FOREST SURVEY RELEASE 71 MARCH 1953

FOREST STATISTICS FOR ARKANSAS

A REPORT OF THE
SOUTHERN FOREST SURVEY

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THE SOUTHERN FOREST SURVEY

The Southern Forest Survey, an activity of the Southern Forest Experiment Station, covers the seven States of the Station's territory--Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas. This Survey is a part of the nation-wide Forest Survey authorized by the McSweeney-McNary Forest Research Act of 1928. Its five-fold purpose is (1) to take inventory of the supply of standing timber and other forest products; (2) to ascertain the rate at which this supply is being increased through growth; (3) to determine the rate at which this supply is being diminished through use, and by fire, insects, disease, and other destructive agencies; (4) to estimate the present requirements and the probable future trend in the requirements for timber and other forest products; and (5) to correlate these findings with existing and anticipated economic conditions, in order that policies may be formulated for the effective use of lands suitable for forest production.

The present Forest Survey of Arkansas is the second to be made in two-thirds of the State, and the first in the Ozark region. The initial Survey, other than in the Ozarks, was made between 1934 and 1936. In its 1945 national Reappraisal of the forest situation, the Forest Service also gave statewide estimates of forest area, timber volume, growth, and drain. Because of differences in standards and procedures, however, the estimates of the Reappraisal are not directly comparable with results of the Forest Survey.

The Forest Survey was made in cooperation with the Arkansas State Forestry and Parks Commission.

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FOREST STATISTICS FOR ARKANSAS

This report summarizes the data on forest land area, timber volume, growth, and drain[1] collected by the Southern Forest Survey in Arkansas in 1947-1951.[2] The State, with the exception of the Ozark survey region (fig. 1), was previously surveyed during the period 1934-1936.[3] Comparisons between the findings of the two surveys are presented on pages 9 to 12.

A comprehensive analysis of Arkansas' forest resources and timber industries will be published later.

The Forest Resource

Almost three-fifths of the State in forest

Arkansas has a land area of 33.7 million acres. Fifty-seven percent, or 19.4 million acres, is in forest. Virtually all the forest land is capable of producing commercial timber, and less than 20,000 acres is withdrawn from this use.

The proportion of forested land varies from 37 to 71 percent among the Survey regions (table 1). It is highest in the rolling Southwest, which has large areas of low agricultural productivity. Widespread clearing of the rich alluvium of the Delta has left this region the least forested. The Ouachita Mountains, too rough in many sections for

Table 1.--Forest-land area by Survey region, 1948-51

Survey region	Forest land	Proportion of total land forested
	Thousand acres	Percent
Southwest	6,339.2	71
Ouachita	3,392.9	70
Ozark	6,134.5	58
Delta	3,497.7	37
State	19,364.3	57

1/ Technical terms used in this report are defined on pages 37-42.
2/ Forest statistics for the Ozark and Southwest Arkansas regions are also available in Forest Survey Releases 57 and 65 respectively.
3/ Survey dates by region were: Southwest, 1936 and 1949; Ouachita, 1936 and 1951; Delta, 1935 and 1950; Ozarks, 1948.

Figure 1.— Forest Survey regions in Arkansas.

agriculture, remain 70 percent forested. The Ozarks, with both rugged mountains and fertile plateaus, are 58 percent forest land.

Eighty-five percent of the commercial forest land in Arkansas is held by private owners. Federal and county governments own almost all the remainder. State ownership is negligible.

Hardwood types most extensive

Three-fifths of the forest acreage is in hardwood types (fig. 2). Bottomland hardwoods and cypress prevail in the Delta and extend along the rivers of the Southwest. The Ozark forests run heavily to upland oak, hickory, and gum. Softwood types predominate in the Southwest and Ouachita regions. Shortleaf and loblolly pines are the principal softwood species, with shortleaf pine predominant in the Ouachita and Ozark Mountains.

Two-thirds of stands below saw-timber size

Pole-timber stands cover almost one-half the forest acreage of the State (fig. 3). Smaller stand sizes occupy an additional 17 percent of the total forest area. Only one-third is in stands of saw-timber size--i. e., containing 1,500 board feet or more per acre. The disproportion of small trees is especially prevalent in the Ozarks and in the upland hardwood types throughout the State. Over one-half the loblolly-shortleaf type, however, is in saw-timber stands and nearly one-half the bottomland hardwoods. The Southwest region has 49 percent of its forest area in saw timber, and the Delta 43 percent. Only 30 percent of the Ouachita Mountain forests are in saw timber, while the Ozarks trail with 17 percent.

Half the forest well stocked

Fifty-two percent (fig. 4) of the forest area is well stocked, in the sense that it contains at least 70 percent of the number of good trees (including well-established seedlings) required for full stocking. Thirty-eight percent of the forest is medium stocked--40 to 69 percent of full stocking. Nine percent is poorly (10 to 39 percent) stocked. Only 1 percent is nonstocked. Stocking is best in the Ouachitas and Southwest, poorest in the Ozarks.

Of the major forest types, the loblolly-shortleaf pine type is the best stocked, upland hardwoods the poorest. In all forest types, fully effective utilization of the growing space is hampered by the presence of large numbers of cull trees, principally hardwoods. Almost one-

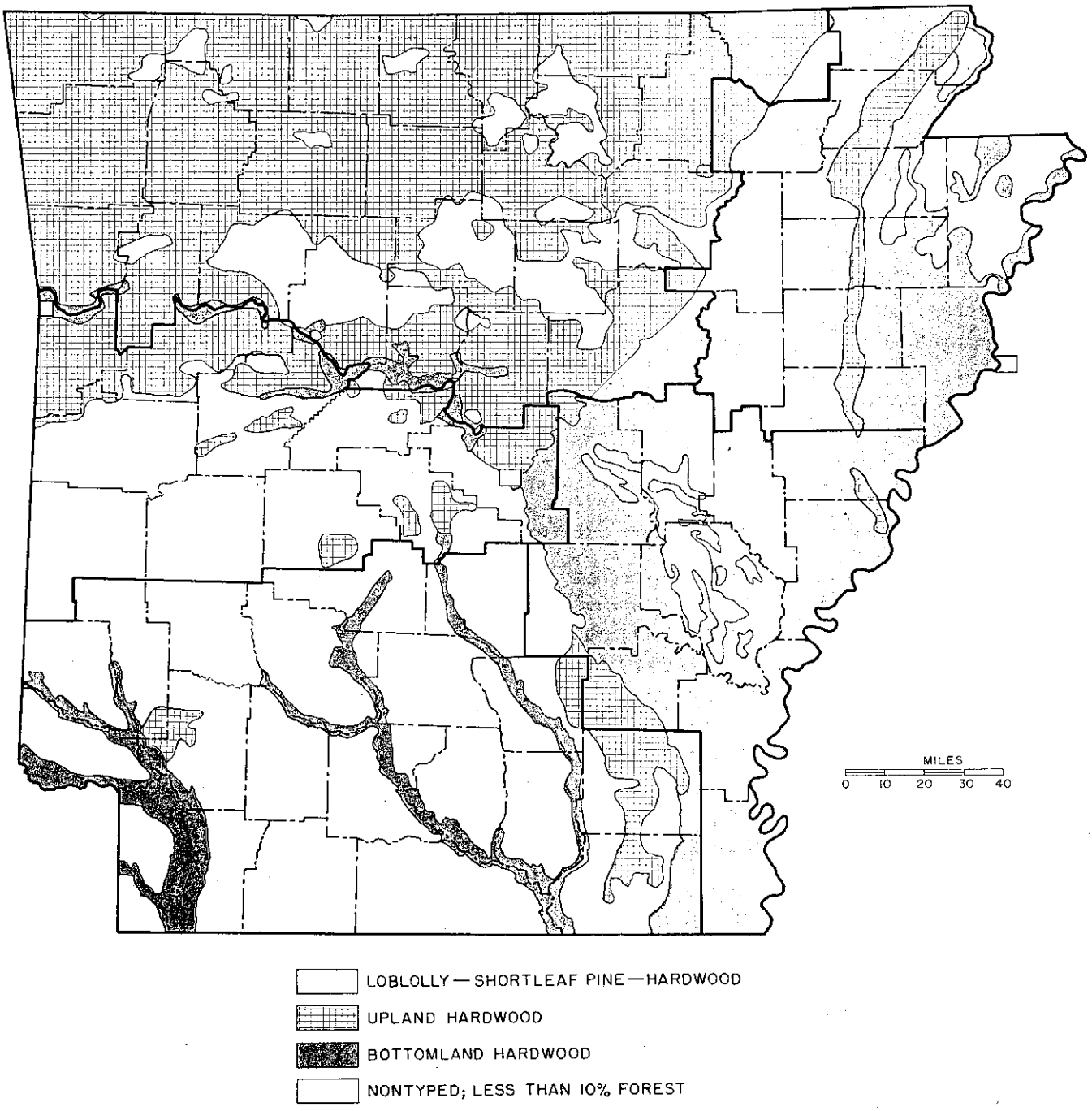

Figure 2. --Generalized forest types in Arkansas.

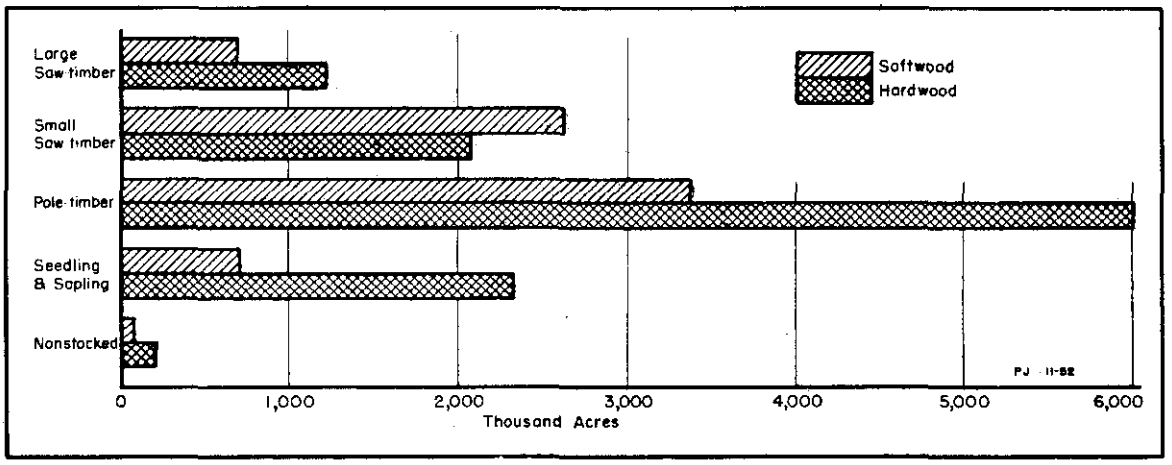

Figure 3.--Forest area by stand size and forest type group, 1948-51.

fourth of the total basal area (which includes all good trees 2 inches d.b.h. and larger and cull trees 5 inches d.b.h. and larger) is in culls. The Ozark region, which has the highest proportion of upland hardwoods and is poorest from the standpoint of stocking, also has the highest proportion of basal area in cull trees--one-third. Similarly, the better stocking and higher proportion of pine in the Ouachitas is reflected in the lower proportion--15 percent--of basal area in cull trees.

Growing stock volume nearly 10 billion cubic feet

The volume of growing stock is 9.8 billion cubic feet, an average of 507 cubic feet or 7 cords per acre. Hardwoods total 5.7 billion, softwoods 4.1 billion cubic feet (fig. 5).

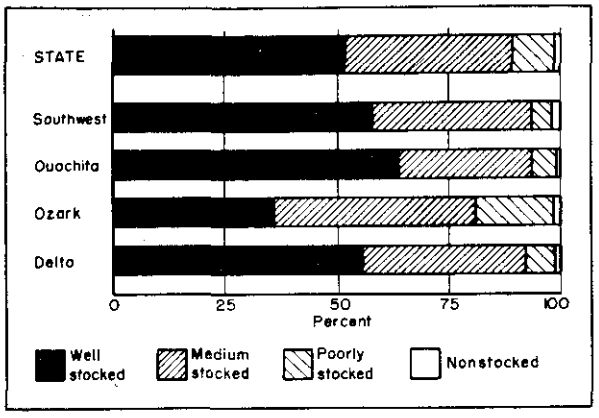

Figure 4.--Degree of stocking by Survey region, 1948-51.

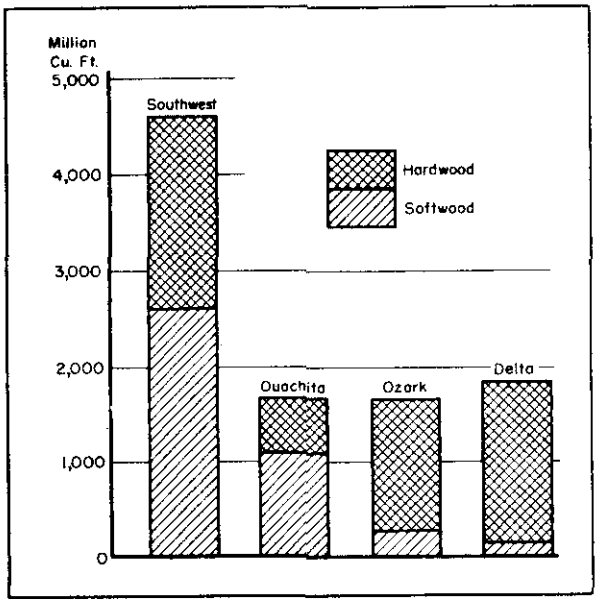

Figure 5.--Growing stock by Survey region, 1948-51.

Hardwoods make up 92 percent of the total volume in the Delta, 83 percent in the Ozarks, 44 percent in the Southwest, and 35 percent in the Ouachita Mountains. Three-fourths of the pine volume and 56 percent of the hardwood volume is in saw-timber trees (fig. 6). In addition to the growing-stock volume there is 3.0 billion cubic feet of sound wood in cull trees and 2.0 billion cubic feet in the tops and limbs of saw-timber size hardwoods.

Saw-timber volume 37 billion board feet

Arkansas' forests contain 36.8 billion board feet of saw timber, half of it in the Southwest region (fig. 7). Twenty billion board feet, or a little more than 1/2 of the saw-timber volume, is hardwood.

Saw-timber volume per acre averages about 1,900 board feet in the State. The Southwest region averages almost 2,900 board feet, the Delta nearly 2,100, the Ouachita more than 1,700, and the Ozark less than 900. Softwood types average nearly 2,600 board feet to the acre, bottomland hardwood over 2,300, upland hardwood nearly 900, and upland hardwood-pine almost 1,100. Red and white oaks together make up 54 percent of the hardwood volume (fig. 8); sweetgum, black, and tupelo gum 19 percent; hickories 6 percent; and

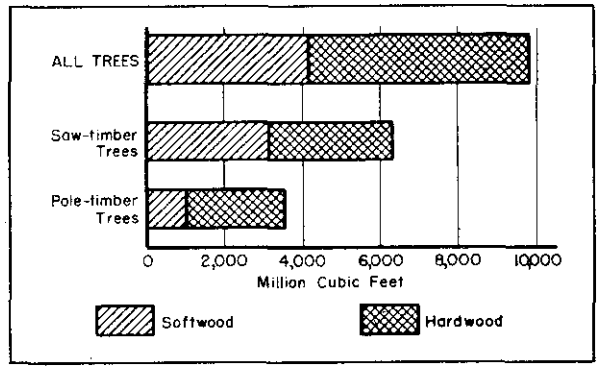

Figure 6.--Growing stock volume in pole-timber and saw-timber trees, 1948-51.

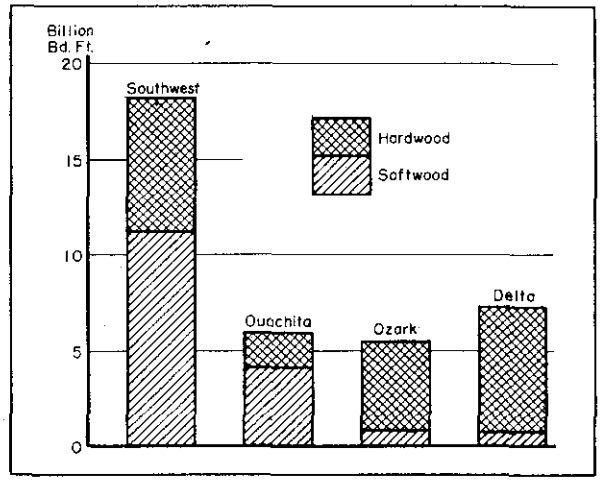

Figure 7.--Saw-timber volume by Survey region, 1948-51.

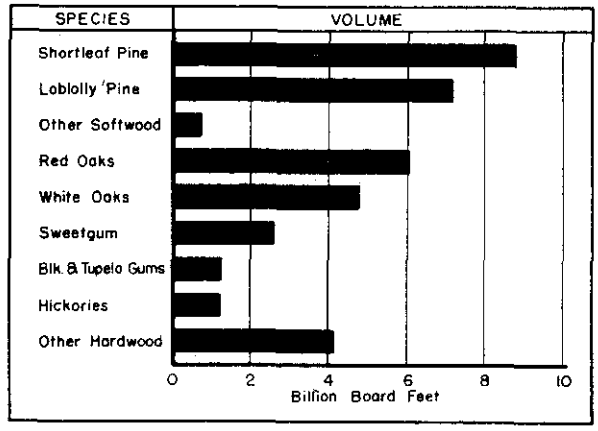

Figure 8.--Saw-timber volume by species, 1948-51.

other hardwoods 21 percent. Shortleaf pine accounts for 53 percent of the softwood volume, loblolly pine for 43 percent, cypress and cedar together for 4 percent.

Large trees of good quality

Trees 20 inches d. b. h. and larger make up about one-quarter of the total hardwood saw-timber volume; about 55 percent is in trees 14 to 18 inches d. b. h.; and only one-fifth is in 12-inch trees (table 2). Of the softwood saw-timber volume, three-fifths is in trees 14 inches d. b. h. and larger (about one-tenth is in 20-inch and larger trees), and two-fifths is in 10- and 12-inch trees.

Table 2.--Saw-timber volume by softwood tree grade, hardwood log grade, and tree diameter, 1948-51

Species group and d. b. h. class (inches)	All grades	Grade 1	Grade 2	Grade 3
	Million board feet			
Softwood:				
10 to 12	7,184.7	640.0	1,498.4	5,046.3
14 to 18	7,799.1	1,948.9	2,470.2	3,380.0
20 and up	1,791.6	700.0	503.1	588.5
Total	16,775.4	3,288.9	4,471.7	9,014.8
Hardwood:				
12	4,042.8	...	2.3	4,040.5
14 to 18	10,726.0	52.3	1,872.7	8,801.0
20 and up	5,254.4	1,435.7	1,896.7	1,922.0
	20,023.2	1,488.0	3,771.7	14,763.5
All classes	36,798.6	4,776.9	8,243.4	23,778.3

Quality is closely related to tree size. In hardwood trees 20 inches d. b. h. and larger, more than three-fifths of the volume is in grades 1 and 2--that is, logs that yield, on the average, at least 65 and 40 percent respectively of their net volume in No. 1 Common and better grades of lumber. In 14- to 18-inch trees less than one-fifth of the volume is of grade 1 or 2 quality. The 12-inch class is entirely grade 3, which yields, on the average, less than 40 percent No. 1 Common and

better. A breakdown of grade-3 hardwood material according to its suitability for factory lumber or ties and construction lumber is given in table 25.

In softwood saw-timber trees 20 inches and larger, 67 percent of the volume is in grade 1 and 2 trees. (Grade 1 and 2 softwood trees have at least 12 feet of clear bole and 25 percent of the merchantable length clear of limbs and knots in sections not less than 8 feet in length.) In 14- to 18-inch trees, 57 percent of the volume is in grade 1 and 2 trees. In the 10- to 12-inch group, only 30 percent of the volume is in these two grades.

One-third of all grade-3 material is in fair or better stands--that is, stands with at least four grade-2 hardwood logs or softwood trees per acre.

Stands of fair or better quality make up less than half the saw-timber acreage.

Annual net growth, 549 million cubic feet; saw-timber growth almost 2.2 billion board feet

Current net annual growth is estimated at 549 million cubic feet for growing stock, and 2,181 million board feet for saw timber alone (table 26). Statewide, slightly more than one-half of the saw-timber growth is on softwoods. In terms of all growing stock, however, softwood growth does not quite equal hardwood growth. Softwood growth is concentrated on trees of saw-timber size, while more than two-fifths of the hardwood growth is on pole-timber trees.

Net annual growth per acre of growing stock averages 28 cubic feet, ranging from 14 in the Ozarks to 44 in the Southwest. The net annual growth of saw timber averages 113 board feet per acre. In stands of saw-timber size, growth averages 282 board feet per acre in softwood types and 165 board feet per acre in hardwood types.

Total 1948 drain, 411 million cubic feet; saw-timber drain just over 2 billion board feet

In 1948, cutting for industrial and domestic use removed an estimated 411 million cubic feet from the growing stock. Of this, sawlogs made up 63 percent; fuel wood 13 percent; pulpwood 10 percent; other products 14 percent (fig. 9). Softwoods comprised 57 percent of the total drain. Sawlogs and pulpwood accounted for 92 percent of the softwood

drain, but for less than one-half of the hardwood drain. One-quarter of the hardwood drain resulted from fuel-wood cutting. Arkansas' timber stands also supplied considerable amounts of veneer logs, tight cooperage, handle stock, and pine poles and piling.

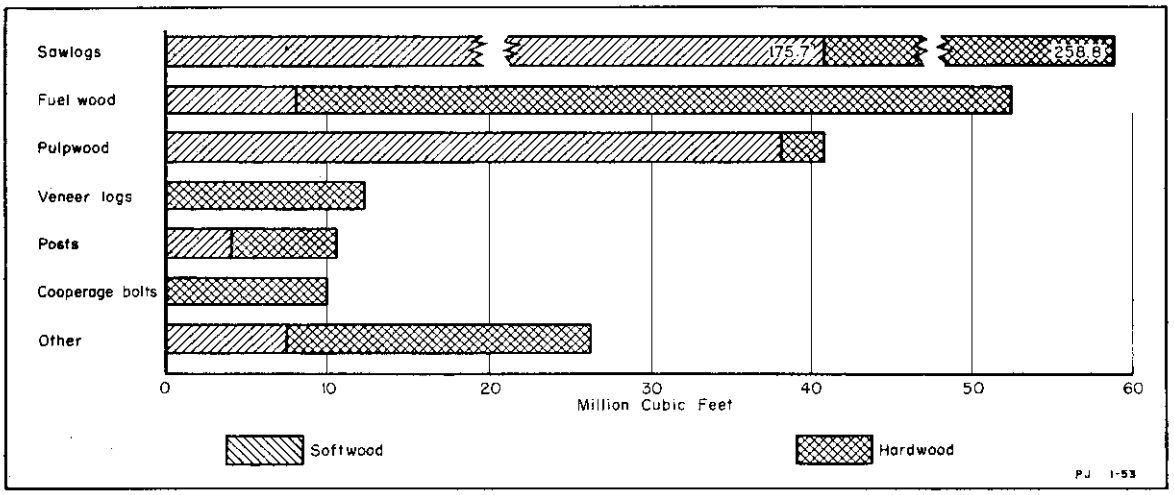

Figure 9. --Drain on growing stock, by commodity, 1948.

The volume of saw timber cut was 2,055 million board feet, divided almost equally between hardwood and softwood. Saw-timber drain by commodity was similar to that of the total drain, except that sawlogsaccounted for 71 percent of the saw-timber drain and pulpwood but 3 percent.

Arkansas' primary forest industries include some 1,700 sawmills, 2 pulp mills, and 162 non-lumber establishments manufacturing handles, cooperage stock, miscellaneous dimension, veneer, and excelsior. In addition, six plants treat wood products with preservatives and one processes chemical wood. While most of the sawmills are small, nearly 100 produced at least 3 million board feet apiece in 1948. There is considerable use of wood for fuel, fence posts, and miscellaneous farm timbers.

The Changing Forest Resource

The forests of the Southwest, Ouachita, and Delta survey regions, which include more than two-thirds of the forest land in Arkansas, were surveyed in 1934-36 and again in 1949-51.

During the period between surveys, small increases in forest acreage in the uplands were overbalanced by extensive land clearing in the bottomlands. Upland hardwood and pine-hardwood types spread at the expense of pine forest. The loggers' preference for pine reduced the softwood volume, while upland hardwood volume gained. In the bottomlands, where hardwood species prevail, timber volume declines were in general accord with forest acreage reductions due to land clearing. Throughout the resurveyed area the proportion of small trees in the stands increased.

Southwest provides contrasts in forest practices

The Southwest region contains one of the few large areas in the nation where there has been a sizeable gain in pine volume since the middle 1930's. In the seven-county area east of the Ouachita River, pine saw-timber volume has increased by one-third. In terms of total pine growing stock the increase has been 17 percent. Nearly all this forest acreage is privately owned: it is estimated that almost half is held by large lumber and pulp companies who employ professional foresters to manage their land.

These large volume gains, resulting from conservative timber harvesting, hardwood control, and fire protection, have not been duplicated in the remaining thirteen counties of the Southwest region, where the bulk of the forest is on farms or in other small tracts. While some owners are improving the productivity of their holdings, the cut in many stands has exceeded growth, and pine volume has dropped about one-fourth.

The improvement east of the Ouachita River, while striking, has not been able to reverse trends in the Southwest region as a whole. Region-wide, softwood (mainly pine) decreased in extent and quantity while hardwood increased. Between the 1936 and 1949 surveys the acreage classed as pine forest decreased 9 percent, but pine-hardwood acreage increased 20 percent and upland hardwood acreage rose 35 percent (table 3).

Table 3.--Changes in forest-type acreage in Southwest region, 1936-49

Forest type	1936	1949	Change
	Thousand acres		Percent
Loblolly-shortleaf pine	2,100.1	1,903.8	- 9
Loblolly-shortleaf pine-hardwood	1,708.8	2,052.6	+20
Bottomland hardwood	1,358.5	1,300.7	- 4
Upland hardwood types	803.6	1,082.1	+35
Total commercial forest	5,971.0	6,339.2	+ 6

Pine growing-stock volume dropped 8 percent while hardwood increased 4 percent (fig. 10). Heavy increases in small trees brought about the change in hardwood volume. In saw-timber size growing stock, softwood and hardwood both declined--4 percent and 1 percent respectively. Forest acreage increased 6 percent, mainly because of farm land abandonment.

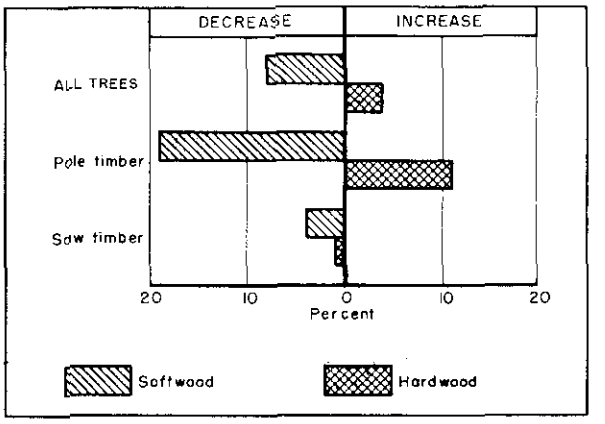

Figure 10.--Changes in growing stock volume in Southwest region, 1936 to 1949.

Ouachita hardwoods increase

In the Ouachita region, forest acreage increased 3 percent between 1936 and 1951. During this period the area in the pine type dropped 16 percent (table 4). Many acres previously in pine are now of the mixed pine-hardwood type, which increased 40 percent.

Table 4.--Changes in forest-type acreage in Ouachita region, 1936 to 1951

Forest type	1936	1951	Change
	Thousand acres		Percent
Loblolly-shortleaf pine	1,535.2	1,292.3	-16
Loblolly-shortleaf pine-hardwood	796.6	1,115.2	+40
Hardwood types	972.3	984.0	+ 1
Total commercial forest	3,304.1	3,391.5	+ 3

The effects of heavy pine cutting and vigorous hardwood growth are also apparent in volume changes (fig. 11). Hardwood growing stock increased 15 percent; softwoods declined 4. In saw-timber size growing stock, hardwood increased 6 percent while softwood dropped 10. For all species combined, growing-stock volume was up 2 percent; saw timber down 6 percent. Larger trees have borne the brunt of the cutting for softwood sawlogs. In 1936, seven-

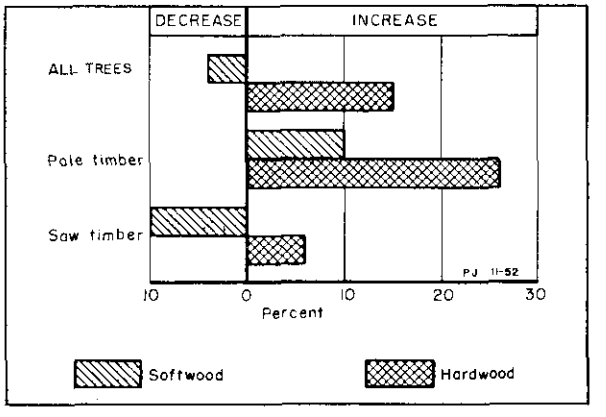

Figure 11.--Changes in growing-stock volume in Ouachita region, 1936 to 1951.

teen percent of the softwood saw-timber volume was contained in trees 20 inches in d.b.h. and larger. By 1951 less than 8 percent of the volume was in trees of this size.

Delta forests shrink

During the period 1935 to 1950, the forests of the Delta region declined 16 percent in growing-stock volume and 22 percent in saw-timber volume. These changes in volume closely paralleled a 19-percent decrease in forest land acreage. Land clearing, which was primarily responsible for this decline in forest acreage, was concentrated in the alluvial bottoms, the bottomland hardwood acreage declining one-fourth.

While the total timber volume is considerably less than in 1935, the stocking has changed but slightly. On a per-acre basis, the volume of total growing stock increased 4 percent and saw-timber volume decreased 4 percent.

Because large trees have been cut most heavily, the proportion of smaller trees has risen. In terms of volume, the decline in trees 20 inches in d.b.h. and larger was almost twice as great as the decline for all saw timber.

Accuracy of the Survey

The estimates of forest acreage and timber volume are based upon a systematic sampling method involving a forest-nonforest classification on aerial photographs and on-the-ground measurement of quarter-acre sample plots. In the Delta and Ozark regions, pairs of plots were located every 3 miles on lines 3 miles apart; in the Southwest and Ouachita regions the average spacing was 4 miles on lines 3 miles apart.

Accuracy of the estimates may be affected by two types of error. The first type stems from the use of a sample to estimate the whole and from variability of the item being sampled. This type is termed sampling error; it is susceptible to a mathematical evaluation of the probability of error. The second type of error derives from human mistakes in measurement, judgment, arithmetic, or recording, and from limitations of method or equipment. Effects of this second type of error--often referred to as reporting and estimating error--cannot be appraised mathematically, but the Forest Survey constantly attempts to hold such errors to a minimum by proper training and good supervision, and by emphasis on careful work.

Statistical analysis of the data, using random-sampling formulas, indicates a sampling error of 0.4 percent for the State estimate of total forest area, 1.7 percent for total cubic-foot volume, and 2.1 percent for total board-foot volume. However, because a systematic sample is generally more efficient than a random sample of the same size, these estimates of sampling error may be considered as setting an upper limit of error, rather than as expressing the actual probability of error.

As the acreage and volumes for the State are broken down by Survey region, county, forest type, species, and other subdivisions of the data, the possibility of error increases and is greatest for the smallest items. The order of this increase is suggested in the following tabulation, which shows the sampling error to which the estimates may be liable on a probability of two chances out of three.

Forest area		Cubic volume		Board-foot volume	
Size of area sampled	Maximum sampling error	Volume sampled	Maximum sampling error	Volume sampled	Maximum sampling error
M acres	Percent	Million cu. ft.	Percent	Million bd. ft.	Percent
19,000	0.4	9,500	1.7	36,500	2.1
10,000	.6	5,000	2.4	20,000	2.9
5,000	.8	2,500	3.4	10,000	4.0
2,000	1.2	1,000	5.3	4,000	6.4
500	2.5	300	9.7	1,000	12.7
50	7.9	30	30.7	100	40.3

Growth estimates are based on radial-growth measurements and mortality data taken on the sample plots. No attempt was made to calculate sampling error in these estimates.

Drain estimates are conversions of production estimates. Lumber production was estimated from a survey conducted by the U. S. Bureau of Census. For other commodities a canvass of manufacturers was conducted by the Forest Service. Commercial log and bolt production, other than for lumber, was obtained by a 100-percent canvass of establishments or producers. Production of fuel wood and fence posts, and for miscellaneous domestic use of farms, was estimated from an area sample. The data on production of each commodity were converted to drain upon growing stock by using drain-to-production ratios derived from measurements taken on sample cutting areas. The sampling errors

to which the State cubic-foot drain estimates are liable, on a probability of two chances out of three, are found in the following tabulation.

Commodity	Sampling error of cubic-foot drain
	Percent error
Sawlogs	2.9
Veneer logs	8.4
Cooperage bolts	11.6
Pulpwood	2.3
Fuel wood	22.0
Chemical wood	4.1
Poles and piling	2.4
Posts	10.7
Hewn ties	8.4
Round mine timbers	1.3
Misc. logs and bolts	8.8
All commodities	3.4

Table 5.--Forest and nonforest land area by Survey region, 1948-51

Class of land	State	Southwest	Ouachita	Ozark	Delta
	Thousand acres				
Forest:					
Commercial	19,341.8	6,339.2	3,391.5	6,113.7	3,497.4
Noncommercial:					
Reserved	19.8	...	1.4	18.1	.3
Unproductive	2.7	...	...	2.7	...
Total	19,364.3	6,339.2	3,392.9	6,134.5	3,497.7
Nonforest 1/	14,379.7	2,535.1	1,433.3	4,526.0	5,885.3
Total, all classes	33,744.0	8,874.3	4,826.2	10,660.5	9,383.0

1/ Includes some acres of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 6.--Forest land by class of ownership, 1948-51

Class of ownership	Commercial forest	
	Thousand acres	Percent
Private:		
Farm 1/	5,549.1	28.7
Other	10,877.1	56.2
Total private	16,426.2	84.9
Public:		
National forests	2,292.2	11.8
Soil Conservation Service	70.1	.4
Fish and Wildlife Service	107.0	.6
Public domain	130.4	.7
Other federal	213.5	1.1
State	4.1	(2/)
County	98.3	.5
Total public	2,915.6	15.1
All ownership	19,341.8	100.0

1/ Based on 1945 Census of Agriculture.
2/ Negligible.

Table 7.--Land area and commercial forest area by county, 1948-51 1/

County	All land	Commercial forest	
	Thousand acres	Thousand acres	Percent
Arkansas	662.4	270.7	40.9
Ashley	597.2	430.1	72.0
Baxter	365.4	256.8	70.3
Benton	567.0	254.6	44.9
Boone	385.3	206.6	53.6
Bradley	415.4	329.8	79.4
Calhoun	401.9	333.1	82.9
Carroll	405.8	236.6	58.3
Chicot	414.1	193.8	46.8
Clark	562.0	400.9	71.3
Clay	416.0	201.9	48.5
Cleburne	380.8	230.3	60.5
Cleveland	384.6	279.4	72.6
Columbia	491.5	308.5	62.8
Conway	358.4	147.1	41.0
Craighead	458.9	113.8	24.8
Crawford	382.7	193.7	50.6
Crittenden	398.7	81.7	20.5
Cross	400.6	157.9	39.4
Dallas	430.1	355.0	82.5
Desha	496.6	244.5	49.2
Drew	535.0	385.0	72.0
Faulkner	419.8	165.7	39.5
Franklin	393.6	178.2	45.3
Fulton	391.0	239.6	61.3
Garland	461.4	367.5	79.6
Grant	403.8	325.3	80.6
Greene	370.6	119.4	32.2
Hempstead	470.4	261.0	55.5
Hot Spring	397.4	306.8	77.2
Howard	384.0	271.7	70.8
Independence	483.2	259.4	53.7
Izard	367.4	200.6	54.6
Jackson	407.7	146.0	35.8
Jefferson	569.6	244.3	42.9
Johnson	432.6	234.7	54.3
Lafayette	343.7	235.8	68.6
Lawrence	378.9	136.1	35.9
Lee	396.8	157.2	39.6
Lincoln	361.6	165.1	45.7
Little River	348.2	229.6	65.9
Logan	465.3	261.6	56.2
Lonoke	512.0	179.9	35.1
Madison	532.5	354.9	66.6
Marion	401.9	273.1	68.0
Miller	401.3	251.3	62.6
Mississippi	588.1	73.2	12.4
Monroe	394.9	214.2	54.2
Montgomery	512.6	423.2	82.6
Nevada	394.2	232.4	59.0
Newton	526.1	400.8	76.2
Ouachita	472.3	344.1	72.9
Perry	355.8	273.1	76.8
Phillips	450.5	168.2	37.3
Pike	393.6	305.6	77.6
Poinsett	487.7	171.7	35.2
Polk	550.4	444.0	80.7
Pope	522.2	306.7	58.7
Prairie	431.4	183.0	42.4
Pulaski	499.8	284.6	56.9
Randolph	407.7	208.5	51.1
St. Francis	407.0	118.8	29.2
Saline	464.6	369.9	79.6
Scott	574.8	444.2	77.3
Searcy	425.0	294.6	69.3
Sebastian	338.6	144.6	42.7
Sevier	374.4	268.3	71.7
Sharp	381.4	258.1	67.7
Stone	390.4	291.5	74.7
Union	673.3	485.5	72.1
Van Buren	457.0	300.9	65.8
Washington	616.4	308.4	50.0
White	666.9	312.3	46.8
Woodruff	378.9	156.0	41.2
Yell	602.9	378.8	62.8
All counties	33,744.0	19,341.8	57.3

1/ County data on saw-timber volume and growing stock, suitable for combining into county groups, are available as a supplement to this release.

Table 8.--Commercial forest land by stand size and forest type, by Survey region, 1948-51

Forest type	All stand sizes	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Nonstocked and other areas 1/
	Thousand acres					
			STATE			
Softwood types:						
Loblolly-shortleaf pine	3,703.3	400.1	1,613.2	1,358.1	284.6	47.3
Loblolly-shortleaf pine-hardwood	3,518.5	299.1	1,016.5	1,933.3	248.8	20.8
Cedar	281.4	...	...	86.5	184.4	10.5
Total	7,503.2	699.2	2,629.7	3,377.9	717.8	78.6
Hardwood types:						
Bottomland hardwood	4,397.0	843.1	1,291.4	1,729.8	462.4	70.3
Upland hardwood	5,145.1	256.5	562.1	2,790.6	1,437.3	98.6
Upland hardwood-pine	2,296.5	117.1	221.8	1,490.3	432.9	34.4
Total	11,838.6	1,216.7	2,075.3	6,010.7	2,332.6	203.3
All types	19,341.8	1,915.9	4,705.0	9,388.6	3,050.4	281.9
			SOUTHWEST			
Softwood types:						
Loblolly-shortleaf pine	1,903.8	244.7	1,010.9	454.0	160.0	34.2
Loblolly-shortleaf pine-hardwood	2,052.6	222.1	779.3	913.6	123.5	14.1
Total	3,956.4	466.8	1,790.2	1,367.6	283.5	48.3
Hardwood types:						
Bottomland hardwood	1,300.7	243.7	365.0	531.7	131.2	29.1
Upland hardwood	138.2	13.9	31.1	79.7	6.8	6.7
Upland hardwood-pine	943.9	60.3	116.0	622.8	118.2	26.6
Total	2,382.8	317.9	512.1	1,234.2	256.2	62.4
All types	6,339.2	784.7	2,302.3	2,601.8	539.7	110.7
			OUACHITA			
Softwood types:						
Loblolly-shortleaf pine	1,292.3	140.5	483.9	596.8	63.3	7.8
Loblolly-shortleaf pine-hardwood	1,086.9	59.1	154.1	779.6	90.2	3.9
Cedar	28.3	...	...	19.9	8.4	...
Total	2,407.5	199.6	638.0	1,396.3	161.9	11.7
Hardwood types:						
Bottomland hardwood	172.6	36.0	48.0	79.3	9.3	...
Upland hardwood	265.0	12.0	11.3	155.8	67.5	18.4
Upland hardwood-pine	546.4	18.4	37.2	379.0	111.8	...
Total	984.0	66.4	96.5	614.1	188.6	18.4
All types	3,391.5	266.0	734.5	2,010.4	350.5	30.1
			OZARK			
Softwood types:						
Loblolly-shortleaf pine	468.9	14.9	98.4	291.2	59.1	5.3
Loblolly-shortleaf pine-hardwood	271.8	15.7	50.3	185.6	20.2	...
Cedar	250.3	...	...	63.8	176.0	10.5
Total	991.0	30.6	148.7	540.6	255.3	15.8
Hardwood types:						
Bottomland hardwood	321.6	56.2	76.7	133.2	46.7	8.8
Upland hardwood	4,094.8	202.5	417.5	2,100.7	1,311.1	63.0
Upland hardwood-pine	706.3	38.4	55.5	414.6	190.0	7.8
Total	5,122.7	297.1	549.7	2,648.5	1,547.8	79.6
All types	6,113.7	327.7	698.4	3,189.1	1,803.1	95.4
			DELTA			
Softwood types:						
Loblolly-shortleaf pine	38.3	...	20.0	16.1	2.2	...
Loblolly-shortleaf pine-hardwood	107.2	2.2	32.8	54.5	14.9	2.8
Cedar	2.8	...	...	2.8	...	...
Total	148.3	2.2	52.8	73.4	17.1	2.8
Hardwood types:						
Bottomland hardwood	2,602.1	507.2	801.7	985.6	275.2	32.4
Upland hardwood	647.1	28.1	102.2	454.4	51.9	10.5
Upland hardwood-pine	99.9	...	13.1	73.9	12.9	...
Total	3,349.1	535.3	917.0	1,513.9	340.0	42.9
All types	3,497.4	537.5	969.8	1,587.3	357.1	45.7

1/ Includes areas not classified elsewhere.

Table 9.—Commercial forest land by degree of tree stocking and forest type, by Survey region, 1948-51

Forest type	All stocking	Well stocked	Medium stocked	Poorly stocked	Non-stocked
	Thousand acres				
			STATE		
Softwood types:					
Loblolly-shortleaf pine	3,703.3	2,717.5	788.1	150.4	47.3
Loblolly-shortleaf pine-hardwood	3,518.5	2,144.9	1,212.7	140.1	20.8
Cedar	281.4	49.4	153.9	67.6	10.5
Total	7,503.2	4,911.8	2,154.7	358.1	78.6
Hardwood types:					
Bottomland hardwood	4,397.0	2,134.3	1,825.7	366.7	70.3
Upland hardwood	5,145.1	1,905.5	2,261.8	879.2	98.6
Upland hardwood-pine	2,296.5	1,009.0	1,065.6	187.5	34.4
Total	11,838.6	5,048.8	5,153.1	1,433.4	203.3
All types	19,341.8	9,960.6	7,307.8	1,791.5	281.9
			SOUTHWEST		
Softwood types:					
Loblolly-shortleaf pine	1,903.8	1,417.8	381.2	70.6	34.2
Loblolly-shortleaf pine-hardwood	2,052.6	1,345.5	640.3	5[illegible].7	14.1
Total	3,956.4	2,763.3	1,021.5	123.3	48.3
Hardwood types:					
Bottomland hardwood	1,300.7	484.0	675.5	112.1	29.1
Upland hardwood	138.2	48.5	76.1	6.9	6.7
Upland hardwood-pine	943.9	377.2	489.5	50.6	26.6
Total	2,382.8	909.7	1,241.1	169.6	62.4
All types	6,339.2	3,673.0	2,262.6	292.9	110.7
			OUACHITA		
Softwood types:					
Loblolly-shortleaf pine	1,292.3	1,075.5	189.5	19.5	7.8
Loblolly-shortleaf pine-hardwood	1,086.9	640.7	406.3	36.0	3.9
Cedar-hardwood	28.3	7.7	12.2	8.4	...
Total	2,407.5	1,723.9	608.0	63.9	11.7
Hardwood types:					
Bottomland hardwood	172.6	86.3	73.4	12.9	...
Upland hardwood	265.0	69.6	100.4	76.6	18.4
Upland hardwood-pine	546.4	278.3	229.9	38.2	...
Total	984.0	434.2	403.7	127.7	18.4
All types	3,391.5	2,158.1	1,011.7	191.6	30.1
			OZARK		
Softwood types:					
Shortleaf pine	468.9	199.8	203.5	60.3	5.3
Shortleaf pine-hardwood	271.8	84.2	136.2	51.4	...
Cedar	250.3	41.7	138.9	59.2	10.5
Total	991.0	325.7	478.6	170.9	15.8
Hardwood types:					
Bottomland hardwood	321.6	120.4	134.9	57.5	8.8
Upland hardwood	4,094.8	1,453.5	1,830.9	747.4	63.0
Upland hardwood-pine	706.3	297.2	306.2	95.1	7.8
Total	5,122.7	1,871.1	2,272.0	900.0	79.6
All types	6,113.7	2,196.8	2,750.6	1,070.9	95.4
			DELTA		
Softwood types:					
Loblolly-shortleaf pine	38.3	24.4	13.9	...	...
Loblolly-shortleaf pine-hardwood	107.2	74.5	29.9	...	2.8
Cedar	2.8	...	2.8	...	...
Total	148.3	98.9	46.6	...	2.8
Hardwood types:					
Bottomland hardwood	2,602.1	1,443.6	941.9	184.2	32.4
Upland hardwood	647.1	333.9	254.4	48.3	10.5
Upland hardwood-pine	99.9	56.3	40.0	3.6	...
Total	3,349.1	1,833.8	1,236.3	236.1	42.9
All types	3,497.4	1,932.7	1,282.9	236.1	45.7

Table 10.--Area of saw-timber stands by stand quality and forest type, by Survey region, 1948-51

Forest type	All qualities	Fair or better	Poor
	Thousand acres		
		STATE	
Softwood types:			
Loblolly-shortleaf pine	2,013.3	1,005.1	1,008.2
Loblolly-shortleaf pine-hardwood	1,315.6	576.7	738.9
Total	3,328.9	1,581.8	1,747.1
Hardwood types:			
Bottomland hardwood	2,134.5	909.8	1,224.7
Upland hardwood	818.6	400.9	417.7
Upland hardwood-pine	338.9	131.6	207.3
Total	3,292.0	1,442.3	1,849.7
All types	6,620.9	3,024.1	3,596.8
		SOUTHWEST	
Softwood types:			
Loblolly-shortleaf pine	1,255.6	626.0	629.6
Loblolly-shortleaf pine-hardwood	1,001.4	401.9	599.5
Total	2,257.0	1,027.9	1,229.1
Hardwood types:			
Bottomland hardwood	608.7	246.4	362.3
Upland hardwood	45.0	20.8	24.2
Upland hardwood-pine	176.3	64.2	112.1
Total	830.0	331.4	498.6
All types	3,087.0	1,359.3	1,727.7
		OUACHITA	
Softwood types:			
Loblolly-shortleaf pine	624.4	309.6	314.8
Loblolly-shortleaf pine-hardwood	213.2	122.8	90.4
Total	837.6	432.4	405.2
Hardwood types:			
Bottomland hardwood	84.0	29.4	54.6
Upland hardwood	23.3	12.0	11.3
Upland hardwood-pine	55.6	18.6	37.0
Total	162.9	60.0	102.9
All types	1,000.5	492.4	508.1
		OZARK	
Softwood types:			
Shortleaf pine	113.3	58.4	54.9
Shortleaf pine-hardwood	66.0	47.6	18.4
Total	179.3	106.0	73.3
Hardwood types:			
Bottomland hardwood	132.9	68.8	64.1
Upland hardwood	620.0	322.6	297.4
Upland hardwood-pine	93.9	46.3	47.6
Total	846.8	437.7	409.1
All types	1,026.1	543.7	482.4
		DELTA	
Softwood types:			
Loblolly-shortleaf pine	20.0	11.1	8.9
Loblolly-shortleaf pine-hardwood	35.0	4.4	30.6
Total	55.0	15.5	39.5
Hardwood types:			
Bottomland hardwood	1,308.9	565.2	743.7
Upland hardwood	130.3	45.5	84.8
Upland hardwood-pine	13.1	2.5	10.6
Total	1,452.3	613.2	839.1
All types	1,507.3	628.7	878.6

Table 11.--Basal area per acre of growing stock and cull trees by forest-type group and Survey region, 1948-51

Forest-type group	State	South-west	Ouachita	Ozark	Delta
	Square feet				
Softwoods:					
2 and 4 inch trees 1/	15.1	13.5	18.8	12.7	13.8
Growing stock	43.2	49.2	40.9	26.2	32.5
Cull trees	9.2	9.1	7.5	14.0	8.7
All trees	67.5	71.8	67.2	52.9	55.0
Bottomland hardwood:					
2 and 4 inch trees 1/	7.0	6.0	9.4	6.7	7.4
Growing stock	43.9	41.7	42.8	41.5	45.4
Cull trees	19.7	23.2	17.2	19.4	18.1
All trees	70.6	70.9	69.4	67.6	70.9
Upland hardwood:					
2 and 4 inch trees 1/	10.9	8.7	13.3	11.4	8.8
Growing stock	26.7	34.1	27.6	23.1	37.6
Cull trees	17.1	13.8	14.7	19.2	10.7
All trees	54.7	56.6	55.6	53.7	57.1
All types					
2 and 4 inch trees 1/	11.7	11.1	17.0	11.4	8.0
Growing stock	37.0	45.1	37.8	24.5	43.2
Cull trees	14.6	12.8	9.7	18.4	16.1
All trees	63.3	69.0	64.5	54.3	67.3

1/ Includes only sound, well-formed trees.

Table 12.--Total volume by class of timber and species, by Survey region, 1948-51

Species	All timber	Growing stock: Total growing stock	Growing stock: Saw-timber trees: Sawlog portions	Growing stock: Saw-timber trees: Upper stems	Growing stock: Pole-timber trees	Upper stems and limbs	Cull trees
	Thousand cords						
STATE							
Softwood:							
Loblolly pine	20,944.1	20,801.4	15,601.3	1,790.7	3,409.4	...	142.7
Shortleaf pine	32,182.7	31,861.4	19,701.4	2,460.0	9,700.0	...	321.3
Other softwoods	2,653.3	2,305.3	1,662.6	266.8	375.9	...	348.0
Total	55,780.1	54,968.1	36,965.3	4,517.5	13,485.3	...	812.0
Hardwood:							
Red oaks	44,941.8	24,429.8	14,122.2	...	10,307.6	9,065.7	11,446.3
White oaks	39,494.1	21,193.9	11,335.8	...	9,858.1	7,580.7	10,719.5
Hickories	12,002.9	7,110.4	2,953.7	...	4,156.7	1,793.9	3,098.6
Sweetgum	16,568.6	11,043.3	6,105.9	...	4,937.4	3,107.5	2,417.8
Black and tupelo gums	8,804.3	4,307.4	2,959.7	...	1,347.7	1,711.9	2,785.0
Other hardwoods	37,150.9	16,677.7	9,825.4	...	6,852.3	6,097.0	14,376.2
Total	158,962.6	84,762.5	47,302.7	...	37,459.8	29,356.7	44,843.4
All species	214,742.7	139,730.6	84,268.0	4,517.5	50,945.1	29,356.7	45,655.4
SOUTHWEST							
Softwood:							
Loblolly pine	20,274.7	20,134.7	15,146.7	1,736.0	3,252.0	...	140.0
Shortleaf pine	14,061.3	14,018.6	9,218.6	1,018.7	3,781.3	...	42.7
Other softwoods	534.7	500.0	393.3	50.7	56.0	...	34.7
Total	34,870.7	34,653.3	24,758.6	2,805.4	7,089.3	...	217.4
Hardwood:							
Red oaks	15,511.9	8,704.4	4,989.5	...	3,714.9	2,943.3	3,864.2
White oaks	11,450.7	6,880.5	3,655.2	...	3,225.3	2,340.3	2,229.9
Hickories	3,561.2	2,194.0	1,173.1	...	1,020.9	717.9	649.3
Sweetgum	10,331.3	7,016.4	3,611.9	...	3,404.5	1,765.7	1,549.2
Black and tupelo gums	3,235.8	1,688.0	1,094.0	...	594.0	609.0	938.8
Other hardwoods	8,452.2	3,607.5	1,803.0	...	1,804.5	1,079.1	3,765.6
Total	52,543.1	30,090.8	16,326.7	...	13,764.1	9,455.3	12,997.0
All species	87,413.8	64,744.1	41,085.3	2,805.4	20,853.4	9,455.3	13,214.4
OUACHITA							
Softwood:							
Loblolly pine	408.0	408.0	321.3	34.7	52.0	...	...
Shortleaf pine	14,060.0	13,966.7	8,701.4	941.3	4,324.0	...	93.3
Other softwoods	178.7	170.7	62.7	14.7	93.3	...	8.0
Total	14,646.7	14,545.4	9,085.4	990.7	4,469.3	...	101.3
Hardwood:							
Red oaks	3,813.5	2,022.4	1,034.3	...	988.1	729.9	1,061.2
White oaks	6,591.1	3,614.9	1,813.4	...	1,801.5	1,226.9	1,749.3
Hickories	1,647.8	968.7	319.4	...	649.3	197.0	482.1
Sweetgum	1,415.0	886.6	523.9	...	362.7	298.5	229.9
Black and tupelo gums	985.1	449.3	326.9	...	122.4	195.5	340.3
Other hardwoods	2,229.9	825.4	337.3	...	488.1	216.4	1,188.1
Total	16,682.4	8,767.3	4,355.2	...	4,412.1	2,864.2	5,050.9
All species	31,329.1	23,312.7	13,440.6	990.7	8,881.4	2,864.2	5,152.2
OZARK							
Softwood:							
Shortleaf pine	3,748.0	3,562.7	1,578.7	473.3	1,510.7	...	185.3
Other softwoods	388.0	257.3	81.3	24.0	152.0	...	130.7
Total	4,136.0	3,820.0	1,660.0	497.3	1,662.7	...	316.0
Hardwood:							
Red oaks	14,858.2	7,601.5	4,492.5	...	3,109.0	2,991.0	4,265.7
White oaks	13,358.2	5,800.0	2,846.3	...	2,953.7	1,946.3	5,611.9
Hickories	4,993.9	2,704.4	991.0	...	1,713.4	571.6	1,717.9
Sweetgum	1,980.6	1,246.3	797.0	...	449.3	400.0	334.3
Black and tupelo gums	2,710.3	1,167.1	894.0	...	273.1	510.4	1,032.8
Other hardwoods	7,271.7	2,082.1	1,120.9	...	961.2	726.9	4,462.7
Total	45,172.9	20,601.4	11,141.7	...	9,459.7	7,146.2	17,425.3
All species	49,308.9	24,421.4	12,801.7	497.3	11,122.4	7,146.2	17,741.3
DELTA							
Softwood:							
Loblolly pine	261.4	258.7	133.3	20.0	105.4	...	2.7
Shortleaf pine	313.4	313.4	202.7	26.7	84.0	...	...
Other softwoods	1,551.9	1,377.3	1,125.3	177.4	74.6	...	174.6
Total	2,126.7	1,949.4	1,461.3	224.1	264.0	...	177.3
Hardwood:							
Red oaks	10,758.2	6,101.5	3,605.9	...	2,495.6	2,401.5	2,255.2
White oaks	8,094.1	4,898.5	3,020.9	...	1,877.6	2,067.2	1,128.4
Hickories	1,800.0	1,243.3	470.2	...	773.1	307.4	249.3
Sweetgum	2,841.7	1,894.0	1,173.1	...	720.9	643.3	304.4
Black and tupelo gums	1,873.1	1,003.0	644.8	...	358.2	397.0	473.1
Other hardwoods	19,197.1	10,162.7	6,564.2	...	3,598.5	4,074.6	4,959.8
Total	44,564.2	25,303.0	15,479.1	...	9,823.9	9,891.0	9,370.2
All species	46,690.9	27,252.4	16,940.4	224.1	10,087.9	9,891.0	9,547.5

Table 13.--Total volume by class of timber and species, by Survey region, 1948-51

Species	All timber	Growing stock: Total growing stock	Growing stock: Saw-timber trees: Sawlog portions	Growing stock: Saw-timber trees: Upper stems	Growing stock: Pole-timber trees	Upper stems and limbs	Cull trees
	Million cubic feet						
STATE							
Softwood:							
Loblolly pine	1,570.8	1,560.1	1,170.1	134.3	255.7	...	10.7
Shortleaf pine	2,413.7	2,389.6	1,477.6	184.5	727.5	...	24.1
Other softwoods	199.0	172.9	124.7	20.0	28.2	...	26.1
Total	4,183.5	4,122.6	2,772.4	338.8	1,011.4	...	60.9
Hardwood:							
Red oaks	3,011.1	1,636.8	946.2	...	690.6	607.4	766.9
White oaks	2,646.1	1,420.0	759.5	...	660.5	507.9	718.2
Hickories	804.2	476.4	197.9	...	278.5	120.2	207.6
Sweetgum	1,110.1	739.9	409.1	...	330.8	208.2	162.0
Black and tupelo gums	589.9	288.6	198.3	...	90.3	114.7	186.6
Other hardwoods	2,489.1	1,117.4	658.3	...	459.1	408.5	963.2
Total	10,650.5	5,679.1	3,169.3	...	2,509.8	1,966.9	3,004.5
All species	14,834.0	9,801.7	5,941.7	338.8	3,521.2	1,966.9	3,065.4
SOUTHWEST							
Softwood:							
Loblolly pine	1,520.6	1,510.1	1,136.0	130.2	243.9	...	10.5
Shortleaf pine	1,054.6	1,051.4	691.4	76.4	283.6	...	3.2
Other softwoods	40.1	37.5	29.5	3.8	4.2	...	2.6
Total	2,615.3	2,599.0	1,856.9	210.4	531.7	...	16.3
Hardwood:							
Red oaks	1,039.3	583.2	334.3	...	248.9	197.2	258.9
White oaks	767.2	461.0	244.9	...	216.1	156.8	149.4
Hickories	238.6	147.0	78.6	...	68.4	48.1	43.5
Sweetgum	692.2	470.1	242.0	...	228.1	118.3	103.8
Black and tupelo gums	216.8	113.1	73.3	...	39.8	40.8	62.9
Other hardwoods	566.3	241.7	120.8	...	120.9	72.3	252.3
Total	3,520.4	2,016.1	1,093.9	...	922.2	633.5	870.8
All species	6,135.7	4,615.1	2,950.8	210.4	1,453.9	633.5	887.1
OUACHITA							
Softwood:							
Loblolly pine	30.6	30.6	24.1	2.6	3.9	...	...
Shortleaf pine	1,054.5	1,047.5	652.6	70.6	324.3	...	7.0
Other softwoods	13.4	12.8	4.7	1.1	7.0	...	.6
Total	1,098.5	1,090.9	681.4	74.3	335.2	...	7.6
Hardwood:							
Red oaks	255.5	135.5	69.3	...	66.2	48.9	71.1
White oaks	441.6	242.2	121.5	...	120.7	82.2	117.2
Hickories	110.4	64.9	21.4	...	43.5	13.2	32.3
Sweetgum	94.8	59.4	35.1	...	24.3	20.0	15.4
Black and tupelo gums	66.0	30.1	21.9	...	8.2	13.1	22.8
Other hardwoods	149.4	55.3	22.6	...	32.7	14.5	79.6
Total	1,117.7	587.4	291.8	...	295.6	191.9	338.4
All species	2,216.2	1,678.3	973.2	74.3	630.8	191.9	346.0
OZARK							
Softwood:							
Shortleaf pine	281.1	267.2	118.4	35.5	113.3	...	13.9
Other softwoods	29.1	19.3	6.1	1.8	11.4	...	9.8
Total	310.2	286.5	124.5	37.3	124.7	...	23.7
Hardwood:							
Red oaks	995.5	509.3	301.0	...	208.3	200.4	285.8
White oaks	895.0	388.6	190.7	...	197.9	130.4	376.0
Hickories	334.6	181.2	66.4	...	114.8	38.3	115.1
Sweetgum	132.7	83.5	53.4	...	30.1	26.8	22.4
Black and tupelo gums	181.6	78.2	59.9	...	18.3	34.2	69.2
Other hardwoods	487.2	139.5	75.1	...	64.4	48.7	299.0
Total	3,026.6	1,380.3	746.5	...	633.8	478.8	1,167.5
All species	3,336.8	1,666.8	871.0	37.3	758.5	478.8	1,191.2
DELTA							
Softwood:							
Loblolly pine	19.6	19.4	10.0	1.5	7.9	...	.2
Shortleaf pine	23.5	23.5	15.2	2.0	6.3	...	...
Other softwoods	116.4	103.3	84.4	13.3	5.6	...	13.1
Total	159.5	146.2	109.6	16.8	19.8	...	13.3
Hardwood:							
Red oaks	720.8	408.8	241.6	...	167.2	160.9	151.1
White oaks	542.3	328.2	202.4	...	125.8	138.5	75.6
Hickories	120.6	83.3	31.5	...	51.8	20.6	16.7
Sweetgum	190.4	126.9	78.6	...	48.3	43.1	20.4
Black and tupelo gums	125.5	67.2	43.2	...	24.0	26.6	31.7
Other hardwoods	1,286.2	680.9	439.8	...	241.1	273.0	332.3
Total	2,985.8	1,695.3	1,037.1	...	658.2	662.7	627.8
All species	3,145.3	1,841.5	1,146.7	16.8	678.0	662.7	641.1

Table14. --Growing stock by species and Survey region, 1948-51

Species	State	South-west	Ouachita	Ozark	Delta
	- - - - - - Million cubic feet - - - - - -				
Softwood:					
Loblolly pine	1,560.1	1,510.1	30.6	...	19.4
Shortleaf pine	2,389.6	1,051.4	1,047.5	267.2	23.5
Cypress	155.3	37.1	9.7	5.7	102.8
Cedar	17.6	.4	3.1	13.6	.5
Total	4,122.6	2,599.0	1,090.9	286.5	146.2
Hardwood:					
Southern red, black and scarlet oaks	788.4	290.9	74.9	352.6	70.0
Cherrybark, Shumard, and northern red oaks	300.4	79.5	36.7	121.5	62.7
Water oaks	548.0	212.8	23.9	35.2	276.1
White oaks	582.5	190.3	115.8	202.8	73.6
Other white oaks	837.5	270.7	126.4	185.8	254.6
Sweetgum	739.9	470.1	59.4	83.5	126.9
Black and tupelo gums	288.6	113.1	30.1	78.2	67.2
Cottonwood	70.2	4.1	1.5	7.7	56.9
Willow	115.9	16.2	2.8	1.7	95.2
Pecan	146.6	20.0	2.6	10.9	113.1
Other hickories	476.4	147.0	64.9	181.2	83.3
Elms	271.5	71.9	26.0	41.1	132.5
Maples	57.7	21.1	3.8	11.4	21.4
Yellow-poplar	.9	.2	...	...	.7
Sycamore	48.1	14.9	6.3	9.0	17.9
Ash	126.1	23.8	3.1	17.3	81.9
Beech	19.6	15.0	...	2.4	2.2
Sweetbay and magnolia	8.0	6.4	.4	1.2	...
Hackberry	106.9	17.1	2.0	7.4	80.4
Other hardwoods	145.9	31.0	6.8	29.4	78.7
Total	5,679.1	2,016.1	587.4	1,380.3	1,695.3
All species	9,801.7	4,615.1	1,678.3	1,666.3	1,841.5

Table 15.--Distribution of growing stock by species within each forest type, 1948-51

Species	All types	Loblolly-shortleaf pine	Loblolly-shortleaf pine-hardwood	Cedar	Bottom-land hardwood	Upland hardwood	Upland hardwood-pine
	Percent						
Softwood:							
Loblolly pine	15.9	31.0	26.7	...	1.3	...	4.1
Shortleaf pine	24.4	57.1	26.8	5.5	(1/)	...	7.4
Cypress	1.6	...	(1/)	...	6.3	...	...
Cedar	.2	(1/)	(1/)	30.4	(1/)	.3	.4
Total	42.1	88.1	53.5	35.9	7.6	.3	11.9
Hardwood:							
Southern red, black, and scarlet oaks	8.0	2.6	10.1	2.2	.6	24.2	19.6
Cherrybark, Shumard, and northern red oaks	3.1	.4	1.7	2.9	2.9	10.3	4.8
Water oaks	5.6	.3	2.6	...	18.0	1.3	3.0
White oaks	5.9	2.0	7.8	1.5	1.3	15.1	15.5
Other white oaks	8.5	2.6	8.5	27.1	10.9	16.1	11.2
Sweetgum	7.5	1.9	6.6	2.2	14.7	5.7	13.5
Black and tupelo gums	2.9	.7	3.0	(1/)	4.4	4.6	4.5
Cottonwood	.7	...	...	...	2.8	.1	(1/)
Willow	1.2	...	.1	...	4.6	.1	...
Pecan	1.5	...	...	...	5.9	(1/)	(1/)
Other hickories	4.9	1.1	4.1	11.0	3.3	14.0	10.1
Elms	2.8	.2	.9	10.6	7.3	3.5	2.0
Maples	.6	(1/)	.4	.4	1.3	.7	1.1
Yellow-poplar	(1/)	...	...	...	...	.1	(1/)
Sycamore	.5	...	(1/)	.7	1.5	.5	.4
Ash	1.3	(1/)	.2	2.2	3.9	1.1	1.0
Beech	.2	(1/)	.2	...	.2	.3	.7
Sweet bay and magnolia	.1	...	.1	...	.2	.1	(1/)
Hackberry	1.1	...	(1/)	.7	4.2	.1	.1
Other hardwoods	1.5	.1	.2	2.6	4.4	1.8	.6
Total	57.9	11.9	46.5	64.1	92.4	99.7	88.1
All species	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Negligible.

Table 16.--Growing stock by species and stand size, by Survey region, 1948-51

Species	All stand sizes	Large saw timber	Small saw timber	Pole-timber	Seedling and sapling	Nonstocked and other areas 1/
	Million cubic feet					
STATE						
Softwood:						
Loblolly pine	1,560.1	436.2	888.6	223.9	10.9	.5
Shortleaf pine	2,389.6	348.6	1,354.7	668.0	17.9	.4
Other softwoods	172.9	50.8	76.8	40.2	5.1	(2/)
Total	4,122.6	835.6	2,320.1	932.1	33.9	.9
Hardwood:						
Red oaks	1,636.8	311.0	587.7	679.0	57.3	1.8
White oaks	1,420.0	236.5	433.1	682.5	64.5	3.4
Hickories	476.4	62.8	131.6	255.4	25.2	1.4
Sweetgum	739.9	156.7	310.0	258.4	14.6	.2
Black and tupelo gums	288.6	84.3	108.6	87.2	8.4	.1
Other hardwoods	1,117.4	319.4	403.1	358.1	33.9	2.9
Total	5,679.1	1,170.7	1,974.1	2,320.6	203.9	9.8
All species	9,801.7	2,006.3	4,294.2	3,252.7	237.8	10.7
SOUTHWEST						
Softwood:						
Loblolly pine	1,510.1	428.7	862.2	207.9	10.8	.5
Shortleaf pine	1,051.4	165.8	727.0	154.5	3.9	.2
Other softwoods	37.5	19.0	11.8	6.5	.2	...
Total	2,599.0	613.5	1,601.0	368.9	14.9	.7
Hardwood:						
Red oaks	583.2	136.5	264.1	178.1	4.5	...
White oaks	461.0	85.8	196.2	172.0	5.8	1.2
Hickories	147.0	31.4	57.9	56.6	.7	.4
Sweetgum	470.1	95.1	205.3	163.3	6.4	...
Black and tupelo gums	113.1	37.7	49.5	24.7	1.2	...
Other hardwoods	241.7	59.4	86.8	91.0	3.4	1.1
Total	2,016.1	445.9	859.8	685.7	22.0	2.7
All species	4,615.1	1,059.4	2,460.8	1,054.6	36.9	3.4
OUACHITA						
Softwood:						
Loblolly pine	30.6	7.1	16.6	6.9	...	...
Shortleaf pine	1,047.5	163.6	508.8	368.4	6.7	...
Other softwoods	12.8	...	...	12.8	...	...
Total	1,090.9	170.7	525.4	388.1	6.7	...
Hardwood:						
Red oaks	135.5	19.8	30.8	82.5	2.4	...
White oaks	242.2	29.1	53.0	152.3	7.7	.1
Hickories	64.9	5.4	13.5	44.1	1.9	...
Sweetgum	59.4	4.9	21.6	31.5	1.4	...
Black and tupelo gums	30.1	4.7	9.9	14.9	.6	...
Other hardwoods	55.3	9.4	15.4	27.8	2.7	...
Total	587.4	73.3	144.2	353.1	16.7	.1
All species	1,678.3	244.0	669.6	741.2	23.4	.1
OZARK						
Softwood:						
Shortleaf pine	267.2	19.1	102.3	138.4	7.2	.2
Other softwoods	19.3	0.6	4.5	10.5	3.7	(2/)
Total	286.5	19.7	106.8	148.9	10.9	.2
Hardwood:						
Red oaks	509.3	76.4	132.1	259.6	39.7	1.5
White oaks	388.6	34.1	72.0	236.2	44.5	1.8
Hickories	181.2	14.8	33.2	110.9	21.3	1.0
Sweetgum	83.5	19.5	31.7	26.3	5.8	.2
Black and tupelo gums	78.2	20.9	23.7	27.3	6.2	.1
Other hardwoods	139.5	28.1	28.6	64.2	17.1	1.5
Total	1,380.3	193.8	321.3	724.5	134.6	6.1
All species	1,666.8	213.5	428.1	873.4	145.5	6.3
DELTA						
Softwood:						
Loblolly pine	19.4	0.4	9.8	9.1	0.1	...
Shortleaf pine	23.5	.1	16.6	6.7	.1	...
Other softwoods	103.3	31.2	60.5	10.4	1.2	...
Total	146.2	31.7	86.9	26.2	1.4	...
Hardwood:						
Red oaks	408.8	78.3	160.7	158.8	10.7	0.3
White oaks	328.2	87.5	111.9	122.0	6.5	.3
Hickories	83.3	11.2	27.0	43.8	1.3	...
Sweetgum	126.9	37.2	51.4	37.3	1.0	...
Black and tupelo gums	67.2	21.0	25.5	20.3	.4	...
Other hardwoods	680.9	222.5	272.3	175.1	10.7	.3
Total	1,695.3	457.7	648.8	557.3	30.6	.9
All species	1,841.5	489.4	735.7	583.5	32.0	.9

1/ Includes areas not classified elsewhere.
2/ Negligible.

Table 17.--Average volume per acre of growing stock by forest type and Survey region, 1948-51

Forest type	State	Southwest	Ouachita	Ozark	Delta
	Cubic feet				
Softwood types:					
Loblolly-shortleaf pine	857	1,051	722	449	755
Loblolly-shortleaf pine-hardwood	547	666	381	382	356
Cedar	97	...	230	82	107
Total	683	851	563	338	454
Hardwood types:					
Bottomland hardwood	562	594	519	477	559
Upland hardwood	272	481	217	245	420
Upland hardwood-pine	352	433	324	247	481
Total	395	524	329	260	530
All types	507	728	495	273	527

Table 18.--Average volume per acre of growing stock by stand size and forest type, 1948-51

Forest type	All stand sizes	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Nonstocked and other areas 1/
	Cubic feet					
Softwood types:						
Loblolly-shortleaf pine	857	1,531	1,196	453	59	15
Loblolly-shortleaf pine-hardwood	547	1,223	863	343	72	...
Cedar	97	...	...	210	48	19
All softwood types	683	1,399	1,067	384	61	11
Hardwood types:						
Bottomland hardwood	562	907	763	384	95	70
Upland hardwood	272	670	597	277	80	46
Upland hardwood-pine	352	781	728	348	83	12
All hardwood types	395	845	717	326	83	48
All types	507	1,047	913	346	78	38

1/ Includes areas not classified elsewhere.

Table 19.--Saw-timber volume by species and tree diameter, by Survey region, 1948-51

Species	All diameter classes	10 - 12 inches 1/	14 - 18 inches	20 - 24 inches	26 inches and up
	Million board feet				
			STATE		
Softwood:					
Loblolly pine	7,194.0	2,554.7	3,523.1	938.5	177.7
Shortleaf pine	8,827.5	4,437.0	3,913.8	439.0	37.7
Other softwoods	753.9	193.0	362.2	107.2	91.5
Total	16,775.4	7,184.7	7,799.1	1,484.7	306.9
Hardwood:					
Red oaks	6,027.1	1,252.2	3,164.0	1,185.1	425.8
White oaks	4,778.2	975.6	2,504.2	882.0	416.4
Hickories	1,238.2	321.6	702.6	145.7	68.3
Sweetgum	2,580.9	560.6	1,494.6	381.1	144.6
Black and tupelo gums	1,255.3	180.2	689.3	310.2	75.6
Other hardwoods	4,143.5	752.6	2,171.3	795.9	423.7
Total	20,023.2	4,042.8	10,726.0	3,700.0	1,554.4
All species	36,798.6	11,227.5	18,525.1	5,184.7	1,861.3
			SOUTHWEST		
Softwood:					
Loblolly pine	6,985.4	2,477.1	3,401.2	929.4	177.7
Shortleaf pine	4,133.7	2,099.7	1,893.7	140.3	...
Other softwoods	180.7	33.3	87.6	34.6	25.2
Total	11,299.8	4,610.1	5,382.5	1,104.3	202.9
Hardwood:					
Red oaks	2,118.7	458.7	1,123.5	406.6	129.9
White oaks	1,558.0	310.3	824.1	307.7	115.9
Hickories	506.3	97.4	282.8	62.4	63.7
Sweetgum	1,525.2	365.5	910.2	184.2	65.3
Black and tupelo gums	470.6	67.0	227.7	134.3	41.6
Other hardwoods	759.7	176.8	393.3	116.0	73.6
Total	6,938.5	1,475.7	3,761.6	1,211.2	490.0
All species	18,238.3	6,085.8	9,144.1	2,315.5	692.9
			OUACHITA		
Softwood:					
Loblolly pine	148.7	48.4	94.8	5.5	...
Shortleaf pine	3,892.9	1,875.4	1,703.2	276.6	37.7
Other softwoods	24.4	21.9	2.5	...	...
Total	4,066.0	1,945.7	1,800.5	282.1	37.7
Hardwood:					
Red oaks	433.8	84.7	236.1	69.9	43.1
White oaks	757.3	175.3	439.2	127.9	14.9
Hickories	133.0	47.6	75.3	10.1	...
Sweetgum	220.9	42.2	125.7	39.2	13.8
Black and tupelo gums	133.3	19.7	81.5	32.1	...
Other hardwoods	139.8	39.0	68.3	28.4	4.1
Total	1,818.1	408.5	1,026.1	307.6	75.9
All species	5,884.1	2,354.2	2,826.6	589.7	113.6
			OZARK		
Softwood:					
Shortleaf pine	710.1	412.1	275.9	22.1	...
Other softwoods	34.1	25.0	9.1	...	...
Total	744.2	437.1	285.0	22.1	...
Hardwood:					
Red oaks	1,921.9	409.2	1,012.3	390.7	109.7
White oaks	1,188.0	308.0	661.0	180.3	38.7
Hickories	399.3	126.3	234.2	34.2	4.6
Sweetgum	333.7	65.9	196.7	61.8	9.3
Black and tupelo gums	379.7	54.1	229.5	69.3	26.8
Other hardwoods	467.2	112.5	241.4	89.9	23.4
Total	4,689.8	1,076.0	2,575.1	826.2	212.5
All species	5,434.0	1,513.1	2,860.1	848.3	212.5
			DELTA		
Softwood:					
Loblolly pine	59.9	29.2	27.1	3.6	...
Shortleaf pine	90.8	49.8	41.0	...	...
Other softwoods	514.7	112.8	263.0	72.6	66.3
Total	665.4	191.8	331.1	76.2	66.3
Hardwood:					
Red oaks	1,552.7	299.6	792.1	317.9	143.1
White oaks	1,274.9	182.0	579.9	266.1	246.9
Hickories	199.6	50.3	110.3	39.0	...
Sweetgum	501.1	87.0	262.0	95.9	56.2
Black and tupelo gums	271.7	39.4	150.6	74.5	7.2
Other hardwoods	2,776.8	424.3	1,468.3	561.6	322.6
Total	6,576.8	1,082.6	3,363.2	1,355.0	776.0
All species	7,242.2	1,274.4	3,694.3	1,431.2	842.3

1/ Hardwood saw-timber volume not tallied in trees under 11.0 inches d.b.h.

Table 20.--Saw-timber volume by species and stand size, by Survey region, 1948-51

Species	All stand sizes	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Nonstocked and other areas 1/
	Million board feet					
STATE						
Softwood:						
Loblolly pine	7,194.0	2,443.3	4,096.7	622.3	31.7	...
Shortleaf pine	8,827.5	1,845.7	5,481.9	1,449.1	50.4	.4
Other softwoods	753.9	278.2	348.0	114.6	13.0	.1
Total	16,775.4	4,567.2	9,926.6	2,186.0	95.1	.5
Hardwood:						
Red oaks	6,027.1	1,547.2	2,487.6	1,785.7	197.5	9.1
White oaks	4,778.2	1,225.5	1,532.4	1,791.7	216.2	12.4
Hickories	1,238.2	288.9	391.7	493.9	58.6	5.1
Sweetgum	2,580.9	767.6	1,181.1	582.6	48.7	.9
Black and tupelo gums	1,255.3	446.7	445.8	329.8	32.6	.4
Other hardwoods	4,143.5	1,630.1	1,615.1	797.7	90.7	9.9
Total	20,023.2	5,906.0	7,653.7	5,781.4	644.3	37.8
All species	36,798.6	10,473.2	17,580.3	7,967.4	739.4	38.3
SOUTHWEST						
Softwood:						
Loblolly pine	6,985.4	2,400.9	3,968.1	584.7	31.7	...
Shortleaf pine	4,133.7	866.4	2,942.5	312.9	11.9	...
Other softwoods	180.7	102.7	47.6	29.5	.9	...
Total	11,299.8	3,370.0	6,958.2	927.1	44.5	...
Hardwood:						
Red oaks	2,118.7	632.0	1,056.1	416.1	14.5	...
White oaks	1,558.0	412.6	674.8	449.1	14.4	7.1
Hickories	506.3	165.7	199.5	137.6	1.5	2.0
Sweetgum	1,525.2	409.2	773.8	326.9	15.3	...
Black and tupelo gums	470.6	194.3	192.1	80.5	3.7	...
Other hardwoods	759.7	289.3	287.8	172.6	3.9	6.1
Total	6,938.5	2,103.1	3,184.1	1,582.8	53.3	15.2
All species	18,238.3	5,473.1	10,142.3	2,509.9	97.8	15.2
OUACHITA						
Softwood:						
Loblolly pine	148.7	41.0	85.6	22.1	...	...
Shortleaf pine	3,892.9	889.2	2,081.2	902.3	20.2	...
Other softwoods	24.4	...	...	24.4	...	...
Total	4,066.0	930.2	2,166.8	948.8	20.2	...
Hardwood:						
Red oaks	433.8	95.2	117.1	211.3	10.2	...
White oaks	757.3	140.2	177.6	414.7	24.8	...
Hickories	133.0	18.4	31.6	80.4	2.6	...
Sweetgum	220.9	24.0	94.9	96.0	6.0	...
Black and tupelo gums	133.3	19.0	42.2	69.1	3.0	...
Other hardwoods	139.8	36.0	56.2	45.0	2.6	...
Total	1,818.1	332.8	519.6	916.5	49.2	...
All species	5,884.1	1,263.0	2,686.4	1,865.3	69.4	...
OZARK						
Softwood:						
Shortleaf pine	710.1	89.6	384.2	217.9	18.0	.4
Other softwoods	34.1	2.6	12.8	12.9	5.7	.1
Total	744.2	92.2	397.0	230.8	23.7	.5
Hardwood:						
Red oaks	1,921.9	421.9	641.6	725.0	126.9	6.5
White oaks	1,188.0	171.4	273.9	590.6	146.8	5.3
Hickories	399.3	56.3	99.6	193.0	47.3	3.1
Sweetgum	333.7	111.5	120.4	77.8	23.1	.9
Black and tupelo gums	379.7	123.5	117.4	115.4	23.0	.4
Other hardwoods	467.2	148.8	126.9	145.0	42.7	3.8
Total	4,689.8	1,033.4	1,379.8	1,846.8	409.8	20.0
All species	5,434.0	1,125.6	1,776.8	2,077.6	433.5	20.5
DELTA						
Softwood:						
Loblolly pine	59.9	1.4	43.0	15.5	...	...
Shortleaf pine	90.8	.5	74.0	16.0	0.3	...
Other softwoods	514.7	172.9	287.6	47.8	6.4	...
Total	665.4	174.8	404.6	79.3	6.7	...
Hardwood:						
Red oaks	1,552.7	398.1	672.8	433.3	45.9	2.6
White oaks	1,274.9	501.3	406.1	337.3	30.2	...
Hickories	199.6	48.5	61.0	82.9	7.2	...
Sweetgum	501.1	222.9	192.0	81.9	4.3	...
Black and tupelo gums	271.7	109.9	94.1	64.8	2.9	...
Other hardwoods	2,776.8	1,156.0	1,144.2	435.1	41.5	...
Total	6,576.8	2,436.7	2,570.2	1,435.3	132.0	2.6
All species	7,242.2	2,611.5	2,974.8	1,514.6	138.7	2.6

1/ Includes areas not classified elsewhere.

Table 21.--Saw-timber volume by species and Survey region, 1948-51

Species	State	Southwest	Ouachita	Ozark	Delta
	Million board feet				
Softwood:					
Loblolly pine	7,194.0	6,985.4	148.7	...	59.9
Shortleaf pine	8,827.5	4,133.7	3,892.9	710.1	90.8
Cypress	731.1	180.1	17.6	19.1	514.3
Cedar	22.8	.6	6.8	15.0	.4
Total	16,775.4	11,299.8	4,066.0	744.2	665.4
Hardwood:					
Southern red, black and scarlet oaks	2,638.4	903.3	234.5	1,266.4	234.2
Cherrybark, Shumard, and northern red oaks	1,213.0	337.0	138.2	478.9	258.9
Water oaks	2,175.7	878.4	61.1	176.6	1,059.6
White oaks	1,964.6	674.1	397.2	636.7	256.6
Other white oaks	2,813.6	883.9	360.1	551.3	1,018.3
Sweetgum	2,580.9	1,525.2	220.9	333.7	501.1
Black and tupelo gums	1,255.3	470.6	133.3	379.7	271.7
Cottonwood	349.3	13.4	2.6	27.8	305.5
Willow	501.9	66.9	6.9	7.2	420.9
Pecan	669.5	91.1	9.8	45.2	523.4
Other hickories	1,238.2	506.3	133.0	399.3	199.6
Elms	897.0	193.3	53.6	115.2	534.9
Maples	169.4	56.7	7.4	37.5	67.8
Yellow-poplar	5.0	...	...	...	5.0
Sycamore	241.4	66.6	36.9	47.2	90.7
Ash	419.7	75.8	2.2	57.6	284.1
Beech	83.5	63.0	...	8.8	11.7
Sweetbay and magnolia	18.4	12.8	1.7	3.9	...
Hackberry	433.7	50.5	6.0	28.7	348.5
Other hardwoods	354.7	69.6	12.7	88.1	184.3
Total	20,023.2	6,938.5	1,818.1	4,689.8	6,576.8
All species	36,798.6	18,238.3	5,884.1	5,434.0	7,242.2

Table 22.--Average saw-timber volume per acre by forest type and Survey region, 1948-51

Forest type	State	Southwest	Ouachita	Ozark	Delta
	Board feet				
Softwood types:					
Loblolly-shortleaf pine	3,324	4,356	2,636	1,116	2,230
Loblolly-shortleaf pine-hardwood	2,016	2,548	1,307	1,195	1,099
Cedar	225	...	385	208	143
All softwood types	2,594	3,418	2,010	909	1,373
Hardwood types:					
Bottomland hardwood	2,342	2,474	1,899	1,967	2,352
Upland hardwood	893	1,751	772	817	1,241
Upland hardwood-pine	1,061	1,329	940	784	1,143
All hardwood types	1,464	1,978	1,063	885	2,102
All types	1,903	2,877	1,735	889	2,071

Table 23.--Average saw-timber volume per acre by stand size and forest type, 1948-51

Forest type	All stand sizes	Large saw timber	Small saw timber	Cordwood	Seedling and sapling	Nonstocked and other areas 1/
	Board feet					
Softwood types:						
Loblolly-shortleaf pine	3,324	7,921	4,875	906	152	8
Loblolly-shortleaf pine-hardwood	2,016	6,158	3,423	893	184	...
Cedar	225	...	...	499	106	57
All softwood types	2,594	7,167	4,314	888	151	13
Hardwood types:						
Bottomland hardwood	2,342	4,854	3,246	1,050	383	306
Upland hardwood	893	3,586	2,434	693	251	151
Upland hardwood-pine	1,061	3,838	3,049	817	214	26
All hardwood types	1,464	4,489	3,005	826	270	183
All types	1,903	5,466	3,737	849	242	136

1/ Includes areas not classified elsewhere.

Table 24.--Softwood saw-timber volume by tree grade and stand quality, by species group and Survey region, 1948-51

Species group and Survey region	All grades	Grade 1	Grade 2	Grade 3	
				In fair and better stands	In poor stands
	Million board feet				
Species group:					
Loblolly pine	7,194.0	1,384.4	1,777.3	1,616.9	2,415.4
Shortleaf pine	8,827.5	1,566.8	2,583.8	1,612.3	3,064.6
Other softwoods	753.9	337.7	110.6	111.7	193.9
Total	16,775.4	3,288.9	4,471.7	3,340.9	5,673.9
Survey region:					
Southwest	11,299.8	2,232.4	2,880.4	2,483.1	3,703.9
Ouachita	4,066.0	741.2	1,179.2	621.9	1,523.7
Ozark	744.2	97.2	276.4	123.6	247.0
Delta	665.4	218.1	135.7	112.3	199.3
Total	16,775.4	3,288.9	4,471.7	3,340.9	5,673.9

Table 25.--Hardwood saw-timber volume by log grade and stand quality, by species group and Survey region, 1948-51

Species group and Survey region	All grades	Grade 1	Grade 2	Grade 3 A			Grade 3 B		
				Total	In fair and better stands	In poor stands	Total	In fair and better stands	In poor stands
	Million board feet								
Species group:									
Red oaks	6,027.1	361.6	1,043.0	3,527.2	1,067.8	2,459.4	1,095.3	338.5	756.8
White oaks	4,778.2	430.2	876.2	2,900.5	791.0	2,109.5	571.3	143.5	427.8
Hickories	1,238.2	54.2	208.6	779.6	270.3	509.3	195.8	75.5	120.3
Sweetgum	2,580.9	151.3	319.8	1,482.7	480.1	1,002.6	627.1	206.8	420.3
Black and tupelo gums	1,255.3	160.0	302.5	691.6	273.4	418.2	101.2	35.0	66.2
Other hardwoods	4,143.5	330.7	1,021.6	2,439.8	956.4	1,483.4	351.4	81.1	270.3
Total	20,023.2	1,488.0	3,771.7	11,821.4	3,839.0	7,982.4	2,942.1	880.4	2,061.7
Survey region:									
Southwest	6,938.5	438.7	1,260.8	4,248.1	1,550.6	2,697.5	990.9	327.8	663.1
Ouachita	1,818.1	118.5	323.6	1,100.6	196.8	903.8	275.4	59.5	215.9
Ozark	4,689.8	254.3	654.9	2,646.8	743.4	1,903.4	1,133.8	368.9	764.9
Delta	6,576.8	676.5	1,532.4	3,825.9	1,348.2	2,477.7	542.0	124.2	417.8
Total	20,023.2	1,488.0	3,771.7	11,821.4	3,839.0	7,982.4	2,942.1	880.4	2,061.7

Table 26.--Net annual growth of saw timber and growing stock by species and class of timber, by Survey region, 1948-51

Class of timber	Growing stock			Saw timber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	- - - Million cubic feet - - -			- - - Million board feet - - -		
			STATE			
Saw-timber trees	392.6	227.0	165.6	2,180.8	1,168.4	1,012.4
Pole-timber trees	156.2	31.8	124.4	...	...	...
Total	548.8	258.8	290.0	2,180.8	1,168.4	1,012.4
			SOUTHWEST			
Saw-timber trees	212.2	152.9	59.3	1,179.3	811.0	368.3
Pole-timber trees	63.6	15.3	48.3	...	...	...
Total	275.8	168.2	107.6	1,179.3	811.0	368.3
			OUACHITA			
Saw-timber trees	64.7	52.8	11.9	336.2	263.1	73.1
Pole-timber trees	25.7	10.3	15.4	...	...	...
Total	90.4	63.1	27.3	336.2	263.1	73.1
			OZARK			
Saw-timber trees	46.2	14.9	31.3	254.8	58.4	196.4
Pole-timber trees	37.9	4.4	33.5	...	...	...
Total	84.1	19.3	64.8	254.8	58.4	196.4
			DELTA			
Saw-timber trees	69.5	6.4	63.1	410.5	35.9	374.6
Pole-timber trees	29.0	1.8	27.2	...	...	...
Total	98.5	8.2	90.3	410.5	35.9	374.6

Table 27.--Net annual growth per acre of saw timber and growing stock, by forest-type and stand-size group, by Survey region, 1948-51

Stand-size group	Growing stock			Saw timber		
	All types	Softwood type	Hardwood type	All types	Softwood type	Hardwood type
	Cubic feet			Board feet		
			STATE			
Saw timber	44	57	31	223	282	165
Pole timber	24	33	20	70	93	57
Other stand sizes	9	11	8	13	19	11
Total	28	41	20	113	169	77
			SOUTHWEST			
Saw timber	58	65	39	294	327	206
Pole timber	33	40	26	99	118	79
Other stand sizes	15	17	12	21	27	16
Total	44	52	29	186	229	114
			OUACHITA			
Saw timber	38	40	24	186	197	125
Pole timber	25	29	17	73	84	49
Other stand sizes	7	6	7	8	12	5
Total	27	31	16	99	118	52
			OZARK			
Saw timber	21	31	19	103	127	98
Pole timber	16	26	13	41	57	38
Other stand sizes	7	7	7	10	15	9
Total	14	22	12	42	58	38
			DELTA			
Saw timber	34	56	33	186	220	185
Pole timber	27	42	26	76	80	76
Other stand sizes	12	(1/)	12	21	5	22
Total	28	42	28	117	122	117

1/ Negligible.

Table 28.--Commodity drain on saw timber and growing stock in species groups, by commodity and Survey region, 1948

Commodity	Growing stock			Saw timber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			Million board feet		
			STATE			
Sawlogs	258.8	175.7	83.1	1,449.8	901.9	547.9
Veneer logs	12.3	...	12.3	81.6	...	81.6
Cooperage bolts	10.0	...	10.0	65.6	...	65.6
Pulpwood	40.8	38.1	2.7	66.6	60.5	6.1
Fuel wood	52.5	8.1	44.4	243.9	38.1	205.8
Chemical wood	3.3	...	3.3	10.0	...	10.0
Piling	0.7	0.7	...	3.3	3.3	...
Poles	3.9	3.9	...	18.9	18.9	...
Posts	10.6	4.0	6.6	30.2	.6	29.6
Hewn ties	6.5	.4	6.1	38.9	1.7	37.2
Round mine timbers	.5	.3	0.2	0.4	0.4	...
Miscellaneous products	11.4	2.2	9.2	46.0	10.4	35.6
Total	411.3	233.4	177.9	2,055.2	1,035.8	1,019.4
			SOUTHWEST			
Sawlogs	152.7	109.3	43.4	846.9	560.8	286.1
Veneer logs	4.5	...	4.5	30.1	...	30.1
Cooperage bolts	1.4	...	1.4	9.4	...	9.4
Pulpwood	31.0	29.6	1.4	50.1	47.0	3.1
Fuel wood	12.1	3.6	8.5	56.5	17.3	39.2
Chemical wood	2.4	...	2.4	7.3	...	7.3
Piling	.5	.5	...	2.0	2.0	...
Poles	2.5	2.5	...	11.9	11.9	...
Posts	2.0	.4	1.6	7.2	.1	7.1
Hewn ties	3.3	.4	2.9	19.5	1.5	18.0
Round mine timbers	...	...	...	...	...	...
Miscellaneous products	2.7	1.0	1.7	11.7	4.9	6.8
Total	215.1	147.3	67.8	1,052.6	645.5	407.1
			OUACHITA			
Sawlogs	43.9	39.9	4.0	231.7	205.0	26.7
Veneer logs	1.6	...	1.6	10.7	...	10.7
Cooperage bolts	1.6	...	1.6	10.5	...	10.5
Pulpwood	7.4	7.4	(1/)	11.7	11.7	(1/)
Fuel wood	7.2	2.2	5.0	33.2	10.1	23.1
Chemical wood	...	...	...	...	...	...
Piling	(1/)	(1/)	...	.1	.1	...
Poles	1.0	1.0	...	4.6	4.6	...
Posts	3.5	2.8	.7	3.6	.4	3.2
Hewn ties	.2	(1/)	.2	1.5	.1	1.4
Round mine timbers	.3	.2	.1	.3	.3	...
Miscellaneous products	1.9	1.2	.7	9.7	5.5	4.2
Total	68.6	54.7	13.9	317.6	237.8	79.8
			OZARK			
Sawlogs	31.1	20.4	10.7	175.0	104.7	70.3
Veneer logs	.7	...	.7	4.9	...	4.9
Cooperage bolts	3.1	...	3.1	20.2	...	20.2
Pulpwood	.3	.3	...	.5	.5	...
Fuel wood	11.4	.6	10.8	53.1	2.9	50.2
Chemical wood	.4	...	.4	1.2	...	1.2
Piling	(1/)	(1/)	...	.1	.1	...
Poles	.4	.4	...	2.2	2.2	...
Posts	3.1	.6	2.5	11.3	.1	11.2
Hewn ties	1.6	(1/)	1.6	10.0	.1	9.9
Round mine timbers	.2	.1	.1	.1	.1	...
Miscellaneous products	2.8	(1/)	2.8	10.5	(1/)	10.5
Total	55.1	22.4	32.7	289.1	110.7	178.4
			DELTA			
Sawlogs	31.1	6.1	25.0	196.2	31.4	164.8
Veneer logs	5.5	...	5.5	35.9	...	35.9
Cooperage bolts	3.9	...	3.9	25.5	...	25.5
Pulpwood	2.1	.8	1.3	4.3	1.3	3.0
Fuel wood	21.8	1.7	20.1	101.1	7.8	93.3
Chemical wood	.5	...	.5	1.5	...	1.5
Piling	.2	.2	...	1.1	1.1	...
Poles	(1/)	(1/)	...	.2	.2	...
Posts	2.0	.2	1.8	8.1	(1/)	8.1
Hewn ties	1.4	(1/)	1.4	7.9	(1/)	7.9
Round mine timbers	...	...	...	...	...	...
Miscellaneous products	4.0	(1/)	4.0	14.1	...	14.1
Total	72.5	9.0	63.5	395.9	41.8	354.1

1/ Negligible.

Table 29.--Commodity drain of saw timber and growing stock by species, 1948

Species	Growing stock	Saw timber
	Million cubic feet	Million board feet
Softwood:		
Pines	227.4	1,012.2
Other	6.0	23.6
Total	233.4	1,035.8
Hardwood:		
Oaks	114.2	640.9
Sweetgum	29.1	184.6
Black and tupelo gums	8.5	51.5
Other	26.1	142.4
Total	177.9	1,019.4
All species	411.3	2,055.2

Table 30.--Commodity drain on saw timber and growing stock, by species group and class of timber by Survey region, 1948

Class of timber	Growing stock			Saw timber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			Million board feet		
			STATE			
Saw-timber trees	344.0	191.3	152.7	2,055.2	1,035.8	1,019.4
Pole-timber trees	67.3	42.1	25.2	...	...	...
Total	411.3	233.4	177.9	2,055.2	1,035.8	1,019.4
			SOUTHWEST			
Saw-timber trees	179.1	119.3	59.8	1,052.6	645.5	407.1
Pole-timber trees	36.0	28.0	8.0	...	...	...
Total	215.1	147.3	67.8	1,052.6	645.5	407.1
			OUACHITA			
Saw-timber trees	55.9	44.1	11.8	317.6	237.8	79.8
Pole-timber trees	12.7	10.6	2.1	...	...	...
Total	68.6	54.7	13.9	317.6	237.8	79.8
			OZARK			
Saw-timber trees	47.4	20.2	27.2	289.1	110.7	178.4
Pole-timber trees	7.7	2.2	5.5	...	...	...
Total	55.1	22.4	32.7	289.1	110.7	178.4
			DELTA			
Saw-timber trees	61.6	7.7	53.9	395.9	41.8	354.1
Pole-timber trees	10.9	1.3	9.6	...	...	...
Total	72.5	9.0	63.5	395.9	41.8	354.1

Definitions of Terms

Forest Land

Forest land. Includes: (a) land which is at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or of exerting an influence on the climate or on the water regime; (b) land from which the trees have been removed to less than 10 percent stocking and which has not been developed for other use; (c) afforested area; (d) chaparral areas.

Commercial forest land. Forest land which is (a) producing, or is physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Noncommercial forest land. 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 saw timber) because of adverse site conditions, or physical inaccessibility.

Species

Commercial species. Includes species that normally have value for commercial timber products; excludes so-called weed or noncommercial species such as blackjack oak, scrub post oak, blue beech, sourwood, etc.

Softwoods. Loblolly pine (*Pinus taeda*), shortleaf pine (*P. echinata*), baldcypress (*Taxodium distichum*), and eastern redcedar (*Juniperus virginiana*).

Hardwoods. Broadleaved species, of which the most numerous genera or species are the oaks (*Quercus spp.*), hickories (*Carya* spp.), and sweetgum (*Liquidambar styraciflua*).

Class of Timber

Saw-timber tree. A live tree of commercial species at least 9.0 inches d.b.h. in softwoods and 11.0 inches d.b.h. in hardwoods, that contains at least a 12-foot merchantable butt log--or, if the butt log is a cull, at

least 50 percent of the gross volume is in merchantable logs. To be merchantable, a log must meet the following requirements:

(a) In softwoods, logs having a minimum 6-inch small-end diameter inside bark and at least one-third sound, with sweep or crook not exceeding two-thirds the small-end diameter.
(b) In hardwoods, logs having a minimum 8-inch small-end diameter inside bark and which meet the specifications of a grade 3B or better log.

Pole-timber tree. A live tree of commercial species between 5.0 inches d.b.h. and saw-timber size, but straight and clear enough to become a saw-timber tree in the future. In the South, trees of this size are commonly termed cordwood trees.

Seedling and sapling trees. Live, well-established seedlings and trees of commercial species less than 5.0 inches in d.b.h., sound and of good form.

Cull tree. A live tree 5.0 inches or larger in d.b.h., which is unmerchantable for sawlogs now or prospectively because of defect, rot, or species.

Forest Type

Forest type is based on the dominant and codominant trees of commercial species and good form which govern the stand-size class.

Loblolly-shortleaf pine. Stands in which loblolly and shortleaf pines comprise 75 percent or more of the trees.

Loblolly-shortleaf pine-hardwood. Stands in which loblolly and shortleaf pines comprise at least 25 percent of the trees, but less than 75 percent.

Cedar. Stands in which eastern redcedar comprises at least 25 percent of the trees.

Upland hardwood. Stands in which upland hardwoods comprise 75 percent or more of the trees, and no pine is present.

Upland hardwood-pine. Stands in which upland hardwoods comprise 75 percent or more of the trees, and some pine is present.

Bottomland hardwood. Stands in which bottomland hardwoods and cypress comprise 75 percent or more of the trees.

Stand-size Class

Large saw timber. Stands with saw-timber trees having a net volume of at least 1,500 board feet per acre and at least half of this volume in softwoods 15.0 inches d.b.h. and larger, and hardwoods 17.0 inches d.b.h. and larger.

Small saw timber. Stands which have a net volume of at least 1,500 board feet per acre in saw-timber trees, but which do not meet the specifications for large saw timber.

Pole timber. Stands failing to meet the saw-timber specification but at least 10 percent stocked with pole-timber and larger trees (5.0 inches d.b.h. and larger) and with at least half the minimum stocking in pole-timber trees. In the South, stands of this class are commonly termed cordwood stands.

Seedling and sapling. Stands not qualifying as either saw-timber or pole-timber stands, but having at least 10 percent stocking of trees of commercial species and with at least half the minimum stocking in seedling and sapling trees.

Nonstocked and other areas. Commercial forest land not qualifying as saw timber, pole timber, or seedling and sapling stands.

Tree Stocking

Stocking is the extent to which growing space is effectively utilized by present or potential growing-stock trees of commercial species. Stands are considered to be well stocked when the percentage of full stocking is 70 or above, medium stocked when the percentage is 40 to 69, poorly stocked when the percentage is 10 to 39, and nonstocked when the percentage is under 10.

Volume

Saw-timber volume. Net volume in board feet, International 1/4-inch rule, in merchantable sawlogs in saw-timber trees.

Total volume. Net volume in cubic feet (inside bark) or standard cords (including bark) of live saw-timber trees, pole-timber trees, and cull trees of all species.

> Growing stock. Net volume in sawlog portion of saw-timber trees, upper stems of softwood saw-timber trees, and stems of pole-timber trees to a minimum diameter of 4 inches inside bark.
>
> Other material. Net volume in upper stems and limbs of hardwood saw-timber trees, and stems and limbs of cull trees, to a minimum diameter of 4 inches inside bark.

Basal area

Basal area. Cross-sectional area, including bark, of trees at breast height, measured in square feet.

Diameter

D. b. h. (diameter breast high). Tree diameter in inches, outside bark, measured at 4-1/2 feet above ground.

Diameter class. The 2-inch diameter classes extend from 1. 0 inch below to 0. 9 inch above the stated midpoint. Thus, the 12-inch class includes trees 11. 0 inches to and including 12. 9 inches d. b. h.

Growth

Net annual growth of saw timber. The change during the inventory year in net board-foot volume of live saw timber on commercial forest land resulting from natural causes exclusive of catastrophic losses.

Net annual growth of growing stock. The change during the inventory year in net cubic-foot volume of the growing stock on commercial forest land resulting from natural causes exclusive of catastrophic losses.

Drain

Commodity drain on saw timber. The board-foot volume of live saw-timber trees removed from commercial forest land during a specified year as timber products and logging waste.

Commodity drain on growing stock. The cubic-foot volume of live sawtimber and pole-timber trees removed from commercial forest land during a specified year as timber products and logging waste.

Log and Tree Grade

Tree grades for softwoods:

Grade 1 (smooth[1] trees). Not less than 20 feet of clear bole and at least 40 percent of the merchantable length clear of limbs and knots in sections not less than 8 feet in length. All cedar sawlog trees were graded as No. 1.

Grade 2 (limby trees). Not less than 12 feet of clear bole and 25 to 39 percent of the merchantable length clear of limbs and knots in sections not less than 8 feet in length.

Grade 3 (rough trees). Merchantable trees below grade-2 specifications.

Log grades for hardwoods:[2]

Grade 1. Logs having, in general, five-sixths or more of their length on the 3 best faces in clear-cuttings not less than 5 feet long; they yield, on the average, at least 65 percent of their volume in No. 1 Common and better grades of lumber.

Grade 2. Logs having, in general, two-thirds or more of their length on the 3 best faces in clear-cuttings not less than 3 feet long; they yield, on the average, at least 40 percent of their volume in No. 1 Common and better grades of lumber.

1/ Except as noted for cedar.

2/ For detailed external specifications of log grades used, see Forest Service Committee on Interim Hardwood Sawlog Grades, "Interim sawlog grades for southern hardwoods," Southern Forest Experiment Station, 9 pp., illus. Rev. 1948.

Grade 3.

--A. Logs below grade 2, having one-half or more of their length on the 3 best faces in clear-cuttings not less than 2 feet long; they yield, on the average, at least 13 percent of their volume in No. 1 Common and better grades of lumber.

--B. Logs which do not meet the clear-cutting requirements of 3A or higher grades, but which are sound, reasonably straight, and without large knots or knot clusters; they are suitable for ties or low-grade structural timbers.

Stand Quality

Fair and better. A stand in which at least four grade-2 or better hardwood logs or softwood trees are present per acre.

Poor. A stand in which fewer than four grade-2 or better hardwood logs or softwood trees are present per acre.

Standard Forest Survey Tables

To insure that Forest Survey statistics for the different States and major forest regions of the country are on a comparable basis, a plan for nationally standardized terminology, definitions, forest categories, and summary tables has been formulated. The survey of Arkansas' forests was partly completed before the plan was promulgated, and therefore the foregoing tables do not conform in every respect to present national standards.

Chief differences are: (1) the national standards make some changes in the forest type categories used in the foregoing tables; (2) upper-stem volume of hardwood saw-timber trees is included in growing stock under the national standards but excluded from growing stock in the foregoing tables; (3) limb volume of both merchantable and cull hardwood saw-timber trees is included in a single category under the national standards, whereas the hardwood upper stems and limbs category in the foregoing tables includes upper-stems and limb volumes of merchantable hardwood saw timber but excludes upper stems and limbs of hardwood cull trees.

There follows a set of 10 nationally standard tables in which data from the foregoing tables have been adjusted to conform as nearly as possible to the national Forest Survey standards. It will be noted that estimates of cubic volume for timber inventory, growth, and drain are all affected by this adjustment.

Table I. --Land area, by major classes of land, Arkansas, 1948-51

Class of land	Area
	Thousand acres
Forest:	
Commercial	19,341.8
Noncommercial:	
Reserved from commercial timber use	19.8
Unproductive for timber use	2.7
Total	19,364.3
Nonforest 1/	14,379.7
Total, all classes	33,744.0

1/ Includes some acreage of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table II. --Commercial forest land area, by ownership and stand-size classes, Arkansas, 1948-51

Ownership class	Total	Saw-timber stands	Pole-timber stands	Seedling and sapling stands 1/
	Thousand acres			
Federally owned or managed:				
National forest	2,292.2	787.4	1,231.0	273.8
Indian	...	...	...	...
Other	521.0	175.0	204.3	141.7
Total	2,813.2	962.4	1,435.3	415.5
State)	...	...	...	...
County and municipal) 2/	102.4	34.4	40.2	27.8
Private	16,426.2	5,624.1	7,913.1	2,889.0
All ownership	19,341.8	6,620.9	9,388.6	3,332.3

1/ Nonstocked and other areas included with seedling and sapling stands.
2/ Separation of State, county, and municipal not available.

Table III. --Area of commercial forest land, by major forest types, Arkansas, 1948-51

Forest type	Thousand acres
Loblolly-shortleaf pine 1/	3,953.6
Oak-pine 2/	3,549.6
Oak-hickory	7,441.6
Oak-gum-cypress	4,192.5
Elm-ash-cottonwood	204.5
Total	19,341.8

1/ Differs from national specification in that only stands with 75 percent or more pine are included.
2/ Differs from national specification in that stands with 25 to 75 percent pine are included.

Table IV. --Net volume of live saw timber and growing stock on commercial forest land, by stand-size class, Arkansas, 1948-51

Stand-size class	Saw timber	Growing stock
	Million board feet	Million cubic feet
Saw-timber stands	28,053.5	7,179.5
Pole-timber stands	7,967.4	3,627.5
Seedling and sapling stands	739.4	279.6
Nonstocked and other areas not elsewhere classified	38.3	13.2
Total	36,798.6	11,099.8

Table V.--Net volume of live saw timber and growing stock on commercial forest land, by ownership class, Arkansas, 1948-51

Ownership class	Saw timber	Growing stock
	Million board feet	Million cubic feet
Federally owned or managed:		
National forest	4,229.2	1,184.5
Indian	...	...
Other	869.6	256.2
Total	5,098.8	1,440.7
State 1/	...	...
County and municipal 1/	170.9	50.3
Private:		
Farm 2/	...	...
Industrial and other 2/	...	...
Total	31,528.9	9,608.8
All ownerships	36,798.6	11,099.8

1/ Separation between State, county, and municipal not available.
2/ Separation between farm, industrial, and other not available.

Table VI.--Net volume of live saw timber and growing stock on commercial forest land, by species, Arkansas, 1948-51

Species	Saw timber	Growing stock
	Million board feet	Million cubic feet
Softwoods:		
Shortleaf and loblolly pines	16,021.5	3,949.7
Cypress	731.1	155.3
Other eastern softwoods	22.8	17.6
Total	16,775.4	4,122.6
Hardwoods:		
White oaks (*Q. alba* and *prinus*)	2,089.7	746.3
Red oaks (*Q. borealis* and *falcata* var. *pagodaefolia*)	1,148.3	360.2
Other white oaks	2,688.5	983.5
Other red oaks	4,878.8	1,667.3
Sugar maple	31.8	9.4
Soft maples	137.6	59.3
Beech	83.5	25.0
Sweetgum	2,580.9	907.2
Tupelo and blackgum	1,255.3	370.0
Ash	419.7	153.3
Hickory	1,907.7	746.7
Cottonwood and aspen	349.3	92.8
Basswood	12.8	3.4
Yellow-poplar	5.0	1.2
Black walnut	39.4	13.3
Other eastern hardwoods	2,394.9	838.3
Total	20,023.2	6,977.2
All species	36,798.6	11,099.8

Table VII. --Net volume of live saw timber on commercial forest land, by diameter class groups and species, Arkansas, 1948-50

Species	Diameter class groups						Total
	10 inches	12 inches	14 inches	16 inches	18 inches	20 inches and up	
	Million board feet						
Southern yellow pines	3,206.8	3,784.9	3,338.9	2,583.4	1,514.6	1,592.9	16,021.5
White and red pines	...	...	...	...	...	...	...
Other eastern softwoods	67.6	125.4	101.8	157.4	103.0	198.7	753.9
White oaks (Q. alba and prinus)	...	463.7	527.5	367.3	299.5	431.7	2,089.7
Other white oaks	...	511.9	507.6	481.0	321.3	866.7	2,688.5
Red oaks (Q. borealis and falcata var. pagodaefolia)	...	227.1	259.6	212.3	165.2	284.1	1,148.3
Other red oaks	...	1,025.1	1,044.2	804.3	678.4	1,326.8	4,878.8
Yellow birch	...	...	...	...	...	...	...
Sugar maple	...	7.4	5.2	4.8	1.7	12.7	31.8
Beech	...	4.7	13.1	20.3	15.0	30.4	83.5
Sweetgum	...	560.6	646.2	470.3	378.1	525.7	2,580.9
Tupelo and blackgum	...	180.2	240.6	237.2	211.5	385.8	1,255.3
Yellow-poplar	...	...	...	2.1	...	2.9	5.0
Other eastern hardwoods	...	1,062.1	1,083.9	960.3	767.5	1,387.6	5,261.4

Table VIII. --Net volume of all timber on commercial forest land, by class of material and species group, Arkansas, 1948-51

Class of material	Total	Softwoods	Hardwoods
	- - - - Million cubic feet - - - -		
Growing stock:			
Saw-timber trees:			
Sawlog portion	5,941.7	2,772.4	3,169.3
Upper stem portion	1,636.9	338.8	1,298.1
Total	7,578.6	3,111.2	4,467.4
Pole-timber trees	3,521.2	1,011.4	2,509.8
Total growing stock	11,099.8	4,122.6	6,977.2
Other material:			
Sound cull trees	1,472.3	41.4	1,430.9
Rotten cull trees	1,200.6	19.5	1,181.1
Hardwood limbs	1,061.3	...	1,061.3
Salvable dead trees	61.3	26.3	35.0
Total other material	3,795.5	87.2	3,708.3
Total, all timber	14,895.3	4,209.8	10,685.5

Table IX. --Net annual growth, annual mortality, and commodity drain on live saw timber and growing stock on commercial forest land, by species groups, Arkansas, 1948

Item	Saw timber			Growing stock		
	Total	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods
	Million board feet			Million cubic feet		
Net annual growth	2,180.8	1,168.4	1,012.4	614.4	258.8	355.6
Annual mortality	220.8	100.7	120.1	77.2	27.8	49.4
Commodity drain						
Timber products	1,909.6	1,000.7	908.9	381.0	206.7	174.3
Logging waste	145.6	35.1	110.5	96.4	26.7	69.7
Total commodity drain	2,055.2	1,035.8	1,019.4	477.4	233.4	244.0

Table X.--Total output of timber products and commodity drain on live saw timber and growing stock, Arkansas, 1948

Product	Volume of products cut[1/]			Commodity drain on saw timber			Commodity drain on growing stock		
	Standard unit	Number	M cu. ft.	Total	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods
				Million board feet			Million cubic feet		
Sawlogs	MBM[2/]	1,430,000	226,288	1,449.8	901.9	547.9	294.4	175.7	118.7
Veneer logs and bolts	MBM[2/]	71,000	9,917	81.6	...	81.6	17.6	...	17.6
Cooperage logs and bolts	MBM[2/]	46,000	6,587	65.6	...	65.6	14.3	...	14.3
Pulpwood logs	MBM[2/]	....	...	...	...	...	...	...	...
Pulpwood bolts	Std. cords[3/]	616,000	46,621	66.6	60.5	6.1	41.2	38.1	3.1
Fuel wood	Std. cords[3/]	1,349,000	101,228	243.9	38.1	205.8	65.8	8.1	57.7
Piling	M linear feet	828	580	3.3	3.3	...	0.7	0.7	...
Poles	M pieces	261	3,286	18.9	18.9	...	3.9	3.9	...
Posts	M pieces	16,771	10,565	30.2	0.6	29.6	12.5	4.0	8.5
Hewn ties	M pieces	736	5,170	38.9	1.7	37.2	8.9	.4	8.5
Mine timbers	M cu. ft.	506	506	0.4	.4	...	.5	.3	0.2
Miscellaneous[4/]	M cu. ft.	12,656	12,656	56.0	10.4	45.6	17.6	2.2	15.4
Total			423,404	2,055.2	1,035.8	1,019.4	477.4	233.4	244.0

1/ Includes material from both growing stock and other miscellaneous sources.
2/ International 1/4-inch rule.
3/ Rough wood basis.
4/ Includes chemical wood, excelsior, handle stock, shingle bolts, etc.