158 | 3,757 | 3,492 | 6,132 | 2,206 | 22,897 |
| Percent | 13.8 | 18.2 | 16.4 | 15.2 | 26.8 | 9.6 | 100.0 |

OTHER MATERIAL

| | | | | | | | |
|----------------------|-------|-----|-------|-----|-------|-------|-------|
| Sound culls: | | | | | | | |
| Softwoods | 135 | 132 | 178 | 95 | 73 | 14 | 627 |
| Hardwoods | 831 | 718 | 762 | 676 | 1,712 | 1,173 | 5,872 |
| Rotten culls | 93 | 102 | 65 | 30 | 116 | 167 | 573 |
| Total other material | 1,059 | 952 | 1,005 | 801 | 1,901 | 1,354 | 7,072 |

^{1/} Sound wood and bark.

Table 9b.--Net volume^{1/} of all timber by species and diameter class,
 southern subregion, 1957
 (In thousand cords)

GROWING STOCK

| Species | Diameter class | | | | | | All diameters |
|-------------------|----------------|----------|-----------|-----------|--------------|------------|---------------|
| | 6 inches | 8 inches | 10 inches | 12 inches | 14-18 inches | 20+ inches | |
| Softwoods: | | | | | | | |
| Shortleaf pine | 65 | 89 | 150 | 177 | 277 | 34 | 792 |
| Virginia pine | 116 | 203 | 92 | 55 | 14 | -- | 480 |
| Total | 181 | 292 | 242 | 232 | 291 | 34 | 1,272 |
| White pine | 61 | 149 | 99 | 100 | 115 | 82 | 606 |
| Hemlock | 16 | 70 | 45 | 51 | 83 | 239 | 504 |
| Redcedar | 45 | 6 | 25 | 14 | 10 | -- | 100 |
| Total sftwds. | 303 | 517 | 411 | 397 | 499 | 355 | 2,482 |
| Hardwoods: | | | | | | | |
| Blackgum | 33 | 28 | 29 | 68 | 166 | 48 | 372 |
| Yellow-poplar | 321 | 481 | 492 | 381 | 670 | 347 | 2,692 |
| Soft maple | 180 | 99 | 37 | 93 | 163 | 31 | 603 |
| Basswood-cucumber | 92 | 69 | 207 | 156 | 395 | 48 | 967 |
| Other soft hwdws. | 17 | 119 | 99 | 88 | 149 | 94 | 566 |
| Total | 643 | 796 | 864 | 786 | 1,543 | 568 | 5,200 |
| White oak | 177 | 312 | 205 | 251 | 414 | 205 | 1,564 |
| Other white oaks | 441 | 576 | 427 | 323 | 637 | 305 | 2,709 |
| Northern red oak | 170 | 198 | 83 | 234 | 708 | 513 | 1,906 |
| Other red oaks | 436 | 453 | 489 | 516 | 940 | 209 | 3,043 |
| Hickory | 232 | 433 | 574 | 435 | 785 | 269 | 2,728 |
| Ash | 21 | 37 | 74 | 38 | 58 | 20 | 248 |
| Hard maple | 41 | 97 | 39 | 60 | 127 | 102 | 466 |
| Black walnut | 28 | 39 | 56 | 26 | 103 | 19 | 271 |
| Dogwood, holly | 43 | 23 | -- | -- | -- | -- | 66 |
| Other hard hwdws. | 234 | 227 | 215 | 143 | 271 | 174 | 1,264 |
| Total | 1,823 | 2,395 | 2,162 | 2,026 | 4,043 | 1,816 | 14,265 |
| Total hwdws. | 2,466 | 3,191 | 3,026 | 2,812 | 5,586 | 2,384 | 19,465 |
| All species | 2,769 | 3,708 | 3,437 | 3,209 | 6,085 | 2,739 | 21,947 |
| Percent | 12.6 | 16.9 | 15.7 | 14.6 | 27.7 | 12.5 | 100.0 |

OTHER MATERIAL

| | | | | | | | |
|----------------------|-----|-------|-------|-----|-------|-------|-------|
| Sound culls: | | | | | | | |
| Softwoods | 83 | 100 | 91 | 69 | 43 | 39 | 425 |
| Hardwoods | 722 | 849 | 937 | 662 | 1,633 | 1,618 | 6,421 |
| Rotten culls | 60 | 71 | 192 | 26 | 204 | 333 | 886 |
| Total other material | 865 | 1,020 | 1,220 | 757 | 1,880 | 1,990 | 7,732 |

^{1/} Sound wood and bark.

Table 10.--Net volume^{1/} of all timber by species and class of material,
 Mountain Region, 1957
 (In thousand cords)

| Species | Growing stock | | | | Other material | |
|-------------------------|-----------------|-------------|-------------------|-------------------|----------------|--------------|
| | Sawtimber trees | | Pole-timber trees | Total sound trees | Sound culls | Rotten culls |
| | Saw-log portion | Upper stems | | | | |
| Softwoods: | | | | | | |
| Shortleaf pine | 1,282 | 540 | 758 | 2,580 | 364 | 10 |
| Virginia pine | 414 | 149 | 1,015 | 1,578 | 524 | 10 |
| Total | 1,696 | 689 | 1,773 | 4,158 | 888 | 20 |
| White pine | 788 | 138 | 350 | 1,276 | 42 | 4 |
| Hemlock | 608 | 178 | 133 | 919 | 103 | 2 |
| Redcedar | 35 | 14 | 96 | 145 | 19 | 12 |
| Total sftwds. | 3,127 | 1,019 | 2,352 | 6,498 | 1,052 | 38 |
| Hardwoods: | | | | | | |
| Blackgum | 301 | 126 | 206 | 633 | 436 | 50 |
| Yellow-poplar | 1,726 | 463 | 1,546 | 3,735 | 249 | 26 |
| Soft maple | 303 | 121 | 611 | 1,035 | 800 | 108 |
| Basswood-cucumber | 617 | 124 | 440 | 1,181 | 175 | 59 |
| Other soft hwdws. | 402 | 170 | 416 | 988 | 510 | 28 |
| Total | 3,349 | 1,004 | 3,219 | 7,572 | 2,170 | 271 |
| White oak | 1,632 | 729 | 1,726 | 4,087 | 817 | 85 |
| Other white oaks | 2,835 | 1,254 | 3,967 | 8,056 | 4,142 | 208 |
| Northern red oak | 1,622 | 608 | 1,087 | 3,317 | 703 | 106 |
| Other red oaks | 2,423 | 1,026 | 3,640 | 7,089 | 1,092 | 110 |
| Hickory | 1,875 | 771 | 2,085 | 4,731 | 762 | 82 |
| Ash | 134 | 55 | 301 | 490 | 64 | 2 |
| Hard maple | 331 | 129 | 305 | 765 | 344 | 79 |
| Black walnut | 214 | 89 | 223 | 526 | 77 | 15 |
| Dogwood, holly | -- | -- | 90 | 90 | 79 | 2 |
| Scrub oak ^{2/} | -- | -- | -- | -- | 349 | 23 |
| Other hard hwdws. | 529 | 209 | 885 | 1,623 | 1,694 | 438 |
| Total | 11,595 | 4,870 | 14,309 | 30,774 | 10,123 | 1,150 |
| Total hwdws. | 14,944 | 5,874 | 17,528 | 38,346 | 12,293 | 1,421 |
| All species | 18,071 | 6,893 | 19,880 | 44,844 | 13,345 | 1,459 |
| Percent | 40.3 | 15.4 | 44.3 | 100.0 | 90.1 | 9.9 |

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 10a.--Net volume^{1/} of all timber by species and class of material,
northern subregion, 1957
(In thousand cords)

| Species | Growing stock | | | | Other material | |
|-------------------------|-----------------|-------------|-------------------|-------------------|----------------|--------------|
| | Sawtimber trees | | Pole-timber trees | Total sound trees | Sound culls | Rotten culls |
| | Saw-log portion | Upper stems | | | | |
| Softwoods: | | | | | | |
| Shortleaf pine | 845 | 339 | 604 | 1,788 | 239 | 10 |
| Virginia pine | 288 | 114 | 696 | 1,098 | 310 | 6 |
| Total | 1,133 | 453 | 1,300 | 2,886 | 549 | 16 |
| White pine | 450 | 80 | 140 | 670 | 26 | -- |
| Hemlock | 300 | 68 | 47 | 415 | 34 | -- |
| Redcedar | -- | -- | 45 | 45 | 18 | 12 |
| Total sftwds. | 1,883 | 601 | 1,532 | 4,016 | 627 | 28 |
| Hardwoods: | | | | | | |
| Blackgum | 106 | 39 | 116 | 261 | 131 | 17 |
| Yellow-poplar | 621 | 170 | 252 | 1,043 | 72 | 11 |
| Soft maple | 94 | 43 | 295 | 432 | 215 | 17 |
| Basswood - cucumber | 116 | 26 | 72 | 214 | 46 | 4 |
| Other soft hdwds. | 169 | 72 | 181 | 422 | 146 | 20 |
| Total | 1,106 | 350 | 916 | 2,372 | 610 | 69 |
| White oak | 1,038 | 453 | 1,032 | 2,523 | 519 | 51 |
| Other white oaks | 1,948 | 876 | 2,523 | 5,347 | 2,618 | 130 |
| Northern red oak | 548 | 227 | 636 | 1,411 | 354 | 46 |
| Other red oaks | 1,243 | 541 | 2,262 | 4,046 | 665 | 59 |
| Hickory | 810 | 347 | 846 | 2,003 | 338 | 30 |
| Ash | 53 | 20 | 169 | 242 | 40 | 1 |
| Hard maple | 120 | 51 | 128 | 299 | 87 | 22 |
| Black walnut | 107 | 48 | 100 | 255 | 41 | -- |
| Dogwood, holly | -- | -- | 24 | 24 | 15 | -- |
| Scrub oak ^{2/} | -- | -- | -- | -- | 187 | 21 |
| Other hard hdwds. | 104 | 46 | 209 | 359 | 398 | 116 |
| Total | 5,971 | 2,609 | 7,929 | 16,509 | 5,262 | 476 |
| Total hdwds. | 7,077 | 2,959 | 8,845 | 18,881 | 5,872 | 545 |
| All species | 8,960 | 3,560 | 10,377 | 22,897 | 6,499 | 573 |
| Percent | 39.1 | 15.6 | 45.3 | 100.0 | 91.9 | 8.1 |

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 10b.--Net volume^{1/} of all timber by species and class of material,
southern subregion, 1957

(In thousand cords)

| Species | Growing stock | | | | Other material | |
|-------------------------|-----------------|-------------|-------------------|-------------------|----------------|--------------|
| | Sawtimber trees | | Pole-timber trees | Total sound trees | Sound culls | Rotten culls |
| | Saw-log portion | Upper stems | | | | |
| Softwoods: | | | | | | |
| Shortleaf pine | 437 | 201 | 154 | 792 | 125 | -- |
| Virginia pine | 126 | 35 | 319 | 480 | 214 | 4 |
| Total | 563 | 236 | 473 | 1,272 | 339 | 4 |
| White pine | 338 | 58 | 210 | 606 | 16 | 4 |
| Hemlock | 308 | 110 | 86 | 504 | 69 | 2 |
| Redcedar | 35 | 14 | 51 | 100 | 1 | -- |
| Total sftwds. | 1,244 | 418 | 820 | 2,482 | 425 | 10 |
| Hardwoods: | | | | | | |
| Blackgum | 195 | 87 | 90 | 372 | 305 | 33 |
| Yellow-poplar | 1,105 | 293 | 1,294 | 2,692 | 177 | 15 |
| Soft maple | 209 | 78 | 316 | 603 | 585 | 91 |
| Basswood-cucumber | 501 | 98 | 368 | 967 | 129 | 55 |
| Other soft hdwds. | 233 | 98 | 235 | 566 | 364 | 8 |
| Total | 2,243 | 654 | 2,303 | 5,200 | 1,560 | 202 |
| White oak | 594 | 276 | 694 | 1,564 | 298 | 34 |
| Other white oaks | 887 | 378 | 1,444 | 2,709 | 1,524 | 78 |
| Northern red oak | 1,074 | 381 | 451 | 1,906 | 349 | 60 |
| Other red oaks | 1,180 | 485 | 1,378 | 3,043 | 427 | 51 |
| Hickory | 1,065 | 424 | 1,239 | 2,728 | 424 | 52 |
| Ash | 81 | 35 | 132 | 248 | 24 | 1 |
| Hard maple | 211 | 78 | 177 | 466 | 257 | 57 |
| Black walnut | 107 | 41 | 123 | 271 | 36 | 15 |
| Dogwood, holly | -- | -- | 66 | 66 | 64 | 2 |
| Scrub oak ^{2/} | -- | -- | -- | -- | 162 | 2 |
| Other hard hdwds. | 425 | 163 | 676 | 1,264 | 1,296 | 322 |
| Total | 5,624 | 2,261 | 6,380 | 14,265 | 4,861 | 674 |
| Total hdwds. | 7,867 | 2,915 | 8,683 | 19,465 | 6,421 | 876 |
| All species | 9,111 | 3,333 | 9,503 | 21,947 | 6,846 | 886 |
| Percent | 41.5 | 15.2 | 43.3 | 100.0 | 88.5 | 11.5 |

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 11.--Net volume^{1/} of all timber by forest type and stand-size class,
 Mountain Region, 1957
 (In thousand cords)

| GROWING STOCK | | | | | | |
|-------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|---------------|
| Forest type | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
| Softwood types: | | | | | | |
| Shortleaf pine | 234 | 939 | 993 | 43 | -- | 2,209 |
| Virginia pine | -- | 525 | 1,083 | 10 | 7 | 1,625 |
| White pine | 980 | 457 | 133 | 5 | -- | 1,575 |
| Total | 1,214 | 1,921 | 2,209 | 58 | 7 | 5,409 |
| Hardwood types: | | | | | | |
| Oak-pine | 253 | 524 | 1,213 | 7 | -- | 1,997 |
| Maple-beech-birch | 219 | 67 | 84 | -- | 3 | 373 |
| Oak-hickory | 13,758 | 10,097 | 12,174 | 522 | 141 | 36,692 |
| Oak-gum-cypress | 327 | -- | 41 | 5 | -- | 373 |
| Total | 14,557 | 10,688 | 13,512 | 534 | 144 | 39,435 |
| All types | 15,771 | 12,609 | 15,721 | 592 | 151 | 44,844 |
| Percent | 35.2 | 28.1 | 35.1 | 1.3 | 0.3 | 100.0 |
| OTHER MATERIAL | | | | | | |
| Softwood types: | | | | | | |
| Shortleaf pine | 23 | 184 | 383 | 23 | 12 | 625 |
| Virginia pine | -- | 75 | 386 | 45 | 39 | 545 |
| White pine | 78 | 96 | 43 | -- | 19 | 236 |
| Total | 101 | 355 | 812 | 68 | 70 | 1,406 |
| Hardwood types: | | | | | | |
| Oak-pine | 31 | 49 | 434 | 60 | -- | 574 |
| Maple-beech-birch | 84 | 63 | 98 | -- | 7 | 252 |
| Oak-hickory | 3,568 | 2,314 | 5,468 | 790 | 316 | 12,456 |
| Oak-gum-cypress | 36 | -- | 63 | 14 | 3 | 116 |
| Total | 3,719 | 2,426 | 6,063 | 864 | 326 | 13,398 |
| All types | 3,820 | 2,781 | 6,875 | 932 | 396 | 14,804 |
| Percent | 25.8 | 18.8 | 46.4 | 6.3 | 2.7 | 100.0 |

^{1/} Sound wood and bark.

Table 11a.--Net volume^{1/} of all timber by forest type and stand-size class,
northern subregion, 1957

(In thousand cords)

GROWING STOCK

| Forest type | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
|-------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|---------------|
| Softwood types: | | | | | | |
| Shortleaf pine | 149 | 583 | 775 | 14 | -- | 1,521 |
| Virginia pine | -- | 394 | 640 | 10 | 7 | 1,051 |
| White pine | 600 | 121 | 28 | -- | -- | 749 |
| Total | 749 | 1,098 | 1,443 | 24 | 7 | 3,321 |
| Hardwood types: | | | | | | |
| Oak-pine | 212 | 219 | 985 | 7 | -- | 1,423 |
| Maple-beech-birch | 46 | -- | 10 | -- | -- | 56 |
| Oak-hickory | 5,817 | 5,727 | 5,957 | 260 | 61 | 17,822 |
| Oak-gum-cypress | 262 | -- | 8 | 5 | -- | 275 |
| Total | 6,337 | 5,946 | 6,960 | 272 | 61 | 19,576 |
| All types | 7,086 | 7,044 | 8,403 | 296 | 68 | 22,897 |
| Percent | 30.9 | 30.8 | 36.7 | 1.3 | 0.3 | 100.0 |

OTHER MATERIAL

| | | | | | | |
|-------------------|-------|-------|-------|-----|-----|-------|
| Softwood types: | | | | | | |
| Shortleaf pine | 20 | 122 | 267 | 6 | 12 | 427 |
| Virginia pine | -- | 52 | 246 | 21 | 25 | 344 |
| White pine | 61 | 64 | -- | -- | -- | 125 |
| Total | 81 | 238 | 513 | 27 | 37 | 896 |
| Hardwood types: | | | | | | |
| Oak-pine | 27 | 9 | 379 | 12 | -- | 427 |
| Maple-beech-birch | 26 | -- | 7 | -- | -- | 33 |
| Oak-hickory | 1,446 | 1,216 | 2,516 | 230 | 266 | 5,674 |
| Oak-gum-cypress | 36 | -- | -- | 3 | 3 | 42 |
| Total | 1,535 | 1,225 | 2,902 | 245 | 269 | 6,176 |
| All types | 1,616 | 1,463 | 3,415 | 272 | 306 | 7,072 |
| Percent | 22.9 | 20.7 | 48.3 | 3.8 | 4.3 | 100.0 |

^{1/} Sound wood and bark.

Table 11b.--Net volume^{1/} of all timber by forest type and stand-size class,
southern subregion, 1957
(In thousand cords)

| GROWING STOCK | | | | | | |
|-------------------|------------------------------|------------------------------|---------------------------|---------------------------------|---|---------------|
| Forest type | Large sawtimber stands | Small sawtimber stands | Pole- timber stands | Seedling & sapling stands | Poorly stocked stands & unstocked areas | All stands |
| Softwood types: | | | | | | |
| Shortleaf pine | 85 | 356 | 218 | 29 | -- | 688 |
| Virginia pine | -- | 131 | 443 | -- | -- | 574 |
| White pine | 380 | 336 | 105 | 5 | -- | 826 |
| Total | 465 | 823 | 766 | 34 | -- | 2,088 |
| Hardwood types: | | | | | | |
| Oak-pine | 41 | 305 | 228 | -- | -- | 574 |
| Maple-beech-birch | 173 | 67 | 74 | -- | 3 | 317 |
| Oak-hickory | 7,941 | 4,370 | 6,217 | 262 | 80 | 18,870 |
| Oak-gum-cypress | 65 | -- | 33 | -- | -- | 98 |
| Total | 8,220 | 4,742 | 6,552 | 262 | 83 | 19,859 |
| All types | 8,685 | 5,565 | 7,318 | 296 | 83 | 21,947 |
| Percent | 39.6 | 25.4 | 33.3 | 1.3 | 0.4 | 100.0 |
| OTHER MATERIAL | | | | | | |
| Softwood types: | | | | | | |
| Shortleaf pine | 3 | 62 | 116 | 17 | -- | 198 |
| Virginia pine | -- | 23 | 140 | 24 | 14 | 201 |
| White pine | 17 | 32 | 43 | -- | 19 | 111 |
| Total | 20 | 117 | 299 | 41 | 33 | 510 |
| Hardwood types: | | | | | | |
| Oak-pine | 4 | 40 | 55 | 48 | -- | 147 |
| Maple-beech-birch | 58 | 63 | 91 | -- | 7 | 219 |
| Oak-hickory | 2,122 | 1,098 | 2,952 | 560 | 50 | 6,782 |
| Oak-gum-cypress | -- | -- | 63 | 11 | -- | 74 |
| Total | 2,184 | 1,201 | 3,161 | 619 | 57 | 7,222 |
| All types | 2,204 | 1,318 | 3,460 | 660 | 90 | 7,732 |
| Percent | 28.5 | 17.0 | 44.8 | 8.5 | 1.2 | 100.0 |

^{1/} Sound wood and bark.

Table 12.--Net volume^{1/} of all timber by species and diameter class,
Mountain Region, 1957
(In million cubic feet)

| GROWING STOCK | | | | | | | |
|-----------------------|----------------|----------|-----------|-----------|--------------|------------|---------------|
| Species | Diameter class | | | | | | All diameters |
| | 6 inches | 8 inches | 10 inches | 12 inches | 14-18 inches | 20+ inches | |
| Softwoods: | | | | | | | |
| Shortleaf pine | 15.9 | 34.4 | 38.2 | 40.7 | 50.8 | 8.3 | 188.3 |
| Virginia pine | 29.1 | 36.9 | 21.2 | 15.0 | 5.0 | 0.7 | 107.9 |
| Total | 45.0 | 71.3 | 59.4 | 55.7 | 55.8 | 9.0 | 296.2 |
| White pine | 7.3 | 18.4 | 13.4 | 16.9 | 31.6 | 18.3 | 105.9 |
| Hemlock | 2.8 | 6.6 | 4.4 | 7.2 | 15.7 | 45.9 | 82.6 |
| Redcedar | 4.4 | 2.4 | 1.9 | 1.3 | 0.9 | -- | 10.9 |
| Total sftwds. | 59.5 | 98.7 | 79.1 | 81.1 | 104.0 | 73.2 | 495.6 |
| Hardwoods: | | | | | | | |
| Blackgum | 4.2 | 4.3 | 5.0 | 7.2 | 18.5 | 8.3 | 47.5 |
| Yellow-poplar | 25.0 | 35.7 | 44.5 | 43.1 | 95.3 | 35.3 | 278.9 |
| Soft maple | 16.5 | 11.8 | 13.3 | 13.9 | 15.7 | 3.8 | 75.0 |
| Basswood-cucumber | 6.3 | 6.4 | 16.6 | 15.9 | 37.3 | 5.8 | 88.3 |
| Other soft hwdws. | 4.8 | 11.2 | 12.4 | 10.4 | 23.1 | 12.0 | 73.9 |
| Total | 56.8 | 69.4 | 91.8 | 90.5 | 189.9 | 65.2 | 563.6 |
| White oak | 27.9 | 46.0 | 42.7 | 44.6 | 98.6 | 43.6 | 303.4 |
| Other white oaks | 76.6 | 98.8 | 86.0 | 87.8 | 157.8 | 77.8 | 584.8 |
| Northern red oak | 24.0 | 25.0 | 22.6 | 27.6 | 93.3 | 57.9 | 250.4 |
| Other red oaks | 63.0 | 86.5 | 92.4 | 84.9 | 144.8 | 40.2 | 511.8 |
| Hickory | 30.2 | 51.2 | 60.0 | 60.2 | 115.4 | 32.4 | 349.4 |
| Ash | 3.4 | 5.8 | 11.8 | 5.0 | 8.4 | 1.6 | 36.0 |
| Hard maple | 5.0 | 10.3 | 6.1 | 7.0 | 20.1 | 9.7 | 58.2 |
| Black walnut | 3.3 | 3.8 | 8.1 | 6.5 | 15.9 | 1.6 | 39.2 |
| Dogwood, holly | 4.1 | 1.5 | -- | -- | -- | -- | 5.6 |
| Other hard hwdws. | 26.1 | 14.4 | 23.3 | 13.6 | 30.7 | 14.3 | 122.4 |
| Total | 263.6 | 343.3 | 353.0 | 337.2 | 685.0 | 279.1 | 2,261.2 |
| Total hwdws. | 320.4 | 412.7 | 444.8 | 427.7 | 874.9 | 344.3 | 2,824.8 |
| All species | 379.9 | 511.4 | 523.9 | 508.8 | 978.9 | 417.5 | 3,320.4 |
| Percent | 11.4 | 15.4 | 15.8 | 15.3 | 29.5 | 12.6 | 100.0 |
| OTHER MATERIAL | | | | | | | |
| Sound culls: | | | | | | | |
| Softwoods | 12.7 | 15.7 | 19.0 | 12.7 | 9.5 | 5.0 | 74.6 |
| Hardwoods | 94.1 | 102.4 | 122.4 | 101.7 | 268.3 | 230.7 | 919.6 |
| Rotten culls | 10.7 | 13.0 | 17.9 | 7.3 | 24.7 | 41.6 | 115.2 |
| Total other material | 117.5 | 131.1 | 159.3 | 121.7 | 302.5 | 277.3 | 1,109.4 |

^{1/} Excludes bark.

Table 13.--Net volume^{1/} of all timber by species and class of material,
 Mountain Region, 1957
 (In million cubic feet)

| Species | Growing stock | | | | Other material | |
|-------------------------|--------------------|----------------|-------------------------|-------------------------|----------------|-----------------|
| | Sawtimber trees | | Pole timber trees | Total sound trees | Sound culls | Rotten culls |
| | Saw-log portion | Upper stems | | | | |
| Softwoods: | | | | | | |
| Shortleaf pine | 98.7 | 39.3 | 50.3 | 188.3 | 25.5 | 0.7 |
| Virginia pine | 31.2 | 10.7 | 66.0 | 107.9 | 35.5 | 0.7 |
| Total | 129.9 | 50.0 | 116.3 | 296.2 | 61.0 | 1.4 |
| White pine | 70.5 | 9.7 | 25.7 | 105.9 | 3.4 | 0.3 |
| Hemlock | 57.3 | 15.9 | 9.4 | 82.6 | 8.9 | 0.2 |
| Redcedar | 3.5 | 0.6 | 6.8 | 10.9 | 1.3 | 0.9 |
| Total softwoods. | 261.2 | 76.2 | 158.2 | 495.6 | 74.6 | 2.8 |
| Hardwoods: | | | | | | |
| Blackgum | 24.5 | 9.5 | 13.5 | 47.5 | 33.9 | 4.1 |
| Yellow-poplar | 138.8 | 34.9 | 105.2 | 278.9 | 18.5 | 2.3 |
| Soft maple | 23.6 | 9.8 | 41.6 | 75.0 | 57.4 | 7.7 |
| Basswood-cucumber | 48.6 | 10.4 | 29.3 | 88.3 | 13.4 | 4.8 |
| Other soft hwdws. | 32.2 | 13.3 | 28.4 | 73.9 | 37.6 | 2.3 |
| Total | 267.7 | 77.9 | 218.0 | 563.6 | 160.8 | 21.2 |
| White oak | 129.3 | 57.5 | 116.6 | 303.4 | 63.9 | 6.6 |
| Other white oaks | 224.3 | 99.1 | 261.4 | 584.8 | 313.3 | 16.8 |
| Northern red oak | 129.1 | 49.7 | 71.6 | 250.4 | 55.3 | 8.5 |
| Other red oaks | 191.5 | 78.4 | 241.9 | 511.8 | 80.6 | 8.4 |
| Hickory | 149.1 | 58.9 | 141.4 | 349.4 | 55.4 | 6.4 |
| Ash | 10.8 | 4.2 | 21.0 | 36.0 | 4.6 | 0.2 |
| Hard maple | 26.7 | 10.1 | 21.4 | 58.2 | 26.0 | 6.1 |
| Black walnut | 17.1 | 6.9 | 15.2 | 39.2 | 5.9 | 1.3 |
| Dogwood, holly | -- | -- | 5.6 | 5.6 | 5.0 | 0.3 |
| Scrub oak ^{2/} | -- | -- | -- | -- | 23.5 | 2.2 |
| Other hard hwdws. | 41.2 | 17.4 | 63.8 | 122.4 | 125.3 | 34.4 |
| Total | 919.1 | 382.2 | 959.9 | 2,261.2 | 758.8 | 91.2 |
| Total hwdws. | 1,186.8 | 460.1 | 1,177.9 | 2,824.8 | 919.6 | 112.4 |
| All species | 1,448.0 | 536.3 | 1,336.1 | 3,320.4 | 994.2 | 115.2 |
| Percent | 43.6 | 16.2 | 40.2 | 100.0 | 89.6 | 10.4 |

^{1/} Excludes bark.

^{2/} Includes noncommercial species.

Table 14.--Average volume^{1/} per acre of sawtimber by forest type, species group, and stand-size class, Mountain Region, 1957

(In board-feet)

| Forest type and species group | Large sawtimber stands | Small sawtimber stands | Pole-timber stands | Other stand sizes | All stands |
|-------------------------------|------------------------|------------------------|--------------------|-------------------|------------|
| Shortleaf pine | | | | | |
| Softwood | 2,657 | 2,392 | 570 | 136 | 1,021 |
| Hardwood | 235 | 220 | 31 | -- | 79 |
| Virginia pine | | | | | |
| Softwood | -- | 2,392 | 312 | 6 | 522 |
| Hardwood | -- | 771 | 129 | -- | 184 |
| White pine | | | | | |
| Softwood | 10,836 | 2,684 | 469 | -- | 4,814 |
| Hardwood | 1,496 | 303 | -- | -- | 628 |
| Oak-pine | | | | | |
| Softwood | 1,302 | 1,027 | 253 | 25 | 389 |
| Hardwood | 2,989 | 1,053 | 226 | -- | 460 |
| Maple-beech-birch | | | | | |
| Softwood | 51 | -- | -- | -- | 22 |
| Hardwood | 3,086 | 1,921 | 381 | 80 | 1,832 |
| Oak-hickory | | | | | |
| Softwood | 288 | 188 | 48 | 24 | 122 |
| Hardwood | 4,419 | 2,537 | 540 | 224 | 1,700 |
| Oak-gum-cypress | | | | | |
| Softwood | 50 | -- | -- | -- | 18 |
| Hardwood | 4,840 | -- | 87 | -- | 1,745 |
| All types | | | | | |
| Softwood | 716 | 579 | 129 | 30 | 309 |
| Hardwood | 4,187 | 2,125 | 437 | 165 | 1,417 |

^{1/} Log scale, International 1/4-inch rule.

Table 15.--Average volume^{1/} per acre of all trees by forest type, species group,
and stand-size class, Mountain Region, 1957

(In standard cords)

| Forest type and species group | Large sawtimber stands | | Small sawtimber stands | | Pole- timber stands | | Other stand sizes | | All stands | |
|-------------------------------------|------------------------------|---------------|------------------------------|---------------|---------------------------|---------------|-------------------------|---------------|----------------|---------------|
| | Sound trees | Cull trees | Sound trees | Cull trees | Sound trees | Cull trees | Sound trees | Cull trees | Sound trees | Cull trees |
| Shortleaf pine | | | | | | | | | | |
| Softwood | 7.1 | 0.1 | 9.2 | 0.6 | 3.7 | 0.9 | 0.6 | 0.3 | 4.6 | 0.7 |
| Hardwood | 4.5 | 1.0 | 1.8 | 1.5 | 0.9 | 0.9 | 0.2 | 0.3 | 1.1 | 1.0 |
| Virginia pine | | | | | | | | | | |
| Softwood | -- | -- | 9.5 | 1.6 | 5.0 | 1.6 | 0.1 | 0.8 | 4.3 | 1.4 |
| Hardwood | -- | -- | 5.0 | 0.4 | 2.0 | 0.9 | 0.1 | 0.4 | 1.9 | 0.7 |
| White pine | | | | | | | | | | |
| Softwood | 20.9 | 0.5 | 13.6 | 0.1 | 2.2 | 0.5 | 0.6 | 0.4 | 12.2 | 0.4 |
| Hardwood | 7.8 | 1.8 | 1.9 | 3.1 | 3.4 | 1.3 | -- | 2.0 | 4.2 | 2.1 |
| Oak-pine | | | | | | | | | | |
| Softwood | 6.8 | 0.3 | 3.7 | (2/) | 2.3 | 0.7 | 0.2 | 0.6 | 2.5 | 0.6 |
| Hardwood | 10.3 | 1.8 | 9.1 | 1.2 | 4.2 | 1.6 | (2/) | 0.9 | 4.6 | 1.4 |
| Maple-beech-birch | | | | | | | | | | |
| Softwood | 0.4 | -- | -- | -- | -- | -- | -- | -- | 0.2 | -- |
| Hardwood | 10.3 | 4.1 | 6.7 | 6.3 | 5.7 | 6.6 | 1.0 | 2.4 | 7.6 | 5.3 |
| Oak-hickory | | | | | | | | | | |
| Softwood | 0.6 | (2/) | 0.7 | 0.1 | 0.3 | 0.1 | 0.1 | 0.1 | 0.4 | 0.1 |
| Hardwood | 15.4 | 4.1 | 12.6 | 3.0 | 6.2 | 2.9 | 1.1 | 1.9 | 8.7 | 3.0 |
| Oak-gum-cypress | | | | | | | | | | |
| Softwood | 0.2 | -- | -- | -- | -- | -- | -- | -- | 0.1 | -- |
| Hardwood | 17.6 | 2.0 | -- | -- | 3.7 | 5.7 | 0.2 | 0.8 | 7.2 | 2.2 |
| All types | | | | | | | | | | |
| Softwood | 1.6 | 0.1 | 2.3 | 0.2 | 1.1 | 0.3 | 0.2 | 0.2 | 1.3 | 0.2 |
| Hardwood | 14.8 | 3.9 | 10.8 | 2.7 | 5.3 | 2.5 | 0.8 | 1.6 | 7.5 | 2.7 |

^{1/} Sound wood and bark.

^{2/} Less than 0.05 cord per acre.

Table 16.--Number of trees^{1/} by species group, diameter class, and quality, Mountain Region, 1957

(In thousand trees)

SOUND TREES

| D.b.h. class | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All trees |
|--------------|--------------|-----------------|----------------|----------------|-----------|
| 2 | 71,554 | 39,980 | 182,655 | 656,032 | 950,221 |
| 4 | 44,506 | 23,046 | 77,521 | 304,594 | 449,667 |
| 6 | 23,595 | 7,948 | 27,753 | 125,208 | 184,504 |
| 8 | 16,271 | 6,270 | 13,811 | 69,284 | 105,636 |
| 10 | 7,811 | 2,307 | 9,382 | 38,656 | 58,156 |
| 12 | 4,057 | 1,700 | 5,413 | 22,448 | 33,618 |
| 14 | 1,525 | 762 | 3,366 | 13,785 | 19,438 |
| 16 | 566 | 544 | 1,434 | 6,890 | 9,434 |
| 18 | 128 | 248 | 980 | 4,362 | 5,718 |
| 20 | 95 | 265 | 413 | 2,056 | 2,829 |
| 22 | 45 | 109 | 197 | 1,159 | 1,510 |
| 24 | -- | 102 | 50 | 568 | 720 |
| 26 | -- | 22 | 30 | 265 | 317 |
| 28 | -- | 31 | 50 | 127 | 208 |
| 30+ | -- | 87 | 19 | 145 | 251 |
| Total | 170,153 | 83,421 | 323,074 | 1,245,579 | 1,822,227 |

CULL TREES

| | | | | | |
|-------|--------|--------|---------|-----------|-----------|
| 2 | 25,324 | 8,024 | 236,506 | 834,771 | 1,104,625 |
| 4 | 10,039 | 2,016 | 26,920 | 185,463 | 224,438 |
| 6 | 8,066 | 1,293 | 13,449 | 57,754 | 80,562 |
| 8 | 3,985 | 526 | 4,804 | 27,621 | 36,936 |
| 10 | 2,540 | 201 | 4,329 | 16,630 | 23,700 |
| 12 | 874 | 208 | 1,698 | 8,523 | 11,303 |
| 14 | 281 | 42 | 1,486 | 5,324 | 7,133 |
| 16 | 123 | 46 | 652 | 4,114 | 4,935 |
| 18 | 22 | 19 | 682 | 3,040 | 3,763 |
| 20 | -- | 23 | 399 | 1,808 | 2,230 |
| 22 | -- | 28 | 195 | 1,560 | 1,783 |
| 24 | -- | -- | 86 | 902 | 988 |
| 26 | -- | 6 | 47 | 382 | 435 |
| 28 | -- | 24 | 58 | 319 | 401 |
| 30+ | -- | -- | 26 | 270 | 296 |
| Total | 51,254 | 12,456 | 291,337 | 1,148,481 | 1,503,528 |

^{1/} All trees 1.0 inch d.b.h. or larger.

Table 17.--Stocking on commercial forest land by forest type and tree-size class, Mountain Region, 1957

(In thousand acres)

GROWING STOCK OF ALL SIZES

| Forest type | Non-stocked 0-9% | Poor stocking 10-39% | Medium stocking 40-69% | Good stocking 70-100% | Total area |
|-------------------|---------------------|----------------------------|------------------------------|-----------------------------|---------------|
| Shortleaf pine | 4.1 | 71.1 | 157.6 | 150.2 | 383.0 |
| Virginia pine | 16.8 | 45.5 | 52.2 | 145.0 | 259.5 |
| White pine | 4.0 | 4.1 | 15.4 | 72.2 | 95.7 |
| Oak-pine | -- | 49.1 | 79.7 | 152.8 | 281.6 |
| Maple-beech-birch | 1.0 | 7.1 | 11.1 | 28.8 | 48.0 |
| Oak-hickory | 84.7 | 615.1 | 1,396.0 | 1,927.7 | 4,023.5 |
| Oak-gum-cypress | 7.7 | 11.0 | 23.7 | 9.3 | 51.7 |
| All types | 118.3 | 803.0 | 1,735.7 | 2,486.0 | 5,143.0 |
| Percent | 2.3 | 15.6 | 33.8 | 48.3 | 100.0 |

SAWTIMBER GROWING STOCK

| | | | | | |
|-------------------|---------|---------|-------|-------|---------|
| Shortleaf pine | 139.6 | 205.9 | 30.6 | 6.9 | 383.0 |
| Virginia pine | 178.2 | 57.7 | 19.0 | 4.6 | 259.5 |
| White pine | 27.5 | 28.4 | 20.4 | 19.4 | 95.7 |
| Oak-pine | 162.6 | 106.5 | 6.7 | 5.8 | 281.6 |
| Maple-beech-birch | 17.7 | 25.1 | 5.2 | -- | 48.0 |
| Oak-hickory | 1,690.9 | 1,769.4 | 493.9 | 69.3 | 4,023.5 |
| Oak-gum-cypress | 33.3 | 9.2 | 4.5 | 4.7 | 51.7 |
| All types | 2,249.8 | 2,202.2 | 580.3 | 110.7 | 5,143.0 |
| Percent | 43.7 | 42.8 | 11.3 | 2.2 | 100.0 |

Table 18.--Net annual growth by species group and unit of measure, Mountain Region, 1957

| Species group | Sawtimber | Growing stock | |
|-----------------|----------------------------|----------------------------|---------------------------|
| | <u>Million bd.-ft.</u> | <u>Million cu. ft.</u> | <u>Thousand cords</u> |
| Yellow pines | 25.8 | 11.5 | 179 |
| Other softwoods | 32.1 | 7.3 | 93 |
| Soft hardwoods | 98.5 | 30.9 | 458 |
| Hard hardwoods | 206.0 | 88.0 | 1,344 |
| All species | 362.4 | 137.7 | 2,074 |

Table 19.--Net annual growth percentages by species group and unit of measure, Mountain Region, 1957

| Unit of measure | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|-----------------|--------------|-----------------|----------------|----------------|-------------|
| Board-feet | 3.46 | 3.81 | 6.00 | 3.65 | 4.08 |
| Cubic feet | 3.89 | 3.63 | 5.48 | 3.89 | 4.14 |
| Standard cords | 4.30 | 3.97 | 6.05 | 4.37 | 4.62 |

Table 20.--Average annual timber cut by tree-size class and species group,
Mountain Region

SAWTIMBER (In million board-feet)

| Tree-size class | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|-----------------|--------------|-----------------|----------------|----------------|-------------|
| Small sawtimber | 4.0 | 7.4 | 10.4 | 28.5 | 50.3 |
| Large sawtimber | 6.0 | 24.8 | 36.3 | 113.8 | 180.9 |
| All trees | 10.0 | 32.2 | 46.7 | 142.3 | 231.2 |

GROWING STOCK (In thousand cords)

| | | | | | |
|-----------------|----|----|-----|-----|-----|
| Pole trees | 42 | 4 | 18 | 108 | 172 |
| Small sawtimber | 16 | 19 | 33 | 92 | 160 |
| Large sawtimber | 11 | 45 | 83 | 289 | 428 |
| All trees | 69 | 68 | 134 | 489 | 760 |

GROWING STOCK (In million cubic feet)

| | | | | | |
|-----------------|-----|-----|------|------|------|
| Pole trees | 2.5 | 0.3 | 1.1 | 6.5 | 10.4 |
| Small sawtimber | 1.2 | 1.7 | 2.5 | 6.9 | 12.3 |
| Large sawtimber | 1.0 | 4.3 | 6.8 | 23.7 | 35.8 |
| All trees | 4.7 | 6.3 | 10.4 | 37.1 | 58.5 |

Table 21.--Net annual change in volume by species group,
Mountain Region, 1957

SAWTIMBER (In million board-feet)

| Item | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|---------------------------|--------------|-----------------|----------------|----------------|-------------|
| Net volume, Jan. 1, 1957 | 745.2 | 844.4 | 1,641.4 | 5,644.7 | 8,875.7 |
| Total growth | 32.0 | 38.4 | 106.7 | 247.8 | 424.9 |
| Mortality | 6.2 | 6.3 | 8.2 | 41.8 | 62.5 |
| Net growth | 25.8 | 32.1 | 98.5 | 206.0 | 362.4 |
| Timber cut | 10.0 | 32.2 | 46.7 | 142.3 | 231.2 |
| Loss or gain | +15.8 | -0.1 | +51.8 | +63.7 | +131.2 |
| Net volume, Dec. 31, 1957 | 761.0 | 844.3 | 1,693.2 | 5,708.4 | 9,006.9 |
| Percent change | +2.1 | 0.0 | +3.2 | +1.1 | +1.5 |

GROWING STOCK (In thousand cords)

| | | | | | |
|---------------------------|-------|-------|-------|--------|--------|
| Net volume, Jan. 1, 1957 | 4,158 | 2,340 | 7,572 | 30,774 | 44,844 |
| Total growth | 208 | 108 | 483 | 1,515 | 2,314 |
| Mortality | 29 | 15 | 25 | 171 | 240 |
| Net growth | 179 | 93 | 458 | 1,344 | 2,074 |
| Timber cut | 69 | 68 | 134 | 489 | 760 |
| Loss or gain | +110 | +25 | +324 | +855 | +1,314 |
| Net volume, Dec. 31, 1957 | 4,268 | 2,365 | 7,896 | 31,629 | 46,158 |
| Percent change | +2.6 | +1.1 | +4.3 | +2.8 | +2.9 |

GROWING STOCK (In million cubic feet)

| | | | | | |
|---------------------------|-------|-------|-------|---------|---------|
| Net volume, Jan. 1, 1957 | 296.2 | 199.4 | 563.6 | 2,261.2 | 3,320.4 |
| Total growth | 13.6 | 8.5 | 32.9 | 101.0 | 156.0 |
| Mortality | 2.1 | 1.2 | 2.0 | 13.0 | 18.3 |
| Net growth | 11.5 | 7.3 | 30.9 | 88.0 | 137.7 |
| Timber cut | 4.7 | 6.3 | 10.4 | 37.1 | 58.5 |
| Loss or gain | +6.8 | +1.0 | +20.5 | +50.9 | +79.2 |
| Net volume, Dec. 31, 1957 | 303.0 | 200.4 | 584.1 | 2,312.1 | 3,399.6 |
| Percent change | +2.3 | +0.5 | +3.6 | +2.3 | +2.4 |

Table 21a.--Net annual change in volume by species group,
northern subregion, 1957

SAWTIMBER (In million board-feet)

| Item | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|---------------------------|--------------|-----------------|----------------|----------------|-------------|
| Net volume, Jan. 1, 1957 | 492.4 | 444.9 | 541.6 | 2,904.2 | 4,383.1 |
| Total growth | 21.3 | 18.0 | 34.6 | 125.1 | 199.0 |
| Mortality | 4.1 | 3.3 | 2.7 | 21.5 | 31.6 |
| Net growth | 17.2 | 14.7 | 31.9 | 103.6 | 167.4 |
| Timber cut | 8.7 | 6.0 | 20.9 | 72.2 | 107.8 |
| Loss or gain | +8.5 | +8.7 | +11.0 | +31.4 | +59.6 |
| Net volume, Dec. 31, 1957 | 500.9 | 453.6 | 552.6 | 2,935.6 | 4,442.7 |
| Percent change | +1.7 | +2.0 | +2.0 | +1.1 | +1.4 |

GROWING STOCK (In thousand cords)

| | | | | | |
|---------------------------|-------|-------|-------|--------|--------|
| Net volume, Jan. 1, 1957 | 2,886 | 1,130 | 2,372 | 16,509 | 22,897 |
| Total growth | 147 | 49 | 139 | 792 | 1,127 |
| Mortality | 20 | 7 | 8 | 91 | 126 |
| Net growth | 127 | 42 | 131 | 701 | 1,001 |
| Timber cut | 60 | 16 | 54 | 254 | 384 |
| Loss or gain | +67 | +26 | +77 | +447 | +617 |
| Net volume, Dec. 31, 1957 | 2,953 | 1,156 | 2,449 | 16,956 | 23,514 |
| Percent change | +2.3 | +2.3 | +3.2 | +2.7 | +2.7 |

GROWING STOCK (In million cubic feet)

| | | | | | |
|---------------------------|-------|------|-------|---------|---------|
| Net volume, Jan. 1, 1957 | 204.3 | 97.7 | 176.2 | 1,191.9 | 1,670.1 |
| Total growth | 9.5 | 4.0 | 9.6 | 52.2 | 75.3 |
| Mortality | 1.4 | 0.6 | 0.7 | 6.8 | 9.5 |
| Net growth | 8.1 | 3.4 | 8.9 | 45.4 | 65.8 |
| Timber cut | 4.1 | 1.4 | 4.3 | 19.0 | 28.8 |
| Loss or gain | +4.0 | +2.0 | +4.6 | +26.4 | +37.0 |
| Net volume, Dec. 31, 1957 | 208.3 | 99.7 | 180.8 | 1,218.3 | 1,707.1 |
| Percent change | +2.0 | +2.0 | +2.6 | +2.2 | +2.2 |

Table 21b.--Net annual change in volume by species group,
southern subregion, 1957

SAWTIMBER (In million board-feet)

| Item | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|---------------------------|--------------|-----------------|----------------|----------------|-------------|
| Net volume, Jan. 1, 1957 | 252.8 | 399.5 | 1,099.8 | 2,740.5 | 4,492.6 |
| Total growth | 10.7 | 20.4 | 72.1 | 122.7 | 225.9 |
| Mortality | 2.1 | 3.0 | 5.5 | 20.3 | 30.9 |
| Net growth | 8.6 | 17.4 | 66.6 | 102.4 | 195.0 |
| Timber cut | 1.3 | 26.2 | 25.8 | 70.1 | 123.4 |
| Loss or gain | +7.3 | -8.8 | +40.8 | +32.3 | +71.6 |
| Net volume, Dec. 31, 1957 | 260.1 | 390.7 | 1,140.6 | 2,772.8 | 4,564.2 |
| Percent change | +2.9 | -2.2 | +3.7 | +1.2 | +1.6 |

GROWING STOCK (In thousand cords)

| | | | | | |
|---------------------------|-------|-------|-------|--------|--------|
| Net volume, Jan. 1, 1957 | 1,272 | 1,210 | 5,200 | 14,265 | 21,947 |
| Total growth | 61 | 59 | 344 | 723 | 1,187 |
| Mortality | 9 | 8 | 17 | 80 | 114 |
| Net growth | 52 | 51 | 327 | 643 | 1,073 |
| Timber cut | 9 | 52 | 80 | 235 | 376 |
| Loss or gain | +43 | -1 | +247 | +408 | +697 |
| Net volume, Dec. 31, 1957 | 1,315 | 1,209 | 5,447 | 14,673 | 22,644 |
| Percent change | +3.4 | -0.1 | +4.8 | +2.9 | +3.2 |

GROWING STOCK (In million cubic feet)

| | | | | | |
|---------------------------|------|-------|-------|---------|---------|
| Net volume, Jan. 1, 1957 | 91.9 | 101.7 | 387.4 | 1,069.3 | 1,650.3 |
| Total growth | 4.1 | 4.5 | 23.3 | 48.8 | 80.7 |
| Mortality | 0.7 | 0.6 | 1.3 | 6.2 | 8.8 |
| Net growth | 3.4 | 3.9 | 22.0 | 42.6 | 71.9 |
| Timber cut | 0.6 | 4.9 | 6.1 | 18.1 | 29.7 |
| Loss or gain | +2.8 | -1.0 | +15.9 | +24.5 | +42.2 |
| Net volume, Dec. 31, 1957 | 94.7 | 100.7 | 403.3 | 1,093.8 | 1,692.5 |
| Percent change | +3.0 | -1.0 | +4.1 | +2.3 | +2.6 |

Table 22.--Average annual change in volume per acre by stand size and forest type,
Mountain Region, 1957

| Stand size and forest type | Sawtimber (in board-feet) | | | | Growing stock (in standard cords) | | | |
|----------------------------|---------------------------|-----------|--------------------------|------------|-----------------------------------|-----------|--------------------------|------------|
| | Growth | Mortality | Timber cut ^{1/} | Net change | Growth | Mortality | Timber cut ^{1/} | Net change |
| Sawtimber stands: | | | | | | | | |
| Yellow pine | 136 | 11 | 125 | 0 | 0.50 | 0.06 | 0.54 | -0.10 |
| White pine | 286 | 88 | 394 | -196 | .82 | .16 | .87 | -.21 |
| Oak-pine | 134 | 17 | 71 | +46 | .62 | .05 | .27 | +0.30 |
| Oak-hickory ^{2/} | 154 | 28 | 118 | +8 | .53 | .08 | .33 | +0.12 |
| All types | 156 | 29 | 131 | -4 | .54 | .08 | .37 | +0.09 |
| Poletimber stands: | | | | | | | | |
| Yellow pine | 28 | 3 | 8 | +17 | .37 | .06 | .08 | +0.23 |
| White pine | 39 | -- | -- | +39 | .55 | -- | -- | +0.55 |
| Oak-pine | 35 | -- | 9 | +26 | .48 | .02 | .10 | +0.36 |
| Oak-hickory ^{2/} | 38 | 5 | 10 | +23 | .44 | .02 | .05 | +0.37 |
| All types | 37 | 4 | 9 | +24 | .43 | .02 | .06 | +0.35 |
| Other stands: | | | | | | | | |
| Yellow pine | 1 | 12 | 14 | -25 | .03 | .04 | .07 | -0.08 |
| White pine | -- | -- | -- | -- | .04 | -- | -- | +0.04 |
| Oak-pine | 2 | -- | -- | +2 | .01 | -- | -- | +0.01 |
| Oak-hickory ^{2/} | 27 | 3 | 5 | +19 | .08 | .04 | .02 | +0.02 |
| All types | 21 | 4 | 6 | +11 | .07 | .04 | .02 | +0.01 |
| All stands: | | | | | | | | |
| Yellow pine | 46 | 7 | 41 | -2 | .33 | .05 | .20 | +0.08 |
| White pine | 200 | 57 | 253 | -110 | .69 | .10 | .56 | +0.03 |
| Oak-pine | 50 | 5 | 25 | +20 | .44 | .03 | .13 | +0.28 |
| Oak-hickory ^{2/} | 83 | 14 | 53 | +16 | .42 | .05 | .16 | +0.21 |
| All types | 79 | 14 | 56 | +9 | .42 | .05 | .18 | +0.19 |

1/ Excludes timber removed in clearing land.

2/ Includes volume in maple-beech-birch and oak-gum-cypress types.

Table 23.--County area by broad use class, 1957

| County | Total area ^{1/} | Nonforest area | | Forest land | | |
|---------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | | Land | Water | Non-commercial | Commercial | |
| | <u>Thousand acres</u> | <u>Thousand acres</u> | <u>Thousand acres</u> | <u>Thousand acres</u> | <u>Thousand acres</u> | <u>Percent</u> |
| Alleghany | 288.6 | 37.5 | 0.6 | 30.4 | 220.1 | 76.4 |
| Augusta | 631.0 | 278.5 | 0.1 | 63.0 | 289.4 | 45.9 |
| Bath | 345.6 | 42.0 | 0.8 | 46.7 | 256.1 | 74.3 |
| Bland | 236.2 | 64.3 | -- | 5.8 | 166.1 | 70.3 |
| Botetourt | 351.4 | 96.5 | 0.8 | 26.7 | 227.4 | 64.9 |
| Buchanan | 325.1 | 47.8 | -- | -- | 277.3 | 85.3 |
| Carroll | 318.7 | 159.4 | 2.2 | 6.0 | 151.1 | 47.7 |
| Clarke | 111.3 | 75.2 | 0.9 | -- | 35.2 | 31.9 |
| Craig | 215.0 | 42.8 | -- | 13.2 | 159.0 | 74.0 |
| Dickenson | 214.4 | 27.3 | -- | 1.4 | 185.7 | 86.6 |
| Floyd | 245.1 | 133.5 | -- | 2.4 | 109.2 | 44.6 |
| Frederick | 276.5 | 130.5 | 0.2 | 1.8 | 144.0 | 52.1 |
| Giles | 232.3 | 64.3 | 2.2 | 8.3 | 157.5 | 68.4 |
| Grayson | 291.2 | 150.6 | 1.9 | 5.4 | 133.3 | 46.1 |
| Highland | 266.3 | 69.9 | -- | 9.7 | 186.7 | 70.1 |
| Lee | 280.3 | 136.3 | 0.1 | 16.1 | 127.8 | 45.6 |
| Montgomery | 252.8 | 96.0 | 0.5 | 2.9 | 153.4 | 60.8 |
| Page | 202.2 | 72.7 | 0.6 | 46.8 | 32.1 | 40.7 |
| Pulaski | 217.6 | 95.7 | 9.7 | 6.3 | 105.9 | 50.9 |
| Roanoke | 176.6 | 67.7 | -- | 2.6 | 106.3 | 60.2 |
| Rockbridge | 386.6 | 133.4 | 0.6 | 27.4 | 225.2 | 58.3 |
| Rockingham | 556.2 | 246.9 | 1.9 | 78.0 | 229.4 | 41.4 |
| Russell | 309.1 | 165.1 | 0.7 | -- | 143.3 | 46.5 |
| Scott | 345.0 | 151.1 | 1.2 | 5.0 | 187.7 | 54.6 |
| Shenandoah | 324.5 | 138.2 | 0.5 | 18.3 | 167.5 | 51.7 |
| Smyth | 278.4 | 115.8 | 0.1 | 4.0 | 158.5 | 57.0 |
| Tazewell | 334.1 | 144.8 | -- | 0.3 | 189.0 | 56.6 |
| Warren | 140.2 | 55.5 | 1.1 | 14.0 | 69.6 | 50.0 |
| Washington | 370.6 | 197.3 | 2.4 | 0.5 | 170.4 | 46.3 |
| Wise | 265.6 | 64.1 | 0.4 | 13.5 | 187.6 | 70.7 |
| Wythe | 294.4 | 144.9 | 1.3 | 7.0 | 141.2 | 48.2 |
| Entire Region | 9,082.9 | 3,445.6 | 30.8 | 463.5 | 5,143.0 | 56.8 |

^{1/} Gross area from the Bureau of the Census, 1950. Excludes independent cities.

Table 24.--Ownership of commercial forest land by county, 1957

| County | Private | | Public | | | | | Total public | |
|---------------|----------------|---------|-----------------|----------------|----------------|--------------------|----------------|--------------|--|
| | | | National forest | Other Federal | State | County, city, town | | | |
| | Thousand acres | Percent | Thousand acres | Thousand acres | Thousand acres | Thousand acres | Thousand acres | Percent | |
| Alleghany | 116.6 | 53.0 | 101.3 | -- | -- | 2.2 | 103.5 | 47.0 | |
| Augusta | 149.6 | 51.7 | 139.5 | -- | 0.1 | 0.2 | 139.8 | 48.3 | |
| Bath | 128.3 | 50.1 | 127.8 | -- | -- | (1/) | 127.8 | 49.9 | |
| Bland | 146.5 | 88.2 | 19.0 | -- | 0.6 | -- | 19.6 | 11.8 | |
| Botetourt | 163.0 | 71.7 | 52.7 | -- | -- | 11.7 | 64.4 | 28.3 | |
| Buchanan | 277.3 | 100.0 | -- | -- | -- | (1/) | (1/) | -- | |
| Carroll | 146.0 | 96.6 | 4.3 | -- | -- | 0.8 | 5.1 | 3.4 | |
| Clarke | 35.0 | 99.4 | -- | (1/) | (1/) | 0.2 | 0.2 | 0.6 | |
| Craig | 60.2 | 37.9 | 98.8 | -- | -- | (1/) | 98.8 | 62.1 | |
| Dickenson | 177.1 | 95.4 | 8.6 | -- | -- | -- | 8.6 | 4.6 | |
| Floyd | 109.2 | 100.0 | -- | -- | (1/) | -- | (1/) | -- | |
| Frederick | 141.3 | 98.1 | 2.7 | -- | -- | (1/) | 2.7 | 1.9 | |
| Giles | 108.1 | 68.6 | 48.2 | -- | 1.2 | (1/) | 49.4 | 31.4 | |
| Grayson | 121.6 | 91.2 | 11.6 | -- | -- | 0.1 | 11.7 | 8.8 | |
| Highland | 139.1 | 74.5 | 47.6 | -- | -- | -- | 47.6 | 25.5 | |
| Lee | 118.7 | 92.9 | 9.0 | -- | -- | 0.1 | 9.1 | 7.1 | |
| Montgomery | 135.6 | 88.4 | 14.8 | 0.8 | 2.2 | (1/) | 17.8 | 11.6 | |
| Page | 64.2 | 78.2 | 17.9 | -- | -- | -- | 17.9 | 21.8 | |
| Pulaski | 73.6 | 69.5 | 16.9 | 0.2 | 15.0 | 0.2 | 32.3 | 30.5 | |
| Roanoke | 96.2 | 90.5 | 1.6 | 0.1 | 6.8 | 1.6 | 10.1 | 9.5 | |
| Rockbridge | 173.1 | 76.9 | 46.1 | -- | 0.3 | 5.7 | 52.1 | 23.1 | |
| Rockingham | 126.3 | 55.1 | 101.4 | -- | -- | 1.7 | 103.1 | 44.9 | |
| Russell | 143.2 | 99.9 | -- | -- | (1/) | 0.1 | 0.1 | 0.1 | |
| Scott | 157.4 | 83.9 | 30.3 | -- | -- | -- | 30.3 | 16.1 | |
| Shenandoah | 110.0 | 65.7 | 57.5 | -- | -- | (1/) | 57.5 | 34.3 | |
| Smyth | 99.2 | 62.6 | 59.1 | -- | 0.1 | 0.1 | 59.3 | 37.4 | |
| Tazewell | 184.0 | 97.4 | 5.0 | -- | -- | (1/) | 5.0 | 2.6 | |
| Warren | 63.7 | 91.5 | 4.2 | 1.7 | -- | -- | 5.9 | 8.5 | |
| Washington | 153.9 | 90.3 | 16.2 | 0.3 | (1/) | (1/) | 16.5 | 9.7 | |
| Wise | 159.1 | 84.8 | 26.9 | -- | -- | 1.6 | 28.5 | 15.2 | |
| Wythe | 94.0 | 66.6 | 45.3 | -- | (1/) | 1.9 | 47.2 | 33.4 | |
| Entire Region | 3,971.1 | 77.2 | 1,114.3 | 3.1 | 26.3 | 28.2 | 1,171.9 | 22.8 | |

1/ Less than 50 acres.

Table 25.--Net volume^{1/} of sawtimber by county and species group, 1957

(In million board-feet)

| County | Softwoods ^{2/} | Yellow-poplar, basswood, and cucumber ^{3/} | Oaks and other hard hardwoods | All species |
|---------------|-------------------------|---|-------------------------------------|----------------|
| Alleghany | 42.1 | 1.7 | 167.8 | 211.6 |
| Augusta | 57.8 | 17.3 | 356.7 | 431.8 |
| Bath | 77.3 | 14.1 | 303.2 | 394.6 |
| Bland | 36.8 | 19.6 | 153.7 | 210.1 |
| Botetourt | 115.6 | 124.0 | 281.3 | 520.9 |
| Buchanan | 16.2 | 205.7 | 240.5 | 462.4 |
| Carroll | 105.7 | 21.8 | 168.5 | 296.0 |
| Clarke | 9.5 | 28.5 | 25.5 | 63.5 |
| Craig | 55.9 | 30.9 | 132.8 | 219.6 |
| Dickenson | 7.7 | 141.9 | 258.0 | 407.6 |
| Floyd | 49.3 | 36.0 | 75.6 | 160.9 |
| Frederick | 24.2 | 19.0 | 208.4 | 251.6 |
| Giles | 12.1 | 26.7 | 168.9 | 207.7 |
| Grayson | 14.9 | 16.7 | 159.7 | 191.3 |
| Highland | 87.2 | 33.6 | 293.6 | 414.4 |
| Lee | 19.1 | 42.0 | 113.3 | 174.4 |
| Montgomery | 34.7 | 26.8 | 110.1 | 171.6 |
| Page | 26.5 | 10.6 | 94.5 | 131.6 |
| Pulaski | 59.5 | 13.8 | 26.5 | 99.8 |
| Roanoke | 41.9 | 17.4 | 47.2 | 106.5 |
| Rockbridge | 120.4 | 137.2 | 357.2 | 614.8 |
| Rockingham | 234.1 | 52.3 | 371.9 | 658.3 |
| Russell | 4.0 | 85.7 | 156.1 | 245.8 |
| Scott | 46.2 | 86.9 | 132.2 | 265.3 |
| Shenandoah | 41.1 | 25.8 | 217.1 | 284.0 |
| Smyth | 39.6 | 46.3 | 165.7 | 251.6 |
| Tazewell | 6.5 | 44.0 | 220.5 | 271.0 |
| Warren | 3.7 | 29.2 | 47.0 | 79.9 |
| Washington | 76.7 | 82.1 | 192.6 | 351.4 |
| Wise | 78.3 | 185.8 | 266.0 | 530.1 |
| Wythe | 45.0 | 18.0 | 132.6 | 195.6 |
| Entire Region | 1,589.6 | 1,641.4 | 5,644.7 | 8,875.7 |

^{1/} Log scale, International 1/4-inch rule.

^{2/} Includes white pine, hemlock, and redcedar.

^{3/} Includes other soft hardwoods.

Table 26.--Net volume^{1/} of sawtimber by county, broad species group,
and diameter group, 1957

(In million board-feet)

| County | Softwoods | | | Hardwoods | | |
|---------------|--------------------|---------------------|-----------------|---------------------|---------------------|-----------------|
| | 9.0-14.9 inches | 15.0-18.9 inches | 19.0+ inches | 11.0-14.9 inches | 15.0-18.9 inches | 19.0+ inches |
| Alleghany | 37.9 | 4.2 | -- | 61.4 | 64.4 | 43.7 |
| Augusta | 43.8 | -- | 14.0 | 201.0 | 90.1 | 82.9 |
| Bath | 36.8 | 9.4 | 31.1 | 132.3 | 109.6 | 75.4 |
| Bland | 22.7 | 6.5 | 7.6 | 91.1 | 42.5 | 39.7 |
| Botetourt | 51.7 | 45.8 | 18.1 | 188.6 | 119.2 | 97.5 |
| Buchanan | 6.4 | 3.2 | 6.6 | 188.5 | 135.1 | 122.6 |
| Carroll | 43.5 | 11.3 | 50.9 | 101.0 | 56.5 | 32.8 |
| Clarke | 0.8 | 1.3 | 7.4 | 29.0 | 14.2 | 10.8 |
| Craig | 37.1 | 13.8 | 5.0 | 88.3 | 47.3 | 28.1 |
| Dickenson | 4.6 | 3.1 | -- | 136.1 | 124.9 | 138.9 |
| Floyd | 49.3 | -- | -- | 65.3 | 29.4 | 16.9 |
| Frederick | 24.2 | -- | -- | 93.2 | 54.5 | 79.7 |
| Giles | 12.1 | -- | -- | 101.5 | 57.1 | 37.0 |
| Grayson | 14.9 | -- | -- | 95.6 | 70.1 | 10.7 |
| Highland | 46.1 | 35.1 | 6.0 | 175.2 | 105.1 | 46.9 |
| Lee | 19.1 | -- | -- | 73.3 | 52.5 | 29.5 |
| Montgomery | 32.5 | 2.2 | -- | 63.7 | 49.3 | 23.9 |
| Page | 25.1 | 1.4 | -- | 52.3 | 33.8 | 19.0 |
| Pulaski | 31.3 | 18.4 | 9.8 | 21.8 | 13.7 | 4.8 |
| Roanoke | 30.7 | 3.4 | 7.8 | 25.5 | 20.6 | 18.5 |
| Rockbridge | 72.2 | 29.7 | 18.5 | 240.2 | 184.8 | 69.4 |
| Rockingham | 77.6 | 24.7 | 131.8 | 198.6 | 147.7 | 77.9 |
| Russell | 2.2 | 1.8 | -- | 94.1 | 75.9 | 71.8 |
| Scott | 5.9 | -- | 40.3 | 94.5 | 77.7 | 46.9 |
| Shenandoah | 35.0 | 6.1 | -- | 125.1 | 61.8 | 56.0 |
| Smyth | 24.4 | 12.0 | 3.2 | 106.6 | 59.2 | 46.2 |
| Tazewell | 6.5 | -- | -- | 95.4 | 52.6 | 116.5 |
| Warren | 3.7 | -- | -- | 52.1 | 15.4 | 8.7 |
| Washington | 39.4 | 20.3 | 17.0 | 127.1 | 87.0 | 60.6 |
| Wise | 2.8 | 16.2 | 59.3 | 149.0 | 144.5 | 158.3 |
| Wythe | 37.8 | 7.2 | -- | 73.9 | 44.6 | 32.1 |
| Entire Region | 878.1 | 277.1 | 434.4 | 3,341.3 | 2,241.1 | 1,703.7 |

^{1/} Log scale, International 1/4-inch rule.

Table 27.--Net volume^{1/} of all timber by county, species group, and diameter group,

1957

(In thousand cords)

GROWING STOCK

| County | Yellow pines | | Other softwoods | | Soft hardwoods | | Hard hardwoods | | All species |
|---------------|---------------|------------|-----------------|------------|----------------|------------|----------------|------------|-------------|
| | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | |
| Alleghany | 109 | 25 | 23 | 13 | 51 | -- | 526 | 401 | 1,148 |
| Augusta | 284 | 34 | 30 | 29 | 57 | 30 | 1,376 | 688 | 2,528 |
| Bath | 150 | 41 | 28 | 55 | 143 | 24 | 1,196 | 627 | 2,264 |
| Bland | 76 | 38 | 28 | 11 | 135 | 27 | 526 | 334 | 1,175 |
| Botetourt | 186 | 94 | 34 | 83 | 177 | 222 | 942 | 579 | 2,317 |
| Buchanan | -- | -- | 7 | 31 | 403 | 427 | 611 | 505 | 1,984 |
| Carroll | 85 | 6 | 135 | 121 | 157 | 36 | 678 | 335 | 1,553 |
| Clarke | 9 | 3 | -- | 12 | 42 | 60 | 123 | 41 | 290 |
| Craig | 215 | 76 | 20 | -- | 77 | 59 | 515 | 278 | 1,240 |
| Dickenson | 19 | 8 | 8 | -- | 315 | 283 | 484 | 577 | 1,694 |
| Floyd | 45 | -- | 206 | 24 | 118 | 66 | 180 | 136 | 775 |
| Frederick | 208 | 12 | 12 | 4 | 90 | 43 | 730 | 467 | 1,566 |
| Giles | 25 | 12 | -- | 6 | 89 | 33 | 547 | 351 | 1,063 |
| Grayson | 2 | -- | 24 | 14 | 38 | 47 | 610 | 336 | 1,071 |
| Highland | 135 | 30 | 78 | 83 | 155 | 57 | 1,033 | 627 | 2,198 |
| Lee | 8 | -- | 36 | 6 | 144 | 73 | 398 | 244 | 909 |
| Montgomery | 155 | 22 | 89 | 6 | 110 | 43 | 492 | 247 | 1,164 |
| Page | 136 | 8 | 21 | 6 | 45 | 26 | 396 | 189 | 827 |
| Pulaski | 156 | 80 | 7 | 11 | 49 | 32 | 227 | 55 | 617 |
| Roanoke | 180 | 25 | 36 | 17 | 106 | 32 | 231 | 103 | 730 |
| Rockbridge | 194 | 48 | 65 | 107 | 106 | 290 | 931 | 792 | 2,533 |
| Rockingham | 277 | 54 | 88 | 262 | 150 | 106 | 928 | 821 | 2,686 |
| Russell | 2 | 3 | 6 | 2 | 189 | 159 | 329 | 345 | 1,035 |
| Scott | 19 | -- | 28 | 72 | 259 | 172 | 363 | 289 | 1,202 |
| Shenandoah | 296 | 20 | 3 | 13 | 42 | 50 | 988 | 439 | 1,851 |
| Smyth | 90 | 46 | 25 | 8 | 175 | 85 | 580 | 316 | 1,325 |
| Tazewell | 13 | 10 | 2 | 4 | 215 | 78 | 547 | 479 | 1,348 |
| Warren | 32 | 5 | 8 | -- | 74 | 58 | 472 | 70 | 719 |
| Washington | 118 | 40 | 39 | 69 | 266 | 145 | 602 | 429 | 1,708 |
| Wise | 5 | 10 | 15 | 132 | 363 | 375 | 644 | 621 | 2,165 |
| Wythe | 129 | 50 | 26 | 12 | 64 | 30 | 588 | 260 | 1,159 |
| Entire Region | 3,358 | 800 | 1,127 | 1,213 | 4,404 | 3,168 | 18,793 | 11,981 | 44,844 |

^{1/} Sound wood and bark.

Table 27.--Net volume^{1/} of all timber by county, species group, and diameter group,
 1957 (continued)
 (In thousand cords)
 OTHER MATERIAL

| County | Yellow pines | | Other softwoods | | Soft hardwoods | | Hard hardwoods | | All species |
|---------------|---------------|------------|-----------------|------------|----------------|------------|----------------|------------|-------------|
| | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | 5 - 12 inches | 13+ inches | |
| Alleghany | 44 | 5 | -- | -- | 24 | 35 | 279 | 360 | 747 |
| Augusta | 104 | -- | 20 | 14 | 24 | 61 | 322 | 392 | 937 |
| Bath | 26 | -- | -- | 7 | 35 | 40 | 482 | 323 | 913 |
| Bland | 31 | -- | 5 | 4 | 11 | 21 | 93 | 219 | 384 |
| Botetourt | 25 | 5 | 12 | 5 | 18 | 3 | 151 | 185 | 404 |
| Buchanan | 2 | 5 | -- | -- | 66 | 129 | 322 | 537 | 1,061 |
| Carroll | 7 | -- | 8 | -- | 47 | 18 | 271 | 93 | 444 |
| Clarke | 5 | 2 | -- | -- | 10 | 3 | 50 | 21 | 91 |
| Craig | 52 | -- | -- | -- | 5 | 27 | 208 | 207 | 499 |
| Dickenson | -- | -- | -- | -- | 12 | 58 | 129 | 220 | 419 |
| Floyd | 42 | -- | 6 | -- | 90 | 20 | 33 | 147 | 338 |
| Frederick | 23 | -- | -- | -- | 4 | -- | 89 | 92 | 208 |
| Giles | 19 | 6 | 3 | 25 | 72 | 33 | 213 | 219 | 590 |
| Grayson | -- | 5 | -- | -- | 101 | 35 | 196 | 110 | 447 |
| Highland | 12 | -- | 19 | -- | 36 | 32 | 324 | 301 | 724 |
| Lee | -- | -- | -- | -- | 90 | 57 | 149 | 69 | 365 |
| Montgomery | 84 | 4 | 3 | 2 | 24 | 16 | 113 | 117 | 363 |
| Page | 30 | -- | 7 | -- | 3 | -- | 31 | 49 | 120 |
| Pulaski | 47 | -- | 1 | -- | 70 | 25 | 53 | 21 | 217 |
| Roanoke | 36 | 6 | -- | -- | 18 | 33 | 100 | 72 | 265 |
| Rockbridge | 34 | 17 | 4 | -- | 114 | 34 | 341 | 319 | 863 |
| Rockingham | 30 | 18 | 2 | -- | 28 | 28 | 272 | 353 | 731 |
| Russell | -- | -- | 1 | 1 | 32 | 39 | 54 | 44 | 171 |
| Scott | 32 | -- | 3 | 15 | 63 | 114 | 244 | 311 | 782 |
| Shenandoah | 69 | 13 | -- | -- | 15 | 13 | 196 | 147 | 453 |
| Smyth | -- | -- | -- | -- | 14 | 26 | 41 | 76 | 157 |
| Tazewell | 7 | 4 | -- | -- | 85 | 47 | 297 | 282 | 722 |
| Warren | 9 | -- | -- | -- | 24 | 12 | 51 | 21 | 117 |
| Washington | 2 | 1 | -- | 6 | 18 | 20 | 45 | 84 | 176 |
| Wise | 2 | -- | 9 | -- | 41 | 114 | 151 | 201 | 518 |
| Wythe | 35 | 8 | -- | -- | 44 | 110 | 229 | 152 | 578 |
| Entire Region | 809 | 99 | 103 | 79 | 1,238 | 1,203 | 5,529 | 5,744 | 14,804 |

^{1/} Sound wood and bark.

Table 28.--Average annual volume of sawtimber cut by county
and species group^{1/}

(In million board-feet)

| County | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|---------------|--------------|-----------------|----------------|----------------|-------------|
| Alleghany | 0.2 | 1.2 | -- | 3.9 | 5.3 |
| Augusta | -- | -- | 4.3 | 22.7 | 27.0 |
| Bath | -- | -- | -- | -- | -- |
| Bland | -- | -- | -- | 2.6 | 2.6 |
| Botetourt | 0.6 | -- | 11.2 | 7.9 | 19.7 |
| Buchanan | -- | -- | 1.0 | 5.2 | 6.2 |
| Carroll | 0.6 | 16.2 | -- | 1.4 | 18.2 |
| Clarke | -- | -- | -- | 1.1 | 1.1 |
| Craig | -- | -- | -- | -- | -- |
| Dickenson | -- | -- | 0.7 | -- | 0.7 |
| Floyd | 0.3 | 5.0 | 1.3 | 7.0 | 13.6 |
| Frederick | 5.6 | 0.2 | 0.9 | 18.8 | 25.5 |
| Giles | -- | -- | 1.1 | 1.4 | 2.5 |
| Grayson | -- | 2.6 | 13.7 | 5.7 | 22.0 |
| Highland | -- | -- | -- | 2.8 | 2.8 |
| Lee | -- | -- | -- | -- | -- |
| Montgomery | -- | -- | -- | -- | -- |
| Page | -- | -- | 1.3 | 4.9 | 6.2 |
| Pulaski | -- | -- | -- | 8.8 | 8.8 |
| Roanoke | 0.2 | 1.2 | 3.2 | 3.4 | 8.0 |
| Rockbridge | 0.2 | -- | -- | 2.6 | 2.8 |
| Rockingham | -- | -- | -- | 1.1 | 1.1 |
| Russell | -- | -- | 1.5 | 4.4 | 5.9 |
| Scott | -- | 1.2 | 2.8 | 5.7 | 9.7 |
| Shenandoah | 1.7 | 3.4 | -- | -- | 5.1 |
| Smyth | 0.4 | 1.2 | 1.8 | 0.9 | 4.3 |
| Tazewell | -- | -- | 1.6 | 20.1 | 21.7 |
| Warren | 0.2 | -- | -- | 3.0 | 3.2 |
| Washington | -- | -- | 0.3 | 5.2 | 5.5 |
| Wise | -- | -- | -- | 0.4 | 0.4 |
| Wythe | -- | -- | -- | 1.3 | 1.3 |
| Entire Region | 10.0 | 32.2 | 46.7 | 142.3 | 231.2 |

^{1/} Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 29.--Average annual volume of growing stock cut by county
and species group^{1/}

(In thousand cords)

| County | Yellow pines | Other softwoods | Soft hardwoods | Hard hardwoods | All species |
|---------------|--------------|-----------------|----------------|----------------|-------------|
| Alleghany | 9 | 3 | -- | 31 | 43 |
| Augusta | -- | -- | 10 | 66 | 76 |
| Bath | 1 | -- | -- | 1 | 2 |
| Bland | -- | -- | -- | 9 | 9 |
| Botetourt | 4 | -- | 26 | 31 | 61 |
| Buchanan | -- | -- | 5 | 15 | 20 |
| Carroll | 3 | 28 | 1 | 7 | 39 |
| Clarke | -- | -- | -- | 3 | 3 |
| Craig | 5 | 2 | -- | 4 | 11 |
| Dickenson | -- | -- | 2 | -- | 2 |
| Floyd | 3 | 12 | 4 | 24 | 43 |
| Frederick | 14 | 1 | 3 | 55 | 73 |
| Giles | -- | -- | 4 | 8 | 12 |
| Grayson | -- | 5 | 33 | 34 | 72 |
| Highland | -- | -- | -- | 9 | 9 |
| Lee | -- | -- | -- | -- | -- |
| Montgomery | -- | -- | -- | 3 | 3 |
| Page | -- | -- | 4 | 16 | 20 |
| Pulaski | -- | -- | -- | 21 | 21 |
| Roanoke | 3 | 4 | 11 | 9 | 27 |
| Rockbridge | 5 | -- | -- | 10 | 15 |
| Rockingham | -- | -- | -- | 3 | 3 |
| Russell | -- | -- | 4 | 14 | 18 |
| Scott | -- | 4 | 16 | 21 | 41 |
| Shenandoah | 17 | 6 | -- | 1 | 24 |
| Smyth | 1 | 3 | 4 | 2 | 10 |
| Tazewell | 2 | -- | 4 | 59 | 65 |
| Warren | 2 | -- | -- | 15 | 17 |
| Washington | -- | -- | 3 | 14 | 17 |
| Wise | -- | -- | -- | 1 | 1 |
| Wythe | -- | -- | -- | 3 | 3 |
| Entire Region | 69 | 68 | 134 | 489 | 760 |

^{1/} Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.

White pine-hemlock type: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is white pine or hemlock.

Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other associated hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Maple-beech-birch type: Upland hardwood forests in which 50 percent or more of the stand is sugar maple, beech, or yellow birch, singly or in combination, except where yellow pines make up 25 to 49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand. In the mountains, flat areas of forest bordering streams may be given this classification. River birch, sycamore, willow, and alder are characteristic of such areas.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedlings and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

Softwood logs^{1/} must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.

Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications^{2/} for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Species Groups

Yellow pines: Includes shortleaf, pitch, Table-Mountain, and Virginia pine.

Other softwoods: White pine, hemlock, spruce, fir, and eastern redcedar.

Soft hardwoods: Blackgum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, willow, elm, hackberry, sycamore, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, river birch, black walnut, black locust, honeylocust, mulberry, sourwood, dogwood, holly, and persimmon.

^{1/} For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

^{2/} For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

| <u>D.b.h.</u> | <u>Minimum number trees per acre</u> |
|---------------|--|
| Seedlings | 1,000 |
| 2 inches | 800 |
| 4 inches | 590 |
| 6 inches | 400 |
| 8 inches | 240 |
| 10 inches | 155 |
| 12 inches | 115 |
| 14 inches | 90 |

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Preliminary estimates of area by land-use class were based on examination of about 68,200 points systematically spaced on aerial photographs of the Virginia Mountain Region. Subsamples of 1,727 photo points classified as forest and 678 in other land uses were established as sample plots on the ground. These ground plots provided adjustments for changes in land use since the date of photographs, and supplied detailed measurements and observations needed in evaluating forest conditions.

Forest area.--The sampling intensity of the 1957 survey provided an estimate of the total forest area with a standard error of ± 0.6 percent. The probabilities were two out of three that the actual forest area was within ± 0.6 percent of the estimated acreage. The standard error per million acres was ± 1.4 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ± 2.7 percent, or ± 4.9 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ± 3.6 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 2,758 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ± 12.7 percent, or ± 3.0 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data are as follows:

| <u>Item</u> | <u>Percent of error</u> | |
|----------------------|-------------------------|-------------|
| | <u>Low</u> | <u>High</u> |
| Forest area | ± 0.8 | ± 6.6 |
| Growing stock volume | ± 10.1 | ± 18.4 |
| Board-foot volume | ± 14.4 | ± 24.7 |

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



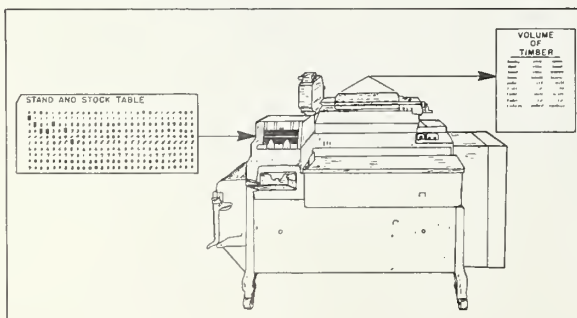
1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.



2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Forest Survey Reports Published Since 1945

Forest Statistics:

- No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
- No. 26 - 1946 Commodity Drain by County from South Carolina Forests
- No. 28 - South Carolina's Forest Resources, 1947
- No. 30 - Forest Resources of Northeast Florida, 1949
- No. 31 - Forest Resources of Central Florida, 1949
- No. 32 - Forest Resources of Northwest Florida, 1949
- No. 33 - Forest Resources of South Florida, 1949
- No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
- No. 36 - Forest Statistics for Florida, 1949
- No. 37 - Forest Statistics for Southwest Georgia, 1951
- No. 39 - Forest Statistics for Southeast Georgia, 1952
- No. 40 - Forest Statistics for Central Georgia, 1952
- No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952
- No. 42 - Forest Statistics for North Central and North Georgia, 1953
- No. 44 - Forest Statistics for Georgia, 1951-53
- No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955
(out of print)
- No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
- No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
- No. 49 - North Carolina's Timber Supply, 1955
- No. 50 - Forest Statistics for the Coastal Plain of Virginia, 1956
- No. 51 - Forest Statistics for the Piedmont of Virginia, 1957

Pulpwood Production:

- No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
- No. 23 - 1946 Pulpwood Production by County in the Southeast
- No. 27 - 1947 Pulpwood Production by County in the Southeast
- No. 29 - 1948 Pulpwood Production by County in the Southeast
- *No. 35 - 1949 Pulpwood Production in the South (out of print)
- *No. 69 - Pulpwood Production in the South, 1950
- *No. 38 - 1951 Pulpwood Production in the South
- *No. 72 - 1952 Pulpwood Production in the South
- *No. 43 - 1953 Pulpwood Production in the South
- *No. 76 - 1954 Pulpwood Production in the South
- *No. 47 - 1955 Pulpwood Production in the South (out of print)
- *No. 80 - 1956 Pulpwood Production in the South

Other Reports

- Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
- Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
- Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
- The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
- The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
- The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

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