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FOREST RESOURCES OF ILLINOIS

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 **CENTRAL STATES**
FOREST EXPERIMENT STATION
Columbus 13, Ohio

Harold L. Mitchell, Director

FOREST RESOURCES OF ILLINOIS

BY

THE FOREST SURVEY ORGANIZATION
Central States Forest Experiment Station

in cooperation with

THE AGRICULTURAL EXPERIMENT STATION
University of Illinois

and

THE DIVISION OF FORESTRY
Illinois Department of Conservation

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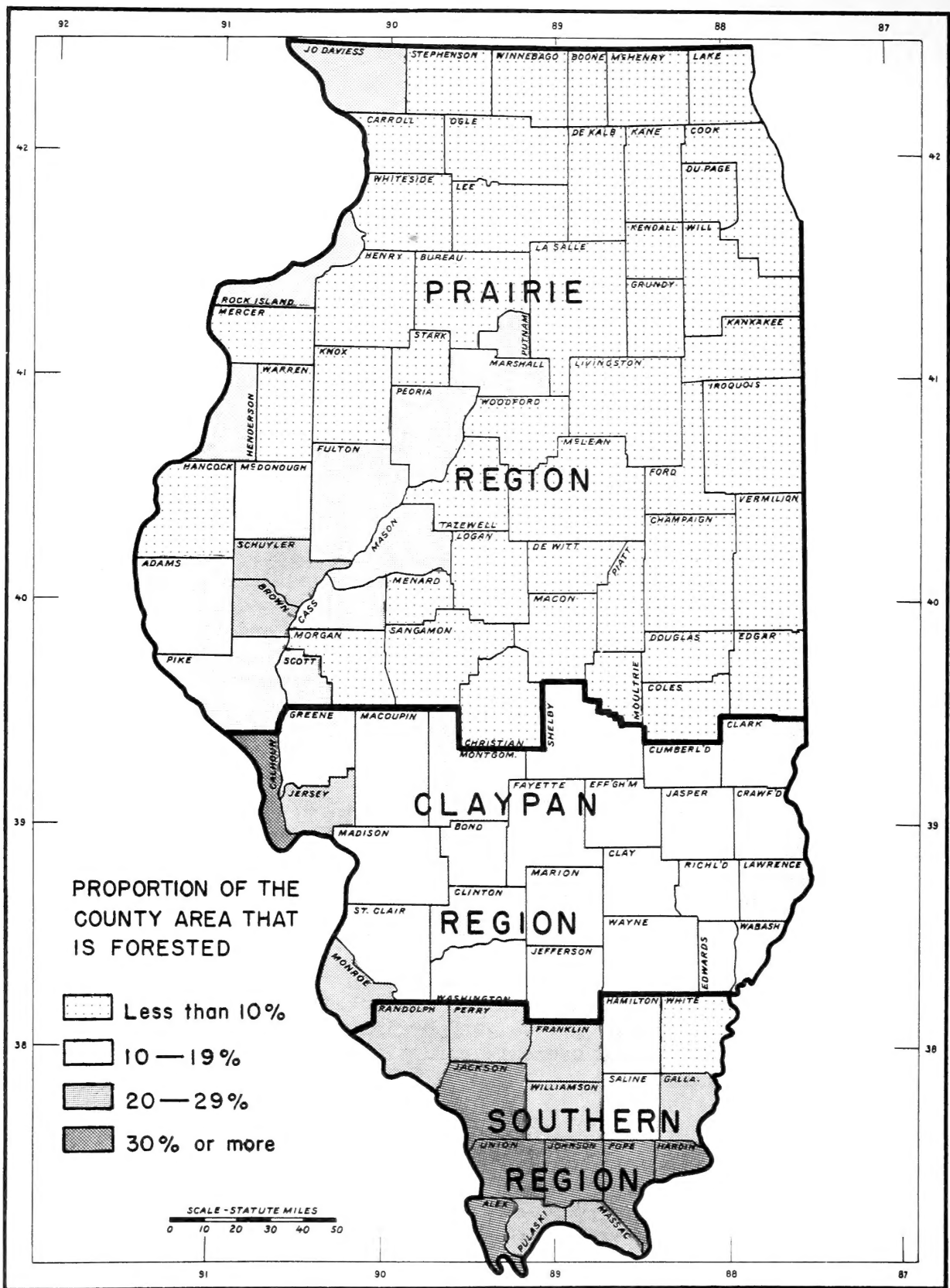
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FOREWORD

The Forest Survey is a nation-wide activity of the Forest Service. The fivefold purpose of the Forest Survey is: (1) to make a field inventory of the present supply of standing timber; (2) to ascertain the rate at which this supply is being increased through growth; (3) to determine the rate at which it is being diminished through industrial and domestic uses, windfall, fire, disease, and other causes; (4) to determine the present consumption and the probable future trend in requirements for forest products; and (5) to interpret and correlate these findings with existing and anticipated economic conditions, as an aid in the formulation of both private and public policies for use of land suitable for forest production.

The Forest Survey is conducted in the various regions by the forest experiment station of the Forest Service. In Illinois the project is directed by the Central States Forest Experiment Station with headquarters in Columbus, Ohio.

This Survey Release presents the more significant statistics on forest area and timber volume for the state of Illinois and for each of the three regions into which the state has been divided. Later an analytical report for the state will be published which will interpret forest area, timber volume, growth, and drain statistics in the light of existing and anticipated economic conditions.



LOCATION OF FOREST SURVEY REGIONS IN ILLINOIS AND THE PROPORTION OF THE AREA OF EACH COUNTY THAT IS FORESTED

SIGNIFICANT FACTS CONCERNING THE FOREST RESOURCES OF ILLINOIS

The forest area of Illinois, as determined by the Forest Survey, is 3,996,000 acres or 11 percent of the total land area. The proportion of forest land is highest in the Southern region where 26 percent of the land is in forest. Two counties in this region, Pope and Alexander, are more than 40 percent forested. The Claypan region averages 16 percent forest land with one county, Calhoun, reaching 43 percent. In the Prairie region much of the area was open grassland at the time of settlement. Most of the 1.6 million acres of forest land in this region is in the counties bordering the Mississippi and Illinois Rivers, and the remainder occurs principally in small scattered patches.

Ninety-five percent of the commercial forest land in the state is in private ownership. The Shawnee National Forest in the Southern region contains 3.7 percent of the forest land in the state and other federal and state agencies account for 1.1 percent. Most of the private forest land is in small farm woodlands, although some large areas of privately owned forest land occur along the Mississippi, Ohio, Wabash, and Illinois Rivers.

The oak-hickory type occurs on nearly half of the forest area in the state and predominates in the upland areas of all regions. The proportion of oak-hickory type is greatest in the Southern region and least in the Prairie region. The white oak type, which comprises 9 percent of the forest area of the state, is more prevalent in the north than in the south. Similarly the mixed hardwood type, in which elm, basswood, and maple are the principal species, occupies a larger proportion of the forest land in the northern portion of the state. The pin oak type is largely confined to poorly drained areas of the two southern regions. The bottomland hardwood type occurs along the major rivers and makes up nearly one-fifth of the forest area of the state. It is rather uniformly represented in all regions and is one of the most important timber-producing types in the state.

Timber stands with sufficient volume to be classed as saw timber occur on 46 percent of the commercial forest land in the state. More than two-thirds of the saw-timber area contains enough volume in trees 15 inches d.b.h. and larger to be classed as large saw-timber area. Pole-timber stands make up 25 percent of the forest area of the state, seedling and sapling 19 percent, and poorly stocked areas 10 percent. The distribution of forest area by stand-size class varies but little from region to region.

The net volume of saw timber in the state is 10.3 billion board feet. Nearly 70 percent of this volume is found in large saw-timber stands and 19 percent in small saw-timber stands. The remaining 11 percent is in scattered trees in the other stand-size classes. The distribution of volume by stand-size class in each of the regions is similar to the state average.

Oak species make up 56 percent of the board-foot volume in the state and white oak alone accounts for 20 percent of the total. Black oak and northern red oak each make up 10 percent of the total volume. Other species of importance are elm (10 percent), hickory (7 percent), and soft maple (6 percent). In general the proportion of white oak, northern red oak, and elm in the stands increases from south to north. Hickory, on the other hand, is less important in the northern part of the state. Softwood species are of minor importance throughout the state.

Less than one-third of the saw-timber volume in the state is in grade 1 and 2 logs. These logs produce the high-quality material required by the cooperage, veneer, and furniture industries. The large proportion of low-quality timber presents a serious problem in forest utilization and management.

The volume of the forest growing stock--the sawlog portion of merchantable trees of sawlog size and the stems of sound pole-timber trees--is 2.4 billion cubic feet. One-third of this volume is in trees of pole-timber size. In addition to the growing stock there is 1.7 billion cubic feet in tops and limbs of saw-timber trees and in the sound portion of cull trees. Although very little of this is now being utilized it is a large volume of wood awaiting an economic use.

The average volume per acre of all species on all commercial forest land in the state is 2,625 board feet. Areas classed as large saw timber averaged 5,726 board feet per acre and small saw-timber areas averaged 3,424 board feet. The average volume per acre in the three regions were similar to the state average. The average volume per acre of all growing stock was 608 cubic feet with a range from 75 cubic feet per acre in seedling and sapling areas to 1,052 cubic feet in large saw-timber areas.

STATE TABLES

STATE OF ILLINOIS

Table 1.--Forest and nonforest area by regions, 1948

| Region | Total land area ^{1/} | Forest area | Nonforest area |
|----------------|-------------------------------------|--|--|
| | <u>Thousand acres</u> | <u>Thousand acres</u> <u>Percent</u> | <u>Thousand acres</u> <u>Percent</u> |
| Southern | 3,942 | 1,042 26 | 2,900 74 |
| Claypan | 8,487 | 1,356 16 | 7,131 84 |
| Prairie | 23,377 | 1,598 7 | 21,779 93 |
| All regions | 35,806 | 3,996 11 | 31,810 89 |

^{1/} Source: Area of United States 1940, U. S. Bureau of the Census.

STATE OF ILLINOIS

Table 2.--Commercial forest area by ownership class, 1948

| Ownership class | : | Commercial forest area ^{1/} | |
|-----------------|---|--------------------------------------|----------------|
| | : | <u>Thousand</u> | <u>Percent</u> |
| | | <u>acres</u> | |
| Federal: | | | |
| National forest | | 147 | 3.7 |
| Other | | 32 | .8 |
| | | | |
| Total | | 179 | 4.5 |
| State | | 10 | .3 |
| Private | | 3,752 | 95.2 |
| | | | |
| All ownerships | | 3,941 | 100.0 |

^{1/} Does not include 55 thousand acres of forest land classified as noncommercial.

STATE OF ILLINOIS

Table 3.--Commercial forest area by forest type and stand-size class, 1948

| Forest type | Total | Large | | Small | | Seedling: | |
|------------------|-------------------|--------------|----------------|--------|---------|-----------|---------|
| | | saw- | saw- | Pole- | and | Poorly | stocked |
| | | timber | timber | timber | sapling | area | area |
| | | area | area | area | area | area | area |
| | Thousand acres | Per- cent | Thousand acres | | | | |
| Oak-hickory | 1,859 | 47.2 | 470 | 269 | 511 | 481 | 128 |
| White oak | 369 | 9.4 | 186 | 99 | 43 | 18 | 23 |
| Mixed hdwd. | 539 | 13.7 | 170 | 61 | 196 | 96 | 16 |
| Pin oak flats | 275 | 7.0 | 104 | 65 | 63 | 24 | 19 |
| Bottomland hdwd. | 767 | 19.4 | 321 | 79 | 163 | 90 | 114 |
| Scrub hdwd. | 132 | 3.3 | 0 | 0 | 7 | 20 | 105 |
| All types | 3,941 | | 1,251 | 573 | 983 | 729 | 405 |
| Percent | | 100.0 | 31.8 | 14.5 | 24.9 | 18.5 | 10.3 |

STATE OF ILLINOIS

Table 4.--Saw-timber volume by species and stand-size class, 1948

| Species | : Total | : Large : saw- : timber : area | : Small : saw- : timber : area | : Pole- : timber : area | : Seedling : : and : sapling : area | : Poorly : stocked : area | |
|----------------------------|----------------------------------|-----------------------------------|---|----------------------------|--|------------------------------|-----|
| | <u>Million</u> <u>bd. ft.</u> | <u>Percent</u> | - - - - - <u>Million board feet</u> - - - - - | | | | |
| Redcedar and cypress | 40 | 0.4 | 17 | 22 | 0 | 1 | 0 |
| White oak | 2,117 | 20.5 | 1,392 | 513 | 115 | 49 | 48 |
| Post-oak group | 870 | 8.4 | 569 | 151 | 101 | 11 | 38 |
| Black oak | 1,095 | 10.6 | 759 | 227 | 82 | 14 | 13 |
| Northern red oak | 1,036 | 10.0 | 830 | 133 | 57 | 16 | 0 |
| Other red oaks | 714 | 6.9 | 428 | 184 | 60 | 26 | 16 |
| Hickory | 700 | 6.8 | 442 | 157 | 76 | 8 | 17 |
| Elm | 1,020 | 9.9 | 678 | 155 | 100 | 35 | 52 |
| Soft maple | 633 | 6.1 | 515 | 65 | 20 | 5 | 28 |
| Sugar maple | 231 | 2.2 | 161 | 35 | 6 | 26 | 3 |
| Sycamore | 314 | 3.0 | 232 | 25 | 12 | 4 | 41 |
| Ash | 273 | 2.6 | 201 | 61 | 10 | 1 | 0 |
| Basswood and yellow-poplar | 181 | 1.7 | 149 | 14 | 12 | 0 | 6 |
| Cottonwood | 299 | 2.9 | 196 | 85 | 14 | 2 | 2 |
| Black walnut | 167 | 1.6 | 130 | 24 | 4 | 4 | 5 |
| Other hardwoods | 656 | 6.4 | 464 | 111 | 69 | 2 | 10 |
| All species | 10,346 | | 7,163 | 1,962 | 738 | 204 | 279 |
| Percent | | 100.0 | 69.2 | 19.0 | 7.1 | 2.0 | 2.7 |

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Table 5.--Saw-timber volume by species and tree-diameter class, 1948

| Species | : | : | : | : | : | : | : |
|----------------------------|--|------------------|--------|--------|--------|-----------|--------|
| | Total | 12-14 | 16-18 | 20-22 | 24-26 | 28 inches | and |
| | : | inches | inches | inches | inches | inches | larger |
| | - - - - - Million board feet - - - - - | | | | | | |
| Redcedar and cypress | 40 | 21 ^{1/} | 5 | 0 | 6 | 8 | |
| White oak | 2,117 | 776 | 741 | 325 | 155 | 120 | |
| Post-oak group | 870 | 230 | 280 | 217 | 73 | 70 | |
| Black oak | 1,095 | 244 | 357 | 248 | 160 | 86 | |
| Northern red oak | 1,036 | 208 | 301 | 190 | 168 | 169 | |
| Other red oaks | 714 | 209 | 174 | 114 | 162 | 55 | |
| Hickory | 700 | 325 | 229 | 104 | 24 | 18 | |
| Elm | 1,020 | 335 | 320 | 182 | 91 | 92 | |
| Soft maple | 633 | 157 | 153 | 130 | 105 | 88 | |
| Sugar maple | 231 | 80 | 83 | 48 | 4 | 16 | |
| Sycamore | 314 | 33 | 62 | 65 | 82 | 72 | |
| Ash | 273 | 109 | 89 | 47 | 28 | 0 | |
| Basswood and yellow-poplar | 181 | 37 | 46 | 45 | 19 | 34 | |
| Cottonwood | 299 | 64 | 71 | 70 | 42 | 52 | |
| Black walnut | 167 | 91 | 47 | 15 | 6 | 8 | |
| Other hardwoods | 656 | 203 | 149 | 121 | 135 | 48 | |
| All species | 10,346 | 3,122 | 3,107 | 1,921 | 1,260 | 936 | |
| Percent | 100.0 | 30.2 | 30.0 | 18.6 | 12.2 | 9.0 | |

^{1/} Includes 5 million board feet in 10-inch trees.

STATE OF ILLINOIS

Table 6.--Hardwood saw-timber volume by species group and percentage distribution in log grades, 1948

| Species group | Volume | Log grade 1 | Log grade 2 | Log grade 3 |
|--------------------------|---------------------------|----------------|----------------|----------------|
| | <u>Million</u> bd. ft. | <u>Percent</u> | | |
| White oaks ^{1/} | 2,987 | 6.9 | 18.3 | 74.8 |
| Red oaks ^{2/} | 2,845 | 13.1 | 18.9 | 68.0 |
| Other hardwoods | 4,474 | 12.1 | 16.8 | 71.1 |
| All hardwoods | 10,306 | 11.0 | 17.9 | 71.1 |

^{1/} Includes white oak and post-oak group.

^{2/} Includes black oak, northern red oak, and other red oaks.

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Table 7.--Total cubic volume of sound wood by species
and class of material, 1948

| Species | Growing stock | | | | | |
|----------------------------|--------------------------------|---------|--------------------|-------------------|--------------|------------|
| | Total | Total | Saw-timber trees | Pole-timber trees | Tops & limbs | Cull trees |
| | ----- Million cubic feet ----- | | | | | |
| Redcedar and cypress | 11.8 | 11.7 | 10.2 ^{1/} | 1.5 | -- | 0.1 |
| White oak | 694.6 | 427.2 | 320.2 | 107.0 | 223.5 | 43.9 |
| Post-oak group | 320.4 | 185.6 | 131.9 | 53.7 | 93.4 | 41.4 |
| Black oak | 366.2 | 218.8 | 165.9 | 52.9 | 117.7 | 29.7 |
| Northern red oak | 304.3 | 177.8 | 152.6 | 25.2 | 106.3 | 20.2 |
| Other red oaks | 279.0 | 168.5 | 109.1 | 59.4 | 77.8 | 32.7 |
| Hickory | 309.3 | 214.7 | 111.6 | 103.1 | 79.3 | 15.3 |
| Elm | 483.7 | 286.6 | 160.1 | 126.5 | 113.2 | 83.9 |
| Soft maple | 315.2 | 147.9 | 99.3 | 48.6 | 73.7 | 93.6 |
| Sugar maple | 88.5 | 55.4 | 35.5 | 19.9 | 25.0 | 8.1 |
| Sycamore | 97.2 | 56.0 | 47.4 | 8.6 | 33.7 | 7.5 |
| Ash | 154.0 | 96.7 | 43.1 | 53.6 | 30.6 | 26.7 |
| Basswood and yellow-poplar | 76.0 | 34.8 | 27.0 | 7.8 | 19.0 | 22.2 |
| Cottonwood | 86.0 | 50.0 | 45.7 | 4.3 | 32.0 | 4.0 |
| Black walnut | 93.4 | 60.1 | 26.6 | 33.5 | 18.8 | 14.5 |
| Other hardwoods | 364.1 | 202.4 | 101.2 | 101.2 | 72.3 | 89.4 |
| Noncommercial species | 14.6 | -- | -- | -- | -- | 14.6 |
| All species | 4,058.3 | 2,394.2 | 1,587.4 | 806.8 | 1,116.3 | 547.8 |
| Percent | 100.0 | 59.0 | 39.1 | 19.9 | 27.5 | 13.5 |

^{1/} Includes tops of redcedar and cypress trees.

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Table 8.--Cubic volume of growing stock by species
and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|-------------------------------|----------------------------------|---------------------------------|---------------------------------|-------------------------|------------------------------------|---------------------------|------|
| | <u>Million</u> <u>cu. ft.</u> | <u>Million cubic feet</u> | | | | | |
| | Percent | | | | | | |
| Redcedar and cypress | 11.7 | 0.5 | 3.3 | 7.5 | 0.2 | 0.3 | 0.4 |
| White oak | 427.2 | 17.8 | 237.7 | 113.7 | 57.3 | 9.9 | 8.6 |
| Post-oak group | 185.6 | 7.8 | 97.4 | 39.0 | 40.1 | 2.6 | 6.5 |
| Black oak | 218.8 | 9.1 | 118.8 | 50.2 | 45.0 | 2.9 | 1.9 |
| Northern red oak | 177.8 | 7.4 | 128.2 | 28.5 | 17.5 | 3.6 | 0 |
| Other red oaks | 168.5 | 7.0 | 75.0 | 47.9 | 38.0 | 4.9 | 2.7 |
| Hickory | 214.7 | 9.0 | 104.3 | 54.4 | 48.6 | 4.0 | 3.4 |
| Elm | 286.6 | 12.0 | 147.0 | 50.7 | 69.7 | 10.0 | 9.2 |
| Soft maple | 147.9 | 6.2 | 108.7 | 22.3 | 11.5 | .9 | 4.5 |
| Sugar maple | 55.4 | 2.3 | 32.8 | 10.6 | 7.7 | 3.9 | .4 |
| Sycamore | 56.0 | 2.3 | 36.8 | 5.3 | 6.8 | .6 | 6.5 |
| Ash | 96.7 | 4.0 | 48.5 | 21.4 | 26.1 | .7 | 0 |
| Basswood and yellow-poplar | 34.8 | 1.5 | 25.8 | 3.7 | 3.7 | .6 | 1.0 |
| Cottonwood | 50.0 | 2.1 | 29.9 | 16.6 | 2.7 | .4 | .4 |
| Black walnut | 60.1 | 2.5 | 29.8 | 8.3 | 16.2 | 1.0 | 4.8 |
| Other hardwoods | 202.4 | 8.5 | 92.5 | 34.0 | 63.8 | 8.3 | 3.8 |
| All species | 2,394.2 | | 1,316.5 | 514.1 | 454.9 | 54.6 | 54.1 |
| Percent | | 100.0 | 55.0 | 21.5 | 19.0 | 2.3 | 2.2 |

STATE OF ILLINOIS

Table 9.--Cubic volume of growing stock by stand-size class
and tree-diameter class, 1948

| Stand-size class | : | : | : | : | : | : | : | : | :28 inches |
|---------------------------|--|-------|-------|-------|-------|-------|-------|-------|------------|
| | Total | 6-8 | 10 | 12-14 | 16-18 | 20-22 | 24-26 | : | and |
| | : | : | : | : | : | : | : | : | larger |
| | - - - - - Million cubic feet - - - - - | | | | | | | | |
| Large saw-timber area | 1,316.6 | 125.8 | 108.8 | 217.8 | 345.4 | 243.3 | 148.2 | 127.3 | |
| Small saw-timber area | 514.0 | 97.2 | 104.2 | 203.4 | 80.6 | 18.5 | 7.2 | 2.9 | |
| Pole-timber area | 454.9 | 224.4 | 113.7 | 66.3 | 28.4 | 10.7 | 10.5 | .9 | |
| Seedling and sapling area | 54.6 | 15.8 | 6.6 | 13.6 | 11.2 | 4.8 | 1.3 | 1.3 | |
| Poorly stocked area | 54.1 | 7.1 | 4.7 | 7.8 | 10.9 | 6.0 | 16.5 | 1.1 | |
| All classes | 2,394.2 | 470.3 | 338.0 | 508.9 | 476.5 | 283.3 | 183.7 | 133.5 | |
| Percent | 100.0 | 19.6 | 14.1 | 21.3 | 19.9 | 11.8 | 7.7 | 5.6 | |

STATE OF ILLINOIS

Table 10.--Average volume per acre by stand-size class and region, 1948

| BOARD-FOOT VOLUME | | | | | | | | |
|-----------------------------|---|-------------|---|----------|---|---------|---|---------|
| Stand-size class | : | All regions | : | Southern | : | Claypan | : | Prairie |
| Large saw-timber area | | 5,726 | | 5,883 | | 5,548 | | 5,784 |
| Small saw-timber area | | 3,424 | | 3,385 | | 3,244 | | 3,598 |
| Pole-timber area | | 751 | | 668 | | 846 | | 721 |
| Seedling and sapling area | | 280 | | 291 | | 248 | | 301 |
| Poorly stocked area | | 689 | | 281 | | 775 | | 746 |
| All classes | | 2,625 | | 2,613 | | 2,585 | | 2,668 |
| CUBIC-FOOT VOLUME <u>1/</u> | | | | | | | | |
| Large saw-timber area | | 1,052.4 | | 1,129.5 | | 1,051.1 | | 1,004.4 |
| Small saw-timber area | | 897.2 | | 930.8 | | 898.3 | | 871.0 |
| Pole-timber area | | 462.8 | | 513.3 | | 401.7 | | 484.4 |
| Seedling and sapling area | | 74.9 | | 87.7 | | 55.6 | | 83.0 |
| Poorly stocked area | | 133.6 | | 78.9 | | 135.8 | | 146.1 |
| All classes | | 607.5 | | 662.3 | | 592.3 | | 584.5 |

1/ Growing stock only.

SOUTHERN REGION

SOUTHERN REGION

Table 1.--Forest and nonforest area by county, 1948

| County | : Total : land : area <u>1/</u> | : | : Forest area | : | : Nonforest area |
|------------|---------------------------------------|---------------------------------|----------------|---------------------------------|------------------|
| | <u>Thousand</u> <u>acres</u> | <u>Thousand</u> <u>acres</u> | <u>Percent</u> | <u>Thousand</u> <u>acres</u> | <u>Percent</u> |
| Alexander | 143 | 67 | 47 | 76 | 53 |
| Franklin | 278 | 62 | 22 | 216 | 78 |
| Gallatin | 210 | 55 | 26 | 155 | 74 |
| Hamilton | 278 | 53 | 19 | 225 | 81 |
| Hardin | 117 | 45 | 38 | 72 | 62 |
| Jackson | 386 | 123 | 32 | 263 | 68 |
| Johnson | 221 | 79 | 36 | 142 | 64 |
| Massac | 157 | 44 | 28 | 113 | 72 |
| Perry | 283 | 61 | 22 | 222 | 78 |
| Pope | 244 | 100 | 41 | 144 | 59 |
| Pulaski | 131 | 34 | 26 | 97 | 74 |
| Randolph | 380 | 85 | 22 | 295 | 78 |
| Saline | 246 | 43 | 18 | 203 | 82 |
| Union | 265 | 101 | 38 | 164 | 62 |
| White | 321 | 30 | 9 | 291 | 91 |
| Williamson | 282 | 60 | 21 | 222 | 79 |
| Total | 3,942 | 1,042 | 26 | 2,900 | 74 |

1/ Source. Area of United States 1940, U. S. Bureau of the Census.

SOUTHERN REGION

Table 2.--Commercial forest area by ownership class, 1948

| Ownership class | : | Commercial forest area ^{1/} | |
|-----------------|---|--------------------------------------|----------------|
| | | <u>Thousand</u> <u>acres</u> | <u>Percent</u> |
| Federal: | | | |
| National forest | | 147 | 14.3 |
| Other | | 10 | 1.0 |
| | | | |
| Total | | 157 | 15.3 |
| State | | 4 | .4 |
| Private | | 869 | 84.3 |
| | | | |
| All ownerships | | 1,030 | 100.0 |

^{1/} Does not include 12 thousand acres of forest land classified as noncommercial.

SOUTHERN REGION

Table 3.--Commercial forest area by forest type and stand-size class, 1948

| Forest type | Total | Large | | | Small | | Seedling: | Poorly |
|------------------|-------------------|--------------|---------|---------|---------|----------------|-----------|---------|
| | | timber | saw- | area | timber | saw- | Pole- | and |
| | Thousand acres | Per- cent | - - - - | - - - - | - - - - | Thousand acres | - - - - | - - - - |
| Oak-hickory | 537 | 52.1 | 103 | 101 | 182 | 126 | 25 | |
| White oak | 49 | 4.8 | 17 | 9 | 11 | 5 | 7 | |
| Mixed hdwd. | 85 | 8.3 | 54 | 6 | 15 | 10 | 0 | |
| Pin oak flats | 129 | 12.5 | 40 | 28 | 30 | 24 | 7 | |
| Bottomland hdwd. | 214 | 20.8 | 101 | 25 | 48 | 33 | 7 | |
| Scrub hdwd. | 16 | 1.5 | 0 | 0 | 0 | 5 | 11 | |
| All types | 1,030 | | 315 | 169 | 286 | 203 | 57 | |
| Percent | | 100.0 | 30.6 | 16.4 | 27.8 | 19.7 | 5.5 | |

SOUTHERN REGION

Table 4.--Saw-timber volume by species and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|--|----------------------------------|---------------------------------|---------------------------------|-------------------------|------------------------------------|---------------------------|----|
| | <u>Million</u> <u>bd. ft.</u> | <u>Million board feet</u> | | | | | |
| | Percent | | | | | | |
| Redcedar and cypress | 21 | .8 | 17 | 3 | 0 | 1 | 0 |
| White oak | 410 | 15.2 | 263 | 97 | 40 | 5 | 5 |
| Post-oak group | 177 | 6.6 | 105 | 43 | 22 | 5 | 2 |
| Black oak | 293 | 10.9 | 180 | 76 | 24 | 11 | 2 |
| Northern red oak | 236 | 8.8 | 193 | 36 | 6 | 1 | 0 |
| Other red oaks | 366 | 13.6 | 251 | 77 | 14 | 20 | 4 |
| Hickory | 252 | 9.4 | 157 | 66 | 26 | 1/ | 3 |
| Elm | 140 | 5.2 | 90 | 22 | 22 | 6 | 1/ |
| Soft maple | 111 | 4.1 | 87 | 16 | 3 | 5 | 0 |
| Sugar maple | 33 | 1.2 | 26 | 4 | 3 | 0 | 0 |
| Sycamore | 105 | 3.9 | 77 | 12 | 12 | 4 | 0 |
| Ash | 63 | 2.3 | 52 | 6 | 4 | 1 | 0 |
| Basswood and yellow-poplar ^{2/} | 71 | 2.6 | 65 | 1 | 5 | 0 | 0 |
| Cottonwood | 120 | 4.5 | 67 | 53 | 0 | 0 | 0 |
| Black walnut | 22 | .8 | 16 | 5 | 1 | 0 | 0 |
| Other hardwoods | 271 | 10.1 | 207 | 55 | 9 | 0 | 0 |
| All species | 2,691 | | 1,853 | 572 | 191 | 59 | 16 |
| Percent | | 100.0 | 68.9 | 21.2 | 7.1 | 2.2 | .6 |

1/ Less than .5 million board feet.

2/ Chiefly yellow-poplar.

SOUTHERN REGION

Table 5.--Saw-timber volume by species and tree-diameter class 1948

| Species | Total | 12-14 inches | 16-18 inches | 20-22 inches | 24-26 inches | 28 inches and larger |
|--------------------------------|-----------|-----------------|-----------------|-----------------|-----------------|----------------------------|
| ----- Million board feet ----- | | | | | | |
| Redcedar and cypress | 21 | 7 ^{1/} | 0 | 0 | 6 | 8 |
| White oak | 410 | 163 | 144 | 66 | 17 | 20 |
| Post-oak group | 177 | 63 | 54 | 33 | 19 | 8 |
| Black oak | 293 | 81 | 88 | 53 | 23 | 48 |
| Northern red oak | 236 | 55 | 65 | 36 | 43 | 37 |
| Other red oaks | 366 | 104 | 91 | 64 | 61 | 46 |
| Hickory | 252 | 123 | 60 | 51 | 11 | 7 |
| Elm | 140 | 52 | 44 | 19 | 14 | 11 |
| Soft maple | 111 | 31 | 29 | 29 | 22 | 0 |
| Sugar maple | 33 | 15 | 9 | 5 | 4 | 0 |
| Sycamore | 105 | 17 | 25 | 13 | 25 | 25 |
| Ash | 63 | 29 | 24 | 10 | 0 | 0 |
| Basswood and yellow-poplar | 71 | 11 | 21 | 18 | 11 | 10 |
| Cottonwood | 120 | 36 | 33 | 11 | 6 | 34 |
| Black walnut | 22 | 17 | 4 | 1 | 0 | 0 |
| Other hardwoods | 271 | 102 | 83 | 59 | 20 | 7 |
| All species | 2,691 | 906 | 774 | 468 | 282 | 261 |
| Percent | 100.0 | 33.7 | 28.7 | 17.4 | 10.5 | 9.7 |

^{1/} Includes 1 million board feet in 10-inch trees.

SOUTHERN REGION

Table 6.--Hardwood saw-timber volume by species group and percentage distribution in log grades, 1948

| Species group | : | : | Log grade | : | Log grade | : | Log grade | | |
|--------------------------|---|----------------|-----------|------|-----------|----------------|-----------|------|---|
| | : | Volume | : | 1 | : | 2 | : | 3 | |
| | : | <u>Million</u> | - | - | - | <u>Percent</u> | - | - | - |
| | : | <u>bd. ft.</u> | - | - | - | - | - | - | - |
| White oaks ^{1/} | | 587 | | 8.4 | | 15.2 | | 76.4 | |
| Red oaks ^{2/} | | 895 | | 18.0 | | 16.4 | | 65.6 | |
| Other hardwoods | | 1,188 | | 12.9 | | 11.6 | | 75.5 | |
| <hr/> | | | | | | | | | |
| All hardwoods | | 2,670 | | 13.5 | | 13.9 | | 72.6 | |

^{1/} Includes white oak and post-oak group.

^{2/} Includes black oak, northern red oak, and other red oaks.

SOUTHERN REGION

Table 7.--Total cubic volume of sound wood by species
and class of material, 1948

| Species | Growing stock | | | | | |
|--------------------------------|---------------|-------------------|------------------|-------------------|--------------|------------|
| | Total | Total | Saw-timber trees | Pole-timber trees | Tops & limbs | Cull trees |
| ----- Million cubic feet ----- | | | | | | |
| Redcedar and cypress | 4.5 | 4.5 ^{1/} | 4.4 | .1 | -- | 0 |
| White oak | 147.9 | 93.3 | 62.7 | 30.6 | 44.0 | 10.6 |
| Post-oak group | 77.9 | 46.7 | 27.2 | 19.5 | 19.5 | 11.7 |
| Black oak | 98.4 | 60.2 | 44.7 | 15.5 | 31.9 | 6.3 |
| Northern red oak | 70.3 | 41.2 | 34.9 | 6.3 | 24.5 | 4.6 |
| Other red oaks | 145.6 | 91.3 | 55.8 | 35.5 | 39.8 | 14.5 |
| Hickory | 121.8 | 87.2 | 40.4 | 46.8 | 28.8 | 5.8 |
| Elm | 80.4 | 50.5 | 22.1 | 28.4 | 15.8 | 14.1 |
| Soft maple | 56.9 | 25.6 | 17.7 | 7.9 | 13.3 | 18.0 |
| Sugar maple | 17.8 | 10.9 | 5.0 | 5.9 | 3.6 | 3.3 |
| Sycamore | 34.4 | 18.3 | 15.9 | 2.4 | 11.4 | 4.7 |
| Ash | 41.1 | 25.7 | 10.2 | 15.5 | 7.2 | 8.2 |
| Basswood and yellow-poplar | 21.5 | 12.8 | 10.7 | 2.1 | 7.6 | 1.1 |
| Cottonwood | 37.0 | 21.9 | 18.6 | 3.3 | 13.1 | 2.0 |
| Black walnut | 12.9 | 9.2 | 3.7 | 5.5 | 2.6 | 1.1 |
| Other hardwoods | 152.9 | 82.9 | 42.6 | 40.3 | 30.6 | 39.4 |
| Noncommercial species | 1.4 | -- | -- | -- | -- | 1.4 |
| All species | 1,122.7 | 682.2 | 416.6 | 265.6 | 293.7 | 146.8 |
| Percent | 100.0 | 60.8 | 37.1 | 23.7 | 26.1 | 13.1 |

^{1/} Includes tops of redcedar and cypress trees.

SOUTHERN REGION

Table 8.--Cubic volume of growing stock by species
and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area |
|----------------------------|----------------------------------|---|---------------------------------|-------------------------|------------------------------------|---------------------------|
| | <u>Million</u> <u>cu. ft.</u> | - - - - - <u>Million cubic feet</u> - - - - - | | | | |
| | Percent | | | | | |
| Redcedar and cypress | 4.5 | .7 | 3.3 | .8 | .1 | .3 |
| White oak | 93.3 | 13.7 | 46.2 | 24.3 | 19.8 | 1.4 |
| Post-oak group | 46.7 | 6.8 | 20.3 | 10.3 | 14.3 | 1.4 |
| Black oak | 60.2 | 8.8 | 29.5 | 15.5 | 13.0 | 1.9 |
| Northern red oak | 41.2 | 6.0 | 29.4 | 7.9 | 3.5 | .4 |
| Other red oaks | 91.3 | 13.4 | 45.2 | 20.6 | 20.9 | 4.0 |
| Hickory | 87.2 | 12.8 | 37.5 | 24.6 | 23.3 | .7 |
| Elm | 50.5 | 7.4 | 24.6 | 10.6 | 12.4 | 2.8 |
| Soft maple | 25.6 | 3.8 | 17.0 | 5.5 | 2.0 | .9 |
| Sugar maple | 10.9 | 1.6 | 7.6 | 1.8 | 1.4 | .1 |
| Sycamore | 18.3 | 2.7 | 12.3 | 3.0 | 2.4 | .6 |
| Ash | 25.7 | 3.8 | 14.0 | 4.4 | 7.0 | .3 |
| Basswood and yellow-poplar | 12.8 | 1.9 | 10.8 | .2 | 1.8 | 0 |
| Cottonwood | 21.9 | 3.2 | 10.1 | 11.3 | .3 | .1 |
| Black walnut | 9.2 | 1.3 | 4.3 | 1.9 | 3.0 | 0 |
| Other hardwoods | 82.9 | 12.1 | 43.7 | 14.6 | 21.6 | 2.9 |
| All species | 682.2 | | 355.8 | 157.3 | 146.8 | 17.8 |
| Percent | 100.0 | | 52.1 | 23.1 | 21.5 | 2.6 |

1/ Less than .05 million cubic feet.

SOUTHERN REGION

Table 9.--Cubic volume of growing stock by stand-size class
and tree-diameter class, 1948

| Stand-size class | : Total | : 6-8 | : 10 | : 12-14 | : 16-18 | : 20-22 | : 24-26 | : 28 inches | : and |
|---------------------------|--|----------|----------|----------|----------|----------|----------|-------------|----------|
| | : | : inches | : inches | : inches | : inches | : inches | : inches | : inches | : larger |
| | - - - - - Million cubic feet - - - - - | | | | | | | | |
| Large saw-timber area | 355.9 | 39.5 | 33.9 | 61.5 | 88.0 | 60.0 | 36.6 | 36.4 | |
| Small saw-timber area | 157.2 | 33.1 | 32.4 | 63.2 | 21.2 | 6.2 | 1.1 | 0 | |
| Pole-timber area | 146.8 | 82.4 | 34.0 | 19.6 | 6.0 | 1.5 | 2.4 | .9 | |
| Seedling and sapling area | 17.8 | 5.4 | 3.1 | 3.2 | 3.5 | 1.3 | 1.3 | 0 | |
| Poorly stocked area | 4.5 | 1.5 | .5 | 1.0 | .6 | .6 | .3 | 0 | |
| | | | | | | | | | |
| All classes | 682.2 | 161.9 | 103.9 | 148.5 | 119.3 | 69.6 | 41.7 | 37.3 | |
| | | | | | | | | | |
| Percent | 100.0 | 23.7 | 15.2 | 21.8 | 17.5 | 10.2 | 6.1 | 5.5 | |

SOUTHERN REGION

Table 10.--Average volume per acre by stand-size class, 1948

| Stand-size class | Average volume per acre | |
|---------------------------|-------------------------|---------------------------------|
| | <u>Board feet</u> | <u>Cubic feet</u> ^{1/} |
| Large saw-timber area | 5,883 | 1,129.5 |
| Small saw-timber area | 3,385 | 930.8 |
| Pole-timber area | 668 | 513.3 |
| Seedling and sapling area | 291 | 87.7 |
| Poorly stocked area | 281 | 78.9 |
| All classes | 2,613 | 662.3 |

^{1/} Growing stock only.

CLAYPAN REGION

CLAYPAN REGION

Table 1.--Forest and nonforest area by county, 1948

| County | Total | | Forest area | | Nonforest area | |
|------------|----------------|--------------------|----------------|---------|----------------|---------|
| | land | area ^{1/} | Forest area | Percent | Nonforest area | Percent |
| | Thousand acres | Thousand acres | Thousand acres | Percent | Thousand acres | Percent |
| Bond | 245 | 37 | 15 | | 208 | 85 |
| Calhoun | 166 | 72 | 43 | | 94 | 57 |
| Clark | 323 | 58 | 18 | | 265 | 82 |
| Clay | 297 | 46 | 15 | | 251 | 85 |
| Clinton | 319 | 62 | 19 | | 257 | 81 |
| Crawford | 283 | 40 | 14 | | 243 | 86 |
| Cumberland | 222 | 30 | 14 | | 192 | 86 |
| Edwards | 144 | 20 | 14 | | 124 | 86 |
| Effingham | 309 | 47 | 15 | | 262 | 85 |
| Fayette | 460 | 84 | 18 | | 376 | 82 |
| Greene | 348 | 54 | 16 | | 294 | 84 |
| Jasper | 317 | 36 | 11 | | 281 | 89 |
| Jefferson | 367 | 61 | 17 | | 306 | 83 |
| Jersey | 239 | 66 | 28 | | 173 | 72 |
| Lawrence | 239 | 34 | 14 | | 205 | 86 |
| Macoupin | 558 | 95 | 17 | | 463 | 83 |
| Madison | 468 | 57 | 12 | | 411 | 88 |
| Marion | 371 | 62 | 17 | | 309 | 83 |
| Monroe | 243 | 58 | 24 | | 185 | 76 |
| Montgomery | 452 | 46 | 10 | | 406 | 90 |
| Richland | 233 | 30 | 13 | | 203 | 87 |
| St. Clair | 429 | 55 | 13 | | 374 | 87 |
| Shelby | 494 | 55 | 11 | | 439 | 89 |
| Wabash | 141 | 14 | 10 | | 127 | 90 |
| Washington | 362 | 63 | 17 | | 299 | 83 |
| Wayne | 458 | 74 | 16 | | 384 | 84 |
| Total | 8,487 | 1,356 | 16 | | 7,131 | 84 |

^{1/} Source: Area of United States 1940, U. S. Bureau of the Census.

CLAYPAN REGION

Table 2.--Commercial forest area by ownership class, 1948

| Ownership class | Commercial forest area <u>1/</u> | |
|-----------------|----------------------------------|----------------|
| | <u>Thousand</u> <u>acres</u> | <u>Percent</u> |
| Federal: | | |
| National forest | 0 | 0 |
| Other | 6 | .4 |
| | <hr/> | |
| Total | 6 | .4 |
| State | 0 | 0 |
| Private | 1,341 | 99.6 |
| | <hr/> | |
| All ownerships | 1,347 | 100.0 |

1/ Does not include 9 thousand acres of forest land classified as noncommercial.

CLAYPAN REGION

Table 3.--Commercial forest area by forest type and stand-size class, 1948

| Forest type | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|------------------|---------------------------|---------------------------------|---------------------------------|-------------------------|------------------------------------|---------------------------|-----------|
| | <u>Thousand acres</u> | <u>Per- cent</u> | - - - - - | | | <u>Thousand acres</u> | - - - - - |
| Oak-hickory | 655 | 48.6 | 168 | 69 | 199 | 171 | 48 |
| White oak | 125 | 9.3 | 72 | 23 | 17 | 13 | 0 |
| Mixed hdwd. | 131 | 9.7 | 14 | 19 | 58 | 40 | 0 |
| Pin oak flats | 141 | 10.5 | 59 | 37 | 33 | 0 | 12 |
| Bottomland hdwd. | 271 | 20.1 | 127 | 32 | 50 | 26 | 36 |
| Scrub hdwd. | 24 | 1.8 | 0 | 0 | 0 | 0 | 24 |
| All types | 1,347 | | 440 | 180 | 357 | 250 | 120 |
| Percent | | 100.0 | 32.6 | 13.4 | 26.5 | 18.6 | 8.9 |

CLAYPAN REGION

Table 4.--Saw-timber volume by species and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|-------------------------------|----------------------------------|---------------------------------|---------------------------------|-------------------------|------------------------------------|---------------------------|------------|
| | <u>Million</u> <u>bd. ft.</u> | <u>Million board feet</u> | | | | | |
| | <u>Percent</u> | - - - - - | | | | | |
| White oak | 690 | 19.8 | 485 | 129 | 40 | 30 | 6 |
| Post-oak group | 323 | 9.3 | 169 | 67 | 77 | 6 | 4 |
| Black oak | 418 | 12.0 | 329 | 59 | 30 | 0 | 0 |
| Northern red oak | 151 | 4.3 | 143 | 8 | 0 | 0 | 0 |
| Other red oaks | 334 | 9.6 | 169 | 101 | 46 | 6 | 12 |
| Hickory | 305 | 8.8 | 217 | 59 | 19 | 0 | 10 |
| Elm | 332 | 9.5 | 226 | 37 | 22 | 16 | 31 |
| Soft maple | 303 | 8.7 | 243 | 24 | 8 | 0 | 28 |
| Sugar maple | 31 | .9 | 17 | 12 | 2 | 0 | 0 |
| Sycamore | 108 | 3.1 | 103 | 5 | 0 | 0 | 0 |
| Ash | 125 | 3.6 | 82 | 41 | 2 | 0 | 0 |
| Basswood and yellow-poplar | 5 | .2 | 2 | 3 | 0 | 0 | 0 |
| Cottonwood | 46 | 1.3 | 30 | 0 | 12 | 2 | 2 |
| Black walnut | 78 | 2.2 | 64 | 9 | 3 | 2 | 0 |
| Other hardwoods | 233 | 6.7 | 162 | 30 | 41 | 0 | 0 |
| All species | 3,482 | | 2,441 | 584 | 302 | 62 | 93 |
| Percent | | 100.0 | 70.1 | 16.8 | 8.7 | 1.8 | 2.6 |

CLAYPAN REGION

Table 5.--Saw-timber volume by species and tree-diameter class, 1948

| Species | : | : | : | : | : | : | : 28 inches |
|-------------------------------|--|----------|----------|----------|----------|----------|-------------|
| | : Total | : 12-14 | : 16-18 | : 20-22 | : 24-26 | : and | : larger |
| | : | : inches | : inches | : inches | : inches | : inches | : larger |
| | - - - - - Million board feet - - - - - | | | | | | |
| White oak | 690 | 251 | 270 | 95 | 44 | 30 | |
| Post-oak group | 323 | 102 | 125 | 72 | 13 | 11 | |
| Black oak | 418 | 78 | 145 | 96 | 65 | 34 | |
| Northern red oak | 151 | 15 | 43 | 36 | 23 | 34 | |
| Other red oaks | 334 | 100 | 79 | 45 | 101 | 9 | |
| Hickory | 305 | 107 | 127 | 47 | 13 | 11 | |
| Elm | 332 | 122 | 104 | 68 | 0 | 38 | |
| Soft maple | 303 | 55 | 64 | 58 | 48 | 78 | |
| Sugar maple | 31 | 8 | 23 | 0 | 0 | 0 | |
| Sycamore | 108 | 13 | 28 | 34 | 12 | 21 | |
| Ash | 125 | 53 | 34 | 14 | 24 | 0 | |
| Basswood and yellow-poplar | 5 | 5 | 0 | 0 | 0 | 0 | |
| Cottonwood | 46 | 9 | 0 | 9 | 10 | 18 | |
| Black walnut | 78 | 51 | 16 | 5 | 6 | 0 | |
| Other hardwoods | 233 | 38 | 49 | 37 | 75 | 34 | |
| All species | 3,482 | 1,007 | 1,107 | 616 | 434 | 318 | |
| Percent | 100.0 | 28.9 | 31.8 | 17.7 | 12.5 | 9.1 | |

CLAYPAN REGION

Table 6.--Hardwood saw-timber volume by species group and percentage distribution in log grades, 1948

| Species group | : Volume | : Log grade: 1 | : Log grade: 2 | : Log grade: 3 |
|--------------------------|----------------|----------------|----------------|----------------|
| | <u>Million</u> | - - - - - | <u>Percent</u> | - - - - - |
| | <u>bd. ft.</u> | | | |
| White oaks ^{1/} | 1,013 | 3.5 | 28.0 | 68.5 |
| Red oaks ^{2/} | 903 | 5.8 | 21.4 | 72.8 |
| Other hardwoods | 1,566 | 13.4 | 27.2 | 59.4 |
| | | | | |
| All hardwoods | 3,482 | 8.0 | 25.8 | 66.2 |

^{1/} Includes white oak and post-oak group.

^{2/} Includes black oak, northern red oak, and other red oaks.

CLAYPAN REGION

Table 7.--Total cubic volume of sound wood by species
and class of material, 1948

| Species | Growing stock | | | | | |
|--------------------------------|---------------|-------|------------------|-------------------|--------------|------------|
| | Total | Total | Saw-timber trees | Pole-timber trees | Tops & limbs | Cull trees |
| ----- Million cubic feet ----- | | | | | | |
| Redcedar | .1 | .1 | 0 | .1 | 0 | 0 |
| White oak | 225.9 | 140.7 | 104.9 | 35.8 | 73.6 | 11.6 |
| Post-oak group | 129.3 | 75.8 | 49.9 | 25.9 | 35.6 | 17.9 |
| Black oak | 129.7 | 81.3 | 63.4 | 17.9 | 45.3 | 3.1 |
| Northern red oak | 43.4 | 23.8 | 22.1 | 1.7 | 15.5 | 4.1 |
| Other red oaks | 126.3 | 72.6 | 51.2 | 21.4 | 36.5 | 17.2 |
| Hickory | 116.5 | 78.0 | 48.3 | 29.7 | 34.5 | 4.0 |
| Elm | 142.2 | 88.7 | 52.0 | 36.7 | 37.1 | 16.4 |
| Soft maple | 141.6 | 66.0 | 47.6 | 18.4 | 35.8 | 39.8 |
| Sugar maple | 12.2 | 8.2 | 5.0 | 3.2 | 3.5 | .5 |
| Sycamore | 32.3 | 20.5 | 16.5 | 4.0 | 11.8 | 0 |
| Ash | 69.2 | 44.6 | 19.7 | 24.9 | 14.1 | 10.5 |
| Basswood and yellow-poplar | 5.9 | 2.8 | .7 | 2.1 | .5 | 2.6 |
| Cottonwood | 13.2 | 7.7 | 6.9 | .8 | 4.8 | .7 |
| Black walnut | 39.6 | 25.1 | 12.5 | 12.6 | 8.9 | 5.6 |
| Other hardwoods | 109.9 | 61.9 | 35.1 | 26.8 | 25.2 | 22.8 |
| Noncommercial species | 2.3 | -- | -- | -- | -- | 2.3 |
| <hr/> | | | | | | |
| All species | 1,339.6 | 797.8 | 535.8 | 262.0 | 382.7 | 159.1 |
| <hr/> | | | | | | |
| Percent | 100.0 | 59.5 | 40.0 | 19.5 | 28.6 | 11.9 |

CLAYPAN REGION

Table 8.--Cubic volume of growing stock by species
and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area |
|-------------------------------|----------------------------------|---------------------------------|---------------------------------|-------------------------|------------------------------------|---------------------------|
| | <u>Million</u> <u>cu. ft.</u> | <u>Million cubic feet</u> | | | | |
| | Percent | | | | | |
| Redcedar and cypress | .1 | 0 | 0 | .1 | 0 | 0 |
| White oak | 140.7 | 17.6 | 86.9 | 30.6 | 17.4 | 4.9 |
| Post-oak group | 75.8 | 9.5 | 32.1 | 19.4 | 22.2 | 1.2 |
| Black oak | 81.3 | 10.2 | 51.1 | 15.5 | 14.6 | .1 |
| Northern red oak | 23.8 | 3.0 | 21.2 | 1.9 | .7 | 0 |
| Other red oaks | 72.6 | 9.1 | 27.1 | 26.0 | 16.5 | .9 |
| Hickory | 78.0 | 9.8 | 49.0 | 16.0 | 11.3 | 0 |
| Elm | 88.7 | 11.1 | 52.6 | 14.6 | 13.5 | 3.0 |
| Soft maple | 66.0 | 8.3 | 52.7 | 5.8 | 3.2 | 0 |
| Sugar maple | 8.2 | 1.0 | 2.8 | 3.5 | 1.9 | 0 |
| Sycamore | 20.5 | 2.6 | 16.8 | .9 | 2.8 | 0 |
| Ash | 44.6 | 5.6 | 17.8 | 14.1 | 12.5 | .2 |
| Basswood and yellow-poplar | 2.8 | .4 | 1.8 | .7 | 0 | .3 |
| Cottonwood | 7.7 | 1.0 | 5.0 | 0 | 2.1 | .3 |
| Black walnut | 25.1 | 3.1 | 14.5 | 3.4 | 6.0 | .7 |
| Other hardwoods | 61.9 | 7.7 | 31.1 | 9.3 | 18.6 | 2.3 |
| All species | 797.8 | | 462.5 | 161.7 | 143.4 | 13.9 |
| Percent | | 100.0 | 58.0 | 20.3 | 18.0 | 1.7 |
| | | | 2.0 | | | |

CLAYPAN REGION

Table 9.--Cubic volume of growing stock by stand-size class
and tree-diameter class, 1948

| Stand-size class | Total | 6-8 | 10 | 12-14 | 16-18 | 20-22 | 24-26 | 28 inches and larger |
|------------------------------|--------------------|-------|-------|-------|-------|-------|-------|----------------------------|
| | Million cubic feet | | | | | | | |
| Large saw-timber area | 462.5 | 51.7 | 39.2 | 75.9 | 118.4 | 85.3 | 47.3 | 44.7 |
| Small saw-timber area | 161.7 | 31.0 | 37.8 | 56.7 | 28.7 | 2.4 | 3.7 | 1.4 |
| Pole-timber area | 143.4 | 67.4 | 28.5 | 24.2 | 13.0 | 3.8 | 6.5 | 0 |
| Seedling and sapling area | 13.9 | 2.5 | 2.0 | 3.3 | 5.7 | .4 | 0 | 0 |
| Poorly stocked area | 16.3 | 1.6 | .3 | 3.8 | 4.6 | 0 | 6.0 | 0 |
| All classes | 797.8 | 154.2 | 107.8 | 163.9 | 170.4 | 91.9 | 63.5 | 46.1 |
| Percent | 100.0 | 19.3 | 13.5 | 20.5 | 21.4 | 11.5 | 8.0 | 5.8 |

CLAYPAN REGION

Table 10.--Average volume per acre by stand-size class, 1948

| Stand-size class | Average volume per acre | |
|---------------------------|-------------------------|---------------------------------|
| | <u>Board feet</u> | <u>Cubic feet</u> ^{1/} |
| Large saw-timber area | 5,548 | 1,051.1 |
| Small saw-timber area | 3,244 | 898.3 |
| Pole-timber area | 846 | 401.7 |
| Seedling and sapling area | 248 | 55.6 |
| Poorly stocked area | 775 | 135.8 |
| All classes | 2,585 | 592.3 |

^{1/} Growing stock only.

PRAIRIE REGION

PRAIRIE REGION

Table 1.--Forest and nonforest area by county, 1948

| County | : Total : land : area $\frac{1}{2}$: | : | Forest area | : | Nonforest area |
|------------|---|---------------------------------|----------------|---------------------------------|----------------|
| | <u>Thousand</u> <u>acres</u> | <u>Thousand</u> <u>acres</u> | <u>Percent</u> | <u>Thousand</u> <u>acres</u> | <u>Percent</u> |
| Adams | 554 | 93 | 17 | 461 | 83 |
| Boone | 181 | 6 | 3 | 175 | 97 |
| Brown | 196 | 42 | 21 | 154 | 79 |
| Bureau | 555 | 35 | 6 | 520 | 94 |
| Carroll | 300 | 22 | 7 | 278 | 93 |
| Cass | 237 | 46 | 19 | 191 | 81 |
| Champaign | 640 | 7 | 1 | 633 | 99 |
| Christian | 454 | 13 | 3 | 441 | 97 |
| Coles | 324 | 23 | 7 | 301 | 93 |
| Cook | 611 | 30 | 5 | 581 | 95 |
| DeKalb | 407 | 5 | 1 | 402 | 99 |
| DeWitt | 255 | 11 | 4 | 244 | 96 |
| Douglas | 269 | 5 | 2 | 264 | 98 |
| DuPage | 212 | 11 | 5 | 201 | 95 |
| Edgar | 402 | 23 | 6 | 379 | 94 |
| Ford | 312 | 1 | 0 | 311 | 100 |
| Fulton | 559 | 96 | 17 | 463 | 83 |
| Grundy | 276 | 10 | 4 | 266 | 96 |
| Hancock | 510 | 46 | 9 | 464 | 91 |
| Henderson | 244 | 35 | 14 | 209 | 86 |
| Henry | 529 | 17 | 3 | 512 | 97 |
| Iroquois | 718 | 13 | 2 | 705 | 98 |
| Jo Daviess | 393 | 60 | 15 | 333 | 85 |
| Kane | 330 | 10 | 3 | 320 | 97 |
| Kankakee | 435 | 16 | 4 | 419 | 96 |
| Kendall | 205 | 8 | 4 | 197 | 96 |
| Knox | 466 | 44 | 9 | 422 | 91 |
| Lake | 292 | 20 | 7 | 272 | 93 |
| LaSalle | 738 | 26 | 4 | 712 | 96 |
| Lee | 467 | 9 | 2 | 458 | 98 |

PRAIRIE REGION

Table 1.--Forest and nonforest area by county, 1948, continued

| County | : Total : land : area ^{1/} | : | : Forest area | : | : Nonforest area |
|-------------|---|---|---------------------------------|----------------|---------------------------------|
| | <u>Thousand</u> <u>acres</u> | | <u>Thousand</u> <u>acres</u> | <u>Percent</u> | <u>Thousand</u> <u>acres</u> |
| | | | | <u>Percent</u> | |
| Livingston | 668 | | 9 | 1 | 659 |
| Logan | 398 | | 11 | 3 | 387 |
| McDonough | 372 | | 40 | 11 | 332 |
| McHenry | 391 | | 16 | 4 | 375 |
| McLean | 751 | | 18 | 2 | 733 |
| Macon | 369 | | 12 | 3 | 357 |
| Marshall | 253 | | 28 | 11 | 225 |
| Mason | 346 | | 44 | 13 | 302 |
| Menard | 200 | | 15 | 8 | 185 |
| Mercer | 356 | | 28 | 8 | 328 |
| Morgan | 362 | | 30 | 8 | 332 |
| Moultrie | 221 | | 8 | 4 | 213 |
| Ogle | 484 | | 29 | 6 | 455 |
| Peoria | 399 | | 52 | 13 | 347 |
| Piatt | 280 | | 7 | 2 | 273 |
| Pike | 530 | | 97 | 18 | 433 |
| Putnam | 106 | | 18 | 17 | 88 |
| Rock Island | 269 | | 34 | 13 | 235 |
| Sangamon | 563 | | 24 | 4 | 539 |
| Schuyler | 278 | | 69 | 25 | 209 |
| Scott | 161 | | 21 | 13 | 140 |
| Stark | 186 | | 6 | 3 | 180 |
| Stephenson | 363 | | 16 | 4 | 347 |
| Tazewell | 418 | | 38 | 9 | 380 |
| Vermilion | 575 | | 29 | 5 | 546 |
| Warren | 347 | | 25 | 7 | 322 |
| Whiteside | 442 | | 16 | 4 | 426 |
| Will | 541 | | 23 | 4 | 518 |
| Winnebago | 333 | | 22 | 7 | 311 |
| Woodford | 344 | | 30 | 9 | 314 |
| Total | 23,377 | | 1,598 | 7 | 21,779 |

^{1/} Source: Area of United States 1940, U. S. Bureau of the Census

PRAIRIE REGION

Table 2.--Commercial forest area by ownership class, 1948

| Ownership class | Commercial forest area ^{1/} | |
|-----------------|--------------------------------------|----------------|
| | <u>Thousand acres</u> | <u>Percent</u> |
| Federal: | | |
| National forest | 0 | 0 |
| Other | 16 | 1.0 |
| <hr/> | | |
| Total | 16 | 1.0 |
| State | 6 | .4 |
| Private | 1,542 | 98.6 |
| <hr/> | | |
| All ownerships | 1,564 | 100.0 |

^{1/} Does not include 34 thousand acres of forest land classified as noncommercial.

PRAIRIE REGION

Table 3.--Commercial forest area by forest type and stand-size class, 1948

| Forest type | Total | Large | Small | Seedling | Pole- | and | Poorly |
|------------------|-------------------|------------------------|------------------------|-----------------|----------------|-----------------|--------|
| | | saw- timber area | saw- timber area | sapling area | timber area | stocked area | |
| | Thousand acres | Per- cent | Thousand acres | | | | |
| Oak-hickory | 667 | 42.6 | 199 | 99 | 130 | 184 | 55 |
| White oak | 195 | 12.5 | 97 | 67 | 15 | 0 | 16 |
| Mixed hdwd. | 323 | 20.7 | 102 | 36 | 123 | 46 | 16 |
| Pin oak flats | 5 | .3 | 5 | 0 | 0 | 0 | 0 |
| Bottomland hdwd. | 282 | 18.0 | 93 | 22 | 65 | 31 | 71 |
| Scrub hdwd. | 92 | 5.9 | 0 | 0 | 7 | 15 | 70 |
| All types | 1,564 | | 496 | 224 | 340 | 276 | 228 |
| Percent | | 100.0 | 31.7 | 14.3 | 21.8 | 17.6 | 14.6 |

PRAIRIE REGION

Table 4.--Saw-timber volume by species and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|---|----------------------------|--|---------------------------------|-------------------------|------------------------------------|---------------------------|------------|
| | <u>Million bd. ft.</u> | <u>Percent</u> - - - - - <u>Million board feet</u> - - - - - | | | | | |
| Redcedar | 19 | .5 | 0 | 19 | 0 | 0 | |
| White oak | 1,017 | 24.4 | 644 | 287 | 35 | 14 | |
| Post-oak group ^{1/} | 370 | 8.9 | 295 | 41 | 2 | 0 | |
| Black oak | 384 | 9.2 | 250 | 92 | 28 | 3 | |
| Northern red oak | 649 | 15.6 | 494 | 89 | 51 | 15 | |
| Other red oaks | 14 | .3 | 8 | 6 | 0 | 0 | |
| Hickory | 143 | 3.4 | 68 | 32 | 31 | 8 | |
| Elm | 548 | 13.1 | 362 | 96 | 56 | 13 | |
| Soft maple | 219 | 5.3 | 185 | 25 | 9 | 0 | |
| Sugar maple | 167 | 4.0 | 118 | 19 | 1 | 26 | |
| Sycamore | 101 | 2.4 | 52 | 8 | 0 | 0 | |
| Ash | 85 | 2.0 | 67 | 14 | 4 | 0 | |
| Basswood and yellow-poplar ^{2/} | 105 | 2.5 | 82 | 10 | 7 | 0 | |
| Cottonwood | 133 | 3.2 | 99 | 32 | 2 | 0 | |
| Black walnut | 67 | 1.6 | 50 | 10 | 0 | 2 | |
| Other hardwoods | 152 | 3.6 | 95 | 26 | 19 | 2 | |
| All species | 4,173 | | 2,869 | 806 | 245 | 83 | |
| Percent | | 100.0 | 68.7 | 19.3 | 5.9 | 2.0 | 4.1 |

^{1/} Chiefly bur oak.
^{2/} Chiefly basswood.

PRAIRIE REGION

Table 5.--Saw-timber volume by species and tree-diameter class, 1948

| Species | : | : | : | : | : | : |
|-------------------------------|--|------------------|----------|----------|----------|-------------|
| | :Total | : 12-14 | : 16-18 | : 20-22 | : 24-26 | : 28 inches |
| | : | : inches | : inches | : inches | : inches | : and |
| | | | | | | : larger |
| | - - - - - Million board feet - - - - - | | | | | |
| Redcedar | 19 | 14 ^{1/} | 5 | 0 | 0 | 0 |
| White oak | 1,017 | 362 | 327 | 164 | 94 | 70 |
| Post-oak group | 370 | 65 | 101 | 112 | 41 | 51 |
| Black oak | 384 | 85 | 124 | 99 | 72 | 4 |
| Northern red oak | 649 | 138 | 193 | 118 | 102 | 98 |
| Other red oaks | 14 | 5 | 4 | 5 | 0 | 0 |
| Hickory | 143 | 95 | 42 | 6 | 0 | 0 |
| Elm | 548 | 161 | 172 | 95 | 77 | 43 |
| Soft maple | 219 | 71 | 60 | 43 | 35 | 10 |
| Sugar maple | 167 | 57 | 51 | 43 | 0 | 16 |
| Sycamore | 101 | 3 | 9 | 18 | 45 | 26 |
| Ash | 85 | 27 | 31 | 23 | 4 | 0 |
| Basswood and yellow-poplar | 105 | 21 | 25 | 27 | 8 | 24 |
| Cottonwood | 133 | 19 | 38 | 50 | 26 | 0 |
| Black walnut | 67 | 23 | 27 | 9 | 0 | 8 |
| Other hardwoods | 152 | 63 | 17 | 25 | 40 | 7 |
| All species | 4,173 | 1,209 | 1,226 | 837 | 544 | 357 |
| Percent | 100.0 | 29.0 | 29.4 | 20.1 | 13.0 | 8.5 |

^{1/} Includes 4 million board feet in 10-inch trees.

PRAIRIE REGION

Table 6.--Hardwood saw-timber volume by species group and percentage distribution in log grades, 1948

| Species group | : Volume | : Log grade 1 | : Log grade 2 | : Log grade 3 |
|--------------------------|----------------|----------------|---------------|---------------|
| | <u>Million</u> | <u>Percent</u> | | |
| | <u>bd. ft.</u> | | | |
| White oaks ^{1/} | 1,387 | 7.7 | 14.4 | 77.9 |
| Red oaks ^{2/} | 1,047 | 9.6 | 21.7 | 68.7 |
| Other hardwoods | 1,720 | 9.3 | 20.3 | 70.4 |
| All hardwoods | 4,154 | 8.9 | 18.8 | 72.3 |

^{1/} Includes white oak and post-oak group.

^{2/} Includes black oak, northern red oak, and other red oaks.

PRAIRIE REGION

Table 7.--Total cubic volume of sound wood by species
and class of material, 1948

| Species | Growing stock | | | | | |
|--------------------------------|---------------|-------|---------------------|----------------------|-----------------|---------------|
| | Total | Total | Saw-timber trees | Pole-timber trees | Tops & limbs | Cull trees |
| ----- Million cubic feet ----- | | | | | | |
| Redcedar | 7.2 | 7.1 | 5.8 ^{1/} | 1.3 | -- | .1 |
| White oak | 320.8 | 193.2 | 152.6 | 40.6 | 105.9 | 21.7 |
| Post-oak group | 113.2 | 63.1 | 54.8 | 8.3 | 38.3 | 11.8 |
| Black oak | 138.1 | 77.3 | 57.8 | 19.5 | 40.5 | 20.3 |
| Northern red oak | 190.6 | 112.8 | 95.6 | 17.2 | 66.3 | 11.5 |
| Other red oaks | 7.1 | 4.6 | 2.1 | 2.5 | 1.5 | 1.0 |
| Hickory | 71.0 | 49.5 | 22.9 | 26.6 | 16.0 | 5.5 |
| Elm | 261.1 | 147.4 | 86.0 | 61.4 | 60.3 | 53.4 |
| Soft maple | 116.7 | 56.3 | 34.0 | 22.3 | 24.6 | 35.8 |
| Sugar maple | 58.5 | 36.3 | 25.5 | 10.8 | 17.9 | 4.3 |
| Sycamore | 30.5 | 17.2 | 15.0 | 2.2 | 10.5 | 2.8 |
| Ash | 43.7 | 26.4 | 13.2 | 13.2 | 9.3 | 8.0 |
| Basswood and yellow-poplar | 48.6 | 19.2 | 15.6 | 3.6 | 10.9 | 18.5 |
| Cottonwood | 35.8 | 20.4 | 20.2 | .2 | 14.1 | 1.3 |
| Black walnut | 40.9 | 25.8 | 10.4 | 15.4 | 7.3 | 7.8 |
| Other hardwoods | 101.3 | 57.6 | 23.5 | 34.1 | 16.5 | 27.2 |
| Noncommercial species | 10.9 | -- | -- | -- | -- | 16.9 |
| All species | 1,596.0 | 914.2 | 635.0 | 279.2 | 439.9 | 241.9 |
| Percent | 100.0 | 57.3 | 39.8 | 17.5 | 27.6 | 15.1 |

^{1/} Includes tops of redcedar trees.

PRAIRIE REGION

Table 8.--Cubic volume of growing stock by species
and stand-size class, 1948

| Species | Total | Large saw- timber area | Small saw- timber area | Pole- timber area | Seedling and sapling area | Poorly stocked area | |
|-------------------------------|----------------------------------|---------------------------------|---|-------------------------|------------------------------------|---------------------------|------|
| | <u>Million</u> <u>cu. ft.</u> | <u>Percent</u> | - - - - - <u>Million cubic feet</u> - - - - - | | | | |
| Redcedar | 7.1 | .8 | 0 | 6.7 | 0 | .4 | |
| White oak | 193.2 | 21.1 | 104.6 | 58.8 | 20.1 | 3.6 | |
| Post-oak group | 63.1 | 6.9 | 45.0 | 9.3 | 3.6 | 0 | |
| Black oak | 77.3 | 8.5 | 38.2 | 19.2 | 17.4 | .9 | |
| Northern red oak | 112.8 | 12.3 | 77.6 | 18.7 | 13.3 | 3.2 | |
| Other red oaks | 4.6 | .5 | 2.7 | 1.3 | .6 | 0 | |
| Hickory | 49.5 | 5.4 | 17.8 | 13.8 | 14.0 | 3.3 | |
| Elm | 147.4 | 16.1 | 69.8 | 25.5 | 43.8 | 4.2 | |
| Soft maple | 56.3 | 6.2 | 39.0 | 11.0 | 6.3 | 0 | |
| Sugar maple | 36.3 | 4.0 | 22.4 | 5.3 | 4.4 | 3.8 | |
| Sycamore | 17.2 | 1.9 | 7.7 | 1.4 | 1.6 | 0 | |
| Ash | 26.4 | 2.9 | 16.7 | 2.9 | 6.6 | .2 | |
| Basswood and yellow-poplar | 19.2 | 2.1 | 13.2 | 2.8 | 1.9 | .3 | |
| Cottonwood | 20.4 | 2.2 | 14.8 | 5.3 | .3 | 0 | |
| Black walnut | 25.8 | 2.8 | 11.0 | 3.0 | 7.2 | .3 | |
| Other hardwoods | 57.6 | 6.3 | 17.7 | 10.1 | 23.6 | 3.1 | |
| All species | 914.2 | | 498.2 | 195.1 | 164.7 | 22.9 | 33.3 |
| Percent | | 100.0 | 54.5 | 21.3 | 18.0 | 2.5 | 3.7 |

PRAIRIE REGION

Table 9.--Cubic volume of growing stock by stand-size class
and tree-diameter class, 1948

| Stand-size class: | Total | 6-8 | 10 | 12-14 | 16-18 | 20-22 | 24-26 | 28 inches and larger |
|--------------------------------|--|-----------|-----------|-----------|-----------|-----------|----------|----------------------------|
| | - - - - - Million cubic feet - - - - - | | | | | | | |
| Large saw-timber area | 498.2 | 34.6 | 35.7 | 80.4 | 139.0 | 98.0 | 64.3 | 46.2 |
| Small saw-timber area | 195.1 | 33.1 | 34.0 | 83.5 | 30.7 | 9.9 | 2.4 | 1.5 |
| Pole-timber area | 164.7 | 74.6 | 51.2 | 22.5 | 9.4 | 5.4 | 1.6 | 0 |
| Seedling and sap- ling area | 22.9 | 7.9 | 1.5 | 7.1 | 2.0 | 3.1 | 0 | 1.3 |
| Poorly stocked area | 33.3 | 4.0 | 3.9 | 3.0 | 5.7 | 5.4 | 10.2 | 1.1 |
| All classes | 914.2 | 154.2 | 126.3 | 196.5 | 186.8 | 121.8 | 78.5 | 50.1 |
| Percent | 100.0 | 16.9 | 13.8 | 21.5 | 20.4 | 13.3 | 8.6 | 5.5 |

PRAIRIE REGION

Table 10.--Average volume per acre by stand-size class, 1948

| Stand-size class | Average volume per acre | |
|---------------------------|-------------------------|-----------------------------|
| | <u>Board feet</u> | <u>Cubic feet</u> <u>1/</u> |
| Large saw-timber area | 5,784 | 1,004.4 |
| Small saw-timber area | 3,598 | 871.0 |
| Pole-timber area | 721 | 484.4 |
| Seedling and sapling area | 301 | 83.0 |
| Poorly stocked area | 746 | 146.1 |
| <hr/> | | |
| All classes | 2,668 | 584.5 |

1/ Growing stock only.

FOREST SURVEY PROCEDURE

The inventory of the forest resources of Illinois was made during the period October 1947 to May 1948. A sampling procedure was used involving an office study of aerial photographs and a field examination of randomly selected forest and nonforest plots.

The proportion of forest land in each county was obtained by placing a transparent template marked with uniformly spaced dots over aerial photographs and counting the number of dots falling on forest and nonforest areas. The percentage of the forest dots in a county applied to the total land area gave a preliminary estimate of the forest area. This was later adjusted after field examination.

The location of a selected number of dots falling on forest land was marked on the photographs. The acre surrounding each marked dot was examined under stereoscope and was classified by stand-size class on the basis of the height, crown width, and density of trees on the plot. Plots to be examined in the field were randomly drawn from those classified under stereoscope. In making this selection the greatest weight was given to the stand-size classes containing the heaviest timber volume. In addition, a number of nonforest plots were selected for field examination to measure the movement of open land to forest since the date of photography.

Through the cooperation of the Illinois Agricultural Experiment Station and the Illinois Division of Forestry, the sampling intensity of the Southern region was increased to provide more accurate forest area and timber volume data for this important area.

The locations of the selected field plots were marked on the photographs, which were then sent to the field. Crews of two men each located these points on the ground. On forest land a 1/5-acre plot was established on which forest conditions were described and the species, size, quality, and growth of trees were recorded.

The following tabulation gives the number of dots and plots examined for each of the three regions and for the state.

| | <u>Total</u> | <u>Southern region</u> | <u>Claypan region</u> | <u>Prairie region</u> |
|---|--------------|----------------------------|---------------------------|---------------------------|
| Number of dots counted to determine forest and nonforest area | 191,350 | 35,702 | 41,006 | 114,642 |
| Number of forest plots stereoscopically examined on photos | 5,933 | 2,999 | 1,232 | 1,702 |
| Number of forest plots field examined | 1,033 | 542 | 212 | 279 |
| Number of nonforest plots field examined | 266 | 109 | 70 | 87 |

ACCURACY OF DATA

Statistical analysis of forest area and timber volume data shows the following sampling errors 1/ for each of three regions and for the state:

| <u>Region</u> | <u>Total forest area</u> | | <u>Total saw-timber volume</u> | |
|---------------|--------------------------|----------------|----------------------------------|----------------|
| | <u>M acres</u> | <u>Percent</u> | <u>Million</u> <u>bd. ft.</u> | <u>Percent</u> |
| Southern | + 24 | + 2.35 | + 129 | + 4.80 |
| Claypan | + 36 | + 2.66 | + 226 | + 6.50 |
| Prairie | + 45 | + 2.81 | + 277 | + 6.64 |
| State | + 63 | + 1.57 | + 380 | + 3.68 |

These estimates of sampling error do not include errors resulting from the development and application of volume tables and cull factors, or from mistakes in measurement or judgment. All phases of field and office work were closely supervised to keep these errors to a minimum. Since the percentage error increases with each subdivision of the total, small acreages or volumes may have large errors and may therefore indicate only relative magnitudes.

1/ At one standard deviation; i.e., the chances are two out of three that, if the survey were repeated, the total forest area or volume figures would not differ more than the errors shown in this table.

EXPLANATION OF TERMS USED

Forest land - Land bearing forest growth or land from which the forest has been removed but which shows evidence of past forest occupancy and which is not now in other use. To qualify as forest, an area must: (1) be at least 100 feet wide; (2) be at least one acre in area; (3) have a sufficient number of trees to provide 10 percent crown coverage; or (4) lacking 10 percent crown coverage, be likely to remain in forest use.

Commercial forest land - Forest land bearing or capable of bearing timber of commercial character and economically available now or prospectively for commercial use and not withdrawn from such use.

Noncommercial forest land - Forest land not qualifying as commercial forest land. Two classes of forest area are included: (1) commercially valuable forest land withdrawn from timber use for such purposes as parks, game refuges, or reservoir protection; and (2) forest land which because of poor growing conditions will not produce trees of commercial quality.

Forest types

Oak-hickory - Stands of hardwoods in which oaks and hickories comprise at least 60 percent of the dominant and codominant trees.

White oak - Stands in which white oak (Quercus alba) comprises at least 60 percent of the dominant and codominant trees.

Mixed hardwoods - Stands of mixed hardwood species not qualifying for other hardwood types. Principal species include elm, maple, basswood, and black walnut in mixture with oaks and hickories.

Pin oak flats - Stands of pin oak and other hardwoods occurring on poorly drained flats. Associate species include soft maple, elm, hickory, and sweetgum.

Bottomland hardwoods - Stands on the alluvial bottoms of rivers and streams. The principal species include sycamore, willow, elm, blackgum, sweetgum, soft maple, oaks, hickory, cottonwood, and cypress.

Scrub hardwoods - Stands in which scrub oak or other noncommercial tree species comprise at least 60 percent of the dominant and codominant trees.

Tree classes

Sound saw-timber tree - A coniferous tree at least 9.0 inches d.b.h. (diameter outside bark at 4.5 feet above ground), or a hardwood tree at least 11.0 inches d.b.h., with a sound butt log at least 8 feet long, or with at least half of the gross volume of the tree in sound material.

Sound pole-timber tree - A tree at least 5.0 inches d.b.h. but less than saw-timber size, which now is or gives promise of becoming a sound merchantable tree.

Cull tree - A tree that does not qualify as a sound pole-timber or saw-timber tree because of poor form, limbiness, rot, or other defect.

Volume estimates

Board-foot volume includes the volume of that portion of saw-timber trees merchantable for sawlogs. Volume deductions have been made for rot, crook, and other defects. Board-foot volumes are shown in the International 1/4-inch log rule, which approximates green lumber tally.

Cubic-foot volume

Total volume includes the sound wood inside bark in both sound and cull living trees 5.0 inches d.b.h. and larger from the stump to a minimum top diameter of 4.0 inches inside bark. It therefore includes the upper stems of coniferous trees and the upper stems and limbs of hardwoods.

Growing stock includes the volume of sound wood inside bark in: (1) the saw-timber portion of sound trees, (2) the upper stem of sound saw-timber-sized conifers to a minimum top diameter of 4.0 inches inside bark, and (3) the sound pole-timber trees to the same top diameter.

Stand-size class

Large saw timber - stands having a minimum net volume of 1500 board feet per acre in living merchantable trees, and having more than half of this volume in trees 15.0 inches d.b.h. and larger.

Small saw timber - stands having a net volume of 1500 board feet per acre in living merchantable trees, and having at least half of this volume in trees smaller than 15.0 inches in d.b.h.

Pole timber - stands having a net volume of less than 1500 board feet per acre in living merchantable trees, but which are at least 10 percent stocked with pole-sized and larger trees. At least half the stocking must be in pole-sized trees.

Seedlings and saplings - stands not qualifying either for saw timber or pole timber but having at least 300 seedlings and saplings of commercial species per acre.

Poorly stocked - commercial forest land not qualifying for any other class. Denuded areas that are not likely to be put to a nonforest use are classed as poorly stocked.

Hardwood log grades

Grade 1 - Logs at least 14.0 inches in diameter inside bark with five-sixths of the surface on the three best faces clear of defect in not more than two cuttings. Lumber from such logs will normally grade at least 60 percent No. 1 common and better.

Grade 2 - Logs at least 12 inches in diameter inside bark with two-thirds of the surface on the three best faces clear of defect in not more than three cuttings. Lumber from such logs will normally grade at least 35 percent No. 1 common and better.

Grade 3 - Merchantable logs at least 8.0 inches in diameter inside bark which do not meet the requirements of higher grades. Such logs will normally produce less than 35 percent No. 1 common and better lumber or will be suitable only for ties or timbers.

Species listed

| | | |
|--|---|--|
| Redcedar | - | <u>Juniperus virginiana</u> |
| Cypress | - | <u>Taxodium distichum</u> |
| White oak | - | <u>Quercus alba</u> |
| Post-oak group includes: | | |
| Post oak | - | <u>Quercus stellata</u> |
| Swamp white oak | - | <u>Quercus bicolor</u> |
| Swamp chestnut oak | - | <u>Quercus prinus</u> |
| Overcup oak | - | <u>Quercus lyrata</u> |
| Bur oak | - | <u>Quercus macrocarpa</u> |
| Chinquapin oak | - | <u>Quercus muehlenbergii</u> |
| Chestnut oak | - | <u>Quercus montana</u> |
| Black oak | - | <u>Quercus velutina</u> |
| Northern red oak includes: | | |
| Northern red oak | - | <u>Quercus borealis</u> |
| Swamp red oak | - | <u>Quercus falcata var. pagodaefolia</u> |
| Other red oaks include: | | |
| Southern red oak | - | <u>Quercus falcata</u> |
| Pin oak | - | <u>Quercus palustris</u> |
| Scarlet oak | - | <u>Quercus coccinea</u> |
| Willow oak | - | <u>Quercus phellos</u> |
| Water oak | - | <u>Quercus nigra</u> |
| Shingle oak | - | <u>Quercus imbricaria</u> |
| Hickory | - | <u>Carya species</u> |
| Elm | - | <u>Ulmus species</u> |
| Soft maple includes: | | |
| Red maple | - | <u>Acer rubrum</u> |
| Silver maple | - | <u>Acer saccharinum</u> |
| Boxelder | - | <u>Acer negundo</u> |
| Sugar maple | - | <u>Acer saccharophorum</u> |
| Sycamore | - | <u>Platanus occidentalis</u> |
| Ash | - | <u>Fraxinus species</u> |
| Basswood and yellow- poplar includes: | | |
| Basswood | - | <u>Tilia species</u> |
| Yellow-poplar | - | <u>Liriodendron tulipifera</u> |
| Cucumbertree | - | <u>Magnolia acuminata</u> |

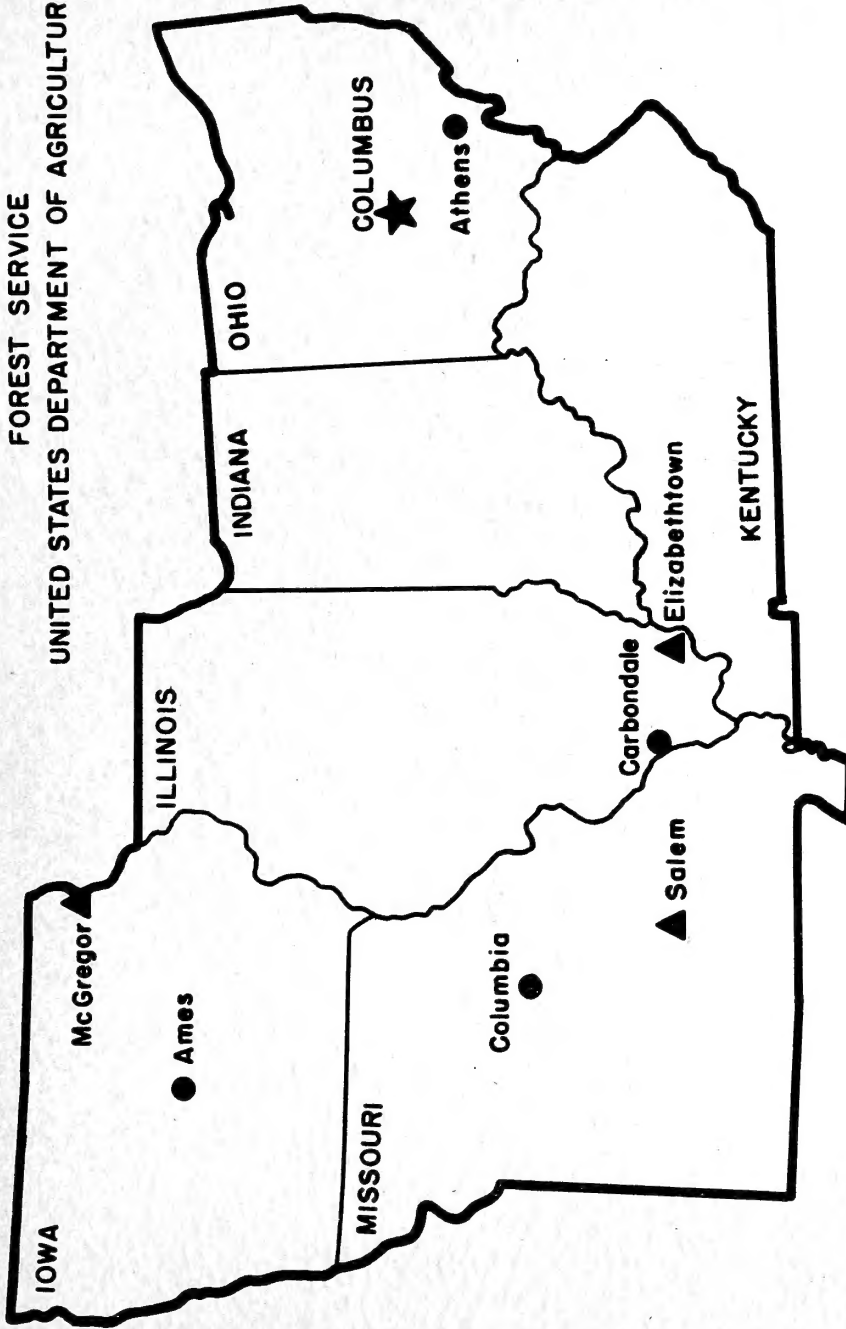
Species listed (continued)

Cottonwood - Populus deltoides
Black walnut - Juglans nigra
Other hardwoods - include all other commercial hardwood species.

Noncommercial species - include species that do not normally have commercial value such as hawthorn, redbud, ironwood, alder, and service berry.



TERRITORY SERVED BY THE
CENTRAL STATES FOREST EXPERIMENT STATION
FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE



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