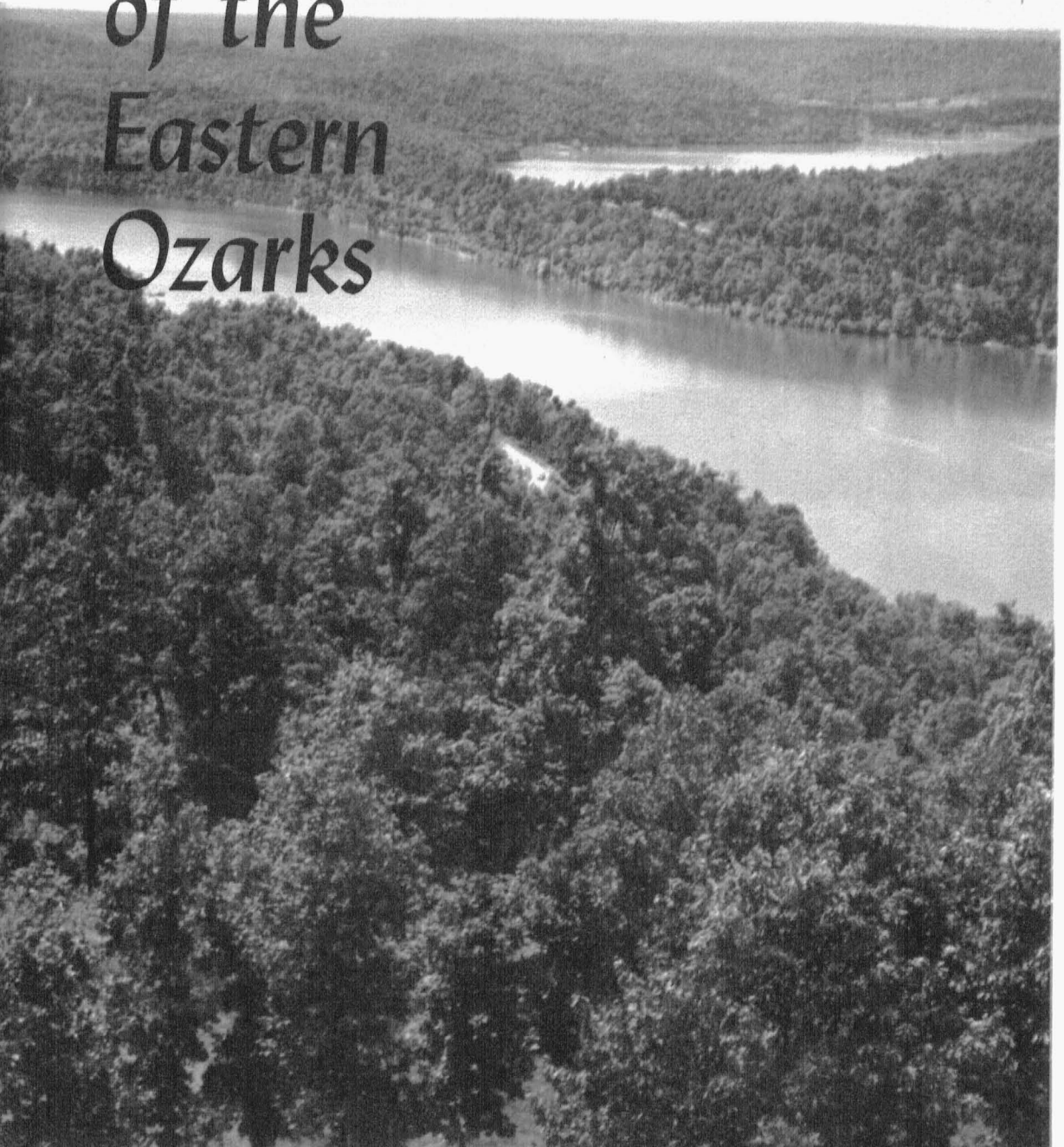
Timber Resources

of the Eastern Ozarks



U.S. Department
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Forest Service

University
of Missouri
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This bulletin reports on Missouri Agricultural Experiment Station research Project 399, Forest Survey.

Timber Resources

of the Eastern Ozarks

By Joseph J. Mendel

Foreword

This is the first in a new series of reports describing the timber resource of Missouri. It presents statistical data needed for long-range planning to meet future demands as well as to aid in the development of stable, local wood-using industries.

The first forest survey of Missouri was made in 1947. Since then the forest has changed. Changes in timber cutting, land use, and tree growth all served to modify the forest situation. The new survey reveals the changes that have occurred and evaluates the trends that have developed since the first survey.

The resurvey reported here was begun in January 1958 and completed in December 1960. It is part of the nationwide program of maintaining a current account of our forest assets as authorized by Congress in the McSweeney-McNary Forest Research Act of May 22, 1928. A distinctive feature of the resurvey is its intensification which permits presenting county data for the more heavily forested areas of the State. This important contribution is directly attributable to the State Government of Missouri whose awareness of the importance of the State's forest resources resulted in an appropriation of $80,000 by the seventieth session of the General Assembly to assist in inventorying these resources. Such an appropriation, supplementing the Federal funds available for a regular survey, made an intensified survey possible.

The resurvey was conducted by the Forest Survey organization of the Lake States Forest Experiment Station in active collaboration with the School of Forestry, University of Missouri, which administered the State functions of the Survey. The Central States Forest Experiment Station participated in the timber-cut studies, collaborated in compiling the data, and prepared this report.

Acknowledgement is due the active participation of the North Central Region of the U. S. Forest Service, which conducted the forest survey of the national forest land in Missouri, the results of which have been incorporated into this report, and the Missouri Conservation Commission and the T. J. Moss Tie Company, who provided men and equipment to assist the survey in areas of their interest.

The resurvey was under the direction of Clarence D. Chase, head of the Forest Survey Unit at the Lake States Forest Experiment Station. Compilation of data was done by Burton L. Essex.

The Situation Report

The Eastern Ozark Region is rapidly approaching a new prominence as a timber-producing area. Significant improvements in most aspects of the timber resource picture have revealed a capability which heretofore has been repressed through the misuse of the land.

The present forest situation and changes which have occurred since 1947 are:

Tables and Charts

Appendix

General Characteristics

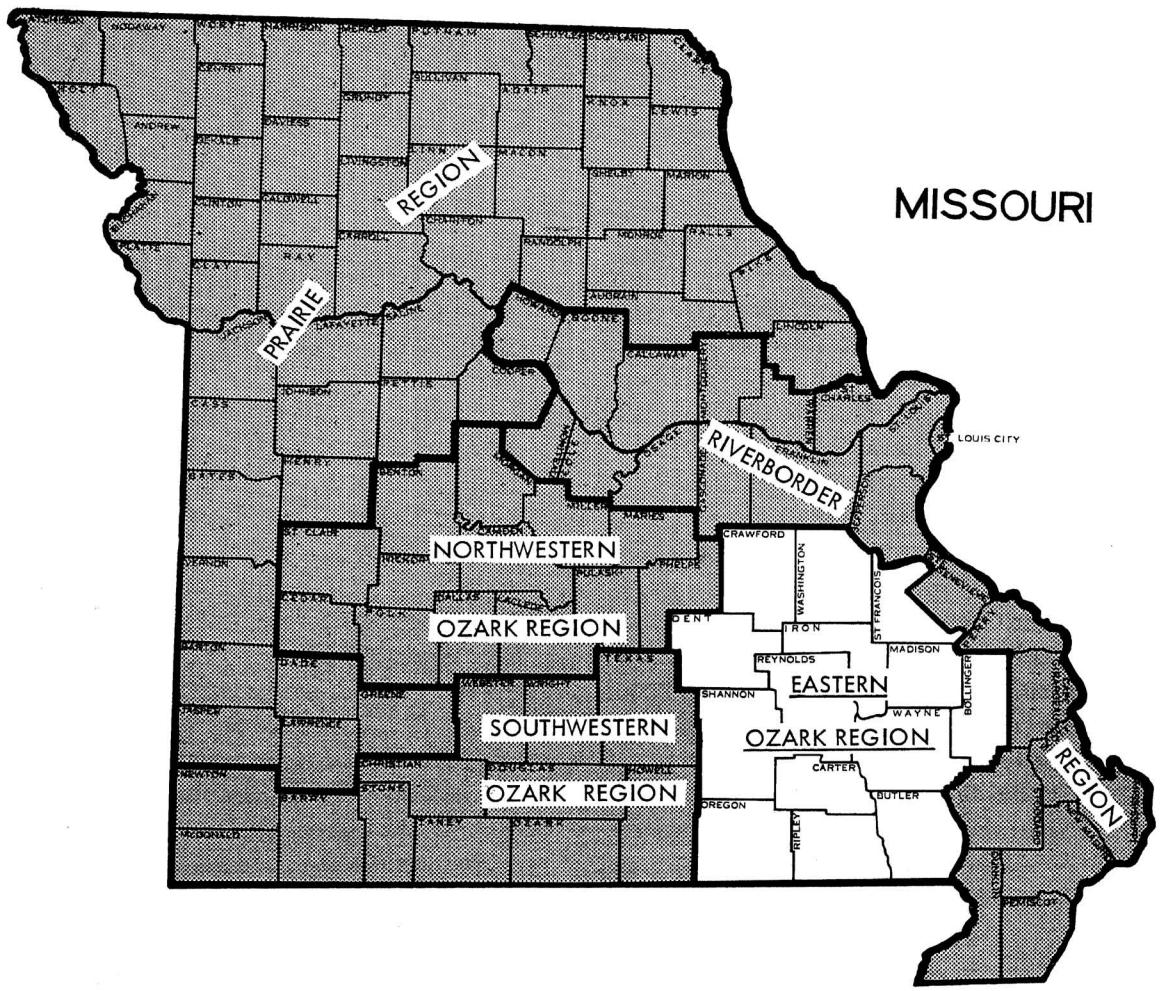


Figure 1. Location of the Eastern Ozarks in Missouri.

The Eastern Ozark Region of Missouri occupies an area of 9,610 square miles in the southeastern quarter of the State. It contains 14 of Missouri's 114 counties and is the most heavily forested section in the State (Fig. 1).

The topography of the central portion of this region is relatively rugged. What once was a smooth plateau surface has been intricately and deeply dissected into a rough, stony, hill country. The valleys are deep with rather steep grades and are rarely more than one-quarter of a mile wide. Elevations range between 1,600 feet in the north and 200 feet in the south. Except for the small area of alluvial soils in the valleys, the soils of this region are not suited for agriculture. They are stony and low in fertility and water-holding capacity. These droughty characteristics have an adverse effect on timber growth.

The north and east border portions of the region are somewhat less rugged and, though the soils are poor in comparison to those in other parts of the State, most of the agriculture of the Eastern Ozark Region is confined to these areas.

The presence of lead deposits accounted

for the first settlement of the region early in the 18th Century. However it was not until the latter part of the 19th Century with the advent of the railroads, that the value of the virgin forest was realized and logging of the timber gained importance.

Originally the Eastern Ozark Region bore a forest of shortleaf pine and hardwoods, the latter including a large amount of high-quality oak, hickory, walnut, and elm. Extensive logging from 1880 to 1920 removed virtually all of the valuable, accessible timber. These cutting operations were invariably followed by a series of fires by which the settlers attempted to keep the land open for pasture. The present stands indicate the gradual recovery of this renewable resource.

The character of the economic future of the Eastern Ozark Region is still doubtful. Except for the border region, agriculture holds no great promise. The poor quality of the soil dictates that agriculture will remain at or near the present low level, capable of supporting only a limited population. The past history of mining in the area is one of great instability. In recent years however, the low-grade iron ores that underlie this area have gained a new prominence and hold some promise for the future. Regardless of these developments, the future economic growth of the region will be closely associated with the forest resource. If properly managed, this timber will lead to the establishment of stable wood-using industries and their accompanying financial benefits.

Closely associated with the timber are the recreational, fish, and wildlife resources of the area. The continued development of these available and unique resources is essential for the local economy and the recreation needs of the urban population.

The Forest Since 1947

Almost Three-Fourths of the Land is Forested

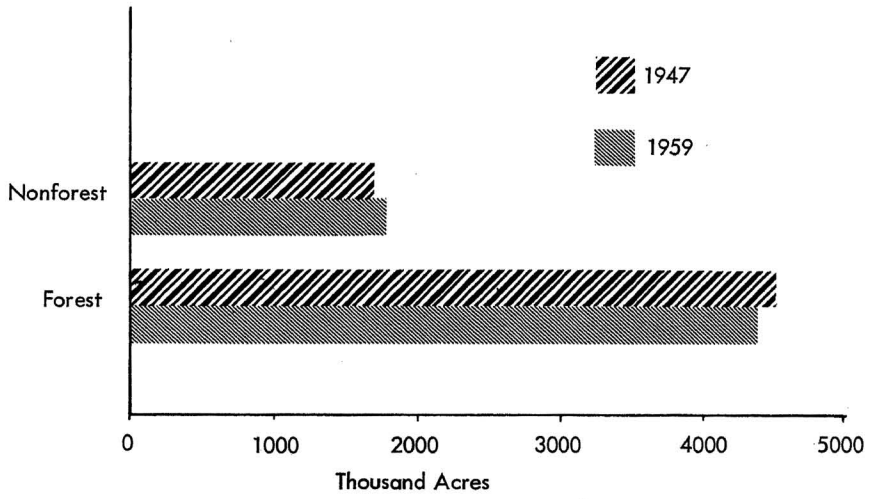


Figure 2 – Comparison of forest and nonforest land. Despite the slight decrease since 1947, forest land still constitutes over 70 percent of the land area.

Of a total land area of 6,149,800 acres, more than 70 percent is classified as forest land (Fig. 2). This preponderance of forest land is not unique to any specific group of counties in the region. Each of the 14 counties is more than half forested; and in Carter, Iron, Reynolds, Ripley, Shannon, and Wayne counties, forests occupy three-fourths or more of the land area.

However, not all of this forest land can be called commercially productive. Land with-

drawn from timber production and that incapable of producing a timber crop are classified as noncommercial forest land and occupy 60,000 acres or more than one percent of the forest land. Thus commercial forest land in this region occupies 4,332,800 acres.

A comparison[1] of the 1947-1959 data reveals that the commercial forest area has been reduced by 100,200 acres. Of this reduction, a shift to noncommercial forest land accounted for 5,000 acres or 5 percent. The major portion, 95,200 acres or 95 percent, is the net result of the conversion of forest to nonforest land.

This net figure of 95,200 acres does not indicate the total extent of the conversion between forest and nonforest land. Actually 242,000 acres were involved in the changeovers. Approximately 168,700 acres changed from forest to nonforest use, while 73,500 acres changed from nonforest to forest.

Further analysis of this change reveals the objectives of the conversion of forest to nonforest land. More than 70 percent of the converted forest land was used for grazing, 17 percent was cleared for cultivation, almost 5 percent was taken over for mining, and the remaining 8 percent was taken over for other nonforest uses.

Three-Fourths of the Commercial Forest is in Private Ownership

More than three-fourths of the commercial forest land is in private ownership (Fig. 3). Half of this private land is farmer owned, 42 percent is in miscellaneous private ownership, and 8 percent is held by forest industries.

Public ownership, including Federal, State, county, and municipal holdings amounting to more than a million acres, comprises less than one-fourth of the commercial forest land. National forest holdings constitute the bulk of this public ownership.

Since 1947, some small changes occurred in the ownership pattern of commercial forest land. Private ownership was reduced to almost 76 percent compared to 78 percent in 1947. State, county, and municipal ownership increased from 2 percent to 4 percent and Federal ownership rose from about 19 percent to slightly more than 20 percent.

Forest land ownership has influenced the development of the forest resources of the Eastern Ozark Region to a great, though incalculable, extent. It will undoubtedly have a dominant role in the future. With almost 70 percent of the commercial forest land held by farmers and miscellaneous private owners, any program of forest development must necessarily have the sanction and spirited cooperation of these two groups of owners.

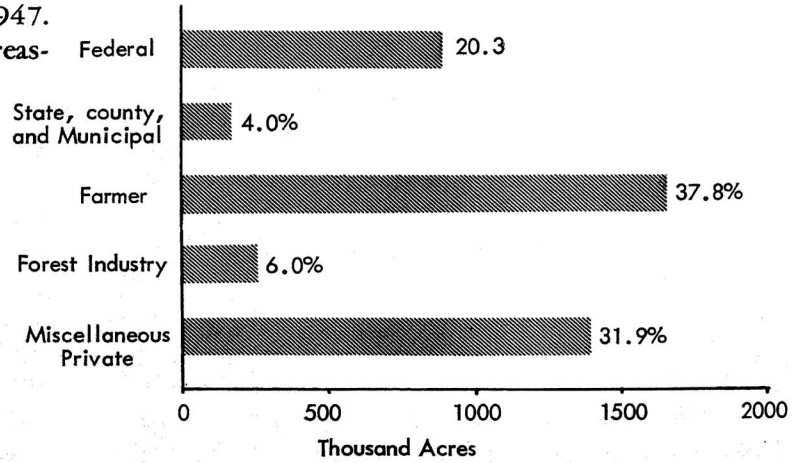


Figure 3. -- The ownership of commercial forest land, 1959. This comparison documents the importance of the farmer and the miscellaneous private owner in any consideration of the forestry problems of the Eastern Ozarks.

[1]Total land area and nonforest area of the 1959 data does not include 24,200 acres of water area which was included in the 1947 data.

Stand-Size Situation Improving

Stand-size distribution has improved significantly since the last survey, enhancing the possibility of sustained-yield forest management in the Eastern Ozarks (Fig. 4). The area of commercial forest land bearing stands of sawtimber size has almost doubled. Sawtimber now occupies approximately 1.2 million acres or 28 percent of the area (Fig. 5).

Poletimber stands were reduced by more than 300,000 acres, largely through advancement into the sawtimber class. They are still the largest stand-size class, covering some 1.7 million acres or 39 percent of the commercial forest area.

The seedling and sapling stand-size class was also reduced and now occupies approximately 1.2 million acres or 28 percent of the commercial forest land. Although this is a reasonable percentage of total forest land to be in the seedling and sapling class, more than half this acreage is rated as poorly stocked.

The area of non-stocked stands was reduced by 50,000 acres and now occupies approximately 220,000 acres or 5 percent of the commercial forest area.

The combined acreage of poorly stocked seedling and sapling and non-stocked stands amounts to 840,000 acres or almost one-fifth of the commercial forest area. If a high level of cutting is to be sustained, satisfactory stocking must be maintained in all stand-size classes. Considering the regenerative capacity of the Ozark forests, the task of obtaining satisfactory stocking should not be too difficult.

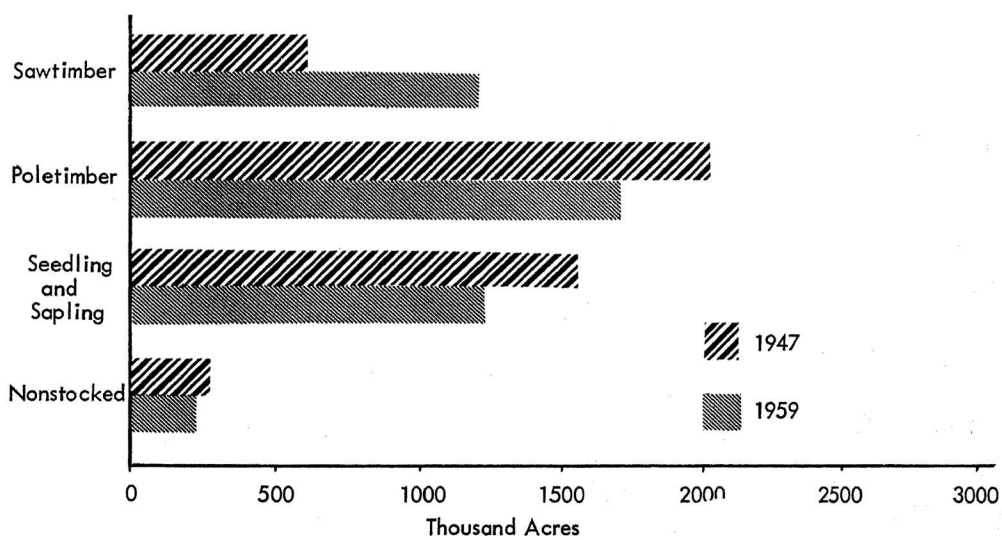


Figure 4 - Comparison of the commercial forest area by stand-size classes, 1947 and 1959 1959. The improvement in the stand-size situation is evident. Sawtimber has almost doubled while the seedling and sapling and non-stocked classes were reduced.

Pine Tree Increases

Since the 1947 survey, forest type definitions have been standardized to be directly comparable with those of other eastern regions; thus, a detailed analysis of the changes in the area occupied by the various forest types is not possible. However, on the basis of a number of broad type groups, certain changes are evident.

The area of the pine type has almost doubled, increasing by almost 120,000 acres (Figs. 7 and 8). This build-up of the pine resources is largely a result of conversion from the oak-pine type, which has decreased by almost 130,000

Fig. 5

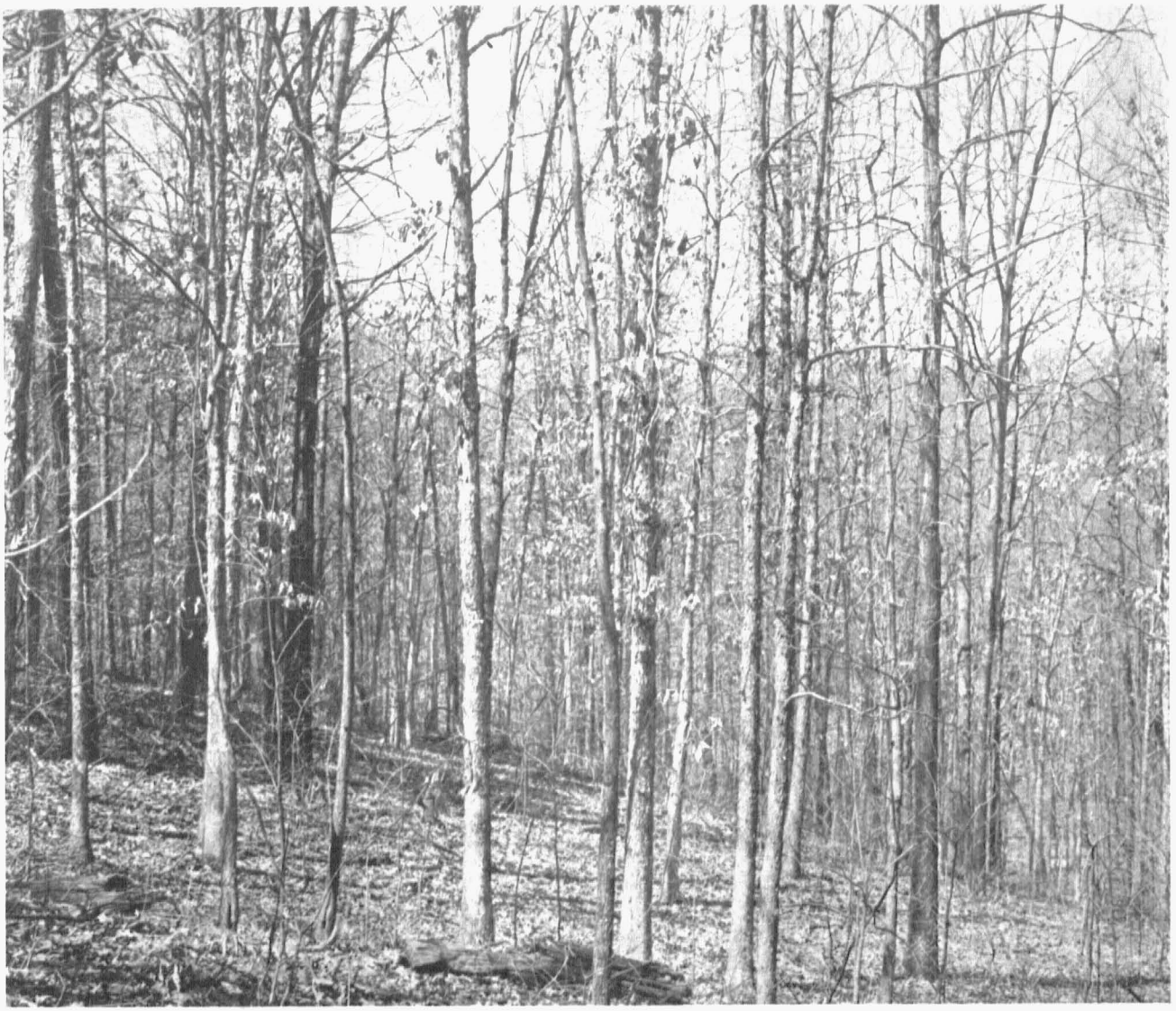


Fig. 6

Fig. 5—Sawtimber stands which originally occupied much of the timbered area were liquidated through cutting.

Fig. 6—Poletimber stands, through growth, develop into sawtimber stands which provide the raw material for lumber, flooring and similar products

Fig. 7—Young pine stands originating wherever seed trees are available are becoming of increasing importance in the states economy

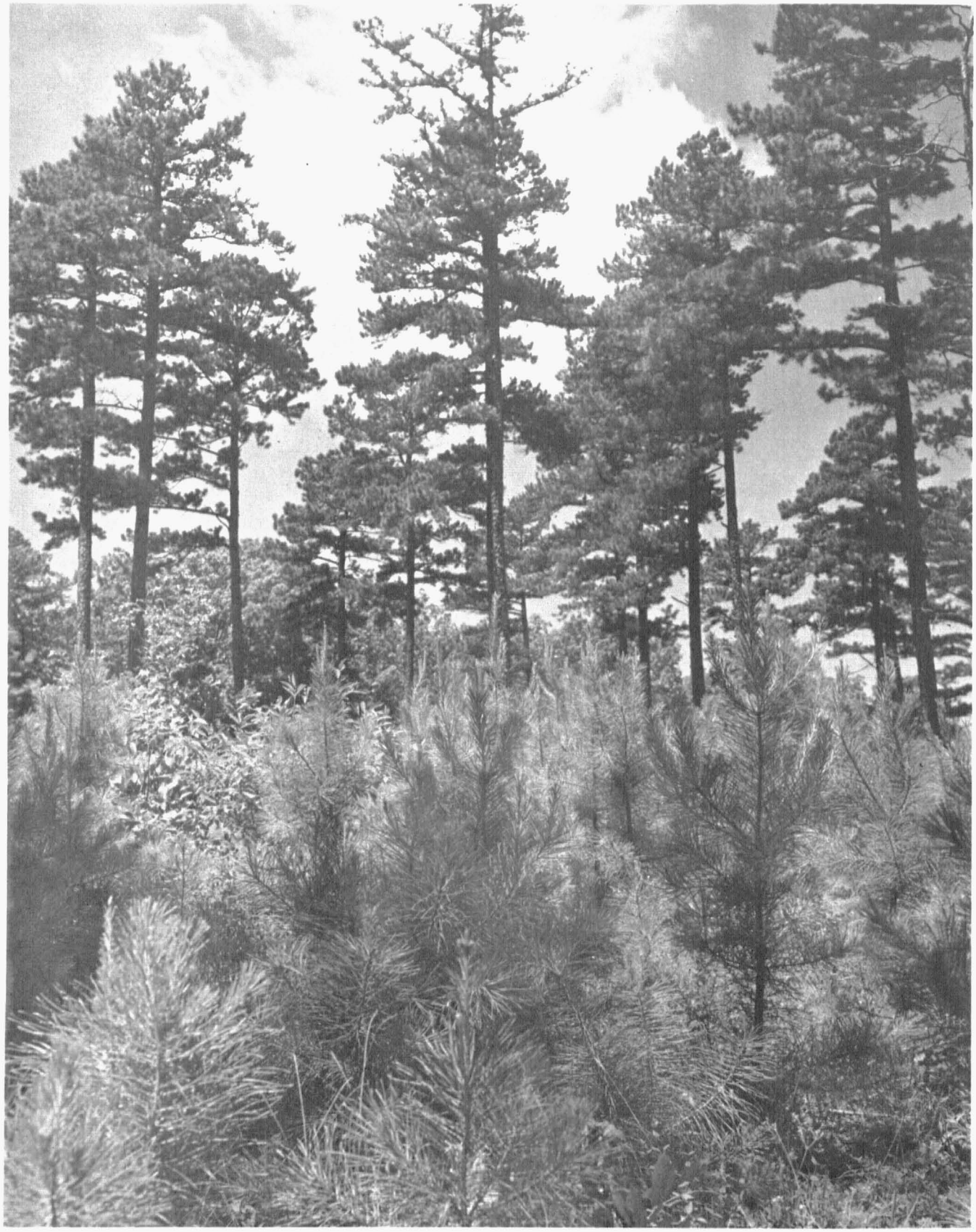


Fig. 7

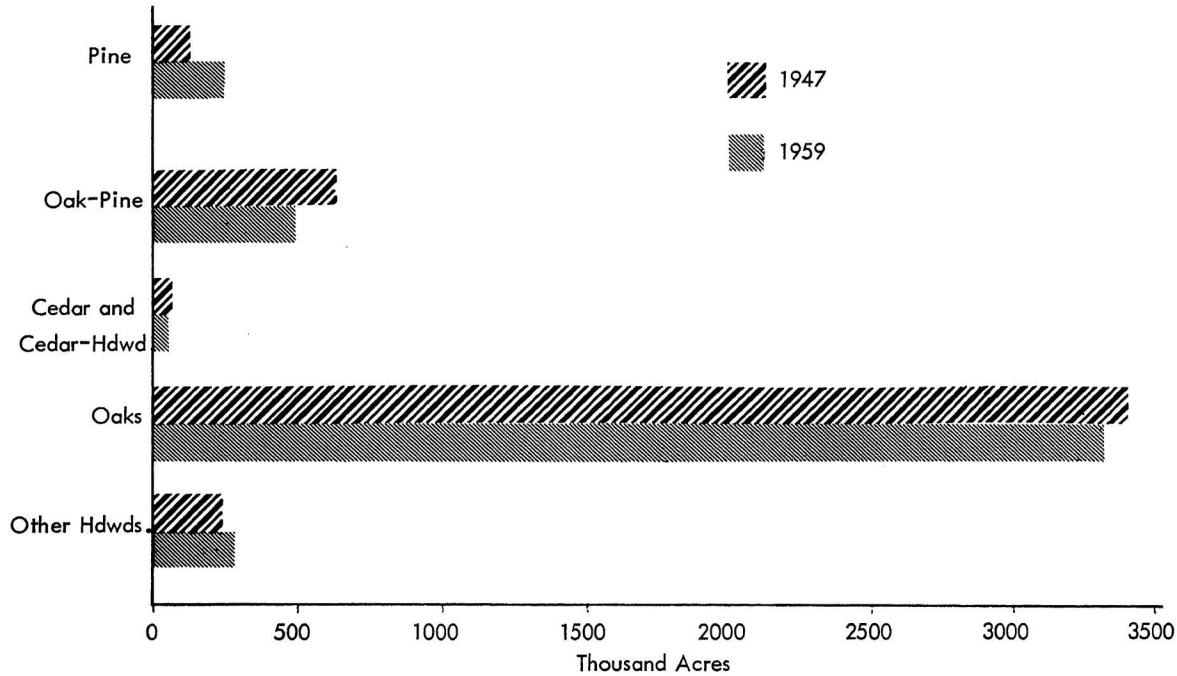


Figure 8. -- Comparison of the commercial forest area by forest type groups, 1947 and 1959. The combined oak types still cover over three-fourths of the commercial forest area.

acres or 22 percent in the period between surveys. The pine type now occupies over 5 percent of the commercial forest area while the oak-pine type occupies 11 percent.

The combined oak types, while decreasing by approximately 96,000 acres, still cover more than three-fourths of the commercial forest area. Black-scarlet oak is the most prevalent forest type in the Eastern Ozarks, occupying more than half the forest area.

Growing Stock Increases by 36 Percent

The volume of growing stock now totals 21.6 million cords. Since 1947, it has increased by 5.6 million cords; 3 percent annually (Fig. 9). This is a noteworthy increase which exceeds the statewide estimate of an annual growing-stock increase of 2 percent made in 1947 on the basis of the first Missouri survey. The important fact is that the forests of the Eastern Ozarks have a capability previously not recognized and which even today has not been definitely ascertained.

On commercial forest land, the volume of growing stock averages 5 cords or 395 cubic feet per acre, an increase of 1.4 cords or 109 cubic feet since 1947. Approximately 59 percent of the growing-stock volume is in poletimber trees and the remaining 41 percent is in trees of sawtimber size.

Almost 83 percent of the growing stock is hard hardwoods. Softwoods account for 14 percent; and soft hardwoods, which have been reduced by 18 percent since 1947, now represent only 3 percent of the total volume (Table A).

More than 33 percent of the growing stock is on farmer-owned land. Miscellaneous private land supports an additional 27 percent for a combined total of 60 percent of the growing stock. The importance of these two groups of owners in any timber management program must be recognized considering the forest area and growing stock under their jurisdiction.

National forests support 30 percent of the growing stock while the remaining 10 percent is on land of other public agencies and private forest industries.

A further analysis of the ownership/grow-

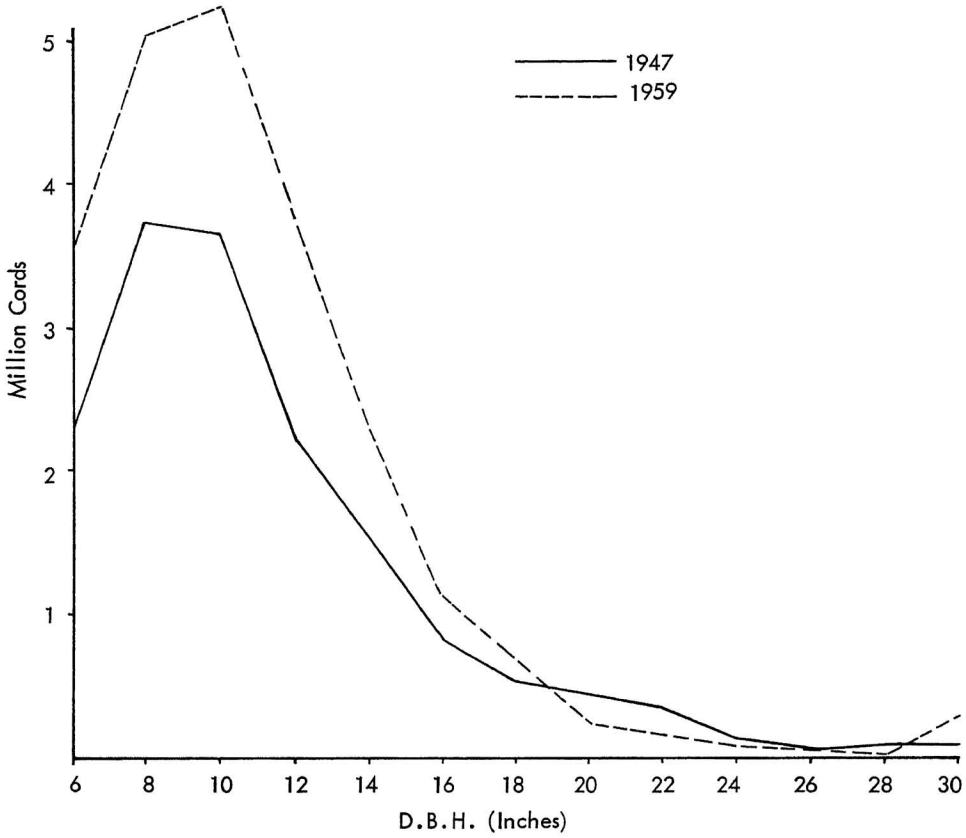


Figure 9 - Comparison of growing-stock volume by tree diameter classes, 1947 and 1959. Large gains in volume occurred in the 6 to 14-inch classes. Heavy cutting in the 20-inch class and up has reduced the volume in the larger sawtimber classes.

ing-stock relation reveals the benefits of forest management and hints at even greater capabilities of the Eastern Ozarks forests. National forest land supports an average of 7.5 cords per acre in contrast to slightly more than 4 cords for the other ownership groups. This suggests that the growing stock on private forest land could be increased greatly by forest management.

Table A. -- Comparison of the 1947 and 1959 growing stock by species groups

Species group	1947	1959	Change	
	Thousand cords	Thousand cords	Thousand cords	Percent
Softwoods	1,584.8	3,004.0	+1,419.2	+89.6
Soft hardwoods	863.3	704.4	- 158.9	-18.4
Hard hardwoods	13,453.2	17,853.1	+4,399.9	+32.7
Total	15,901.3	21,561.5	+5,660.2	+35.6

Table B. -- Comparison of the 1947 and 1959 sawtimber volume on commercial forest land by species groups

Species group	1947	1959	Change	
	Million Bd. Ft.	Million Bd. Ft.	Million Bd. Ft.	Percent
Softwoods	310.3	566.1	+255.8	+82.4
Soft hardwoods	265.3	125.7	-139.6	-52.6
Hard hardwoods	2,486.8	2,606.7	+119.9	+ 4.8
Total	3,062.4	3,298.5	+236.1	+ 7.7

Sawtimber Volume on the Increase

Sawtimber volume increased by 236 million board feet since 1947 and now totals 3.3 billion board feet, an increase of almost 8 percent since 1947 (Table B). Sawtimber volume averages about 760 board feet per acre of commercial forest land, a per-acre gain of 70 board feet or 10 percent.

Over three-fourths of the sawtimber is hard hardwoods. Softwoods and soft hardwoods account for 17 percent and 4 percent, respectively.

The distribution of the sawtimber volume among the various classes of landowners is similar to that of the growing stock. Farmer-owned land has 33 percent of the sawtimber volume and miscellaneous private land has 28 percent. National forest land and land in other ownerships have 29 and 10 percent of the sawtimber volume, respectively.

On a per-acre basis, national forest land supports an average sawtimber volume of 1,100 board feet and it is recognized that this is not the full potential. However, this is almost twice the volume found on the average acre of private land. Sawtimber volume on the commercial forest land of the various private ownership groups ranged from 660 to more than 700 board feet. Fire prevention and good forest management on private land can easily increase timber production and thus improve the economic status of the Eastern Ozarks.

Tree and Log Quality Low

In most products, quality connotes value. This is true of timber products and if the forests are to attain their proper place in the economy of the region, quality of product must be considered.

Tree quality throughout the region is low. Only 47 percent of the trees are classified as crop and storage trees; i.e., trees considered as desirable to remain in the stand for at least 10 years. The remaining 53 percent are poor-risk trees which, because of poor form or other defects, should be removed from the stand. This low percentage of crop and storage trees and the high proportion in culls and poor poles indicate the relatively poor condition of existing stands and emphasize the importance of improving timber quality through utilizing the low-quality material or applying cultural measures.

Another measure of the quality of the forests in the region is the grade of the sawlog material. Here again indications are that quality is low (Table 8). Almost 70 percent of the sawlog material in standing trees is classified as Tie and Timber grade. Another 22 percent is Grade 3 while only 8 percent is in Grades 1 and 2, the better classes. This picture is not as bleak as it appears, however. Much of the low log quality is a result of size and not necessarily cull or defect. The sawtimber volume increases since the 1947 survey were in the lower diameter classes (Fig. 9). More than two-thirds of the sawtimber volume is in the 12- and 14-inch-diameter classes, and, regardless of other characteristics, these trees are too small to yield Grade 1 logs. Therefore, it is apparent that the timber of the Eastern Ozarks can be upgraded tremendously if for the next decade or two the sawtimber in the lower diameter classes is allowed to remain in the stand. From a financial standpoint as well as good forest management, this is a sound premise. This young sawtimber has just entered the period of its most rapid growth during which it is adding quality material.

Annual Growth Increases Growing Stock by Six Percent

Annual net growth on commercial forest land in the Eastern Ozarks amounts to 1.2 million cords with more than three-fourths of the growth accumulating on pole-sized timber trees (Table 9).

This represents a 6-percent annual increase in the total growing stock before allowance for annual cutting, an average of 0.29 cords per acre or 22.9 cubic feet.

Net growth of softwoods represented almost 14 percent of the total annual net growth. Black oak and white oak produced the most growth, accounting for 19 and 18 percent of the total. Other leading species were shortleaf pine and scarlet oak. These four species combined accounted for almost 64 percent of the total annual growth.

The average annual sawtimber net growth was 318.8 million board feet representing a 9.7 percent annual increase in sawtimber, or an average increase of 73.6 board feet per acre of commercial forest land. In sawtimber stands the average increase was 98 board feet per acre, but only a third of the sawtimber growth occurred in sawtimber stands. The remainder is scattered through other stands.

Desirable Cut is Estimated at More than 750,000 Cords

The forests of the Eastern Ozark Region can sustain a cut of about 780,000 cords including 150 million board feet of sawtimber annually for the next decade while improving the forests and increasing the growing stock (Table 10). This cut amounts to approximately 63 percent of the total annual net growth and 3.6 percent of the total growing stock. It is about 49 percent of the sawtimber growth and 4.7 percent of the sawtimber volume.

Desirable cut for this region was based primarily upon determination of harvest cuts from sawtimber (and in a few cases poletimber) stands, plus improvement cuts in other stands. It is the level of cutting which should be maintained this decade, if possible. Because timber growth is now comparatively rapid (sawtimber growth more than 9 percent and total growing-stock growth 6 percent) this reasonably high cut can be maintained provided it is made from the poorer and not the best growing stock. Considerable volumes would be left to build up the growing-stock levels.

It should be recognized that there are problems associated with the overall objective of obtaining and marketing this cut. Almost 50 percent of the cut would come from poletimber-size trees. This is small material for which only limited markets exist at present. Also, the sawtimber cut may be of lower average quality than that presently being cut. The extent to which these problems are met, and the silvicultural goals of the desirable cut are achieved in the next decade, may determine the economic well-being of forestry in this region.

The Opportunity

The forest survey has measured and recorded the development of the timber resource of the Eastern Ozarks during the last 12 years. It is a record of progress for those who have worked to achieve this gain. Even more important, however, the survey has revealed deficiencies, areas in which more progress must be made if the Eastern Ozarks is to approach its full capability as a timber-producing region. This is no small task. Restocking idle land, increasing volume in present stands, removing the culls, improving quality, and attaining more complete

fire protection, are but part of the task set for the future. The opportunity for greater timber production in the Eastern Ozarks is apparent.

Although the following statistics show that the forests still bear the scars of mismanagement, they also reveal the admirable recovery of this resource and its still greater potential.

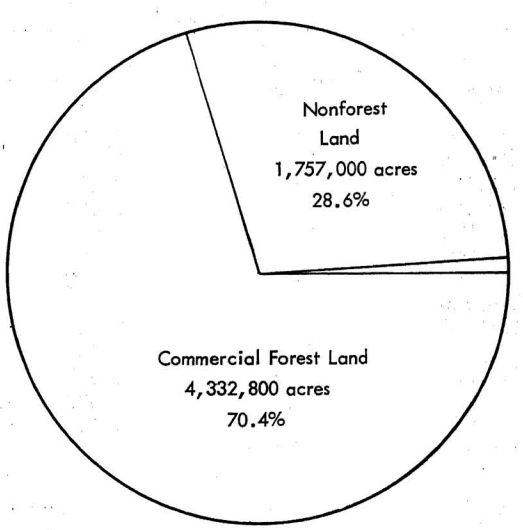
Tables and Charts

The following 69 tables and 30 charts present forest resource data for the Eastern Ozarks as well as for each of the 14 individual counties that comprise the region.

In general, tables 1 to 13 present regional data although tables 1, 11, and 12 also include a county breakdown. Individual county data are presented in a series of four tables for each county. The counties are arranged in alphabetical order. Each series of county tables is preceded by charts that were constructed from data contained in tables 1, 11, and 12.

No timber-cut data have been included in this report. This information will be presented in a supplement.

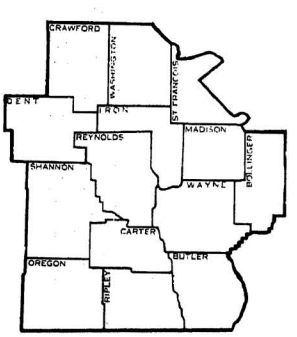
Terms are defined and limits of accuracy set forth in the Appendix, page 68.



Total Land Area - 6,149,800 acres

Noncommercial
Forest Land
60,000 acres
1.0%

Fig. 10 - Location of and area in different classes of land in Eastern Ozark Region.



EASTERN OZARK REGION

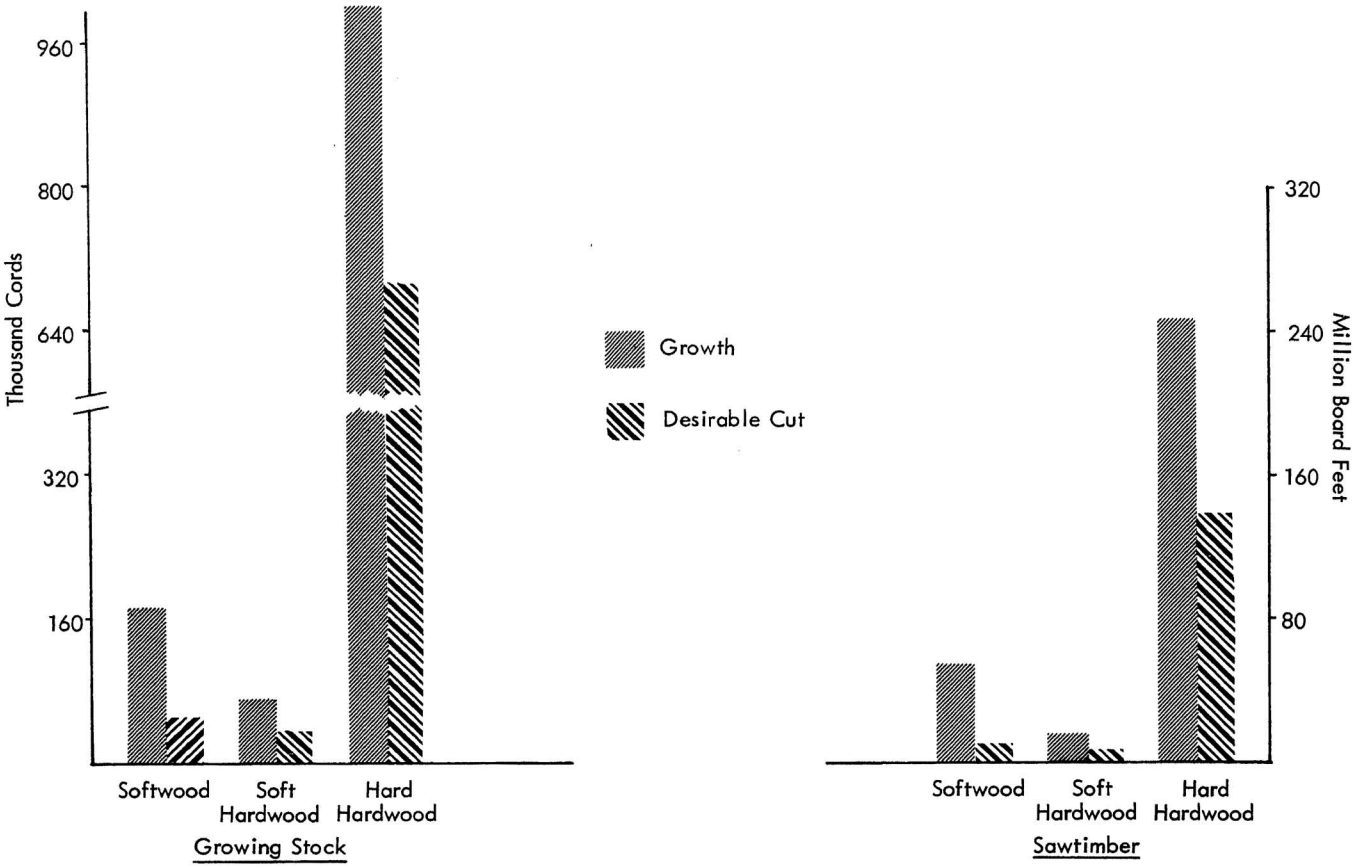


Fig. 11 - COMPARISON OF GROWTH AND DESIRABLE CUT IN EASTERN OZARK REGION

Table 1. -- Land area by counties

Eastern Ozark Region, Missouri, 1959

County	Land area 1/	Nonforest	Forest land			
			Area	Percent forest	Non-commercial	Commercial forest
	Acres	Acres	Acres	Percent	Acres	Acres
Bollinger	397,400	182,700	214,700	54.0	1,900	212,800
Butler	457,000	211,700	245,300	53.7	1,800	243,500
Carter	323,800	47,200	276,600	85.4	7,300	269,300
Crawford	486,400	161,900	324,500	66.7	2,600	321,900
Dent	483,800	157,900	325,900	67.4	2,900	323,000
Iron	354,600	75,600	279,000	78.7	1,600	277,400
Madison	317,400	87,400	230,000	72.5	4,000	226,000
Oregon	501,800	143,400	358,400	71.4	2,400	356,000
Reynolds	526,100	94,500	431,600	82.0	12,700	418,900
Ripley	409,000	102,200	306,800	75.0	1,900	304,900
St. Francois	292,500	141,000	151,500	51.8	1,500	150,000
Shannon	639,400	122,200	517,200	80.9	4,300	512,900
Washington	486,400	133,500	352,900	72.6	3,400	349,500
Wayne	474,200	95,800	378,400	79.8	11,700	366,700
All Counties	6,149,800	1,757,000	4,392,800	71.4	60,000	4,332,800

1/ From areas of the United States, 1950 Bureau of the Census.

Table 2. -- Forest land area by type and stand-size class

Eastern Ozark Region, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	238,600	104,200	89,300	18,600	14,100	12,400
Redcedar	15,500	-	8,200	1,200	6,100	-
Hardwood - redcedar	28,800	1,800	14,400	4,500	-	8,100
Oak - pine	482,400	167,800	197,300	43,400	66,800	7,100
Black - scarlet oak	2,325,300	626,300	946,400	386,500	270,500	95,600
White oak	355,300	129,000	172,400	28,800	18,700	6,400
Post - blackjack oak	604,600	67,700	189,500	89,000	202,600	55,800
Oak - gum - cypress	113,500	54,300	21,900	6,400	3,000	27,900
Elm - ash - cottonwood	126,800	34,100	33,000	14,200	39,600	5,900
Maple - beech	42,000	10,500	26,900	4,600	-	-
All commercial forest	4,332,800	1,195,700	1,699,300	597,200	621,400	219,200
Percent by size-class	100.0	27.6	39.2	13.8	14.3	5.1
Noncommercial forest						
Productive-reserved	26,500	4,600	9,600	3,800	6,400	2,100
Unproductive forest	33,500	-	-	-	-	33,500
All forest area	4,392,800	1,200,300	1,708,900	601,000	627,800	254.800

Table 3. -- Commercial forest land by ownership and stand-size class

Eastern Ozark Region, Missouri, 1959

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	874,600	359,100	377,000	60,700	32,900	44,900
Other Federal	6,000	1,700	2,300	800	900	300
State, county, & municipal	173,100	54,500	71,100	11,400	27,400	8,700
Farmer - owned	1,635,900	383,100	667,100	229,000	279,900	76,800
Forest industry	260,900	70,300	80,300	55,200	45,100	10,000
Miscellaneous private	1,382,300	327,000	501,500	240,100	235,200	78,500
All ownerships	4,332,800	1,195,700	1,699,300	597,200	621,400	219,200

Table 4. -- Net timber volume by ownership and species group

Eastern Ozark Region, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	6,550.2	1,725.0	74.3	4,750.9	964.6	344.2	10.1	610.3
Other Federal	27.5	2.4	1.4	23.7	4.4	.4	.3	3.7
State, country, & municipal	842.4	73.1	36.5	732.8	136.6	12.9	6.9	116.8
Farmer - owned	7,185.3	609.4	294.3	6,281.6	1,094.7	103.6	53.3	937.8
Forest industry	1,110.9	95.9	54.1	960.9	184.1	17.6	9.9	156.6
Miscellaneous private	5,845.2	498.2	243.8	5,103.2	914.1	87.4	45.2	781.5
All ownerships	21,561.5	3,004.0	704.4	17,853.1	3,298.5	566.1	125.7	2,606.7

Table 5. -- Net timber volume on commercial forest land by species and kind of material

Eastern Ozark Region, Missouri, 1959

Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	2,923.0	1,233.9	1,689.1	551.6	352.1	141.0	58.5	9.0	-
Cypress	31.0	-	31.0	12.9	12.9	-	-	1.2	-
Redcedar	50.0	43.5	6.5	1.6	.3	.6	.7	83.1	-
All softwoods	3,004.0	1,277.4	1,726.6	566.1	365.3	141.6	59.2	93.3	-
Hard Hardwoods									
Oak, white	3,817.6	2,220.9	1,596.7	576.5	317.4	115.2	143.9	508.6	1,150.3
Oak, post	2,268.6	1,401.1	867.5	321.7	171.3	43.7	106.7	458.2	660.7
Oak, other white	146.6	95.7	50.9	20.0	16.2	2.0	1.8	29.2	38.3
Oak, black	5,022.7	3,214.1	1,808.6	708.4	413.6	110.9	183.9	559.3	1,387.5
Oak, scarlet	2,554.0	1,589.1	964.9	389.1	249.9	65.2	74.0	226.2	774.3
Oak, northern red	765.8	405.4	360.4	135.8	73.4	31.0	31.4	127.8	254.6
Oak, other red	816.7	511.9	304.8	117.5	68.1	14.6	34.8	297.1	227.6
Hickory, Group A	956.4	651.3	305.1	125.1	82.5	14.1	28.5	117.2	242.0
Hickory, Group B	950.7	671.7	279.0	116.0	47.8	16.5	51.7	161.7	222.5
Maple, hard	172.7	88.6	84.1	38.3	23.7	7.0	7.6	49.1	64.1
Birch	16.8	12.6	4.2	.9	-	.9	-	2.6	1.9
Walnut, black	96.2	82.6	13.6	5.5	2.3	1.3	1.9	13.0	10.7
Ash	99.0	59.0	40.0	14.5	11.0	1.1	2.4	30.0	27.8
Other hard hardwoods	169.3	80.0	89.3	37.4	37.3	.1	-	51.9	62.7
All hard hardwoods	17,853.1	11,084.0	6,769.1	2,606.7	1,514.5	423.6	668.6	2,631.9	5,125.0

Soft Hardwoods									
Elm	302.3	195.5	106.8	42.5	22.7	3.3	16.5	68.6	81.5
Maple, soft	25.6	11.5	14.1	6.3	4.2	2.1	-	23.3	10.4
Sweetgum	150.7	97.5	53.2	21.5	11.1	5.4	5.0	21.3	39.6
Blackgum	118.1	44.5	73.6	24.2	15.7	2.4	6.1	73.8	43.8
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	17.9	5.8	12.1	5.0	2.0	1.2	1.8	.5	8.8
Sycamore	89.8	25.8	64.0	26.2	20.2	2.5	3.5	20.5	49.4
All soft hardwoods	704.4	380.6	323.8	125.7	75.9	16.9	32.9	208.0	233.5
All hardwoods	18,557.5	11,464.6	7,092.9	2,732.4	1,590.4	440.5	701.5	2,839.9	5,358.5
All Species	21,561.5	12,742.0	8,819.5	3,298.5	1,955.7	582.1	760.7	2,933.2	5,358.5

* Less than 1/2 of 1 significant unit.

Table 6. -- Percent of trees by species and tree quality class

Eastern Ozark Region 1/, Missouri, 1959

(Percent)

Species	Total	Tree class					
		Crop	Storage	Harvest	Poor pole	Sound cull	Rotten cull
Softwoods							
Pine, shortleaf	100	23	72	2	3	-	-
Cypress	100	-	65	31	-	-	4
Redcedar	100	-	22	22	33	16	7
All softwoods	100	23	70	2	4	1	-
Hardwoods							
Oak, white	100	2	53	13	16	6	10
Oak, post	100	-	44	13	19	7	17
Oak, other white	100	-	51	10	17	10	12
Oak, black	100	2	52	13	16	2	15
Oak, scarlet	100	1	53	14	12	3	17
Oak, northern red	100	1	38	19	16	4	22
Oak, other red	100	-	14	12	29	15	30
Hickory, Group A	100	-	40	14	21	7	18
Hickory, Group B	100	-	34	15	25	9	17
Maple, hard	100	-	20	21	23	19	17
Birch	100	-	73	8	-	19	-
Walnut, black	100	-	32	7	40	9	12
Ash	100	-	25	14	27	19	15
Elm	100	-	33	18	26	14	9
Maple, soft	100	-	3	6	46	12	33
Sweetgum	100	1	43	14	21	6	15
Blackgum	100	-	24	9	19	7	41
Cottonwood	100	-	14	21	-	65	-
Sycamore	100	-	53	3	33	5	6
Other Hardwoods	100	-	11	8	27	20	34
All hardwoods	100	1	43	13	19	7	17
All species	100	2	45	13	18	6	16

1/ Sample does not include national forest land.

Table 7. -- Distribution of growing-stock volume by species and diameter classes

Eastern Ozark Region, Missouri, 1959

Species	Growing stock by inch diameter classes (Thousand cords)					Sawtimber by inch diameter classes (Million Board Feet)						
	Total	6	8	10	12+	Total	10	12-14	16-18	20-22	24-28	30+
Softwoods												
Pine, shortleaf	2,923.0	479.9	754.0	1,042.1	647.0	551.6	259.7	252.5	34.3	5.1	-	-
Cypress	31.0	-	-	2.9	28.1	12.9	.7	1.2	3.0	5.4	2.6	-
Redcedar	50.0	26.1	17.4	6.5	-	1.6	1.6	-	-	-	-	-
All softwoods	3,004.0	506.0	771.4	1,051.5	675.1	566.1	262.0	253.7	37.3	10.5	2.6	-
Hard Hardwoods												
Oak, white	3,817.6	620.1	845.2	755.6	1,596.7	576.5	-	438.1	109.5	21.1	5.5	2.3
Oak, post	2,268.6	439.8	473.0	488.3	867.5	321.7	-	264.6	44.9	12.2	-	-
Oak, other white	146.6	21.6	34.0	40.1	50.9	20.0	-	12.6	6.2	*	1.2	-
Oak, black	5,022.7	766.0	1,192.5	1,255.6	1,808.6	708.4	-	495.8	162.8	39.9	7.2	2.7
Oak, scarlet	2,554.0	324.5	594.9	669.7	964.9	389.1	-	294.3	85.5	6.5	2.6	.2
Oak, northern red	765.8	79.9	154.9	170.6	360.4	135.8	-	83.1	32.2	15.9	3.5	1.1
Oak, other red	816.7	166.1	202.3	143.5	304.8	117.5	-	74.6	36.8	5.0	1.1	-
Hickory, Group A	956.4	193.5	262.5	195.3	305.1	125.1	-	84.1	32.6	3.4	5.0	-
Hickory, Group B	950.7	220.1	257.7	193.9	279.0	116.0	-	73.4	35.6	3.3	-	3.7
Maple, hard	172.7	20.8	23.8	44.0	84.1	38.3	-	8.9	15.6	11.6	2.2	-
Birch	16.8	.2	6.2	6.2	4.2	.9	-	.9	-	-	-	-
Walnut, black	96.2	20.3	25.5	36.8	13.6	5.5	-	2.9	1.8	.8	-	-
Ash	99.0	15.8	23.6	19.5	40.1	14.5	-	9.3	3.0	2.2	-	-
Other hard hardwoods	169.3	24.2	33.0	22.8	89.3	37.4	-	14.5	20.7	*	2.2	-
All hard hardwoods	17,853.1	2,912.9	4,129.1	4,041.9	6,769.2	2,606.7	-	1,857.1	587.2	121.9	30.5	10.0
Soft Hardwoods												
Elm	302.3	52.1	69.5	73.9	106.8	42.5	-	23.8	15.5	3.2	-	-
Maple, soft	25.6	7.2	1.9	2.5	14.0	6.3	-	1.2	3.1	-	2.0	-
Sweetgum	150.7	32.4	23.4	41.7	53.2	21.5	-	10.8	7.1	.2	3.4	-
Blackgum	118.1	14.7	17.6	12.2	73.6	24.2	-	10.5	10.6	3.1	-	-
Yellow-poplar	-	-	-	-	-	-	-	-	-	-	-	-
Cottonwood	17.9	-	-	5.8	12.1	5.0	-	3.0	.2	1.8	-	-
Sycamore	89.8	8.2	11.3	6.3	64.0	26.2	-	9.8	11.9	.1	3.0	1.4
All soft hardwoods	704.4	114.6	123.7	142.4	323.7	125.7	-	59.1	48.4	8.4	8.4	1.4
All hardwoods	18,557.5	3,027.5	4,252.8	4,184.3	7,092.9	2,732.4	-	1,916.2	635.6	130.3	38.9	11.4
All Species	21,561.5	3,533.5	5,024.2	5,235.8	7,768.0	3,298.5	262.0	2,169.9	672.9	140.8	41.5	11.4
Percent	100.0	16.4	23.3	24.3	36.0	100.0	7.9	65.8	20.4	4.3	1.3	.3

* Less than 1/2 of 1 significant unit.

Table 8. -- Quality of sawlog material by species group and log grade

Eastern Ozark Region, Missouri, 1959

Species Group	Log Grade (Percent)					Number of trees graded
	Total	1	2	3	Tie and timber	
Pine	100.0	14.8	28.8	49.9	6.5	40
Oak, white	100.0	.5	7.0	28.6	63.9	77
Oak, post	100.0	-	15.7	8.2	76.1	33
Oak, black	100.0	1.5	2.7	20.8	75.0	88
Oak, scarlet	100.0	-	4.8	20.2	75.0	39
Oak, red	100.0	11.8	8.7	17.0	62.5	27
Hickory	100.0	-	6.2	24.0	69.8	43
Other hardwoods	100.0	1.1	10.3	15.3	73.3	38
All groups	100.0	1.5	6.8	22.6	69.1	385

Table 9. -- Periodic annual net growth on commercial forest land by species and kind of material

Eastern Ozark Region, Missouri, 1959

Species group	Growing Stock (Thousand Cords)				Sawtimber (Million Board Feet)				
	Total	Ingrowth	Growth on: Poletimber trees	Growth on: Sawtimber trees	Total	In sawtimber stands: Ingrowth	In sawtimber stands: Growth	In other stands: Ingrowth	In other stands: Growth
Softwoods									
Pine, shortleaf	165.1	24.1	74.8	66.2	55.1	8.9	18.4	15.5	12.3
Cypress	.3	-	-	.3	.2	-	.2	-	-
Redcedar	3.8	1.4	2.0	.4	.4	*	*	.4	*
All softwoods	169.2	25.5	76.8	66.9	55.7	8.9	18.6	15.9	12.3
Hard Hardwoods									
Oak, white	227.9	53.1	124.5	50.3	54.0	6.3	10.7	24.1	12.9
Oak, post	100.2	18.4	61.0	20.8	24.1	3.5	4.1	11.6	4.9
Oak, other white	8.7	.3	6.7	1.7	2.9	.5	.3	1.9	.2
Oak, black	236.3	25.8	155.5	55.0	68.6	13.5	11.1	32.2	11.8
Oak, scarlet	160.5	42.4	85.5	32.6	46.5	7.4	7.5	28.0	3.6
Oak, northern red	37.5	6.1	21.0	10.4	11.0	.8	1.8	5.6	2.8
Oak, other red	63.7	17.3	36.6	9.8	9.4	2.0	1.8	4.0	1.6
Hickory, Group A	37.5	5.5	22.5	9.5	8.9	1.0	3.0	3.2	1.7
Hickory, Group B	70.5	21.9	40.1	8.5	11.5	.6	1.2	6.3	3.4
Maple, hard	10.6	2.8	5.5	2.3	3.3	-	.3	2.3	.7
Birch	1.0	-	.8	.2	.4	-	-	.2	.2
Walnut, Black	18.8	7.5	10.1	1.2	3.3	1.5	.2	1.3	.3
Ash	6.2	1.9	3.1	1.2	.9	.3	.5	-	.1
Other hard hardwoods	22.0	11.8	7.7	2.5	2.6	1.4	1.2	-	*
All hard hardwoods	1,001.4	214.8	580.6	206.0	247.4	38.8	43.7	120.7	44.2
Soft Hardwoods									
Elm	38.5	12.0	21.5	5.0	9.0	2.4	.9	4.6	1.1
Maple, soft	3.9	2.1	1.3	.5	.3	-	.2	-	.1
Sweetgum	13.5	4.3	6.7	2.5	3.5	1.7	.6	.8	.4
Blackgum	10.4	3.0	2.9	4.5	2.3	.4	1.6	-	.3
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.9	.6	-	.3	.1	*	*	-	.1
Sycamore	3.6	1.4	1.4	.8	.5	-	.2	-	.3
All soft hardwoods	70.8	23.4	33.8	13.6	15.7	4.5	3.5	5.4	2.3
All hardwoods	1,072.2	238.2	614.4	219.6	263.1	43.3	47.2	126.1	46.5
All Species	1,241.4	263.7	691.2	286.5	318.8	52.2	65.8	142.0	58.8

* Less than 1/2 of 1 significant unit.

Table 10. -- Annual net desirable cut on commercial forest land by species and kind of material

Eastern Ozark Region, Missouri, 1959

Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)			Cull trees and hardwood limbs
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands	Thousand cords
Softwoods							
Pine, shortleaf	48.7	19.4	29.3	9.6	8.1	1.5	.4
Cypress	1.4	-	1.4	.6	.6	-	.1
Redcedar	1.6	1.6	*	*	-	-	4.2
All softwoods	51.7	21.0	30.7	10.2	8.7	1.5	4.7
Hard Hardwoods							
Oak, white	124.8	50.8	74.0	26.7	20.9	5.8	78.7
Oak, post	106.2	58.3	47.9	17.8	11.8	6.0	59.5
Oak, other white	4.9	3.3	1.6	.6	.4	.2	2.6
Oak, black	173.9	80.3	93.6	36.7	30.1	6.6	99.9
Oak, scarlet	87.2	37.4	49.8	20.1	14.3	5.8	51.3
Oak, northern red	32.0	12.4	19.6	7.4	5.7	1.7	20.3
Oak, other red	33.5	22.9	10.6	4.1	3.5	.6	22.8

Table 10. -- Annual net desirable cut on commercial forest land by species and kind of material

Eastern Ozark Region, Missouri, 1959

Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)			Cull trees and hardwood limbs
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands	Thousand cords
Hickory, Group A	52.2	27.1	25.1	10.3	7.6	2.7	25.8
Hickory, Group B	45.8	24.4	21.4	8.9	4.9	4.0	25.2
Maple, hard	10.9	4.2	6.7	3.1	2.0	1.1	7.6
Birch	.5	.2	.3	*	-	*	.1
Walnut, black	4.5	3.6	.9	.4	.3	.1	1.3
Ash	8.3	6.1	2.2	.8	.7	.1	3.0
Other hard hardwoods	9.1	4.2	4.9	2.1	2.1	-	6.1
All hard hardwoods	693.8	335.2	358.6	139.0	104.3	34.7	404.2
Soft Hardwoods							
Elm	17.3	10.7	6.6	2.6	1.6	1.0	8.4
Maple, soft	1.0	.6	.4	.2	.2	*	1.5
Sweetgum	6.4	3.7	2.7	1.1	.8	.3	3.1
Blackgum	7.8	2.7	5.1	1.7	1.3	.4	6.8
Yellow-poplar	-	-	-	-	-	-	-
Cottonwood	.4	.2	.2	.1	.1	*	.2
Sycamore	4.2	.7	3.5	1.4	1.4	*	3.6
All soft hardwoods	37.1	18.6	18.5	7.1	5.4	1.7	23.6
All hardwoods	730.9	353.8	377.1	146.1	109.7	36.4	427.8
All Species	782.6	374.8	407.8	156.3	118.4	37.9	432.5

* Less than 1/2 of 1 significant unit.

Table 11. -- Periodic annual net growth on commercial forest land by county and species group

Eastern Ozark Region, Missouri, 1959

County	Growing Stock (Thousand Cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Bollinger	51.3	3.9	4.5	42.9	13.4	1.2	1.1	11.1
Butler	75.0	8.6	13.3	53.1	21.6	3.2	3.0	15.4
Carter	88.3	16.6	3.2	68.5	24.9	6.0	.7	18.2
Crawford	85.5	6.8	6.2	72.5	21.0	2.1	1.6	17.3
Dent	87.4	10.2	4.2	73.0	20.8	2.9	.9	17.0
Iron	80.8	11.6	3.0	66.2	17.7	3.2	.6	13.9
Madison	59.7	8.2	2.6	48.9	14.3	2.5	.5	11.3
Oregon	106.3	16.3	4.6	85.4	29.7	6.1	1.0	22.6
Reynolds	124.6	16.0	5.6	103.0	29.9	4.4	1.2	24.3
Ripley	94.7	15.1	5.8	73.8	26.5	5.7	1.3	19.5
St. Francois	37.0	2.8	1.8	32.4	9.4	.9	.3	8.2
Shannon	143.9	19.7	5.6	118.6	37.8	6.8	1.1	29.9
Washington	97.4	14.8	4.4	78.2	22.5	4.0	.9	17.6
Wayne	109.5	18.6	6.0	84.9	29.3	6.7	1.5	21.1
All Counties	1,241.4	169.2	70.8	1,001.4	318.8	55.7	15.7	247.4

Table 12. -- Annual net desirable cut on commercial forest land by county and species group

Eastern Ozark Region, Missouri, 1959

County	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)				Cull trees and hardwood limbs
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods	Thousand cords
Bollinger	33.4	1.2	2.4	29.8	6.9	.2	.5	6.2	19.5
Butler	46.4	2.6	7.0	36.8	10.5	.6	1.3	8.6	31.3
Carter	54.3	5.1	1.7	47.5	11.6	1.1	.3	10.2	29.3
Crawford	55.5	2.1	3.2	50.2	10.8	.4	.7	9.7	30.6
Dent	55.8	3.1	2.2	50.5	10.5	.5	.4	9.6	31.9
Iron	50.9	3.5	1.5	45.9	8.7	.6	.3	7.8	25.8
Madison	37.8	2.5	1.4	33.9	7.1	.5	.2	6.4	20.5
Oregon	66.6	5.0	2.4	59.2	14.3	1.1	.5	12.7	37.1
Reynolds	79.1	4.9	2.9	71.3	14.9	.8	.5	13.6	41.6
Ripley	58.7	4.6	3.0	51.1	12.6	1.0	.6	11.0	32.5
St. Francois	24.3	.8	1.0	22.5	5.0	.2	.2	4.6	13.9
Shannon	91.3	6.1	3.0	82.2	18.6	1.3	.5	16.8	50.2
Washington	60.9	4.5	2.3	54.1	11.0	.7	.4	9.9	31.9
Wayne	67.6	5.7	3.1	58.8	13.8	1.2	.7	11.9	36.4
All Counties	782.6	51.7	37.1	693.8	156.3	10.2	7.1	139.0	432.5

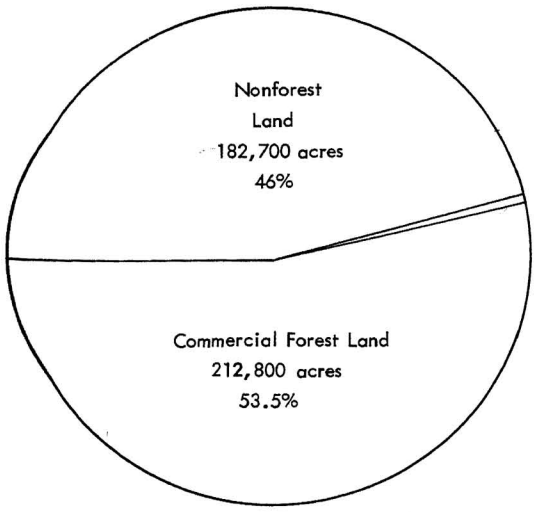
Table 13. -- Regeneration situation on commercial forest land by type and stocking class

Eastern Ozark Region, Missouri, 1959

(Acres)

Forest type	Total	Restocking satisfactorily			Restocking unsatisfactorily		
		Restocking naturally to pine	Restocking naturally to redcedar	Stocked with hardwoods	Hand planting to pine recommended	Unfavorable planting chance	Conflicting uses
Pine	238,600	238,600					
Redcedar	15,500	5,100	10,400				
Hardwood - red cedar	28,800	27,300	600	900			
Oak - pine	482,400	67,500	4,800	390,800	4,800	4,800	9,700
Black - scarlet oak	2,325,300	116,300	46,500	2,023,000			139,500
White oak	355,300	32,000	10,600	298,500			14,200
Post - blackjack oak	(604,600) 1/						
Oak - gum - cypress	113,500	3,400		110,100			
Elm - ash - cottonwood	126,800		16,500	97,600			12,700
Maple - beech	42,000		23,500	18,500			
All types	3,728,200	490,200	112,900	2,939,400	4,800	4,800	176,100

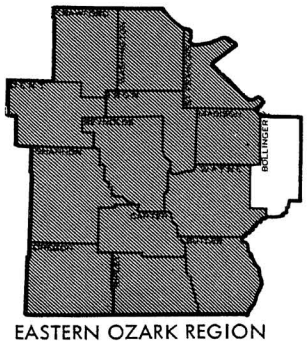
1/ Distribution not shown because it was based on insufficient plots.



Noncommercial
Forest Land
1,900 acres
0.5%

Total Land Area - 397,400 acres

Fig. 12 - Location of and area in different classes of land in Bollinger County.



EASTERN OZARK REGION

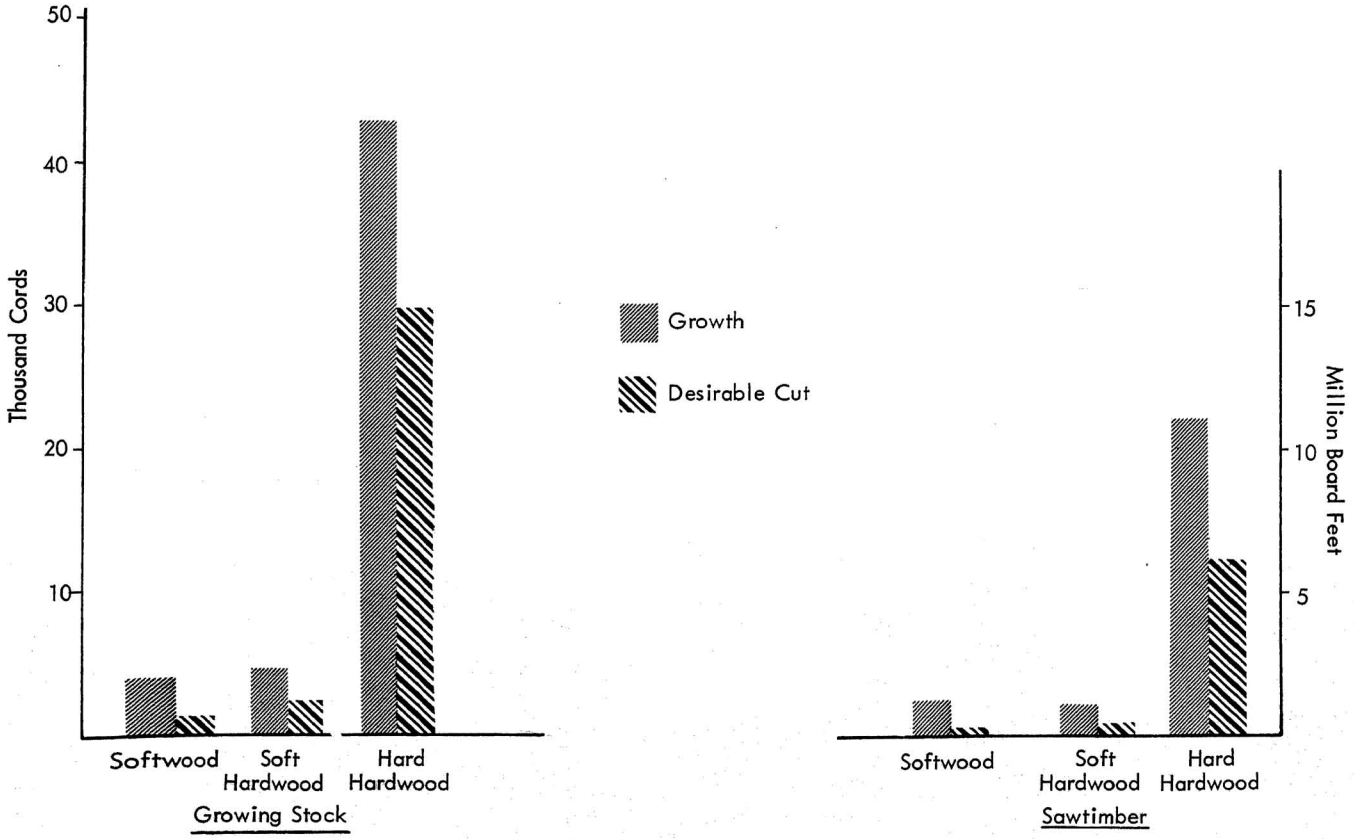


Fig. 13 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR BOLLINGER COUNTY

Table 14. -- Commercial forest land by ownership and stand-size class

Bollinger County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	1,400	300	500	400	100	100
Other Federal	--	--	--	--	--	--
State, county, & municipal	300	100	100	*	100	*
Farmer-owned	126,000	28,100	47,500	17,600	27,400	5,400
Forest industry and miscellaneous private	85,100	19,500	27,700	15,300	18,500	4,100
All ownerships	212,800	48,000	75,800	33,300	46,100	9,600

* Less than 1/2 of 1 significant unit.

Table 15. -- Forest land area by type and stand-size class

Bollinger County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	5,500	1,900	2,000	300	900	400
Redcedar	700	-	500	-	200	-
Hardwood - redcedar	2,200	-	1,900	-	-	300
Oak - pine	13,100	3,200	4,400	1,800	3,500	200
Black - scarlet oak	105,900	24,800	41,900	20,900	14,600	3,700
White oak	21,700	6,100	10,100	2,900	2,300	300
Post - blackjack oak	39,300	4,600	8,900	5,800	17,200	2,800
Oak - gum - cypress	6,900	4,400	400	400	200	1,500
Elm - ash - cottonwood	12,300	2,200	1,500	1,000	7,200	400
Maple - beech	5,200	800	4,200	200	-	-
All commercial forest	212,800	48,000	75,800	33,300	46,100	9,600
Percent by size-class	100.0	22.6	35.6	15.6	21.7	4.5
Noncommercial forest						
Productive-reserved	-	-	-	-	-	-
Unproductive forest	1,900	-	-	-	-	1,900
All forest area	214,700	48,000	75,800	33,300	46,100	11,500

Table 16. -- Net timber volume on commercial forest land by species and kind of material

Bollinger County, Missouri, 1959

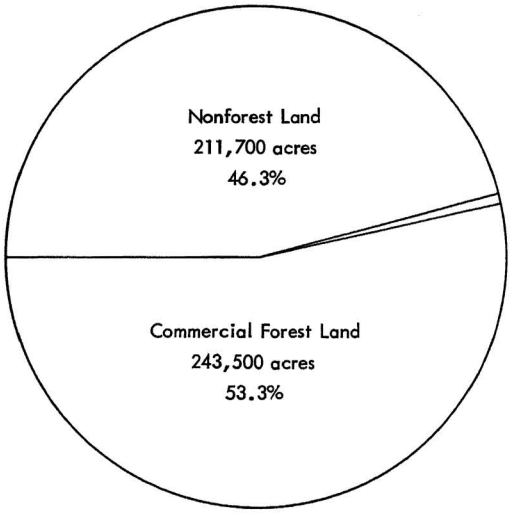
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	60.4	27.3	33.1	11.0	6.2	1.6	3.2	.3	-
Cypress	3.8	-	3.8	1.6	1.6	-	-	-	-
Redcedar	5.6	5.1	.5	.1	.1	-	*	.1	-
All softwoods	69.8	32.4	37.4	12.7	7.9	1.6	3.2	.4	-
Hard Hardwoods									
Oak, white	167.5	98.8	68.7	24.8	14.4	2.2	8.2	21.4	49.5
Oak, post	104.5	64.6	39.9	14.9	8.3	.4	6.2	23.1	30.4
Oak, other white	7.5	4.2	3.3	1.3	1.1	.1	.1	1.0	2.4
Oak, black	202.5	124.7	77.8	30.5	19.0	1.1	10.4	24.7	59.7
Oak, scarlet	79.6	47.1	32.5	13.1	9.0	.1	4.0	10.1	26.1
Oak, northern red	29.9	13.6	16.3	6.1	3.8	.6	1.7	5.1	11.5
Oak, other red	42.9	27.5	15.4	5.8	3.2	.6	2.0	17.3	11.2
Hickory, Group A	43.6	28.4	15.2	6.4	4.1	.7	1.6	5.2	12.3
Hickory, Group B	45.3	29.9	15.4	6.4	2.3	.4	3.7	8.4	12.3
Maple, hard	15.5	8.3	7.2	3.4	1.6	1.2	.6	3.7	5.7
Birch	1.7	1.5	.2	*	-	*	-	.3	.1
Walnut, black	5.3	4.8	.5	.2	*	.1	.1	.8	.4
Ash	7.6	4.7	2.9	1.0	.9	-	.1	1.0	2.0
Other hard hardwoods	13.7	5.9	7.8	3.3	3.3	-	-	2.9	5.5
All hard hardwoods	767.1	464.0	303.1	117.2	71.0	7.5	38.7	125.0	229.1
Soft Hardwoods									
Elm	18.6	11.2	7.4	2.9	1.5	*	1.4	4.7	5.8
Maple, soft	1.8	.7	1.1	.5	.3	.2	-	1.8	.8
Sweetgum	11.2	6.7	4.5	1.9	1.1	.1	.7	1.4	3.5
Blackgum	6.1	2.4	3.7	1.2	.8	-	.4	3.5	2.2
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.7	-	.7	.3	.1	.1	.1	.1	.5
Sycamore	6.6	1.4	5.2	2.1	1.6	.1	.4	1.0	4.0
All soft hardwoods	45.0	22.4	22.6	8.9	5.4	.5	3.0	12.5	16.8
All hardwoods	812.1	486.4	325.7	126.1	76.4	8.0	41.7	137.5	245.9
All Species	881.9	518.8	363.1	138.8	84.3	9.6	44.9	137.9	245.9

* Less than 1/2 of 1 significant unit.

Table 17. -- Net timber volume by ownership and species group

Bollinger County, Missouri, 1959

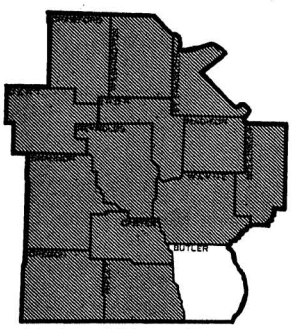
Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	5.8	.5	.3	5.0	.9	.1	-	.8
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	1.4	-	-	1.4	.2	-	-	.2
Farmer-owned	511.6	40.3	23.5	447.8	77.0	7.3	4.6	65.1
Forest industry and miscellaneous private	363.1	29.0	21.2	312.9	60.7	5.3	4.3	51.1
All ownerships	881.9	69.8	45.0	767.1	138.8	12.7	8.9	117.2



Noncommercial Forest Land
1,800 acres
0.4%

Total Land Area - 457,000 acres

Fig. 14 - Location of and area in different classes of land in Butler County.



EASTERN OZARK REGION

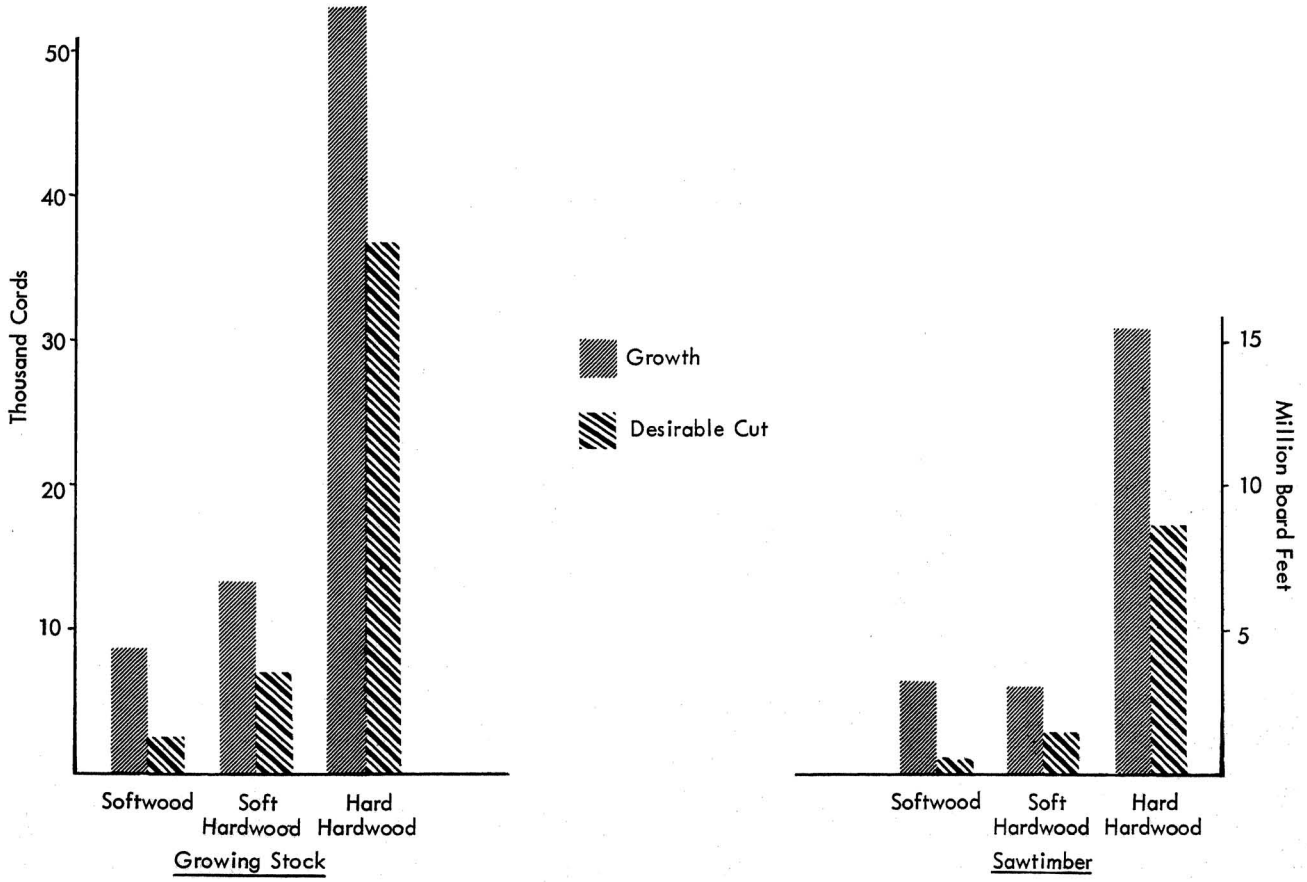


Fig. 15 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR BUTLER COUNTY

Table 18. -- Commercial forest land by ownership and stand-size class

Butler County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	44,200	16,200	20,200	3,200	2,800	1,800
Other Federal	-	-	-	-	-	-
State, county, & municipal	7,400	2,700	2,000	400	900	1,400
Farmer-owned	140,200	38,600	52,500	14,900	17,800	16,400
Forest industry and miscellaneous private	51,700	14,800	15,500	7,000	6,500	7,900
All ownerships	243,500	72,300	90,200	25,500	28,000	27,500

Table 19. -- Forest land area by type and stand-size class

Butler County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	13,300	5,500	5,300	1,500	600	400
Redcedar	700	-	300	-	400	-
Hardwood - redcedar	1,500	1,200	200	-	-	100
Oak - pine	21,000	6,100	9,400	2,900	2,200	400
Black - scarlet oak	78,700	18,400	30,400	13,400	10,600	5,900
White oak	9,500	3,200	5,100	700	400	100
Post - blackjack oak	28,900	2,200	14,300	3,600	7,100	1,700
Oak - gum - cypress	66,000	29,000	15,600	2,700	-	18,700
Elm - ash - cottonwood	22,400	6,200	8,700	600	6,700	200
Maple - beech	1,500	500	900	100	-	-
All commercial forest	243,500	72,300	90,200	25,500	28,000	27,500
Percent by size-class	100.0	29.7	37.0	10.5	11.5	11.3
Noncommercial forest						
Productive-reserved	*	*	-	-	-	-
Unproductive forest	1,800	-	-	-	-	1,800
All forest area	245,300	72,300	90,200	25,500	28,000	29,300

Table 20. -- Net timber volume on commercial forest land by species and kind of material

Butler County, Missouri, 1959

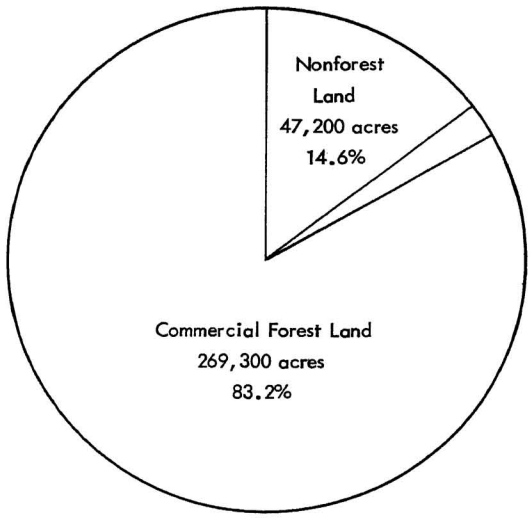
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	136.8	50.2	86.6	28.0	17.4	8.9	1.7	.4	-
Cypress	11.9	-	11.9	4.9	4.9	-	-	.9	-
Redcedar	3.9	3.1	.8	.2	.1	-	.1	52.5	-
All softwoods	152.6	53.3	99.3	33.1	22.4	8.9	1.8	53.8	-
Hard Hardwoods									
Oak, white	131.5	78.3	53.2	19.1	9.4	5.0	4.7	17.4	38.1
Oak, post	108.4	68.9	39.5	14.7	5.1	4.8	4.8	17.4	30.1
Oak, other white	48.5	30.7	17.8	7.0	5.7	.3	1.0	9.6	13.4
Oak, black	180.3	111.9	68.4	26.7	13.2	7.3	6.2	20.9	52.2
Oak, scarlet	102.7	68.4	34.3	13.8	6.7	4.8	2.3	7.7	27.4
Oak, northern red	24.8	12.5	12.3	4.7	2.6	1.0	1.1	4.5	8.8
Oak, other red	189.2	65.3	123.9	49.0	39.3	6.0	3.7	31.1	94.9
Hickory, Group A	39.5	29.2	10.3	4.2	2.4	.9	.9	4.3	8.2
Hickory, Group B	50.2	34.6	15.6	6.7	4.1	1.0	1.6	6.9	12.9
Maple, hard	11.3	6.6	4.7	2.0	1.7	.1	.2	12.8	3.5
Birch	2.0	1.4	.6	.1	-	.1	-	.3	.2
Walnut, black	3.4	2.5	.9	.3	*	.1	.2	.7	.7
Ash	13.8	6.4	7.4	2.7	2.5	.1	.1	2.8	5.3
Other hard hardwoods	40.9	14.3	26.6	11.5	11.5	-	-	8.6	19.2
All hard hardwoods	946.5	531.0	415.5	162.5	104.2	31.5	26.8	145.0	314.9
Soft Hardwoods									
Elm	57.1	35.4	21.7	8.6	4.7	1.3	2.6	21.1	16.5
Maple, soft	4.5	.7	3.8	1.9	.2	1.7	-	6.9	3.0
Sweetgum	48.5	32.2	16.3	6.7	3.7	1.3	1.7	7.2	12.2
Blackgum	8.8	2.8	6.0	2.0	.8	.2	1.0	7.4	3.6
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	2.4	.7	1.7	.8	.5	.2	.1	.2	1.3
Sycamore	10.6	2.5	8.1	3.5	2.6	.5	.4	1.0	6.8
All soft hardwoods	131.9	74.3	57.6	23.5	12.5	5.2	5.8	43.8	43.4
All hardwoods	1,078.4	605.3	473.1	186.0	116.7	36.7	32.6	188.8	358.3
All Species	1,231.0	658.6	572.4	219.1	139.1	45.6	34.4	242.6	358.3

* Less than 1/2 of 1 significant unit.

Table 21. -- Net timber volume by ownership and species group

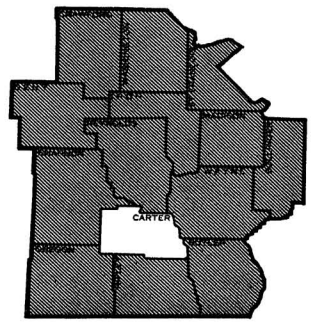
Butler County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	345.6	97.2	8.7	239.7	53.8	21.2	1.5	31.1
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	41.1	2.5	6.4	32.2	8.4	.6	1.2	6.6
Farmer-owned	604.4	37.6	75.6	491.2	106.4	7.9	13.2	85.3
Forest industry and miscellaneous private	239.9	15.3	41.2	183.4	50.5	3.4	7.6	39.5
All ownerships	1,231.0	152.6	131.9	946.5	219.1	33.1	23.5	162.5



Total Land Area - 323,800 acres

Fig. 16 - Location of and area in different classes of land in Carter County.



EASTERN OZARK REGION

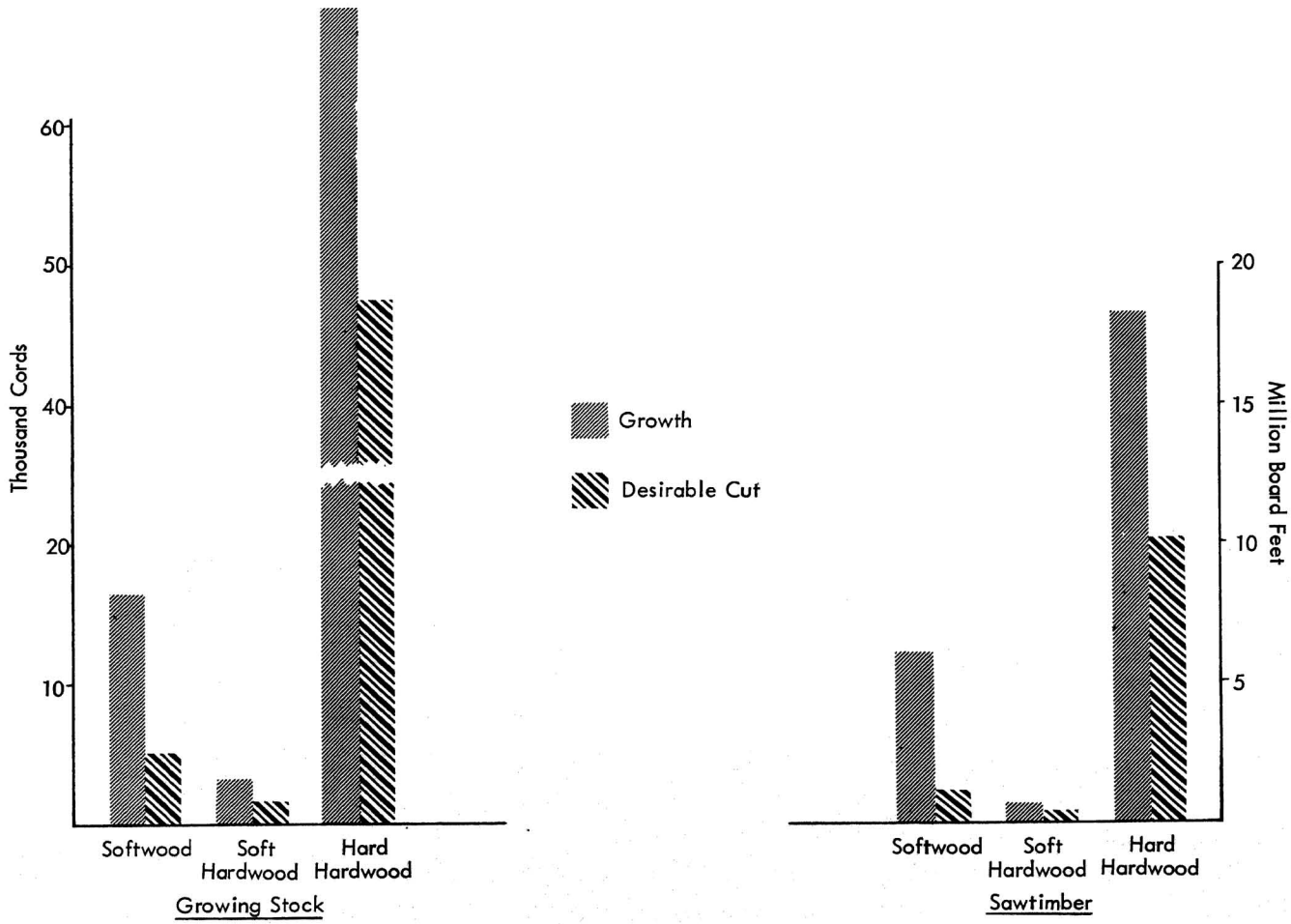


Fig. 17 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR CARTER COUNTY

Table 22. -- Commercial forest land by ownership and stand-size class

Carter County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	87,000	44,200	32,000	4,500	4,200	2,100
Other Federal	-	-	-	-	-	-
State, county, & municipal	23,300	8,100	9,300	1,400	3,500	1,000
Farmer-owned	49,300	12,800	20,200	6,500	8,000	1,800
Forest industry and miscellaneous private	109,700	29,500	39,300	18,400	17,800	4,700
All ownerships	269,300	94,600	100,800	30,800	33,500	9,600

Table 23. -- Forest land area by type and stand-size class

Carter County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	27,800	14,500	9,400	2,100	700	1,100
Redcedar	700	-	300	-	400	-
Hardwood - redcedar	600	-	400	-	-	200
Oak - pine	46,900	17,700	21,100	3,200	4,400	500
Black - scarlet oak	135,200	47,700	48,500	19,400	14,900	4,700
White oak	19,300	7,800	9,000	1,200	800	500
Post - blackjack oak	29,400	4,600	8,800	3,900	10,000	2,100
Oak - gum - cypress	1,500	700	200	200	200	200
Elm - ash - cottonwood	5,300	1,200	1,100	600	2,100	300
Maple - beech	2,600	400	2,000	200	-	- -
All commercial forest	269,300	94,600	100,800	30,800	33,500	9,600
Percent by size-class	100.0	35.1	37.4	11.5	12.4	3.6
Noncommercial forest						
Productive-reserved	5,600	1,800	2,100	700	1,000	-
Unproductive forest	1,700	-	-	-	-	1,700
All forest area	276,600	96,400	102,900	31,500	34,500	11,300

Table 24. -- Net timber volume on commercial forest land by species and kind of material

Carter County, Missouri, 1959

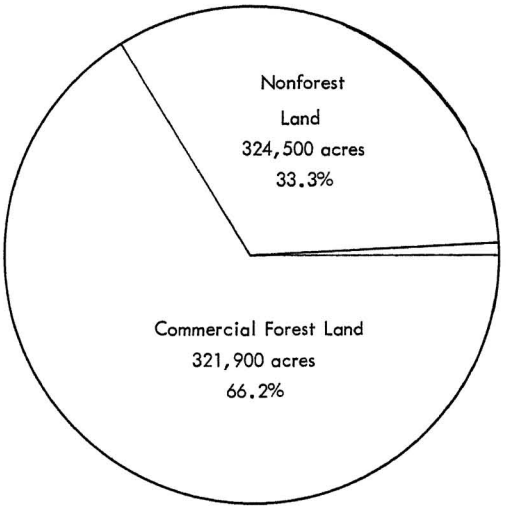
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands: 500-1500 bd. ft.	Other stands: Under 500 ft.		
Softwoods									
Pine, shortleaf	291.7	106.3	185.4	60.1	47.2	9.7	3.2	.5	-
Cypress	.6	-	.6	.2	.2	-	-	-	-
Redcedar	1.8	1.6	.2	*	-	-	-	.2	-
All softwoods	294.1	107.9	186.2	60.3	47.4	9.7	3.2	.7	-
Hard Hardwoods									
Oak, white	244.1	132.7	111.4	40.3	26.0	7.3	7.0	31.7	80.3
Oak, post	169.1	94.0	75.1	27.8	16.4	6.2	5.2	26.6	57.1
Oak, other white	7.1	4.7	2.4	1.0	.8	.1	.1	1.2	1.9
Oak, black	344.5	204.5	140.0	54.9	34.8	11.1	9.0	34.0	107.6
Oak, scarlet	223.6	130.4	93.2	37.6	27.6	6.5	3.5	14.0	74.9
Oak, northern red	44.1	22.9	21.2	8.0	5.1	1.5	1.4	7.7	15.0
Oak, other red	28.7	20.9	7.8	2.9	.9	.4	1.6	14.2	5.6
Hickory, Group A	67.3	46.5	20.8	8.6	6.3	1.0	1.3	6.9	16.4
Hickory, Group B	67.0	49.0	18.0	7.3	3.4	1.3	2.6	9.8	14.1
Maple, hard	8.7	5.2	3.5	1.6	.9	.3	.4	2.0	2.6
Birch	.9	.7	.2	*	-	*	-	.1	.2
Walnut, black	6.0	4.6	1.4	.6	.4	.1	.1	.7	1.0
Ash	4.7	2.7	2.0	.7	.4	.2	.1	1.6	1.2
Other hard hardwoods	6.3	3.8	2.5	1.1	1.1	-	-	2.4	1.9
All hard hardwoods	1,222.1	722.6	499.5	192.4	124.1	36.0	32.3	152.9	379.8
Soft Hardwoods									
Elm	12.8	8.7	4.1	1.7	.8	.2	.7	2.4	3.3
Maple, soft	.9	.6	.3	.1	.1	-	-	.6	.3
Sweetgum	5.8	3.5	2.3	1.0	.3	.5	.2	.8	1.8
Blackgum	7.3	2.8	4.5	1.4	.9	.3	.2	3.9	2.6
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	1.8	1.3	.5	.2	.1	-	.1	*	.3
Sycamore	4.1	1.5	2.6	1.2	.8	.2	.2	1.4	2.4
All soft hardwoods	32.7	18.4	14.3	5.6	3.0	1.2	1.4	9.1	10.7
All hardwoods	1,254.8	741.0	513.8	198.0	127.1	37.2	33.7	162.0	390.5
All Species	1,548.9	848.9	700.0	258.3	174.5	46.9	36.9	162.7	390.5

* Less than 1/2 of 1 significant unit.

Table 25. -- Net timber volume by ownership and species group

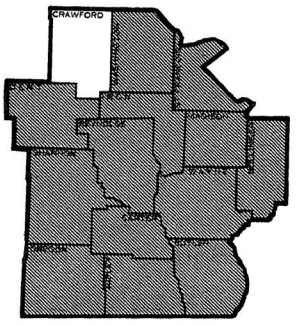
Carter County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	716.7	193.9	7.9	514.9	128.6	44.2	1.3	83.1
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	21.2	3.2	.8	17.2	3.4	.5	.1	2.8
Farmer-owned	498.3	59.2	13.3	425.8	74.2	9.3	2.2	62.7
Forest industry and miscellaneous private	312.7	37.8	10.7	264.2	52.1	6.3	2.0	43.8
All ownership	1,548.9	294.1	32.7	1,222.1	258.3	60.3	5.6	192.4



Total Land Area - 486,400 acres

Fig. 18 - Location of and area in different classes of land in Crawford County.



EASTERN OZARK REGION

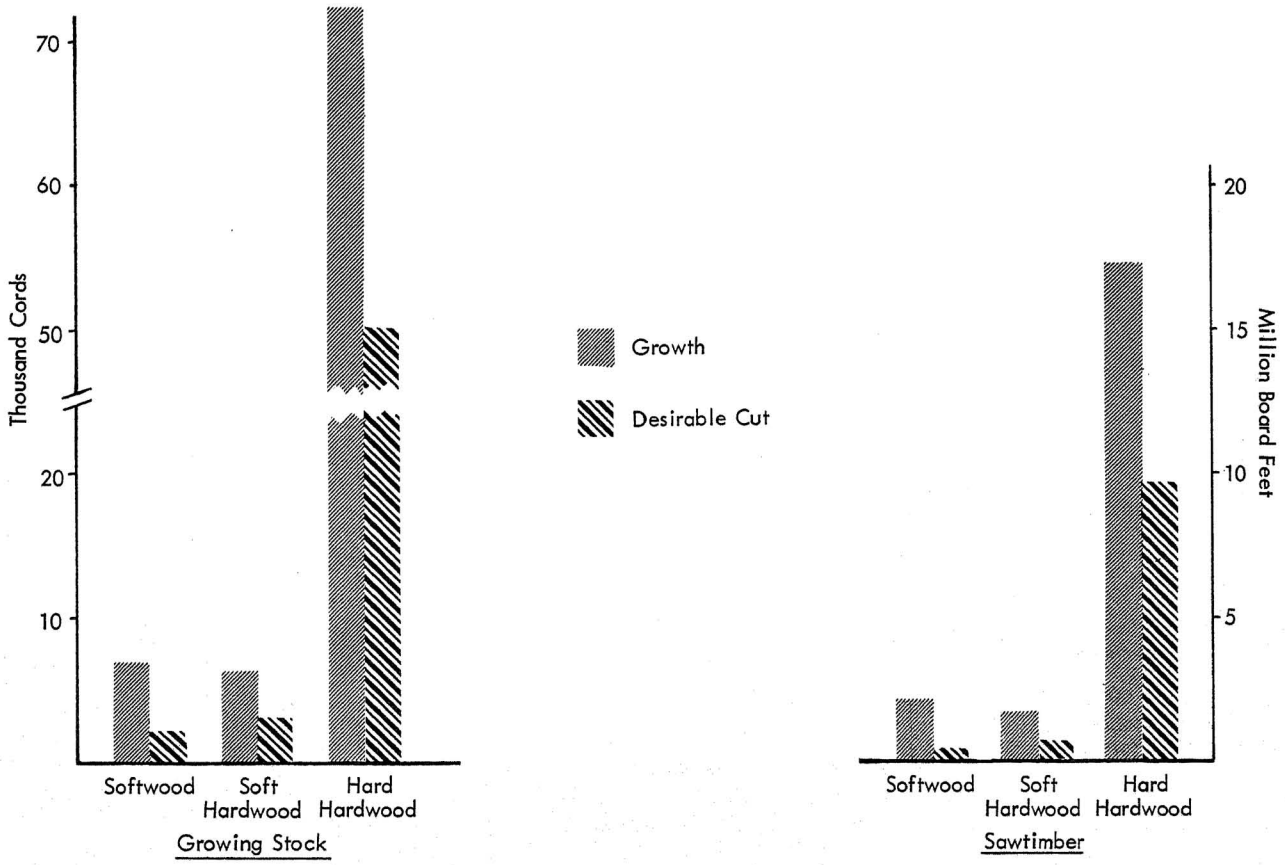


Fig. 19 - COMPARISON OF GROWTH AND DESIRABLE CUT IN CRAWFORD COUNTY

Table 26. -- Commercial forest land by ownership and stand-size class

Crawford County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	44,400	12,600	21,900	4,400	500	5,000
Other Federal	-	-	-	-	-	-
State, county, & municipal	5,300	1,700	2,100	400	900	200
Farmer-owned	170,300	40,400	66,300	25,900	30,200	7,500
Forest industry and miscellaneous private	101,900	25,000	33,800	19,900	18,000	5,200
All ownerships	321,900	79,700	124,100	50,600	49,600	17,900

Table 27. -- Forest land area by type and stand-size class

Crawford County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	8,200	3,300	2,800	300	1,200	600
Redcedar	1,000	-	600	*	400	-
Hardwood - redcedar	3,600	-	1,600	1,200	-	800
Oak - pine	23,500	7,900	7,100	3,300	4,800	400
Black - scarlet oak	185,000	44,400	78,000	32,600	21,200	8,800
White oak	28,900	10,100	14,000	2,500	1,800	500
Post - blackjack oak	49,500	4,900	14,400	7,700	17,400	5,100
Oak - gum - cypress	4,900	3,100	500	300	200	800
Elm - ash - cottonwood	12,700	4,400	2,500	2,300	2,600	900
Maple - beech	4,600	1,600	2,600	400	-	-
All commercial forest	321,900	79,700	124,100	50,600	49,600	17,900
Percent by size-class	100.0	24.8	38.5	15.7	15.4	5.6
Noncommercial forest						
Productive-reserved	-	-	-	-	-	-
Unproductive forest	2,600	-	-	-	-	2,600
All forest area	324,500	79,700	124,100	50,600	49,600	20,500

* Less than 1/2 of 1 significant unit.

Table 28. -- Net timber volume on commercial forest land by species and kind of material

Crawford County, Missouri, 1959

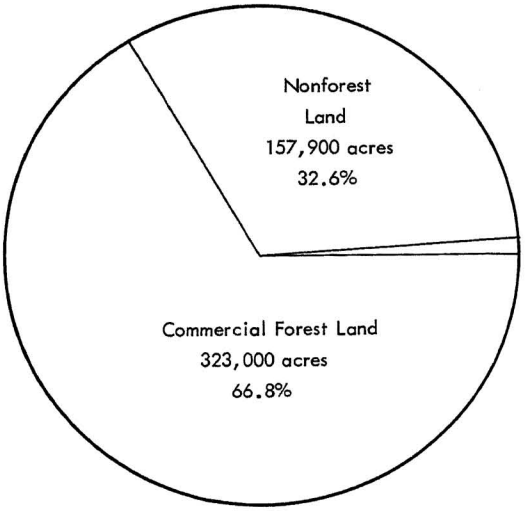
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	113.3	52.3	61.0	20.2	9.2	6.4	4.6	.7	-
Cypress	2.5	-	2.5	1.0	1.0	-	-	*	-
Redcedar	4.6	4.1	.5	.1	-	.1	*	.3	-
All softwoods	120.4	56.4	64.0	21.3	10.2	6.5	4.6	1.0	-
Hard Hardwoods									
Oak, white	294.2	175.1	119.1	43.0	21.4	10.0	11.6	38.2	85.8
Oak, post	157.9	103.9	54.0	20.0	10.3	1.1	8.6	35.5	41.0
Oak, other white	8.4	5.4	3.0	1.2	.9	.2	.1	1.5	2.2
Oak, black	362.9	236.3	126.6	49.6	27.6	7.0	15.0	42.2	97.2
Oak, scarlet	158.9	101.1	57.8	23.3	13.4	3.8	6.1	17.3	46.4
Oak, northern red	60.0	31.2	28.8	10.9	5.6	2.8	2.5	9.6	20.5
Oak, other red	60.0	43.4	16.6	6.2	2.8	.8	2.6	22.2	12.1
Hickory, Group A	69.0	46.0	23.0	9.4	6.0	1.1	2.3	8.8	18.3
Hickory, Group B	69.7	47.1	22.6	9.4	3.8	1.1	4.5	12.4	18.1
Maple, hard	17.4	7.7	9.7	4.4	3.1	.7	.6	3.3	7.4
Birch	1.8	1.3	.5	.1	-	.1	-	.1	.1
Walnut, black	7.5	6.8	.7	.3	.1	.1	.1	1.0	.6
Ash	9.3	5.7	3.6	1.3	1.1	*	.2	2.1	2.4
Other hard hardwoods	15.4	7.2	8.2	3.4	3.4	-	-	4.4	5.7
All hard hardwoods	1,292.4	818.2	474.2	182.5	99.5	28.8	54.2	198.6	357.8
Soft Hardwoods									
Elm	27.1	16.3	10.8	4.4	2.5	.2	1.7	4.7	8.3
Maple, soft	3.3	1.2	2.1	.9	.9	*	*	2.6	1.5
Sweetgum	9.9	6.1	3.8	1.5	.9	.3	.3	1.3	2.8
Blackgum	8.7	3.2	5.5	1.9	1.3	.1	.5	5.4	3.3
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	1.4	-	1.4	.6	.2	.1	.3	.1	1.1
Sycamore	10.9	2.4	8.5	3.5	3.1	.1	.3	1.9	6.6
All soft hardwoods	61.3	29.2	32.1	12.8	8.9	.8	3.1	16.0	23.6
All hardwoods	1,353.7	847.4	506.3	195.3	108.4	29.6	57.3	214.6	381.4
All Species	1,474.1	903.8	570.3	216.6	118.6	36.1	61.9	215.6	381.4

* Less than 1/2 of 1 significant unit.

Table 29. -- Net timber volume by ownership and species group

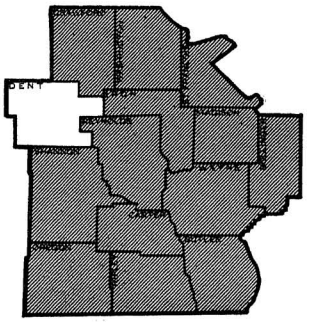
Crawford County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	281.2	27.3	2.8	251.1	28.6	4.9	.5	23.2
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	29.4	2.3	1.8	25.3	4.9	.5	.4	4.0
Farmer-owned	715.1	55.7	31.5	627.9	107.5	9.6	6.4	91.5
Forest industry and miscellaneous private	448.4	35.1	25.2	388.1	75.6	6.3	5.5	63.8
All ownerships	1,474.1	120.4	61.3	1,292.4	216.6	21.3	12.8	182.5



Total Land Area - 483,800 acres

Fig. 20 - Location of and area in different classes of land in Dent County



EASTERN OZARK REGION

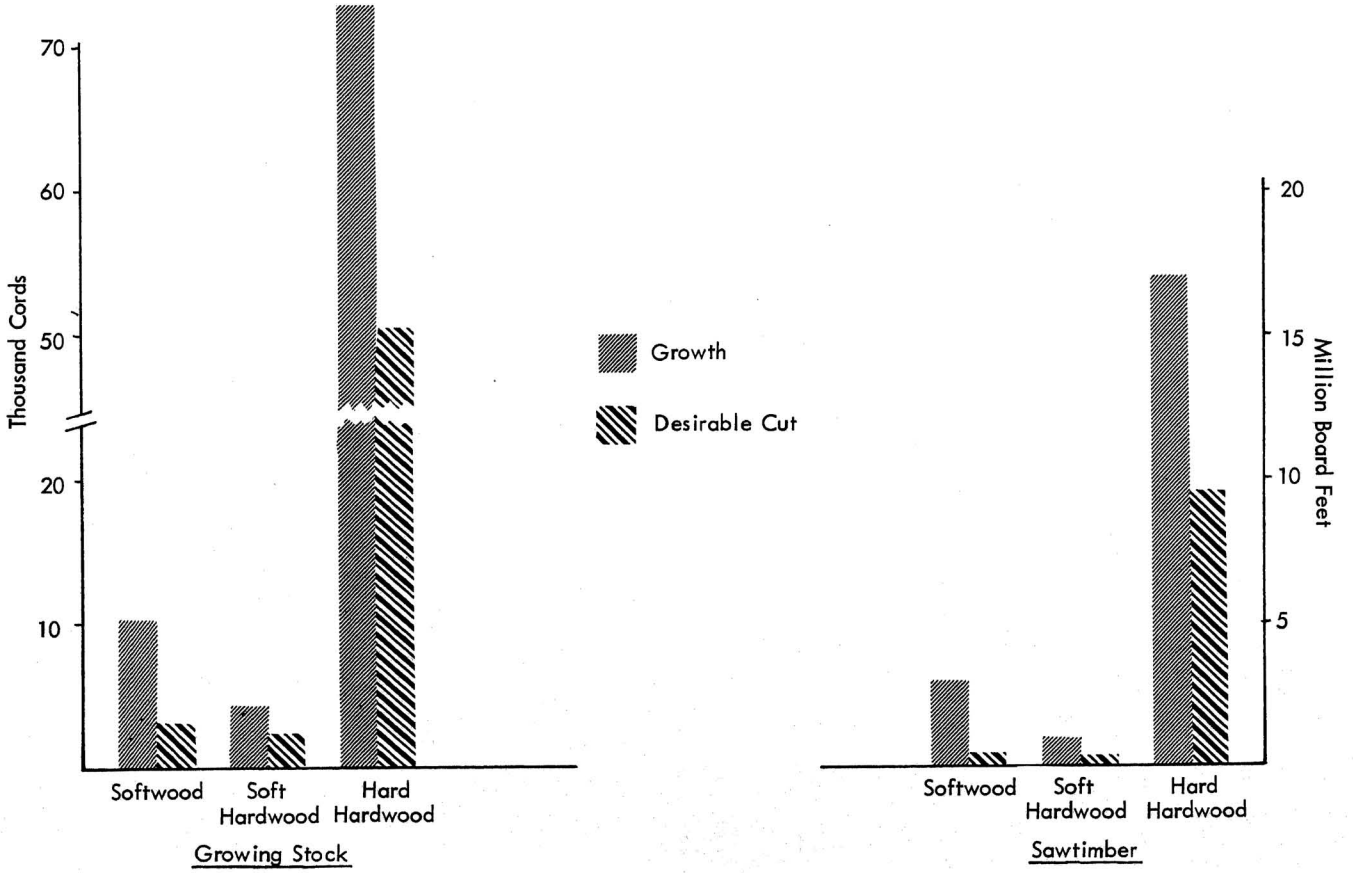


Fig. 21 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR DENT COUNTY

Table 30. -- Commercial forest land by ownership and stand-size class

Dent County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	64,800	23,300	27,900	7,100	1,700	4,800
Other Federal	-	-	-	-	-	-
State, county, & municipal	14,700	4,700	6,000	1,100	2,200	700
Farmer-owned	181,300	42,500	72,700	27,700	30,000	8,400
Forest industry and miscellaneous private	62,200	15,100	21,400	12,200	10,300	3,200
All ownerships	323,000	85,600	128,000	48,100	44,200	17,100

Table 31. -- Forest land area by type and stand-size class

Dent County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	12,800	5,100	5,100	800	800	1,000
Redcedar	1,100	-	700	*	400	-
Hardwood - redcedar	3,100	600	800	600	-	1,100
Oak - pine	30,300	10,900	11,100	2,700	5,200	400
Black - scarlet oak	190,000	49,400	78,900	33,000	20,600	8,100
White oak	27,600	10,700	13,000	2,300	1,100	500
Post - blackjack oak	46,500	4,800	15,000	7,200	14,400	5,100
Oak - gum - cypress	2,300	1,000	400	200	200	500
Elm - ash - cottonwood	6,700	2,200	1,600	1,000	1,500	400
Maple - beech	2,600	900	1,400	300	-	-
All commercial forest	323,000	85,600	128,000	48,100	44,200	17,100
Percent by size-class	100.0	26.5	39.6	14.9	13.7	5.3
Noncommercial forest						
Productive-reserved	700	-	300	-	400	-
Unproductive forest	2,200	-	-	-	-	2,200
All forest area	325,900	85,600	128,300	48,100	44,600	19,300

* Less than 1/2 of 1 significant unit.

Table 32. -- Net timber volume on commercial forest land by species and kind of material

Dent County, Missouri, 1959

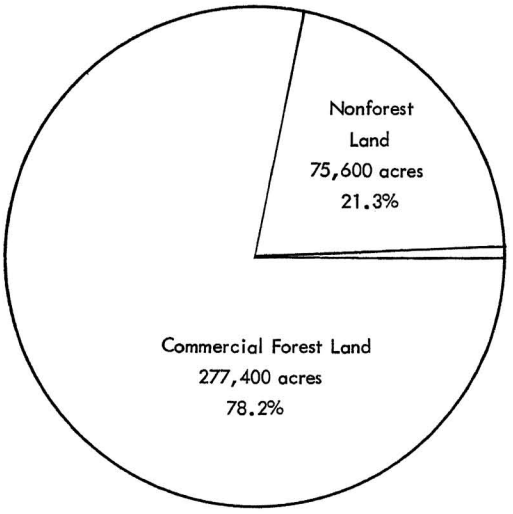
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	177.3	88.0	89.3	29.2	12.7	11.6	4.9	.8	-
Cypress	.7	-	.7	.3	.3	-	-	*	-
Redcedar	4.1	3.3	.8	.2	.1	*	.1	27.2	-
All softwoods	182.1	91.3	90.8	29.7	13.1	11.6	5.0	28.0	-
Hard Hardwoods									
Oak, white	296.6	174.4	122.2	44.2	21.3	11.5	11.4	41.5	88.0
Oak, post	154.8	100.7	54.1	20.1	10.0	1.7	8.4	36.1	41.3
Oak, other white	5.7	4.1	1.6	.6	.4	.1	.1	1.6	1.2
Oak, black	384.3	255.4	128.9	50.6	27.3	8.4	14.9	45.3	98.9
Oak, scarlet	174.3	113.0	61.3	24.7	13.5	5.0	6.2	18.1	49.1
Oak, northern red	64.5	34.8	29.7	11.1	5.3	3.2	2.6	10.5	20.9
Oak, other red	49.0	36.7	12.3	4.6	1.5	.6	2.5	20.9	9.1
Hickory, Group A	69.0	46.2	22.8	9.3	5.8	1.1	2.4	9.5	18.0
Hickory, Group B	67.8	46.7	21.1	8.7	3.1	1.6	4.0	12.7	17.0
Maple, hard	12.0	6.3	5.7	2.6	1.8	.3	.5	7.6	4.3
Birch	1.0	.8	.2	*	-	*	*	.3	.1
Walnut, black	7.0	6.3	.7	.4	.1	.1	.2	1.2	.7
Ash	6.3	3.8	2.5	.9	.7	*	.2	2.5	1.6
Other hard hardwoods	8.2	4.6	3.6	1.5	1.5	-	-	3.2	2.5
All hard hardwoods	1,300.5	833.8	466.7	179.3	92.3	33.6	53.4	211.0	352.7
Soft Hardwoods									
Elm	19.2	12.8	6.4	2.6	1.4	.2	1.0	5.5	4.9
Maple, soft	1.6	.8	.8	.3	.3	*	*	1.1	.6
Sweetgum	6.1	4.0	2.1	.8	.4	.3	.1	.9	1.5
Blackgum	8.5	3.2	5.3	1.8	1.2	.2	.4	5.4	3.2
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.8	-	.8	.3	.1	.1	.1	*	.5
Sycamore	5.5	1.6	3.9	1.6	1.3	.1	.2	1.7	3.0
All soft hardwoods	41.7	22.4	19.3	7.4	4.7	.9	1.8	14.6	13.7
All hardwoods	1,342.2	856.2	486.0	186.7	97.0	34.5	55.2	225.6	366.4
All Species	1,524.3	947.5	576.8	216.4	110.1	46.1	60.2	253.6	366.4

* Less than 1/2 of 1 significant unit.

Table 33. -- Net timber volume by ownership and species group

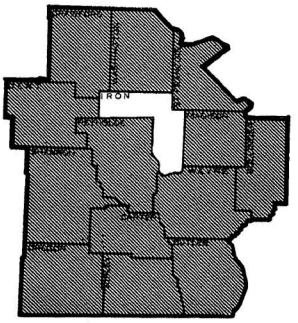
Dent County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	401.8	86.5	3.3	312.0	45.2	13.4	.5	31.3
Other Federal	--	-	-	-	-	-	-	-
State, county, & municipal	81.0	7.0	3.2	70.8	13.0	1.1	.7	11.2
Farmer-owned	763.0	64.6	23.5	674.9	111.4	11.0	4.1	96.3
Forest industry and miscellaneous private	278.5	24.0	11.7	242.8	46.8	4.2	2.1	40.5
All ownerships	1,524.3	182.1	41.7	1,300.5	216.4	29.7	7.4	179.3



Total Land Area - 354,600 acres

Fig. 22 - Location of and area in different classes of land in Iron County.



EASTERN OZARK REGION

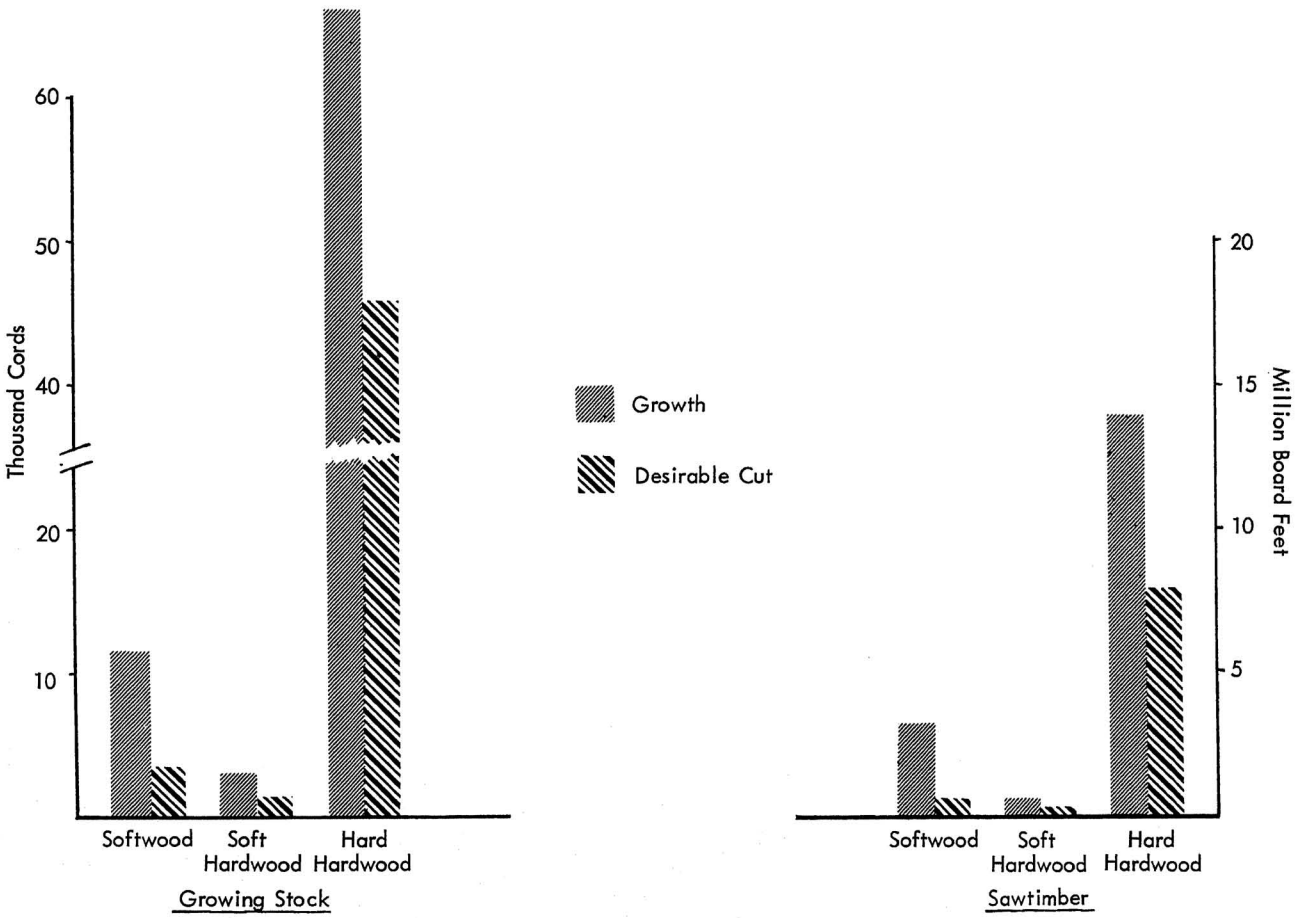


Fig. 23 - COMPARISON OF GROWTH AND DESIRABLE CUT OF IRON COUNTY

Table 34. -- Commercial forest land by ownership and stand-size class

Iron County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	91,400	27,500	47,100	6,200	1,400	9,200
Other Federal	-	-	-	-	-	-
State, county, & municipal	3,400	1,000	1,500	200	600	100
Farmer-owned	75,000	16,400	31,300	10,800	13,200	3,300
Forest industry and miscellaneous private	107,600	24,100	39,100	20,000	18,900	5,500
All ownerships	277,400	69,000	119,000	37,200	34,100	18,100

Table 35. -- Forest land area by type and stand-size class

Iron County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	12,700	4,900	5,700	500	600	1,000
Redcedar	1,300	-	1,000	100	200	-
Hardwood - redcedar	1,400	-	500	-	-	900
Oak - pine	28,200	10,900	10,700	2,200	3,700	700
Black - scarlet oak	166,600	39,300	75,500	25,900	15,900	10,000
White oak	20,200	7,400	10,100	1,500	800	400
Post - blackjack oak	38,500	3,200	12,800	6,200	11,700	4,600
Oak - gum - cypress	2,000	1,200	100	200	200	300
Elm - ash - cottonwood	4,600	1,600	1,400	400	1,000	200
Maple - beech	1,900	500	1,200	200	-	-
All commercial forest	277,400	69,000	119,000	37,200	34,100	18,100
Precent by size-class	100.0	24.9	42.9	13.4	12.3	6.5
Noncommercial forest						
Productive-reserved	-	-	-	-	-	-
Unproductive forest	1,600	-	-	-	-	1,600
All forest area	279,000	69,000	119,000	37,200	34,100	19,700

Table 36. -- Net timber volume on commercial forest land by species and kind of material

Iron County, Missouri, 1959

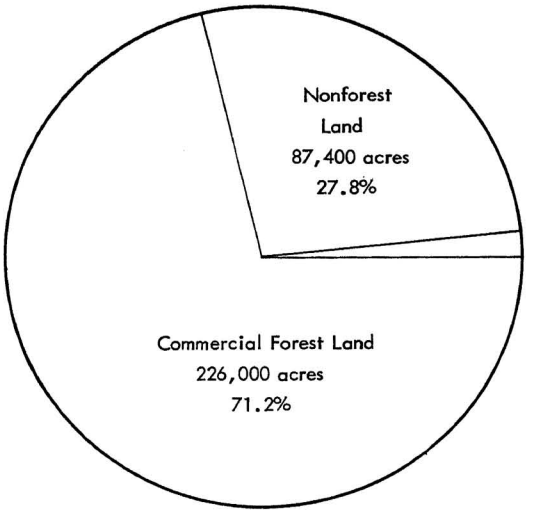
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	201.6	102.9	98.7	32.4	13.1	15.5	3.8	.7	-
Cypress	.7	-	.7	.3	.3	-	-	.1	-
Redcedar	2.5	2.1	.4	.1	-	*	.1	.4	-
All softwoods	204.8	105.0	99.8	32.8	13.4	15.5	3.9	1.2	-
Hard Hardwoods									
Oak, white	263.0	162.0	101.0	36.5	14.7	12.8	9.0	39.4	72.8
Oak, post	126.1	84.8	41.3	15.3	6.8	1.8	6.7	31.5	31.4
Oak, other white	4.4	3.2	1.2	.5	.3	.2	*	1.7	.9
Oak, black	362.4	258.4	104.0	40.7	19.3	9.9	11.5	42.0	79.8
Oak, scarlet	175.6	123.8	51.8	20.9	9.7	6.3	4.9	16.2	41.5
Oak, northern red	65.4	40.1	25.3	9.5	3.8	3.8	1.9	10.2	17.8
Oak, other red	45.1	33.5	11.6	4.5	2.3	.4	1.8	17.8	8.7
Hickory, Group A	56.8	38.9	17.9	7.4	4.0	1.3	2.1	8.4	14.2
Hickory, Group B	57.4	39.5	17.9	7.5	2.1	1.8	3.6	11.2	14.2
Maple, hard	8.2	4.4	3.8	1.7	1.0	.3	.4	1.6	2.9
Birch	.6	.4	.2	*	-	*	*	.2	.2
Walnut, black	5.2	4.6	.6	.2	.1	*	.1	.7	.5
Ash	3.9	2.5	1.4	.6	.3	.1	.2	2.3	1.0
Other hard hardwoods	6.0	3.2	2.8	1.1	1.1	-	-	2.8	1.9
All hard hardwoods	1,180.1	799.3	380.8	146.4	65.5	38.7	42.2	186.0	287.8
Soft Hardwoods									
Elm	12.9	9.2	3.7	1.5	.8	.1	.6	2.6	2.8
Maple, soft	.9	.6	.3	.1	.1	*	*	.7	.2
Sweetgum	5.5	3.6	1.9	.7	.3	.3	.1	1.0	1.4
Blackgum	6.5	2.4	4.1	1.3	.8	.2	.3	4.9	2.5
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.4	-	.4	.1	*	.1	*	*	.3
Sycamore	3.0	1.1	1.9	.9	.7	.1	.1	1.7	1.5
All soft hardwoods	29.2	16.9	12.3	4.6	2.7	.8	1.1	10.9	8.7
All hardwoods	1,209.3	816.2	393.1	151.0	68.2	39.5	43.3	196.9	296.5
All Species	1,414.1	921.2	492.9	183.8	81.6	55.0	47.2	198.1	296.5

* Less than 1/2 of 1 significant unit.

Table 37. -- Net timber volume by ownership and species group

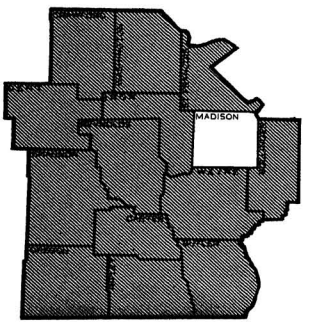
Iron County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Saftwood	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	622.6	141.0	5.7	475.9	64.2	21.6	.7	41.9
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	18.7	1.5	.6	16.6	3.0	.2	.1	2.7
Farmer-owned	314.3	25.2	8.3	280.8	45.0	4.3	1.3	39.4
Forest industry and miscellaneous private	458.5	37.1	14.6	406.8	71.6	6.7	2.5	62.4
All ownerships	1,414.1	204.8	29.2	1,180.1	183.8	32.8	4.6	146.4



Total Land Area - 317,400 acres

Fig. 24 - Location of and area in different classes of land in Madison County.



EASTERN OZARK REGION

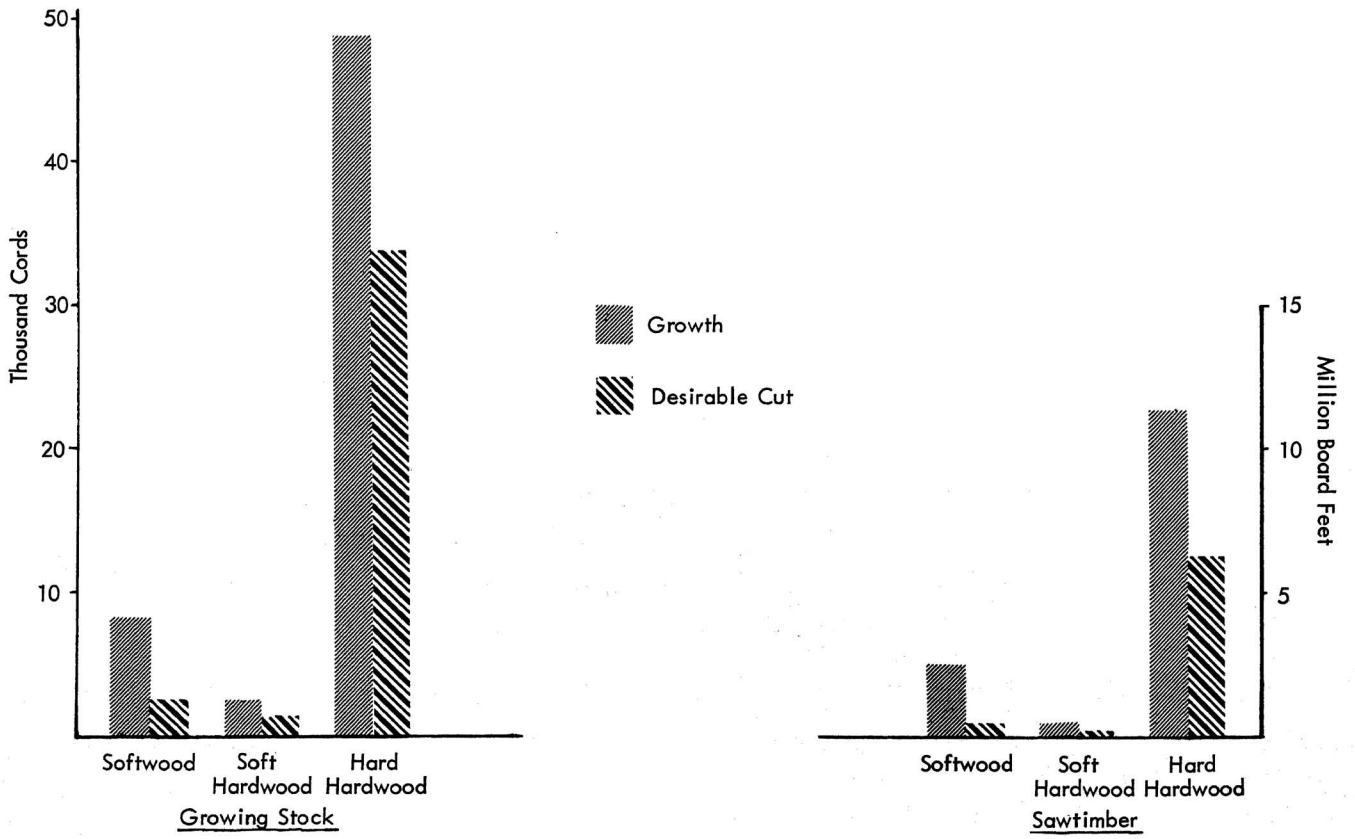


Fig. 25 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR MADISON COUNTY

Table 38. -- Commercial forest land by ownership and stand-size class

Madison County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	38,500	10,900	20,600	3,800	600	2,600
Other Federal	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-
Farmer-owned	99,900	21,300	41,900	15,000	17,600	4,100
Forest industry and miscellaneous private	87,600	19,300	31,900	16,900	15,400	4,100
All ownerships	226,000	51,500	94,400	35,700	33,600	10,800

Table 39. -- Forest land area by type and stand-size class

Madison County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	11,900	4,900	5,100	500	1,000	400
Redcedar	1,700	-	800	600	300	-
Hardwood - redcedar	1,600	-	700	600	-	300
Oak - pine	22,900	6,800	9,700	2,100	4,000	300
Black - scarlet oak	127,500	28,700	55,500	23,700	14,400	5,200
White oak	18,200	6,000	9,200	1,700	1,000	300
Post - blackjack oak	34,900	3,000	11,200	5,400	11,500	3,800
Oak - gum - cypress	1,400	800	100	100	100	300
Elm - ash - cottonwood	4,200	900	1,100	700	1,300	200
Maple - beech	1,700	400	1,000	300	-	-
All commercial forest	226,000	51,500	94,400	35,700	33,600	10,800
Percent by size-class	100.0	22.8	41.8	15.8	14.8	4.8
Noncommercial forest						
Productive-reserved	-	-	-	-	-	-
Unproductive	4,000	-	-	-	-	4,000
All forest area	230,000	51,500	94,400	35,700	33,600	14,800

Table 40. -- Net timber volume on commercial forest land by species and kind of material

Madison County, Missouri, 1959

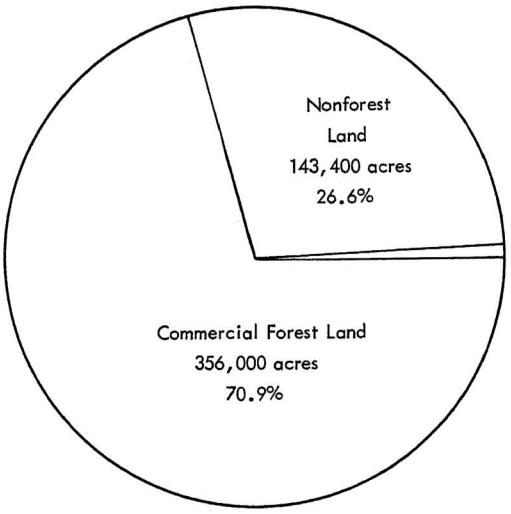
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	141.6	63.4	78.2	25.0	14.4	7.0	3.6	.6	-
Cypress	.7	-	.7	.3	.3	-	-	-	-
Redcedar	2.8	2.4	.4	.2	-	.1	.1	.2	-
All softwoods	145.1	65.8	79.3	25.5	14.7	7.1	3.7	.8	-
Hard Hardwoods									
Oak, white	206.0	127.1	78.9	28.4	15.5	4.5	8.4	28.2	56.9
Oak, post	108.9	71.0	37.9	14.1	6.6	1.2	6.3	25.6	28.8
Oak, other white	4.0	2.6	1.4	.6	.4	.2	*	1.0	1.1
Oak, black	250.8	163.9	86.9	34.1	19.7	3.7	10.7	31.2	66.6
Oak, scarlet	110.4	69.6	40.8	16.4	9.9	2.3	4.2	12.4	32.8
Oak, northern red	39.7	20.7	19.0	7.2	3.9	1.4	1.9	6.9	13.4
Oak, other red	33.1	24.7	8.4	3.2	1.0	.4	1.8	15.4	6.2
Hickory, Group A	48.1	32.7	15.4	6.3	3.8	.8	1.7	6.4	12.2
Hickory, Group B	47.0	34.4	12.6	5.2	2.0	.5	2.7	8.7	9.9
Maple, hard	7.8	3.9	3.9	1.9	1.1	.4	.4	1.4	3.0
Birch	.6	.5	.1	*	-	*	-	.1	.1
Walnut, black	5.0	4.3	.7	.3	.1	.1	.1	.7	.5
Ash	3.7	2.5	1.2	.4	.3	*	.1	1.5	.8
Other hard hardwoods	5.8	2.9	2.9	1.1	1.0	.1	-	2.2	2.0
All hard hardwoods	870.9	560.8	310.1	119.2	65.3	15.6	38.3	141.7	234.3
Soft Hardwoods									
Elm	11.9	7.8	4.1	1.6	.7	.1	.8	1.9	3.1
Maple, soft	.9	.6	.3	.1	.1	*	*	.5	.1
Sweetgum	4.1	2.8	1.3	.5	.4	*	.1	.6	1.0
Blackgum	6.0	2.5	3.5	1.1	.7	.1	.3	3.6	2.1
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.5	-	.5	.2	.1	*	.1	*	.4
Sycamore	3.1	1.0	2.1	.8	.6	.1	.1	.9	1.7
All soft hardwoods	26.5	14.7	11.8	4.3	2.6	.3	1.4	7.5	8.4
All hardwoods	897.4	575.5	321.9	123.5	67.9	15.9	39.7	149.2	242.7
All Species	1,042.5	641.3	401.2	149.0	82.6	23.0	43.4	150.0	242.7

* Less than 1/2 of 1 significant unit.

Table 41. -- Net timber volume by ownership and species group

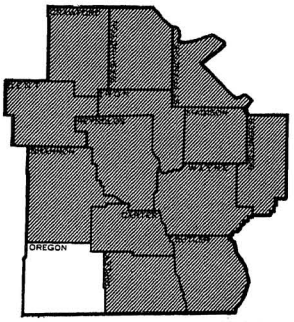
Madison County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	242.7	59.7	3.2	179.8	30.7	11.1	.4	19.2
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-	-	-
Farmer-owned	418.7	44.5	11.0	363.2	59.0	7.2	1.8	50.0
Forest industry and miscellaneous private	381.1	40.9	12.3	327.9	59.3	7.2	2.1	50.0
All ownerships	1,042.5	145.1	26.5	870.9	149.0	25.5	4.3	119.2



Total Land Area - 501,800 acres

Fig. 26 - Location of and area in different classes of land in Oregon County



EASTERN OZARK REGION

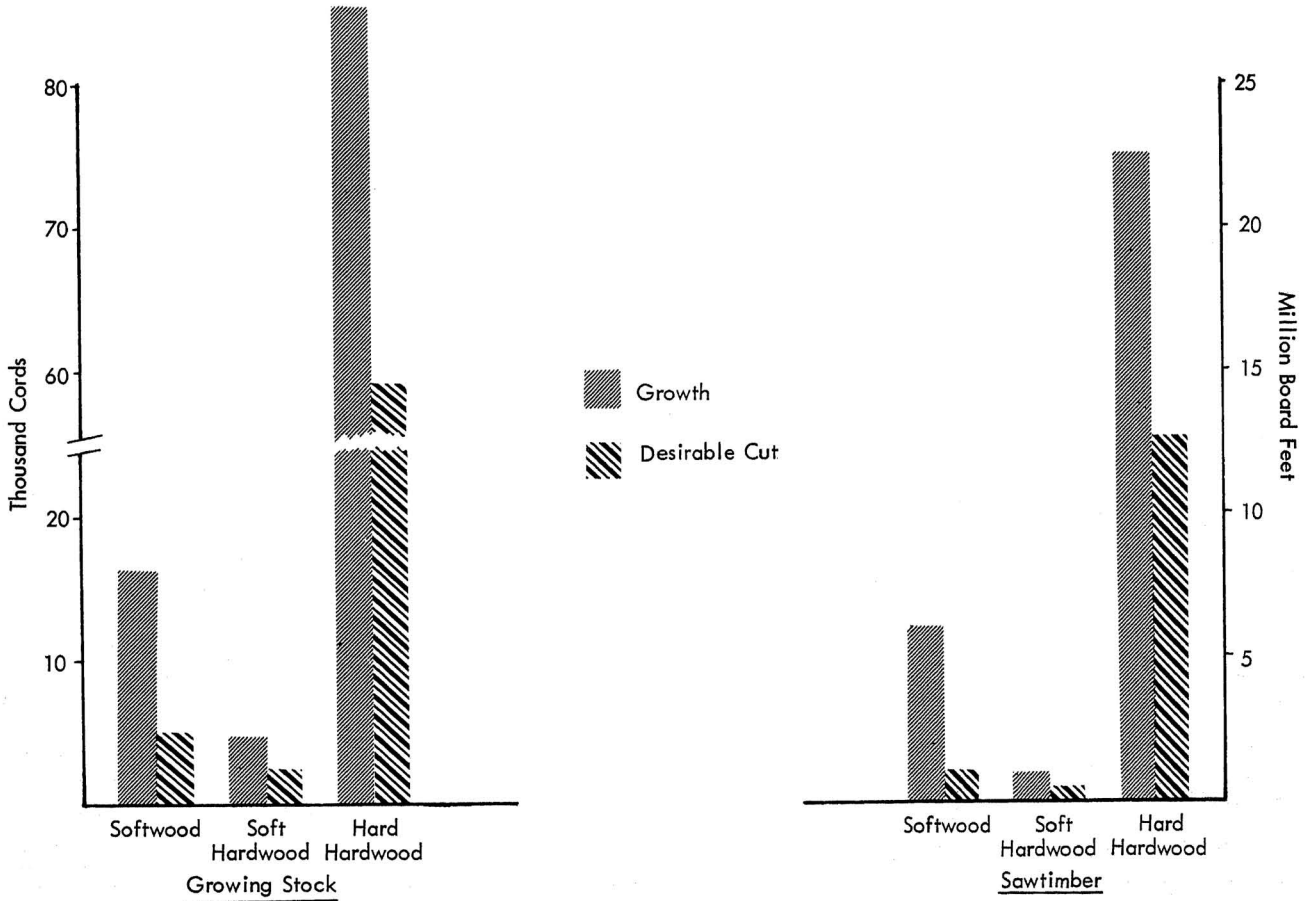


Fig. 27 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR OREGON COUNTY

Table 42. -- Commercial forest land by ownership and stand-size class

Oregon County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	88,400	44,000	31,800	4,900	5,600	2,100
Other Federal	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-
Farmer-owned	159,500	38,300	64,700	22,600	27,400	6,500
Forest industry and miscellaneous private	108,100	26,900	37,100	19,700	18,500	5,900
All ownerships	356,000	109,200	133,600	47,200	51,500	14,500

Table 43. -- Forest land area by type and stand-size class

Oregon County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	24,300	11,500	7,500	2,800	1,100	1,400
Redcedar	1,200	-	500	-	700	-
Hardwood - redcedar	1,000	-	600	-	-	400
Oak - pine	51,500	19,000	22,100	4,100	5,700	600
Black - scarlet oak	191,000	57,500	72,000	29,800	25,000	6,700
White Oak	29,000	11,000	14,100	2,000	1,300	600
Post - blackjack oak	45,400	6,300	13,000	6,800	15,400	3,900
Oak - gum - cypress	2,300	1,000	300	300	300	400
Elm - ash - cottonwood	7,400	2,100	1,800	1,000	2,000	500
Maple - beech	2,900	800	1,700	400	-	-
All commercial forest	356,000	109,200	133,600	47,200	51,500	14,500
Percent by size-class	100.0	30.7	37.5	13.3	14.4	4.1
Noncommercial forest						
Productive-reserved	*	*	-	-	-	-
Unproductive forest	2,400	-	-	-	-	2,400
All forest area	358,400	109,200	133,600	47,200	51,500	16,900

* Less than 1/2 of 1 significant unit.

Table 44. -- Net timber volume on commercial forest land by species and kind of material

Oregon County, Missouri, 1959

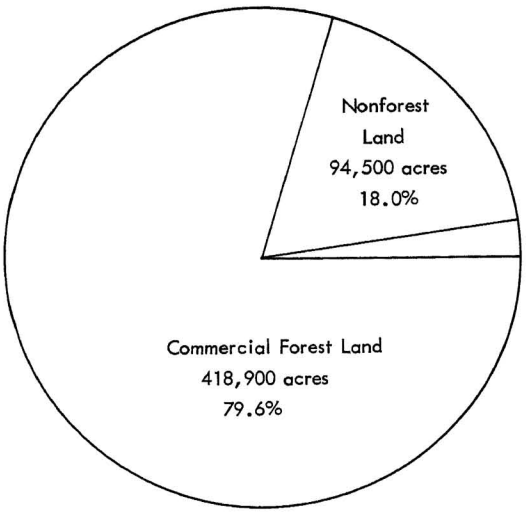
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood trees (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	283.8	97.5	186.3	61.1	46.6	10.1	4.4	.6	-
Cypress	.9	-	.9	.4	.4	-	-	-	-
Redcedar	3.0	2.7	.3	.1	-	*	.1	.3	-
All softwoods	287.7	100.2	187.5	61.6	47.0	10.1	4.5	.9	-
Hard Hardwoods									
Oak, white	318.8	175.9	142.9	51.6	32.8	7.3	11.5	40.8	103.0
Oak, post	211.5	119.5	92.0	34.1	20.3	5.6	8.2	36.4	70.1
Oak, other white	9.0	5.9	3.1	1.2	1.0	.2	-	1.5	2.3
Oak, black	424.3	253.9	170.4	66.7	43.2	8.9	14.6	45.0	130.8
Oak, scarlet	249.0	142.6	106.4	42.9	31.7	5.5	5.7	18.6	85.3
Oak, northern red	56.3	28.4	27.9	10.4	6.5	1.5	2.4	10.4	19.7
Oak, other red	44.6	32.7	11.9	4.5	1.3	.6	2.6	21.6	8.6
Hickory, Group A	87.6	60.5	27.1	11.1	8.1	.9	2.1	9.6	21.5
Hickory, Group B	83.3	61.1	22.2	9.2	4.3	1.1	3.8	12.8	17.7
Maple, hard	12.2	6.2	6.0	2.7	1.7	.4	.6	2.3	4.6
Birch	1.1	.8	.3	.1	-	.1	-	.1	.1
Walnut, black	8.4	7.0	1.4	.6	.4	.1	.1	1.0	1.0
Ash	6.7	3.9	2.8	1.0	.6	.2	.2	2.2	1.9
Other hard hardwoods	9.2	5.1	4.1	1.7	1.7	-	-	3.4	2.9
All hard hardwoods	1,522.0	903.6	618.5	237.8	153.6	32.4	51.8	205.7	469.5
Soft Hardwoods									
Elm	18.9	13.0	5.9	2.5	1.4	.2	.9	3.2	4.6
Maple, soft	1.8	1.0	.8	.4	.4	-	-	1.2	.6
Sweetgum	7.1	4.5	2.6	1.0	.4	.4	.2	.9	1.9
Blackgum	9.1	3.4	5.7	1.9	1.3	.2	.4	5.4	3.4
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	2.0	1.0	1.0	.4	.1	.1	.2	*	.6
Sycamore	6.8	2.5	4.3	1.8	1.4	.2	.2	1.5	3.4
All soft hardwoods	45.7	25.4	20.3	8.0	5.0	1.1	1.9	12.2	14.5
All hardwoods	1,567.7	928.9	638.8	245.8	158.6	33.5	53.7	217.9	484.0
All Species	1,855.4	1,029.1	826.3	307.4	205.6	43.6	58.2	218.8	484.0

* Less than 1/2 of 1 significant unit.

Table 45. -- Net timber volume by ownership and species group

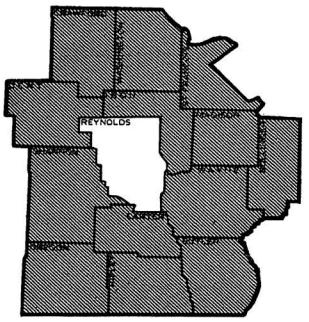
Oregon County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	694.0	198.9	6.8	488.3	128.4	45.8	.7	81.9
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-	-	-
Farmer-owned	657.4	51.4	20.3	585.7	99.7	9.0	3.7	87.0
Forest industry and miscellaneous private	504.0	37.4	18.6	448.0	79.3	6.8	3.6	68.9
All ownerships	1,855.4	287.7	45.7	1,522.0	307.4	61.6	8.0	237.8



Total Land Area - 526,100 acres

Fig. 28 - Location of and area in different classes of land in Reynolds County



EASTERN OZARK REGION

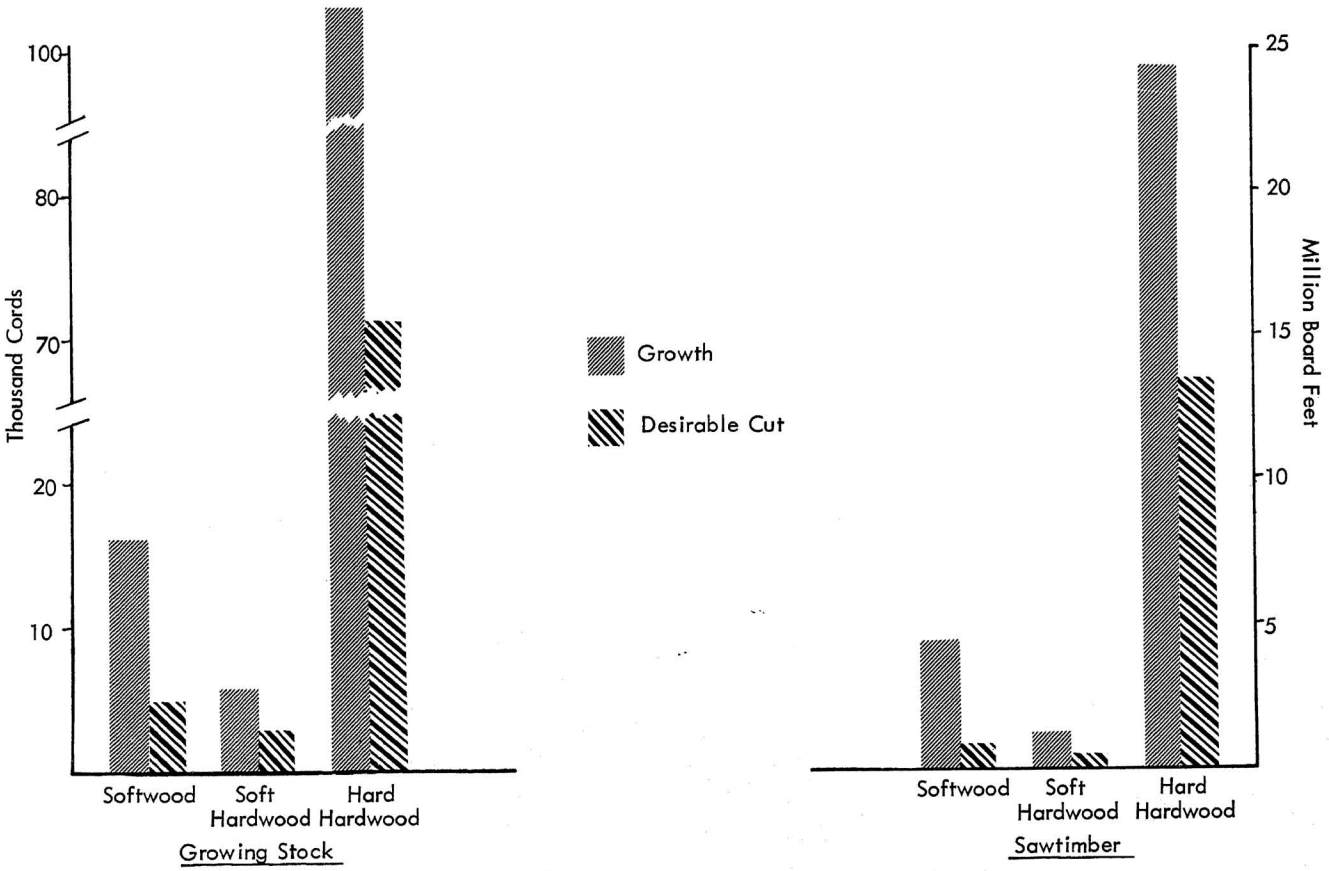


Fig. 29 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR REYNOLDS COUNTY

Table 46. -- Commercial forest land by ownership and stand-size class

Reynolds County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	89,400	35,400	42,600	4,900	1,600	4,900
Other Federal	-	-	-	-	-	-
State, county, & municipal	36,200	13,600	13,800	2,100	5,100	1,600
Farmer-owned	107,800	30,100	44,800	13,200	16,700	3,000
Forest industry and miscellaneous private	185,500	53,400	66,200	29,000	28,600	8,300
All ownerships	418,900	132,500	167,400	49,200	52,000	17,800

Table 47. -- Forest land area by type and stand-size class

Reynolds County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	19,300	7,600	9,000	700	900	1,100
Redcedar	1,200	-	800	-	400	-
Hardwood - redcedar	4,600	-	3,600	-	-	1,000
Oak - pine	42,200	16,300	16,900	2,100	6,500	400
Black - scarlet oak	241,700	77,400	98,200	34,500	23,000	8,600
White oak	41,500	17,100	17,600	3,400	2,100	1,300
Post - blackjack oak	50,600	8,100	16,100	6,300	15,900	4,200
Oak - gum - cypress	4,600	2,300	600	600	700	400
Elm - ash - cottonwood	10,300	3,000	2,800	1,200	2,500	800
Maple - beech	2,900	700	1,800	400	-	-
All commercial forest	418,900	132,500	167,400	49,200	52,000	17,800
Percent by size-class	100.0	31.6	40.0	11.7	12.4	4.3
Noncommercial forest						
Productive-reserved	9,700	1,000	4,000	900	1,900	1,900
Unproductive forest	3,000	-	-	-	-	3,000
All forest area	431,600	133,500	171,400	50,100	53,900	22,700

Table 48. -- Net timber volume on commercial forest land by species and kind of material

Reynolds County, Missouri, 1959

Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood trees (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	277.5	144.7	132.8	43.7	19.5	18.1	6.1	1.1	-
Cypress	2.1	-	2.1	.9	.9	-	-	-	-
Redcedar	4.1	3.7	.4	.1	-	.1	-	.4	-
All softwoods	283.7	148.4	135.3	44.7	20.4	18.2	6.1	1.5	-
Hard Hardwoods									
Oak, white	417.6	245.5	172.1	62.3	34.3	14.4	13.6	56.5	124.3
Oak, post	202.8	127.5	75.3	27.9	16.1	2.3	9.5	46.0	57.4
Oak, other white	9.6	6.9	2.7	1.1	.9	.2	*	2.1	2.1
Oak, black	561.6	375.7	185.9	72.9	42.9	12.3	17.7	59.2	142.7
Oak, scarlet	257.1	169.6	87.5	35.2	20.6	7.1	7.5	24.7	70.2
Oak, northern red	97.3	54.4	42.9	16.2	8.5	4.7	3.0	14.3	30.3
Oak, other red	64.4	48.0	16.4	6.1	2.4	.9	2.8	24.6	11.8
Hickory, Group A	92.2	59.1	33.1	13.6	9.2	1.3	3.1	12.4	26.3
Hickory, Group B	86.7	58.3	28.4	11.8	5.0	1.6	5.2	16.7	22.7
Maple, hard	13.4	6.9	6.5	3.1	1.7	.8	.6	2.5	5.0
Birch	1.1	.8	.3	*	-	*	*	.2	.1
Walnut, black	9.8	8.6	1.2	.5	.2	.1	.2	1.2	.9
Ash	8.7	5.4	3.3	1.2	.9	*	.3	3.0	2.3
Other hard hardwoods	13.3	6.9	6.4	2.7	2.7	-	-	4.4	4.5
All hard hardwoods	1,835.6	1,173.6	662.0	254.6	145.4	45.7	63.5	267.8	500.6
Soft Hardwoods									
Elm	23.5	16.1	7.4	2.9	1.8	.1	1.0	4.3	5.7
Maple, soft	1.8	1.2	.6	.3	.3	*	*	1.3	.5
Sweetgum	10.7	6.8	3.9	1.6	.7	.6	.3	1.4	2.9
Blackgum	12.6	4.8	7.8	2.5	1.8	.2	.5	7.3	4.6
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.8	-	.8	.3	.1	.1	.1	.1	.6
Sycamore	6.4	1.9	4.5	1.8	1.4	.1	.3	2.3	3.4
All soft hardwoods	55.8	30.8	25.0	9.4	6.1	1.1	2.2	16.7	17.7
All hardwoods	1,891.4	1,204.4	687.0	264.0	151.5	46.8	65.7	284.5	518.3
All Species	2,175.1	1,352.8	822.3	308.7	171.9	65.0	71.8	286.0	518.3

* Less than 1/2 of 1 significant unit.

Table 49. -- Net timber volume by ownership and species group

Reynolds County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	654.5	148.7	6.1	499.7	64.3	21.2	.6	42.5
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	208.7	18.9	8.1	181.7	35.2	3.4	1.5	30.3
Farmer-owned	485.0	42.6	14.0	428.4	73.5	7.1	2.4	64.0
Forest industry and miscellaneous private	826.9	73.5	27.6	725.8	135.7	13.0	4.9	117.8
All ownerships	2,175.1	283.7	55.8	1,835.6	308.7	44.7	9.4	254.6

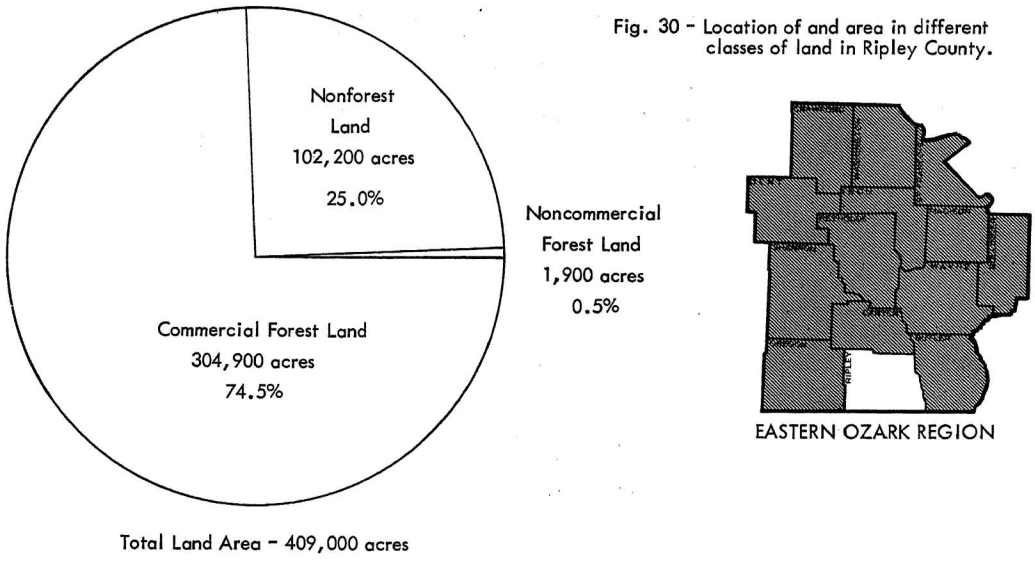


Fig. 30 - Location of and area in different classes of land in Ripley County.

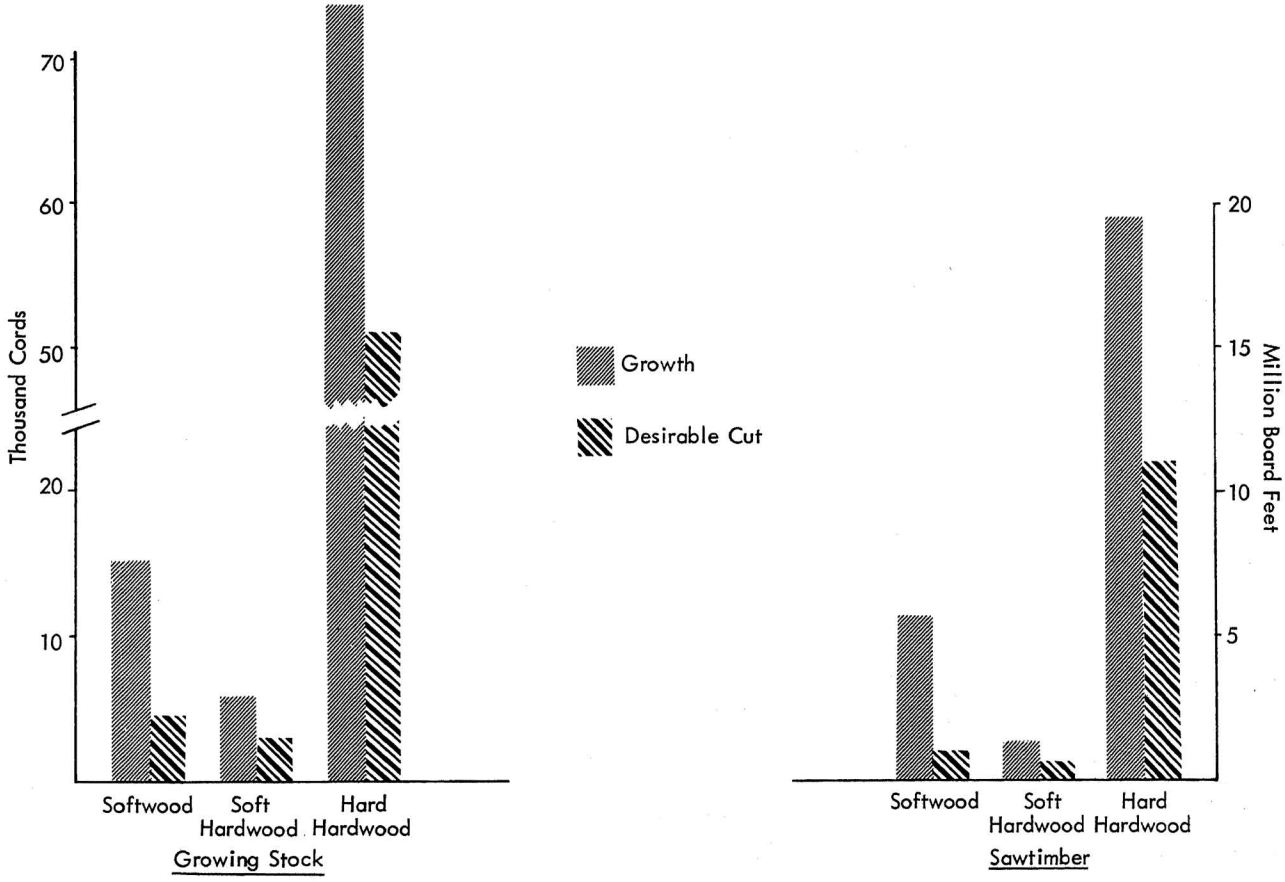


Fig. 31 -COMPARISON OF GROWTH AND DESIRABLE CUT FOR RIPLEY COUNTY

Table 50. -- Commercial forest land by ownership and stand-size class

Ripley County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	87,800	41,900	32,400	5,000	5,800	2,700
Other Federal	-	-	-	-	-	-
State, county, & municipal	3,400	1,100	1,400	200	500	200
Farmer-owned	120,400	27,700	49,400	17,000	20,100	6,200
Forest industry and miscellaneous private	93,300	22,200	33,200	16,900	15,500	5,500
All ownerships	304,900	92,900	116,400	39,100	41,900	14,600

Table 51. -- Forest land area by type and stand-size class

Ripley County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	21,400	10,400	6,600	2,200	1,000	1,200
Redcedar	1,100	-	400	-	700	-
Hardwood - redcedar	800	-	400	-	-	400
Oak - pine	46,100	16,400	20,200	4,200	4,600	700
Black - scarlet oak	154,900	45,100	59,600	24,000	20,500	5,700
White oak	21,700	8,000	11,100	1,400	900	300
Post - blackjack oak	37,400	4,700	11,500	5,500	12,400	3,300
Oak - gum - cypress	9,400	4,300	2,000	500	100	2,500
Elm - ash - cottonwood	9,200	3,000	3,000	1,000	1,700	500
Maple - beech	2,900	1,000	1,600	300	-	-
All commercial forest	304,900	92,900	116,400	39,100	41,900	14,600
Percent by size-class	100.0	30.5	38.2	12.8	13.7	4.8
Noncommercial forest						
Productive-reserved	*	*	-	-	-	-
Unproductive forest	1,900	-	-	-	-	1,900
All forest area	306,800	92,900	116,400	39,100	41,900	16,500

* Less than 1/2 of 1 significant unit.

Table 52. -- Net timber volume on commercial forest land by species and kind of material

Ripley County, Missouri, 1959

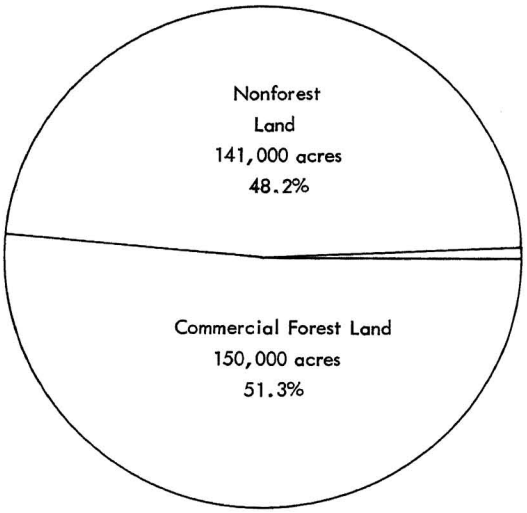
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	263.9	89.5	174.4	57.0	43.6	10.0	3.4	.6	-
Cypress	2.1	-	2.1	.8	.8	-	-	.1	-
Redcedar	2.3	2.0	.3	.1	-	*	.1	.2	-
All softwoods	268.3	91.5	176.8	57.9	44.4	10.0	3.5	.9	-
Hard Hardwoods									
Oak, white	261.5	147.1	114.4	41.3	24.3	8.0	9.0	33.6	82.4
Oak, post	177.2	100.5	76.7	28.3	15.2	6.6	6.5	29.9	58.4
Oak, other white	13.1	8.4	4.7	1.9	1.6	.1	.2	2.3	3.5
Oak, black	356.9	215.2	141.7	55.4	32.6	11.5	11.3	36.9	108.7
Oak, scarlet	220.2	129.2	91.0	36.8	25.1	7.2	4.5	14.7	73.1
Oak, northern red	46.1	23.9	22.2	8.5	4.5	2.0	2.0	8.5	15.7
Oak, other red	54.9	31.2	23.7	9.2	5.7	1.2	2.3	19.9	17.8
Hickory, Group A	72.5	51.7	20.8	8.4	5.7	1.0	1.7	7.7	16.4
Hickory, Group B	72.8	53.5	19.3	8.1	3.7	1.4	3.0	10.6	15.5
Maple, hard	12.4	6.0	6.4	2.9	2.1	.3	.5	2.1	4.8
Birch	1.2	.8	.4	.3	-	.3	-	.2	.2
Walnut, black	6.9	5.7	1.2	.4	.2	.1	.1	.9	1.0
Ash	7.0	3.9	3.1	1.1	.8	.2	.1	2.2	2.3
Other hard hardwoods	13.7	5.9	7.8	2.9	2.9	-	-	3.9	4.9
All hard hardwoods	1,316.4	783.0	533.4	205.5	124.4	39.9	41.2	173.4	404.7
Soft Hardwoods									
Elm	22.7	14.8	7.9	3.3	1.9	.4	1.0	4.6	6.1
Maple, soft	2.5	.8	1.7	.7	.6	.1	-	2.3	1.2
Sweetgum	11.2	7.0	4.2	1.6	.9	.4	.3	1.6	3.0
Blackgum	7.8	2.7	5.1	1.7	1.1	.2	.4	4.9	3.0
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	2.5	1.5	1.0	.4	.2	.1	.1	*	.7
Sycamore	10.6	2.5	8.1	2.6	2.0	.4	.2	1.6	4.7
All soft hardwoods	57.3	29.3	28.0	10.3	6.7	1.6	2.0	15.0	18.7
All hardwoods	1,373.7	812.3	561.4	215.8	131.1	41.5	43.2	188.4	423.4
All Species	1,642.0	903.8	738.2	273.7	175.5	51.5	46.7	189.3	423.4

* Less than 1/2 of 1 significant unit.

Table 53. -- Net timber volume by ownership and species group

Ripley County, Missouri, 1959

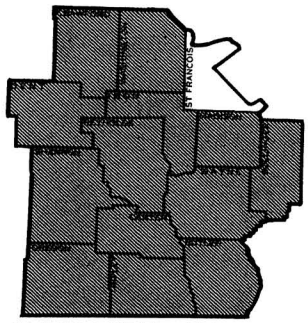
Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	704.2	195.4	10.0	498.8	127.3	45.1	1.2	81.0
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	19.1	1.6	1.1	16.4	4.2	.3	.3	3.6
Farmer-owned	506.5	39.5	23.0	444.0	99.5	6.8	4.8	87.9
Forest industry and miscellaneous private	412.2	31.8	23.2	357.2	42.7	5.7	4.0	33.0
All ownerships	1,642.0	268.3	57.3	1,316.4	273.7	57.9	10.3	205.5



Noncommercial
Forest Land
1,500 acres
0.5%

Total Land Area - 292,500 acres

Fig. 32 - Location of and area of land in different classes of land in St. Francois County.



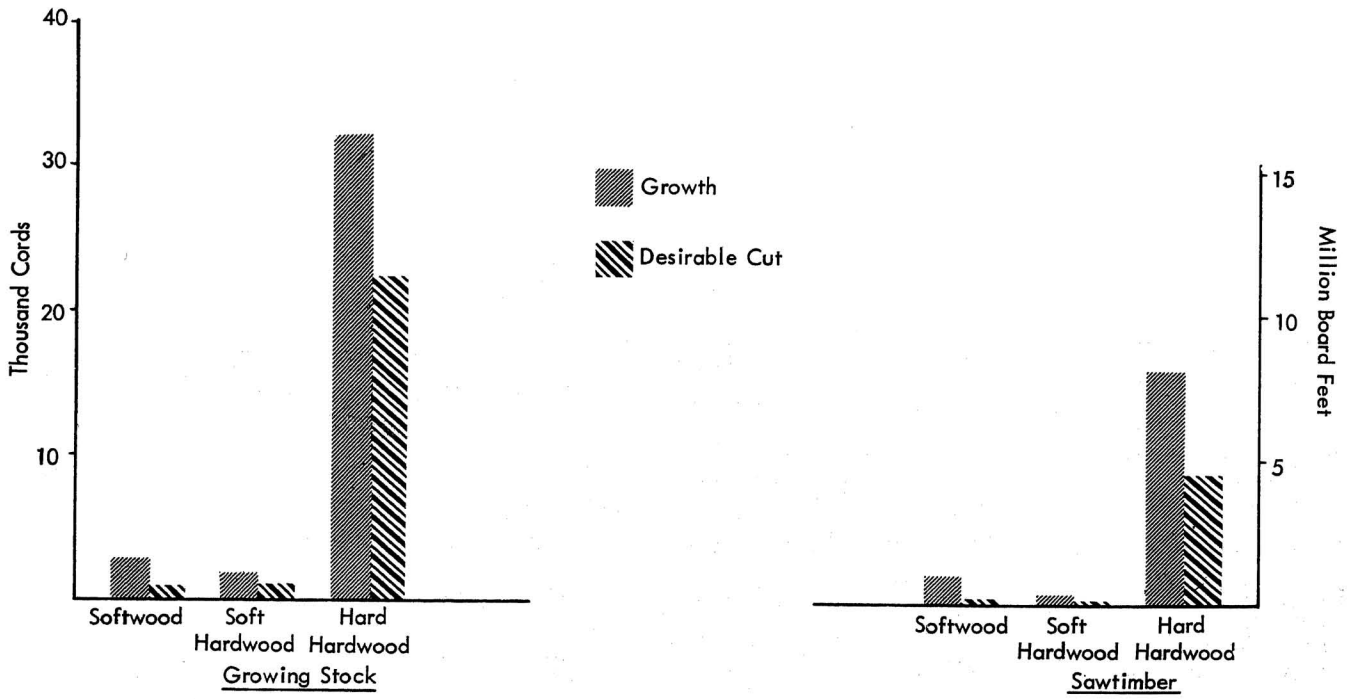


Fig. 33 COMPARISON OF GROWTH AND DESIRABLE CUT FOR ST. FRANCOIS COUNTY

Table 54. -- Commercial forest land by ownership and stand-size class

St. Francois County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	3,500	700	1,500	800	300	200
Other Federal	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-
Farmer-owned	65,200	15,400	26,900	9,000	11,200	2,700
Forest industry and miscellaneous private	81,300	19,700	29,200	14,500	13,900	4,000
All ownerships	150,000	35,800	57,600	24,300	25,400	6,900

Table 55. -- Forest land area by type and stand-size class

St. Francois County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	4,200	1,400	1,600	200	600	400
Redcedar	400	-	200	-	200	-
Hardwood - redcedar	600	-	400	-	-	200
Oak - pine	10,700	2,600	3,800	1,300	2,800	200
Black - scarlet oak	88,000	21,700	34,900	16,500	11,700	3,200
White oak	15,700	5,700	7,700	1,300	700	300
Post - blackjack oak	25,000	3,000	7,300	4,100	8,400	2,200
Oak - gum - cypress	1,200	500	200	200	100	200
Elm - ash - cottonwood	3,000	700	700	500	900	200
Maple - beech	1,200	200	800	200	-	-
All commercial forest	150,000	35,800	57,600	24,300	25,400	6,900
Percent by size-class	100.0	23.9	38.4	16.2	16.9	4.6
Noncommercial forest						
Productive-reserved	-	-	-	-	-	-
Unproductive forest	1,500	-	-	-	-	1,500
All forest area	151,500	35,800	57,600	24,300	25,400	8,400

Table 56. -- Net timber volume on commercial forest land by species and kind of material

St. Francois County, Missouri, 1959

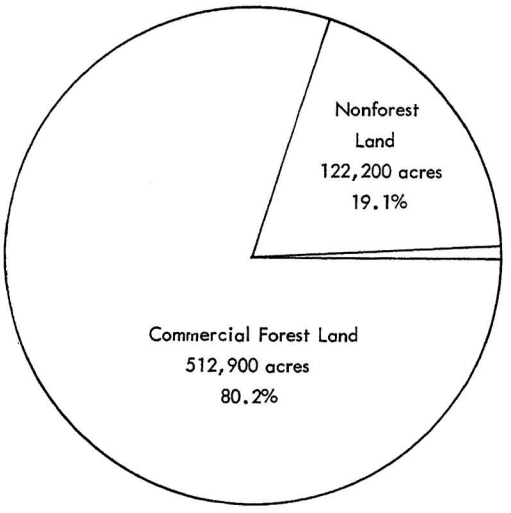
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	47.6	21.7	25.9	8.6	5.0	1.1	2.5	.2	-
Cypress	.4	-	.4	.2	.2	-	-	-	-
Redcedar	1.8	1.6	.2	*	*	*	*	.1	-
All softwoods	49.8	23.3	26.5	8.8	5.2	1.1	2.5	.3	-
Hard Hardwoods									
Oak, white	132.4	75.3	57.1	20.6	12.4	1.9	6.3	16.6	41.2
Oak, post	79.7	50.1	29.6	11.0	6.0	.3	4.7	17.1	22.5
Oak, other white	2.7	1.9	.8	.3	.2	*	.1	.4	.6
Oak, black	166.0	101.8	64.2	25.2	16.0	1.1	8.1	19.1	49.3
Oak, scarlet	66.6	39.3	27.3	11.1	7.8	.2	3.1	8.2	22.1
Oak, northern red	24.2	11.1	13.1	4.9	3.1	.4	1.4	4.1	9.2
Oak, other red	24.3	17.8	6.5	2.5	.7	.4	1.4	10.9	4.8
Hickory, Group A	34.4	22.4	12.0	5.0	3.6	.2	1.2	4.3	9.4
Hickory, Group B	31.6	22.3	9.3	3.9	1.6	.3	2.0	5.7	7.4
Maple, hard	5.5	2.7	2.8	1.2	.7	.2	.3	.9	2.1
Birch	.4	.3	.1	*	-	*	-	.1	-
Walnut, black	4.0	3.6	.4	.1	*	*	.1	.5	.3
Ash	2.9	1.9	1.0	.4	.3	*	.1	.9	.7
Other hard hardwoods	3.7	2.1	1.6	.7	.7	-	-	1.4	1.1
All hard hardwoods	578.4	352.6	225.8	86.9	53.1	5.0	28.8	90.2	170.7
Soft Hardwoods									
Elm	7.9	5.4	2.5	1.0	.6	*	.4	1.2	1.9
Maple, soft	.5	.4	.1	*	*	-	-	.3	.1
Sweetgum	2.8	2.0	.8	.3	.2	.1	-	.3	.5
Blackgum	4.5	1.7	2.8	.9	.7	-	.2	2.5	1.6
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.4	-	.4	.1	*	*	.1	*	.3
Sycamore	2.0	.7	1.3	.5	.4	*	.1	.4	.9
All soft hardwoods	18.1	10.2	7.9	2.8	1.9	.1	.8	4.7	5.3
All hardwoods	596.5	362.8	233.7	89.7	55.0	5.1	29.6	94.9	176.0
All Species	646.3	386.1	260.2	98.5	60.2	6.2	32.1	95.2	176.0

* Less than 1/2 of 1 significant unit.

Table 57. -- Net timber volume by ownership and species group

St. Francois County, Missouri, 1959

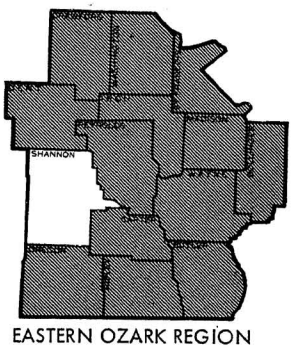
Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	14.7	1.1	.3	13.3	2.3	.2	-	2.1
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	-	-	-	-	-	-	-	-
Farmer-owned	277.1	21.3	7.0	248.8	40.2	3.7	1.0	35.5
Forest industry and miscellaneous private	354.5	27.4	10.8	316.3	56.0	4.9	1.8	49.3
All ownerships	646.3	49.8	18.1	578.4	98.5	8.8	2.8	86.9



Total Land Area - 639,400 acres

Fig. 34 - Location of and area of land in different classes in Shannon County.

Noncommercial
Forest Land
4,300 acres
0.7%



EASTERN OZARK REGION

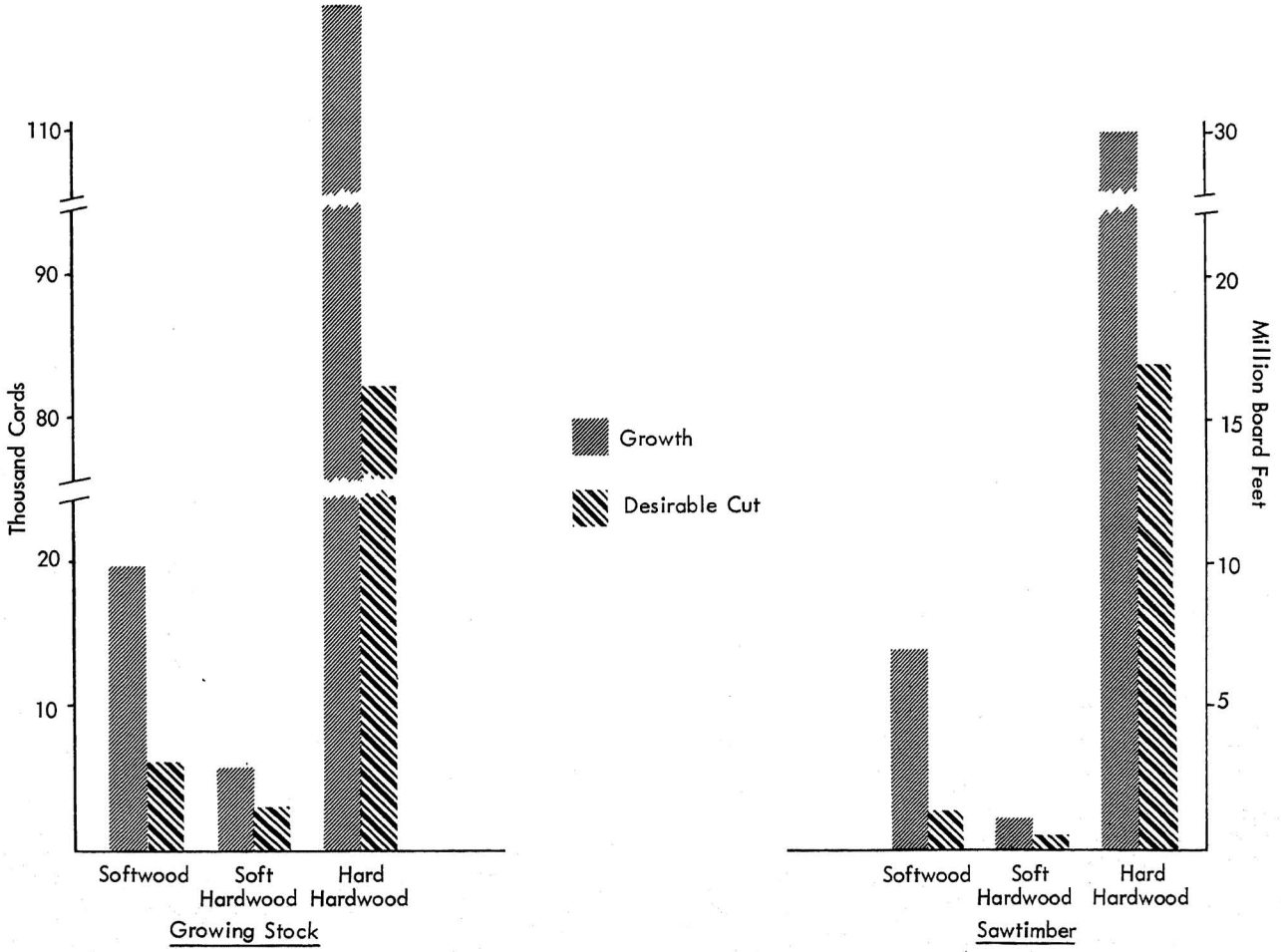


Fig. 35 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR SHANNON COUNTY

Table 58. -- Commercial forest land by ownership and stand-size class

Shannon County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	81,400	35,900	32,300	7,000	3,200	3,000
Other Federal	-	-	-	-	-	-
State, county, & municipal	60,600	16,300	27,100	4,300	10,500	2,400
Farmer-owned	115,000	24,500	53,600	14,900	18,800	3,200
Forest industry and miscellaneous private	255,900	61,800	91,600	47,400	40,700	14,400
All ownerships	512,900	138,500	204,600	73,600	73,200	23,000

Table 59. -- Forest land by type and stand-size class

Shannon County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	29,900	11,900	10,700	3,800	1,900	1,600
Redcedar	1,400	-	600	-	800	-
Hardwood - redcedar	1,800	-	900	-	-	900
Oak - pine	58,600	18,900	25,500	5,100	8,100	1,000
Black - scarlet oak	288,300	78,300	116,000	48,900	34,600	10,500
White oak	45,300	17,100	22,500	3,000	2,000	700
Post - blackjack oak	72,500	8,500	23,400	10,300	23,200	7,100
Oak - gum - cypress	2,700	800	400	400	400	700
Elm - ash - cottonwood	8,700	2,100	2,500	1,400	2,200	500
Maple - beech	3,700	900	2,100	700	-	-
All commercial forest	512,900	138,500	204,600	73,600	73,200	23,000
Percent by size-class	100.0	27.0	39.9	14.3	14.3	4.5
Noncommercial forest						
Productive-reserved	400	*	-	-	400	-
Unproductive forest	3,900	-	-	-	-	3,900
All forest area	517,200	138,500	204,600	73,600	73,600	26,900

* Less than 1/2 of 1 significant unit.

Table 60. -- Net timber volume on commercial forest land by species and kind of material

Shannon County, Missouri, 1959

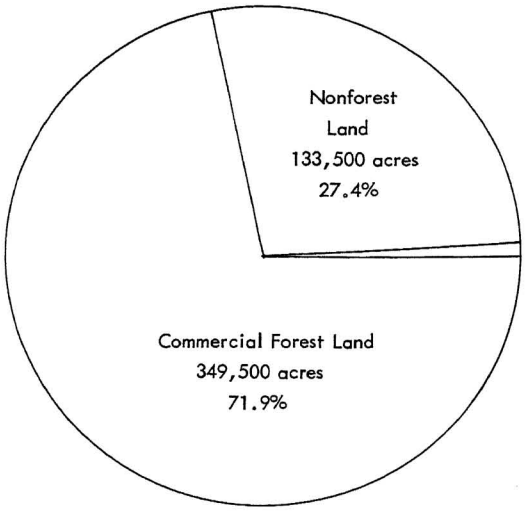
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	347.3	136.8	210.5	69.0	50.1	11.6	7.3	1.0	-
Cypress	.7	-	.7	.3	.3	-	-	-	-
Redcedar	4.3	3.7	.6	.1	-	-	.1	.5	-
All softwoods	352.3	140.5	211.8	69.4	50.4	11.6	7.4	1.5	-
Hard Hardwoods									
Oak, white	467.2	265.5	201.7	72.8	43.9	9.9	19.0	59.4	145.2
Oak, post	282.1	171.8	110.3	40.9	23.7	3.5	13.7	55.6	84.1
Oak, other white	9.9	6.8	3.1	1.1	1.0	.1	*	1.9	2.3
Oak, black	605.9	378.5	227.4	89.0	57.3	7.6	24.1	66.4	174.4
Oak, scarlet	312.0	183.7	128.3	51.7	37.8	4.2	9.7	27.8	103.0
Oak, northern red	87.2	43.7	43.5	16.4	9.7	2.5	4.2	15.1	30.7
Oak, other red	70.7	53.2	17.5	6.6	1.5	.9	4.2	33.2	12.7
Hickory, Group A	118.9	79.9	39.0	15.9	11.3	1.0	3.6	14.6	30.9
Hickory, Group B	111.2	80.3	30.9	12.9	5.7	1.1	6.1	19.1	24.5
Maple, hard	16.9	8.6	8.3	3.7	2.3	.5	.9	2.9	6.3
Birch	1.3	1.0	.3	.1	-	.1	*	.1	.2
Walnut, black	12.6	10.6	2.0	.8	.5	.1	.2	1.6	1.5
Ash	8.1	5.3	2.8	1.1	.6	.1	.4	3.2	2.1
Other hard hardwoods	10.5	6.4	4.1	1.7	1.7	-	-	4.6	2.8
All hard hardwoods	2,114.5	1,295.3	819.2	314.7	197.0	31.6	86.1	305.5	620.7
Soft Hardwoods									
Elm	24.7	17.2	7.5	2.9	1.6	.1	1.2	3.8	5.8
Maple, soft	1.6	1.2	.4	.2	.2	-	-	1.0	.3
Sweetgum	8.4	5.9	2.5	1.0	.4	.4	.2	1.1	1.8
Blackgum	14.0	5.5	8.5	2.9	2.0	.2	.7	8.2	5.1
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	1.4	.3	1.1	.5	.2	.1	.2	*	.8
Sycamore	6.5	2.7	3.8	1.5	1.1	.1	.3	1.7	3.0
All soft hardwoods	56.6	32.8	23.8	9.0	5.5	.9	2.6	15.8	16.8
All hardwoods	2,171.1	1,328.1	843.0	323.7	202.5	32.5	88.7	321.3	637.5
All Species	2,523.4	1,468.6	1,054.8	393.1	252.9	44.1	96.1	322.8	637.5

* Less than 1/2 of 1 significant unit.

Table 61. -- Net timber volume by ownership and species group

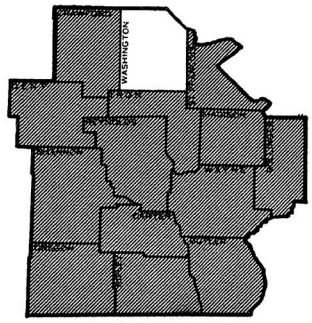
Shannon County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	642.8	199.7	4.7	438.4	109.4	43.5	.4	65.5
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	322.7	26.2	10.0	286.5	48.8	4.5	1.7	42.6
Farmer-owned	494.9	39.5	11.8	443.6	68.4	6.3	1.8	60.3
Forest industry and miscellaneous private	1,063.0	86.9	30.1	946.0	166.5	15.1	5.1	146.3
All ownerships	2,523.4	352.3	56.6	2,114.5	393.1	69.4	9.0	314.7



Total Land Area - 486,400 acres

Fig. 36 - Location of and area of land in different classes of land in Washington County



EASTERN OZARK REGION

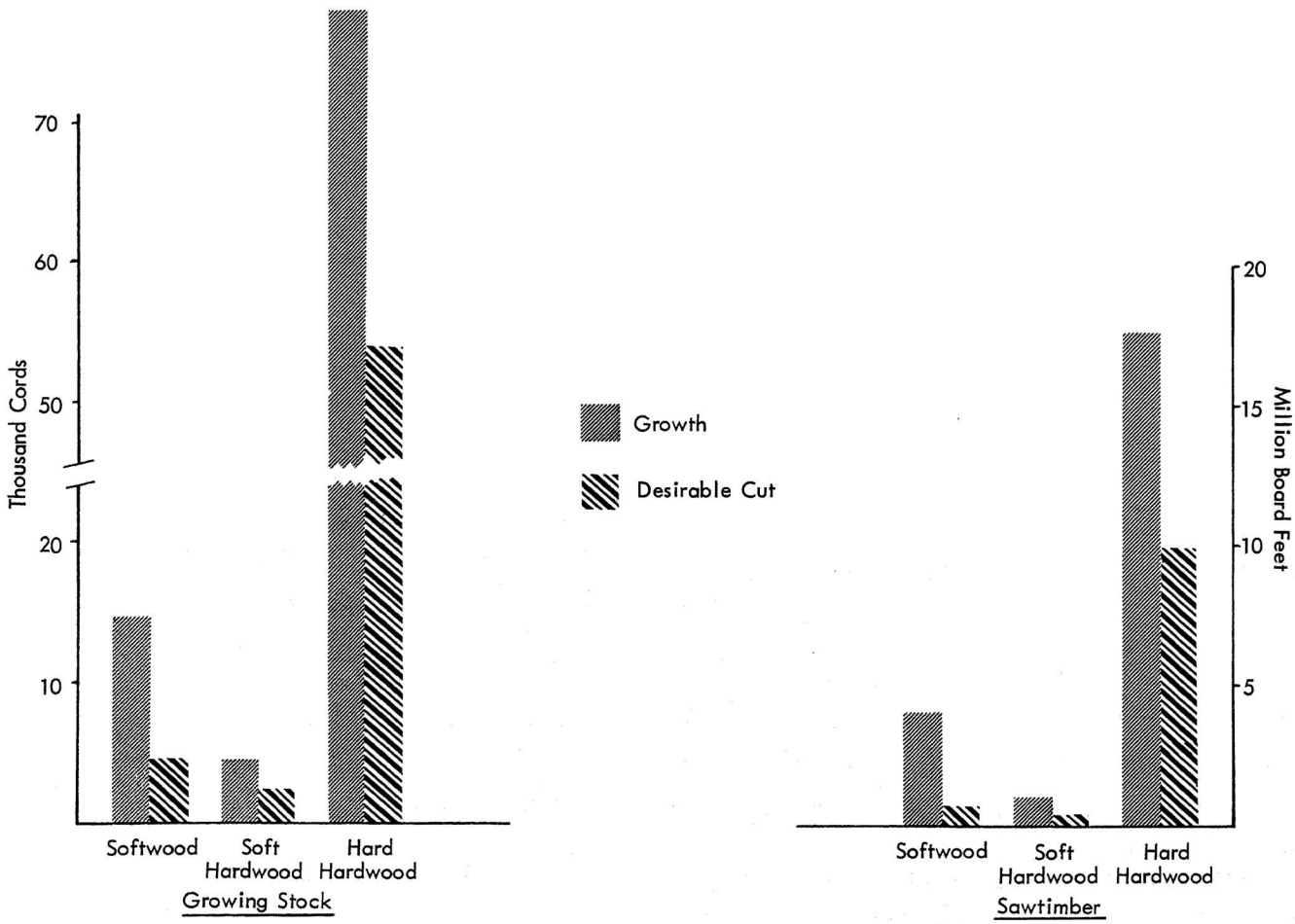


Fig. 37 - COMPARISON OF GROWTH AND DESIRABLE CUT FOR WASHINGTON COUNTY

Table 62. -- Commercial forest land by ownership and stand-size class

Washington County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Federally owned or managed						
National forest	70,900	26,000	34,700	4,100	1,700	4,400
Other Federal	-	-	-	-	-	-
State, county, & municipal	3,500	900	1,500	200	600	300
Farmer-owned	85,500	17,000	38,000	11,700	15,900	2,900
Forest industry and miscellaneous private	189,600	38,700	73,300	33,100	35,200	9,300
All ownerships	349,500	82,600	147,500	49,100	53,400	16,900

Table 63. -- Forest land area by type and stand-size class

Washington County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satis-factorily stocked	Poorly stocked	
Commercial forest						
Pine	17,800	6,600	8,600	600	1,400	600
Redcedar	1,300	-	900	*	400	-
Hardwood - redcedar	2,600	-	1,500	-	-	1,100
Oak - pine	33,000	11,500	13,100	2,900	4,900	600
Black - scarlet oak	195,700	45,600	86,700	33,100	22,100	8,200
White oak	29,600	9,600	15,000	2,700	2,100	200
Post - blackjack oak	54,200	4,100	17,300	8,100	19,100	5,600
Oak - gum - cypress	3,000	2,300	100	100	100	400
Elm - ash - cottonwood	8,700	2,100	2,000	1,100	3,300	200
Maple - beech	3,600	800	2,300	500	-	-
All commercial forest	349,500	82,600	147,500	49,100	53,400	16,900
Percent by size-class	100.0	23.6	42.2	14.1	15.3	4.8
Noncommercial forest						
Productive-reserved	1,000	-	-	500	500	-
Unproductive forest	2,400	-	-	-	-	2,400
All forest area	352,900	82,600	147,500	49,600	53,900	19,300

* Less than 1/2 of 1 significant unit.

Table 64. -- Net timber volume on commercial forest land by species and kind of material

Washington County, Missouri, 1959

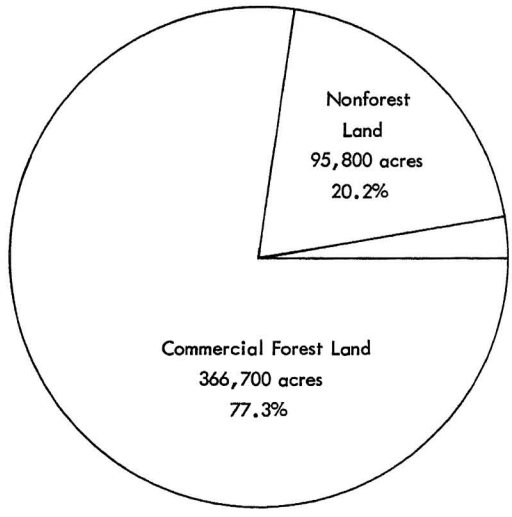
Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	255.4	133.6	121.8	39.7	17.2	17.6	4.9	.9	-
Cypress	2.0	-	2.0	.9	.9	-	-	-	-
Redcedar	5.2	4.5	.7	.2	-	.2	*	.4	-
All softwoods	262.6	138.1	124.5	40.8	18.1	17.8	4.9	1.3	-
Hard Hardwoods									
Oak, white	319.3	193.7	125.6	45.3	19.9	12.6	12.8	44.1	90.4
Oak, post	165.4	110.6	54.8	20.3	9.0	2.0	9.3	39.7	41.8
Oak, other white	6.3	4.2	2.1	.8	.7	.1	*	1.6	1.6
Oak, black	405.4	274.6	130.8	51.2	25.4	9.8	16.0	48.3	100.4
Oak, scarlet	185.5	122.5	63.0	25.5	12.8	6.2	6.5	18.8	50.5
Oak, northern red	69.3	38.0	31.3	11.7	5.0	3.9	2.8	11.3	22.0
Oak, other red	55.5	41.5	14.0	5.2	1.9	.5	2.8	24.2	10.2
Hickory, Group A	72.8	50.0	22.8	9.3	5.3	1.6	2.4	10.1	18.2
Hickory, Group B	73.4	51.3	22.1	9.2	2.8	1.8	4.6	13.7	17.5
Maple, hard	14.6	7.3	7.3	3.4	1.8	.9	.7	2.6	5.8
Birch	1.4	1.0	.4	.2	-	.2	*	.2	.1
Walnut, black	7.6	6.8	.8	.3	*	.1	.2	1.0	.7
Ash	6.7	4.4	2.3	.8	.6	*	.2	2.5	1.6
Other hard hardwoods	10.2	5.0	5.2	2.2	2.2	-	-	3.8	3.5
All hard hardwoods	1,393.4	910.9	482.5	185.4	87.4	39.7	58.3	221.9	364.3
Soft Hardwoods									
Elm	18.9	12.9	6.0	2.4	1.2	.2	1.0	3.8	4.7
Maple, soft	1.4	.7	.7	.3	.3	*	*	1.3	.4
Sweetgum	8.2	5.3	2.9	1.2	.6	.3	.3	1.3	2.3
Blackgum	8.7	3.4	5.3	1.7	1.1	.2	.4	5.9	3.1
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	.8	-	.8	.3	.1	.1	.1	*	.6
Sycamore	5.2	1.6	3.6	1.5	1.1	.1	.3	1.6	2.7
All soft hardwoods	43.2	23.9	19.3	7.4	4.4	.9	2.1	13.9	13.8
All hardwoods	1,436.6	934.8	501.8	192.8	91.8	40.6	60.4	235.8	378.1
All Species	1,699.2	1,072.9	626.3	233.6	109.9	58.4	65.3	237.1	378.1

* Less than 1/2 of 1 significant unit.

Table 65. -- Net timber volume by ownership and species group

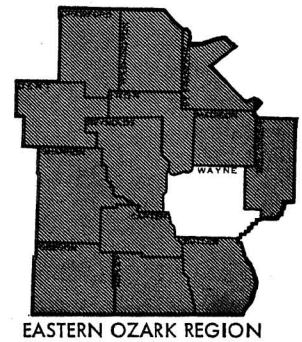
Washington County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	531.4	168.9	4.6	357.9	62.2	25.0	.6	36.6
Other Federal	-	-	-	-	-	-	-	-
State, county, & municipal	18.2	1.5	.7	16.0	2.8	.3	.1	2.4
Farmer-owned	355.8	28.4	10.4	317.0	49.5	4.6	1.8	43.1
Forest industry and miscellaneous private	793.8	63.8	27.5	702.5	119.1	10.9	4.9	103.3
All ownerships	1,699.2	262.6	43.2	1,393.4	233.6	40.8	7.4	185.4



Total Land Area - 474,200 acres

Fig. 38 - Location of and area in different classes of land in Wayne County



EASTERN OZARK REGION

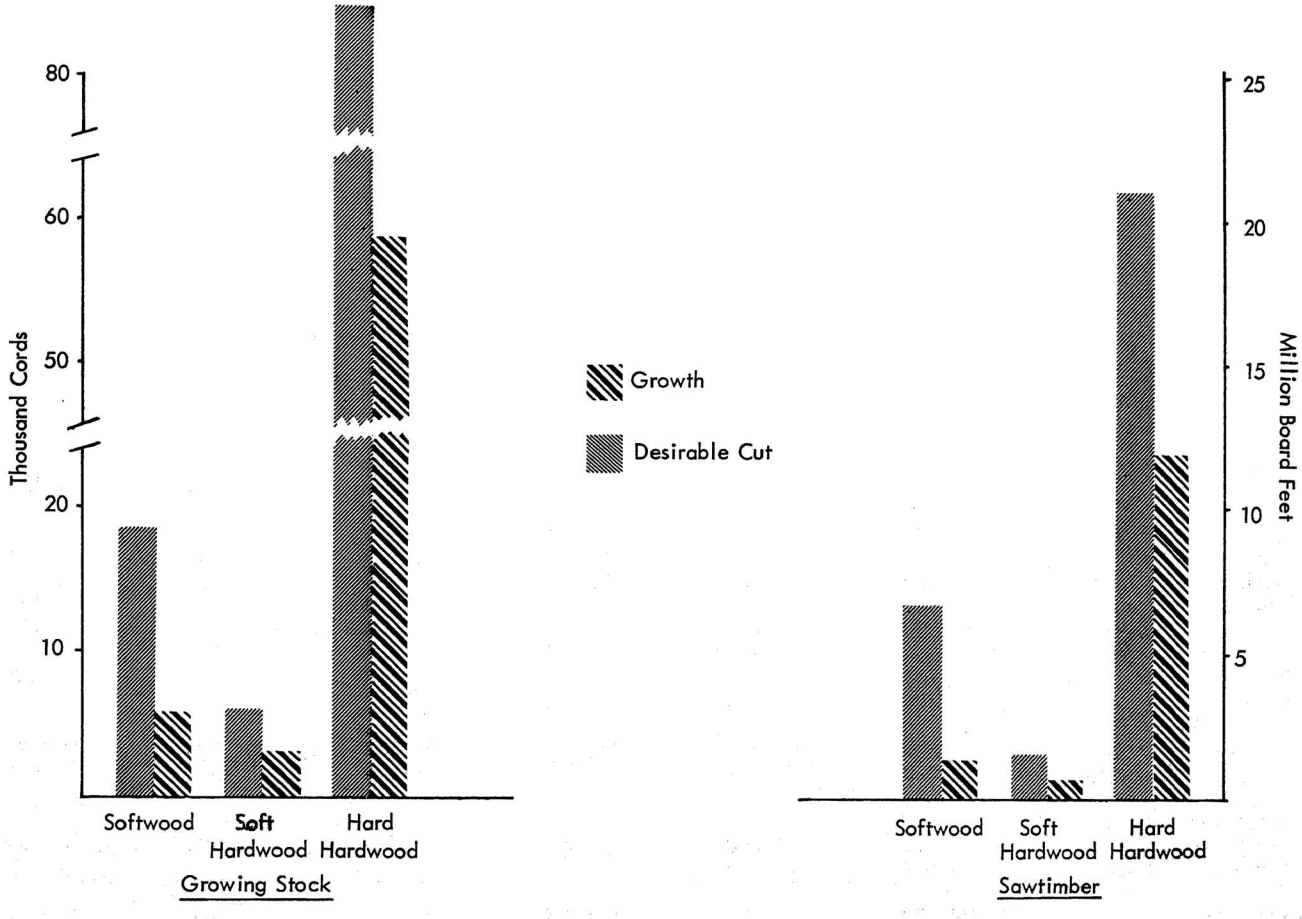


Fig. 39 COMPARISON OF GROWTH AND DESIRABLE CUT FOR WAYNE COUNTY

Table 66. -- Commercial forest land by ownership and stand-size class

Wayne County, Missouri, 1959

(Acres)

Ownership class	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Federally owned or managed						
National forest	81,500	40,200	31,500	4,400	3,400	2,000
Other Federal	6,000	1,700	2,300	800	900	300
State, county, & municipal	15,000	4,300	6,300	1,100	2,500	800
Farmer-owned	140,500	30,000	57,300	22,200	25,600	5,400
Forest industry and miscellaneous private	123,700	27,300	42,500	25,000	22,500	6,400
All ownerships	366,700	103,500	139,900	53,500	54,900	14,900

Table 67. -- Forest land area by type and stand-size class

Wayne County, Missouri, 1959

(Acres)

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings		Non-stocked
				Satisfactorily stocked	Poorly stocked	
Commercial forest						
Pine	29,500	14,700	9,900	2,300	1,400	1,200
Redcedar	1,700	-	600	500	600	-
Hardwood - redcedar	3,400	-	900	2,100	-	400
Oak - pine	54,400	19,600	22,200	5,500	6,400	700
Black - scarlet oak	176,800	48,000	70,300	30,800	21,400	6,300
White oak	27,100	9,200	13,900	2,200	1,400	400
Post - blackjack oak	52,500	5,700	15,500	8,100	18,900	4,300
Oak - gum - cypress	5,300	2,900	1,000	200	200	1,000
Elm - ash - cottonwood	11,300	2,400	2,300	1,400	4,600	600
Maple - beech	4,700	1,000	3,300	400	-	-
All commercial forest	366,700	103,500	139,900	53,500	54,900	14,900
Percent by size-class	100.0	28.2	38.1	14.6	15.0	4.1
Noncommercial forest						
Productive-reserved	9,100	1,800	3,200	1,700	2,200	200
Unproductive forest	2,600	-	-	-	-	2,600
All forest area	378,400	105,300	143,100	55,200	57,100	17,700

Table 68. -- Net timber volume on commercial forest land by species and kind of material

Wayne County, Missouri, 1959

Species	Growing stock (Thousand cords)			Sawtimber (Million Board Feet)				Cull trees (Thousand cords)	Hardwood limbs (Thousand cords)
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands 500-1500 bd. ft.	Other stands Under 500 ft.		
Softwoods									
Pine, shortleaf	324.8	119.7	205.1	66.6	49.9	11.8	4.9	.6	-
Cypress	1.9	-	1.9	.8	.8	-	-	.1	-
Redcedar	4.0	3.6	.4	.1	-	.1	*	.3	-
All softwoods	330.7	123.3	207.4	67.5	50.7	11.9	4.9	1.0	-
Hard Hardwoods									
Oak, white	297.9	169.5	128.4	46.3	27.1	7.8	11.4	39.8	92.4
Oak, post	220.2	133.2	87.0	32.3	17.5	6.2	8.6	37.7	66.3
Oak, other white	10.4	6.7	3.7	1.4	1.2	.1	.1	1.8	2.8
Oak, black	414.9	259.3	155.6	60.9	35.3	11.2	14.4	44.1	119.2
Oak, scarlet	238.5	148.8	89.7	36.1	24.3	6.0	5.8	17.6	71.9
Oak, northern red	57.0	30.1	26.9	10.2	6.0	1.7	2.5	9.6	19.1
Oak, other red	54.3	35.5	18.8	7.2	3.6	.9	2.7	23.8	13.9
Hickory, Group A	84.7	59.8	24.9	10.2	6.9	1.2	2.1	9.0	19.7
Hickory, Group B	87.3	63.7	23.6	9.7	3.9	1.5	4.3	13.0	18.7
Maple, hard	16.8	8.5	8.3	3.7	2.2	.6	.9	3.4	6.1
Birch	1.7	1.3	.4	*	-	*	-	.3	.2
Walnut, black	7.5	6.4	1.1	.5	.2	.2	.1	1.0	.9
Ash	9.6	5.9	3.7	1.3	1.0	.2	.1	2.2	2.6
Other hard hardwoods	12.4	6.7	5.7	2.5	2.5	-	-	3.9	4.3
All hard hardwoods	1,513.2	935.4	577.8	222.3	131.7	37.6	53.0	207.2	438.1
Soft Hardwoods									
Elm	26.1	14.7	11.4	4.2	1.8	.2	2.2	4.8	8.0
Maple, soft	2.1	1.0	1.1	.5	.4	.1	-	1.7	.8
Sweetgum	11.2	7.1	4.1	1.7	.8	.4	.5	1.5	3.0
Blackgum	9.5	3.7	5.8	1.9	1.2	.3	.4	5.5	3.5
Yellow-poplar	-	-	-	-	-	-	-	-	-
Cottonwood	2.0	1.0	1.0	.5	.2	.1	.2	*	.8
Sycamore	8.5	2.4	6.1	2.9	2.1	.4	.4	1.8	5.3
All soft hardwoods	59.4	29.9	29.5	11.7	6.5	1.5	3.7	15.3	21.4
All hardwoods	1,572.6	965.3	607.3	234.0	138.2	39.1	56.7	222.5	459.5
All Species	1,903.3	1,088.6	814.7	301.5	188.9	51.0	61.6	223.5	459.5

* Less than 1/2 of 1 significant unit.

Table 69. -- Net timber volume by ownership and species group

Wayne County, Missouri, 1959

Ownership class	Growing stock (Thousand cords)				Sawtimber (Million Board Feet)			
	Total	Softwoods	Soft hardwoods	Hard hardwoods	Total	Softwoods	Soft hardwoods	Hard hardwoods
Federally owned or managed								
National forest	692.2	206.2	9.9	476.1	118.7	46.9	1.7	70.1
Other Federal	27.5	2.4	1.4	23.7	4.4	.4	.3	3.7
State, county, & municipal	80.9	8.4	3.8	68.7	12.7	1.5	.8	10.4
Farmer-owned	583.2	59.6	21.1	502.5	83.4	9.5	4.2	69.7
Forest industry and miscellaneous private	519.5	54.1	23.2	442.2	82.3	9.2	4.7	68.4
All ownerships	1,903.3	330.7	59.4	1,513.2	301.5	67.5	11.7	222.3

Appendix

Forest Survey Procedure

Forest survey estimates of forest area and timber volume are subject to two kinds of error. These are sampling errors which arise from the use of sampling procedures and non-sampling errors caused by mistakes in judgment, measurement recording, and calculation.

Sampling errors are measurable errors which are held to a minimum through sampling design. Baring the effects of non-sampling errors, the probabilities are two out of three that the actual areas and volumes are within the standard errors shown in the accompanying tables.

Non-sampling errors are not measurable and their effects are kept at a minimum through close supervision, adequate training, and rechecking of all phases of the work.

Based on the data in Table 70 the sampling accuracy of commercial forest and of total volume estimates for Bollinger County would be interpreted as follows:

a. The probabilities are two out of three that the actual area of commercial forest area is within ± 5.3 percent or 11,278 acres of the estimated 212,800 acres.
b. The probabilities are two out of three that the actual total volume is within ± 7.5 percent or 66,142 cords of the estimated 881,900 cords.

Note that the standard error for an individual county is much higher than that for the entire group of counties. The sampling error for any one type, species, ownership, or condition class within a county would be much greater than for the county as a whole. Generally the smaller the area or volume, the higher the sampling error. (Table 71). Although subject to relatively large error, the estimates for small areas represent the best available information and will serve as a guide for resource management.

Accuracy of Data

The data on forest area, timber volume, and growth presented in this report are the results of a sampling procedure used with some regional variation by forest survey units throughout the Nation. In general, it is based upon information obtained from aerial photographs and from sample plots examined on the ground.

The second forest survey of Missouri employed a triple-sampling-inventory procedure to attain specified levels of statistical accuracy. First, a very large number of points were examined on the aerial photographs to determine the forest and nonforest proportions. Then a number of these were further analyzed and photo-measured to estimate forest type, standsize, density, and site. Finally, a somewhat smaller sample of these photo plots were systematically selected for ground examination. The area classification of these plots were used as a check on photo classifications. Tree measurements were the basis for estimating timber volume, growth, and mortality.

The information thus gathered is edited, coded, and punched for machine computing and tabulation. The statistical tables presented in this report are the final estimates resulting from the statistical summaries of these data.

Table 70. -- Sampling accuracy

Eastern Ozarks, Missouri, 1959

County	Commercial forest land	Standard error of area	Total volume	Standard error of volume
	Acres	Percent	Cords	Percent
Bollinger	212,800	5.3	881,900	7.5
Butler	243,500	5.0	1,231,000	6.3
Carter	269,300	4.7	1,548,900	5.6
Crawford	321,900	4.3	1,474,100	5.8
Dent	323,000	4.3	1,524,300	5.7
Iron	277,400	4.6	1,414,100	5.9
Madison	226,000	5.2	1,042,500	6.9
Oregon	356,000	4.1	1,855,400	5.1
Reynolds	418,900	3.8	2,175,100	4.8
Ripley	304,900	4.4	1,642,000	5.5
St. Francois	150,000	6.3	646,300	8.7
Shannon	512,900	3.4	2,523,400	4.4
Washington	349,500	4.1	1,699,200	5.4
Wayne	366,700	4.0	1,903,300	5.1
All counties	4,332,800	1.2	21,561,500	1.5

Table 71. -- Guide for judging accuracy by size of area

Eastern Ozarks, Missouri, 1959

Commercial forest land	Standard error of sampling	
	Area	Total volume
Thousand acres	Percent	Percent
1,000	2.4	3.1
500	3.5	4.4
100	7.7	9.9
50	11.0	14.1
25	15.5	19.9
10	24.5	31.4
5	34.6	44.4
2	54.8	70.3

Table 72. -- Guide for judging volume accuracy

Eastern Ozarks, Missouri, 1959

Growing stock	
Volume	Sampling error
(Cords)	(Percent)
1,000,000	7.0
500,000	9.9
100,000	22.2
50,000	31.4
25,000	44.3
10,000	70.1
5,000	99.2
2,000	156.8

Definition of Terms

Land-Use Classes

Land area—Dry land and land temporarily or partially covered with water, including streams less than ⅛ mile in width and ponds less than 40 acres in area. County figures are from "Areas of the United States, 1950 Bureau of Census."

Forest land—Includes (a) areas at least 10 percent stocked with forest tree species and capable of producing timber or other wood products, (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which has not been developed for other use, and (c) afforested areas. Minimum size forest tract recognized is 1 acre; minimum width of wooded strip is 120 feet.

Commercial forest land—Includes forest land which is producing, or is physically capable of producing, usable crops of industrial wood (usually sawlogs and pulpwood but excluding fuelwood), economically available now or prospectively, and 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 (shown as *productive-reserved),* and (b) incapable of yielding a stand averaging at least one 13-foot sawlog per tree (shown as *unproductive forest).*

Stand-Size and Stocking Classes

Sawtimber—Stands having a minimum net volume per acre of 1,500 board feet, International ¼-inch rule, in live merchantable sawtimber trees of commercial species (this is equal to approximately 1,300 net board feet by the Scribner Decimal C rule).

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

Seedling and sapling (restocking stands)—Stands failing to meet the minimum requirements for either sawtimber or poletimber stands but at least 10 percent stocked with trees of commercial species and at least 5 percent stocked with seedlings and saplings.

Satisfactorily stocked—Stands that are 40 percent or more stocked with present or potential growing-stock trees.

Poorly stocked—Stands that are from 10 to 39 percent stocked with present or potential growing-stock trees.

Nonstocked area—Commercial forest land areas not qualifying as sawtimber, poletimber, or seedling and sapling stands. These stands may contain both board-foot and cubic-foot volume but less than 10 percent of the growing space is effectively utilized by trees.

Tree-Size Classes

Sawtimber trees—Live merchantable trees of softwood species 9.0 inches d.b.h. or larger and hardwood species (including aspen) 11.0 inches d.b.h. and larger.

Pole Trees—Trees of softwood species between 5.0 and 8.9 inches d.b.h. and of hardwood species between 5.0 and 10.9 inches d.b.h.

Seedlings and saplings—Trees less than 5.0 inches d.b.h. and capable of development into poletimber trees.

Cull trees—Live trees of sawtimber or poletimber size with 50 percent or more of the gross

volume of the stem unusable due to defects or deformities. Volume includes limbs of hardwood cull trees.

Hardwood limbs—Limbs of live hardwood trees of sawtimber size to a minimum diameter of 4.0 inches inside bark.

Forest Types

Forest type—A tract of forest land characterized by the predominance of one or more key species which make up a specified proportion of the gross cubic volume in sawtimber and poletimber stands, or of the number of trees in seedling and sapling stands. Nonstocked forest land will be classified as the forest type best suited on the soil.

Pine—Forests in which 50 percent or more of the stand is pine (usually shortleaf pine).

Redcedar—Forests in which 50 percent or more of the stand is redcedar.

Hardwood-redcedar—Forests in which 50 percent or more of the stand is hardwood, but in which redcedar makes up 25 to 49 percent of the stand.

Oak-pine—Forests in which 50 percent or more of the stand is hardwoods (usually upland oaks) but in which hard pines make up 25 to 49 percent of the stand.

Black-scarlet oaks—Forests in which 50 percent or more of the stand is upland oaks or hickory, singly or in combination, except where pines or redcedar comprise 25 to 49 percent, or white oak or post and blackjack oak exceeds 50 percent of the stand.

White oak—Forests in which 50 percent or more of the stand is white oak.

Post-blackjack oak—Forests in which 50 percent or more of stand is post or blackjack oak, singly or in combination.

Oak-gum-cypress—Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination except where pines comprise 25 to 49 percent (oak-pine).

Elm-ash-cottonwood—Forests in which 50 percent or more of the stand is elm, ash, or cottonwood, singly or in combination.

Maple-beech—Forests in which 50 percent or more of the stand is hard maple or beech, singly or in combination.

Species Groups

Softwoods—Coniferous species which include shortleaf pine, cypress, and redcedar.

Soft hardwoods—Soft-textured broadleaved species which include elm, soft maple, sweetgum, blackgum, yellow-poplar, cottonwood, and sycamore.

Hard hardwoods—Firm-textured broadleaved species which include all of the oaks and hickories, hard maple, birch, black walnut, and ash.

Hickory, Group A—Includes only shagbark, shellbark, and mockernut hickories.

Hickory, Group B—Includes all hickories other than shagbark, shellbark, and mockernut.

Species

The various tree species mentioned in this report are listed below. Although other species occur within the region, they were not listed separately but were included in one of the more comprehensive groups such as other white oaks or other red oaks, as they may apply. The approved common name is shown in parentheses if it differs from the brief name used in the tables. The common and scientific names are based on *Check List of Native and Naturalized Trees of the United States (including Alaska)* by Elbert L. Little, Jr. (1953) U. S. Department of Agriculture Agricultural Handbook No. 41.

Softwood Species

Shortleaf pine	*Pinus echinata* Mill.
Cypress (baldcypress)	*Taxodium distichum* (L.) Rich.
Redcedar (eastern redcedar)	*Juniperus virginiana* L.

Hardwood Species

White oak	*Quercus alba* L.
Post oak	*Quercus stellata* Wangenh.
Black oak	*Quercus velutina* Lam.
Scarlet oak	*Quercus coccinea* Muenchh.
Northern red oak	*Quercus rubra* L.
Hard maple (sugar maple)	*Acer saccharum* Marsh.
Birch	*Betula* species
Black walnut	*Juglans nigra* L.
Ash	*Fraxinus* species
Elm	*Ulmus* species
Soft maple includes:	
Red maple	*Acer rubrum* L.
Silver maple	*Acer saccharinum* L.
Boxelder	*Acer negundo* L.
Sweetgum	*Liquidambar styraciflua* L.
Blackgum includes:	
Black tupelo	*Nyssa sylvatica* Marsh.
Water tupelo	*Nyssa aquatica* L.
Yellow-poplar	*Liriodendron tuplipifera* L.
Cottonwood (eastern cottonwood)	*Populus deltoides* Bartr.
Sycamore (American sycamore)	*Platanus occidentalis* L.

Timber Volume

Net timber volume—Net volume of live merchantable trees from stump to a minimum 4-inch top diameter inside bark of the central stem. Sawtimber volume to a minimum 6-inch top for softwood and 8-inch top inside bark for hardwoods. Sound volumes of cull trees and hardwood limbs to a minimum 4-inch diameter inside bark.

Growing stock—Net volume of live merchantable sawtimber and poletimber trees from stump to a minimum 4-inch top diameter inside bark of the central stem. Volume was computed in cubic feet of unpeeled wood using a Lake States Composite Volume Table and corrected for bark thickness by species and diameter class. Volume was then converted to cords using the factor of 79 cubic feet of peeled wood as equal to one cord of unpeeled wood. This is a standard cord (a stacked pile 4x4x8 feet).

Sawtimber material—Net volume of live merchantable sawtimber between the stump and a point in the top of the stem at which utilization

is limited by large branches, forks or other defects, or by a diameter inside bark of 8 inches (6 inches for softwoods). This volume is expressed in terms of board feet by the International ¼-inch log rule which approximates green lumber tally. Conversion to the Scribner rule may be achieved (roughly) by multiplying volumes by 0.85.

Sawtimber volume was computed using a Lake States Composite Volume Table and corrected for form class differences by species and diameter classes. Numerous bark thickness and form class measurements were made in Missouri as a means of providing satisfactory corrections for the composite volume tables.

Growth

Periodic annual net growth—The change during the inventory year in net volume of growing stock on commercial forest land from natural causes exclusive of catastrophic losses. It is expressed in board feet (International ¼-inch rule) of sawtimber and unpeeled cords of total growing stock. Net growth includes increment on trees that were of volume size at the beginning of the year and survived to the end, plus the volume of smaller trees growing into volume size during the year, plus the net volume increment of growing stock, minus the net volume of growing-stock trees that died during the year, and minus the net volume of growing-stock trees that became cull during the year.
Ingrowth of sawtimber—The net board-foot volume of trees that first became sawtimber trees during the inventory year as measured at the end of the year.

Desirable Cut

Desirable cut is the net volume of merchantable timber that may be cut annually during the current decade while (1) progressively effecting a reasonably even distribution of age classes during the optimum rotation selected for each type, and (2) progressively building up to a desirable level of good growing stock to meet the future needs for desired products. The cut should be at a level which can be sustained in subsequent decades. It includes both harvest and intermediate commercial cuttings (yielding at least 3 cords total volume or 500 board feet International ¼-inch rule of sawtimber volume). Cull tree and hardwood limb volumes are not included. "High grading" will yield less volume than is indicated; utilization, closer than anticipated by forest survey (see definition of timber volume), will yield more volume. Non-commercial cuttings also will increase timber yields.

Desirable cut encourages full use of the timber resource while avoiding overcutting. It is based upon forest practices which improve the stands. It must be reduced if timber is allowed to die or overcutting takes place.

Regeneration Classes

Restocking naturally—Areas which are 5 percent or more stocked with pine or redcedar or at least 20 percent restocked with commercial hardwoods of any size. A pine seed source is present and natural regeneration to pine is anticipated.

Machine planting to pine recommended—Areas suitable for pine planting by machine.
Hand planting with pine recommended—Areas too small or terrain unsuitable to justify machine planting but suitable for hand planting.

Unfavorable planting chance—Areas not restocking naturally for which planting is desirable but not feasible at present.

Conflicting uses—Areas not suitable for planting because of uses other than forestry.

Tree Classes

Crop tree—A sound vigorous growing-stock tree that has a good form and a good crown. The butt log must be or have the potential to be grade 2 or better. It should be a dominant or co-dominant tree of a desirable species for the site.

Storage tree—A poorer growing-stock tree which is likely to survive and otherwise suited for holding 10 years.

Harvest tree—A growing-stock tree which is a poor risk, diseased, of poor form or crown, of undesirable species for the site, or one which is interferring with growth of a potential crop tree.

Poor pole—A poletimber-size growing-stock tree which cannot be classed as storage or harvest since it is unlikely to produce merchantable sawtimber. Sawtimber in-growth is not computed.

Sound cull—Nongrowing stock. Fifty percent or more of the gross volume defective and less than half of the defect due to rot.

Rotten cull—Nongrowing stock. Fifty percent or more of the gross volume defective and more than half of the defect due to rot.

Log Grades

Log grading was done for sawtimber-sized trees using (1) specifications for logs of southern pines, (2) hardwood log grades for standard lumber (developed by Forest Products Laboratory), and (3) specifications for tie and timber logs. In grading, the "12-foot rule" was used. Under this rule, the tree is divided into 16-foot sections insofar as possible, and the best 12-foot portion in each section is graded.

Miscellaneous Definitions

D.b.h. (Diameter at breast height)—Diameter of the tree in inches, outside bark, measured at 4½ feet above the average ground level.

Diameter class—In this report data are presented in 2-inch diameter classes which include diameters from 1.0 inch below to 0.9 inch above the stated midpoint; e.g., trees 5.0 inch to and including 6.9 inches are included in the 6 inch class. Corresponding limits apply to other diameter classes.