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Forest Statistics  
For  
Arkansas Ouachita Counties

*T. RICHARD QUICK*  
*and*  
*MARY S. HEDLUND*

Southern  
Forest  
Experiment  
Station



# Forest Statistics for Arkansas Ouachita Counties

T. RICHARD QUICK and MARY S. HEDLUND

These tables were derived from data obtained during a 1978 inventory of 10 counties comprising the Ouachita Unit of Arkansas (fig. 1). Forest area was estimated from aerial photos with an adjustment of ground truth at selected locations. Sample plots were systematically established at three-mile intervals using a grid orientated roughly N-S and E-W. At each location, prism sample points were distributed over approximately 1 acre. Volume estimates were based on measurement of trees selected at these sample points.

The sampling methods were developed to provide suitable state estimates. Estimates for smaller areas are presented, but sampling error increases as the area considered declines. Sampling errors given in table 1 are based on one standard deviation or a probability of two chances out of three. To estimate the sampling error for a combination of counties one can use the following:

$$SE_G = \frac{SE_T \sqrt{X_T}}{\sqrt{X_G}}$$

where:

- SE = Sampling error
- X = variable of interest (area, volume)
- G = group of counties to be combined
- T = total for the unit

Sampling errors for estimates of the principal timber species are shown in table 2.

Because of differences in standards of tree measurements, direct comparisons between these data and the 1969 inventory are invalid. In table 3, changes between the two surveys are summarized in terms of current measurement standards.

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**Commercial forest land.**—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization.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

Table 1.-- Sampling errors<sup>1</sup> for forest land and timber volume, 1978

County	Commercial forest land	Growing stock	Saw-timber
----- Percent -----			
Garland	2	10	12
Logan	4	14	19
Montgomery	2	8	10
Perry	2	10	12
Polk	2	10	14
Pulaski	2	12	15
Saline	1	9	11
Scott	1	6	8
Sebastian	3	16	26
Yell	2	7	11
All counties	0.7	3.0	4.0

<sup>1</sup>By random-sampling formula

T. Richard Quick is Supervisory Forester and Mary S. Hedlund is Mathematician, Southern Forest Experiment Station, Forest Service—USDA, New Orleans, Louisiana.

**Growing-stock trees.**—Live trees that are of commercial species and qualify as desirable or acceptable trees.

**Growing-stock volume.**—Net volume in cubic feet of growing-stock trees at least 5.0 inches in diameter at breast height, 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.

Table 2.—Sampling errors for timber volume by species, 1973

Species	Growing stock	Sawtimber
----- Percent -----		
<b>Softwood:</b>		
Shortleaf pine	4	5
Loblolly pine	24	28
Redcedar	24	41
Cypress	<u>71</u>	<u>70</u>
All softwoods	<u>4.3</u>	<u>4.9</u>
<b>Hardwoods:</b>		
Select white oaks	7	11
Select red oaks	11	15
Other white oaks	8	12
Other red oaks	11	14
Pecan	100	...
Water hickory	78	73
Other hickories	8	15
Persimmon	100	...
Hard maple	73	...
Soft maple	25	74
Boxelder	72	100
Sweetgum	13	18
Blackgum	13	17
Other gums	100	...
White ash	40	65
Other ashes	27	37
Sycamore	38	44
Cottonwood	100	100
Basswood	54	100
Willow	100	100
Black walnut	100	100
Black cherry	37	53
American elm	24	46
Other elms	14	34
River birch	48	53
Hackberry	40	58
Black locust	100	...
Other locusts	100	...
Other hardwoods	<u>100</u>	<u>100</u>
All hardwoods	<u>4.5</u>	<u>7.3</u>
All species	3.0	4.0

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

**Physiographic site.**—A classification of forest land according to its suitability for growing certain species groups—pine, upland hardwood, or bottom-land hardwood.

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

**Rotten trees.**—Live trees of commercial species that do not contain at least one 12-foot saw log, now or prospectively, primarily because of rot.

**Rough trees.**—Live trees of commercial species that do not contain at least one 12-foot saw log, now or prospectively, primarily because of roughness or poor form. (Includes all live trees of non-commercial species.)

**Sawtimber trees<sup>9</sup>** 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 1/4-inch rule.

**Site class.**—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

**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 sapling and seedling.

Table 3.—Change<sup>1</sup> in forest resource since 1969

Item	Change
----- Percent -----	
Commercial forest land	- 4
Growing-stock volume:	
Softwood	+ 4
Hardwood	+10
All species	+ 6
Sawtimber volume:	
Softwood	+13
Hardwood	+ 9
All species	+12

<sup>1</sup>Based on current measurement standards.



Table 4.--Total area, commercial forest land, and proportion of total area, 1978

County	Total area <sup>1</sup>	Commercial forest	
		Area	Proportion
- Thousand acres -      - Percent -			
Garland	470.4	313.2	67
Logan	468.5	212.4	45
Montgomery	512.6	410.4	80
Perry	359.0	277.3	77
Polk	550.4	418.9	76
Pulaski	515.2	221.4	43
Saline	466.6	355.1	76
Scott	574.7	477.9	83
Sebastian	343.7	120.0	35
Yell	606.7	390.5	64
All counties	4,867.8	3,197.1	66

<sup>1</sup>United States Bureau of the Census, Land and Water Area of the United States.

Table 5.--Commercial forest land by ownership class, 1978

County	All Ownerships	National forest	Other public	Forest industry	Farmer	Misc. private
- - - - - Thousand acres - - - - -						
Garland	313.2	105.3	...	124.2	...	83.7
Logan	212.4	81.0	7.9	11.8	24.1	87.6
Montgomery	410.4	293.3	...	51.3	17.4	48.4
Perry	277.3	93.0	3.3	141.6	24.1	15.3
Polk	418.9	171.0	.3	100.3	60.2	87.1
Pulaski	221.4	...	31.0	32.4	49.6	108.4
Saline	355.1	51.7	.3	164.3	32.4	106.4
Scott	477.9	350.3	.1	23.6	6.0	97.9
Sebastian	120.0	5.6	1.6	...	24.5	88.3
Yell	390.5	218.7	22.7	82.5	56.1	10.5
All counties	3,197.1	1,369.9	67.2	732.0	294.4	733.6

Table 6.--Commercial forest land by forest type, 1978

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
----- Thousand acres -----						
Garland	313.2	113.4	102.6	97.2	...	...
Logan	212.4	64.9	59.0	76.7	11.8	...
Montgomery	410.4	182.4	114.0	114.0	...	...
Perry	277.3	129.8	94.4	41.3	11.8	...
Polk	418.9	129.8	153.4	135.7	...	...
Pulaski	221.4	37.8	48.6	86.4	43.2	5.4
Saline	355.1	111.3	95.4	106.0	42.4	...
Scott	477.9	259.6	94.4	118.0	5.9	...
Sebastian	120.0	...	18.0	84.0	12.0	6.0
Yell	390.5	165.0	82.5	82.5	55.0	5.5
All counties	3,197.1	1,194.0	862.3	941.8	182.1	16.9

Table 7.--Commercial forest land by stand-size class, 1978

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
----- Thousand acres -----					
Garland	313.2	102.6	97.2	113.4	...
Logan	212.4	76.7	64.9	70.8	...
Montgomery	410.4	199.5	153.9	57.0	...
Perry	277.3	112.1	94.4	70.8	...
Polk	418.9	159.3	153.4	100.3	5.9
Pulaski	221.4	64.8	75.6	75.6	5.4
Saline	355.1	137.8	137.8	79.5	...
Scott	477.9	253.7	171.1	53.1	...
Sebastian	120.0	6.0	42.0	72.0	...
Yell	390.5	176.0	148.5	66.0	...
All counties	3,197.1	1,288.5	1,138.8	758.5	11.3

Table 8.--Commercial forest land by site class, 1978

County	All classes	165 cu. ft. or more	120-165 cu. ft.	85-120 cu. ft.	50-85 cu. ft.	Less than 50 cu. ft.
----- Thousand acres -----						
Garland	313.2	...	...	37.8	216.0	59.4
Logan	212.4	5.9	5.9	17.7	100.3	82.6
Montgomery	410.4	...	...	114.0	210.9	85.5
Perry	277.3	...	...	35.4	206.5	35.4
Polk	418.9	...	...	94.4	247.8	76.7
Pulaski	221.4	...	...	10.8	135.0	75.6
Saline	355.1	...	5.3	90.1	212.0	47.7
Scott	477.9	...	...	35.4	354.0	88.5
Sebastian	120.0	...	...	...	36.0	84.0
Yell	390.5	...	5.5	55.0	220.0	110.0
All counties	3,197.1	5.9	16.7	490.6	1,938.5	745.4

Table 9.--Commercial forest land by physiographic site class, 1978

County	All sites	Pine	Upland hardwood	Bottomland hardwood
----- Thousand acres -----				
Garland	313.2	313.2	...	...
Logan	212.4	194.7	5.9	11.8
Montgomery	410.4	410.4	...	...
Perry	277.3	265.5	...	11.8
Polk	418.9	418.9	...	...
Pulaski	221.4	162.0	5.4	54.0
Saline	355.1	312.7	...	42.4
Scott	477.9	466.1	5.9	5.9
Sebastian	120.0	60.0	42.0	18.0
Yell	390.5	330.0	...	60.5
All counties	3,197.1	2,933.5	59.2	204.4

Table 10.--Cordage of growing stock on commercial forest land by species group, 1978

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
----- Thousand cords -----								
Garland	4,520	2,945	2,942	3	1,575	1,118	188	269
Logan	2,516	1,519	1,499	20	997	674	113	210
Montgomery	8,280	5,879	5,876	3	2,401	1,756	209	436
Perry	3,674	2,605	2,597	8	1,069	794	160	115
Polk	5,696	3,869	3,836	33	1,827	1,273	262	292
Pulaski	1,931	971	775	196	960	639	140	181
Saline	5,529	3,064	3,060	4	2,465	1,452	497	516
Scott	8,485	6,305	6,253	52	2,180	1,589	249	342
Sebastian	623	127	112	15	496	366	...	130
Yell	5,870	3,561	3,471	90	2,309	1,175	634	500
All counties	47,124	30,845	30,421	424	16,279	10,836	2,452	2,991

Table 11.--Growing-stock volume on commercial forest land by species group, 1978

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
----- Million cubic feet -----								
Garland	326.4	220.9	220.7	.2	105.5	74.9	12.6	18.0
Logan	180.7	113.9	112.4	1.5	66.8	45.1	7.6	14.1
Montgomery	601.8	440.9	440.7	.2	160.9	117.7	14.0	29.2
Perry	267.0	195.4	194.8	.6	71.6	53.2	10.7	7.7
Polk	412.6	290.2	287.7	2.5	122.4	85.3	17.5	19.6
Pulaski	137.1	72.8	58.1	14.7	64.3	42.8	9.4	12.1
Saline	395.0	229.8	229.5	.3	165.2	97.3	33.3	34.6
Scott	619.0	472.9	469.0	3.9	146.1	106.5	16.7	22.9
Sebastian	42.7	9.5	8.4	1.1	33.2	24.5	...	8.7
Yell	421.8	267.1	260.3	6.8	154.7	78.7	42.5	33.5
All counties	3,404.1	2,313.4	2,281.6	31.8	1,090.7	726.0	164.3	200.4

Table 12.--Sawtimber volume on commercial forest land by species group, 1978

County	All species	Softwood			Hardwood			
		Total	Pine	Other	Total	Oak	Gum	Other
----- Million board feet -----								
Garland	1,088.6	898.4	898.4	...	190.2	139.9	28.9	21.4
Logan	599.2	427.0	427.0	...	172.2	131.4	14.5	26.3
Montgomery	2,092.5	1,834.0	1,834.0	...	258.5	209.1	20.1	29.3
Perry	883.6	752.6	752.6	...	131.0	78.6	43.8	8.6
Polk	1,396.5	1,201.6	1,200.5	1.1	194.9	134.2	35.2	25.5
Pulaski	374.7	267.3	214.4	52.9	107.4	71.6	16.6	19.2
Saline	1,193.1	791.3	791.3	...	401.8	240.2	74.7	86.9
Scott	2,015.5	1,760.2	1,751.8	8.4	255.3	183.4	47.4	24.5
Sebastian	86.0	28.1	23.3	4.8	57.9	47.2	...	10.7
Yell	1,348.4	971.8	961.2	10.6	376.6	204.6	122.0	50.0
All counties	11,078.1	8,932.3	8,854.5	77.8	2,145.8	1,440.2	403.2	302.4

Table 13.--Sawtimber volume on commercial forest land by species group and diameter class, 1978

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 -----							
Garland	1,088.6	898.4	652.6	245.8	190.2	127.5	62.7
Logan	599.2	427.0	351.6	75.4	172.2	87.9	84.3
Montgomery	2,092.5	1,834.0	1,322.4	511.6	258.5	123.4	135.1
Perry	883.6	752.6	577.2	175.4	131.0	62.5	68.5
Polk	1,396.5	1,201.6	956.3	245.3	194.9	132.4	62.5
Pulaski	374.7	267.3	189.0	78.3	107.4	58.0	49.4
Saline	1,193.1	791.3	649.3	142.0	401.8	207.9	193.9
Scott	2,015.5	1,760.2	1,418.1	342.1	255.3	154.7	100.6
Sebastian	86.0	28.1	21.8	6.3	57.9	37.0	20.9
Yell	1,348.4	971.8	759.8	212.0	376.6	157.6	219.0
All counties	11,078.1	8,932.3	6,898.1	2,034.2	2,145.8	1,148.9	996.9

Table 14.--Growing-stock volume of softwoods on commercial forest land by forest type, 1978

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
----- Million cubic feet -----						
Garland	220.9	151.7	58.1	11.1	...	...
Logan	113.9	84.6	23.0	6.3	...	...
Montgomery	440.9	339.8	79.0	22.1	...	...
Perry	195.4	132.9	58.1	4.0	.4	...
Polk	290.2	176.8	97.2	16.2	...	...
Pulaski	72.8	28.5	22.9	6.9	14.5	...
Saline	229.8	146.6	54.6	24.4	4.2	...
Scott	472.9	395.2	54.7	22.5	.5	...
Sebastian	9.5	...	6.1	3.4	...	...
Yell	267.1	213.1	47.8	6.2	...	...
All counties	2,313.4	1,669.2	501.5	123.1	19.6	...

Table 15.--Growing-stock volume of hardwoods on commercial forest land by forest type, 1978

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
----- Million cubic feet -----						
Garland	105.5	22.9	29.9	52.7	...	...
Logan	66.8	10.4	10.9	34.3	11.2	...
Montgomery	160.9	41.2	50.4	69.3	...	...
Perry	71.6	13.3	27.2	18.8	12.3	...
Polk	122.4	26.6	47.1	48.7	...	...
Pulaski	64.3	1.6	17.0	31.0	14.7	...
Saline	165.2	13.8	40.0	60.2	51.2	...
Scott	146.1	31.5	32.5	70.9	11.2	...
Sebastian	33.2	...	1.9	28.8	1.5	1.0
Yell	154.7	27.3	22.6	40.8	62.5	1.5
All counties	1,090.7	188.6	279.5	455.5	164.6	2.5

Table 16.--Sawtimber volume of softwoods on commercial forest land by forest type, 1978

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
----- Million board feet -----						
Garland	898.4	569.8	275.2	53.4	...	...
Logan	427.0	332.1	82.7	12.2	...	...
Montgomery	1,834.0	1,412.4	332.8	88.8	...	...
Perry	752.6	496.9	239.2	16.2	.3	...
Polk	1,201.6	761.4	368.2	72.0	...	...
Pulaski	267.3	106.7	91.8	16.2	52.6	...
Saline	791.3	491.9	189.3	93.6	16.5	...
Scott	1,760.2	1,452.5	216.8	88.8	2.1	...
Sebastian	28.1	...	15.2	12.9	...	...
Yell	971.8	791.9	163.0	16.9	...	...
All counties	8,932.3	6,415.6	1,974.2	471.0	71.5	...

Table 17.--Sawtimber volume of hardwoods on commercial forest land by forest type, 1978

County	All types	Loblolly-shortleaf pine	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
----- Million board feet -----						
Garland	190.2	22.4	60.4	107.4	...	...
Logan	172.2	23.0	18.4	95.3	35.5	...
Montgomery	258.5	70.0	83.9	104.6	...	...
Perry	131.0	24.4	23.7	38.4	44.5	...
Polk	194.9	36.6	90.0	68.3	...	...
Pulaski	107.4	3.7	24.9	56.1	22.7	...
Saline	401.8	35.8	98.9	119.3	147.8	...
Scott	255.3	43.3	44.6	140.5	26.9	...
Sebastian	57.9	...	2.3	52.7	2.9	...
Yell	376.6	38.4	32.3	95.0	207.9	3.0
All counties	2,145.8	297.6	479.4	877.6	488.2	3.0

Table 18.--Growing-stock volume of softwoods on commercial forest land by stand-size class, 1978

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
----- Million cubic feet -----					
Garland	220.9	126.3	76.7	17.9	...
Logan	113.9	78.9	28.0	7.0	...
Montgomery	440.9	326.2	97.6	17.1	...
Perry	195.4	129.2	60.6	5.6	...
Polk	290.2	205.4	70.5	14.3	...
Pulaski	72.8	46.0	18.7	8.1	...
Saline	229.8	166.1	52.3	11.4	...
Scott	472.9	357.8	103.8	11.3	...
Sebastian	9.5	.8	6.5	2.2	...
Yell	267.1	179.8	79.0	8.3	...
All counties	2,313.4	1,616.5	593.7	103.2	...

Table 19.--Growing-stock volume of hardwoods on commercial forest land by stand-size class, 1978

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
----- Million cubic feet -----					
Garland	105.5	41.7	52.8	11.0	...
Logan	66.8	40.1	21.4	5.3	...
Montgomery	160.9	79.3	73.6	8.0	...
Perry	71.6	33.8	33.2	4.6	...
Polk	122.4	49.2	63.9	9.3	...
Pulaski	64.3	16.1	41.7	6.5	...
Saline	165.2	74.9	79.5	10.8	...
Scott	146.1	68.3	72.1	5.7	...
Sebastian	33.2	2.8	18.6	11.8	...
Yell	154.7	80.0	67.9	6.8	...
All counties	1,090.7	486.2	524.7	79.8	...

Table 20.--Sawtimber volume of softwoods on commercial forest land by stand-size class, 1978

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
----- Million board feet -----					
Garland	898.4	601.7	239.1	57.6	...
Logan	427.0	355.0	51.8	20.2	...
Montgomery	1,834.0	1,477.3	282.9	73.8	...
Perry	752.6	559.9	180.2	12.5	...
Polk	1,201.6	945.7	207.8	48.1	...
Pulaski	267.3	168.7	63.0	35.6	...
Saline	791.3	621.3	135.2	34.8	...
Scott	1,760.2	1,448.7	293.7	17.8	...
Sebastian	28.1	3.7	15.2	9.2	...
Yell	971.8	774.8	168.8	28.2	...
All counties	8,932.3	6,956.8	1,637.7	337.8	...

Table 21.--Sawtimber volume of hardwoods on commercial forest land by stand-size class, 1978

County	All classes	Sawtimber	Poletimber	Sapling and seedling	Nonstocked areas
----- Million board feet -----					
Garland	190.2	90.7	72.2	27.3	...
Logan	172.2	126.9	32.0	13.3	...
Montgomery	258.5	178.9	66.6	13.0	...
Perry	131.0	83.0	42.8	5.2	...
Polk	194.9	95.7	92.5	6.7	...
Pulaski	107.4	54.7	47.6	5.1	...
Saline	401.8	226.1	146.4	29.3	...
Scott	255.3	154.0	95.6	5.7	...
Sebastian	57.9	6.5	36.1	15.3	...
Yell	376.6	253.0	115.7	7.9	...
All counties	2,145.8	1,269.5	747.5	128.8	...

Table 22.--Growing-stock volume on commercial forest land by physiographic site class and species group, 1978

County	All sites	Pine		Upland hardwood		Bottomland hardwood	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
----- Million cubic feet -----							
Garland	326.4	220.9	105.5	...	...	...	...
Logan	180.7	113.9	47.4	...	8.2	...	11.2
Montgomery	601.8	440.9	160.9	...	...	...	...
Perry	267.0	195.0	59.3	...	...	.4	12.3
Polk	412.6	290.2	122.4	...	...	...	...
Pulaski	137.1	57.1	44.7	...	3.6	15.7	16.0
Saline	395.0	225.6	114.0	...	...	4.2	51.2
Scott	619.0	471.2	134.0	1.2	.9	.5	11.2
Sebastian	42.7	9.2	15.2	.3	15.5	...	2.5
Yell	421.8	267.1	90.7	...	...	...	64.0
All counties	3,404.1	2,291.1	894.1	1.5	28.2	20.8	168.4

Table 23.--Growing-stock volume of softwoods on commercial forest land by class of timber and tree section, 1978

County	All classes	Poletimber	Sawtimber		
			Total	Sawlog	Upper stem
----- Million cubic feet -----					
Garland	220.9	54.9	166.0	152.7	13.3
Logan	113.9	31.1	82.8	75.8	7.0
Montgomery	440.9	103.3	337.6	310.2	27.4
Perry	195.4	48.5	146.9	135.5	11.4
Polk	290.2	68.6	221.6	203.8	17.8
Pulaski	72.8	17.2	55.6	49.4	6.2
Saline	229.8	69.1	160.7	143.2	17.5
Scott	472.9	129.4	343.5	309.8	33.7
Sebastian	9.5	3.7	5.8	5.1	.7
Yell	267.1	74.3	192.8	173.4	19.4
All counties	2,313.4	600.1	1,713.3	1,558.9	154.4



















