U. S. Department of Agriculture
Forest Service Resource Bulletin SO-16 1969

Forest Statistics for Southwest Arkansas Counties

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Arkansas Forest Survey Regions

SOUTHWEST: Ashley, Bradley, Calhoun, Clark, Cleveland, Columbia, Dallas, Drew, Grant, Hempstead, Hot Spring, Howard, Lafayette, Little River, Miller, Nevada, Ouachita, Pike, Sevier, Union

OUACHITA: Garland, Logan, Montgomery, Perry, Polk, Pulaski, Saline, Scott, Sebastian, Yell

OZARK: Baxter, Benton, Boone, Carroll, Cleburne, Conway, Crawford, Faulkner, Franklin, Fulton, Independence, Izard, Johnson, Madison, Marion, Newton, Pope, Randolph, Searcy, Sharp, Stone, Van Buren, Washington, White

SOUTH DELTA: Arkansas, Chicot, Desha, Jefferson, Lee, Lincoln, Lonoke, Monroe, Phillips, Prairie

NORTH DELTA: Clay, Craighead, Crittenden, Cross, Greene, Jackson, Lawrence, Mississippi, Poinsett, St. Francis, Woodruff

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This report tabulates information from a new forest survey of southwest Arkansas, completed in 1969 by the Southern Forest Experiment Station. The tables are intended for use as source data in compiling estimates for groups of counties. Because the Arkansas sampling procedure is intended primarily to furnish inventory data for the State as a whole, estimates for individual counties have limited and variable accuracy.

The data on forest acreage and timber volume were secured by a systematic sampling method involving a forest-nonforest classification on aerial photographs and on-the-ground measurements of trees at sample locations. The sample locations were at the intersections of a grid of lines spaced 3 miles apart. At each forested location, 10 small plots were uniformly distributed on an area of about 1 acre.

Computations of the data were programmed on electronic computer facilities of the National Aeronautics and Space Administration in New Orleans.

The sampling errors to which the county area and volume totals are liable (on a probability of two chances out of three) are shown in table 1.

Table 1.—*Sampling errors*[1] *for forest land and timber volume by county, 1969*

County	Commercial forest land	Growing stock	Sawtimber volume	County	Commercial forest land	Growing stock	Sawtimber volume
	Percent				*Percent*		
Ashley	3.5	6.8	8.8	Hot Spring	3.4	10.0	14.6
Bradley	2.1	7.7	9.7	Howard	2.1	10.3	14.2
Calhoun	1.9	3.4	15.6	Lafayette	4.3	10.5	16.4
Clark	3.6	6.7	9.0	Little River	2.9	12.6	18.8
Cleveland	1.4	7.7	10.2	Miller	3.5	12.6	17.6
Columbia	2.4	10.8	15.0	Nevada	1.8	8.4	13.0
Dallas	.6	7.1	10.7	Ouachita	2.3	7.4	10.5
Drew	2.2	9.1	13.0	Pike	.9	8.3	12.6
Grant	.7	8.9	11.9	Sevier	1.7	10.5	16.1
Hempstead	3.3	9.9	14.5	Union	1.6	6.4	8.7
				All counties	.5	1.9	2.7

[1] By random-sampling formula.

When data for two or more counties are grouped the error decreases; the approximate error for the group may readily be computed by standard statistical procedures.[1]

Conversely, as data for individual counties are broken down by various subdivisions, the possibility of error increases and is greatest for the

[1] Freese, F. Elementary forest sampling. USDA Agr. Handbook 232, 91 pp. 1962.

smallest items. Sampling errors associated with the estimates of the principal timber species in southwest Arkansas are shown in table 2.

Because of differences in standards of tree measurement, meaningful comparisons cannot be made between the volume estimates in this report and those contained in earlier publications on Arkansas.

It is anticipated that data for other counties of Arkansas will be published as field work progresses. A Statewide interpretive report will be issued when all counties have been inventoried; it will include an evaluation of timber trends since the previous survey of 1959.

Table 2.—*Sampling errors*[1] *for timber volume, 1969*

Species	Growing stock	Sawtimber volume
	– *Percent* –	
Softwood:		
Southern pines	3.2	3.8
Other softwoods	40.3	43.5
All softwoods	3.2	3.8
Hardwood:		
Select white oaks	6.4	8.2
Select red oaks	8.9	11.1
Other white oaks	6.3	9.4
Other red oaks	4.8	6.3
Hickory	8.9	13.3
Sweetgum	5.9	8.6
Tupelo and blackgum	9.6	13.0
Maple	15.4	26.8
Beech	22.4	22.7
Ash	14.9	20.6
Other hardwoods	10.2	16.3
All hardwoods	3.1	4.4
All species	1.9	2.7

[1] By random-sampling formula.

DEFINITIONS OF TERMS

Acceptable trees.—Growing-stock trees of commercial species that meet specified standards of size and quality but do not qualify as desirable trees.

Commercial forest land.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization.

Desirable trees.—Growing-stock trees that are of commercial species, have no defects in quality for timber products, are of relatively high vigor, and contain no pathogens that may result in death or serious deterioration before rotation age.

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

Growing-stock trees.—Live trees of commercial species qualifying as desirable or acceptable trees.

Growing-stock volume.—Net volume in cubic feet of growing-stock trees 5.0 inches d.b.h. and over from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Poletimber trees.—Growing-stock trees of commercial species at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Sawtimber trees.—Live trees that are of commercial species, contain at least a 12-foot saw log, and meet Regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches.

Sawtimber volume.—Net volume of the saw-log portion of live sawtimber in board feet, International ¼-inch rule.

Stand-size class.—A classification of forest land based on the size class of growing-stock trees on the area; that is, sawtimber, poletimber, or seedling and saplings.

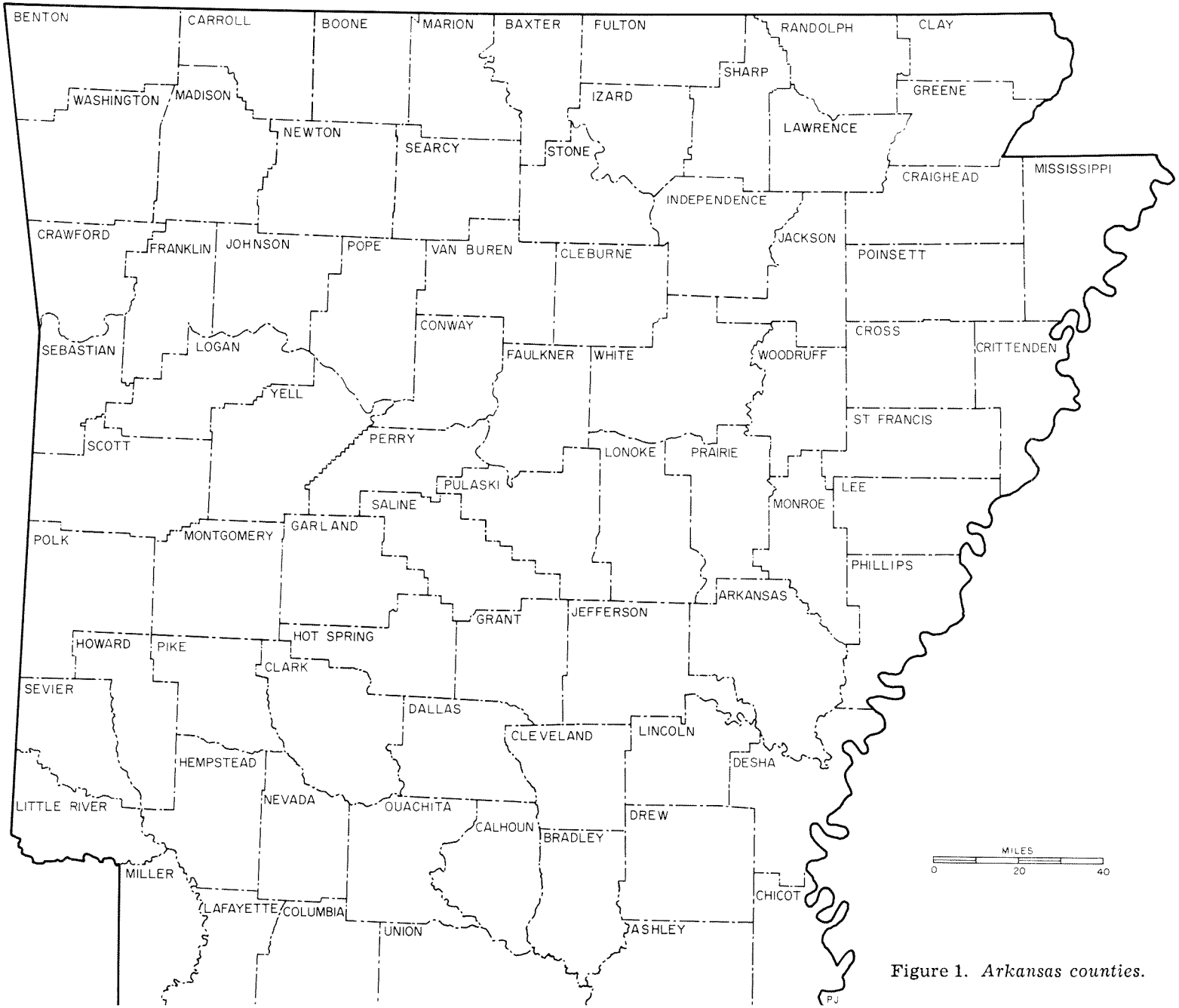

Figure 1. *Arkansas counties.*

Table 3.—*Commercial forest land by ownership class and county, 1969*

County	All ownerships	National forest	Other public	Forest industry	Farmer	Misc. private
	Thousand acres					
Ashley	410.4	...	3.5	268.1	51.3	87.5
Bradley	354.0	...	...	194.9	76.8	82.3
Calhoun	348.0	...	(1)	232.2	5.8	110.0
Clark	423.4	...	10.3	151.0	98.7	163.4
Cleveland	319.0	...	...	145.2	75.5	98.3
Columbia	379.5	...	.2	82.9	89.7	206.7
Dallas	372.6	...	(1)	237.9	70.3	64.4
Drew	387.6	...	9.3	137.8	81.6	158.9
Grant	346.8	...	...	240.0	56.2	50.6
Hempstead	286.7	...	7.2	79.4	97.7	102.4
Hot Spring	294.8	0.4	6.2	154.3	53.7	80.2
Howard	254.8	1.2	9.0	165.6	63.8	15.2
Lafayette	212.8	...	(1)	61.7	56.1	95.0
Little River	192.5	...	4.7	71.6	49.6	66.6
Miller	217.0	...	8.9	21.0	77.1	110.0
Nevada	300.0	...	7.2	90.1	90.1	112.6
Ouachita	384.3	...	9.9	103.8	85.5	185.1
Pike	319.0	2.2	6.8	220.6	81.3	8.1
Sevier	269.5	...	9.3	137.3	68.7	54.2
Union	572.4	...	.9	194.6	54.0	322.9
All counties	6,645.1	3.8	93.4	2,990.0	1,383.5	2,174.4

[1] Negligible.

Table 4.—*Commercial forest land by forest type and county, 1969*

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cotton-wood
	Thousand acres					
Ashley	410.4	205.2	79.8	57.0	68.4	...
Bradley	354.0	123.9	76.7	76.7	76.7	...
Calhoun	348.0	133.4	69.6	63.8	81.2	...
Clark	423.4	116.0	127.6	110.2	69.6	...
Cleveland	319.0	110.2	58.0	75.4	69.6	5.8
Columbia	379.5	144.9	96.6	55.2	82.8	...
Dallas	372.6	118.8	102.6	70.2	81.0	...
Drew	387.6	91.8	81.6	112.2	96.9	5.1
Grant	346.8	76.5	96.9	81.6	91.8	...
Hempstead	286.7	109.8	79.3	42.7	54.9	...
Hot Spring	294.8	80.4	87.1	107.2	20.1	...
Howard	254.8	93.1	88.2	49.0	19.6	4.9
Lafayette	212.8	78.4	56.0	22.4	44.8	11.2
Little River	192.5	38.5	77.0	33.0	38.5	5.5
Miller	217.0	56.0	56.0	21.0	63.0	21.0
Nevada	300.0	102.0	54.0	90.0	54.0	...
Ouachita	384.3	85.4	109.8	85.4	103.7	...
Pike	319.0	139.2	110.2	63.8	...	5.8
Sevier	269.5	78.4	39.2	78.4	58.8	14.7
Union	572.4	199.8	118.8	118.8	135.0	...
All counties	6,645.1	2,181.7	1,665.0	1,414.0	1,310.4	74.0

Table 5.—*Commercial forest land by stand-size class and county, 1969*

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
	Thousand acres				
Ashley	410.4	188.1	51.3	171.0	...
Bradley	354.0	171.1	53.1	123.9	5.9
Calhoun	348.0	116.0	63.8	168.2	...
Clark	423.4	226.2	87.0	104.4	5.8
Cleveland	319.0	150.8	75.4	92.8	...
Columbia	379.5	103.5	75.9	193.2	6.9
Dallas	372.6	156.6	91.8	124.2	...
Drew	387.6	163.2	76.5	142.8	5.1
Grant	346.8	137.7	86.7	122.4	...
Hempstead	286.7	103.7	85.4	97.6	...
Hot Spring	294.8	80.4	120.6	93.8	...
Howard	254.8	98.0	83.3	73.5	...
Lafayette	212.8	72.8	56.0	84.0	...
Little River	192.5	55.0	60.5	77.0	...
Miller	217.0	84.0	49.0	84.0	...
Nevada	300.0	102.0	108.0	90.0	...
Ouachita	384.3	146.4	152.5	85.4	...
Pike	319.0	92.8	121.8	104.4	...
Sevier	269.5	107.8	63.7	98.0	...
Union	572.4	280.8	91.8	199.8	...
All counties	6,645.1	2,635.9	1,644.1	2,330.4	23.7

Table 6.—*Growing-stock volume on commercial forest land by species group and county, 1969*

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
	Thousand cords							
Ashley	6,068	3,995	3,978	17	2,073	1,443	340	290
Bradley	5,459	2,837	2,716	121	2,622	1,479	707	436
Calhoun	4,702	2,401	1,979	422	2,301	1,288	598	415
Clark	7,017	3,579	3,546	33	3,438	2,227	539	672
Cleveland	4,741	1,932	1,929	3	2,809	1,524	854	431
Columbia	4,402	2,308	2,303	5	2,094	1,117	719	258
Dallas	5,389	3,013	3,008	5	2,376	1,330	642	404
Drew	4,601	2,068	1,941	127	2,533	1,606	560	367
Grant	6,077	2,384	2,357	27	3,693	2,073	1,124	496
Hempstead	4,385	2,155	2,151	4	2,230	1,032	503	695
Hot Spring	4,260	2,384	2,384	...	1,876	1,155	388	333
Howard	4,202	2,963	2,955	8	1,239	566	351	322
Lafayette	2,735	1,501	1,396	105	1,234	641	206	387
Little River	2,568	1,516	1,516	...	1,052	668	221	163
Miller	2,946	1,376	1,284	92	1,570	563	443	564
Nevada	4,141	1,929	1,901	28	2,212	1,048	919	245
Ouachita	6,276	2,464	2,457	7	3,812	1,789	1,466	557
Pike	4,838	3,328	3,328	...	1,510	1,070	249	191
Sevier	4,418	2,119	2,104	15	2,299	924	611	764
Union	8,406	4,248	4,211	37	4,158	2,152	1,296	710
All counties	97,631	50,500	49,444	1,056	47,131	25,695	12,736	8,700

Table 7.—*Growing-stock volume on commercial forest land by species group and county, 1969*

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
	Million cubic feet							
Ashley	438.5	299.6	298.3	1.3	138.9	96.7	22.8	19.4
Bradley	388.5	212.8	203.7	9.1	175.7	99.1	47.4	29.2
Calhoun	334.3	180.1	148.5	31.6	154.2	86.3	40.1	27.8
Clark	498.7	268.4	265.9	2.5	230.3	149.2	36.1	45.0
Cleveland	333.1	144.9	144.7	.2	188.2	102.1	57.2	28.9
Columbia	313.4	173.1	172.7	.4	140.3	74.8	48.2	17.3
Dallas	385.2	226.0	225.6	.4	159.2	89.1	43.0	27.1
Drew	324.8	155.1	145.6	9.5	169.7	107.6	37.5	24.6
Grant	426.2	178.8	176.8	2.0	247.4	138.9	75.3	33.2
Hempstead	311.0	161.6	161.3	.3	149.4	69.1	33.7	46.6
Hot Spring	304.5	178.8	178.8	...	125.7	77.4	26.0	22.3
Howard	305.2	222.2	221.6	.6	83.0	37.9	23.5	21.6
Lafayette	195.3	112.6	104.7	7.9	82.7	43.0	13.8	25.9
Little River	184.2	113.7	113.7	...	70.5	44.8	14.8	10.9
Miller	208.4	103.2	96.3	6.9	105.2	37.7	29.7	37.8
Nevada	292.9	144.7	142.6	2.1	148.2	70.2	61.6	16.4
Ouachita	440.2	184.8	184.3	.5	255.4	119.9	98.2	37.3
Pike	350.8	249.6	249.6	...	101.2	71.7	16.7	12.8
Sevier	312.9	158.9	157.8	1.1	154.0	61.9	40.9	51.2
Union	597.2	318.6	315.8	2.8	278.6	144.2	86.8	47.6
All counties	6,945.3	3,787.5	3,708.3	79.2	3,157.8	1,721.6	853.3	582.9

Table 8.—*Sawtimber volume on commercial forest land by species group and county, 1969*

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
	Million board feet							
Ashley	1,848.0	1,451.4	1,446.9	4.5	396.6	293.1	45.3	58.2
Bradley	1,494.5	952.3	905.9	46.4	542.2	328.3	125.2	88.7
Calhoun	1,238.5	794.6	627.2	167.4	443.9	250.3	114.4	79.2
Clark	1,722.3	1,159.5	1,147.2	12.3	562.8	374.1	76.3	112.4
Cleveland	1,188.3	612.5	612.5	...	575.8	344.5	156.7	74.6
Columbia	1,018.2	650.7	650.7	...	367.5	192.5	136.2	38.8
Dallas	1,397.4	1,059.8	1,058.3	1.5	337.6	185.8	84.5	67.3
Drew	1,103.0	680.8	640.5	40.3	422.2	286.6	80.6	55.0
Grant	1,459.0	809.1	797.7	11.4	649.9	376.7	195.6	77.6
Hempstead	974.4	587.7	586.7	1.0	386.7	189.0	68.4	129.3
Hot Spring	894.7	689.3	689.3	...	205.4	133.5	36.8	35.1
Howard	992.3	872.5	871.6	.9	119.8	54.4	27.2	38.2
Lafayette	621.2	420.5	378.3	42.2	200.7	108.4	42.8	49.5
Little River	579.9	455.8	455.8	...	124.1	91.3	8.7	24.1
Miller	668.7	381.1	352.0	29.1	287.6	89.0	99.7	98.9
Nevada	846.1	501.2	489.8	11.4	344.9	185.3	135.6	24.0
Ouachita	1,369.4	745.4	742.6	2.8	624.0	259.8	282.4	81.8
Pike	1,147.0	1,012.0	1,012.0	...	135.0	104.7	24.5	5.8
Sevier	1,101.6	750.1	747.8	2.3	351.5	144.2	92.3	115.0
Union	1,995.6	1,243.0	1,236.0	7.0	752.6	407.3	216.2	129.1
All counties	23,660.1	15,829.3	15,448.8	380.5	7,830.8	4,398.8	2,049.4	1,382.6

Table 9.—*Sawtimber volume on commercial forest land by species group, diameter class and county, 1969*

County	All species	Softwood			Hardwood		
		Total	9.0-14.9 inches	15.0 inches and up	Total	11.0-14.9 inches	15.0 inches and up
	Million board feet						
Ashley	1,848.0	1,451.4	624.3	827.1	396.6	155.9	240.7
Bradley	1,494.5	952.3	446.0	506.3	542.2	229.5	312.7
Calhoun	1,238.5	794.6	249.4	545.2	443.9	175.6	268.3
Clark	1,722.3	1,159.5	636.5	523.0	552.8	283.9	278.9
Cleveland	1,188.3	612.5	317.5	295.0	575.8	182.2	393.6
Columbia	1,018.2	650.7	379.7	271.0	367.5	153.4	214.1
Dallas	1,397.4	1,059.8	525.9	533.9	337.6	172.7	164.9
Drew	1,103.0	680.8	251.1	429.7	422.2	218.3	203.9
Grant	1,459.0	809.1	447.8	361.3	649.9	282.8	367.1
Hempstead	974.4	587.7	376.5	211.2	386.7	171.4	215.3
Hot Spring	894.7	689.3	479.4	209.9	205.4	140.4	65.0
Howard	992.3	872.5	528.8	343.7	119.8	56.4	63.4
Lafayette	621.2	420.5	173.4	247.1	200.7	95.0	105.7
Little River	579.9	455.8	230.6	225.2	124.1	77.0	47.1
Miller	668.7	381.1	275.9	105.2	287.6	146.8	140.8
Nevada	846.1	501.2	316.9	184.3	344.9	169.9	175.0
Ouachita	1,369.4	745.4	346.6	398.8	624.0	344.2	279.8
Pike	1,147.0	1,012.0	685.4	326.6	135.0	95.2	39.8
Sevier	1,101.6	750.1	379.4	370.7	351.5	188.4	163.1
Union	1,995.6	1,243.0	742.5	500.5	752.6	333.1	419.5
All counties	23,660.1	15,829.3	8,413.6	7,415.7	7,830.8	3,672.1	4,158.7

Table 10.—*Average volume per acre of growing stock and sawtimber on commercial forest land by species group and ownership class, 1969*

Ownership class	Growing stock			Sawtimber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Cubic feet			*Board feet*		
National forest	846	346	500	2,616	1,308	1,308
Other public	854	348	506	2,637	1,310	1,327
Forest industry	1,169	705	464	4,433	3,172	1,261
Farmer	886	404	482	2,573	1,504	1,069
Misc. private	984	499	485	3,030	1,902	1,128
All ownerships	1,045	570	475	3,560	2,382	1,178

Table 11.—*Growing stock volume on commercial forest land by species and diameter classes, 1969*

Species	Diameter class (inches at breast height)										
	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Million cubic feet										
Softwood:											
Southern pines	3,708.3	305.1	427.7	571.2	641.8	553.6	460.4	311.9	202.1	215.8	8.7
Other softwoods	79.2	1.7	4.7	5.9	7.6	9.9	12.4	14.8	8.1	12.2	1.9
Total	3,787.5	306.8	432.4	577.1	649.4	573.5	472.8	326.7	210.2	228.0	10.6
Hardwood:											
Select white oaks [1]	334.1	38.0	45.8	59.1	48.1	49.9	39.3	21.0	15.7	15.2	2.0
Select red oaks [2]	178.0	12.9	16.0	19.7	18.3	33.6	25.1	18.2	17.5	16.1	.6
Other white oaks	364.9	50.4	68.4	64.0	61.4	31.3	29.5	9.4	17.3	30.1	3.1
Other red oaks	844.6	81.1	128.1	133.1	116.0	120.6	98.2	60.8	45.0	53.3	8.4
Hickory	264.7	26.7	40.8	39.6	42.4	41.0	25.6	10.7	9.2	26.9	1.8
Sweetgum	733.9	92.5	119.7	123.9	124.2	107.8	74.0	49.7	26.2	15.9	...
Tupelo and blackgum	119.4	10.3	16.8	19.8	19.5	20.8	14.2	8.8	3.0	6.2	...
Maple	24.0	5.7	3.8	5.8	2.5	3.4	1.9	.9	...	...	...
Beech	34.0	1.1	1.6	3.1	6.2	5.0	3.9	2.7	4.3	5.5	.6
Ash	56.8	8.8	12.7	8.5	6.6	9.5	3.3	3.9	1.3	2.2	...
Other hardwoods	203.4	33.2	39.1	36.1	33.4	23.5	11.3	8.8	3.1	13.2	1.7
Total	3,157.8	360.7	492.8	512.7	478.6	446.4	326.3	194.9	142.6	184.6	18.2
All species	6,945.3	667.5	925.2	1,089.8	1,128.0	1,019.9	799.1	521.6	352.8	412.6	28.8

[1] Includes white, swamp chestnut, chinkapin, Durand, swamp white, and bur oaks.
[2] Includes northern red, cherrybark, and Shumard oaks.

Table 12.—*Sawtimber volume on commercial forest land by species and diameter classes, 1969*

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Million board feet								
Softwood:									
Southern pines	15,448.8	2,065.0	3,174.0	3,077.8	2,667.6	1,849.2	1,223.5	1,340.2	51.5
Other softwoods	380.5	15.1	31.3	50.4	62.9	87.8	47.4	73.5	12.1
Total	15,829.3	2,080.1	3,205.3	3,128.2	2,730.5	1,937.0	1,270.9	1,413.7	63.6
Hardwood:									
Select white oaks [1]	850.2	...	179.6	218.2	183.0	102.4	75.5	80.3	11.2
Select red oaks [2]	570.2	...	63.5	143.6	110.1	85.2	86.2	78.4	3.2
Other white oaks	802.2	...	230.6	136.4	140.2	42.7	83.5	153.1	15.7
Other red oaks	2,176.2	...	411.8	499.9	445.8	290.3	219.3	267.5	41.6
Hickory	691.4	...	155.5	182.7	117.9	49.8	44.8	133.9	6.8
Sweetgum	1,746.9	...	448.6	490.0	353.9	240.1	131.4	82.9	...
Tupelo and blackgum	302.5	...	63.3	84.5	65.8	41.8	15.0	32.1	...
Maple	34.8	...	8.6	14.5	7.9	3.8	...	...	...
Beech	129.5	...	22.6	24.0	18.1	16.1	18.8	25.9	4.0
Ash	116.0	...	26.1	41.5	14.7	16.0	6.5	11.2	...
Other hardwoods	410.9	...	123.5	103.1	54.5	42.5	14.4	64.9	8.0
Total	7,830.8	...	1,733.7	1,938.4	1,511.9	930.7	695.4	930.2	90.5
All species	23,660.1	2,080.1	4,939.0	5,066.6	4,242.4	2,867.7	1,966.3	2,343.9	154.1

[1] Includes white, swamp chestnut, chinkapin, Durand, swamp white, and bur oaks.
[2] Includes northern red, cherrybark, and Shumard oaks.