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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FOREST RESOURCES OF GEORGIA



JANUARY 1939

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BY
GEORGIA DIVISION OF FORESTRY
AND
U. S. FOREST SERVICE, ATLANTA, GA.

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THE GEORGIA FORESTRY ASSOCIATION
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PREFACE

DO YOU KNOW

That Georgia has today more standing saw timber and a greater net annual growth of saw timber than any other state in the South?

That of Georgia's total land area of 37 million acres, 23 million acres are forest or potential forest land, of which approximately 21 million acres are now growing timber?

That Georgia's wood-using industries furnish the equivalent of year-long employment to 71,000 individuals?

BUT HAS IT EVER OCCURRED TO YOU

That in 1937 more forest land burned over in Georgia than in all the combined states west of the Mississippi River?

That the annual growth of Georgia's forests is only three-tenths cord per acre and that, if fires were controlled, the growth could readily be doubled?

That each year in the southern half of Georgia more pine timber is destroyed by fire than the total annual amount required by all wood-using industries?

In spite of these appalling facts, do you realize that the State of Georgia appropriates less for forest fire control than all except one of the eleven southern states?



FOREST RESOURCES OF GEORGIA¹

The forests of Georgia in Colonial times were famous as producers of lumber and timbers - commonly known as Georgia Pine - and as producers of naval stores. Although the original virgin stands have almost disappeared and large areas formerly covered by dense stands of timber are now devoted to agriculture, more than 21 million acres, or 57 per cent of the land area of Georgia, are in some stage of forest growth (Table 1, Figure 2). Second-growth stands, many of which occur on abandoned fields, have replaced the virgin timber. Some of these present-day forests are in good condition; they pay dividends to their owners and help support communities. Other areas, also classed as forest, are so run down because of past abuse and fire that they can hardly be considered as an asset. Nearly two and one-quarter million acres additional are idle and abandoned farm land, much of which is now reverting to timber and will in the future doubtless be classed as forest land. (Table 2).

The management of these forest lands is of vital concern to the owners, to the local communities, to the counties, and to the State. If wisely handled, they can furnish forest products in increasing amounts for local consumption

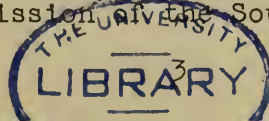
and sale as well as for export and may serve as a permanent base for a much needed industrial expansion. If, on the other hand, these forest lands are abused and mismanaged, the percentage of worthless waste land and scrubby growth will increase, the yield of annual revenue will diminish, and the State as a whole will inevitably suffer.

This report aims to portray the present status of the forest situation in the State and to suggest means of protecting and building up the forest resource so that it may play its full part in guaranteeing future prosperity and security to the people of Georgia.

Farm Woodlands

On the average, there are approximately 47 acres of woodland per farm. Farm forests represent about 46 per cent of the total area in farms. The farm woodlands in the State - 11,675,000 acres - constitute 55 per cent of the total forest area. The importance of making these farm woodlands produce their share of the farm income cannot be too strongly emphasized. Woodland management should be an integral part of farm management. The 2 $\frac{1}{4}$ million acres of idle and abandoned farm land, if not needed for agricultural crops or pasture, should be restored to forest. It

¹Prepared jointly by the Georgia Division of Forestry and the U. S. Forest Service. The data on forest area, inventory, growth and drain are from the Forest Survey at the Southern Forest Experiment Station, New Orleans, La. These data are released as preliminary estimates based on the findings of the Survey, are subject to correction or revision, and are not for publication elsewhere without permission of the Southern Forest Experiment Station.



is estimated that half of this area is worn-out land, the sole use of which should be forest production. According to the Georgia Experiment Station, between 1920 - when the area of land devoted to agriculture reached its peak - and 1930 there was a loss in agricultural area of 8.3 per cent. Modern methods of farming call for a smaller total acreage of field crops and allow more land to be devoted to timber growing. The rapid growth of old-field stands of pine has shown that forest crops can be produced on these lands that are definitely unsuited to and no longer needed for agricultural crops.

Other Privately Owned Forest Land

In addition to the farm woodland ownership, there are 8,879,000 acres of forest land privately owned. Included in this total are the recently acquired holdings of the pulp and paper companies and the hunting estates in the southwest portion of the State. Naval stores operators also own a considerable portion of this acreage in the turpentine belt.

In a recent survey made by the Forest Service covering 3,180,000 acres of this land, 35 per cent of this area was found to be managed according to good forest practices, 64 per cent was in fair-to-good productive condition either through intentional or accidental methods, and only 1 per cent was not in a productive condition.

Public Ownership

The Federal Government owns more than a million acres of forest land in Georgia, most of which is not suitable for agricultural use. The State and counties own about 47,000 acres of forest land, of which 33,000 acres occur in the recently

acquired flatwoods area near Waycross.

Importance of Forest Industries

The capital value of forest industries in the State in 1919 was in excess of 40 million dollars, according to the Bureau of Census. In 1936, according to the Southern Forest Survey, the production and manufacture of raw forest materials furnished 11,370,000 man-days (10 hours each) of employment in the woods and 2,878,000 man-days in primary fabrication plants. The combined woods and mill work amounts to year-long employment for approximately 71,000 persons. According to the last complete census (1929) the forest industries of Georgia furnished one-fourth of all industrial employment in the State. Wages and salaries paid by the various forest industries reached a figure of more than \$13,000,000 in 1929, and the value of all forest products manufactured in the State in that year was in excess of \$70,000,000.

Georgia now ranks sixth among the eleven southern states in lumber production, according to the Forest Service (Figure 9).

Georgia is first in naval stores production, producing 57 per cent of all the naval stores produced in the United States.

Georgia, with two pulp mills within its borders and five in nearby states drawing on its forests for raw material, is now one of the largest producers of pulpwood in the South (Figures 10 and 11).

Balance of Growth Against Drain and Mortality

Probably the most fundamental consideration in forest practice is

to plan cutting operations in such a manner that the amount of timber removed from the forest during any specified period will not exceed the net growth of timber for this period. Obviously, adherence to such a plan of harvesting forest products will mean continuous operation.

Georgia has a greater quantity of standing saw timber and a greater net annual growth of saw timber than any other state in the South. It is highly important to study the annual balance of growth against the amount of timber removed in Georgia in order to work out a proper balance. The timber removed each year may be separated into that used by man, which is called "drain" (Figure 12), and that removed by all factors which kill timber, called "mortality."

Drain consists of timber used for all such purposes such as lumber, ties, fuel wood, posts, and pulpwood; whereas, mortality includes timber killed by fires, insects, diseases, wind storms, or other natural agencies.

53-2093
Based on preliminary estimates made by the Southern Forest Survey (Table 6) in 1936, there were in Georgia approximately 120 million cords of pine in sound trees 5 inches or more in diameter breast high. During the year 1936, approximately 8 million cords were added through growth. The commodity drain of some 4 million cords plus a mortality of $2\frac{1}{2}$ million cords makes a total of $6\frac{1}{2}$ million cords removed from the forest. In other words, for 1936, Georgia's pine timber was growing by some $1\frac{1}{2}$ million cords more rapidly than it was being removed by all causes (Figure 7, Table 7).

On the other hand since 1936 pulp mills established within this and neighboring states have added

an annual drain which would probably equal 700,000 cords (Figure 11). Even so, however, Georgia as a whole is still growing substantially more pine timber than that necessary to balance the amount removed each year by all causes.

Although the State-wide picture is reasonably bright, the balance between growth and timber removed is highly unfavorable in the southern part of the State when it is considered separately (Figure 8, Table 7). There are probably few localities in the United States more favored for timber production than the naval stores region of Georgia. Within this vast area of more than 10 million acres of timber land, much of which is of unsurpassed productivity, forest fires exact a tremendous annual toll. Thus, for the year 1936 the loss of pine volume through mortality was 152 million cubic feet as compared with only 118 million cubic feet used by man for all purposes. This is an appalling condition. It should be remembered that fires, directly or indirectly, cause about 75 per cent of the mortality in pine timber. Expressed in other words, the above figures mean that in 1936 enough pine timber was destroyed in South Georgia alone, directly or indirectly, by fire to supply all pulp mills using Georgia wood with pulpwood for approximately two years. Fire control should, therefore, be the first consideration in Georgia's State-wide forest program.

Fires not only kill timber outright but greatly retard growth of the remaining trees. With full stocking and reasonable care the average acre of pine forest land in Georgia should produce approximately one cord per acre each year. Yet,

for the forests in the State as a whole, the net annual growth is only three-tenths of a cord. This extremely low productivity may be, for the most part, directly attributed to fires during past years. Trees left after logging have been destroyed by fires. Fires have prevented natural restocking of cut-over lands. Lastly, fires have greatly retarded growth of the trees now present on the land.

Control of the fire situation in Georgia would probably result in doubling the net annual growth of timber within ten to fifteen years, other factors remaining the same.

The Forests of Georgia

The forest situation is presented in the following figures and tables based on the most accurate information available. The State has been divided into five units by the Southern Forest Survey, these units being based primarily on their forest types and economic condition. The unit boundaries are shown by Figure 1.

Units 1 and 2 include that portion of the State which lies within the naval stores belt. In these two units are found most of the longleaf and slash pine, and most of the turpentine stills. Unit 3 includes the upper Coastal Plain and part of the lower Piedmont counties. In this unit loblolly is the most important pine. Unit 4 includes the counties in the upper and a part of the lower Piedmont. It is characterized by forests of loblolly and shortleaf pine mixed with hardwoods. Unit 5 is the mountain and valley unit. It is characterized by upland hardwoods mixed with shortleaf pine. Units 1 and 2 were surveyed by the Southern Forest Survey the first half of 1934; Units 3, 4, and 5 were cruised in the latter part of 1935 and early 1936.

The figures and tables were prepared in the Regional Office of the U. S. Forest Service, Atlanta, and are based on data furnished by the Forest Survey at the Southern Forest Experiment Station, New Orleans, La.

FIGURE 1

SOUTHERN FOREST SURVEY UNIT BOUNDARIES STATE OF GEORGIA

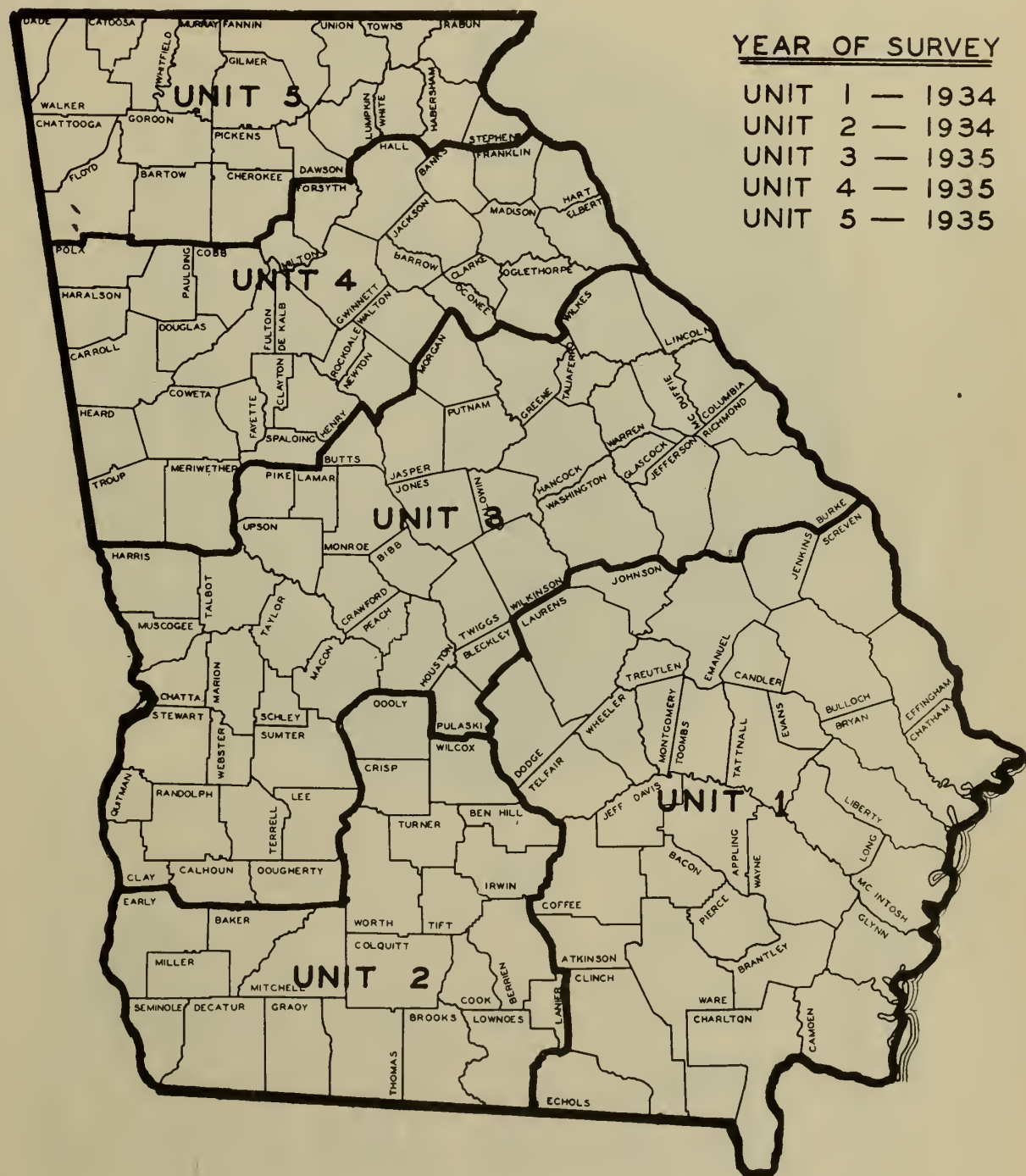


TABLE 1.--Georgia land area classified by major uses
(Data from Southern Forest Survey)

Use	Survey units					:Percent :of State
	1	2	3	4	5	
	Acres					
Forest land	7,056,200	3,020,400 ^{1/}	5,581,900 ^{2/}	2,551,400 ^{3/}	2,835,300	57.2
Percent of unit	72.7	54.1	51.3	40.2	66.4	
Percent of use	33.4	14.4	26.6	12.1	13.5	100.0
Agricultural	2,331,000	2,423,700	5,042,400	3,598,300	1,348,100	40.1
Percent of unit	24.0	43.4	46.4	56.7	31.6	
Percent of use	15.8	16.4	34.2	24.4	9.2	100.0
Other uses	324,000	141,800	253,200	195,900	84,100	2.7
Percent of unit	3.3	2.5	2.3	3.1	2.0	
Percent of use	32.4	14.2	25.4	19.6	8.4	100.0
Total all uses	9,711,200	5,585,900	10,877,500	6,345,600	4,267,500	36,787,700 ^{5/}
Percent of unit	100.0	100.0	100.0	100.0	100.0	
Percent of State	26.4	15.2	29.6	17.2	11.6	100.0

1/ Includes 6,400 acres of non-productive forest land.

2/ Includes 900 acres of non-productive forest land.

3/ Includes 2,400 acres of non-productive forest land.

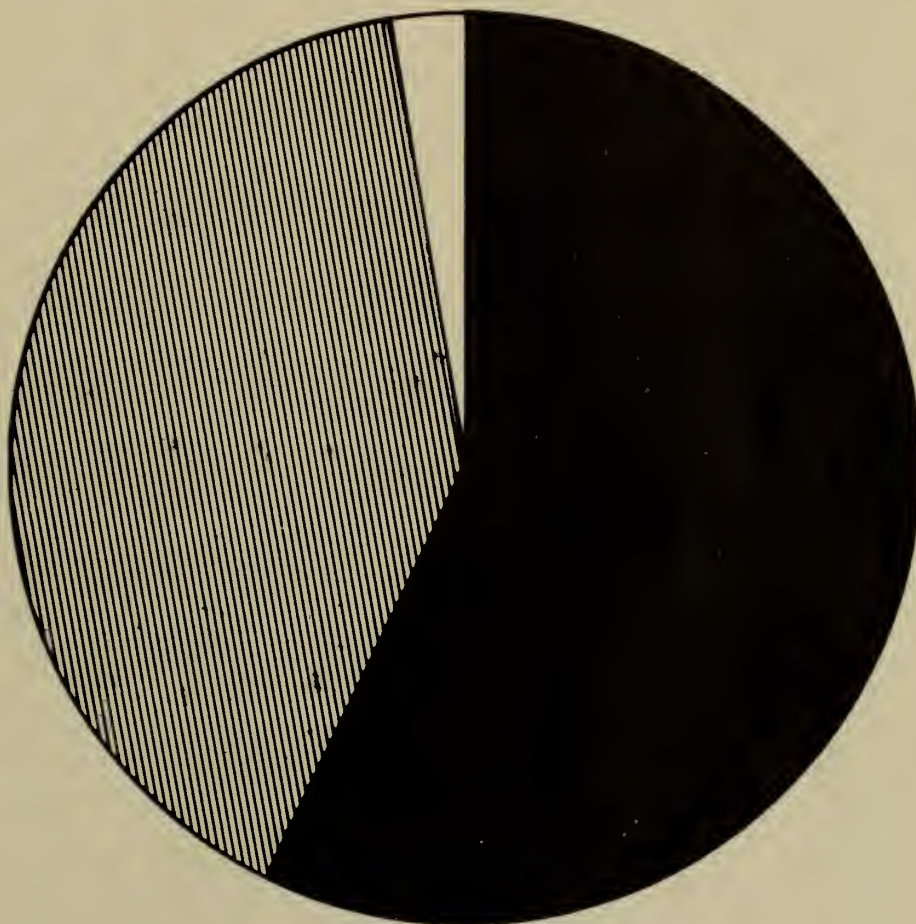
4/ Includes 2,179,300 acres of idle and abandoned farm land which might be classed as potential forest land.

5/ Does not include 796,300 acres in Okefenokee swamp and Coastal islands, of which 387,300 is estimated to be in forest land.

For year of Survey see Figure 1.




FIGURE 2
LAND AREA CLASSIFIED BY MAJOR USES
STATE OF GEORGIA

DATA FROM SOUTHERN FOREST SURVEY



STATE TOTALS

LEGEND

	FOREST LAND
	AGRICULTURAL LAND ^{1/}
	OTHER USES

<u>ACRES</u>	<u>PERCENT</u>
21,045,200	57.2
14,743,500	40.1
999,000	2.7
TOTAL = 36,787,700	100.0

^{1/} INCLUDES IDLE AND ABANDONED FARM LAND SHOWN TABLE 2

TABLE 2.--Agricultural area classified by major uses
(Data from Southern Forest Survey)

Use	Survey units					Total	Percent of : total : agri. land
	1	2	3	4	5		
----- Acres -----							
Crops and improved pasture	2,071,900	2,120,100	4,245,300	3,019,600	1,107,300	12,564,200	85.2
Percent of unit	21.3	38.0	39.1	47.6	25.9		
Percent of total crop and pasture	16.5	16.9	33.8	24.0	8.8	100.0	
Idle crop land	135,400	207,700	391,400	314,100	156,400	1,205,000	8.2
Percent of unit	1.4	3.7	3.6	4.9	3.7		
Percent of idle crop land	11.2	17.2	32.4	26.3	12.9	100.0	
Abandoned crop land	123,700	95,900	405,700	264,600	84,400	974,300	6.6
Percent of unit	1.3	1.7	3.7	4.2	3.6		
Percent of total abandoned land	12.7	9.8	41.7	27.2	8.6	100.0	
Total	2,331,000	2,423,700	5,042,400	3,598,300	1,348,100	14,743,500	
Percent of unit	24.0	43.4	46.4	56.7	31.6		
Percent of total agricultural land	15.8	16.4	34.2	24.4	9.2	100.0	

For year of Survey see Figure 1

TABLE 3.--Productive forest land area classified according to forest type
(Data from Southern Forest Survey)

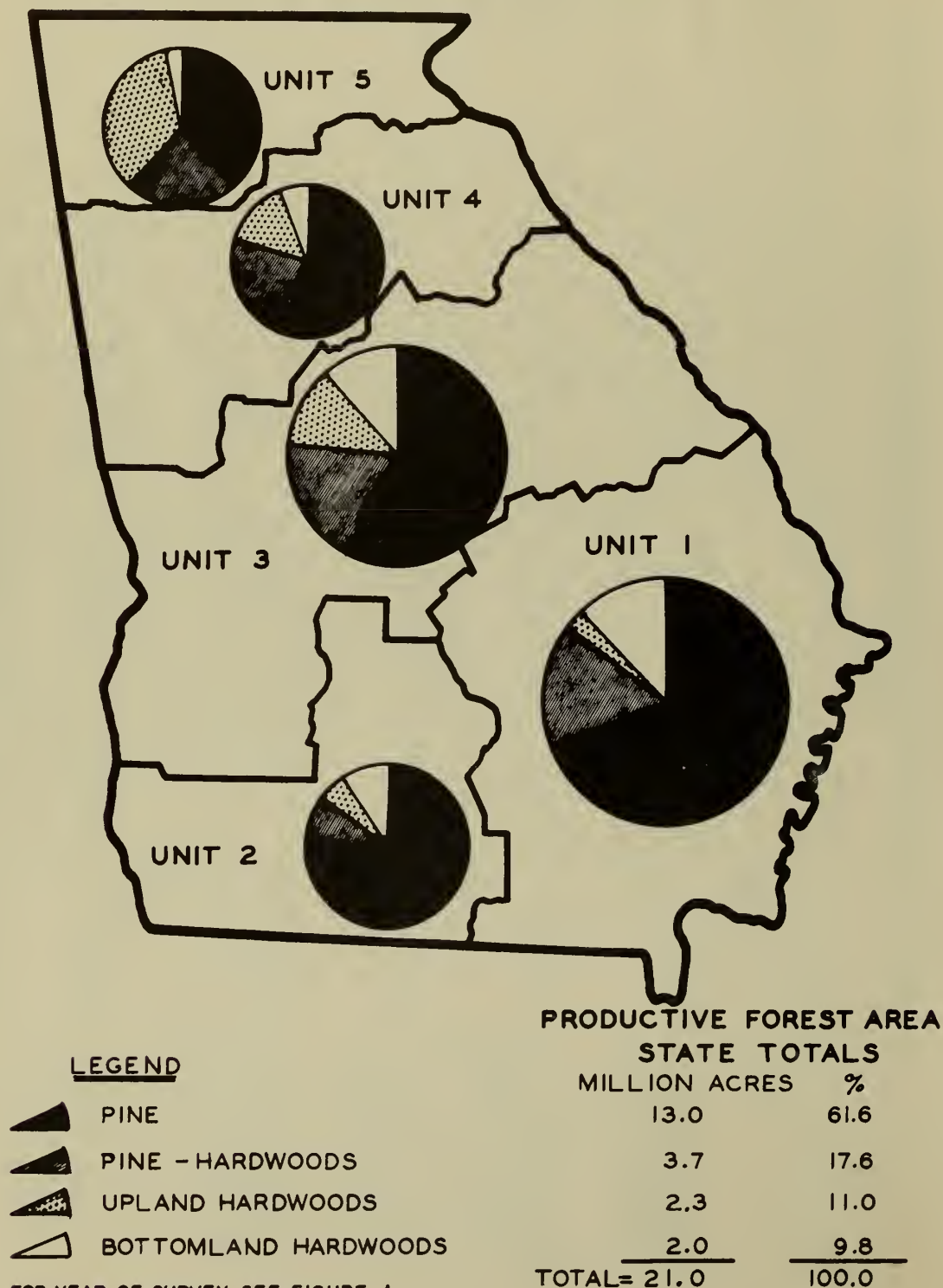
Forest type	Survey units					Total	:Percent :of forest
	1	2	3	4	5		
	Acres						
Pine	4,858,300 ^{1/} 68.9	2,319,000 ^{1/} 76.9	3,184,900 57.1	1,494,800 58.7	1,097,100 38.7	12,954,100	61.6
Percent of unit							
Percent of total							
pine type	37.5	17.9	24.6	11.5	8.5	100.0	
Pine-hardwood	1,165,100 ^{2/} 16.5	245,300 ^{2/} 8.1	1,091,400 19.5	540,500 21.2	666,200 23.4	3,708,500	17.6
Percent of unit							
Percent of total							
pine-hwd. type	31.4	6.8	29.4	14.5	17.9	100.0	
Upland hardwood	184,400 2.6	164,400 5.5	647,300 11.6	353,000 13.8	974,200 34.4	2,323,300	11.0
Percent of unit							
Percent of total							
upland hwd.	7.9	7.1	27.9	15.2	41.9	100.0	
Bottomland hardwoods ^{3/}	848,400 12.0	285,300 9.5	657,400 11.8	160,700 6.3	97,800 3.5	2,049,600	9.8
Percent of unit							
Percent of total							
bottomland hwd.	41.4	13.9	32.1	7.8	4.8	100.0	
Total productive forest	7,056,200 100.0	3,014,000 100.0	5,581,000 100.0	2,549,000 100.0	2,835,300 100.0	21,035,500 ^{4/}	
Percent of unit							
Percent of total							
in State	33.5	14.3	26.6	12.1	13.5	100.0	

^{1/} Includes both turpentine and non-turpentine pine types. ^{2/} Includes cypress type.

^{3/} Includes slash pine-cypress type. ^{4/} Does not include 9,700 acres of non-productive forest land shown in Table 1.

For year of Survey see Figure 1.

FIGURE 3
PRODUCTIVE FOREST AREA CLASSIFIED BY FOREST TYPES
STATE OF GEORGIA
 DATA FROM SOUTHERN FOREST SURVEY



FOR YEAR OF SURVEY SEE FIGURE 1

TABLE 4.--Productive forest area classified according to forest conditions
(Data from Southern Forest Survey)

	Survey units					Total	Percent of forest area in State
	1	2	3	4	5		
	Acres						
Old growth	1,113,000	503,300	460,800	127,400	350,300	2,554,800	12.1
Percent of unit	15.8	16.7	8.3	5.0	12.4		
Percent of total	43.6	19.7	18.0	5.0	13.7	100.0	
Second growth sawlog size	2,415,100	943,400	2,864,500	1,235,100	1,354,300	8,812,400	41.9
Percent of unit	34.2	31.3	51.3	48.4	47.8		
Percent of total	27.4	10.7	32.5	14.0	15.4	100.0	
Second growth under sawlog size	2,542,700	1,148,700	1,917,800	1,084,200	1,039,200	7,732,600	36.8
Percent of unit	36.0	38.1	34.3	42.5	36.6		
Percent of total	32.9	14.9	24.8	14.0	13.4	100.0	
Reproduction	521,500	169,400	239,200	98,200	83,700	1,112,000	5.3
Percent of unit	7.4	5.6	4.3	3.9	2.9		
Percent of total	46.9	15.2	21.5	8.8	7.6	100.0	
Clear cut and fire killed	463,900	249,200	98,700	4,100	7,800	823,700	3.9
Percent of unit	6.6	8.3	1.8	0.2	0.3		
Percent of total	56.3	30.2	12.0	0.5	1.0	100.0	

Definition of terms:

1. Old growth: Stands which have the characteristics of the original mature forests of the region. Stands may have been partly cut, but still contain 600 bd.ft. of pine or pine and hardwood mixed, or 1,000 bd.ft. of hardwood per acre.
2. Second growth, sawlog size: Young stands which have come in as a result of cutting or other causes and contain at least 600 bd.ft. per acre.
3. Second growth, below sawlog size: Young stands composed mostly of pines under 9" d.b.h. or hardwoods under 13" d.b.h. These stands are composed of trees larger than 1" d.b.h. but not suitable for saw timber and having less than 600 bd.ft. per acre.
4. Reproduction: Areas not falling into either of the above classifications and bearing, per acre, more than 80 seedlings less than 1" d.b.h.
5. Clear cut and fire killed: Cut over or burned over areas on which an insufficient quantity of young growth has come in to classify them either as second growth or reproduction.

For year of Survey see Figure 1

FIGURE 4
PRODUCTIVE FOREST AREA CLASSIFIED
ACCORDING TO FOREST CONDITIONS
STATE OF GEORGIA
 DATA FROM SOUTHERN FOREST SURVEY

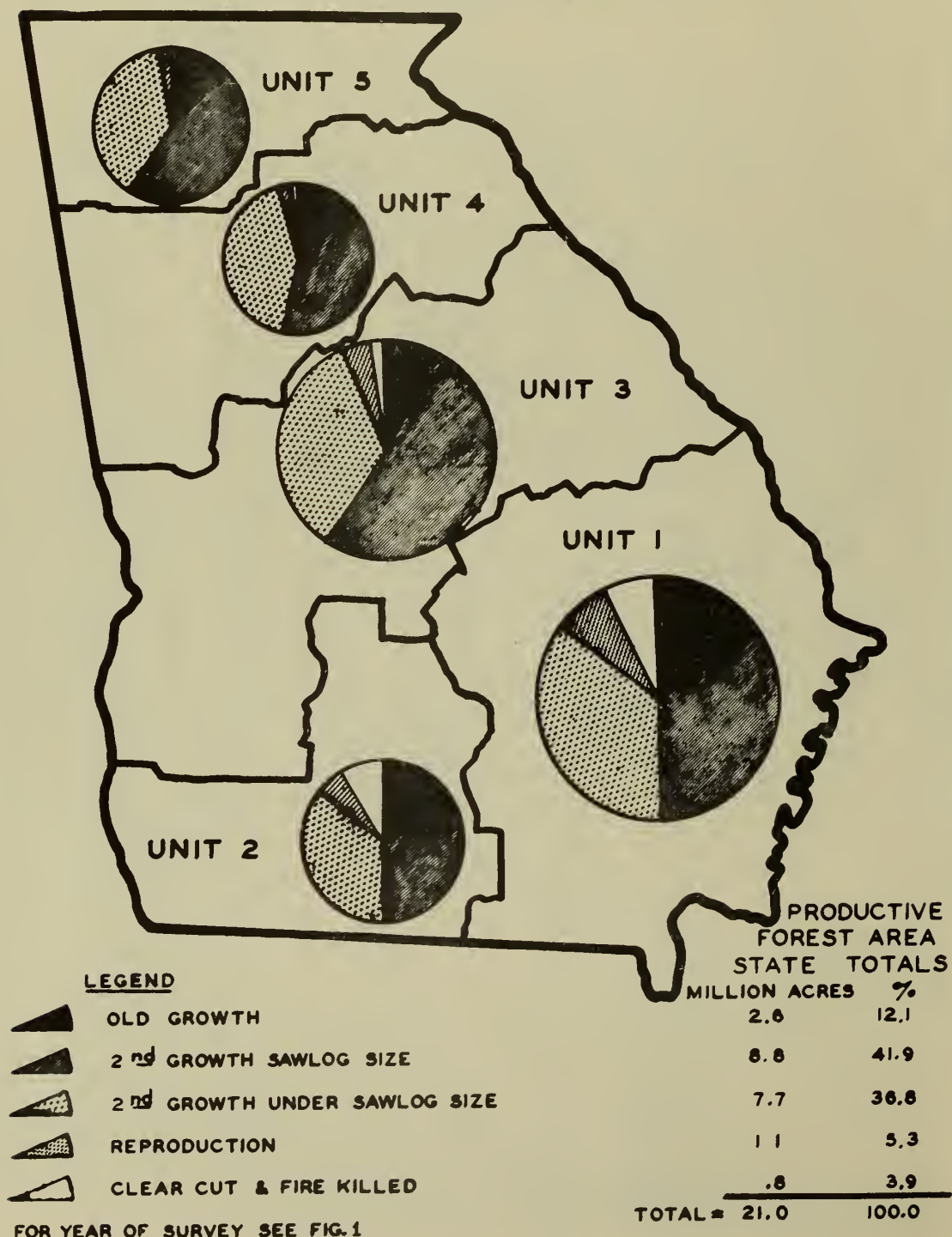


TABLE 5.--Inventory of sawlog size timber as of January 1, 1937^{1/}
 Net board foot volumes expressed in International 4" scale
 (Data from Southern Forest Survey)

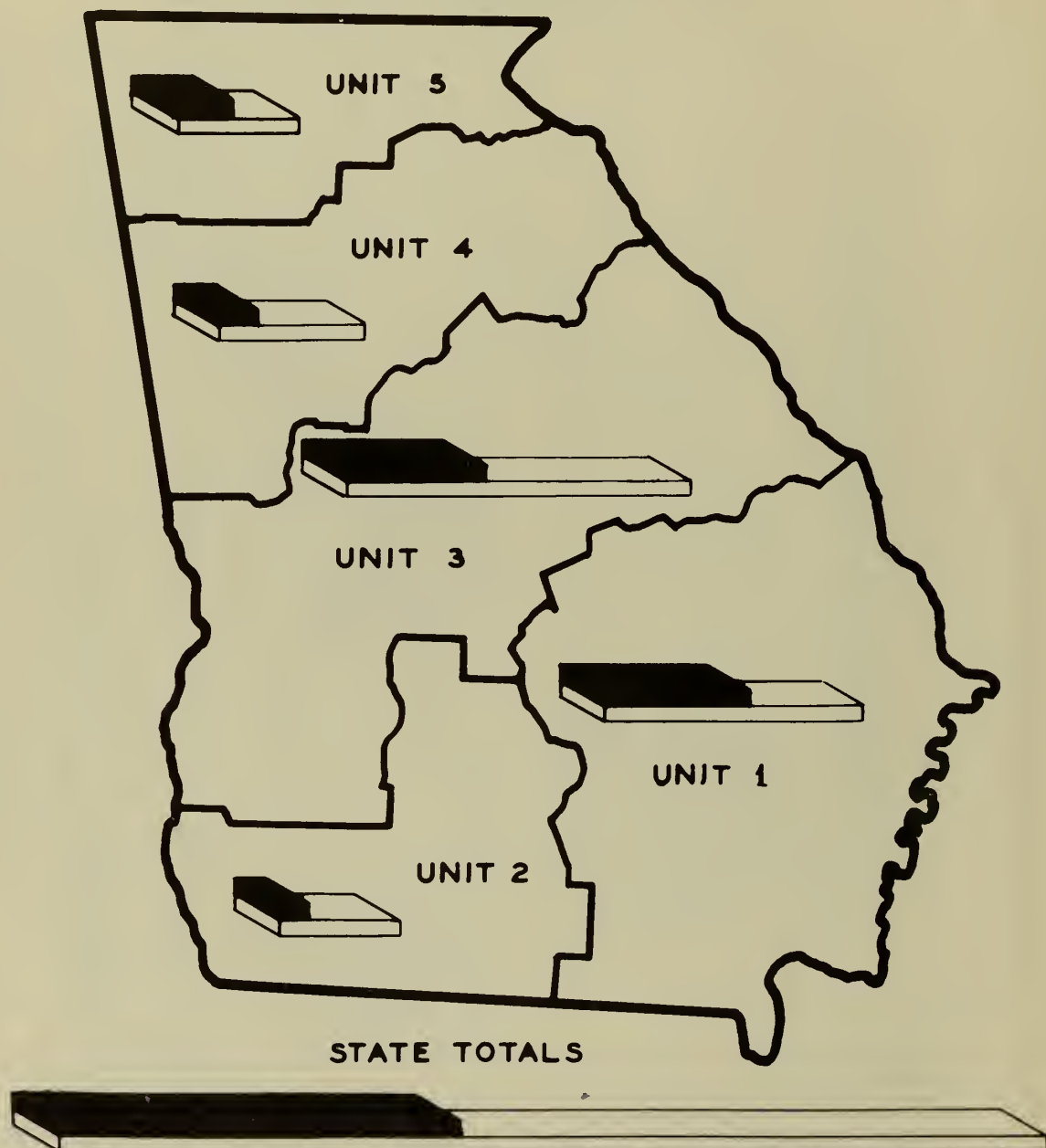
Species groups	Survey units					Total	:Percent :of total :sawtimber
	1	2	3	4	5		
	Thousands of bd.ft.						
Pine	8,606,600	4,026,000	11,466,400	4,991,500	3,960,700	33,051,200	71.0
Percent of unit	64.0		71.3	78.2	69.7		
Percent of State	26.1	12.2	34.6	15.1	12.0	100.0	
Hardwoods and cypress	4,799,200	1,009,300	4,616,000	1,393,800	1,725,900	13,544,200	29.0
Percent of unit	36.0	20.0	28.7	21.8	30.3		
Percent of State	35.4	7.4	34.1	10.3	12.8	100.0	
Total	13,405,800	5,035,300	16,082,400	6,385,300	5,686,600	46,595,400	
Percent of unit	100.0	100.0	100.0	100.0	100.0		
Percent of State	28.8	10.8	34.5	13.7	12.2	100.0	

^{1/} This table includes only pine and cypress 9" d.b.h., and hardwoods 13" d.b.h. and larger.

For year of Survey see Figure 1.

FIGURE 5

INVENTORY OF SAWLOG SIZE TIMBER - JAN. 1, 1937^{1/}
 NET BOARD FOOT VOLUMES EXPRESSED IN INTERNATIONAL $\frac{1}{4}$ " SCALE
 DATA FROM SOUTHERN FOREST DATA



■	HARDWOOD & CYPRESS	13,544,200 M.B.F.
□	PINE	33,051,200 M.B.F.
		<hr/>
		TOTAL = 46,595,400 M.B.F.

^{1/} INCLUDES ONLY PINE & CYPRESS 9" D.B.H. AND HARDWOODS 13" D.B.H. AND LARGER

TABLE 6.--Inventory of growing stock 1936
Net cordwood volume/including sawlog
timber - good trees only
(Data from Southern Forest Survey)

Species groups	Survey units					Total	:Percent :of State : total
	1	2	3	4	5		
----- Cords -----							
Pines							
Under sawlog size ^{2/}	12,481,900	4,668,500	9,611,400	5,139,500	4,284,600	36,185,900	17.9
Sawlog size ^{2/}	19,806,500	9,297,600	24,123,400	10,402,500	8,478,200	72,108,200	35.6
Top wood ^{4/}	5,889,800	2,632,400	3,447,400	1,513,200	1,182,100	14,664,900	7.3
Total pines	38,178,200	16,598,500	37,182,200	17,055,200	13,944,900	122,959,000	60.8
Percent of unit	58.1	72.9	59.7	66.4	54.4		
Percent of species group	31.0	13.5	30.2	13.9	11.4	100.0	
Pulping hardwoods	21,953,400	4,732,700	17,164,800	4,064,700	1,802,900	49,718,500	24.6
Percent of unit	33.4	20.8	27.5	15.8	7.0		
Percent of species group	44.2	9.5	34.5	8.2	3.6	100.0	
Non-pulping hardwoods	5,607,200	1,431,700	7,977,200	4,570,200	9,892,400	29,478,700	14.6
Percent of unit	8.5	6.3	12.8	17.8	38.6		
Percent of species group	19.0	4.9	27.1	15.5	33.5	100.0	
Total	65,738,800	22,762,900	62,324,200	25,690,100	25,640,200	202,156,200	
Percent of unit	100.0	100.0	100.0	100.0	100.0		
Percent of State	32.5	11.3	30.8	12.7	12.7	100.0	

1/ Expressed in standard stacked cords 4' x 4' x 8'.

2/ Includes trees 5" d.b.h. to 9" d.b.h.

3/ Includes trees 9" d.b.h. and over.

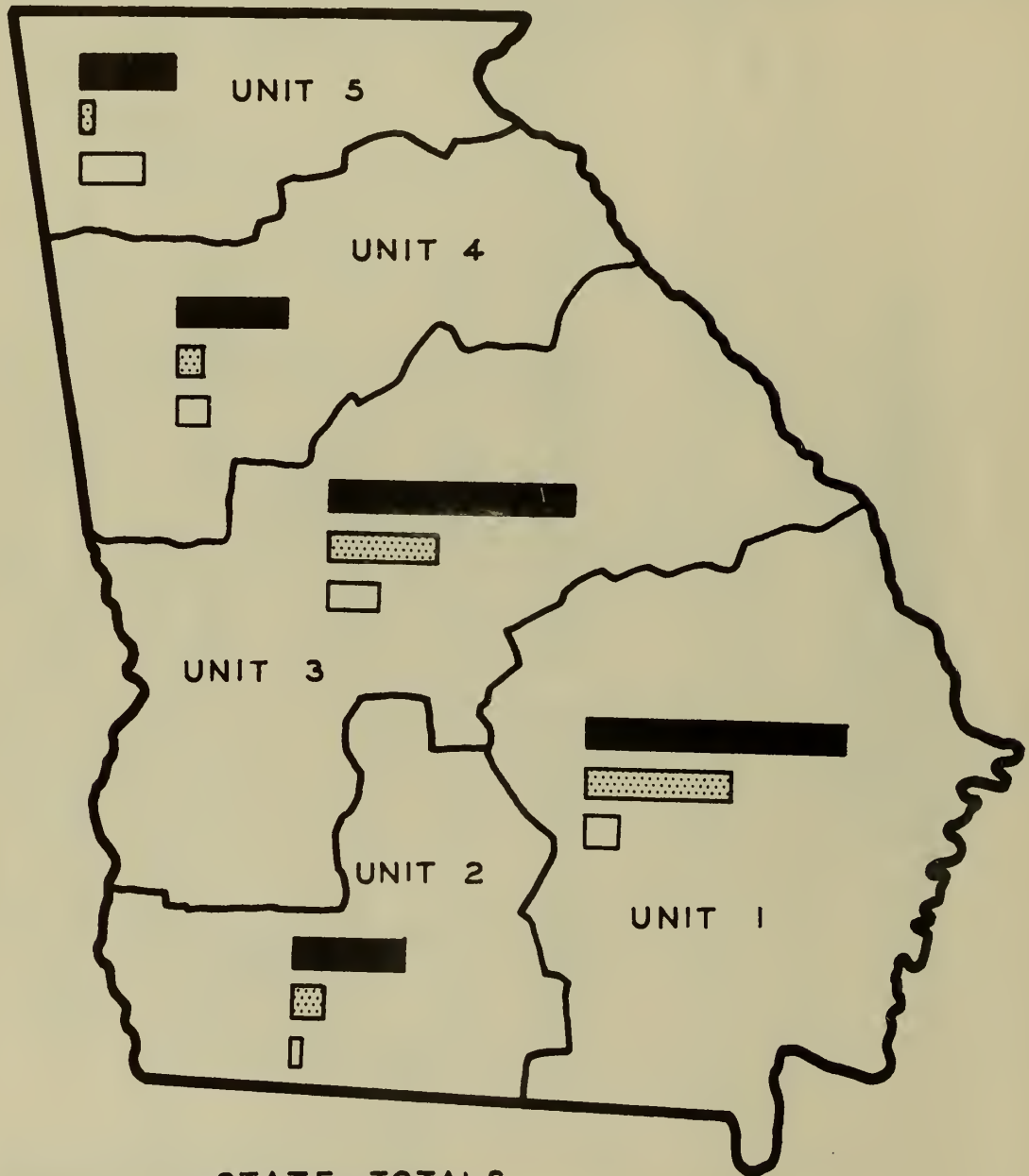
4/ Includes tops of sawlog size trees.

For year of Survey see Figure 1.

FIGURE 6

INVENTORY OF GROWING STOCK 1936

NET CORDWOOD VOLUME - INCLUDING SAWLOG TIMBER - GOOD TREES ONLY



STATE TOTALS

MILLION CORDS

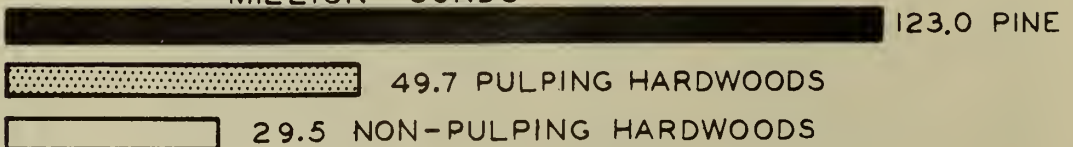


TABLE 7.--Comparison of growth, mortality and commodity drain, cubic feet, 1936
(Data from Southern Forest Survey)

	Units									
	1	2	3	4	5	Total				
	Pine :Hwds. 1/	Pine :Hwds. 1/	Pine :Hwds. 1/	Pine :Hwds. 1/	Pine :Hwds. 1/	Pine :Hwds.	Pine :Hwds.	Pine :Hwds.	Pine :Hwds. 1/	Pine :Hwds. 1/
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
	Millions of cu.ft. inside bark									
Growing stock										
January 1, 1936	2820.0	1862.0	1233.1	410.1	2818.9	1656.2	1301.1	564.6	1076.1	763.1 9249.2 5256.0
Gross growth ^{2/}	176.7	80.8	78.2	17.5	213.3	102.5	101.9	36.0	62.6	35.3 632.7 272.1
Mortality ^{3/}	119.1	31.8	33.6	5.1	30.0	22.5	13.0	5.6	11.9	13.1 207.6 78.1
Change due to turpentine ^{4/}	- 3.1	-	- 1.0	-	-	-	-	-	-	- 4.1 -
Net increment ^{4/}	54.5	49.0	43.6	12.4	183.3	80.0	88.9	30.4	50.7	22.2 421.0 194.0
Commodity drain ^{5/}	64.7	25.0	49.0	9.8	98.3	32.4	62.1	20.7	21.4	12.8 295.5 100.7
Net change in growing stock	- 10.2	+24.0	- 5.4	+2.6	+85.0	+47.6	+26.8	+9.7	+29.3	+9.4 125.5 93.3
Growing stock										
January 1, 1937	2809.8	1886.0	1227.7	412.7	2903.9	1703.8	1327.9	574.3	1105.4	772.5 9374.7 5349.3

1/ Includes cypress.

2/ Growth - the gross amount added before deductions have been made for mortality and drain.

3/ Mortality - loss from such causes as fire, disease and insects.

4/ Net increment equals gross growth minus mortality and change due to turpentine.

5/ Commodity drain - combined drain of industrial and other uses.

FIGURE 7

COMPARISON OF GROWTH, MORTALITY & DRAIN 1936 STATE OF GEORGIA

DATA FROM SOUTHERN FOREST SURVEY

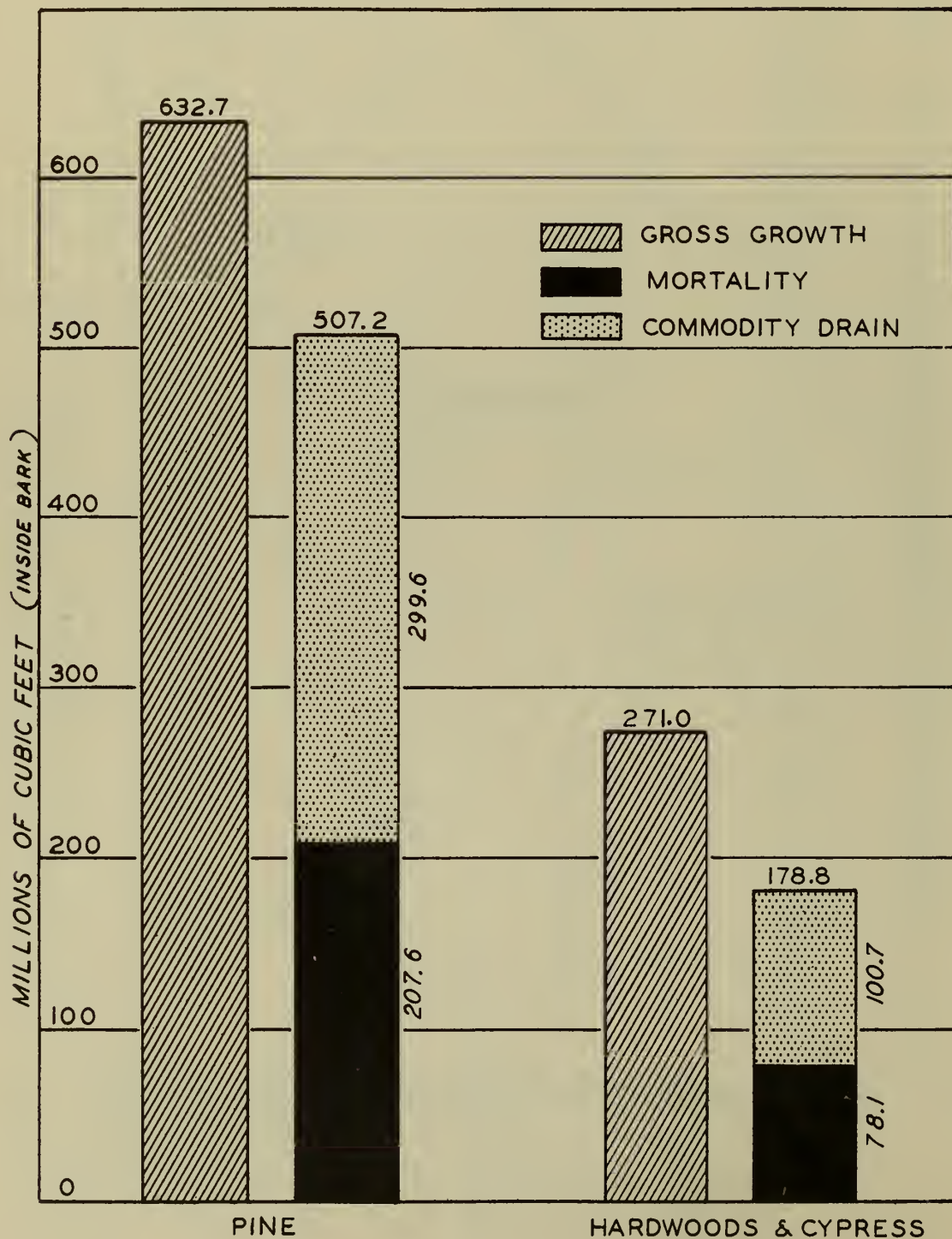
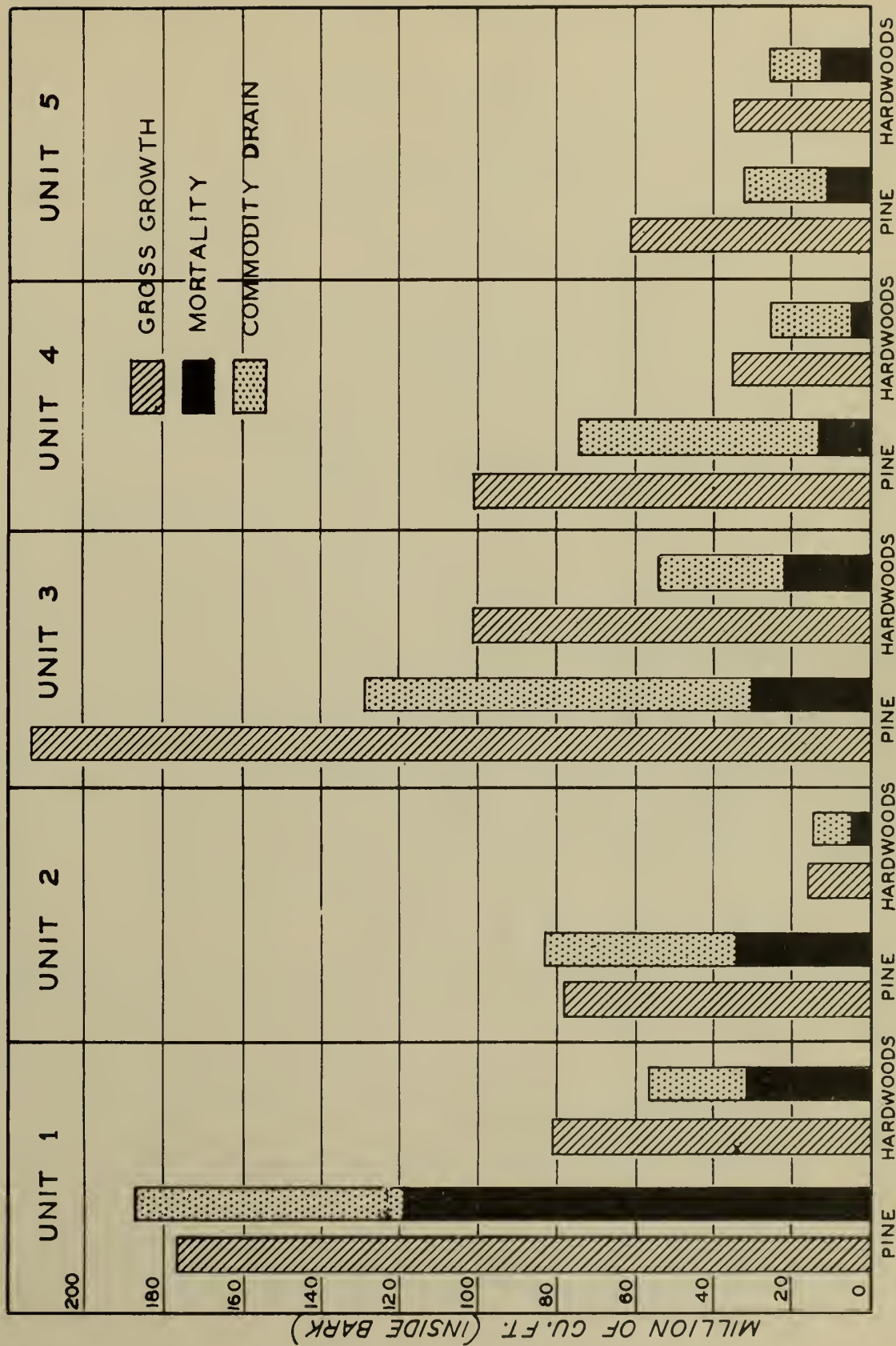


FIGURE 8

COMPARISON OF GROWTH, MORTALITY & DRAIN 1936

BY SURVEY UNITS - DATA FROM SOUTHERN FOREST SURVEY



NOTE: CYPRESS INCLUDED WITH HARDWOODS

Forest Industries

Fluctuation in lumber production in the State is illustrated by Figure 9. These fluctuations can be attributed mainly to changing economic conditions throughout the country rather than to the supply of available timber. These data were compiled by the Forest Service and, although they are not considered to include all lumber produced, they are nevertheless comparable year by year for the mills reporting. Areas from which the original old-growth stands were removed have restocked to rapidly growing second-growth timber. This condition has made it possible for Georgia to maintain generally its place among the other states in lumber production.

The distribution of certain industries dependent on the forest for raw materials is shown by Figure 10. The pulp mills are a recent establishment. The drain of pulpwood will be greater than is indicated by the two mills shown on the figure because five mills in Florida and one in North Carolina obtain a large portion of their requirements from Georgia timberlands.

During the 1934-35 naval stores season 629 turpentine stills, or 56 per cent of all the stills in the naval stores belt, were operating in Georgia.

Although there is a large number of sawmills in the State, most of them are of the portable type. Only 3 per cent of the total number of sawmills produce over 20 M bd. ft. per mill per day. In numerous instances operators of these small mills pay low wages, own little or no forest land, and pay no taxes. In addition they frequently

move from one location to another, cutting largely immature timber, and leave the cut-over areas in a state of low productivity. Fortunately most of these mills are found in and north of the Piedmont area and they do not at present compete strongly with the increased pulpwood utilization which is confined generally to the Coastal Plain.

In 1936 there were 104 non-lumber primary wood-using plants in the State, such as treating plants, veneer mills, stave and heading mills. These industries, while essential, do not constitute a very large portion of the wood-using industry.

Contrary to general belief, the volume of wood used by pulp mills each year is actually only a small percentage of the total consumed by all wood-using industries. Thus in 1936 only 1.7 per cent of the total commodity drain was pulpwood. If all of the 7 existing mills using Georgia timber operated at capacity the total annual drain would be approximately 700,000 cords. This would represent approximately one-eighth of the total commodity drain.

It has already been mentioned that in 1929 the primary wood-using industries contributed 25 per cent of all industrial employment; they paid 9.7 per cent of all salaries and wages, and produced 10 per cent of the value of all industrial production in Georgia. The establishment of new pulp and paper mills has undoubtedly increased these figures. These figures as contrasted with the 1910 census show a decline in importance of the forest industries because in 1909 and 1910 the forest industries furnished employment to

FIGURE 9

PRODUCTION OF SAWN LUMBER IN GEORGIA

DATA FROM U. S. DEPARTMENT OF AGRICULTURE
WITH COOPERATION OF THE BUREAU OF THE CENSUS

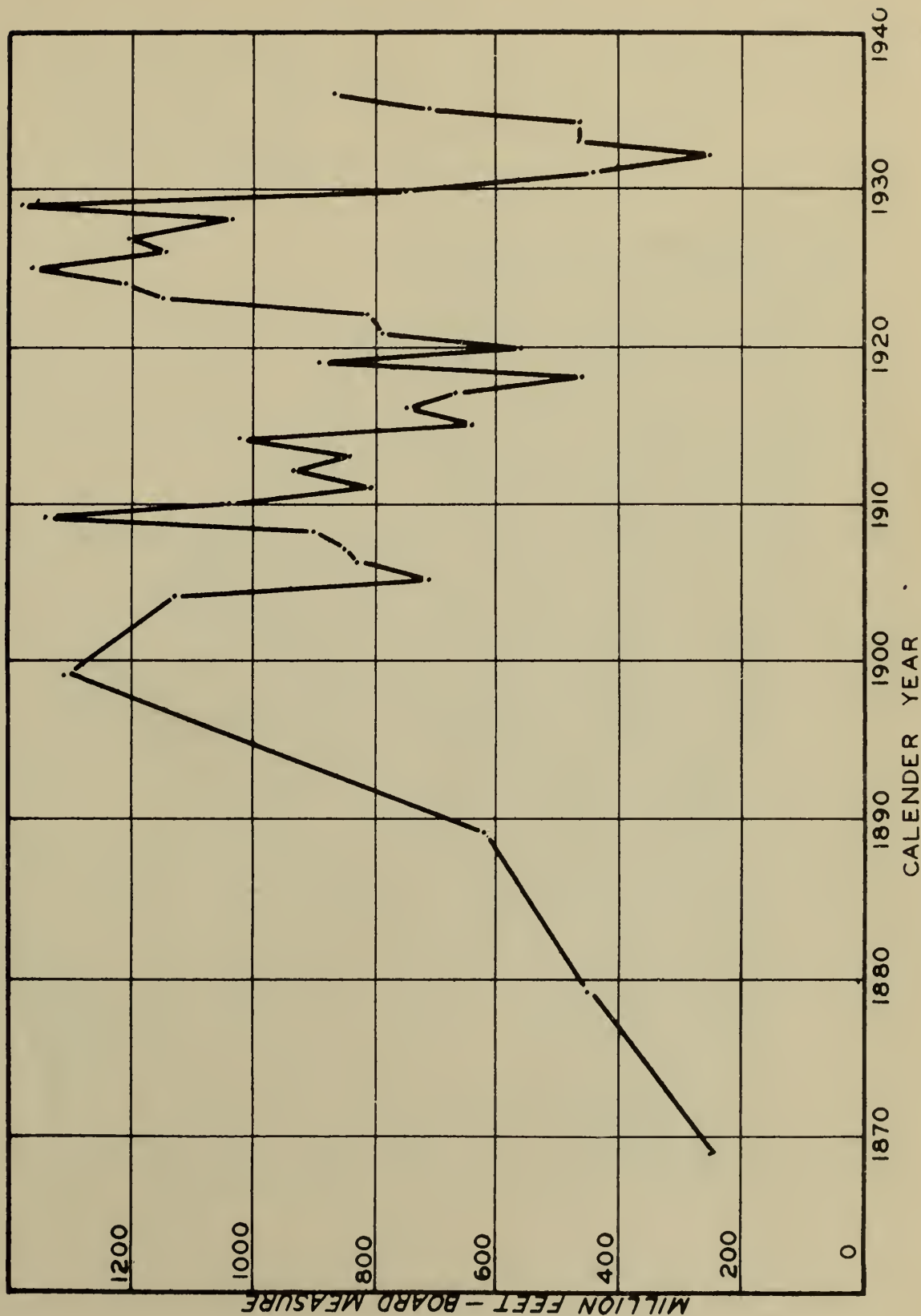
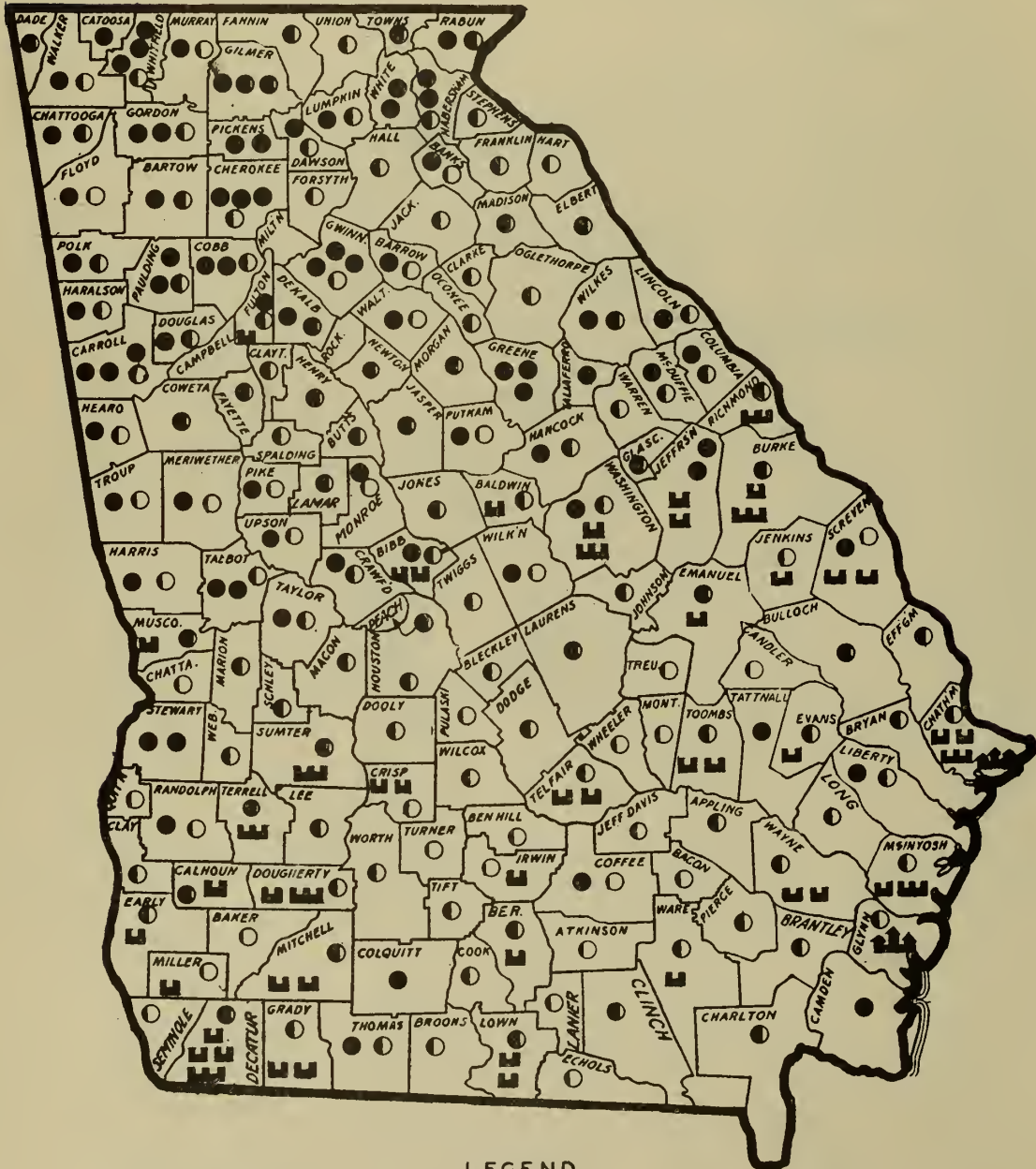


FIGURE 10

SAWMILLS AND PULP PAPER MILLS
GRAPHIC PRESENTATION BY COUNTIES
BASED ON FOREST SURVEY DATA
STATE OF GEORGIA



LEGEND

- = 10 SAWMILLS, CAPACITY 1-19,000 BOARD FEET
- = SAWMILL, CAPACITY 20-39,000 BOARD FEET
- = SAWMILL, CAPACITY 40-79,000 BOARD FEET
- ▲ = PULP MILL

more persons than all other industries combined, excluding the manufacture of cotton goods. This decline in relative importance has been caused in part by the expansion and establishment of nonwood-using industries such as textile mills which to a large extent have absorbed the increase in available labor.

With adequate fire control and good cutting practices the annual supply of raw material available for manufacture probably can be doubled within the next fifteen years to serve as a sound base for a greatly increased industrial development.

Present Cutting Practices

In spite of the indicated excess of growth over drain, considering the State as a whole, there are local areas where heavy cutting has reduced the growing stock far below that desired from the standpoint of good forestry. Furthermore, the indicated excess of growth is mostly in the smaller diameter classes. For the most part, the commodity drain, whether for sawlogs, poles, fuel wood, or pulpwood, has been accompanied by high grading the timber stands. The best trees have been cut; the poorer slow-growing individuals have been left; and the quality and growth rate per acre has been decreased accordingly.

With the exception of a few large holdings the cutting for industrial purposes falls far short of desirable practices. The selection of trees to cut into sawlogs for the hundreds of small sawmills is in the majority of cases left to irresponsible hands who have no interest in timber as a crop. Land-

owners have not insisted on proper cutting methods because they themselves have seldom known what needed to be done. Cutting for fuel wood from farm woodlands has also been poorly conducted from a forestry standpoint. All too often the best formed, straightest, fastest growing, and easiest splitting trees are cut for fuel wood, leaving the crooked, slow-growing runts for future growth. Under such cutting plans the woodlands have deteriorated to the point where they are capable of only very slow growth. The stands are often poorly stocked as a result of poor cutting practices, lack of protection from fire, and over-grazing.

Some progress has been made in improving pulpwood cutting practices. Pulpwood cut from the holdings of the pulp and paper companies has been in accordance with approved forestry practices for the most part. Although the cutting practices on other than company-owned lands have shown some recent improvement, they still result in most instances in greatly depleting the growing stock. Here again the problem is mainly one of educating the forest landowners so that they can and will insist on their timber being cut in such a way that it is left in a productive condition capable of providing another cut in from 5 to 10 years.

Forest Fire Control

It is estimated that 23 million acres of present and potential forest land in Georgia need protection from fire.

The budget estimates for the year ending June 30, 1939, for fire control purposes on other than federally owned land amount to \$237,946

FIGURE 11

COMPARISON OF TOTAL COMMODITY DRAIN WITH PULPWOOD DRAIN
STATE OF GEORGIA
1936 & 1937 DATA FROM SOUTHERN FOREST SURVEY

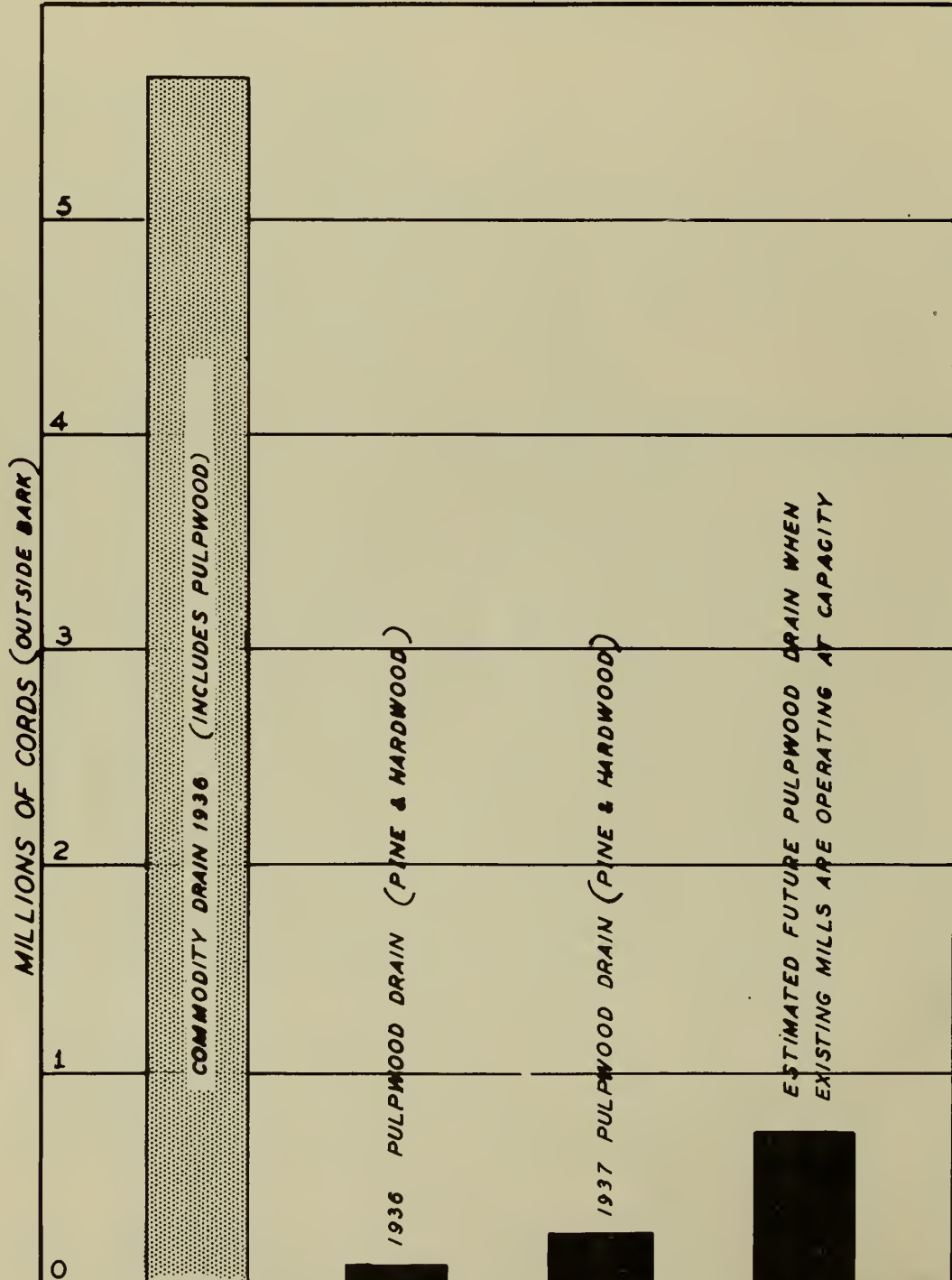


FIGURE 12

COMMODITY DRAIN ON GEORGIA'S FOREST

1 9 3 6

DATA FROM SOUTHERN FOREST SURVEY

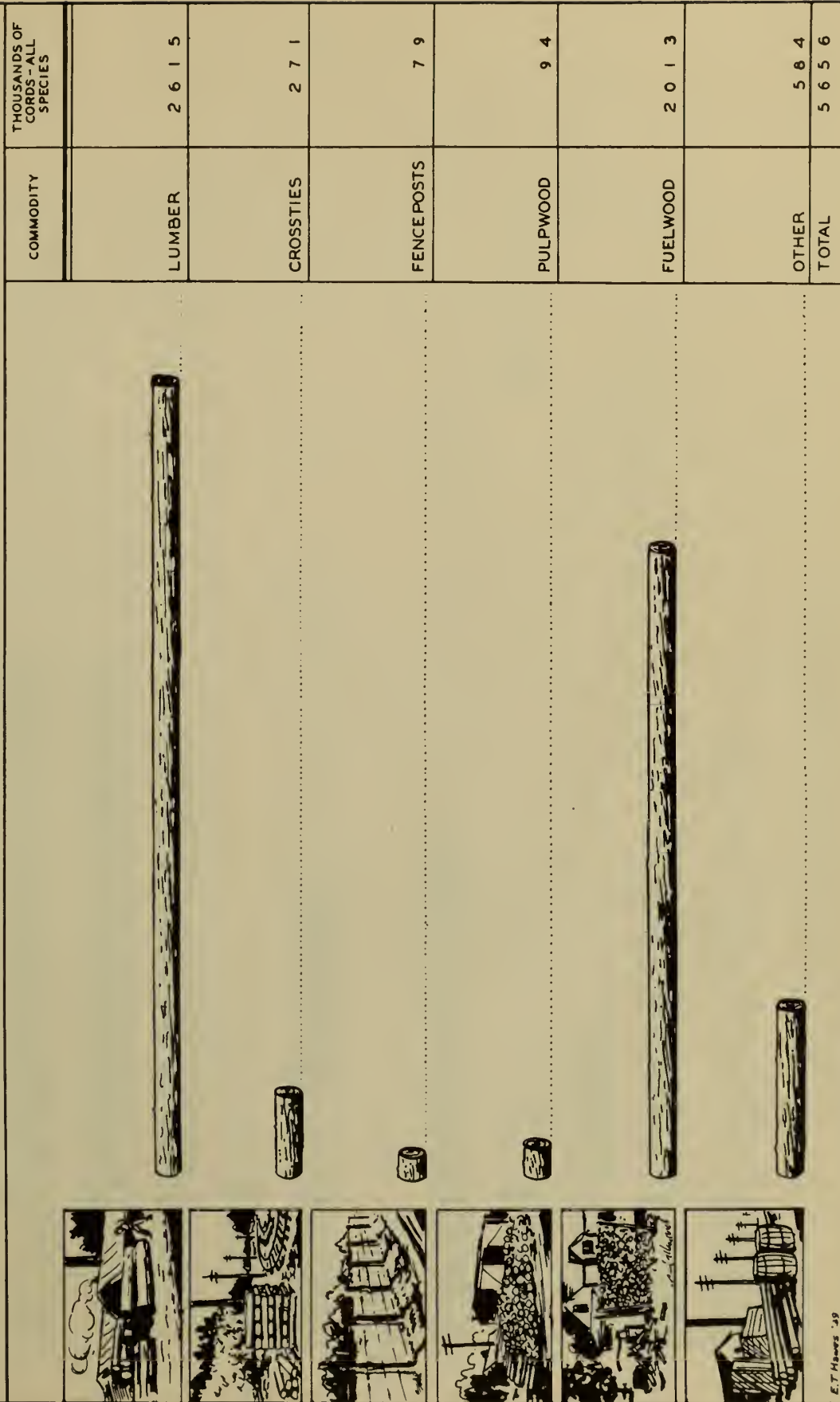
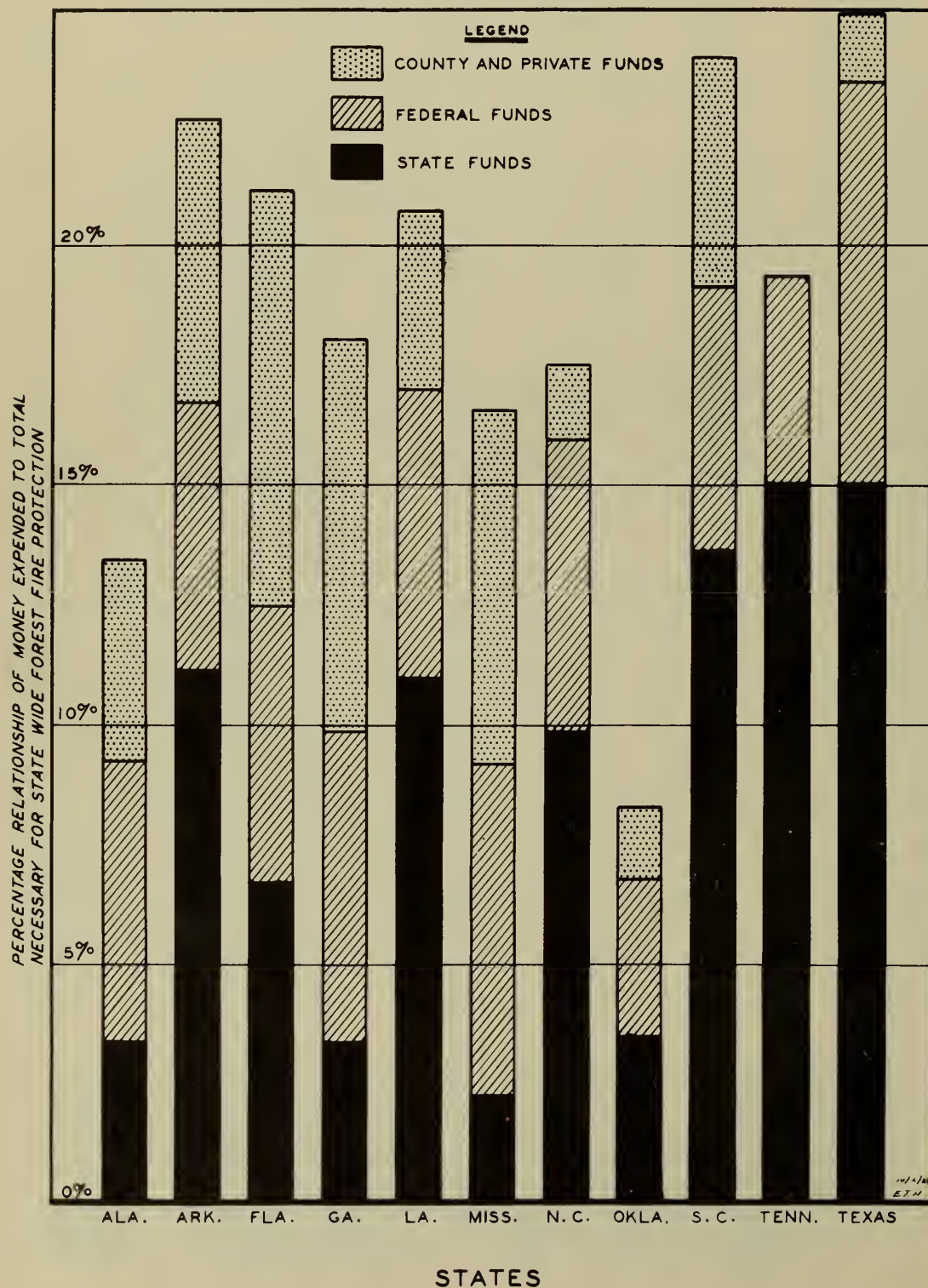


FIGURE 13
EXPENDITURES AND SOURCE OF FUNDS
SPENT FOR FOREST FIRE PROTECTION
OF STATE AND PRIVATE FOREST LANDS
JULY 1, 1937 TO JUNE 30, 1938

MONEY SPENT SHOWN IN PERCENT OF TOTAL
FUNDS NECESSARY FOR STATE WIDE PROTECTION



obtained from the following sources: Federal funds \$74,287, State funds \$39,329, private funds \$98,937, and county funds \$25,393.

Adequate State-wide protection from forest fires would cost approximately \$1,200,000 annually. This objective will now be brought much closer as a result of the passage of a Constitutional Amendment at the November 1938 general election. This Amendment gives the counties the right to cooperate financially with the State in fire protection work and makes it possible to place under protection hundreds of thousands of acres of forest land.

The State Division of Forestry, in cooperation with groups of landowners and several counties during the calendar year 1937, protected 3,490,100 acres of forest land, or less than 17 per cent of the private forest land needing protection.

Figure 13 and Table 8 indicate that of eleven southern states, Georgia ranked seventh in obtaining adequate funds from all sources for State-wide protection. Georgia ranked tenth in the amount of state funds appropriated for this objective. The county and private contributions were nearly two and a half times as much as the State appropriation (Figure 13).

Problems in forest production in Georgia are few. Yet so acute is one of these problems that upon its successful solution hangs the future of Georgia as one of the great wood-producing states of the country. This vital problem is the prevention and control of forest fires. In the naval stores region of the State

during the year 1936, 152 million cubic feet of pine timber were lost through mortality. Conservatively, 75 per cent or 114 million cubic feet were lost, directly or indirectly, from fire. Expressed in dollars, and assuming a valuation of \$1 per cord on the stump, this means that in one section of Georgia alone timber valued at more than \$1,250,000 was lost as the result of fire. At a time when economic conditions throughout the nation are in general discouraging and when living conditions in many rural communities are critical, it seems ridiculous for a modern state to permit the wanton destruction of a valuable commodity such as timber.

That forest fires in Georgia can be prevented is obvious from the mere consideration that 97 per cent are man-caused. Being caused by man they assuredly can be prevented by man. Moreover, for 1937 the annual fire loss on the several million acres under organized fire protection was less than 1.8 per cent. This small loss, contrasted with an estimated loss of 19.8 per cent incurred throughout the State on areas not under organized protection, shows beyond doubt that fires can be prevented (Figure 14).

Federal funds for fire protection in Georgia have greatly exceeded funds appropriated from the State Treasury for every year since the beginning of organized protection in 1926. Several counties are appropriating thousands of dollars annually for fire control and many others would do likewise if only the State would take more vigorous action. This question of adequate appropriations of State funds for fire control is one of the most important

FIGURE 14

Results of FOREST FIRE PROTECTION in Georgia 1937

FOREST PROTECTION LEDGER

Data for Protected Forest
17% is **PROTECTED**



3,490,100 ACRES



1064 FIRES BURNED OVER
1.8% OF THE PRIVATE FOREST LAND UNDER
PROTECTION

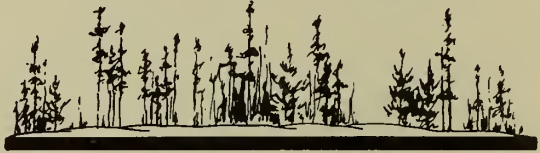


\$96,000 DAMAGE
DONE BY FIRE TO FOREST UNDER PROTECTION



Result of **PROTECTION**

Data for Unprotected Forest
83% is **UNPROTECTED**



18,586,453 ACRES



24,781 FIRES BURNED OVER
19.8% OF THE PRIVATE FOREST LAND
UNPROTECTED



\$3,700,000 DAMAGE
DONE BY FIRE TO UNPROTECTED FORESTS



Result of **NON-PROTECTION**

problems facing the State Legislature.

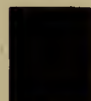
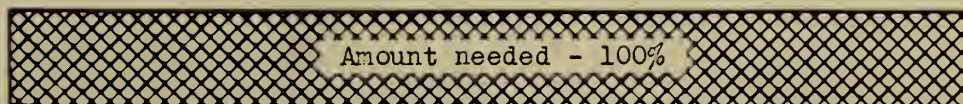
Forest fires are a stigma on Georgia's claim of being a modern state. They can and should be prevented.

The ratio of expenditures for forest fire protection on State and privately owned lands to what would be required for State-wide protection on such lands is shown in the table below. The graphs illustrate the data.

TABLE 8.--State and privately owned forest lands
Georgia - July 1, 1937 to June 30, 1938

Amount required for State-wide protection	: \$1,200,000	: 100.0%
State funds expended	34,479	2.9
Federal funds expended	66,510	5.5
County and private funds expended	84,238	7.0
Total funds expended	\$185,227	15.4

Ratio of present expenditures to requirements
for State-wide protection



Source of funds



PERTINENT POINTS TO CONSIDER

Studies of the forest resources in Georgia reveal the following pertinent facts.

1. Georgia is today, as she has been in the past, producing vast quantities of timber.

2. In spite of the great annual production of timber in Georgia at the present time, this amount could be easily doubled if adequate protection from fire were provided.

3. Doubling Georgia's annual production of timber would allow for the expansion of her forest industries which in turn would provide for a substantial increase in the number of persons engaged in the woods and mills of the State.

4. The most pressing problem confronting forest landowners in Georgia today is adequate fire prevention and control. The funds needed for such prevention and control are not great. The entire State could be protected for an average of not more than 5 cents per forest acre per year. Funds for fire protection are now being appropriated by individuals, counties,

the Federal Government, and the State; but State funds are lagging far behind funds from other sources.

5. Of the eleven southern states, Georgia ranks tenth on the basis of adequate state appropriations for forest fire control.

6. Provisions should be made authorizing an annual appropriation by the State of 1 cent per acre per year for all forest land in the State, provided that this fund is used in matching county funds appropriated for the same purpose.

7. An increased educational campaign should be inaugurated to the end that man-caused fires be materially reduced if not entirely eliminated.

8. If Georgia is to continue to be a great timber-producing State the program of State-wide fire protection and the adoption of better methods of harvesting the forest crop must be far more vigorously supported. The improvement of forest practices should go hand in hand with fire control so that the forest lands may yield maximum returns.



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