



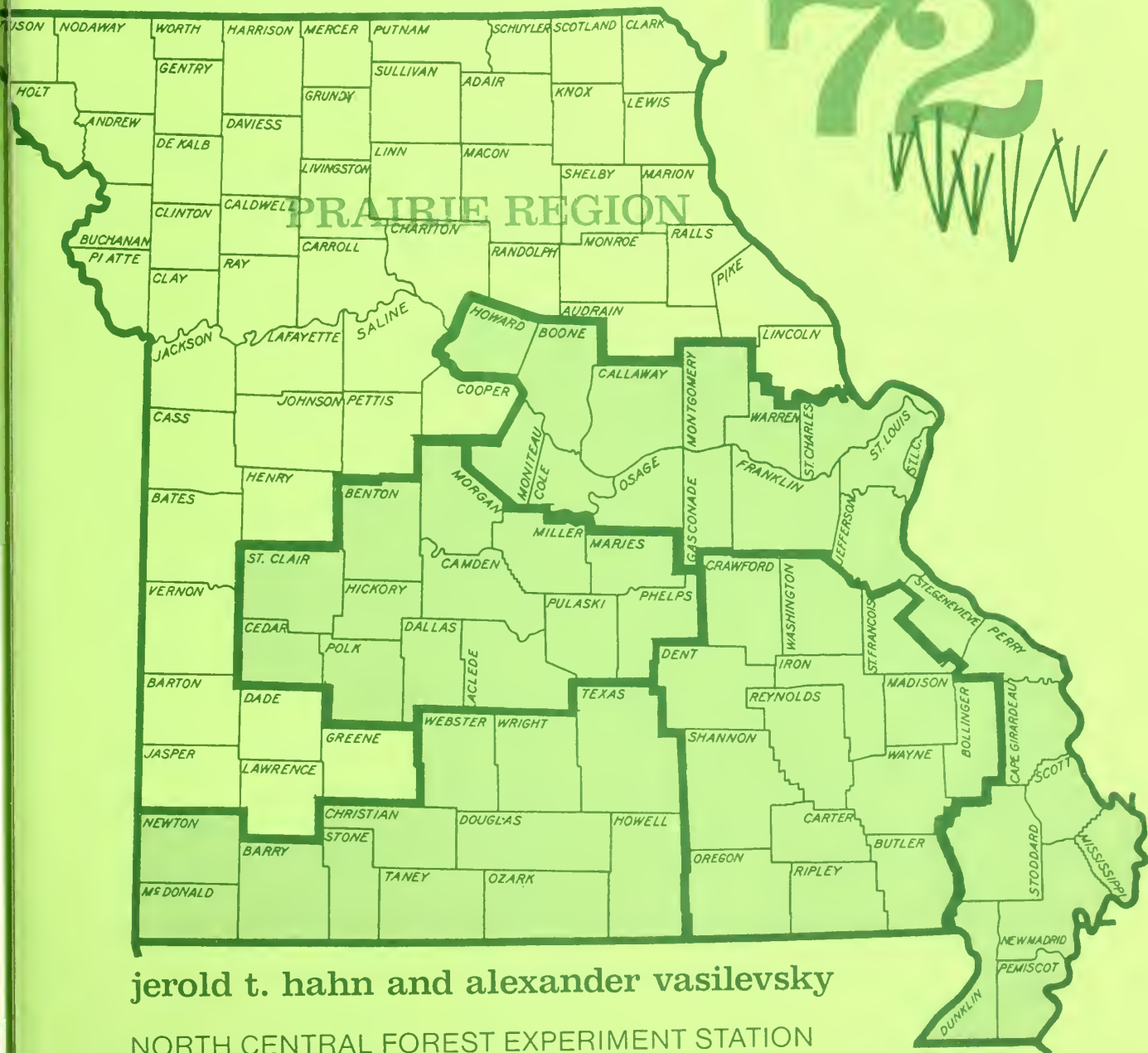


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FOREST RESOURCE OF MISSOURI'S Prairie region



Jerold t. hahn and alexander vasilevsky

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE • U.S. DEPARTMENT OF AGRICULTURE

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FOREWORD

Forest Survey is a continuing endeavor as mandated by the McSweeney-McNary Forest Research Act of 1928. Its objective is to inventory periodically the Nation's forest lands to determine their extent, condition, and volumes of timber, growth, and depletions. This kind of up-to-date information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are charged with the responsibility for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for Forest Survey work done in Michigan, Wisconsin, Minnesota, North Dakota, eastern South Dakota, Nebraska, Iowa, Illinois, Indiana, Missouri, and Kansas.

Fieldwork for the 1972 Missouri Forest Survey was started in January 1970 and was completed in May 1973. Reports on the two previous surveys of Missouri's timber resource are dated 1947 and 1959. These earlier reports provide a basis for comparison with the information in this report for those interested in trends that have developed over the past quarter century.

Similar Resource Bulletins reporting statistical highlights and detailed tables on the timber resource of the other Survey Units in Missouri (see cover) are available or are in preparation. These will provide the basis for a comprehensive analysis of the timber resource of the entire State which will be published as a separate report.

A higher degree of accuracy of survey information was obtained during the 1972 survey than otherwise would have been feasible because of intensified field sampling made possible by extra funding provided the North Central Station by the State Legislature through the Missouri Department of Conservation. The Department also conducted a canvass of primary wood-using plants in the State, which was used to help in estimating the quantity of timber products harvested in Missouri.

Personnel from the National Forests in Missouri installed sample plots on national forest lands, which were used to inventory those lands. The USDA Agricultural Stabilization and Conservation Service and the State Historical Society of Missouri furnished aerial photos used in the survey.

N O T E

● References to information concerning growth, mortality, and removals are dated 1971, but information concerning forest area and timber inventory incorporates changes that occurred during calendar year 1971; therefore, they represent conditions as of January 1, 1972, and are dated 1972.

● Many of the terms used in this Resource Bulletin have specialized meanings, which are defined in "Glossary of Terms Used in Resource Bulletins Reporting Missouri's 1972 Timber Resource." Copies of this Glossary can be obtained from the North Central Forest Experiment Station.

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G L O S S A R Y O F T E R M S
Used in Resource Bulletins Reporting

M I S S O U R I ' S 1 9 7 2 T I M B E R R E S O U R C E

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Land-Use Classes

Gross area.--The entire area of land and water as determined by the Bureau of Census, 1960.

Land area.--The area of dry land and land temporarily or partially covered by water such as marshes, swamps, flood plains, streams, sloughs, and estuaries. Canals less than 1/8-mile wide, and lakes, reservoirs, and ponds smaller than 40 acres are included as land area. These figures are from the Bureau of Census, 1960.

Forest land.--Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Includes afforested areas. The minimum forest area classified was 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas were classed as forest if less than 120 feet in width.

Commercial forest land.--Forest land that is producing or is capable of producing crops of industrial wood and that is not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both inaccessible and inoperable areas.

Noncommercial forest land.--(a) Unproductive--forest land incapable of yielding crops of industrial wood because of adverse site conditions, (b) Productive-reserved--forest land withdrawn from commercial timber use through statute or administrative regulation, or exclusively used for Christmas tree production.

Nonforest land.--Land that has never supported forests, and land formerly forested where forest use is precluded by development for nonforest uses, such as cropland, improved pasture, residential areas, and city parks. Also includes improved roads and adjoining rights-of-way, powerline clearings, and certain areas of water classified by the Bureau

of Census as land. Unimproved roads, streams, canals, and nonforest strips in forest areas must be more than 120 feet wide, and clearings in forest areas must be more than 1 acre in size, to qualify as nonforest land.

Ownership Classes

National forest.--Federal lands that have been designated by executive order or statute as national forests or purchase units, and other lands under the administration of the USDA Forest Service.

Other Federal.--Federal lands other than national forest.

State, county, and municipal.--Lands owned by States, counties, or local public agencies, or lands leased by them for more than 50 years.

Forest industry.--Lands owned by companies or individuals operating primary wood-using plants.

Farmer-owned.--Lands owned by operators of farms. A farm must include 10 or more acres from which the sale of agricultural products totals \$50 or more annually, or if less than 10 acres, the yield must be at least \$250 annually.

Miscellaneous private.--Privately owned lands other than forest industry- or farmer-owned.

Tree Classes

All live trees.--Growing-stock, rough and rotten trees 1 inch d.b.h. and larger.

Growing-stock trees.--All live trees of commercial species except rough and rotten trees.

Desirable trees.--Growing-stock trees having no serious defects in quality limiting present or prospective use, and of relatively high vigor and containing no pathogens that may result in death or serious deterioration before rotation age. These are trees that would be favored by forest managers in silvicultural operations.

Acceptable trees.--Trees meeting the standards for growing stock but not qualifying as desirable trees.

Sawtimber trees.--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs, each 8 feet or longer. At least 33 percent of the gross volume of the tree must be sound wood. Softwoods must be at least 9.0 inches d.b.h. and hardwoods at least 11.0 inches.

Poletimber trees.--Growing-stock trees of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size, and of good form and vigor.

Saplings.--Live trees of commercial species 1.0 to 5.0 inches d.b.h. and of good form and vigor.

Seedlings.--Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive according to regional standards. (Examples of seedlings not expected to survive are those that are diseased or heavily damaged by logging, browsing, or fire). Only softwood seedlings over 6 inches and hardwood seedlings over 1 foot in height are counted.

Rotten trees.--Live trees (any size) of commercial species that do not contain a merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of rot (that is, when more than 50 percent of the cull volume of the tree is rotten).

Rough trees.--Live trees that do not contain at least one merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of roughness and poor form, as well as all live noncommercial species.

Short-log (rough trees).--Sawtimber-sized trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Stocking

The degree of utilization of land by trees as measured in terms of basal area and/or the number of trees in a stand compared to the basal area and/or number

of trees required to utilize fully the growth potential of the land.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees do reach 5 inches d.b.h.

Stocking of all live trees, growing-stock trees, and desirable trees are recorded separately and stands are grouped into the following stocking classes.

Stocking Classes

Overstocked stands.--Stands in which stocking of trees is 133 percent or more.

Fully stocked stands.--Stands in which stocking of trees is from 100 to 133 percent.

Medium-stocked stands.--Stands in which stocking of trees is from 60 to 100 percent.

Poorly stocked stands.--Stands in which stocking of trees is from 16.7 to 60 percent.

Nonstocked areas.--Commercial forest land on which stocking of trees is less than 16.7 percent.

Area-Condition Classes

Class 10.--Areas fully stocked with desirable trees but not overstocked.

Class 20.--Areas fully stocked with desirable trees, but overstocked with all live trees.

Class 30.--Areas medium to fully stocked with desirable trees, and with less than 30 percent of the area controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Class 40.--Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees and/or conditions that ordinarily prevent occupancy by desirable trees.

Class 50.--Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.

Class 60.--Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.

Class 70.--Areas poorly stocked with desirable trees, and poorly stocked with growing-stock trees.

Stand-Size Classes

Stand.--A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Sawtimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber or poletimber trees and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, and with half or more of this stocking in sawtimber and/or poletimber trees and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands.--Stands at least 16.7 percent stocked with growing-stock trees and with saplings and/or seedlings comprising more than half of this stocking.

Nonstocked areas.--Commercial forest land on which stocking of growing-stock trees is less than 16.7 percent.

Other Classifications

Site index.--An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Site classes.--A classification of forest land in terms of inherent capacity to grow crops of industrial wood expressed in cubic-foot growth per acre per year.

Stand-age.--Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Basal area.--The area in square feet of the cross section at breast height of a single tree. When the basal area of all the trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Forest Types

A classification of forest land based upon the species forming a plurality of live-tree stocking. Major forest types in Missouri are:

Shortleaf pine.--Forests in which shortleaf pine comprises a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Eastern redcedar.--Forests in which eastern redcedar comprises a plurality of the stocking. (Common associates include oak and hickory.)

Eastern redcedar-hardwood.--Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking but in which eastern redcedar comprises 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

Shortleaf pine-oak.--Forests in which upland oaks comprise a plurality of the stocking, but in which shortleaf pine comprises 25 to 50 percent of the stocking.

Post-blackjack oak.--Forests in which post oak or blackjack oak, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Black-scarlet oak.--Forests in which upland oaks or hickory, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent, or where white oak or post and blackjack oak

comprise a plurality. (Common associates include yellow-poplar, elm, maple, and black walnut.)

White oak.--Forests in which white oak and other white oak species, singly or in combination, comprise a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Oak-gum-cypress.--Bottomland forests in which bottomland oaks such as pin, swamp white, and shingle oaks, along with tupelo, blackgum, sweetgum, and cypress, singly or in combination, comprise a plurality of the stocking. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

Elm-ash-cottonwood.--Forests in which elm, ash, or cottonwood, singly or in combination, comprises a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple.)

Cottonwood.--Forests in which cottonwood comprises a plurality of the stocking.

Maple-beech.--Forests in which hard maple or beech, singly or in combination, comprises a plurality of the stocking. (Common associates include elm and basswood.)

Timber Volume

Volume of growing stock.--The volume of sound wood in the bole of growing-stock trees 5.0 inches d.b.h. and over, from a 1-foot stump to a minimum of 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs. Growing-stock volumes are shown in cubic feet and cords. Conversion from one unit of measure to another may be accomplished by a factor of 79 cubic feet per solid wood cord.

Volume of sawtimber.--Net volume of the saw log portion of live sawtimber trees in board feet, International 1/4-inch rule, from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

Upper stem portion.--That part of the bole of sawtimber trees above the merchantable sawtimber top to a minimum top diameter

of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Growth and Mortality

Net annual growth of growing stock.--Net annual growth of growing stock is the change in volume of sound wood that occurred during 1971 in growing-stock trees that were 5.0 inches d.b.h. or larger at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than 5.0 inches d.b.h. at the beginning of the year that grew sufficiently during the year to be reclassified into the 5.0-inch-or-larger d.b.h. classes (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year but were reclassified during the year as growing-stock trees,

plus

the annual change in volume of sound wood that occurred during the year on growing-stock trees that died during the year,

plus

the annual change in volume of sound wood that occurred in growing-stock trees included among timber removals for the year (See glossary for timber removals from growing stock, p. 5),

plus

the annual change in volume of sound wood in trees that had been classified as growing stock at the beginning of the year but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the years the trees were classified as growing stock was included,

minus

the volume of sound wood in growing-stock trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as growing stock at the beginning of the year, but were reclassified during the year as rough or rotten trees.

Net annual growth of sawtimber.--

Net annual growth of sawtimber is the change in volume of sound wood that occurred during 1971 in trees that were sawtimber size at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than sawtimber size at the beginning of the year that grew sufficiently during the year to be reclassified as sawtimber trees (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year, but were reclassified during the year as sawtimber trees,

plus

the annual change in volume of sound wood that occurred during the year on sawtimber trees that died during the year,

plus

the annual change in volume of sound wood that occurred in sawtimber trees included among timber removals for the year (see glossary for timber removals from sawtimber, p. 5),

plus

the annual change in volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the year the trees were classified as sawtimber was included,

minus

the volume of sound wood in sawtimber trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees.

*Mortality of growing stock.--*The volume of sound wood in growing-stock trees dying annually from natural causes. Natural causes include fire, insects, disease, animal damage, weather, and suppression.

*Mortality of sawtimber.--*The net board-foot volume of sawtimber trees dying annually from natural causes.

Timber Removals

*Timber removals from growing stock.--*The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals (see glossary for volume of growing stock, p. 4). Roundwood products are logs, bolts, or other round sections cut and used from trees. Logging residues are the unused portions of cut trees plus unused trees killed by logging. Other removals are growing-stock trees removed but not utilized for products or trees left standing but "removed" from the commercial forest land classification by land use change--examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

*Timber removals from sawtimber.--*The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals (see glossary for volume of sawtimber, p. 4).

*Timber products output.--*All timber products cut from roundwood, and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees,

cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulp chips or other products.

Plant byproducts.--Wood products, such as pulpwood chips, obtained incidental to production of other manufactured products.

Plant residues.--Wood materials from manufacturing plants not utilized for some product.

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TIMBER RESOURCE OF MISSOURI'S PRAIRIE, 1972

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HIGHLIGHTS¹

Forest Area

Forest land occupies 2.0 million acres (50 percent of the Unit's land area) as compared to 2.4 million acres (12 percent) in 1959.

Commercial forest land totaled 1.9 million acres in 1972, as compared to 2.4 million acres in 1959.

Pike County contains the Unit's largest area of commercial forest (92 thousand acres), followed by Lincoln County (79 thousand), Iron County (64 thousand), and Macon County (33 thousand).

Farmers, private individuals, and corporations not directly engaged in timber processing own 99 percent of the commercial forest.

The black-scarlet oak type (487 thousand acres) and white oak type (480 thousand acres) dominated the commercial forest in 1972 in contrast to 1959 when the elm-ash-hickory type (780 thousand acres) and the black-scarlet oak type (672 thousand acres) contained the largest areas.

Poletimber stands and sawtimber stands each contained 38 percent of the commercial forest area.

Timber Volume

Volume of growing stock on commercial forest land was 922 million cubic feet in 1972, as compared to 1,091 million cubic feet in 1959--a 15-percent decline.

Sawtimber volume declined 11 percent from 2.8 billion board feet in 1959 to 2.5 billion board feet in 1972.

Together, the oaks account for 57 percent of the growing-stock volume in 1972.

Average volume per acre of growing stock is 475 cubic feet (6.0 cords).

Farmers, private individuals, and corporations not directly engaged in timber processing own 99 percent of the growing-stock volume.

Volume in rough and rotten trees that are alive (nongrowing-stock trees) is 702 million cubic feet, mostly in rough trees.

Short-log trees (rough trees) account for 128 million cubic feet.

Stand Conditions

In 1971, net annual growth on growing-stock trees was 30 million cubic feet (376 thousand cords).

Net annual growth rate of growing stock was 3.2 percent of inventory volume.

Mortality of growing-stock trees amounted to 5 million cubic feet (60 thousand cords), largely caused by disease.

Seventy-three percent of the commercial forest area is capable of growing trees 50 feet and taller at age 50, but only 21 percent is capable of growing trees 70 feet and taller at age 50.

Sixty-five percent of the commercial forest includes stands younger than 50 years old.

Sixty-two percent of the commercial forest is classified as poorly stocked and an additional 18 percent as nonstocked with growing-stock trees (see Glossary for nonstocked areas, page 2).

Timber Use

In 1971 timber removals from growing stock amounted to 47 million cubic feet

¹Published 1959 statistics have been adjusted to be comparable with 1972 data because of changed definitions and procedures used during the two surveys.

(589 thousand cords)--57 percent more than the volume of net annual growth. (See Glossary for timber removals, page 5.)

Three-fourths (35 million cubic feet) of the growing-stock removals were classed as "other" removals so they were not utilized. (See Glossary for timber removals, page 5.)

In 1969 total timber products output was 17 million cubic feet, of which 7 million cubic feet were in saw logs and 4 million cubic feet were in fuelwood.

In 1969 primary plant wood residues totaled 4 million cubic feet, of which 2 million cubic feet are not used.²

Managed Harvest³

During the period 1972 through 1981, the estimated annual managed harvest from growing stock on commercial forest land will average 21 million cubic feet (267 thousand cords)--17 million cubic feet from harvest cuttings and 4 million cubic feet from thinnings.

During the same period, the estimated annual managed harvest from rough and rotten (nongrowing-stock) trees will average 19 million cubic feet (237 thousand cords).

TABLES

Area:

1. Area of land by land class, 1959 and 1972.
2. Area of land and forest land, by county.
3. Area of commercial forest land for survey unit and for individual counties within unit, by forest type and stand-size class.
4. Area of commercial forest land, by county and ownership class.
5. Area of commercial forest land, by stand-volume and ownership class.

²Primary plants are those using logs and bolts or chips, shavings, etc., from logs and bolts.

³Managed harvest is defined in the appendix on page 99.

6. Area of commercial forest land, area-condition and ownership class.

7. Area of commercial forest land, site and ownership class.

8. Area of commercial forest land, forest type and ownership class.

9. Area of commercial forest land, forest type and stand-age class.

10. Area of commercial forest land, forest type and site-index class.

11. Area of commercial forest land, forest type and basal-area class.

12. Area of commercial forest land, forest type, stand-size, and site class.

13. Area of commercial forest land, stocking class based on selected stand components.

14. Area of commercial forest land, stocking class of growing-stock trees and stand-size class.

15. Area of noncommercial forest land by ownership class.

16. Area of noncommercial forest land by forest type.

Number of Trees:

17. Number of all live trees on commercial forest land, by species and diameter class.
18. Number of growing-stock trees on commercial forest land, by species and diameter class.
19. Number of short-log trees on commercial forest land, by species and diameter class.

Volume:

20. Net volume of growing stock and sawtimber on commercial forest land, by species, 1959 and 1972.

21. Net volume on commercial forest land for survey unit and for individual counties within unit, by species and kind of material.

22. Net volume of timber on commercial forest land, by class of timber, and softwoods and hardwoods.

23. Net volume of growing stock, sawtimber, and rough and rotten trees on commercial forest land, by individual species.

24. Net volume of growing stock and sawtimber on commercial forest land, by ownership class and species group.

25. Net volume of growing stock on commercial forest land, by species and diameter class.

26. Net volume of sawtimber on commercial forest land, by species and diameter class.

27. Net volume of growing stock on commercial forest land, by species and forest type.

28. Net volume of sawtimber on commercial forest land, by species and forest type.

29. Net volume of timber in cull trees on commercial forest land, by species and all tree class.

30. Net volume of short-log trees on commercial forest land, by species and diameter class.

31. Net volume of sawtimber on commercial forest land, by species and log grade class.

32. Walnut volume on nonforest land, diameter class and class of timber.

Growth and Removals:

33. Net annual growth of growing stock and sawtimber on commercial forest land, by species and county.

34. Timber removals from growing stock and sawtimber on commercial forest land, by ownership class and species group.

35. Timber removals from growing stock and sawtimber on commercial forest land, by species and county.

Mortality:

36. Annual mortality of growing stock and sawtimber on commercial forest land, by cause and softwoods and hardwoods.

37. Annual mortality of growing stock and sawtimber on commercial forest land, by species.

Utilization:

38. Output of timber products, by source of material and softwoods and hardwoods.

39. Forest products harvested, by ownership class and product.

40. Volume of primary plant residue, by kind of material and type of use.

41. Timber products output from roundwood, by species and product.

Annual Managed Harvest:

42. Average annual managed harvest for 1972-1981 from harvest cuttings and thinnings on commercial forest land, by species and kind of material.

43. Average annual managed harvest of growing stock for 1972-1981 from harvest cuttings and thinnings on commercial forest land, by species and forest type.

44. Average annual managed harvest of growing stock for 1972-1981 from harvest cuttings and thinnings on commercial forest land, by species and stand-volume class.

45. Average annual managed harvest for 1972-1981, by harvest cuttings of growing stock on commercial forest land, by species and stand-volume class.

46. Average annual managed harvest for 1972-1981, by thinnings of growing stock on commercial forest land, by species and stand-volume class.

47. Average annual managed harvest of sawtimber for 1972-1981 from harvest cuttings and thinnings on commercial forest land, by species and forest type.

48. Average annual managed harvest of sawtimber for 1972-1981 from harvest cuttings and thinnings on commercial forest land, by species and stand-volume class.

49. Average annual managed harvest for 1972-1981, by harvest cuttings of sawtimber on commercial forest land, by species and stand-volume class.

50. Average annual managed harvest for 1972-1981, by thinnings of sawtimber on commercial forest land, by species and stand-volume class.

51. Area of managed harvest for 1972-1981, by harvest cuttings on commercial forest land by forest type and stand-age class.

52. Area of managed harvest by thinnings on commercial forest land for 1972-1981, by forest type and stand-age class.

Text Tables:

53. Sampling errors for estimates smaller than unit totals of volume, net growth, and removals, and of area of commercial forest land.

54. Forest type, site index, and rotation age by management objective used in calculation of annual managed harvest, Missouri.

Table 1.--Area of land by land class, *Prairie, Missouri, 1959 and 1972*

(Thousand acres)

LAND CLASS	1959 ^{1/}	1972
COMMERCIAL FOREST LAND:		
POST-BLACKJACK OAK TYPE	82.79	137.50
BLACK-SCARLET OAK TYPE	671.64	486.70
WHITE OAK TYPE	315.62	480.30
OAK-GUM-CYPRESS TYPE	99.04	107.40
ELM-ASH-COTTONWOOD TYPE	779.64	294.50
MAPLE-BEECH TYPE	37.97	85.00
NONSTOCKED	422.11	349.00
SUBTOTAL	2,408.81	1,940.40
NONCOMMERCIAL FOREST LAND:		
UNPRODUCTIVE	15.90	15.90
PRODUCTIVE-RESERVED	15.40	46.50
SUBTOTAL	31.30	62.40
NONFOREST LAND	17,116.79	17,545.40
TOTAL	19,556.90	19,548.20

^{1/} FIGURES HAVE BEEN ADJUSTED FROM THOSE PUBLISHED PREVIOUSLY FOR 1959 TO CONFORM TO 1972 LAND CLASSES BECAUSE OF CHANGES IN SURVEY DEFINITIONS AND PROCEDURES.

Table 2.--Area of land and forest land, by county, Prairie, Missouri,
1972

County	Land area	Forest land			Commercial forest as a percent of land area
		All forest	Noncommercial	Commercial	
- - - - -Thousand acres- - - - -					Percent
Adair	365.8	52.6	3.3	49.3	13
Andrew	278.9	16.2	.1	16.1	6
Atchison	351.5	14.0	.1	13.9	4
Audrain	442.9	29.3	.2	29.1	7
Barton	380.2	25.7	.1	25.6	7
Bates	538.4	49.5	.2	49.3	9
Buchanan	258.4	19.8	.1	19.7	8
Caldwell	275.2	17.8	.1	17.7	6
Carroll	446.0	27.1	.2	26.9	6
Cass	446.5	34.9	.4	34.5	8
Chariton	482.4	42.1	.2	41.9	9
Clark	323.6	53.6	.4	53.2	16
Clay	263.6	22.5	.5	22.0	8
Clinton	268.7	18.9	.4	18.5	7
Cooper	361.9	49.0	.4	48.6	13
Dade	322.6	49.1	10.0	39.1	12
Daviess	360.3	32.6	.3	32.3	9
Dekalb	270.7	13.9	.1	13.8	5
Gentry	312.3	25.9	.2	25.7	8
Greene	433.0	58.9	.4	58.5	14
Grundy	278.4	27.1	.7	26.4	9
Harrison	460.8	45.1	.4	44.7	10
Henry	469.6	60.4	21.6	38.8	8
Holt	292.9	18.9	.1	18.8	6
Jackson	385.6	22.6	.1	22.5	6
Jasper	410.9	46.8	.4	46.4	11
Johnson	528.6	54.1	3.5	50.6	10
Knox	327.7	33.0	.3	32.7	10
Lafayette	404.2	22.0	.1	21.9	5
Lawrence	396.2	50.2	.7	49.5	12
Lewis	324.9	48.0	.5	47.5	15
Lincoln	400.1	86.0	6.6	79.4	20
Linn	398.4	30.5	1.2	29.3	7
Livingston	339.4	30.4	.1	30.3	9
Macon	520.7	63.9	.7	63.2	12
Marion	280.3	42.7	.6	42.1	15
Mercer	291.0	29.0	.3	28.7	10
Monroe	428.2	51.9	1.4	50.5	12
Nodaway	561.3	25.4	.1	25.3	5
Pettis	434.4	40.9	.3	40.6	9
Pike	435.9	93.0	.9	92.1	21
Platte	273.1	32.6	.3	32.3	12
Putnam	331.5	40.9	.4	40.5	12
Ralls	306.0	47.7	.4	47.3	15
Randolph	309.5	49.8	.6	49.2	16
Ray	366.8	38.8	.4	38.4	10
Saline	484.6	32.2	.7	31.5	7
Schuyler	195.8	13.5	.1	13.4	7
Scotland	282.2	21.4	.1	21.3	8
Shelby	320.8	35.2	.3	34.9	11
Sullivan	418.5	38.8	.3	38.5	9
Vernon	536.1	64.1	.4	63.7	12
Worth	170.9	12.5	.1	12.4	7
All counties	19,548.2	2,002.8	62.4	1,940.4	10

Table 3.--Area of commercial forest land for Missouri's
Prairie Survey Unit and for individual counties
within Unit, by forest type and stand-size class, 1972

(Thousand acres)

ALL COUNTIES					
Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling : stands	: Nonstocked : areas
Post-blackjack oak	137.5	26.5	101.4	9.6	--
Black-scarlet oak	486.7	187.4	259.0	40.3	--
White oak	480.3	246.5	203.5	30.3	--
Oak-gum-cypress ¹	107.4	47.0	49.2	11.2	--
Elm-ash-cottonwood	294.5	181.4	93.3	19.8	--
Maple-beech	85.0	47.0	38.0	--	--
Nonstocked ²	349.0	--	--	--	349.0
All forest types	1,940.4	735.8	744.4	111.2	349.0
ADAIR COUNTY					
Post-blackjack oak	1.6	--	1.6	--	--
Black-scarlet oak	14.4	3.3	10.6	.5	--
White oak	17.5	7.0	9.1	1.4	--
Oak-gum-cypress ¹ / ₂	2.8	.7	1.6	.5	--
Elm-ash-cottonwood	3.6	1.8	1.7	.1	--
Maple-beech ¹ / ₂	2.2	1.0	1.2	--	--
Nonstocked ² / ₂	7.2	--	--	--	7.2
All forest types	49.3	13.8	25.8	2.5	7.2
ANDREW COUNTY					
Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	3.6	1.0	2.4	.2	--
White oak	3.9	1.5	2.1	.3	--
Oak-gum-cypress ¹ / ₂	.7	.3	.3	.1	--
Elm-ash-cottonwood	1.7	1.1	.5	.1	--
Maple-beech	1.8	1.1	.7	--	--
Nonstocked ² / ₂	4.1	--	--	--	4.1
All forest types	16.1	5.0	6.3	.7	4.1
ATCHISON COUNTY					
Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	3.2	1.0	1.9	.3	--
White oak	3.9	1.8	1.8	.3	--
Oak-gum-cypress ¹ / ₂	.6	.3	.3	--	--
Elm-ash-cottonwood	3.5	2.3	1.1	.1	--
Maple-beech ¹ / ₂	.6	.3	.3	--	--
Nonstocked ² / ₂	1.8	--	--	--	1.8
All forest types	13.9	5.7	5.7	.7	1.8
AUDRAIN COUNTY					
Post-blackjack oak	.5	--	.5	--	--
Black-scarlet oak	5.2	1.6	3.2	.4	--
White oak	7.0	3.4	3.1	.5	--
Oak-gum-cypress ¹ / ₂	1.9	.8	.9	.2	--
Elm-ash-cottonwood	8.3	5.1	2.9	.3	--
Maple-beech ¹ / ₂	1.6	.7	.9	--	--
Nonstocked ² / ₂	4.6	--	--	--	4.6
All forest types	29.1	11.6	11.5	1.4	4.6

¹/ Includes only bottomland oaks--no gum or cypress.

²/ See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

BARTON COUNTY

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling : stands	: Nonstocked : areas
Post-blackjack oak	2.3	.6	1.5	.2	--
Black-scarlet oak	5.9	3.5	1.6	.8	--
White oak	2.8	2.0	.8	--	--
Oak-gum-cypress ^{1/}	1.3	.9	.4	--	--
Elm-ash-cottonwood	5.0	3.4	1.1	.5	--
Maple-beech	.8	.8	--	--	--
Nonstocked ^{2/}	7.5	--	--	--	7.5
All forest types	25.6	11.2	5.4	1.5	7.5

BATES COUNTY

Post-blackjack oak	5.4	1.1	3.9	.4	--
Black-scarlet oak	10.7	6.1	3.1	1.5	--
White oak	4.9	3.9	1.0	--	--
Oak-gum-cypress ^{1/}	3.1	2.0	1.1	--	--
Elm-ash-cottonwood	11.6	7.7	2.8	1.1	--
Maple-beech	1.6	1.6	--	--	--
Nonstocked ^{2/}	12.0	--	--	--	12.0
All forest types	49.3	22.4	11.9	3.0	12.0

BUCHANAN COUNTY

Post-blackjack oak	.2	--	.2	--	--
Black-scarlet oak	3.0	1.0	1.8	.2	--
White oak	3.5	1.7	1.5	.3	--
Oak-gum-cypress ^{1/}	1.4	.4	.7	.3	--
Elm-ash-cottonwood	4.8	2.6	1.9	.3	--
Maple-beech	2.3	.8	1.5	--	--
Nonstocked ^{2/}	4.5	--	--	--	4.5
All forest types	19.7	6.5	7.6	1.1	4.5

CALDWELL COUNTY

Post-blackjack oak	.2	--	.2	--	--
Black-scarlet oak	3.0	1.1	1.7	.2	--
White oak	3.8	2.1	1.5	.2	--
Oak-gum-cypress ^{1/}	1.0	.4	.6	--	--
Elm-ash-cottonwood	5.2	3.1	1.8	.3	--
Maple-beech	1.0	.7	.3	--	--
Nonstocked ^{2/}	3.5	--	--	--	3.5
All forest types	17.7	7.4	6.1	.7	3.5

CARROLL COUNTY

Post-blackjack oak	.5	--	.5	--	--
Black-scarlet oak	5.7	1.9	3.4	.4	--
White oak	7.4	3.5	3.3	.6	--
Oak-gum-cypress ^{1/}	1.6	.8	.6	.2	--
Elm-ash-cottonwood	7.1	4.8	2.1	.2	--
Maple-beech	1.3	.7	.6	--	--
Nonstocked ^{2/}	3.3	--	--	--	3.3
All forest types	26.9	11.7	10.5	1.4	3.3

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

CASS COUNTY

Forest type	: All : stands :	: Sawtimber : stands :	: Poletimber : stands :	: Sapling and : seedling : stands :	: Nonstocked : areas :
Post-blackjack oak	6.3	1.9	3.6	.8	--
Black-scarlet oak	11.2	6.5	3.2	1.5	--
White oak	4.9	3.1	1.8	--	--
Oak-gum-cypress ^{1/}	1.4	1.1	.3	--	--
Elm-ash-cottonwood	2.7	1.4	.7	.6	--
Maple-beech	.2	.2	--	--	--
Nonstocked ^{2/}	7.8	--	--	--	7.8
All forest types	34.5	14.2	9.6	2.9	7.8
CHARITON COUNTY					
Post-blackjack oak	.5	--	.5	--	--
Black-scarlet oak	6.8	2.6	3.7	.5	--
White oak	9.8	5.4	3.8	.6	--
Oak-gum-cypress ^{1/}	3.2	1.3	1.2	.7	--
Elm-ash-cottonwood	13.1	8.2	4.3	.6	--
Maple-beech	2.2	1.0	1.2	--	--
Nonstocked ^{2/}	6.3	--	--	--	6.3
All forest types	41.9	18.5	14.7	2.4	6.3
CLARK COUNTY					
Post-blackjack oak	1.1	--	1.1	--	--
Black-scarlet oak	13.1	4.8	7.9	.4	--
White oak	17.8	9.1	7.3	1.4	--
Oak-gum-cypress ^{1/}	3.1	1.2	1.3	.6	--
Elm-ash-cottonwood	7.3	4.7	2.3	.3	--
Maple-beech	2.6	1.3	1.3	--	--
Nonstocked ^{2/}	8.2	--	--	--	8.2
All forest types	53.2	21.1	21.2	2.7	8.2
CLAY COUNTY					
Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	4.1	1.3	2.6	.2	--
White oak	4.6	2.1	2.2	.3	--
Oak-gum-cypress ^{1/}	1.5	.4	.9	.2	--
Elm-ash-cottonwood	5.8	3.1	2.3	.4	--
Maple-beech	1.6	.6	1.0	--	--
Nonstocked ^{2/}	4.1	--	--	--	4.1
All forest types	22.0	7.5	9.3	1.1	4.1
CLINTON COUNTY					
Post-blackjack oak	.2	--	.2	--	--
Black-scarlet oak	3.1	.9	1.9	.3	--
White oak	3.3	1.7	1.4	.2	--
Oak-gum-cypress ^{1/}	1.6	.5	.8	.3	--
Elm-ash-cottonwood	6.4	4.0	2.1	.3	--
Maple-beech	1.2	.5	.7	--	--
Nonstocked ^{2/}	2.7	--	--	--	2.7
All forest types	18.5	7.6	7.1	1.1	2.7

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

COOPER COUNTY

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling : stands	: Nonstocked : areas
Post-blackjack oak	12.0	2.8	8.4	.8	--
Black-scarlet oak	15.0	6.9	5.4	2.7	--
White oak	6.2	4.3	1.9	--	--
Oak-gum-cypress <u>1/</u>	2.5	1.3	1.2	--	--
Elm-ash-cottonwood	3.8	2.3	.6	.9	--
Maple-beech <u>2/</u>	.3	.3	--	--	--
Nonstocked <u>2/</u>	8.8	--	--	--	8.8
All forest types	48.6	17.9	17.5	4.4	8.8

DADE COUNTY

Post-blackjack oak	8.5	1.8	6.0	.7	---
Black-scarlet oak	12.1	5.1	5.0	2.0	--
White oak	4.5	2.7	1.8	--	--
Oak-gum-cypress <u>1/</u>	1.6	.8	.8	--	--
Elm-ash-cottonwood	2.8	1.4	.7	.7	--
Maple-beech <u>2/</u>	.4	.4	--	--	--
Nonstocked <u>2/</u>	9.2	--	--	--	9.2
All forest types	39.1	12.2	14.3	3.4	9.2

DAVIESS COUNTY

Post-blackjack oak	.8	--	.8	--	--
Black-scarlet oak	9.2	2.8	6.1	.3	--
White oak	11.5	5.3	5.3	.9	--
Oak-gum-cypress <u>1/</u>	1.5	.5	.8	.2	--
Elm-ash-cottonwood	3.2	2.0	1.1	.1	--
Maple-beech <u>2/</u>	2.0	.8	1.2	--	--
Nonstocked <u>2/</u>	4.1	--	--	--	4.1
All forest types	32.3	11.4	15.3	1.5	4.1

DEKALB COUNTY

Post-blackjack oak	.2	--	.2	--	--
Black-scarlet oak	2.9	1.2	1.5	.2	--
White oak	3.5	1.9	1.4	.2	--
Oak-gum-cypress <u>1/</u>	.9	.4	.4	.1	--
Elm-ash-cottonwood	2.6	1.7	.8	.1	--
Maple-beech <u>2/</u>	1.0	.7	.3	--	--
Nonstocked <u>2/</u>	2.7	--	--	--	2.7
All forest types	13.8	5.9	4.6	.6	2.7

GENTRY COUNTY

Post-blackjack oak	.5	--	.5	--	--
Black-scarlet oak	6.1	1.6	4.2	.3	--
White oak	6.9	2.8	3.5	.6	--
Oak-gum-cypress <u>1/</u>	1.2	.3	.8	.1	--
Elm-ash-cottonwood	3.3	1.7	1.5	.1	--
Maple-beech <u>2/</u>	1.9	1.4	.5	--	--
Nonstocked <u>2/</u>	5.8	--	--	--	5.8
All forest types	25.7	7.8	11.0	1.1	5.8

1/ Includes only bottomland oaks--no gum or cypress.2/ See glossary for stand-size classes (page 3)

(Table 3 cont. on next page)

(Table 3 cont.)

GREENE COUNTY

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and seedling stands	: Nonstocked areas
Post-blackjack oak	13.9	3.0	9.8	1.1	--
Black-scarlet oak	18.4	7.7	7.4	3.3	--
White oak	7.1	4.4	2.7	--	--
Oak-gum-cypress ^{1/}	2.6	1.2	1.4	--	--
Elm-ash-cottonwood	3.2	1.6	.6	1.0	--
Maple-beech	.4	.4	--	--	--
Nonstocked ^{2/}	12.9	--	--	--	12.9
All forest types	58.5	18.3	21.9	5.4	12.9
GRUNDY COUNTY					
Post-blackjack oak	.4	--	.4	--	--
Black-scarlet oak	4.8	1.9	2.7	.2	--
White oak	7.1	3.8	2.8	.5	--
Oak-gum-cypress ^{1/}	1.1	.5	.5	.1	--
Elm-ash-cottonwood	4.6	2.8	1.6	.2	--
Maple-beech	2.2	1.5	.7	--	--
Nonstocked ^{2/}	6.2	--	--	--	6.2
All forest types	26.4	10.5	8.7	1.0	6.2
HARRISON COUNTY					
Post-blackjack oak	1.0	--	1.0	--	--
Black-scarlet oak	11.4	3.7	7.2	.5	--
White oak	14.5	7.0	6.5	1.0	--
Oak-gum-cypress ^{1/}	2.7	.9	1.4	.4	--
Elm-ash-cottonwood	7.2	4.5	2.4	.3	--
Maple-beech	2.1	1.1	1.0	--	--
Nonstocked ^{2/}	5.8	--	--	--	5.8
All forest types	44.7	17.2	19.5	2.2	5.8
HENRY COUNTY					
Post-blackjack oak	5.2	1.2	3.5	.5	--
Black-scarlet oak	9.1	4.9	2.8	1.4	--
White oak	3.9	2.8	1.1	--	--
Oak-gum-cypress ^{1/}	2.1	1.4	.7	--	--
Elm-ash-cottonwood	8.1	4.7	2.5	.9	--
Maple-beech	1.2	1.2	--	--	--
Nonstocked ^{2/}	9.2	--	--	--	9.2
All forest types	38.8	16.2	10.6	2.8	9.2
HOLT COUNTY					
Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	3.3	.9	2.2	.2	--
White oak	3.8	1.6	1.9	.3	--
Oak-gum-cypress ^{1/}	1.3	.4	.6	.3	--
Elm-ash-cottonwood	3.7	2.0	1.4	.3	--
Maple-beech	2.4	.6	1.8	--	--
Nonstocked ^{2/}	4.0	--	--	--	4.0
All forest types	18.8	5.5	8.2	1.1	4.0

^{1/} Includes only bottomland oaks--no gum or cypress.

(Table 3 cont. on next page)

^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont.)

JACKSON COUNTY

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling : stands	: Nonstocked : acres
Post-blackjack oak	2.8	.5	1.9	.4	--
Black-scarlet oak	6.6	2.6	3.0	1.0	--
White oak	2.0	1.1	.9	--	--
Oak-gum-cypress ^{1/}	.8	.5	.3	--	--
Elm-ash-cottonwood	2.5	1.1	.8	.6	--
Maple-beech ^{2/}	.4	.4	--	--	--
Nonstocked ^{2/}	7.4	--	--	--	7.4
All forest types	22.5	6.2	6.9	2.0	7.4

JASPER COUNTY

Post-blackjack oak	6.8	2.1	4.2	.5	--
Black-scarlet oak	12.2	7.3	3.5	1.4	--
White oak	5.6	4.2	1.4	--	--
Oak-gum-cypress ^{1/}	2.5	1.8	.7	--	--
Elm-ash-cottonwood	6.5	4.1	1.6	.8	--
Maple-beech ^{2/}	.8	.8	--	--	--
Nonstocked ^{2/}	12.0	--	--	--	12.0
All forest types	46.4	20.3	11.4	2.7	12.0

JOHNSON COUNTY

Post-blackjack oak	8.4	2.0	5.6	.8	--
Black-scarlet oak	14.0	6.4	5.5	2.1	--
White oak	5.6	3.8	1.8	--	--
Oak-gum-cypress ^{1/}	2.3	1.4	.9	--	--
Elm-ash-cottonwood	5.7	3.3	1.5	.9	--
Maple-beech ^{2/}	1.0	1.0	--	--	--
Nonstocked ^{2/}	13.6	--	--	--	13.6
All forest types	50.6	17.9	15.3	3.8	13.6

KNOX COUNTY

Post-blackjack oak	.8	--	.8	--	--
Black-scarlet oak	8.7	2.8	5.5	.4	--
White oak	11.1	5.3	4.9	.9	--
Oak-gum-cypress ^{1/}	1.8	.6	1.0	.2	--
Elm-ash-cottonwood	4.5	2.9	1.5	.1	--
Maple-beech ^{2/}	1.4	.8	.6	--	--
Nonstocked ^{2/}	4.4	--	--	--	4.4
All forest types	32.7	12.4	14.3	1.6	4.4

LAFAYETTE COUNTY

Post-blackjack oak	2.7	.7	1.7	.3	--
Black-scarlet oak	5.4	2.8	1.7	.9	--
White oak	2.4	1.9	.5	--	--
Oak-gum-cypress ^{1/}	1.3	.9	.4	--	--
Elm-ash-cottonwood	4.4	3.1	.8	.5	--
Maple-beech ^{2/}	.5	.5	--	--	--
Nonstocked ^{2/}	5.2	--	--	--	5.2
All forest types	21.9	9.9	5.1	1.7	5.2

^{1/} Includes only bottomland oaks--no gum or cypress. (Table 3 cont. on next page)
^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont.)

LAWRENCE COUNTY

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Post-blackjack oak	12.2	3.5	7.5	1.2	--
Black-scarlet oak	16.6	7.9	6.2	2.5	--
White oak	7.2	5.3	1.9	--	--
Oak-gum-cypress ^{1/}	2.4	1.6	.8	--	--
Elm-ash-cottonwood	2.2	1.2	.3	.7	--
Maple-beech ^{2/}	.3	.3	--	--	--
Nonstocked ^{2/}	8.6	--	--	--	8.6
All forest types	49.5	19.8	16.7	4.4	8.6

LEWIS COUNTY

Post-blackjack oak	1.3	--	1.3	--	--
Black-scarlet oak	12.3	4.0	7.9	.4	--
White oak	17.0	8.4	7.4	1.2	--
Oak-gum-cypress ^{1/}	2.4	.9	1.2	.3	--
Elm-ash-cottonwood	5.7	3.6	2.0	.1	--
Maple-beech	2.2	1.2	1.0	--	--
Nonstocked ^{2/}	6.6	--	--	--	6.6
All forest types	47.5	18.1	20.8	2.0	6.6

LINCOLN COUNTY

Post-blackjack oak	2.2	--	2.2	--	--
Black-scarlet oak	21.2	6.6	13.8	.8	--
White oak	28.3	13.6	12.7	2.0	--
Oak-gum-cypress ^{1/}	4.3	1.5	2.1	.7	--
Elm-ash-cottonwood	11.1	7.1	3.7	.3	--
Maple-beech ^{2/}	3.0	1.7	1.3	--	--
Nonstocked ^{2/}	9.3	--	--	--	9.3
All forest species	79.4	30.5	35.8	3.8	9.3

LINN COUNTY

Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	4.3	1.6	2.3	.4	--
White oak	5.9	3.2	2.3	.4	--
Oak-gum-cypress ^{1/}	1.7	.7	.6	.4	--
Elm-ash-cottonwood	8.7	5.0	3.4	.3	--
Maple-beech	2.2	.6	1.6	--	--
Nonstocked ^{2/}	6.2	--	--	--	6.2
All forest types	29.3	11.1	10.5	1.5	6.2

LIVINGSTON COUNTY

Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	5.0	1.6	3.1	.3	--
White oak	6.2	2.8	2.9	.5	--
Oak-gum-cypress ^{1/}	1.8	.7	.7	.4	--
Elm-ash-cottonwood	7.9	4.6	2.9	.4	--
Maple-beech ^{2/}	2.7	1.2	1.5	--	--
Nonstocked ^{2/}	6.4	--	--	--	6.4
All forest types	30.3	10.9	11.4	1.6	6.4

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3.)

(Table 3 cont. on next page)

(Table 3 cont.)

MACON COUNTY

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Post-blackjack oak	1.7	--	1.7	--	--
Black-scarlet oak	17.6	5.0	12.0	.6	--
White oak	22.3	10.0	10.5	1.8	--
Oak-gum-cypress ^{1/}	3.5	.9	2.2	.4	--
Elm-ash-cottonwood	6.2	3.3	2.7	.2	--
Maple-beech	3.3	1.4	1.9	--	--
Nonstocked ^{2/}	8.6	--	--	--	8.6
All forest types	63.2	20.6	31.0	3.0	8.6

MARION COUNTY

Post-blackjack oak	1.4	--	1.4	--	--
Black-scarlet oak	11.8	3.3	8.1	.4	--
White oak	15.6	7.1	7.4	1.1	--
Oak-gum-cypress ^{1/}	2.2	.8	1.0	.4	--
Elm-ash-cottonwood	4.4	2.8	1.5	.1	--
Maple-beech	2.1	1.1	1.0	--	--
Nonstocked ^{2/}	4.6	--	--	--	4.6
All forest types	42.1	15.1	20.4	2.0	4.6

MERCER COUNTY

Post-blackjack oak	.7	--	.7	--	--
Black-scarlet oak	7.7	2.6	4.8	.3	--
White oak	9.8	4.8	4.3	.7	--
Oak-gum-cypress ^{1/}	1.4	.6	.7	.1	--
Elm-ash-cottonwood	3.1	1.9	1.1	.1	--
Maple-beech	1.7	1.3	.4	--	--
Nonstocked ^{2/}	4.3	--	--	--	4.3
All forest types	28.7	11.2	12.0	1.2	4.3

MONROE COUNTY

Post-blackjack oak	1.1	--	1.1	--	--
Black-scarlet oak	11.7	4.2	7.0	.5	--
White oak	16.3	8.4	6.8	1.1	--
Oak-gum-cypress ^{1/}	2.9	1.1	1.3	.5	--
Elm-ash-cottonwood	8.4	5.2	2.9	.3	--
Maple-beech	2.3	1.0	1.3	--	--
Nonstocked ^{2/}	7.8	--	--	--	7.8
All forest types	50.5	19.9	20.4	2.4	7.8

NODAWAY COUNTY

Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	5.1	1.6	3.1	.4	--
White oak	6.0	2.8	2.7	.5	--
Oak-gum-cypress ^{1/}	1.7	.6	.7	.4	--
Elm-ash-cottonwood	5.1	3.1	1.8	.2	--
Maple-beech	2.2	.6	1.6	--	--
Nonstocked ^{2/}	4.9	--	--	--	4.9
All forest types	25.3	8.7	10.2	1.5	4.9

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

PETTIS COUNTY

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and seedling stands	: Nonstocked areas
Post-blackjack oak	9.1	2.0	6.5	.6	--
Black-scarlet oak	11.6	5.8	3.6	2.2	--
White oak	5.2	3.6	1.6	--	--
Oak-gum-cypress ^{1/}	2.3	1.2	1.1	--	--
Elm-ash-cottonwood	4.4	2.6	.9	.9	--
Maple-beech	.6	.6	--	--	--
Nonstocked ^{2/}	7.4	--	--	--	7.4
All forest types	40.6	15.8	13.7	3.7	7.4

PIKE COUNTY					
Post-blackjack oak	2.3	--	2.3	--	--
Black-scarlet oak	24.7	7.9	16.0	.8	--
White oak	32.9	15.7	14.7	2.5	--
Oak-gum-cypress ^{1/}	4.8	1.9	2.3	.6	--
Elm-ash-cottonwood	12.2	8.2	3.7	.3	--
Maple-beech	4.1	2.1	2.0	--	--
Nonstocked ^{2/}	11.1	--	--	--	11.1
All forest types	92.1	35.8	41.0	4.2	11.1

PLATTE COUNTY					
Post-blackjack oak	.6	--	.6	--	--
Black-scarlet oak	7.0	1.4	5.3	.3	--
White oak	6.9	2.1	4.1	.7	--
Oak-gum-cypress ^{1/}	2.2	.5	1.4	.3	--
Elm-ash-cottonwood	4.8	2.3	2.3	.2	--
Maple-beech	3.4	1.5	1.9	--	--
Nonstocked ^{2/}	7.4	--	--	--	7.4
All forest types	32.3	7.8	15.6	1.5	7.4

PUTNAM COUNTY					
Post-blackjack oak	1.0	--	1.0	--	--
Black-scarlet oak	11.0	3.4	7.2	.4	--
White oak	14.0	6.5	6.4	1.1	--
Oak-gum cypress ^{1/}	2.2	.8	1.1	.3	--
Elm-ash-cottonwood	4.3	2.8	1.4	.1	--
Maple-beech ^{2/}	1.8	.9	.9	--	--
Nonstocked ^{2/}	6.2	--	--	--	6.2
All forest types	40.5	14.4	18.0	1.9	6.2

RALLS COUNTY					
Post-blackjack oak	1.1	--	1.1	--	--
Black-scarlet oak	12.2	4.5	7.3	.4	--
White oak	16.8	8.8	6.9	1.1	--
Oak-gum-cypress ^{1/}	2.5	1.0	1.2	.3	--
Elm-ash-cottonwood	5.5	3.6	1.7	.2	--
Maple-beech ^{2/}	2.2	1.0	1.2	--	--
Nonstocked ^{2/}	7.0	--	--	--	7.0
All forest types	47.3	18.9	19.4	2.0	7.0

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

RANDOLPH COUNTY

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Post-blackjack oak	1.5	--	1.5	--	
Black-scarlet oak	13.9	4.5	8.9	.5	--
White oak	18.7	9.1	8.3	1.3	--
Oak-gum-cypress ^{1/}	2.7	.9	1.5	.3	--
Elm-ash-cottonwood	4.1	2.7	1.4	--	--
Maple-beech ^{2/}	1.6	1.0	.6	--	--
Nonstocked ^{2/}	6.7	--	--	--	6.7
All forest types	49.2	18.2	22.2	2.1	6.7

RAY COUNTY

Post-blackjack oak	.8	--	.8	--	--
Black-scarlet oak	8.7	2.2	6.1	.4	--
White oak	9.8	3.8	5.2	.8	--
Oak-gum-cypress ^{1/}	2.7	.8	1.5	.4	--
Elm-ash-cottonwood	6.6	3.5	2.8	.3	--
Maple-beech ^{2/}	2.1	.8	1.3	--	--
Nonstocked ^{2/}	7.7	--	--	--	7.7
All forest types	38.4	11.1	17.7	1.9	7.7

SALINE COUNTY

Post-blackjack oak	5.6	1.3	3.7	.6	--
Black-scarlet oak	8.3	4.0	2.8	1.5	--
White oak	3.4	2.4	1.0	--	--
Oak-gum-cypress ^{1/}	1.6	1.0	.6	--	--
Elm-ash-cottonwood	4.7	2.7	1.2	.8	--
Maple-beech ^{2/}	.6	.6	--	--	--
Nonstocked ^{2/}	7.3	--	--	--	7.3
All forest types	31.5	12.0	9.3	2.9	7.3

SCHUYLER COUNTY

Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	3.4	1.1	2.2	.1	--
White oak	4.3	2.0	1.9	.4	--
Oak-gum-cypress ^{1/}	.6	.3	.2	.1	--
Elm-ash-cottonwood	1.7	1.1	.5	.1	--
Maple-beech ^{2/}	.6	.3	.3	--	--
Nonstocked ^{2/}	2.5	--	--	--	2.5
All forest types	13.4	4.8	5.4	.7	2.5

SCOTLAND COUNTY

Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	4.3	1.8	2.3	.2	--
White oak	6.5	3.6	2.4	.5	--
Oak-gum-cypress ^{1/}	1.3	.4	.6	.3	--
Elm-ash-cottonwood	4.0	2.6	1.3	.1	--
Maple-beech ^{2/}	1.0	.5	.5	--	--
Nonstocked ^{2/}	3.9	--	--	--	3.9
All forest types	21.3	8.9	7.4	1.1	3.9

^{1/} Includes only bottomland oaks--no gum or cypress.^{2/} See glossary for stand-size classes (page 3).

(Table 3 cont. on next page)

(Table 3 cont.)

SHELBY COUNTY

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Post-blackjack oak	.8	--	.8	--	--
Black-scarlet oak	8.4	3.3	4.8	.3	--
White oak	12.1	6.7	4.6	.8	--
Oak-gum-cypress ^{1/}	1.7	.7	.9	.1	--
Elm-ash-cottonwood	5.6	3.7	1.7	.2	--
Maple-beech	1.4	1.0	.4	--	--
Nonstocked ^{2/}	4.9	--	--	--	4.9
All forest types	34.9	15.4	13.2	1.4	4.9

SULLIVAN COUNTY					
Post-blackjack oak	.8	--	.8	--	--
Black-scarlet oak	9.4	3.4	5.6	.4	--
White oak	12.3	6.1	5.2	1.0	--
Oak-gum-cypress ^{1/}	1.9	.8	.8	.3	--
Elm-ash-cottonwood	5.8	3.8	1.8	.2	--
Maple-beech	2.2	1.0	1.2	--	--
Nonstocked ^{2/}	6.1	--	--	--	6.1
All forest types	38.5	15.1	15.4	1.9	6.1

VERNON COUNTY					
Post-blackjack oak	7.5	2.0	4.8	.7	--
Black-scarlet oak	15.2	9.5	3.9	1.8	--
White oak	8.2	6.7	1.5	--	--
Oak-gum-cypress ^{1/}	4.5	3.0	1.5	--	--
Elm-ash-cottonwood	13.9	10.3	2.7	.9	--
Maple-beech ^{2/}	1.8	1.8	--	--	--
Nonstocked ^{2/}	12.6	--	--	--	12.6
All forest types	63.7	33.3	14.4	3.4	12.6

WORTH COUNTY					
Post-blackjack oak	.3	--	.3	--	--
Black-scarlet oak	3.1	1.0	2.0	.1	--
White oak	3.8	1.8	1.7	.3	--
Oak-gum-cypress ^{1/}	.7	.3	.3	.1	--
Elm-ash-cottonwood	1.9	1.2	.6	.1	--
Maple-beech	.6	.3	.3	--	--
Nonstocked ^{2/}	2.0	--	--	--	2.0
All forest types	12.4	4.6	5.2	.6	2.0

^{1/}Includes only bottomland oaks--no gum or cypress.^{2/}See glossary for stand-size classes (page 3).

Table 4.--Area of commercial forest land, by county and ownership class, Prairie, Missouri, 1972

(Thousand acres)

COUNTY	ALL OWNERSHIPS	FEDERAL	STATE, COUNTY AND MUNICIPAL	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE
ADAIR	49.3	--	0.1	--	49.2
ANDREW	16.1	--	.4	--	15.7
ATCHISON	13.9	--	1.2	--	12.7
AUDRAIN	29.1	--	.1	--	29.0
BARTON	25.6	--	.1	--	25.5
BATES	49.3	--	--	.1	49.2
BUCHANAN	19.7	--	.2	--	19.5
CALDWELL	17.7	--	--	--	17.7
CARROLL	26.9	--	--	--	26.9
CASS	34.5	--	--	--	34.5
CHARITON	41.9	2.0	--	.2	39.7
CLARK	53.2	--	--	--	53.2
CLAY	22.0	--	--	--	22.0
CLINTON	18.5	--	--	--	18.5
COOPER	48.6	--	.1	--	48.5
DADE	39.1	--	--	--	39.1
DAVIESS	32.3	--	--	--	32.3
DEKALB	13.8	--	--	--	13.8
GENTRY	25.7	--	--	--	25.7
GREENE	58.5	--	--	--	58.5
GRUNDY	26.4	--	--	--	26.4
HARRISON	44.7	--	--	--	44.7
HENRY	38.8	--	1.0	--	37.8
HOLT	18.8	.2	.2	--	18.4
JACKSON	22.5	.8	.7	--	21.0
JASPER	46.4	--	--	--	46.4
JOHNSON	50.6	--	--	--	50.6
KNOX	32.7	--	--	--	32.7
LAFAYETTE	21.9	--	--	--	21.9
LAWRENCE	49.5	.3	--	--	49.2
LEWIS	47.5	--	3.0	--	44.5
LINCOLN	79.4	--	1.2	--	78.2
LINN	29.3	--	.4	--	28.9
LIVINGSTON	30.3	--	.2	--	30.1
MACON	63.2	--	1.0	--	62.2
MARION	42.1	--	--	--	42.1
MERCER	28.7	--	--	--	28.7
MONROE	50.5	--	--	--	50.5
NODAWAY	25.3	--	--	--	25.3
PETTIS	40.6	--	.2	--	40.4
PIKE	92.1	--	1.2	--	90.9
PLATTE	32.3	--	--	--	32.3
PUTNAM	40.5	--	--	--	40.5
RALLS	47.3	--	.5	--	46.8
RANDOLPH	49.2	--	1.1	.1	48.0
RAY	38.4	--	--	--	38.4
SALINE	31.5	--	.3	--	31.2
SCHUYLER	13.4	--	--	--	13.4
SCOTLAND	21.3	--	--	--	21.3
SHELBY	34.9	--	.1	--	34.8
SULLIVAN	38.5	--	--	--	38.5
VERNON	63.7	--	1.3	--	62.4
WORTH	12.4	--	--	--	12.4
ALL COUNTIES	1,940.4	3.3	14.6	.4	1,922.1

Table 5.--Area of commercial forest land, by stand-volume and ownership class, Prairie, Missouri, 1972

(Thousand acres)

STAND VOLUME PER ACRE (BOARD FEET) ^{1/}	ALL OWNERSHIPS	FEDERAL	STATE, COUNTY AND MUNICIPAL	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE
LESS THAN 1,500	1,325.6	3.3	13.9	0.3	1,308.1
1,500 TO 5,000	525.1	--	.7	.1	524.3
MORE THAN 5,000	89.7	--	--	--	89.7
ALL CLASSES	1,940.4	3.3	14.6	.4	1,922.1

^{1/} INTERNATIONAL 1/4-INCH RULE.

Table 6.--Area of commercial forest land, by area-condition and ownership class, Prairie, Missouri, 1972

(Thousand acres)

AREA-CONDITION CLASS ^{1/}	ALL OWNERSHIPS	FEDERAL	STATE, COUNTY AND MUNICIPAL	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE
50	8.2	2.2	--	--	6.0
60	419.2	--	.6	--	418.6
70	1,513.0	1.1	14.0	.4	1,497.5
ALL CLASSES	1,940.4	3.3	14.6	.4	1,922.1

^{1/} SEE GLOSSARY FOR AREA-CONDITION CLASSES (PAGE 2).

Table 7.--Area of commercial forest land, by site and ownership class, Prairie, Missouri, 1972

(Thousand acres)

SITE CLASS (CUBIC FEET OF GROWTH PER ACRE PER YEAR)	ALL OWNERS	FEDERAL	STATE, COUNTY AND MUNICIPAL	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE
120 OR MORE	4.3	--	--	--	4.3
85-119	98.1	2.2	.6	--	95.3
50-84	472.2	--	1.3	--	470.9
LESS THAN 50	1,365.8	1.1	12.7	.4	1,351.6
ALL CLASSES	1,940.4	3.3	14.6	.4	1,922.1

(Thousand acres)

FOREST TYPE	ALL OWNERSHIPS	FEDERAL	STATE AND MUNICIPAL	COUNTY	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE
POST-BLACKJACK OAK	137.5	--	0.7	--	--	136.8
BLACK-SCARLET OAK	486.7	--	--	.3	--	486.4
WHITE OAK	480.3	--	10.9	--	--	469.4
OAK-GUM-CYPRESS ^{1/}	107.4	--	.6	--	--	106.8
ELM-ASH-COTTONWOOD	294.5	2.2	1.3	.1	--	290.9
MAPLE-BEECH	85.0	--	--	--	--	85.0
NONSTOCKED ^{2/}	349.0	1.1	1.1	--	--	346.8
ALL FOREST TYPES	1,940.4	3.3	14.6	.4	--	1,922.1

^{1/} INCLUDES ONLY BOTTOMLAND OAKS -- NO GUM OR CYPRESS.

^{2/} SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 9.--Area of commercial forest land, by forest type and stand-age class, Prairie, Missouri, 1972

(Thousand acres)

FOREST TYPE	ALL AGES	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-119	120+
POST-BLACKJACK OAK	137.5	4.8	9.1	18.6	18.6	27.1	14.6	18.6	12.9	4.4	4.4	--	4.4
BLACK-SCARLET OAK	486.7	22.4	13.3	67.5	98.0	101.8	83.8	29.0	25.4	20.5	20.8	4.2	--
WHITE OAK	480.3	12.1	11.4	40.7	93.5	66.7	47.5	54.1	40.0	4.4	26.9	66.4	--
OAK-GUM-CYPRESS ^{1/}	107.4	5.6	--	28.7	26.0	16.9	12.7	--	4.0	4.8	4.6	--	16.6
ELM-ASH-COTTONWOOD	294.5	11.8	8.2	33.3	74.4	85.5	44.9	4.3	16.1	4.3	7.4	4.3	4.1
MAPLE-BEECH	85.0	--	--	15.0	24.5	14.0	10.5	5.9	--	--	4.6	5.9	--
NONSTOCKED ^{2/}	349.0	112.4	103.3	40.7	45.3	15.5	9.6	4.6	--	4.9	12.7	--	4.6
ALL FOREST TYPES	1,940.4	169.1	145.3	244.5	380.3	327.5	223.6	116.5	98.4	43.3	81.4	80.8	29.7

^{1/} INCLUDES ONLY BOTTOMLAND OAKS -- NO GUM OR CYPRESS.

^{2/} SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 10.--Area of commercial forest land, by forest type and site-index class, *Prairie, Missouri, 1972*

(Thousand acres)

FOREST TYPE	ALL : CLASSES	SITE-INDEX CLASS (HEIGHT IN FEET AT 50 YEARS)							
		20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+
POST-BLACKJACK OAK	137.5	--	17.4	51.8	42.1	12.8	13.4	--	--
BLACK-SCARLET OAK	486.7	4.6	5.9	69.0	177.0	137.0	53.4	30.5	9.3
WHITE OAK	480.3	--	49.6	133.3	188.1	59.1	35.1	9.7	5.4
OAK-GUM-CYPRESS ^{1/}	107.4	--	--	19.9	17.5	8.1	14.0	34.8	13.1
ELM-ASH-COTTONWOOD	294.5	--	--	11.9	58.0	67.1	76.8	58.1	22.6
MAPLE-BEECH	85.0	--	5.7	28.9	25.9	17.2	--	--	7.3
NONSTOCKED ^{2/}	349.0	4.4	14.5	102.8	161.0	34.1	23.3	8.9	--
ALL FOREST TYPES	1,940.4	9.0	93.1	417.6	669.6	335.4	216.0	142.0	57.7

^{1/} INCLUDES ONLY BOTTOMLAND OAKS -- NO GUM OR CYPRESS.

^{2/} SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 11.--Area of commercial forest land, by forest type and basal-area class, *Prairie, Missouri, 1972*

(Thousand acres)

FOREST TYPE	ALL : CLASSES	BASAL-AREA CLASS (SQUARE FEET PER ACRE)							
		0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159
POST-BLACKJACK OAK	137.5	--	9.1	12.8	49.0	42.9	19.4	4.3	--
BLACK-SCARLET OAK	486.7	--	28.4	119.0	157.2	117.8	52.8	11.5	--
WHITE OAK	480.3	6.1	5.4	85.6	211.0	104.5	56.4	11.3	--
OAK-GUM-CYPRESS ^{1/}	107.4	--	9.6	8.6	30.7	22.3	22.5	13.7	--
ELM-ASH-COTTONWOOD	294.5	7.8	2.6	51.4	74.0	77.6	53.5	16.6	11.0
MAPLE-BEECH	85.0	--	--	22.7	32.4	17.7	8.4	3.8	--
NONSTOCKED ^{2/}	349.0	65.1	83.6	134.1	42.5	23.7	--	--	--
ALL FOREST TYPES	1,940.4	79.0	138.7	434.2	596.8	406.5	213.0	61.2	11.0

^{1/} INCLUDES ONLY BOTTOMLAND OAKS -- NO GUM OR CYPRESS.

^{2/} SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 12.--Area of commercial forest land, by forest type, stand-size, and site class, Prairie, Missouri, 1972

(Thousand acres)

FOREST, TYPE AND STAND-SIZE CLASS	: ALL SITE : CLASSES	: 165 CU. FT. : OR MORE	: 120-165 : CU. FT.	: 85-120 : CU. FT.	: 50-85 : CU. FT.	: LESS THAN : 50 CU. FT.
POST-BLACKJACK OAK						
SAWTIMBER	26.5	--	--	--	--	26.5
POLETIMBER	101.4	--	--	17.1	--	84.3
SAPLING AND SEEDLING	9.6	--	--	4.8	--	4.8
ALL STANDS	137.5	--	--	21.9	--	115.6
BLACK-SCARLET OAK						
SAWTIMBER	187.4	--	--	9.2	71.3	106.9
POLETIMBER	259.0	--	--	15.7	71.3	172.0
SAPLING AND SEEDLING	40.3	--	--	4.2	9.1	27.0
ALL STANDS	486.7	--	--	29.1	151.7	305.9
WHITE OAK						
SAWTIMBER	249.2	--	--	--	57.0	192.2
POLETIMBER	200.8	--	--	5.6	22.3	172.9
SAPLING AND SEEDLING	30.3	--	--	--	6.1	24.2
ALL STANDS	480.3	--	--	5.6	85.4	389.3
OAK-GUM-CYPRESS ^{1/}						
SAWTIMBER	47.1	--	--	8.8	16.9	21.4
POLETIMBER	49.2	--	--	8.2	32.2	8.8
SAPLING AND SEEDLING	11.1	--	--	--	--	11.1
ALL STANDS	107.4	--	--	17.0	49.1	41.3
ELM-ASH-COTTONWOOD						
SAWTIMBER	181.5	3.9	4.3	26.5	92.7	54.1
POLETIMBER	93.2	--	--	6.8	34.9	51.5
SAPLING AND SEEDLING	19.8	--	3.9	--	3.9	12.0
ALL STANDS	294.5	3.9	8.2	33.3	131.5	117.6
MAPLE-BEECH						
SAWTIMBER	47.0	--	--	3.6	13.2	30.2
POLETIMBER	38.0	--	--	--	3.8	34.2
SAPLING AND SEEDLING	--	--	--	--	--	--
ALL STANDS	85.0	--	--	3.6	17.0	64.4
NONSTOCKED ^{2/}	349.0	--	--	8.6	44.6	295.8
TOTAL ALL TYPES	1,940.4	3.9	8.2	119.1	479.3	1,329.9

1/ INCLUDES ONLY BOTTOMLAND OAKS -- NO GUM OR CYPRESS.

2/ SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 13.--Area of commercial forest land, by stocking class based on selected stand components, *Prairie, Missouri, 1972*

(Thousand acres)

STOCKING PERCENTAGE	STOCKING CLASSIFIED IN TERMS OF					
	ALL TREES	GROWING-STOCK TREES TOTAL	ROUGH AND DESIRABLE	INHIBITING ACCEPTABLE	ROTTEN TREES	VEGETATION
150-159	4.3	--	--	--	--	--
140-149	12.6	--	--	--	--	--
130-139	55.0	--	--	--	9.5	--
120-129	154.8	--	--	--	--	--
110-119	300.7	--	--	--	9.5	--
100-109	379.1	4.6	--	4.6	32.9	--
90-99	421.3	32.5	--	28.9	68.8	--
80-89	323.1	72.1	--	57.7	166.7	--
70-79	151.4	118.5	--	107.1	264.0	--
60-69	95.7	167.6	--	166.4	330.9	--
50-59	27.3	230.9	--	216.5	345.1	--
40-49	15.1	293.4	4.3	297.4	297.0	--
30-39	--	330.9	3.6	338.5	228.7	--
20-29	--	266.3	--	296.0	148.2	4.2
10-19	--	207.5	26.1	203.4	29.3	19.2
0-10	--	216.1	1,906.4	223.9	9.8	1,917.0
TOTAL	1,940.4	1,940.4	1,940.4	1,940.4	1,940.4	1,940.4

Table 14.--Area of commercial forest land, by stocking class of growing-stock trees and stand-size class, *Prairie, Missouri, 1972*

(Thousand acres)

STOCKING PERCENTAGE	ALL STANDS	SAWTIMBER STANDS	POLETIMBER STANDS	SAPLING AND SEEDLING STANDS	NONSTOCKED AREAS ^{1/}
100 TO 133	4.6	--	4.6	--	--
60 TO 100	390.7	180.7	186.7	23.3	--
17 TO 60	1,205.4	555.1	553.1	87.9	9.3
LESS THAN 17	339.7	--	--	--	339.7
ALL CLASSES	1,940.4	735.8	744.4	111.2	349.0

^{1/} SEE GLOSSARY FOR STAND-SIZE CLASSES (PAGE 3).

Table 15.--Area of noncommercial forest land, by ownership class, Prairie, Missouri, 1972

(Thousand acres)

OWNERSHIP CLASSES	: ALL : : AREAS :	PRODUCTIVE : RESERVED : AREAS :	UNPRODUCTIVE : AREAS :
PUBLIC	46.5	46.5	--
FARMER AND MISCELLANEOUS PRIVATE	15.9	--	15.9
ALL OWNERSHIPS	62.4	46.5	15.9

Table 16.--Area of noncommercial forest land, by forest type, Prairie, Missouri, 1972

(Thousand acres)

FOREST TYPE	: ALL : : AREAS :	PRODUCTIVE : RESERVED : AREAS :	UNPRODUCTIVE : AREAS :
EASTERN REDCEDAR	0.1	0.1	--
POST-BLACKJACK OAK	7.5	7.5	--
BLACK-SCARLET OAK	31.6	15.7	15.9
WHITE OAK	10.4	10.4	--
ELM-ASH-COTTONWOOD	12.8	12.8	--
ALL FOREST TYPES	62.4	46.5	15.9

Table 17.--Number of all live trees on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Thousand trees)

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)														
	ALL	1.0-	3.0-	5.0-	7.0-	9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	23.0-	25.0-	27.0-
	CLASSES:	1.0-	3.0-	5.0-	7.0-	9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	23.0-	25.0-	27.0-
		2.9	4.9	6.9	8.9	10.9	12.9	14.9	16.9	18.9	20.9	22.9	24.9	26.9	28.9
SOFTWOODS:															
EASTERN REDCEDAR	6322	4111	1353	286	280	161	65	36	30	--	--	--	--	--	--
TOTAL SOFTWOODS	6322	4111	1353	286	280	161	65	36	30	--	--	--	--	--	--
HARDWOODS:															
SELECT WHITE OAKS	125110	46637	29121	18988	11558	7321	4227	3327	1557	943	525	390	388	126	2
OTHER WHITE OAKS	52207	13420	19576	10697	3986	2129	1179	690	289	149	40	27	22	3	--
SELECT RED OAKS	22635	12515	2037	2198	2086	1356	731	622	403	265	100	96	175	45	6
RED OAKS	41048	12301	6895	7605	5819	3791	2057	935	785	377	212	130	117	14	--
OTHER RED OAKS	49254	20165	11498	7791	4381	2557	1167	685	359	305	175	45	91	30	5
HICKORY A	135834	73620	37512	14894	4695	2601	1196	633	256	191	117	27	84	8	--
HICKORY B	59209	34056	14528	6492	2702	972	301	106	45	--	7	--	--	--	--
HARD MAPLE	13866	8135	3898	808	469	231	85	151	16	60	10	--	--	3	--
SOFT MAPLE	17424	9083	2085	2125	785	1270	797	454	356	116	83	114	108	40	8
ASH	66755	41286	12510	7753	2802	1347	588	271	80	69	19	20	7	3	--
SYCAMORE	1940	--	98	435	378	168	222	147	139	112	75	41	105	18	2
COTTONWOOD	1362	--	--	183	309	167	153	120	126	82	53	50	75	33	11
RIVER BIRCH	6282	1385	1402	1653	812	379	214	242	76	56	22	11	20	5	5
BASSWOOD	4018	2281	--	492	427	360	206	120	38	50	16	17	8	3	--
BLACK WALNUT	24349	10322	2479	4024	3195	1664	1255	661	444	193	64	22	26	--	--
BLACK CHERRY	12532	7717	2239	1529	644	173	89	56	74	--	11	--	--	--	--
ELM	168095	114305	31938	12521	4750	2476	1025	625	154	123	80	33	62	3	--
OTHER HARDWOODS	136586	92434	19448	12402	6260	2839	1501	655	456	213	184	60	103	31	--
NONCOMMERCIAL SPECIES	70599	58867	9518	2033	101	55	25	--	--	--	--	--	--	--	--
TOTAL HARDWOODS	1009105	558529	206782	114623	56159	31856	17028	10500	5653	3304	1793	1083	1391	365	39
ALL SPECIES	1015427	562640	208135	114909	56439	32017	17093	10536	5683	3304	1793	1083	1391	365	39

Table 18.--Number of growing-stock trees on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Thousand trees)

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)															
	ALL CLASSES	1.0- 2.9	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9	28.0- 29.9
SFTWOODS:																
EASTERN REDCEDAR	2405	1809	--	286	117	133	34	16	10	--	--	--	--	--	--	--
TOTAL SFTWOODS	2405	1809	--	286	117	133	34	16	10	--	--	--	--	--	--	--
HARDWOODS:																
SELECT WHITE OAKS	49620	10400	12367	10066	6384	3843	2337	2264	764	571	259	150	167	--	46	2
OTHER WHITE OAKS	23551	3480	9001	6246	2241	1296	629	405	173	65	15	--	--	--	--	--
SELECT RED OAKS	9116	2750	1217	1223	1529	892	537	341	265	147	64	24	94	33	--	--
RED OAKS	20827	4289	3823	4680	3316	2211	987	614	496	191	120	51	42	7	--	--
OTHER RED OAKS	15975	3345	4706	3477	2051	1023	378	361	253	198	94	32	35	22	--	--
HICKORY A	63785	22734	24283	10901	2709	1453	745	426	230	130	83	21	65	5	--	--
HICKORY B	19065	5732	6728	4247	1589	590	120	64	15	--	--	--	--	--	--	--
HARD MAPLE	4985	2883	1222	453	229	67	20	97	--	11	--	--	--	3	--	--
SOFT MAPLE	6572	3710	--	840	309	597	363	334	204	52	50	60	42	11	--	--
ASH	13486	4870	2506	3496	1255	625	398	187	80	31	7	14	4	3	--	--
SYCAMORE	1271	--	98	215	121	111	202	134	117	111	51	34	66	9	2	--
COTTONWOOD	1090	--	--	184	228	109	89	103	126	82	45	44	54	26	--	--
RIVER BIRCH	2795	--	232	1207	697	324	148	90	43	28	14	--	8	--	--	--
BASSWOOD	1205	606	--	--	217	133	124	83	24	18	--	17	--	--	--	--
BLACK WALNUT	6034	597	322	1529	1458	899	524	335	245	98	10	--	--	--	--	--
BLACK CHERRY	1687	--	1144	193	231	64	20	35	--	--	--	--	--	--	--	--
ELM	14542	6857	1786	3043	1377	833	295	192	56	51	7	7	38	--	--	--
OTHER HARDWOODS	12561	3746	1354	3584	2118	881	420	176	164	35	37	19	27	--	--	--
TOTAL HARDWOODS	268167	75999	70789	55584	28049	15951	8336	6241	3255	1819	856	473	642	165	8	--
ALL SPECIES	270572	77808	70789	55870	28166	16084	8370	6257	3265	1819	856	473	642	165	8	--

Table 19.--Number of short-log trees on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Thousand trees)

SPECIES	ALL CLASSES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)								
		11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+
HARDWOODS:										
SELECT WHITE OAKS	2,304	853	535	354	210	133	115	81	23	--
DOTHER WHITE OAKS	469	201	183	38	33	8	6	--	--	--
SELECT RED OAKS	305	57	120	47	48	10	--	17	4	2
RED OAKS	848	581	98	60	37	39	--	30	3	--
DOTHER RED OAKS	467	236	99	38	53	6	14	19	2	--
HICKORY A	295	108	99	26	41	--	6	15	--	--
HICKORY B	76	40	19	17	--	--	--	--	--	--
HARD MAPLE	56	--	30	16	--	10	--	--	--	--
SOFT MAPLE	269	58	57	64	28	19	20	21	--	2
ASH	57	23	15	--	19	--	--	--	--	--
SYCAMORE	28	--	13	--	--	--	--	10	5	--
COTTONWOOD	28	--	16	--	--	--	--	8	4	--
RIVER BIRCH	100	--	88	--	--	--	12	--	--	--
BASSWOOD	21	--	--	14	--	7	--	--	--	--
BLACK WALNUT	529	265	134	73	40	9	--	8	--	--
BLACK CHERRY	25	--	--	25	--	--	--	--	--	--
ELM	379	201	131	8	9	20	--	10	--	--
OTHER HARDWOODS	350	162	77	45	25	22	6	8	5	--
TOTAL HARDWOODS	6,606	2,785	1,714	825	543	283	179	227	46	4

Table 20.--Net volume of growing stock and sawtimber on commercial forest land, by species, Prairie, Missouri, 1959 and 1972

SPECIES	GROWING STOCK		SAWTIMBER	
	1959 ^{1/}	1972	1959 ^{1/}	1972
	MILLION CUBIC FEET		MILLION BOARD FEET ^{2/}	
SOFTWOODS:				
EASTERN REDCEDAR	--	3.5	--	14.6
TOTAL SOFTWOODS	--	3.5	--	14.6
HARDWOODS:				
SELECT WHITE OAKS	266.4	242.9	737.1	685.6
OTHER WHITE OAKS	64.2	59.9	110.6	102.8
SELECT RED OAKS	78.2	58.5	264.1	202.8
RED OAKS	114.9	101.6	271.7	264.9
OTHER RED OAKS	45.1	66.8	81.0	192.3
HICKORY A	88.2	84.3	167.6	170.6
HICKORY B	14.7	24.5	21.0	15.4
HARD MAPLE	6.2	5.3	12.3	10.0
SOFT MAPLE	43.0	44.2	127.3	149.0
ASH	36.7	32.0	85.1	66.7
SYCAMORE	17.5	31.4	77.7	154.6
COTTONWOOD	27.5	29.5	117.8	137.5
RIVER BIRCH	9.1	17.7	27.0	36.2
BASSWOOD	3.0	5.4	6.2	14.9
BLACK WALNUT	52.1	37.8	141.6	98.0
BLACK CHERRY	1.9	2.6	2.2	3.6
ELM	166.6	33.2	421.7	58.1
OTHER HARDWOODS	55.9	41.1	92.7	80.4
TOTAL HARDWOODS	1,091.2	918.7	2,764.7	2,443.4
ALL SPECIES	1,091.2	922.2	2,764.7	2,458.0

^{1/} FIGURES HAVE BEEN ADJUSTED FROM THOSE PUBLISHED PREVIOUSLY FOR 1959 TO CONFORM TO 1972 VOLUMES BECAUSE OF CHANGES IN SURVEY DEFINITIONS AND PROCEDURES.

^{2/} INTERNATIONAL 1/4-INCH RULE.

Table 21.--Net volume on commercial forest land for Missouri's Prairie Survey Unit and for individual counties within Unit, by species and kind of material, 1972

ALL COUNTIES							
Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Peletimber	Sawtimber	Total	In sawtimber	Other	
		trees	trees		stands	stands	
		Thousand cords		Million board feet ^{1/}		Thousand cords	
Softwoods:							
Eastern redcedar	43.8	15.9	27.9	14.6	5.0	9.6	26.0
Total softwoods	43.8	15.9	27.9	14.6	5.0	9.6	26.0
Hardwoods:							
Select white oaks	3,074.5	1,246.2	1,828.3	685.6	552.5	133.1	2,110.0
Other white oaks	758.2	492.6	265.6	102.8	71.4	31.4	385.1
Select red oaks	739.6	209.3	530.3	202.8	167.1	35.7	337.9
Red oaks	1,286.2	592.0	694.2	264.9	157.6	107.3	724.2
Other red oaks	846.6	325.2	521.4	192.3	140.2	52.1	663.4
Hickory A	1,066.4	616.9	449.5	170.6	129.4	41.2	431.3
Hickory B	310.2	271.6	38.6	15.4	8.2	7.2	189.0
Hard maple	67.3	35.9	31.4	10.0	9.8	.2	91.2
Soft maple	560.3	140.5	419.8	149.0	131.5	17.5	617.7
Ash	404.8	226.5	178.3	66.7	56.5	10.2	343.2
Sycamore	398.0	36.2	361.8	154.6	142.2	12.4	107.9
Cottonwood	372.5	36.8	335.7	137.5	125.7	11.8	113.8
River birch	225.3	121.2	104.1	36.2	29.5	6.7	118.1
Basswood	68.2	20.7	47.5	14.9	6.4	8.5	96.8
Black walnut	479.6	215.7	263.9	98.0	71.1	26.9	477.4
Black cherry	31.9	22.7	9.2	3.6	2.0	1.6	107.7
Elm	420.0	252.6	167.4	58.1	46.6	11.5	830.4
Other hardwoods	520.2	302.0	218.2	80.4	59.7	20.7	1,073.1
Noncommercial species	--	--	--	--	--	--	37.0
Total hardwoods	11,629.8	5,164.6	6,465.2	2,443.4	1,907.4	536.0	8,855.2
All species	11,673.6	5,180.5	6,493.1	2,458.0	1,912.4	545.6	8,881.2
ADAIR COUNTY							
Softwoods:							
Eastern redcedar	1.1	0.5	0.6	0.4	0.2	0.2	0.7
Total softwoods	1.1	.5	.6	.4	.2	.2	.7
Hardwoods:							
Select white oaks	103.9	49.7	54.2	20.1	15.1	5.0	71.9
Other white oaks	9.3	6.9	2.4	1.0	.7	.3	6.1
Select red oaks	23.7	7.9	15.8	5.8	4.2	1.6	11.5
Red oaks	32.4	17.9	14.5	5.4	2.3	3.1	20.0
Other red oaks	18.4	9.1	9.3	3.4	1.4	2.0	18.7
Hickory A	29.9	21.7	8.2	3.0	1.7	1.3	12.8
Hickory B	6.8	6.0	.8	.3	.1	.2	3.1
Hard maple	2.0	1.2	.8	.3	.3	--	2.7
Soft maple	7.1	2.0	5.1	1.8	1.5	.3	9.6
Ash	7.3	4.6	2.7	1.0	.7	.3	6.6
Sycamore	6.3	.7	5.6	2.4	2.2	.2	1.5
Cottonwood	5.8	.5	5.3	2.2	1.8	.4	2.3
River birch	4.4	2.6	1.8	.6	.3	.3	2.4
Basswood	2.2	.6	1.6	.5	.2	.3	2.4
Black walnut	9.7	5.3	4.4	1.6	1.0	.6	11.4
Black cherry	1.0	.8	.2	.1	--	.1	3.1
Elm	10.1	6.6	3.5	1.2	.9	.3	18.4
Other hardwoods	8.8	6.3	2.5	.9	.6	.3	18.2
Noncommercial species	--	--	--	--	--	--	.8
Total hardwoods	289.1	150.4	138.7	51.6	35.0	16.6	223.5
All species	290.2	150.9	139.3	52.0	35.2	16.8	224.2

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

ANDREW COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	Thousand cords	trees	trees	Thousand cords	stands	stands	Thousand cords
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	0.1	--	0.2
Total softwoods	.3	.1	.2	.1	.1	--	.2
Hardwoods:							
Select white oaks	23.3	10.8	12.5	4.7	3.6	1.1	19.7
Other white oaks	2.1	1.5	.6	.2	.1	.1	1.6
Select red oaks	5.8	1.8	4.0	1.5	1.1	.4	3.4
Red oaks	7.4	3.9	3.5	1.3	.6	.7	5.0
Other red oaks	6.0	2.7	3.3	1.2	.7	.5	6.2
Hickory A	7.6	5.0	2.6	.9	.6	.3	3.7
Hickory B	1.7	1.4	.3	.1	--	.1	.9
Hard maple	1.4	.5	.9	.3	.3	--	2.0
Soft maple	3.5	1.0	2.5	.9	.8	.1	4.4
Ash	2.6	1.4	1.2	.5	.4	.1	2.4
Sycamore	3.0	.3	2.7	1.1	1.0	.1	.6
Cottonwood	2.7	.2	2.5	1.1	.9	.2	.9
River birch	1.4	.7	.7	.2	.1	.1	.9
Basswood	.6	.2	.4	.1	.1	--	1.0
Black walnut	3.1	1.6	1.5	.5	.3	.2	4.5
Black cherry	.3	.2	.1	--	--	--	.9
Elm	3.0	2.0	1.0	.4	.3	.1	7.5
Other hardwoods	3.6	2.3	1.3	.5	.4	.1	8.3
Noncommercial species	--	--	--	--	--	--	.2
Total hardwoods	79.1	37.5	41.6	15.5	11.3	4.2	74.1
All species	79.4	37.6	41.8	15.6	11.4	4.2	74.3

ATCHISON COUNTY

Softwoods:							
Eastern redcedar	0.2	0.1	0.1	0.1	--	0.1	0.2
Total softwoods	.2	.1	.1	.1	--	.1	.2
Hardwoods:							
Select white oaks	25.2	10.7	14.5	5.4	4.4	1.0	17.4
Other white oaks	2.2	1.5	.7	.3	.2	.1	1.4
Select red oaks	5.9	1.5	4.4	1.6	1.4	.2	2.7
Red oaks	7.0	3.2	3.8	1.4	.8	.6	4.2
Other red oaks	5.2	1.9	3.3	1.2	.8	.4	4.8
Hickory A	7.7	4.6	3.1	1.2	.8	.4	3.1
Hickory B	1.7	1.4	.3	.1	.1	--	.9
Hard maple	.5	.2	.3	.1	.1	--	.6
Soft maple	7.8	2.2	5.6	2.0	1.8	.2	9.1
Ash	3.5	2.0	1.5	.6	.5	.1	2.1
Sycamore	5.2	.5	4.7	1.9	1.8	.1	1.2
Cottonwood	5.7	.3	5.4	2.2	2.1	.1	1.2
River birch	2.2	1.0	1.2	.4	.4	--	1.2
Basswood	.8	.3	.5	.2	.1	.1	1.0
Black walnut	3.6	1.8	1.8	.7	.6	.1	3.2
Black cherry	.3	.2	.1	--	--	--	.9
Elm	4.0	2.2	1.8	.6	.5	.1	6.8
Other hardwoods	4.1	2.6	1.5	.6	.5	.1	7.1
Noncommercial species	--	--	--	--	--	--	.2
Total hardwoods	92.6	38.1	54.5	20.5	16.9	3.6	69.1
All species	92.8	38.2	54.6	20.6	16.9	3.7	69.3

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

AUDRAIN COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	: trees	: trees	: trees	: stands	: stands	: stands	
	Thousand cords			Million board feet ¹			Thousand cords
Softwoods:							
Eastern redcedar	0.4	0.1	0.3	0.2	0.1	0.1	0.3
Total softwoods	.4	.1	.3	.2	.1	.1	.3
Hardwoods:							
Select white oaks	47.5	19.8	27.7	10.3	8.4	1.9	33.6
Other white oaks	3.4	2.2	1.2	.5	.4	.1	2.1
Select red oaks	10.6	2.7	7.9	2.9	2.4	.5	5.0
Red oaks	11.9	5.7	6.2	2.3	1.3	1.0	7.0
Other red oaks	13.1	5.0	8.1	2.9	1.8	1.1	10.1
Hickory A	14.3	8.6	5.7	2.2	1.5	.7	6.3
Hickory B	3.7	3.2	.5	.2	.1	.1	1.8
Hard maple	1.3	.7	.6	.2	.2	--	1.5
Soft maple	17.6	5.2	12.4	4.4	4.0	.4	20.3
Ash	7.9	4.5	3.4	1.4	1.2	.2	4.5
Sycamore	11.5	1.2	10.3	4.2	3.9	.3	2.7
Cottonwood	13.5	.8	12.7	5.3	4.9	.4	3.4
River birch	5.4	2.7	2.7	.9	.7	.2	3.0
Basswood	1.9	.6	1.3	.4	.1	.3	2.3
Black walnut	8.0	4.2	3.8	1.5	1.1	.4	7.6
Black cherry	.5	.4	.1	--	--	--	1.8
Elm	9.1	5.3	3.8	1.3	1.2	.1	15.9
Other hardwoods	9.4	5.9	3.5	1.3	1.0	.3	16.9
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	190.6	78.7	111.9	42.2	34.2	8.0	146.2
All species	191.0	78.8	112.2	42.4	34.3	8.1	146.5
BARTON COUNTY							
Softwoods:							
Eastern redcedar	0.4	0.1	0.3	0.1	--	0.1	0.5
Total softwoods	.4	.1	.3	.1	--	.1	.5
Hardwoods:							
Select white oaks	18.7	5.2	13.5	5.3	4.5	.8	13.5
Other white oaks	13.5	8.7	4.8	1.8	1.2	.6	6.3
Select red oaks	5.8	1.9	3.9	1.7	1.6	.1	3.0
Red oaks	17.7	6.3	11.4	4.4	3.3	1.1	10.3
Other red oaks	14.5	3.7	10.8	4.1	3.9	.2	7.2
Hickory A	13.9	5.2	8.7	3.4	3.1	.3	4.3
Hickory B	4.8	4.2	.6	.3	.2	.1	3.5
Soft maple	7.8	1.1	6.7	2.4	2.0	.4	4.8
Ash	8.2	4.2	4.0	1.4	1.3	.1	8.1
Sycamore	4.4	.4	4.0	2.0	1.7	.3	1.7
Cottonwood	2.8	1.0	1.8	.7	.7	--	1.2
River birch	3.8	2.3	1.5	.5	.5	--	1.8
Basswood	--	--	--	--	--	--	.8
Black walnut	7.6	2.6	5.0	1.9	1.5	.4	6.4
Black cherry	.2	.1	.1	--	--	--	1.4
Elm	4.6	2.5	2.1	.7	.5	.2	11.8
Other hardwoods	9.9	4.8	5.1	1.8	1.3	.5	23.9
Noncommercial species	--	--	--	--	--	--	.8
Total hardwoods	138.2	54.2	84.0	32.4	27.3	5.1	112.8
All species	138.6	54.3	84.3	32.5	27.3	5.2	113.3

¹ International 1/4-inch rule.

(Table 21 cont. on next page)

BATES COUNTY

(Table 21 cont.)

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Polletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees	stands	stands	stands	
	Thousand cords			Million board feet ¹			Thousand cords
Softwoods:							
Eastern redcedar	0.9	0.2	0.7	0.3	--	0.3	1.0
Total softwoods	.9	.2	.7	.3	--	.3	1.0
Hardwoods:							
Select white oaks	35.9	9.0	26.9	10.6	9.0	1.6	22.6
Other white oaks	28.8	18.9	9.9	3.8	2.4	1.4	13.5
Select red oaks	11.9	3.8	8.1	3.5	3.3	.2	4.9
Red oaks	35.7	13.4	22.3	8.5	6.1	2.4	19.5
Other red oaks	31.5	8.2	23.3	8.9	8.4	.5	14.5
Hickory A	28.7	11.0	17.7	6.9	6.1	.8	8.8
Hickory B	10.1	8.7	1.4	.6	.4	.2	6.9
Soft maple	18.0	2.4	15.6	5.6	4.7	.9	10.9
Ash	17.5	8.9	8.6	3.1	2.8	.3	17.3
Sycamore	9.8	.8	9.0	4.3	3.7	.6	3.4
Cottonwood	6.4	2.3	4.1	1.5	1.5	--	2.7
River birch	8.7	5.3	3.4	1.2	1.2	--	4.1
Basswood	--	--	--	--	--	--	1.6
Black walnut	14.4	4.7	9.7	3.5	3.0	.5	15.6
Black cherry	.4	.2	.2	.1	.1	--	2.8
Elm	9.7	5.5	4.2	1.5	1.2	.3	23.4
Other hardwoods	20.3	9.4	10.9	3.9	2.8	1.1	46.2
Noncommercial species	--	--	--	--	--	--	1.6
Total hardwoods	287.8	112.5	175.3	67.5	56.7	10.8	220.3
All species	288.7	112.7	176.0	67.8	56.7	11.1	221.3
BUCHANAN COUNTY							
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	0.1	--	0.1
Total softwoods	.3	.1	.2	.1	.1	--	.1
Hardwoods:							
Select white oaks	26.0	11.8	14.2	5.4	4.2	1.2	21.6
Other white oaks	1.5	.9	.6	.2	.2	--	1.1
Select red oaks	6.5	1.9	4.6	1.7	1.2	.5	3.2
Red oaks	6.9	3.3	3.6	1.4	.7	.7	4.0
Other red oaks	8.3	3.7	4.6	1.7	.9	.8	6.8
Hickory A	8.4	4.9	3.5	1.3	.8	.5	4.1
Hickory B	2.3	2.1	.2	.1	.1	--	1.1
Hard maple	1.9	1.2	.7	.2	.2	--	2.6
Soft maple	9.1	2.7	6.4	2.3	2.0	.3	11.1
Ash	4.7	2.5	2.2	.9	.6	.3	3.2
Sycamore	6.3	.6	5.7	2.3	2.1	.2	1.5
Cottonwood	6.3	.4	5.9	2.4	2.2	.2	2.2
River birch	3.4	1.8	1.6	.5	.4	.1	2.0
Basswood	1.5	.5	1.0	.3	.1	.2	1.8
Black walnut	5.9	3.0	2.9	1.1	.6	.5	6.0
Black cherry	.3	.2	.1	--	--	--	1.3
Elm	6.8	4.6	2.2	.8	.6	.2	11.8
Other hardwoods	6.0	3.9	2.1	.8	.6	.2	11.5
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	112.1	50.0	62.1	23.4	17.5	5.9	97.2
All species	112.4	50.1	62.3	23.5	17.6	5.9	97.3

¹ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

CALDWELL COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	: trees	: trees	: trees	: stands	: stands	: stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.3	0.2	0.1	0.1	--	0.1	0.1
Total softwoods	.3	.2	.1	.1	--	.1	.1
Hardwoods:							
Select white oaks	26.1	10.2	15.9	5.9	5.0	.9	19.0
Other white oaks	1.5	.9	.6	.2	.2	--	1.3
Select red oaks	6.1	1.3	4.8	1.8	1.4	.4	2.9
Red oaks	6.5	2.9	3.6	1.3	.7	.6	3.8
Other red oaks	8.1	3.5	4.6	1.7	1.0	.7	5.9
Hickory A	8.4	4.7	3.7	1.4	.9	.5	4.0
Hickory B	2.2	1.9	.3	.1	.1	--	1.3
Hard maple	1.0	.4	.6	.2	.2	--	1.7
Soft maple	10.3	3.0	7.3	2.6	2.3	.3	12.3
Ash	4.7	2.6	2.1	.8	.7	.1	3.0
Sycamore	7.0	.7	6.3	2.6	2.4	.2	1.7
Cottonwood	7.1	.4	6.7	2.8	2.6	.2	1.9
River birch	3.5	1.8	1.7	.6	.5	.1	2.0
Basswood	1.1	.4	.7	.2	.1	.1	1.4
Black walnut	4.7	2.3	2.4	.9	.7	.2	4.1
Black cherry	.3	.2	.1	--	--	--	1.1
Elm	5.2	3.0	2.2	.8	.7	.1	10.1
Other hardwoods	5.8	3.5	2.3	.9	.7	.2	10.5
Noncommercial species	--	--	--	--	--	--	.2
Total hardwoods	109.6	43.7	65.9	24.8	20.2	4.6	88.2
All species	109.9	43.9	66.0	24.9	20.2	4.7	88.3

CARROLL COUNTY

Softwoods:							
Eastern redcedar	0.5	0.2	0.3	0.2	0.1	0.1	0.3
Total softwoods	.5	.2	.3	.2	.1	.1	.3
Hardwoods:							
Select white oaks	47.9	19.7	28.2	10.5	8.7	1.8	33.2
Other white oaks	3.6	2.3	1.3	.5	.4	.1	2.4
Select red oaks	11.1	2.8	8.3	3.1	2.6	.5	5.0
Red oaks	12.8	5.9	6.9	2.6	1.6	1.0	7.5
Other red oaks	11.7	4.0	7.7	2.7	1.8	.9	9.5
Hickory A	14.5	8.7	5.8	2.2	1.5	.7	6.0
Hickory B	3.4	2.8	.6	.2	.1	.1	1.7
Hard maple	1.2	.6	.6	.2	.2	--	1.3
Soft maple	15.8	4.6	11.2	4.0	3.7	.3	18.3
Ash	7.2	4.1	3.1	1.2	1.1	.1	4.1
Sycamore	10.5	1.1	9.4	3.9	3.7	.2	2.4
Cottonwood	12.2	.6	11.6	4.8	4.5	.3	2.5
River birch	4.5	2.2	2.3	.8	.7	.1	2.6
Basswood	1.6	.5	1.1	.3	.1	.2	2.1
Black walnut	7.1	3.5	3.6	1.4	1.1	.3	6.4
Black cherry	.5	.4	.1	.1	--	.1	1.8
Elm	8.1	4.5	3.6	1.3	1.1	.2	13.5
Other hardwoods	8.1	4.9	3.2	1.2	1.0	.2	14.0
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	181.8	73.2	108.6	41.0	33.9	7.1	134.7
All species	182.3	73.4	108.9	41.2	34.0	7.2	135.0

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

CASS COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees		stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.8	0.2	0.6	0.3	--	0.3	0.5
Total softwoods	.8	.2	.6	.3	--	.3	.5
Hardwoods:							
Select white oaks	31.5	10.3	21.2	8.3	6.7	1.6	24.4
Other white oaks	34.0	21.4	12.6	4.8	3.4	1.4	14.3
Select red oaks	8.2	2.4	5.8	2.4	2.3	.1	5.2
Red oaks	35.7	14.7	21.0	8.1	5.6	2.5	20.3
Other red oaks	15.9	5.1	10.8	4.1	3.9	.2	10.3
Hickory A	17.6	7.3	10.3	4.0	3.7	.3	6.4
Hickory B	7.1	6.4	.7	.3	.2	.1	5.5
Soft maple	3.3	.5	2.8	1.0	.8	.2	2.3
Ash	6.1	3.6	2.5	.9	.8	.1	6.5
Sycamore	2.2	.2	2.0	1.0	.9	.1	1.8
Cottonwood	1.3	.4	.9	.3	.3	--	.5
River birch	1.8	1.0	.8	.3	.3	--	.7
Basswood	--	--	--	--	--	--	.8
Black walnut	10.0	3.6	6.4	2.4	1.8	.6	7.8
Black cherry	.4	.2	.2	.1	.1	--	1.2
Elm	4.4	2.6	1.8	.6	.4	.2	11.5
Other hardwoods	10.7	5.2	5.5	2.0	1.4	.6	22.6
Noncommercial species	--	--	--	--	--	--	1.1
Total hardwoods	190.2	84.9	105.3	40.6	32.6	8.0	143.2
All species	191.0	85.1	105.9	40.9	32.6	8.3	143.7
CHARITON COUNTY							
Softwoods:							
Eastern redcedar	0.6	0.3	0.3	0.2	0.1	0.1	0.3
Total softwoods	.6	.3	.3	.2	.1	.1	.3
Hardwoods:							
Select white oaks	68.9	26.4	42.5	15.8	13.3	2.5	47.5
Other white oaks	4.2	2.4	1.8	.7	.6	.1	2.9
Select red oaks	15.5	3.5	12.0	4.5	3.8	.7	6.6
Red oaks	16.1	7.0	9.1	3.5	2.2	1.3	8.7
Other red oaks	19.5	7.0	12.5	4.5	2.9	1.6	14.3
Hickory A	20.2	11.4	8.8	3.3	2.4	.9	9.1
Hickory B	5.4	4.6	.8	.3	.2	.1	2.7
Hard maple	2.1	1.3	.8	.2	.2	--	2.5
Soft maple	27.6	7.9	19.7	7.0	6.4	.6	32.3
Ash	12.1	6.7	5.4	2.1	1.8	.3	6.5
Sycamore	18.3	1.8	16.5	6.8	6.3	.5	4.3
Cottonwood	20.6	1.2	19.4	8.0	7.5	.5	5.3
River birch	8.3	4.0	4.3	1.5	1.2	.3	4.6
Basswood	3.0	1.0	2.0	.6	.2	.4	3.5
Black walnut	12.3	6.0	6.3	2.4	1.8	.6	10.9
Black cherry	.7	.5	.2	.1	--	.1	2.5
Elm	14.3	8.2	6.1	2.1	1.9	.2	23.4
Other hardwoods	13.6	8.4	5.4	2.1	1.7	.4	24.2
Noncommercial species	--	--	--	--	--	--	.6
Total hardwoods	282.9	109.3	173.6	65.5	54.4	11.1	212.4
All species	283.5	109.6	173.9	65.7	54.5	11.2	212.7

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

CLARK COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Polletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees	stands	stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.3	0.6	0.7	0.4	0.2	0.2	0.5
Total softwoods	1.3	.6	.7	.4	.2	.2	.5
Hardwoods:							
Select white oaks	110.5	44.8	65.7	24.3	20.2	4.1	75.5
Other white oaks	8.6	5.3	3.3	1.3	1.1	.2	5.9
Select red oaks	25.9	6.6	19.3	7.2	6.0	1.2	11.3
Red oaks	29.6	13.7	15.9	6.1	3.7	2.4	17.3
Other red oaks	20.6	8.4	12.2	4.4	2.6	1.8	19.6
Hickory A	30.0	18.7	11.3	4.2	3.1	1.1	13.1
Hickory B	6.7	5.8	.9	.4	.2	.2	3.5
Hard maple	2.5	1.3	1.2	.4	.4	--	3.2
Soft maple	15.2	4.0	11.2	3.9	3.5	.4	19.9
Ash	9.8	5.5	4.3	1.6	1.3	.3	7.3
Sycamore	12.7	1.0	11.7	4.9	4.6	.3	2.8
Cottonwood	9.9	.7	9.2	3.8	3.4	.4	3.3
River birch	6.1	3.0	3.1	1.1	.9	.2	3.2
Basswood	2.5	.7	1.8	.6	.3	.3	2.9
Black walnut	12.0	5.8	6.2	2.3	1.6	.7	12.5
Black cherry	1.0	.7	.3	.1	--	.1	3.4
Elm	12.4	7.4	5.0	1.7	1.4	.3	22.7
Other hardwoods	11.6	7.5	4.1	1.5	1.2	.3	22.3
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	327.6	140.9	186.7	69.8	55.5	14.3	250.4
All species	328.9	141.5	187.4	70.2	55.7	14.5	250.9

CLAY COUNTY

Softwoods:							
Eastern redcedar	0.4	0.2	0.2	0.1	0.1	--	0.2
Total softwoods	.4	.2	.2	.1	.1	--	.2
Hardwoods:							
Select white oaks	32.2	14.7	17.5	6.5	5.0	1.5	24.0
Other white oaks	2.3	1.6	.7	.3	.2	.1	1.7
Select red oaks	7.8	2.3	5.5	2.1	1.5	.6	3.8
Red oaks	9.0	4.5	4.5	1.7	.8	.9	5.3
Other red oaks	10.2	4.7	5.5	2.0	1.0	1.0	8.0
Hickory A	10.3	6.4	3.9	1.5	1.0	.5	4.9
Hickory B	3.0	2.6	.4	.1	--	.1	1.4
Hard maple	1.4	.9	.5	.1	.1	--	1.9
Soft maple	10.6	3.1	7.5	2.7	2.4	.3	13.0
Ash	5.4	3.0	2.4	.9	.7	.2	3.5
Sycamore	7.2	.7	6.5	2.7	2.4	.3	1.8
Cottonwood	7.5	.6	6.9	2.9	2.6	.3	2.5
River birch	4.2	2.3	1.9	.7	.5	.2	2.5
Basswood	1.6	.5	1.1	.3	.1	.2	1.7
Black walnut	6.2	3.3	2.9	1.1	.7	.4	5.9
Black cherry	.4	.3	.1	--	--	--	1.4
Elm	7.1	4.6	2.5	.9	.7	.2	12.2
Other hardwoods	6.8	4.4	2.4	.9	.7	.2	12.7
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	133.2	60.5	72.7	27.4	20.4	7.0	108.5
All species	133.6	60.7	72.9	27.5	20.5	7.0	108.7

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

CLINTON COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees	stands	stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	--	0.1	0.2
Total softwoods	.3	.1	.2	.1	--	.1	.2
Hardwoods:							
Select white oaks	24.7	10.2	14.5	5.4	4.4	1.0	17.7
Other white oaks	1.4	.9	.5	.2	.2	--	1.1
Select red oaks	5.7	1.5	4.2	1.6	1.2	.4	2.6
Red oaks	6.4	3.3	3.1	1.2	.6	.6	3.8
Other red oaks	10.2	4.3	5.9	2.1	1.2	.9	6.6
Hickory A	8.3	5.1	3.2	1.2	.8	.4	3.8
Hickory B	2.6	2.3	.3	.1	.1	--	1.1
Hard maple	1.0	.6	.4	.1	.1	--	1.1
Soft maple	13.7	4.1	9.6	3.4	3.1	.3	15.2
Ash	5.7	3.2	2.5	1.0	.8	.2	2.8
Sycamore	8.4	.9	7.5	3.1	2.8	.3	2.0
Cottonwood	11.5	.6	10.9	4.5	4.3	.2	2.7
River birch	4.3	2.3	2.0	.7	.5	.2	2.4
Basswood	1.4	.5	.9	.3	.1	.2	1.7
Black walnut	5.4	2.8	2.6	1.0	.7	.3	5.0
Black cherry	.3	.2	.1	--	--	--	1.2
Elm	6.8	4.0	2.8	1.0	.9	.1	11.0
Other hardwoods	6.6	4.0	2.6	1.0	.8	.2	12.1
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	124.4	50.8	73.6	27.9	22.6	5.3	94.2
All species	124.7	50.9	73.8	28.0	22.6	5.4	94.4
COOPER COUNTY							
Softwoods:							
Eastern redcedar	1.6	0.5	1.1	0.4	--	0.4	0.8
Total softwoods	1.6	.5	1.1	.4	--	.4	.8
Hardwoods:							
Select white oaks	46.1	14.1	32.0	12.6	9.1	3.5	29.9
Other white oaks	59.6	38.9	20.7	7.9	5.0	2.9	24.7
Select red oaks	12.2	4.0	8.2	3.5	3.2	.3	5.5
Red oaks	55.7	25.9	29.8	11.5	6.7	4.8	27.2
Other red oaks	20.4	7.6	12.8	4.9	4.6	.3	14.9
Hickory A	27.6	13.6	14.0	5.4	4.4	1.0	9.7
Hickory B	12.1	10.8	1.3	.5	.2	.3	8.3
Soft maple	5.2	.6	4.6	1.7	1.3	.4	3.4
Ash	8.0	4.5	3.5	1.3	1.2	.1	9.5
Sycamore	3.3	.2	3.1	1.5	1.4	.1	2.1
Cottonwood	2.0	.6	1.4	.5	.5	--	.8
River birch	2.6	1.4	1.2	.4	.4	--	1.2
Basswood	--	--	--	--	--	--	.9
Black walnut	13.1	4.7	8.4	3.1	2.3	.8	10.2
Black cherry	.8	.5	.3	.1	.1	--	1.4
Elm	5.9	3.5	2.4	.8	.6	.2	14.2
Other hardwoods	13.2	6.3	6.9	2.5	1.8	.7	30.4
Noncommercial species	--	--	--	--	--	--	1.3
Total hardwoods	287.8	137.2	150.6	58.2	42.8	15.4	195.6
All species	289.4	137.7	151.7	58.6	42.8	15.8	196.4

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

DADE COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees		stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.4	0.3	1.1	0.4	--	0.4	1.0
Total softwoods	1.4	.3	1.1	.4	--	.4	1.0
Hardwoods:							
Select white oaks	32.6	11.3	21.3	8.4	5.8	2.6	25.5
Other white oaks	41.2	27.4	13.8	5.3	3.3	2.0	19.2
Select red oaks	8.4	3.0	5.4	2.3	2.1	.2	4.3
Red oaks	39.0	18.4	20.6	7.9	4.6	3.3	20.0
Other red oaks	15.5	6.7	8.8	3.3	3.0	.3	12.5
Hickory A	20.4	10.8	9.6	3.7	3.0	.7	6.4
Hickory B	9.7	8.8	.9	.4	.2	.2	7.6
Soft maple	3.7	.5	3.2	1.1	.8	.3	2.8
Ash	6.1	3.7	2.4	.8	.7	.1	6.9
Sycamore	2.2	.2	2.0	1.0	.8	.2	1.4
Cottonwood	1.2	.4	.8	.3	.3	--	.5
River birch	1.8	1.0	.8	.3	.3	--	.7
Basswood	--	--	--	--	--	--	.7
Black walnut	10.1	3.9	6.2	2.3	1.6	.7	9.1
Black cherry	.5	.3	.2	.1	.1	--	1.2
Elm	4.6	2.9	1.7	.6	.4	.2	12.2
Other hardwoods	10.1	5.3	4.8	1.7	1.1	.6	25.1
Noncommercial species	--	--	--	--	--	--	1.1
Total hardwoods	207.1	104.6	102.5	39.5	28.1	11.4	157.2
All species	208.5	104.9	103.6	39.9	28.1	11.8	158.2
DAVIESS COUNTY							
Softwoods:							
Eastern redcedar	0.8	0.3	0.5	0.3	0.2	0.1	0.4
Total softwoods	.8	.3	.5	.3	.2	.1	.4
Hardwoods:							
Select white oaks	68.8	30.3	38.5	14.2	11.4	2.8	45.6
Other white oaks	5.7	3.8	1.9	.8	.6	.2	4.0
Select red oaks	16.4	4.9	11.5	4.3	3.4	.9	7.1
Red oaks	20.4	10.2	10.2	3.8	2.0	1.8	12.2
Other red oaks	12.1	5.3	6.8	2.5	1.4	1.1	11.4
Hickory A	19.0	12.9	6.1	2.2	1.4	.8	8.2
Hickory B	4.3	3.7	.6	.2	.1	.1	2.2
Hard maple	1.8	1.1	.7	.2	.2	--	2.3
Soft maple	6.5	1.8	4.7	1.6	1.5	.1	8.5
Ash	5.2	3.0	2.2	.8	.6	.2	4.3
Sycamore	5.7	.5	5.2	2.2	2.1	.1	1.2
Cottonwood	5.0	.4	4.6	1.9	1.6	.3	1.7
River birch	2.9	1.5	1.4	.5	.4	.1	1.6
Basswood	1.5	.4	1.1	.4	.2	.2	1.7
Black walnut	7.0	3.5	3.5	1.3	.8	.5	7.5
Black cherry	.6	.5	.1	.1	.1	--	2.1
Elm	7.5	4.7	2.8	1.0	.7	.3	13.2
Other hardwoods	6.5	4.3	2.2	.8	.6	.2	12.9
Noncommercial species	--	--	--	--	--	--	.5
Total hardwoods	196.9	92.8	104.1	38.8	29.1	9.7	148.2
All species	197.7	93.1	104.6	39.1	29.3	9.8	148.6

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

DEKALB COUNTY

Table 21 (cont.)		GERALD COUNTY			Sawtimber			Rough and rotten trees	
Species	Total	Polletimber	Sawtimber	Total	In sawtimber	Other			
	trees	trees	trees		stands	stands			
	Thousand cords			Million board feet ^{1/}			Thousand cords		
Softwoods:									
Eastern redcedar	0.3	0.1	0.2	0.1	0.1	--	0.1		
Total softwoods	.3	.1	.2	.1	.1	--	.1		
Hardwoods:									
Select white oaks	22.6	8.8	13.8	5.1	4.3	.8	16.5		
Other white oaks	1.5	.9	.6	.3	.3	--	1.5		
Select red oaks	5.4	1.3	4.1	1.5	1.2	.3	2.5		
Red oaks	5.8	2.6	3.2	1.2	.7	.5	3.6		
Other red oaks	5.9	2.5	3.4	1.2	.7	.5	5.6		
Hickory A	6.8	3.9	2.9	1.1	.8	.3	3.3		
Hickory B	1.6	1.4	.2	.1	.1	--	.9		
Hard maple	1.0	.4	.6	.2	.2	--	1.4		
Soft maple	5.0	1.5	3.5	1.3	1.2	.1	6.4		
Ash	2.7	1.5	1.2	.5	.4	.1	2.1		
Sycamore	3.8	.3	3.5	1.4	1.3	.1	.8		
Cottonwood	3.8	.2	3.6	1.5	1.4	.1	1.1		
River birch	1.8	.9	.9	.3	.2	.1	1.1		
Basswood	.7	.2	.5	.1	--	.1	.9		
Black walnut	3.0	1.4	1.6	.6	.4	.2	3.2		
Black cherry	.3	.2	.1	--	--	--	.9		
Elm	3.2	1.9	1.3	.5	.4	.1	6.8		
Other hardwoods	3.7	2.2	1.5	.6	.5	.1	7.3		
Noncommercial species	--	--	--	--	--	--	.2		
Total hardwoods	78.6	32.1	46.5	17.5	14.1	3.4	66.1		
All species	78.9	32.2	46.7	17.6	14.2	3.4	66.2		

GENTRY COUNTY

Softwoods:							
Eastern redcedar	0.5	0.2	0.3	0.2	0.1	0.1	0.3
Total softwoods	.5	.2	.3	.2	.1	.1	.3
Hardwoods:							
Select white oaks	42.0	19.7	22.3	8.3	6.4	1.9	31.9
Other white oaks	3.5	2.4	1.1	.4	.3	.1	2.4
Select red oaks	10.1	3.0	7.1	2.6	1.9	.7	5.4
Red oaks	13.2	6.9	6.3	2.4	1.1	1.3	8.8
Other red oaks	10.1	4.9	5.2	1.8	.9	.9	9.8
Hickory A	13.2	8.8	4.4	1.6	1.0	.6	5.8
Hickory B	3.1	2.7	.4	.2	.1	.1	1.6
Hard maple	1.9	.7	1.2	.4	.4	--	2.6
Soft maple	6.0	1.7	4.3	1.5	1.3	.2	7.8
Ash	4.3	2.4	1.9	.7	.6	.1	4.0
Sycamore	4.9	.5	4.4	1.9	1.7	.2	1.1
Cottonwood	4.3	.3	4.0	1.6	1.4	.2	1.6
River birch	2.8	1.6	1.2	.4	.3	.1	1.6
Basswood	1.2	.4	.8	.3	.1	.2	1.6
Black walnut	5.3	2.8	2.5	.9	.6	.3	6.7
Black cherry	.5	.4	.1	--	--	--	1.4
Elm	5.2	3.4	1.8	.7	.5	.2	11.3
Other hardwoods	6.1	4.0	2.1	.8	.6	.2	12.5
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	137.7	66.6	71.1	26.5	19.2	7.3	118.2
All species	138.2	66.8	71.4	26.7	19.3	7.4	118.5

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

(Table 21 cont.)		GREENE COUNTY					
Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Pole/timber : trees	Sawtimber : trees	Total	In sawtimber : stands	Other : stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	2.1	0.6	1.5	0.7	--	0.7	1.3
Total softwoods	2.1	.6	1.5	.7	--	.7	1.3
Hardwoods:							
Select white oaks	51.5	17.4	34.1	13.4	9.2	4.2	38.4
Other white oaks	67.6	44.8	22.8	8.7	5.3	3.4	30.2
Select red oaks	12.9	4.5	8.4	3.5	3.2	.3	6.4
Red oaks	62.7	29.8	32.9	12.7	7.1	5.6	31.3
Other red oaks	22.2	9.7	12.5	4.8	4.3	.5	18.5
Hickory A	31.6	16.9	14.7	5.7	4.5	1.2	10.2
Hickory B	14.7	13.2	1.5	.6	.2	.4	11.1
Soft maple	4.5	.6	3.9	1.4	1.0	.4	3.3
Ash	8.0	5.0	3.0	1.1	1.0	.1	9.4
Sycamore	2.6	.2	2.4	1.1	1.0	.1	2.1
Cottonwood	1.5	.5	1.0	.4	.4	--	.6
River birch	2.1	1.1	1.0	.3	.3	--	.8
Basswood	--	--	--	--	--	--	1.0
Black walnut	15.2	5.9	9.3	3.4	2.3	1.1	13.3
Black cherry	.9	.6	.3	.1	.1	--	1.6
Elm	6.6	4.2	2.4	.8	.6	.2	16.9
Other hardwoods	14.3	7.4	6.9	2.5	1.7	.8	36.1
Noncommercial species	--	--	--	--	--	--	1.5
Total hardwoods	318.9	161.8	157.1	60.5	42.2	18.3	232.7
All species	321.0	162.4	158.6	61.2	42.2	19.0	234.0
GRUNDY COUNTY							
Softwoods:							
Eastern redcedar	0.5	0.2	0.3	0.2	0.1	0.1	0.2
Total softwoods	.5	.2	.3	.2	.1	.1	.2
Hardwoods:							
Select white oaks	44.8	17.4	27.4	10.2	8.7	1.5	31.2
Other white oaks	3.4	2.1	1.3	.5	.4	.1	2.4
Select red oaks	10.6	2.4	8.2	3.0	2.5	.5	4.7
Red oaks	11.4	4.9	6.5	2.5	1.5	1.0	6.5
Other red oaks	9.4	3.6	5.8	2.1	1.4	.7	8.1
Hickory A	12.4	7.0	5.4	2.0	1.4	.6	6.1
Hickory B	2.8	2.4	.4	.2	.1	.1	2.1
Hard maple	2.2	.8	1.4	.5	.4	.1	3.8
Soft maple	9.1	2.5	6.6	2.3	2.1	.2	11.3
Ash	5.2	2.7	2.5	1.0	.9	.1	4.4
Sycamore	7.2	.6	6.6	2.7	2.6	.1	1.5
Cottonwood	6.6	.4	6.2	2.5	2.3	.2	2.0
River birch	3.0	1.5	1.5	.5	.4	.1	1.8
Basswood	1.2	.4	.8	.3	.1	.2	1.9
Black walnut	6.1	2.8	3.3	1.2	.8	.4	6.0
Black cherry	.4	.3	.1	.1	--	.1	1.4
Elm	6.0	3.5	2.5	.8	.7	.1	13.9
Other hardwoods	7.0	4.3	2.7	1.0	.8	.2	13.7
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	148.8	59.6	89.2	33.4	27.1	6.3	123.1
All species	149.3	59.8	89.5	33.6	27.2	6.4	123.3

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

HARRISON COUNTY

Species	Growing stock			Sawtimber			Rough and- rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees		stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.0	0.4	0.6	0.4	0.2	0.2	0.5
Total softwoods	1.0	.4	.6	.4	.2	.2	.5
Hardwoods:							
Select white oaks	90.0	38.4	51.6	19.1	15.5	3.6	59.7
Other white oaks	7.1	4.7	2.4	1.0	.8	.2	4.9
Select red oaks	21.0	5.7	15.3	5.7	4.5	1.2	9.1
Red oaks	25.2	12.4	12.8	4.9	2.6	2.3	14.9
Other red oaks	18.9	8.3	10.6	3.8	2.1	1.7	16.2
Hickory A	25.5	16.6	8.9	3.3	2.2	1.1	11.0
Hickory B	6.1	5.3	.8	.3	.2	.1	3.0
Hard maple	2.1	1.1	1.0	.3	.3	--	2.6
Soft maple	15.0	4.2	10.8	3.8	3.5	.3	18.3
Ash	8.9	5.1	3.8	1.4	1.2	.2	6.2
Sycamore	11.2	1.1	10.1	4.2	4.0	.2	2.6
Cottonwood	11.6	.7	10.9	4.5	4.1	.4	3.1
River birch	5.8	3.1	2.7	1.0	.7	.3	3.1
Basswood	2.2	.7	1.5	.5	.2	.3	2.6
Black walnut	10.1	5.0	5.1	1.9	1.4	.5	10.2
Black cherry	.9	.7	.2	.1	.1	--	2.8
Elm	11.1	6.6	4.5	1.5	1.2	.3	19.5
Other hardwoods	10.6	6.8	3.8	1.4	1.1	.3	19.9
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	283.3	126.5	156.8	58.7	45.7	13.0	210.4
All species	284.3	126.9	157.4	59.1	45.9	13.2	210.9
HENRY COUNTY							
Softwoods:							
Eastern redcedar	0.8	0.2	0.6	0.2	--	0.2	0.7
Total softwoods	.8	.2	.6	.2	--	.2	.7
Hardwoods:							
Select white oaks	28.3	7.9	20.4	8.0	6.5	1.5	19.5
Other white oaks	26.9	17.4	9.5	3.6	2.4	1.2	12.1
Select red oaks	8.9	2.9	6.0	2.6	2.4	.2	3.9
Red oaks	30.2	12.0	18.2	7.0	4.7	2.3	16.3
Other red oaks	22.6	6.5	16.1	6.1	5.8	.3	11.7
Hickory A	20.7	8.4	12.3	4.8	4.3	.5	6.8
Hickory B	8.3	7.3	1.0	.4	.2	.2	5.7
Soft maple	11.7	1.8	9.9	3.5	2.8	.7	7.8
Ash	12.7	6.9	5.8	2.1	1.8	.3	12.8
Sycamore	6.6	.7	5.9	2.9	2.4	.5	2.4
Cottonwood	3.9	1.4	2.5	.9	.9	--	1.7
River birch	5.6	3.5	2.1	.8	.8	--	2.5
Basswood	--	--	--	--	--	--	1.3
Black walnut	11.1	3.9	7.2	2.7	2.2	.5	11.1
Black cherry	.4	.2	.2	.1	.1	--	2.2
Elm	7.3	4.2	3.1	1.0	.8	.2	17.9
Other hardwoods	15.4	7.5	7.9	2.8	1.9	.9	34.2
Noncommercial species	--	--	--	--	--	--	1.3
Total hardwoods	220.6	92.5	128.1	49.3	40.0	9.3	171.2
All species	221.4	92.7	128.7	49.5	40.0	9.5	171.9

^{1/}International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

HOLT COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Polletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees	stands	stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	--	0.1	0.2
Total softwoods	.3	.1	.2	.1	--	.1	.2
Hardwoods:							
Select white oaks	25.3	11.5	13.8	5.1	3.9	1.2	19.7
Other white oaks	2.0	1.5	.5	.2	.1	.1	1.3
Select red oaks	6.0	2.0	4.0	1.5	1.1	.4	3.2
Red oaks	7.3	3.9	3.4	1.3	.5	.8	4.4
Other red oaks	7.6	3.5	4.1	1.5	.8	.7	6.6
Hickory A	8.2	5.2	3.0	1.1	.7	.4	4.2
Hickory B	2.2	2.0	.2	.1	.1	--	1.0
Hsrđ maple	1.0	.6	.4	.2	.2	--	1.3
Soft maple	7.1	2.1	5.0	1.8	1.6	.2	8.7
Ash	4.0	2.0	2.0	.7	.5	.2	2.6
Sycamore	5.1	.5	4.6	1.9	1.6	.3	1.2
Cottonwood	5.4	.4	5.0	2.0	1.7	.3	2.2
River birch	2.8	1.5	1.3	.4	.3	.1	1.6
Basswood	1.0	.3	.7	.2	.1	.1	1.2
Blsck walnut	4.9	2.9	2.0	.8	.5	.3	6.2
Black cherry	.3	.2	.1	--	--	--	1.1
Elm	5.3	3.6	1.7	.6	.5	.1	10.9
Other hardwoods	5.5	3.9	1.6	.6	.4	.2	12.0
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	101.0	47.6	53.4	20.0	14.6	5.4	89.7
All species	101.3	47.7	53.6	20.1	14.6	5.5	89.9

JACKSON COUNTY

Softwoods:							
Eastern redcedsr	0.7	0.1	0.6	0.3	--	0.3	0.9
Total softwoods	.7	.1	.6	.3	--	.3	.9
Hardwoods:							
Select white oaks	14.0	5.3	8.7	3.4	2.5	.9	13.9
Other white oaks	13.7	9.3	4.4	1.7	1.0	.7	8.5
Select red oaks	3.6	1.3	2.3	1.0	.9	.1	2.1
Red oaks	15.3	6.5	8.8	3.4	2.2	1.2	9.2
Other red oaks	10.5	4.5	6.0	2.2	2.0	.2	7.4
Hickory A	10.3	5.4	4.9	1.9	1.6	.3	2.7
Hickory B	5.1	4.7	.4	.2	.1	.1	4.7
Soft maple	3.2	.5	2.7	1.0	.8	.2	2.2
Ash	4.3	2.6	1.7	.6	.5	.1	4.7
Sycamore	1.6	.2	1.4	.7	.6	.1	.9
Cottonwood	1.0	.4	.6	.2	.2	--	.4
River birch	1.5	.9	.6	.2	.2	--	.6
Basswood	--	--	--	--	--	--	.5
Black walnut	5.3	2.1	3.2	1.2	.8	.4	6.6
Black cherry	.2	.1	.1	--	--	--	.9
Elm	3.0	1.9	1.1	.4	.2	.2	8.9
Other hardwoods	6.4	3.4	3.0	1.0	.6	.4	17.6
Noncommercial species	--	--	--	--	--	--	.6
Total hrdwoods	99.0	49.1	49.9	19.1	14.2	4.9	92.4
All species	99.7	49.2	50.5	19.4	14.2	5.2	93.3

^{1/} Internstional 1/4-inch rule.

(Tbble 21 cont. on next psge)

(Table 21 cont.)

JASPER COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords
Softwoods:							
Eastern redcedar	0.9	0.2	0.7	0.3	--	0.3	0.8
Total softwoods	.9	.2	.7	.3	--	.3	.8
Hardwoods:							
Select white oaks	39.0	10.7	28.3	11.1	9.2	1.9	26.8
Other white oaks	38.0	23.6	14.4	5.5	3.9	1.6	15.9
Select red oaks	11.1	3.2	7.9	3.4	3.2	.2	5.7
Red oaks	41.1	16.0	25.1	9.6	6.8	2.8	22.5
Other red oaks	25.3	6.9	18.4	7.0	6.7	.3	12.9
Hickory A	25.8	10.2	15.6	6.1	5.4	.7	8.7
Hickory B	9.7	8.6	1.1	.5	.3	.2	6.9
Soft maple	9.7	1.3	8.4	3.0	2.5	.5	6.1
Ash	11.4	6.1	5.3	1.9	1.8	.1	11.9
Sycamore	5.6	.4	5.2	2.5	2.2	.3	2.7
Cottonwood	3.6	1.3	2.3	.9	.9	--	1.5
River birch	4.9	2.8	2.1	.7	.7	--	2.2
Basswood	--	--	--	--	--	--	1.2
Black walnut	14.0	5.0	9.0	3.3	2.6	.7	14.2
Black cherry	.5	.3	.2	.1	.1	--	1.8
Elm	7.0	4.1	2.9	1.0	.8	.2	17.5
Other hardwoods	15.9	7.3	8.6	3.1	2.3	.8	38.2
Noncommercial species	--	--	--	--	--	--	1.3
Total hardwoods	262.6	107.8	154.8	59.7	49.4	10.3	198.0
All species	263.5	108.0	155.5	60.0	49.4	10.6	198.8
JOHNSON COUNTY							
Softwoods:							
Eastern redcedar	1.5	0.3	1.2	0.5	--	0.5	1.3
Total softwoods	1.5	.3	1.2	.5	--	.5	1.3
Hardwoods:							
Select white oaks	40.1	12.6	27.5	10.8	8.3	2.5	30.3
Other white oaks	42.6	27.7	14.9	5.7	3.7	2.0	20.3
Select red oaks	10.7	3.4	7.3	3.1	2.9	.2	5.3
Red oaks	43.6	18.9	24.7	9.5	6.1	3.4	23.3
Other red oaks	23.8	8.3	15.5	5.9	5.5	.4	15.5
Hickory A	26.5	12.5	14.0	5.5	4.6	.9	8.2
Hickory B	11.8	10.6	1.2	.5	.3	.2	9.2
Soft maple	8.5	1.3	7.2	2.6	2.0	.6	5.9
Ash	10.8	6.1	4.7	1.6	1.4	.2	11.6
Sycamore	4.8	.5	4.3	2.1	1.8	.3	2.4
Cottonwood	2.9	1.0	1.9	.7	.7	--	1.2
River birch	4.1	2.5	1.6	.6	.6	--	1.8
Basswood	--	--	--	--	--	--	1.3
Black walnut	13.7	5.2	8.5	3.1	2.3	.8	14.2
Black cherry	.5	.3	.2	.1	.1	--	2.0
Elm	6.9	4.1	2.8	.9	.7	.2	18.6
Other hardwoods	15.4	7.7	7.7	2.8	1.9	.9	38.6
Noncommercial species	--	--	--	--	--	--	1.3
Total hardwoods	266.7	122.7	144.0	55.5	42.9	12.6	211.0
All species	268.2	123.0	145.2	56.0	42.9	13.1	212.3

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

KNOX COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber : trees	Sawtimber : trees	Total	In sawtimber : stands	Other : stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.8	0.3	0.5	0.2	0.1	0.1	0.4
Total softwoods	.8	.3	.5	.2	.1	.1	.4
Hardwoods:							
Select white oaks	68.6	29.5	39.1	14.5	11.8	2.7	46.1
Other white oaks	5.7	3.8	1.9	.8	.6	.2	3.9
Select red oaks	15.9	4.3	11.6	4.3	3.5	.8	7.1
Red oaks	19.5	9.5	10.0	3.8	2.1	1.7	11.3
Other red oaks	13.0	5.6	7.4	2.7	1.5	1.2	12.5
Hickory A	19.2	12.4	6.8	2.5	1.7	.8	8.1
Hickory B	4.2	3.6	.6	.2	.1	.1	2.2
Hard maple	1.4	.7	.7	.2	.2	--	1.8
Soft maple	9.9	2.9	7.0	2.5	2.3	.2	12.2
Ash	6.1	3.6	2.5	1.0	.8	.2	4.7
Sycamore	7.5	.7	6.8	2.8	2.7	.1	1.6
Cottonwood	7.7	.5	7.2	3.0	2.7	.3	1.8
River birch	3.9	2.1	1.8	.6	.4	.2	2.1
Basswood	1.5	.5	1.0	.3	.2	.1	1.9
Black walnut	7.1	3.6	3.5	1.3	.9	.4	7.1
Black cherry	.7	.5	.2	.1	--	.1	2.3
Elm	7.6	4.5	3.1	1.1	.9	.2	13.6
Other hardwoods	7.2	4.6	2.6	1.0	.8	.2	13.4
Noncommercial species	--	--	--	--	--	--	.5
Total hardwoods	206.7	92.9	113.8	42.7	33.2	9.5	154.2
All species	207.5	93.2	114.3	42.9	33.3	9.6	154.6

LAFAYETTE COUNTY

Softwoods:							
Eastern redcedar	0.4	0.1	0.3	0.1	--	0.1	0.4
Total softwoods	.4	.1	.3	.1	--	.1	.4
Hardwoods:							
Select white oaks	17.2	4.5	12.7	5.0	4.3	.7	10.7
Other white oaks	14.4	9.0	5.4	2.1	1.4	.7	6.7
Select red oaks	5.3	1.6	3.7	1.6	1.5	.1	2.3
Red oaks	17.2	6.7	10.5	4.1	2.9	1.2	9.5
Other red oaks	13.3	3.5	9.8	3.7	3.6	.1	6.5
Hickory A	12.3	4.7	7.6	3.0	2.7	.3	4.0
Hickory B	4.5	3.9	.6	.2	.1	.1	3.2
Soft maple	6.8	.8	6.0	2.2	1.9	.3	3.9
Ash	6.9	3.5	3.4	1.2	1.1	.1	7.0
Sycamore	3.8	.2	3.6	1.7	1.5	.2	1.5
Cottonwood	2.6	.9	1.7	.6	.6	--	1.1
River birch	3.4	2.0	1.4	.5	.5	--	1.6
Basswood	--	--	--	--	--	--	.7
Black walnut	6.2	1.9	4.3	1.6	1.3	.3	6.2
Black cherry	.2	.1	.1	--	--	--	1.1
Elm	3.9	2.0	1.9	.6	.5	.1	9.7
Other hardwoods	8.5	3.8	4.7	1.7	1.3	.4	18.8
Noncommercial species	--	--	--	--	--	--	.6
Total hardwoods	126.5	49.1	77.4	29.8	25.2	4.6	95.1
All species	126.9	49.2	77.7	29.9	25.2	4.7	95.5

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

LAWRENCE COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Softwood	Sawtimber	Total	In sawtimber	Other	
		trees	tree		stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.6	0.4	1.2	0.5	--	0.5	1.0
Total softwoods	1.6	.4	1.2	.5	--	.5	1.0
Hardwoods:							
Select white oaks	51.7	15.3	36.4	14.3	11.0	3.3	33.1
Other white oaks	62.4	39.0	23.4	9.0	6.2	2.8	26.4
Select red oaks	12.6	3.5	9.1	3.8	3.6	.2	6.3
Red oaks	58.9	26.4	32.5	12.5	7.8	4.7	30.1
Other red oaks	21.8	7.6	14.2	5.4	5.1	.3	15.6
Hickory A	27.8	13.1	14.7	5.7	5.0	.7	10.3
Hickory B	13.1	11.8	1.3	.5	.3	.2	9.4
Soft maple	3.1	.4	2.7	1.0	.7	.3	2.4
Ash	6.8	4.0	2.8	1.0	.9	.1	8.3
Sycamore	2.1	.1	2.0	1.0	.9	.1	2.3
Cottonwood	1.3	.4	.9	.4	.4	--	.4
River birch	1.7	.8	.9	.3	.3	--	.6
Basswood	--	--	--	--	--	--	1.0
Black walnut	13.8	5.0	8.8	3.2	2.4	.8	10.1
Black cherry	.8	.5	.3	.1	.1	--	1.1
Elm	5.1	2.9	2.2	.7	.6	.1	13.5
Other hardwoods	13.1	6.1	7.0	2.6	2.0	.6	27.1
Noncommercial species	--	--	--	--	--	--	1.2
Total hardwoods	296.1	136.9	159.2	61.5	47.3	14.2	199.2
All species	297.7	137.3	160.4	62.0	47.3	14.7	200.2
LEWIS COUNTY							
Softwoods:							
Eastern redcedar	1.1	0.5	0.6	0.4	0.2	0.2	0.5
Total softwoods	1.1	.5	.6	.4	.2	.2	.5
Hardwoods:							
Select white oaks	104.8	43.8	61.0	22.5	18.6	3.9	67.0
Other white oaks	8.8	5.9	2.9	1.2	1.0	.2	5.5
Select red oaks	24.2	6.4	17.8	6.6	5.3	1.3	10.0
Red oaks	28.9	14.0	14.9	5.7	3.2	2.5	16.5
Other red oaks	18.4	7.7	10.7	3.9	2.3	1.6	15.8
Hickory A	27.9	18.2	9.7	3.6	2.5	1.1	12.0
Hickory B	6.3	5.5	.8	.3	.1	.2	3.4
Hard maple	2.2	1.1	1.1	.3	.3	--	3.2
Soft maple	12.1	3.2	8.9	3.1	2.9	.2	15.2
Ash	8.4	4.8	3.6	1.4	1.2	.2	6.6
Sycamore	10.1	.8	9.3	3.9	3.7	.2	2.2
Cottonwood	9.2	.7	8.5	3.5	3.1	.4	2.9
River birch	4.9	2.5	2.4	.8	.6	.2	2.4
Basswood	2.2	.6	1.6	.5	.2	.3	2.5
Black walnut	10.3	5.0	5.3	2.0	1.4	.6	10.5
Black cherry	.8	.6	.2	.1	.1	--	2.7
Elm	10.6	6.2	4.4	1.5	1.2	.3	19.9
Other hardwoods	10.1	6.6	3.5	1.3	1.0	.3	19.4
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	300.2	133.6	166.6	62.2	48.7	13.5	218.4
All species	301.3	134.1	167.2	62.6	48.9	13.7	218.9

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

LINCOLN COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Pole/timber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.8	0.8	1.0	0.6	0.3	0.3	0.9
Total softwoods	1.8	.8	1.0	.6	.3	.3	.9
Hardwoods:							
Select white oaks	173.7	73.9	99.8	36.9	30.1	6.8	111.6
Other white oaks	14.5	9.7	4.8	1.9	1.6	.3	9.5
Select red oaks	40.1	11.0	29.1	10.9	8.7	2.2	16.8
Red oaks	48.8	24.0	24.8	9.4	5.1	4.3	28.3
Other red oaks	31.9	13.6	18.3	6.6	3.8	2.8	27.3
Hickory A	47.5	31.5	16.0	6.0	4.0	2.0	20.1
Hickory B	11.0	9.6	1.4	.6	.3	.3	5.5
Hard maple	3.4	1.9	1.5	.4	.4	--	4.4
Soft maple	23.7	6.5	17.2	6.0	5.6	.4	28.9
Ash	14.8	8.6	6.2	2.4	2.0	.4	10.8
Sycamore	18.4	1.6	16.8	7.1	6.7	.4	4.1
Cottonwood	18.7	1.2	17.5	7.2	6.6	.6	5.1
River birch	9.2	4.8	4.4	1.5	1.1	.4	4.7
Basswood	3.9	1.1	2.8	.9	.4	.5	4.4
Black walnut	17.5	8.5	9.0	3.4	2.4	1.0	17.3
Black cherry	1.5	1.2	.3	.1	.1	--	4.8
Elm	18.9	11.0	7.9	2.7	2.2	.5	32.5
Other hardwoods	17.4	11.1	6.3	2.3	1.7	.6	32.2
Noncommercial species	--	--	--	--	--	--	1.2
Total hardwoods	514.9	230.8	284.1	106.3	82.8	23.5	369.5
All species	516.7	231.6	285.1	106.9	83.1	23.8	370.4

LINN COUNTY

Softwoods:							
Eastern redcedar	0.4	0.2	0.2	0.1	0.1	--	0.2
Total softwoods	.4	.2	.2	.1	.1	--	.2
Hardwoods:							
Select white oaks	41.6	16.2	25.4	9.5	8.0	1.5	28.9
Other white oaks	2.7	1.6	1.1	.5	.4	.1	1.7
Select red oaks	9.8	2.3	7.5	2.8	2.4	.4	4.4
Red oaks	10.4	4.3	6.1	2.3	1.4	.9	5.6
Other red oaks	11.8	4.3	7.5	2.7	1.8	.9	8.4
Hickory A	12.3	6.8	5.5	2.1	1.5	.6	6.3
Hickory B	3.5	3.0	.5	.2	.1	.1	2.1
Hard maple	1.5	.9	.6	.2	.1	.1	2.6
Soft maple	17.0	5.0	12.0	4.3	3.9	.4	19.7
Ash	7.5	4.0	3.5	1.4	1.1	.3	4.6
Sycamore	11.3	1.1	10.2	4.2	3.8	.4	2.6
Cottonwood	13.7	.9	12.8	5.3	4.9	.4	4.1
River birch	5.1	2.6	2.5	.8	.7	.1	3.0
Basswood	2.1	.7	1.4	.4	.1	.3	2.3
Black walnut	8.8	4.6	4.2	1.6	1.1	.5	8.2
Black cherry	.4	.3	.1	--	--	--	1.6
Elm	9.5	5.7	3.8	1.3	1.1	.2	18.2
Other hardwoods	10.1	6.5	3.6	1.4	1.0	.4	19.2
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	179.1	70.8	108.3	41.0	33.4	7.6	143.9
All species	179.5	71.0	108.5	41.1	33.5	7.6	144.1

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

LIVINGSTON COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Pole/timber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees		stands	stands	
	Thousand cords			Million board feet ^{1/}		Thousand cords	
Softwoods:							
Eastern redcedar	0.5	0.2	0.3	0.2	0.1	0.1	0.3
Total softwoods	.5	.2	.3	.2	.1	.1	.3
Hardwoods:							
Select white oaks	41.6	17.8	23.8	8.9	7.1	1.8	32.3
Other white oaks	2.6	1.6	1.0	.4	.3	.1	1.9
Select red oaks	9.8	2.7	7.1	2.7	2.1	.6	5.0
Red oaks	11.2	5.4	5.8	2.2	1.1	1.1	6.8
Other red oaks	11.9	4.8	7.1	2.5	1.5	1.0	9.9
Hickory A	13.3	7.8	5.5	2.0	1.4	.6	6.5
Hickory B	3.5	3.0	.5	.2	.1	.1	1.8
Hard maple	1.9	.9	1.0	.3	.3	--	2.7
Soft maple	15.4	4.5	10.9	3.9	3.5	.4	18.2
Ash	7.3	3.8	3.5	1.3	1.1	.2	4.8
Sycamore	10.6	1.0	9.6	3.9	3.5	.4	2.5
Cottonwood	11.8	.8	11.0	4.5	4.2	.3	3.6
River birch	4.8	2.4	2.4	.8	.7	.1	3.0
Basswood	1.9	.6	1.3	.4	.1	.3	2.3
Black walnut	8.1	4.3	3.8	1.5	1.0	.5	8.8
Black cherry	.5	.4	.1	--	--	--	1.8
Elm	8.9	5.5	3.4	1.2	1.0	.2	17.1
Other hardwoods	9.8	6.2	3.6	1.4	1.1	.3	18.8
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	174.9	73.5	101.4	38.1	30.1	8.0	148.2
All species	175.4	73.7	101.7	38.3	30.2	8.1	148.5
MACON COUNTY							
Softwoods:							
Eastern redcedar	1.5	0.6	0.9	0.5	0.2	0.3	0.8
Total softwoods	1.5	.6	.9	.5	.2	.3	.8
Hardwoods:							
Select white oaks	135.8	60.9	74.9	27.8	22.0	5.8	92.1
Other white oaks	11.3	7.7	3.6	1.4	1.1	.3	7.3
Select red oaks	31.5	9.3	22.2	8.3	6.4	1.9	14.2
Red oaks	39.9	20.4	19.5	7.4	3.8	3.6	23.6
Other red oaks	25.4	11.8	13.6	5.0	2.5	2.5	23.7
Hickory A	37.5	25.8	11.7	4.3	2.7	1.6	16.0
Hickory B	8.6	7.5	1.1	.4	.2	.2	4.1
Hard maple	2.5	1.4	1.1	.4	.4	--	3.3
Soft maple	12.8	3.6	9.2	3.2	2.8	.4	16.9
Ash	10.7	6.5	4.2	1.6	1.2	.4	8.8
Sycamore	10.8	1.1	9.7	4.1	3.8	.3	2.6
Cottonwood	9.0	.7	8.3	3.4	2.9	.5	3.4
River birch	6.7	3.8	2.9	1.0	.7	.3	3.4
Basswood	2.9	.9	2.0	.6	.3	.3	3.2
Black walnut	13.4	7.3	6.1	2.2	1.5	.7	14.7
Black cherry	1.3	1.0	.3	.1	--	.1	4.1
Elm	14.0	8.9	5.1	1.8	1.4	.4	25.4
Other hardwoods	12.7	9.0	3.7	1.4	1.0	.4	25.0
Noncommercial species	--	--	--	--	--	--	1.0
Total hardwoods	386.8	187.6	199.2	74.4	54.7	19.7	292.8
All species	388.3	188.2	200.1	74.9	54.9	20.0	293.6

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

(Table 21 cont.)		MARION COUNTY					
Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
		trees	trees		stands	stands	
		Thousand cords		Million board feet ^{1/}		Thousand cords	
Softwoods:							
Eastern redcedar	1.0	0.4	0.6	0.3	0.2	0.1	0.5
Total softwoods	1.0	.4	.6	.3	.2	.1	.5
Hardwoods:							
Select white oaks	95.0	41.9	53.1	19.6	15.7	3.9	60.1
Other white oaks	8.4	5.9	2.5	1.0	.8	.2	5.4
Select red oaks	21.9	6.5	15.4	5.7	4.4	1.3	9.0
Red oaks	27.5	14.1	13.4	5.1	2.5	2.6	16.0
Other red oaks	16.0	6.9	9.1	3.3	1.8	1.5	14.0
Hickory A	25.9	17.8	8.1	3.0	1.9	1.1	10.9
Hickory B	5.9	5.2	.7	.3	.1	.2	2.9
Hard maple	2.3	1.4	.9	.3	.3	--	3.0
Soft maple	9.3	2.5	6.8	2.4	2.2	.2	11.5
Ash	7.0	4.1	2.9	1.1	.9	.2	5.6
Sycamore	7.8	.6	7.2	3.0	2.8	.2	1.7
Cottonwood	7.5	.5	7.0	2.9	2.6	.3	2.3
River birch	3.9	2.1	1.8	.6	.5	.1	2.0
Basswood	2.1	.5	1.6	.5	.2	.3	2.4
Black walnut	9.0	4.4	4.6	1.7	1.1	.6	9.2
Black cherry	.8	.6	.2	.1	.1	--	2.5
Elm	9.7	5.9	3.8	1.3	1.0	.3	16.6
Other hardwoods	8.4	5.4	3.0	1.1	.8	.3	15.9
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	268.4	126.3	142.1	53.0	39.7	13.3	191.7
All species	269.4	126.7	142.7	53.3	39.9	13.4	192.2
MERCER COUNTY							
Softwoods:							
Eastern redcedar	0.7	0.3	0.4	0.2	0.1	0.1	0.3
Total softwoods	.7	.3	.4	.2	.1	.1	.3
Hardwoods:							
Select white oaks	59.8	24.9	34.9	12.9	10.7	2.2	40.2
Other white oaks	4.8	3.1	1.7	.7	.6	.1	3.5
Select red oaks	14.3	3.8	10.5	3.9	3.2	.7	6.2
Red oaks	17.0	8.1	8.9	3.4	1.9	1.5	10.2
Other red oaks	11.2	4.9	6.3	2.2	1.3	.9	10.3
Hickory A	16.7	10.7	6.0	2.2	1.5	.7	7.4
Hickory B	3.7	3.2	.5	.2	.1	.1	2.1
Hard maple	1.9	.8	1.1	.4	.4	--	2.6
Soft maple	6.0	1.6	4.4	1.5	1.4	.1	7.8
Ash	4.6	2.5	2.1	.8	.7	.1	4.2
Sycamore	5.4	.4	5.0	2.1	2.0	.1	1.1
Cottonwood	4.7	.4	4.3	1.8	1.6	.2	1.6
River birch	2.7	1.4	1.3	.4	.3	.1	1.5
Basswood	1.2	.3	.9	.3	.2	.1	1.5
Black walnut	5.7	2.7	3.0	1.1	.7	.4	6.2
Black cherry	.5	.4	.1	.1	--	.1	1.7
Elm	5.7	3.4	2.3	.8	.6	.2	11.7
Other hardwoods	6.2	3.9	2.3	.9	.7	.2	11.9
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	172.1	76.5	95.6	35.7	27.9	7.8	132.1
All species	172.8	76.8	96.0	35.9	28.0	7.9	132.4

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

MONROE COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.1	0.5	0.6	0.4	0.2	0.2	0.5
Total softwoods	1.1	.5	.6	.4	.2	.2	.5
Hardwoods:							
Select white oaks	102.7	41.9	60.8	22.4	18.6	3.8	68.1
Other white oaks	8.1	5.1	3.0	1.2	1.0	.2	5.5
Select red oaks	23.5	6.0	17.5	6.5	5.4	1.1	10.1
Red oaks	27.1	12.6	14.5	5.5	3.2	2.3	15.4
Other red oaks	20.0	8.1	11.9	4.3	2.5	1.8	18.2
Hickory A	27.8	17.3	10.5	3.9	2.8	1.1	12.3
Hickory B	6.5	5.6	.9	.3	.2	.1	3.4
Hard maple	2.1	1.2	.9	.3	.3	--	2.8
Soft maple	17.2	4.8	12.4	4.4	4.0	.4	21.5
Ash	10.0	5.6	4.4	1.7	1.4	.3	7.0
Sycamore	13.2	1.2	12.0	5.0	4.7	.3	3.0
Cottonwood	12.5	.8	11.7	4.8	4.3	.5	3.9
River birch	6.3	3.2	3.1	1.1	.9	.2	3.5
Basswood	2.6	.8	1.8	.6	.3	.3	2.9
Black walnut	11.9	5.9	6.0	2.3	1.6	.7	11.9
Black cherry	.9	.6	.3	.1	--	.1	3.1
Elm	12.5	7.4	5.1	1.8	1.5	.3	22.7
Other hardwoods	12.1	7.8	4.3	1.6	1.2	.4	22.9
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	317.0	135.9	181.1	67.8	53.9	13.9	238.9
All species	318.1	136.4	181.7	68.2	54.1	14.1	239.4
NODAWAY COUNTY							
Softwoods:							
Eastern redcedar	0.4	0.2	0.2	0.2	0.1	0.1	0.2
Total softwoods	.4	.2	.2	.2	.1	.1	.2
Hardwoods:							
Select white oaks	39.5	17.1	22.4	8.3	6.7	1.6	29.3
Other white oaks	2.6	1.6	1.0	.4	.3	.1	1.9
Select red oaks	9.3	2.7	6.6	2.4	1.9	.5	4.7
Red oaks	10.8	5.3	5.5	2.0	1.1	.9	6.6
Other red oaks	10.4	4.4	6.0	2.2	1.3	.9	9.4
Hickory A	11.8	7.4	4.4	1.6	1.1	.5	5.6
Hickory B	3.0	2.6	.4	.2	.1	.1	1.4
Hard maple	1.2	.7	.5	.2	.2	--	1.6
Soft maple	10.3	3.1	7.2	2.6	2.3	.3	12.3
Ash	5.4	3.0	2.4	.9	.7	.2	3.6
Sycamore	7.1	.7	6.4	2.6	2.4	.2	1.6
Cottonwood	8.3	.5	7.8	3.2	2.9	.3	2.4
River birch	3.5	1.8	1.7	.6	.4	.2	2.1
Basswood	1.4	.4	1.0	.3	.1	.2	1.7
Black walnut	6.4	3.5	2.9	1.1	.7	.4	7.3
Black cherry	.5	.4	.1	.1	--	.1	1.7
Elm	7.0	4.5	2.5	.9	.7	.2	13.5
Other hardwoods	7.1	4.7	2.4	.9	.7	.2	14.6
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	145.6	64.4	81.2	30.5	23.6	6.9	121.7
All species	146.0	64.6	81.4	30.7	23.7	7.0	121.9

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

PETTIS COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
		trees	trees		stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.1	0.4	0.7	0.3	--	0.3	0.5
Total softwoods	1.1	.4	.7	.3	--	.3	.5
Hardwoods:							
Select white oaks	37.6	11.2	26.4	10.4	7.7	2.7	23.9
Other white oaks	45.3	29.8	15.5	5.9	3.7	2.2	18.3
Select red oaks	10.3	3.4	6.9	2.9	2.6	.3	4.7
Red oaks	43.9	19.8	24.1	9.2	5.6	3.6	21.5
Other red oaks	18.8	6.2	12.6	4.8	4.5	.3	12.3
Hickory A	23.5	11.0	12.5	4.8	4.0	.8	8.0
Hickory B	9.6	8.4	1.2	.5	.2	.3	6.1
Soft maple	6.6	.9	5.7	2.1	1.6	.5	4.3
Ash	8.5	4.8	3.7	1.3	1.2	.1	9.7
Sycamore	3.6	.3	3.3	1.6	1.4	.2	2.0
Cottonwood	2.3	.8	1.5	.6	.6	--	.9
River birch	3.2	1.8	1.4	.5	.5	--	1.4
Basswood	--	--	--	--	--	--	1.0
Black walnut	11.4	4.2	7.2	2.7	2.0	.7	9.1
Black cherry	.6	.4	.2	.1	.1	--	1.5
Elm	5.6	3.4	2.2	.8	.6	.2	13.9
Other hardwoods	12.5	6.0	6.5	2.3	1.6	.7	28.7
Noncommercial species	--	--	--	--	--	--	1.2
Total hardwoods	243.3	112.4	130.9	50.5	37.9	12.6	168.5
All species	244.4	112.8	131.6	50.8	37.9	12.9	169.0

PIKE COUNTY

Softwoods:							
Eastern redcedar	2.2	0.9	1.3	0.7	0.3	0.4	0.9
Total softwoods	2.2	.9	1.3	.7	.3	.4	.9
Hardwoods:							
Select white oaks	200.6	85.4	115.2	42.6	34.8	7.8	131.3
Other white oaks	16.2	10.7	5.5	2.2	1.8	.4	10.9
Select red oaks	46.6	12.9	33.7	12.5	10.1	2.4	19.9
Red oaks	56.4	27.7	28.7	10.9	6.0	4.9	32.9
Other red oaks	36.5	15.2	21.3	7.7	4.5	3.2	32.3
Hickory A	55.0	36.2	18.8	7.0	4.8	2.2	23.2
Hickory B	12.4	10.7	1.7	.7	.3	.4	6.3
Hard maple	4.2	2.4	1.8	.6	.6	--	5.4
Soft maple	26.8	7.3	19.5	6.9	6.4	.5	33.2
Ash	17.1	9.9	7.2	2.8	2.3	.5	12.6
Sycamore	21.1	1.8	19.3	8.1	7.7	.4	4.6
Cottonwood	20.4	1.2	19.2	7.9	7.2	.7	5.3
River birch	10.3	5.2	5.1	1.8	1.4	.4	5.3
Basswood	4.4	1.2	3.2	1.0	.5	.5	5.2
Black walnut	20.3	9.8	10.5	3.9	2.7	1.2	20.3
Black cherry	1.8	1.4	.4	.1	.1	--	5.9
Elm	21.9	12.9	9.0	3.1	2.5	.6	37.9
Other hardwoods	19.8	12.6	7.2	2.7	2.1	.6	37.0
Noncommercial species	--	--	--	--	--	--	1.4
Total hardwoods	591.8	264.5	327.3	122.5	95.8	26.7	430.9
All species	594.0	265.4	328.6	123.2	96.1	27.1	431.8

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

PLATTE COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.5	0.2	0.3	0.2	0.1	0.1	0.4
Total softwoods	.5	.2	.3	.2	.1	.1	.4
Hardwoods:							
Select white oaks	45.9	25.1	20.8	7.8	5.2	2.6	39.1
Other white oaks	3.4	2.6	.8	.3	.2	.1	2.6
Select red oaks	11.1	4.3	6.8	2.5	1.5	1.0	6.4
Red oaks	15.3	8.7	6.6	2.5	.8	1.7	10.0
Other red oaks	13.4	6.6	6.8	2.4	1.0	1.4	13.0
Hickory A	15.7	10.9	4.8	1.8	.9	.9	7.1
Hickory B	3.9	3.4	.5	.2	.1	.1	1.8
Hard maple	3.1	1.9	1.2	.4	.4	--	4.4
Soft maple	8.4	2.7	5.7	2.1	1.7	.4	10.7
Ash	5.9	3.4	2.5	.9	.6	.3	5.3
Sycamore	6.0	.8	5.2	2.1	1.9	.2	1.5
Cottonwood	6.3	.5	5.8	2.4	2.1	.3	2.2
River birch	4.2	2.6	1.6	.6	.3	.3	2.6
Basswood	2.1	.7	1.4	.5	.1	.4	2.7
Black walnut	8.0	4.3	3.7	1.3	.6	.7	9.0
Black cherry	.7	.5	.2	.1	--	.1	2.3
Elm	9.1	6.6	2.5	.9	.6	.3	16.4
Other hardwoods	8.0	5.4	2.6	1.0	.7	.3	16.0
Noncommercial species	--	--	--	--	--	--	.4
Total hardwoods	170.5	91.0	79.5	29.8	18.7	11.1	153.5
All species	171.0	91.2	79.8	30.0	18.8	11.2	153.9

PUTNAM COUNTY

Softwoods:							
Eastern redcedar	1.0	0.4	0.6	0.3	0.1	0.2	0.4
Total softwoods	1.0	.4	.6	.3	.1	.2	.4
Hardwoods:							
Select white oaks	85.3	37.1	48.2	17.9	14.4	3.5	58.7
Other white oaks	7.0	4.6	2.4	.9	.8	.1	4.9
Select red oaks	19.8	5.6	14.2	5.3	4.2	1.1	9.1
Red oaks	24.5	12.2	12.3	4.7	2.5	2.2	14.8
Other red oaks	15.6	6.7	8.9	3.2	1.8	1.4	15.6
Hickory A	23.6	15.7	7.9	2.9	2.0	.9	10.2
Hickory B	5.1	4.4	.7	.3	.1	.2	2.6
Hard maple	1.7	.9	.8	.2	.2	--	2.3
Soft maple	9.1	2.5	6.6	2.3	2.1	.2	12.0
Ash	6.7	4.0	2.7	1.1	.9	.2	5.5
Sycamore	7.7	.7	7.0	2.9	2.8	.1	1.7
Cottonwood	6.5	.4	6.1	2.5	2.2	.3	2.0
River birch	3.9	2.0	1.9	.7	.5	.2	2.2
Basswood	1.7	.5	1.2	.4	.2	.2	2.1
Black walnut	8.3	4.2	4.1	1.5	1.1	.4	9.1
Black cherry	.8	.6	.2	.1	--	.1	2.6
Elm	8.6	5.2	3.4	1.2	.9	.3	16.1
Other hardwoods	8.1	5.4	2.7	1.0	.8	.2	16.0
Noncommercial species	--	--	--	--	--	--	.6
Total hardwoods	244.0	112.7	131.3	49.1	37.5	11.6	188.1
All species	245.0	113.1	131.9	49.4	37.6	11.8	188.5

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

RALLS COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber : trees	Sawtimber : trees	Total	In sawtimber : stands	Other : stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.1	0.5	0.6	0.4	0.2	0.2	0.4
Total softwoods	1.1	.5	.6	.4	.2	.2	.4
Hardwoods:							
Select white oaks	104.2	42.5	61.7	22.8	19.0	3.8	68.2
Other white oaks	8.2	5.2	3.0	1.2	1.0	.2	5.8
Select red oaks	24.3	6.3	18.0	6.7	5.5	1.2	10.2
Red oaks	27.7	12.9	14.8	5.6	3.3	2.3	15.9
Other red oaks	18.0	7.7	10.3	3.7	2.1	1.6	17.1
Hickory A	27.5	17.4	10.1	3.8	2.7	1.1	12.0
Hickory B	6.1	5.3	.8	.3	.2	.1	3.3
Hard maple	2.3	1.3	1.0	.3	.3	--	3.1
Soft maple	11.5	3.0	8.5	2.9	2.7	.2	15.1
Ash	8.0	4.5	3.5	1.3	1.1	.2	6.3
Sycamore	9.9	.8	9.1	3.8	3.6	.2	2.1
Cottonwood	8.2	.6	7.6	3.2	2.8	.4	2.5
River birch	4.9	2.5	2.4	.9	.7	.2	2.5
Basswood	2.2	.6	1.6	.5	.2	.3	2.5
Black walnut	10.4	4.9	5.5	2.0	1.4	.6	10.6
Black cherry	.9	.7	.2	.1	.1	--	3.0
Elm	10.8	6.5	4.3	1.5	1.2	.3	19.5
Other hardwoods	9.6	6.2	3.4	1.3	1.0	.3	18.6
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	294.7	128.9	165.8	61.9	48.9	13.0	219.0
All species	295.8	129.4	166.4	62.3	49.1	13.2	219.4

RANDOLPH COUNTY

Softwoods:							
Eastern redcedar	1.2	0.5	0.7	0.4	0.2	0.2	0.6
Total softwoods	1.2	.5	.7	.4	.2	.2	.6
Hardwoods:							
Select white oaks	113.1	48.5	64.6	23.8	19.4	4.4	74.3
Other white oaks	9.8	6.6	3.2	1.3	1.0	.3	6.7
Select red oaks	25.9	7.1	18.8	7.0	5.6	1.4	11.2
Red oaks	31.5	15.5	16.0	6.1	3.3	2.8	18.5
Other red oaks	18.7	8.4	10.3	3.8	2.0	1.8	19.0
Hickory A	30.0	20.1	9.9	3.7	2.5	1.2	12.9
Hickory B	6.6	5.7	.9	.3	.1	.2	3.4
Hard maple	2.0	1.0	1.0	.3	.3	--	2.8
Soft maple	9.0	2.5	6.5	2.3	2.2	.1	12.0
Ash	7.6	4.6	3.0	1.1	.9	.2	6.7
Sycamore	8.1	.7	7.4	3.2	3.0	.2	1.7
Cottonwood	6.9	.5	6.4	2.6	2.3	.3	2.0
River birch	4.5	2.5	2.0	.7	.5	.2	2.3
Basswood	2.0	.5	1.5	.5	.3	.2	2.4
Black walnut	9.7	4.8	4.9	1.8	1.3	.5	10.0
Black cherry	1.0	.7	.3	.1	--	.1	3.2
Elm	9.9	5.8	4.1	1.4	1.1	.3	18.3
Other hardwoods	8.9	5.9	3.0	1.1	.8	.3	17.2
Noncommercial species	--	--	--	--	--	--	.7
Total hardwoods	305.2	141.4	163.8	61.1	46.6	14.5	225.3
All species	306.4	141.9	164.5	61.5	46.8	14.7	225.9

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

RAY COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Million board feet ^{1/}	Thousand cords	Thousand cords
Softwoods:							
Eastern redcedar	0.7	0.3	0.4	0.3	0.1	0.2	0.4
Total softwoods	.7	.3	.4	.3	.1	.2	.4
Hardwoods:							
Select white oaks	63.0	30.7	32.3	12.0	8.9	3.1	48.5
Other white oaks	4.7	3.4	1.3	.5	.4	.1	3.7
Select red oaks	14.4	4.8	9.6	3.6	2.5	1.1	7.9
Red oaks	18.9	10.2	8.7	3.3	1.4	1.9	12.2
Other red oaks	16.0	7.4	8.6	3.1	1.4	1.7	16.0
Hickory A	19.9	13.5	6.4	2.4	1.4	1.0	9.0
Hickory B	4.8	4.2	.6	.2	.1	.1	2.2
Hard maple	1.9	1.2	.7	.2	.2	--	2.7
Soft maple	12.2	3.7	8.5	3.0	2.6	.4	15.4
Ash	7.4	4.5	2.9	1.1	.8	.3	5.7
Sycamore	8.5	1.0	7.5	3.1	2.8	.3	2.2
Cottonwood	9.0	.7	8.3	3.4	3.1	.3	2.8
River birch	5.2	3.0	2.2	.8	.5	.3	3.2
Basswood	2.3	.7	1.6	.5	.2	.3	2.6
Black walnut	9.1	4.9	4.2	1.5	.9	.6	9.8
Black cherry	.8	.6	.2	.1	--	.1	2.7
Elm	9.9	6.6	3.3	1.2	.9	.3	18.1
Other hardwoods	9.4	6.3	3.1	1.2	.9	.3	18.5
Noncommercial species	--	--	--	--	--	--	.5
Total hardwoods	217.4	107.4	110.0	41.2	29.0	12.2	183.7
All species	218.1	107.7	110.4	41.5	29.1	12.4	184.1
SALINE COUNTY							
Softwoods:							
Eastern redcedar	0.8	0.2	0.6	0.2	--	0.2	0.6
Total softwoods	.8	.2	.6	.2	--	.2	.6
Hardwoods:							
Select white oaks	24.8	7.3	17.5	6.9	5.4	1.5	16.8
Other white oaks	27.5	17.7	9.8	3.7	2.4	1.3	12.3
Select red oaks	7.2	2.3	4.9	2.1	1.9	.2	3.2
Red oaks	27.8	11.8	16.0	6.2	3.9	2.3	14.5
Other red oaks	15.9	5.1	10.8	4.1	3.9	.2	9.6
Hickory A	16.4	7.3	9.1	3.6	3.1	.5	5.5
Hickory B	7.0	6.2	.8	.3	.2	.1	5.0
Soft maple	6.5	.9	5.6	2.0	1.6	.4	4.3
Ash	7.8	4.4	3.4	1.2	1.1	.1	8.8
Sycamore	3.7	.3	3.4	1.6	1.4	.2	1.7
Cottonwood	2.3	.8	1.5	.6	.6	--	1.0
River birch	3.2	1.9	1.3	.5	.5	--	1.4
Basswood	--	--	--	--	--	--	.8
Black walnut	8.4	3.0	5.4	2.0	1.6	.4	7.9
Black cherry	.3	.2	.1	.1	.1	--	1.5
Elm	4.9	2.8	2.1	.7	.5	.2	12.4
Other hardwoods	10.6	5.0	5.6	2.0	1.3	.7	25.0
Noncommercial species	--	--	--	--	--	--	.9
Total hardwoods	174.3	77.0	97.3	37.6	29.5	8.1	132.6
All species	175.1	77.2	97.9	37.8	29.5	8.3	133.2

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

SCHUYLER COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber	Sawtimber	Total	In sawtimber	Other	
	trees	trees	trees	stands	stands	stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	0.1	--	0.1
Total softwoods	.3	.1	.2	.1	.1	--	.1
Hardwoods:							
Select white oaks	25.6	10.9	14.7	5.4	4.4	1.0	18.8
Other white oaks	2.1	1.4	.7	.3	.2	.1	1.6
Select red oaks	5.9	1.7	4.2	1.6	1.3	.3	3.0
Red oaks	7.4	3.7	3.7	1.4	.8	.6	4.7
Other red oaks	4.4	1.7	2.7	1.0	.6	.4	5.2
Hickory A	7.3	4.8	2.5	.9	.6	.3	3.3
Hickory B	1.4	1.2	.2	.1	--	.1	.8
Hard maple	.5	.2	.3	.1	.1	--	.8
Soft maple	3.5	1.0	2.5	.9	.8	.1	4.3
Ash	2.3	1.3	1.0	.4	.3	.1	1.8
Sycamore	2.7	.3	2.4	1.0	.9	.1	.6
Cottonwood	2.7	.2	2.5	1.0	.9	.1	.7
River birch	1.1	.5	.6	.2	.2	--	.8
Basswood	.6	.2	.4	.1	.1	--	.7
Black walnut	2.7	1.3	1.4	.5	.4	.1	3.1
Black cherry	.3	.2	.1	--	--	--	.9
Elm	2.8	1.7	1.1	.4	.3	.1	5.4
Other hardwoods	2.8	1.8	1.0	.4	.3	.1	5.6
Noncommercial species	--	--	--	--	--	--	.2
Total hardwoods	76.1	34.1	42.0	15.7	12.2	3.5	62.3
All species	76.4	34.2	42.2	15.8	12.3	3.5	62.4
SCOTLAND COUNTY							
Softwoods:							
Eastern redcedar	0.4	0.2	0.2	0.2	0.1	0.1	0.2
Total softwoods	.4	.2	.2	.2	.1	.1	.2
Hardwoods:							
Select white oaks	42.2	16.5	25.7	9.5	8.0	1.5	29.4
Other white oaks	2.8	1.6	1.2	.5	.4	.1	1.9
Select red oaks	9.5	2.1	7.4	2.8	2.4	.4	4.1
Red oaks	10.1	4.3	5.8	2.2	1.5	.7	5.6
Other red oaks	8.9	3.4	5.5	2.0	1.2	.8	8.5
Hickory A	10.8	6.4	4.4	1.7	1.2	.5	4.7
Hickory B	2.5	2.1	.4	.1	.1	--	1.4
Hard maple	1.0	.5	.5	.1	.1	--	1.3
Soft maple	8.9	2.5	6.4	2.3	2.0	.3	11.0
Ash	4.7	2.6	2.1	.8	.7	.1	3.1
Sycamore	6.5	.6	5.9	2.4	2.2	.2	1.4
Cottonwood	6.4	.4	6.0	2.5	2.3	.2	1.6
River birch	3.1	1.6	1.5	.5	.4	.1	1.6
Basswood	1.1	.4	.7	.2	.1	.1	1.4
Black walnut	5.4	2.7	2.7	1.0	.8	.2	5.2
Black cherry	.4	.2	.2	.1	--	.1	1.5
Elm	5.7	3.4	2.3	.8	.7	.1	13.6
Other hardwoods	5.2	3.3	1.9	.7	.6	.1	9.5
Noncommercial species	--	--	--	--	--	--	.3
Total hardwoods	135.2	54.6	80.6	30.2	24.7	5.5	103.5
All species	135.6	54.8	80.8	30.4	24.8	5.6	103.7

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

(Table 21 cont.)							
SHELBY COUNTY							
Species	Growing stock		Sawtimber			Rough and rotten trees	
	: Total	: Poletimber : trees	: Sawtimber : trees	: Total : stands	: In sawtimber : stands		: Other : stands
	Thousand cords		Million board feet ^{1/}			Thousand cords	
Softwoods:							
Eastern redcedar	0.8	0.4	0.4	0.3	0.2	0.1	0.3
Total softwoods	.8	.4	.4	.3	.2	.1	.3
Hardwoods:							
Select white oaks	76.3	29.5	46.8	17.2	14.7	2.5	48.6
Other white oaks	6.0	3.7	2.3	.9	.8	.1	3.9
Select red oaks	17.6	4.0	13.6	5.1	4.3	.8	7.1
Red oaks	19.5	8.6	10.9	4.1	2.6	1.5	10.9
Other red oaks	14.2	5.6	8.6	3.1	1.9	1.2	12.0
Hickory A	20.0	12.2	7.8	2.9	2.1	.8	8.6
Hickory B	4.4	3.8	.6	.2	.1	.1	2.6
Hard maple	1.6	.7	.9	.3	.3	--	2.3
Soft maple	12.1	3.3	8.8	3.1	2.9	.2	15.1
Ash	7.1	4.0	3.1	1.2	1.0	.2	5.0
Sycamore	9.6	.8	8.8	3.7	3.5	.2	2.1
Cottonwood	8.4	.5	7.9	3.3	3.0	.3	2.2
River birch	4.4	2.1	2.3	.8	.6	.2	2.2
Basswood	1.6	.5	1.1	.3	.2	.1	2.0
Black walnut	7.9	3.6	4.3	1.6	1.2	.4	7.4
Black cherry	.6	.5	.1	.1	.1	--	2.1
Elm	8.3	4.6	3.7	1.3	1.1	.2	15.3
Other hardwoods	8.1	5.0	3.1	1.2	1.0	.2	14.8
Noncommercial species	--	--	--	--	--	--	.5
Total hardwoods	227.7	93.0	134.7	50.4	41.4	9.0	164.7
All species	228.5	93.4	135.1	50.7	41.6	9.1	165.0
SULLIVAN COUNTY							
Softwoods:							
Eastern redcedar	0.9	0.4	0.5	0.3	0.2	0.1	0.4
Total softwoods	.9	.4	.5	.3	.2	.1	.4
Hardwoods:							
Select white oaks	76.1	31.1	45.0	16.6	13.8	2.8	53.1
Other white oaks	6.1	3.8	2.3	.9	.7	.2	4.1
Select red oaks	18.0	4.6	13.4	5.0	4.1	.9	8.1
Red oaks	20.8	9.6	11.2	4.2	2.5	1.7	12.4
Other red oaks	14.9	6.0	8.9	3.2	2.0	1.2	14.0
Hickory A	21.1	13.2	7.9	2.9	2.1	.8	9.3
Hickory B	4.7	4.0	.7	.3	.2	.1	2.5
Hard maple	1.7	.9	.8	.3	.3	--	2.3
Soft maple	12.2	3.3	8.9	3.1	2.8	.3	15.4
Ash	7.3	4.1	3.2	1.3	1.1	.2	5.3
Sycamore	9.7	.8	8.9	3.7	3.5	.2	2.1
Cottonwood	8.5	.5	8.0	3.3	3.0	.3	2.5
River birch	4.4	2.1	2.3	.8	.6	.2	2.4
Basswood	1.8	.6	1.2	.4	.2	.2	2.1
Black walnut	8.7	4.3	4.4	1.6	1.2	.4	9.3
Black cherry	.7	.5	.2	.1	--	.1	2.5
Elm	9.1	5.4	3.7	1.3	1.1	.2	17.0
Other hardwoods	9.0	5.8	3.2	1.2	.9	.3	17.3
Noncommercial species	--	--	--	--	--	--	.6
Total hardwoods	234.8	100.6	134.2	50.2	40.1	10.1	182.3
All species	235.7	101.0	134.7	50.5	40.3	10.2	182.7

^{1/} International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

VERNON COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet ^{1/}			Thousand cords
Softwoods:							
Eastern redcedar	1.0	0.3	0.7	0.3	--	0.3	1.1
Total softwoods	1.0	.3	.7	.3	--	.3	1.1
Hardwoods:							
Select white oaks	56.3	13.8	42.5	16.8	14.7	2.1	32.7
Other white oaks	41.5	26.2	15.3	5.9	4.1	1.8	18.6
Select red oaks	17.3	5.0	12.3	5.3	5.0	.3	8.0
Red oaks	52.3	18.6	33.7	12.9	9.7	3.2	29.4
Other red oaks	43.6	10.2	33.4	12.7	12.2	.5	19.1
Hickory A	40.9	14.7	26.2	10.3	9.3	1.0	13.2
Hickory B	13.3	11.4	1.9	.8	.5	.3	9.0
Soft maple	23.5	2.8	20.7	7.4	6.4	1.0	13.6
Ash	22.3	10.7	11.6	4.1	3.8	.3	21.4
Sycamore	12.5	.8	11.7	5.6	5.0	.6	4.9
Cottonwood	8.7	3.2	5.5	2.1	2.1	--	3.7
River birch	11.6	6.8	4.8	1.7	1.7	--	5.5
Basswood	--	--	--	--	--	--	2.0
Black walnut	19.6	6.1	13.5	5.0	4.3	.7	18.4
Black cherry	.5	.2	.3	.1	.1	--	3.2
Elm	11.9	6.5	5.4	1.9	1.7	.2	28.5
Other hardwoods	27.1	12.3	14.8	5.3	4.1	1.2	55.2
Noncommercial species	--	--	--	--	--	--	2.0
Total hardwoods	402.9	149.3	253.6	97.9	84.7	13.2	288.4
All species	403.9	149.6	254.3	98.2	84.7	13.5	289.5
WORTH COUNTY							
Softwoods:							
Eastern redcedar	0.3	0.1	0.2	0.1	0.1	--	0.1
Total softwoods	.3	.1	.2	.1	.1	--	.1
Hardwoods:							
Select white oaks	24.1	10.2	13.9	5.1	4.2	.9	16.6
Other white oaks	2.1	1.4	.7	.3	.2	.1	1.5
Select red oaks	5.7	1.6	4.1	1.5	1.2	.3	2.6
Red oaks	6.9	3.5	3.4	1.3	.7	.6	4.1
Other red oaks	5.1	2.2	2.9	1.0	.6	.4	4.5
Hickory A	6.9	4.5	2.4	.9	.6	.3	3.1
Hickory B	1.6	1.4	.2	.1	.1	--	.8
Hard maple	.6	.3	.3	.1	.1	--	.7
Soft maple	3.8	1.0	2.8	.9	.8	.1	4.8
Ash	2.3	1.3	1.0	.4	.3	.1	1.7
Sycamore	2.9	.2	2.7	1.1	1.0	.1	.7
Cottonwood	2.8	.2	2.6	1.1	1.0	.1	.8
River birch	1.5	.8	.7	.3	.2	.1	.8
Basswood	.6	.2	.4	.1	--	.1	.7
Black walnut	2.6	1.3	1.3	.5	.4	.1	2.9
Black cherry	.2	.2	--	--	--	--	.7
Elm	2.9	1.7	1.2	.4	.3	.1	5.4
Other hardwoods	2.8	1.8	1.0	.4	.3	.1	5.5
Noncommercial species	--	--	--	--	--	--	.2
Total hardwoods	75.4	33.8	41.6	15.5	12.0	3.5	58.1
All species	75.7	33.9	41.8	15.6	12.1	3.5	58.2

^{1/} International 1/4-inch rule.

Table 22.--*Net volume of timber on commercial forest land,
by class of timber and softwoods and hardwoods, Prairie,
Missouri, 1972*

(Million cubic feet)

CLASS OF TIMBER	: ALL : SPECIES	: SOFTWOODS	: HARDWOODS
GROWING STOCK TREES:			
SAW LOG TREES:			
SAW LOG PORTION	344.1	1.8	342.3
UPPER STEM PORTION	168.9	.5	168.4
TOTAL SAWTIMBER	513.0	2.3	510.7
POLETIMBER TREES	409.2	1.2	408.0
TOTAL GROWING STOCK	922.2	3.5	918.7
CULL TREES:			
ROUGH CULL TREES:			
SAWTIMBER	167.2	1.2	166.0
POLETIMBER	320.8	.9	319.9
TOTAL ROUGH CULL	488.0	2.1	485.9
SHORT-LOG CULL TREES			
SAWTIMBER	127.9	--	127.9
POLETIMBER	.1	--	.1
TOTAL SHORT-LOG	128.0	--	128.0
ROTTEN CULL TREES:			
SAWTIMBER	65.3	--	65.3
POLETIMBER	20.3	--	20.3
TOTAL ROTTEN CULL	85.6	--	85.6
TOTAL CULL	701.6	2.1	699.5
SALVABLE DEAD TREES:			
SAWTIMBER	12.6	--	12.6
POLETIMBER	10.9	--	10.9
TOTAL SALVABLE DEAD	23.5	--	23.5
ALL CLASSES	1,647.3	5.6	1,641.7

Table 23.--Net volume of growing stock, sawtimber, and rough and rotten trees on commercial forest land, by individual species, Prairie, Missouri, 1972

Species	: Growing : stock	: Sawtimber : board : feet ¹	: Rough and : rotten trees : cubic feet
	Million cubic feet	Million board feet ¹	Million cubic feet
Softwoods:			
Eastern redcedar	3.5	14.6	2.1
Total softwoods	3.5	14.6	2.1
Hardwoods:			
Select white oak group			
White oak	188.8	525.9	96.8
Bur oak	16.1	49.8	22.0
Chinkapin oak	11.2	36.5	22.4
Overcup oak	.5	1.1	--
Swamp chestnut oak	.5	1.3	1.8
Swamp white oak	25.8	71.0	23.7
Other white oak group			
Post oak	59.9	102.8	30.4
Select red oak group			
Northern red oak	58.0	201.2	26.3
Shumard oak	.5	1.6	.4
Red oak group			
Black oak	99.0	256.6	55.8
Scarlet oak	2.6	8.3	1.4
Other red oak group			
Blackjack oak	1.7	.8	7.0
Pin oak	42.9	136.0	18.6
Shingle oak	22.2	55.5	26.8
Hickory A group			
Mockernut hickory	6.5	15.2	3.2
Pecan	5.9	15.1	2.2
Shagbark hickory	57.4	100.2	25.2
Shellbark hickory	14.5	40.1	3.4
Hickory B group			
Bitternut hickory	16.4	11.3	8.9
Pignut hickory	8.1	4.1	5.8
Water hickory	--	--	.3
Hard maple group			
Sugar maple	5.3	10.0	7.2
Soft maple group			
Silver maple	44.2	149.0	48.8

Table 23 continued in next column)

(Table 23 cont.)

Species	: Growing : stock	: Sawtimber : board : feet ¹	: Rough and : rotten trees : cubic feet
	Million cubic feet	Million board feet ¹	Million cubic feet
Hardwoods (cont.):			
Ash group			
Green ash	15.1	34.4	7.4
White ash	16.9	32.3	19.8
Sycamore group			
American sycamore	31.4	154.6	8.5
Cottonwood group			
Eastern cottonwood	29.5	137.5	9.0
Birch group			
River birch	17.7	36.2	9.3
Basswood group			
American basswood	5.4	14.9	7.6
Black walnut	37.8	98.0	37.7
Black cherry	2.6	3.6	8.5
Elm group			
American elm	22.5	40.9	52.8
Rock elm	1.2	--	2.9
Slippery elm	9.5	17.2	9.9
Other hardwoods			
Black locust	4.5	.9	7.0
Black willow	9.7	18.1	8.5
Boxelder	.8	2.8	6.7
Butternut	--	--	.5
Common persimmon	.3	--	3.4
Hackberry	15.9	34.9	14.5
Honeylocust	6.7	16.8	24.3
Kentucky coffeetree	3.0	6.9	2.1
Ohio buckeye	--	--	1.0
Osage orange	--	--	11.9
Red mulberry	.2	--	4.4
Sassafras	--	--	.5
Noncommercial	--	--	2.9
Total hardwoods	918.7	2,443.4	699.5
All species	922.2	2,458.0	701.6

¹International 1/4-inch rule.

Table 24.--*Net volume of growing stock and sawtimber on commercial forest land, by ownership class and species group, Prairie, Missouri, 1972*

GROWING STOCK

OWNERSHIP CLASS	: ALL : SPECIES	: SOFTWOODS	: SOFT : HARDWOODS	: HARD : HARDWOODS
THOUSAND CORDS				
FEDERAL	77.3	--	77.1	0.2
STATE, COUNTY AND MUNICIPAL	53.9	--	3.2	50.7
FOREST INDUSTRY	2.6	--	.5	2.1
FARMER AND MISCELLANEOUS				
PRIVATE	11,539.8	43.8	2,144.8	9,351.2
ALL OWNERSHIPS	11,673.6	43.8	2,225.6	9,404.2
SAWTIMBER				
MILLION BOARD FEET ^{1/}				
FEDERAL	27.3	--	27.2	.1
STATE, COUNTY AND MUNICIPAL	7.7	--	.8	6.9
FOREST INDUSTRY	.8	--	.3	.5
FARMER AND MISCELLANEOUS				
PRIVATE	2,422.2	14.6	552.1	1,855.5
ALL OWNERSHIPS	2,458.0	14.6	580.4	1,863.0

^{1/} INTERNATIONAL 1/4-INCH RULE.

Table 25.--Net volume of growing stock on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Thousand cords)

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)															
	ALL CLASSES	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9	29.0- 30.9	31.0- 32.9	33.0- 34.9
SOFTWOODS:																
EASTERN REDCEDAR	43.8	8.3	7.8	15.6	4.0	3.1	5.0	--	--	--	--	--	--	--	--	--
TOTAL SOFTWOODS	43.8	8.3	7.8	15.6	4.0	3.1	5.0	--	--	--	--	--	--	--	--	--
HARDWOODS:																
SELECT WHITE OAKS	3074.5	388.1	424.8	433.3	420.4	522.5	234.9	230.9	131.3	90.1	138.6	57.4	2.2			
OTHER WHITE OAKS	758.2	200.9	147.6	144.0	105.6	86.2	45.7	22.4	5.8	--	--	--	--			
SELECT RED OAKS	739.6	35.5	80.9	92.9	86.6	82.8	86.5	66.4	32.5	18.3	103.2	54.0	--			
RED OAKS	1286.2	157.3	204.8	230.1	152.8	146.8	150.6	90.1	72.0	35.3	37.3	9.1	--			
OTHER RED OAKS	846.6	98.0	122.6	104.3	58.7	96.9	95.3	98.9	62.5	26.8	42.8	39.8	--			
HICKORY A	1066.4	323.2	154.3	139.4	119.9	108.3	67.7	54.4	36.9	11.2	47.4	3.7	--			
HICKORY B	310.2	129.6	86.3	55.7	20.9	13.3	4.4	--	--	--	--	--	--			
HARD MAPLE	67.3	13.8	13.7	8.5	4.8	18.9	--	4.2	--	--	--	3.4	--			
SOFT MAPLE	560.3	33.4	26.2	80.8	73.5	95.7	79.6	21.9	33.7	47.9	47.5	20.1	--			
ASH	404.8	87.9	70.4	68.5	68.5	47.4	28.7	13.8	3.8	8.3	4.2	3.3	--			
SYCAMORE	398.0	9.0	10.7	16.6	35.2	42.9	53.6	61.5	33.7	28.3	83.3	15.2	8.0			
COTTONWOOD	372.5	3.3	18.0	15.4	22.1	28.7	54.7	44.4	34.1	39.0	57.9	54.9	--			
RIVER BIRCH	225.3	43.1	44.6	33.3	23.4	24.6	13.9	13.0	7.9	--	11.0	--	10.5			
BASSWOOD	68.2	--	9.6	11.0	18.9	16.7	5.0	7.0	--	--	--	--	--			
BLACK WALNUT	479.6	42.2	83.7	89.6	75.4	78.1	62.7	36.7	3.7	7.5	--	--	--			
BLACK CHERRY	31.9	3.2	15.0	4.6	3.3	5.8	--	--	--	--	--	--	--			
ELM	420.0	94.3	79.6	79.0	47.2	38.2	18.4	19.7	3.3	3.8	36.5	--	--			
OTHER HARDWOODS	520.2	96.3	116.8	88.6	63.8	35.7	48.1	14.5	23.4	10.0	23.0	--	--			
TOTAL HARDWOODS	11629.8	1759.1	1709.6	1695.6	1401.0	1489.5	1049.8	799.8	484.6	325.5	632.7	260.9	20.7			
ALL SPECIES	11673.6	1767.4	1717.4	1711.2	1405.0	1492.6	1054.8	799.8	484.6	326.5	632.7	260.9	20.7			

Table 26.--Net volume of sawtimber on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Million board feet)¹

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)												
	ALL	9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	23.0-	25.0-	27.0-	29.0-	31.0+
	CLASSES	10.9	12.9	14.9	16.9	18.9	20.9	22.9	24.9	26.9	28.9	30.9	32.9
SOFTWOODS:													
EASTERN REDCEDAR	14.6	7.5	2.7	2.3	2.1	--	--	--	--	--	--	--	--
TOTAL SOFTWOODS	14.6	7.5	2.7	2.3	2.1	--	--	--	--	--	--	--	--
HARDWOODS:													
SELECT WHITE OAKS	685.6	--	158.2	193.7	87.6	86.4	48.2	34.9	52.6	23.1	--	--	.9
OTHER WHITE OAKS	102.8	--	43.6	32.6	16.5	8.0	2.1	--	--	--	--	--	--
SELECT RED OAKS	202.8	--	27.9	28.0	31.6	25.2	12.5	7.1	44.6	25.9	--	--	--
RED OAKS	264.9	--	54.3	54.8	59.7	36.2	28.8	14.0	13.9	3.2	--	--	--
OTHER RED OAKS	192.3	--	20.7	36.8	36.8	38.9	24.0	9.4	14.3	11.4	--	--	--
HICKORY A	170.6	--	45.6	37.7	24.4	20.0	14.3	4.6	21.8	2.2	--	--	--
HICKORY B	15.4	--	8.4	5.4	1.6	--	--	--	--	--	--	--	--
HARD MAPLE	10.0	--	1.0	7.0	--	1.0	--	--	--	1.0	--	--	--
SOFT MAPLE	149.0	--	30.7	37.4	29.2	7.1	10.5	14.6	14.2	5.3	--	--	--
ASH	66.7	--	22.3	17.4	12.5	6.0	1.7	3.8	1.7	1.3	--	--	--
SYCAMORE	154.6	--	15.7	16.4	20.3	26.0	15.0	12.9	36.9	8.6	--	--	2.8
COTTONWOOD	137.5	--	7.4	11.1	21.2	17.3	14.5	16.4	25.5	24.1	--	--	--
RIVER BIRCH	36.2	--	8.5	8.1	5.2	4.7	4.2	--	3.1	--	--	--	2.4
BASSWOOD	14.9	--	5.3	5.4	1.8	2.4	--	--	--	--	--	--	--
BLACK WALNUT	98.0	--	26.1	28.9	24.4	14.2	1.7	2.7	--	--	--	--	--
BLACK CHERRY	3.6	--	1.3	2.3	--	--	--	--	--	--	--	--	--
ELM	58.1	--	15.3	12.5	6.2	7.7	1.2	1.4	13.8	--	--	--	--
OTHER HARDWOODS	80.4	--	24.2	14.2	18.9	4.9	8.7	3.2	6.3	--	--	--	--
TOTAL HARDWOODS	2,443.4	--	516.5	549.7	397.9	306.0	187.4	125.0	248.7	106.1	--	--	6.1
ALL SPECIES	2,458.0	7.5	519.2	552.0	400.0	306.0	187.4	125.0	248.7	106.1	--	--	6.1

¹ INTERNATIONAL 1/4-INCH RULE.

Table 27.--Net volume of growing stock on commercial forest land, by species and forest type, Prairie, Missouri, 1972

(Million cubic feet)

SPECIES	ALL : FOREST : TYPES	POST- BLACKJACK : OAK	BLACK- SCARLET : OAK	WHITE OAK	OAK-GUM- CYPRESS	ELM-ASH- COTTONWOOD	MAPLE- BEECH	NON- STOCKED
SOFTWOODS:								
EASTERN REDCEDAR	3.5	--	2.6	.9	--	--	--	--
TOTAL SOFTWOODS	3.5	--	2.6	.9	--	--	--	--
HARDWOODS:								
SELECT WHITE OAKS	242.9	4.4	45.5	162.8	13.9	5.1	7.6	3.6
OTHER WHITE OAKS	59.9	41.4	14.1	4.4	--	--	--	--
SELECT RED OAKS	58.5	.7	28.3	21.1	1.8	3.3	2.8	.5
RED OAKS	101.6	13.2	63.9	20.7	--	2.6	.5	.7
OTHER RED OAKS	66.8	.8	16.7	3.5	29.2	12.1	2.3	2.2
HICKORY A	84.3	4.7	36.2	20.8	8.7	9.7	1.6	2.6
HICKORY B	24.5	3.0	8.6	6.2	2.1	2.7	1.9	--
HARD MAPLE	5.3	--	--	.5	--	--	4.5	.3
SOFT MAPLE	44.2	--	--	--	1.2	42.8	--	.2
ASH	32.0	.5	2.5	6.5	1.6	18.3	1.8	.8
SYCAMORE	31.4	--	2.1	1.3	.3	26.0	.9	--
COTTONWOOD	29.5	--	--	2.9	.4	24.3	.8	1.1
RIVER BIRCH	17.7	--	.2	.7	4.0	12.8	--	--
BASSWOOD	5.4	--	.9	.9	.5	2.5	.6	--
BLACK WALNUT	37.8	.2	8.4	10.3	1.1	11.0	3.1	3.7
BLACK CHERRY	2.6	--	1.8	.2	--	.3	--	.3
ELM	33.2	.4	5.3	5.7	2.2	13.7	4.3	1.6
OTHER HARDWOODS	41.1	.6	6.2	5.4	4.9	17.3	3.7	3.0
TOTAL HARDWOODS	918.7	69.9	240.7	273.9	71.9	204.5	36.4	21.4
ALL SPECIES	922.2	69.9	243.3	274.8	71.9	204.5	36.4	21.4

1/ INCLUDES ONLY BOTTOMLAND OAKS--NO GUM OR CYPRESS.

Table 28.--Net volume of sawtimber on commercial forest land, by species and forest type, Prairie, Missouri, 1972

(Million board feet)¹

SPECIES	ALL : FOREST : TYPES :	POST- : BLACKJACK : OAK :	BLACK- : SCARLET : OAK :	WHITE : OAK :	OAK-GUM- : CYPRESS2/ :	ELM-ASH- : COTTONWOOD :	MAPLE- : BEECH :	NON- : STOCKED :
SOFTWOODS:								
EASTERN REDCEDAR	14.6	--	11.9	2.7	--	--	--	--
TOTAL SOFTWOODS	14.6	--	11.9	2.7	--	--	--	--
HARDWOODS:								
SELECT WHITE OAKS	685.6	12.8	111.6	471.3	46.3	16.1	22.1	5.4
OTHER WHITE OAKS	102.8	59.1	36.1	7.6	--	--	--	--
SELECT RED OAKS	202.8	1.3	93.8	76.0	9.8	12.0	7.5	2.4
RED OAKS	264.9	29.4	173.3	50.7	--	8.0	1.5	2.0
OTHER RED OAKS	192.3	--	37.2	13.0	90.2	42.5	7.0	2.4
HICKORY A	170.6	7.5	62.8	39.7	19.9	34.4	3.3	3.0
HICKORY B	15.4	1.4	5.3	2.8	1.7	3.0	1.2	--
HARD MAPLE	10.0	--	--	1.3	--	--	7.9	.8
SOFT MAPLE	149.0	--	--	--	4.2	143.6	--	1.2
ASH	66.7	--	3.8	9.8	1.5	42.1	8.2	1.3
SYCAMORE	154.6	--	12.7	7.2	2.2	123.8	4.5	4.2
COTTONWOOD	137.5	--	--	12.9	1.9	114.9	3.8	4.0
RIVER BIRCH	36.2	--	1.0	--	6.9	28.3	--	--
BASSWOOD	14.9	--	2.1	3.2	2.2	5.6	1.8	--
BLACK WALNUT	98.0	.7	24.8	25.3	3.2	30.6	6.0	7.4
BLACK CHERRY	3.6	--	1.2	1.2	--	--	--	1.2
ELM	58.1	--	7.1	13.2	1.4	29.7	3.8	2.9
OTHER HARDWOODS	80.4	1.9	8.9	8.7	12.9	37.4	5.2	5.4
TOTAL HARDWOODS	2,443.4	114.1	581.7	743.9	204.3	672.0	83.8	43.6
ALL SPECIES	2,458.0	114.1	593.6	746.6	204.3	672.0	83.8	43.6

1/ INTERNATIONAL 1/4-INCH RULE.

2/ INCLUDES ONLY BOTTOMLAND OAKS--NO GUM OR CYPRESS.

Table 29.--Net volume of timber in cull trees on commercial forest land, by species and cull tree class, Prairie, Missouri, 1972

(Million cubic feet)

SPECIES	: ALL : CULL : TREES	: ROUGH : TREES	: SHORT-LOG : TREES ^{1/}	: ROTTEN : TREES
SOFTWOODS:				
EASTERN REDCEDAR	2.1	2.1	--	--
TOTAL SOFTWOODS	2.1	2.1	--	--
HARDWOODS:				
SELECT WHITE OAKS	166.7	109.5	47.3	9.9
OTHER WHITE OAKS	30.4	22.9	6.0	1.5
SELECT RED OAKS	26.7	13.2	6.4	7.1
RED OAKS	57.2	35.5	13.0	8.7
OTHER RED OAKS	52.4	38.3	9.4	4.7
HICKORY A	34.0	26.3	6.1	1.6
HICKORY B	15.0	13.1	1.4	.5
HARD MAPLE	7.2	5.0	1.2	1.0
SOFT MAPLE	48.8	31.5	9.0	8.3
ASH	27.2	23.7	1.0	2.5
SYCAMORE	8.5	2.7	2.1	3.7
COTTONWOOD	9.0	2.9	1.2	4.9
RIVER BIRCH	9.3	5.1	2.0	2.2
BASSWOOD	7.6	4.9	.4	2.3
BLACK WALNUT	37.7	26.5	7.6	3.6
BLACK CHERRY	8.5	7.4	.5	.6
ELM	65.6	51.7	6.2	7.7
OTHER HARDWOODS	84.8	62.8	7.2	14.8
NONCOMMERCIAL SPECIES	2.9	2.9	--	--
TOTAL HARDWOODS	699.5	485.9	128.0	85.6
ALL SPECIES	701.6	488.0	128.0	85.6

^{1/} VOLUMES ARE FOR TREES 9.0 INCHES D.B.H. AND LARGER FOR SOFTWOODS AND 11.0 INCHES D.B.H. AND LARGER FOR HARDWOODS. VOLUMES FOR ROUGH AND ROTTEN TREES ARE FOR TREES 5.0 INCHES D.B.H. AND LARGER.

Table 30.--Net volume of short-log trees on commercial forest land, by species and diameter class, Prairie, Missouri, 1972

(Million board feet)¹

SPECIES	ALL CLASSES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)										
		11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+		
HARDWOODS:												
SELECT WHITE OAKS	169.3	37.1	33.3	27.7	19.5	14.4	15.1	15.6	6.6	--		
OTHER WHITE OAKS	25.4	8.2	10.8	2.6	2.4	.8	.6	--	--	--		
SELECT RED OAKS	18.4	2.0	6.8	3.2	2.9	.9	--	1.8	.5	.3		
RED OAKS	38.9	20.9	4.4	3.6	1.8	3.9	--	3.6	.7	--		
OTHER RED OAKS	28.7	9.3	5.8	2.8	5.1	.8	1.6	3.0	.3	--		
HICKORY A	21.3	5.1	5.2	1.7	4.3	--	1.2	3.8	--	--		
HICKORY B	4.2	1.7	1.4	1.1	--	--	--	--	--	--		
HARD MAPLE	3.2	--	1.3	1.0	--	.9	--	--	--	--		
SOFT MAPLE	20.5	2.4	3.4	4.7	2.5	1.7	1.8	3.3	--	.7		
ASH	3.2	.9	.9	--	1.4	--	--	--	--	--		
SYCAMORE	3.1	--	.6	--	--	--	--	1.4	1.1	--		
COTTONWOOD	2.7	--	1.0	--	--	--	--	1.1	.6	--		
RIVER BIRCH	6.4	--	4.7	--	--	--	1.7	--	--	--		
BASSWOOD	1.4	--	--	.8	--	.6	--	--	--	--		
BLACK WALNUT	26.0	7.7	6.6	4.7	3.9	1.1	--	2.0	--	--		
BLACK CHERRY	2.0	--	--	2.0	--	--	--	--	--	--		
ELM	17.1	7.6	5.2	.8	.8	1.4	--	1.3	--	--		
OTHER HARDWOODS	19.1	4.8	4.2	2.6	2.0	1.9	.7	1.6	1.3	--		
TOTAL HARDWOODS	410.9	107.7	95.6	59.3	46.6	28.4	22.7	38.5	11.1	1.0		

¹/ INTERNATIONAL 1/4-INCH RULE.

Table 31.--Net volume of sawtimber on commercial forest land, by species and log grade class, Prairie, Missouri, 1972

(Million board feet)¹

SPECIES	: ALL : : GRADES	: LOG : : GRADE 1	: LOG : : GRADE 2	: LOG : : GRADE 3	: TIE AND : TIMBER
SOFTWOODS:					
EASTERN REDCEDAR	14.6	--	--	14.4	0.2
TOTAL SOFTWOODS	14.6	--	--	14.4	.2
HARDWOODS:					
SELECT WHITE OAKS	685.6	70.2	177.2	313.8	124.4
OTHER WHITE OAKS	102.8	2.7	15.3	56.5	28.3
SELECT RED OAKS	202.8	39.5	60.4	78.5	24.4
RED OAKS	264.9	17.2	63.3	120.6	63.8
OTHER RED OAKS	192.3	7.2	10.5	44.8	129.8
HICKORY A	170.6	12.1	36.3	77.6	44.6
HICKORY B	15.4	--	3.9	2.7	8.8
HARD MAPLE	10.0	--	.2	4.1	5.7
SOFT MAPLE	149.0	7.3	38.8	86.4	16.5
ASH	66.7	1.3	36.8	28.6	--
SYCAMORE	154.6	54.3	41.2	53.5	5.6
COTTONWOOD	137.5	15.5	24.6	77.6	19.8
RIVER BIRCH	36.2	6.2	10.5	16.7	2.8
BASSWOOD	14.9	--	4.9	8.9	1.1
BLACK WALNUT	98.0	10.9	24.7	62.4	--
BLACK CHERRY	3.6	--	.6	2.4	.6
ELM	58.1	5.0	16.4	25.8	10.9
OTHER HARDWOODS	80.4	10.5	27.8	28.6	13.5
TOTAL HARDWOODS	2,443.4	259.9	593.4	1,089.5	500.6
ALL SPECIES	2,458.0	259.9	593.4	1,103.9	500.8

¹/ INTERNATIONAL 1/4-INCH RULE.

Table 32.--Walnut volume on nonforest land, by diameter class and class of timber, Prairie, Missouri, 1972

DIAMETER CLASS (INCHES AT BREAST HEIGHT)	: GROWING : : STOCK : : TREES	: SAWTIMBER : : TREES	: ROUGH : : TREES	: SHORT-LOG : : TREES	: ROTTEN : TREES
	THOUSAND CUBIC FEET	THOUSAND BOARD FEET ¹ /	THOUSAND CUBIC FEET	THOUSAND BOARD FEET ¹ /	THOUSAND CUBIC FEET
5.0-6.9	591.3	--	1,726.2	--	--
7.0-8.9	1,566.7	--	2,656.4	--	--
9.0-10.9	1,367.8	--	1,372.6	--	--
11.0-12.9	1,117.4	5,663.3	2,730.9	1,793.1	158.7
13.0-14.9	3,152.5	15,253.2	1,575.9	3,856.5	171.9
15.0-16.9	972.6	4,544.2	1,849.8	3,051.3	352.1
17.0-18.9	316.1	1,478.4	276.7	4,478.6	--
19.0-20.9	295.4	1,372.0	305.2	--	224.7
21.0-22.9	284.7	1,316.8	618.6	--	--
23.0-28.9	421.1	1,942.7	326.8	--	321.4
ALL DIAMETERS	10,085.6	31,570.6	13,439.1	13,179.5	1,228.8

¹/ INTERNATIONAL 1/4-INCH RULE.

Table 33.--Net annual growth of growing stock and sawtimber on commercial forest land, by species and county, Prairie, Missouri, 1971

SPECIES	ALL COUNTIES			ADAIR			ANDREW			ATCHISON			AUDRAIN		
	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-	GROWING : SAW-
	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :	STOCK : TIMBER :
	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND
	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/
SOFTWOODS:															
EASTERN REDCEDAR	1,390	361	34	8	9	2	8	2	14	3					
TOTAL SOFTWOODS	1,390	361	34	8	9	2	8	2	14	3					
HARDWOODS:															
SELECT WHITE OAKS	59,501	12,914	1,957	363	438	83	471	97	896	184					
OTHER WHITE OAKS	19,058	1,256	215	11	48	3	48	3	75	5					
SELECT RED OAKS	23,973	6,351	787	178	196	47	194	51	342	94					
RED OAKS	37,983	7,840	1,084	196	242	43	221	44	372	68					
OTHER RED OAKS	46,325	7,834	1,186	149	388	47	254	35	731	85					
HICKORY A	26,050	2,682	779	46	188	11	185	13	341	20					
HICKORY B	12,186	434	281	10	70	3	71	4	163	7					
HARD MAPLE	1,094	200	31	5	36	7	5	1	15	3					
SOFT MAPLE	33,165	6,627	402	75	199	36	456	82	1,048	187					
ASH	25,599	3,462	468	43	149	21	204	28	443	62					
SYCAMORE	15,736	5,841	256	93	117	42	220	79	473	169					
COTTONWOOD	15,031	5,644	215	80	112	44	246	96	580	227					
RIVER BIRCH	13,154	1,497	331	27	88	10	148	17	343	39					
BASSWOOD	1,633	336	51	11	13	3	19	4	47	9					
BLACK WALNUT	16,085	2,659	327	37	108	15	119	18	269	39					
BLACK CHERRY	1,346	77	50	2	14	1	13	1	25	1					
ELM	2,976	-2,517	26	-87	8	-24	29	-28	39	-67					
OTHER HARDWOODS	23,267	2,821	391	33	161	19	203	23	485	53					
TOTAL HARDWOODS	374,162	65,958	8,837	1,272	2,575	411	3,106	568	6,687	1,185					
ALL SPECIES	375,552	66,319	8,871	1,280	2,584	413	3,114	570	6,701	1,188					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	BARTON			BATES			BUCHANAN			CALDWELL			CARROLL		
	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS
SOFTWOODS:															
EASTERN REDCEDAR	15	5	29	9	8	2	9	2	15	4					
TOTAL SOFTWOODS	15	5	29	9	8	2	9	2	15	4					
HARDWOODS:															
SELECT WHITE OAKS	419	115	807	232	494	96	506	106	882	188					
OTHER WHITE OAKS	362	23	760	49	33	3	33	3	79	6					
SELECT RED OAKS	180	49	366	101	221	59	190	58	362	98					
RED OAKS	452	110	944	221	221	42	199	38	403	77					
OTHER RED OAKS	685	195	1,494	416	522	52	494	49	596	85					
HICKORY A	331	69	673	138	197	13	193	12	346	21					
HICKORY B	199	6	406	15	105	4	101	4	142	7					
HARD MAPLE	--	--	--	--	37	5	17	4	17	4					
SOFT MAPLE	508	128	1,173	296	523	95	595	108	943	169					
ASH	621	92	1,350	203	253	38	248	35	410	59					
SYCAMORE	133	56	299	126	258	92	291	104	437	156					
COTTONWOOD	91	24	208	54	258	99	303	118	531	208					
RIVER BIRCH	145	19	333	44	230	24	209	26	274	34					
BASSWOOD	--	--	--	--	36	7	26	5	40	8					
BLACK WALNUT	263	54	505	105	197	30	155	25	231	36					
BLACK CHERRY	3	--	7	1	15	1	15	1	26	1					
ELM	87	7	191	17	40	--	22	--	54	--					
OTHER HARDWOODS	386	56	801	120	316	31	303	34	396	48					
TOTAL HARDWOODS	4,865	1,003	10,317	2,138	3,956	641	3,900	691	6,169	1,151					
ALL SPECIES	4,880	1,008	10,346	2,147	3,964	643	3,909	693	6,184	1,155					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	CASS			CHARITON			CLARK			CLAY			CLINTON		
	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT.17	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT.17	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT.17	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT.17	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT.17
SOFTWOODS:															
EASTERN RED CEDAR	26	8		21	5		39		9	11		3	8		2
TOTAL SOFTWOODS	26	8		21	5		39		9	11		3	8		2
HARDWOODS:															
SELECT WHITE OAKS	700	178		1,305	282		2,036		440	628		117	481		97
OTHER WHITE OAKS	902	61		88	8		185		14	52		3	32		2
SELECT RED OAKS	263	78		496	145		837		226	253		69	182		55
RED OAKS	877	203		493	98		963		201	290		53	198		31
OTHER RED OAKS	729	193		1,033	128		1,198		166	659		62	636		64
HICKORY A	430	83		470	30		736		56	249		14	199		7
HICKORY B	244	6		235	10		271		11	136		5	122		4
HARD MAPLE	--	--		26	4		40		7	22		3	11		2
SOFT MAPLE	214	54		1,622	293		821		158	614		111	844		147
ASH	407	56		659	97		562		73	292		38	312		47
SYCAMORE	67	29		759	272		533		197	297		106	342		121
COTTONWOOD	40	11		886	347		395		152	309		119	507		200
RIVER BIRCH	66	9		496	63		404		47	264		29	241		30
BASSWOOD	--	--		73	14		60		12	38		7	33		6
BLACK WALNUT	337	68		401	64		390		58	207		30	178		28
BLACK CHERRY	7	1		33	2		49		2	20		1	17		1
ELM	58	-5		77	-98		80		-90	23		-60	21		-45
OTHER HARDWOODS	396	58		725	83		543		60	363		36	349		40
TOTAL HARDWOODS	5,737	1,083		9,877	1,842		10,103		1,790	4,716		743	4,705		837
ALL SPECIES	5,763	1,091		9,898	1,847		10,142		1,799	4,727		746	4,713		839

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	COOPER			DADE			DAVIESS			DEKALB			GENTRY		
	GROWING : STOCK	SAW- : THOUSAND	BD.FT.17	GROWING : STOCK	SAW- : THOUSAND	BD.FT.17	GROWING : STOCK	SAW- : THOUSAND	BD.FT.17	GROWING : STOCK	SAW- : THOUSAND	BD.FT.17	GROWING : STOCK	SAW- : THOUSAND	BD.FT.17
SOFTWOODS:															
EASTERN REDCEDAR	46	13	48	16	25	5	9	2	15	3					
TOTAL SOFTWOODS	46	13	48	16	25	5	9	2	15	3					
HARDWOODS:															
SELECT WHITE OAKS	1,031	272	731	182	1,280	259	430	92	783	151					
OTHER WHITE OAKS	1,554	100	1,084	67	128	8	32	3	78	5					
SELECT RED OAKS	395	111	276	73	542	133	170	48	337	85					
RED OAKS	1,464	307	1,012	210	674	133	181	36	437	81					
OTHER RED OAKS	946	229	729	160	746	98	352	44	613	69					
HICKORY A	657	108	488	74	483	31	157	10	330	21					
HICKORY B	392	12	342	9	172	7	68	3	132	5					
HARD MAPLE	--	--	--	--	30	5	20	4	41	9					
ASH	340	88	247	61	354	67	289	52	344	63					
SYCAMORE	511	79	430	56	316	38	147	20	248	26					
COTTONWOOD	96	42	67	28	237	88	156	56	199	71					
RIVER BIRCH	62	17	38	10	199	76	161	63	173	65					
BASSWOOD	96	14	65	9	183	21	135	13	206	19					
BLACK WALNUT	--	--	--	--	36	8	16	3	28	6					
BLACK CHERRY	447	93	347	68	229	32	99	15	179	24					
ELM	15	2	10	1	32	1	14	1	23	1					
OTHER HARDWOODS	67	-14	50	-13	39	-57	14	-25	13	-48					
	518	82	397	56	296	30	179	22	298	30					
TOTAL HARDWOODS	8,591	1,542	6,313	1,051	5,976	978	2,620	460	4,462	683					
ALL SPECIES	8,637	1,555	6,361	1,067	6,001	983	2,629	462	4,477	686					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	GREENE			GRUNDY			HARRISON			HENRY			HOLT		
	GROWING : STOCK	SAW-TIMBER	BD.FT.1/	GROWING : STOCK	SAW-TIMBER	BD.FT.1/	GROWING : STOCK	SAW-TIMBER	BD.FT.1/	GROWING : STOCK	SAW-TIMBER	BD.FT.1/	GROWING : STOCK	SAW-TIMBER	BD.FT.1/
SOFTWOODS:															
EASTERN REDCEDAR	69	21	15	3	31	7	26	8	9	2					
TOTAL SOFTWOODS	69	21	15	3	31	7	26	8	9	2					
HARDWOODS:															
SELECT WHITE OAKS	1,155	291	829	183	1,699	346	637	176	479	91					
OTHER WHITE OAKS	1,781	110	73	6	156	11	706	47	47	2					
SELECT RED OAKS	427	116	340	96	675	177	283	77	195	48					
RED OAKS	1,641	339	362	78	819	161	791	182	236	41					
OTHER RED OAKS	1,037	227	524	66	1,160	142	1,072	288	574	49					
HICKORY A	750	113	289	23	634	41	495	96	200	12					
HICKORY B	495	14	114	5	257	10	328	10	99	3					
HARD MAPLE	--	--	47	10	29	6	--	--	18	3					
SOFT MAPLE	301	77	515	95	869	158	774	191	409	75					
ASH	536	72	277	39	513	64	1,027	138	224	34					
SYCAMORE	80	34	296	107	464	169	200	83	203	73					
COTTONWOOD	46	12	275	107	485	189	127	33	216	83					
RIVER BIRCH	78	11	186	23	365	42	214	27	175	19					
BASSWOOD	--	--	29	6	54	11	--	--	24	5					
BLACK WALNUT	520	102	204	34	331	47	394	79	176	21					
BLACK CHERRY	17	2	20	1	43	2	7	1	14	1					
ELM	62	-24	29	-46	48	-85	135	8	17	-38					
OTHER HARDWOODS	566	82	347	40	507	55	600	86	272	24					
TOTAL HARDWOODS	9,492	1,578	4,756	873	9,108	1,546	7,790	1,522	3,578	546					
ALL SPECIES	9,561	1,599	4,771	876	9,139	1,553	7,816	1,530	3,587	548					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	JACKSON			JASPER			JOHNSON			KNOX			LAFAYETTE		
	GROWING : STOCK	SAW- : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW- : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW- : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW- : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW- : THOUSAND	BD.FT.1/
SOFTWOODS:															
EASTERN RED CEDAR	32	12	29	9	53	18	24	6	15	5					
TOTAL SOFTWOODS	32	12	29	9	53	18	24	6	15	5					
HARDWOODS:															
SELECT WHITE OAKS	313	74	870	240	897	235	1,274	263	385	109					
OTHER WHITE OAKS	373	22	985	69	1,122	73	126	8	375	26					
SELECT RED OAKS	119	31	348	103	343	96	517	135	164	47					
RED OAKS	389	86	1,042	245	1,126	247	639	127	444	103					
OTHER RED OAKS	502	109	1,175	329	1,116	280	765	105	621	174					
HICKORY A	245	39	617	123	634	110	478	33	292	60					
HICKORY B	209	4	350	11	443	12	175	7	177	6					
HARD MAPLE	--	--	--	--	--	--	22	4	--	--					
SOFT MAPLE	212	52	636	160	567	140	579	105	439	112					
ASH	337	40	838	125	826	112	367	44	492	79					
SYCAMORE	53	21	171	72	148	61	311	113	115	50					
COTTONWOOD	32	8	114	30	92	24	321	124	83	22					
RIVER BIRCH	57	7	185	26	156	20	308	27	129	18					
BASSWOOD	--	--	--	--	--	--	37	7	--	--					
BLACK WALNUT	186	34	480	98	477	93	233	32	211	46					
BLACK CHERRY	3	--	9	1	10	1	33	2	3	1					
ELM	40	-5	130	9	103	-5	45	-55	68	3					
OTHER HARDWOODS	247	32	615	95	603	86	334	37	327	51					
TOTAL HARDWOODS	3,317	554	8,565	1,736	8,663	1,585	6,564	1,118	4,325	907					
ALL SPECIES	3,349	566	8,594	1,745	8,716	1,603	6,588	1,124	4,340	912					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	LAWRENCE			LEWIS			LINCOLN			LINN			LIVINGSTON		
	GROWING	SAW-	STOCK	GROWING	SAW-	STOCK	GROWING	SAW-	STOCK	GROWING	SAW-	STOCK	GROWING	SAW-	STOCK
	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND	THOUSAND
	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/	BD.FT.1/
SOFTWOODS:															
EASTERN REDCEDAR	52	16	34	8	57	13	12	3	14	3					
TOTAL SOFTWOODS	52	16	34	8	57	13	12	3	14	3					
HARDWOODS:															
SELECT WHITE OAKS	1,150	307	1,962	409	3,262	669	782	171	775	158					
OTHER WHITE OAKS	1,616	112	195	13	322	20	57	5	58	4					
SELECT RED OAKS	401	121	782	205	1,299	337	315	92	325	88					
RED OAKS	1,513	329	947	193	1,593	316	320	66	353	64					
OTHER RED OAKS	1,986	253	1,081	145	1,864	245	676	62	706	66					
HICKORY A	677	117	698	50	1,192	79	285	18	314	19					
HICKORY B	433	11	255	10	453	17	154	6	154	6					
HARD MAPLE	--	--	32	7	45	8	18	3	37	7					
SOFT MAPLE	206	53	668	126	1,354	249	1,015	180	900	162					
ASH	427	66	489	59	877	106	405	58	395	57					
SYCAMORE	67	29	423	157	768	282	464	167	432	155					
COTTONWOOD	38	10	371	143	781	304	584	228	499	195					
RIVER BIRCH	63	10	297	36	537	66	271	36	260	35					
BASSWOOD	--	--	52	11	93	20	52	10	46	9					
BLACK WALNUT	466	97	337	48	566	82	297	44	277	40					
BLACK CHERRY	14	2	41	1	74	3	19	1	23	1					
ELM	54	-13	45	-81	78	-145	26	-73	23	-71					
OTHER HARDWOODS	503	82	479	50	830	91	548	56	509	54					
TOTAL HARDWOODS	8,614	1,586	9,154	1,582	15,988	2,749	6,288	1,130	6,086	1,049					
ALL SPECIES	8,666	1,602	9,188	1,590	16,045	2,762	6,300	1,133	6,100	1,052					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	MACON			MARION			MERCER			MONROE			NODAWAY		
	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD. FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD. FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD. FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD. FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD. FT. 1/
SOFTWOODS:															
EASTERN RED CEDAR	45	10	30	7	7	22	5	34	7	14	3				
TOTAL SOFTWOODS	45	10	30	7	7	22	5	34	7	14	3				
HARDWOODS:															
SELECT WHITE OAKS	2,538	504	1,787	354	11	1,117	234	1,930	406	735	150				
OTHER WHITE OAKS	1,254	15	190	11	106	8	13	176	57	4					
SELECT RED OAKS	1,032	260	722	177	461	122	754	122	202	308	81				
RED OAKS	1,326	259	906	175	555	114	180	872	180	347	64				
OTHER RED OAKS	1,625	208	948	127	664	86	149	1,153	149	675	72				
HICKORY A	962	64	660	42	412	30	680	49	285	16					
HICKORY B	354	13	239	9	150	6	266	10	132	5					
HARD MAPLE	35	7	37	6	36	8	29	21	3						
SOFT MAPLE	714	135	517	97	329	61	967	180	612	109					
ASH	658	70	425	49	264	31	565	73	307	44					
SYCAMORE	449	164	327	121	226	84	552	202	288	103					
COTTONWOOD	340	127	307	119	191	74	514	199	350	136					
RIVER BIRCH	516	45	199	28	174	19	413	47	236	25					
BASSWOOD	69	14	48	11	30	7	62	13	34	7					
BLACK WALNUT	451	53	289	42	186	27	390	57	219	28					
BLACK CHERRY	62	3	39	1	27	1	44	2	23	1					
ELM	68	-109	34	-78	20	-48	59	-95	24	-51					
OTHER HARDWOODS	582	54	387	41	291	33	594	63	347	35					
TOTAL HARDWOODS	12,035	1,886	8,061	1,332	5,239	897	10,020	1,755	5,000	832					
ALL SPECIES	12,080	1,896	8,091	1,339	5,261	902	10,054	1,762	5,014	835					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	PETTIS			PIKE			PLATTE			PUTNAM			RAILS		
	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS	SAW- TIMBER : THOUSAND BD.FT.17	GROWING : STOCK : CORDS
SOFTWOODS:															
EASTERN RED CEDAR	30	7	68	15	15	4	30	7	36	8					
TOTAL SOFTWOODS	30	7	68	15	15	4	30	7	36	8					
HARDWOODS:															
SELECT WHITE OAKS	844	225	3,733	772	872	140	1,586	323	1,963	412					
OTHER WHITE OAKS	1,183	75	357	24	81	4	154	10	179	13					
SELECT RED OAKS	330	92	1,517	390	397	87	649	163	779	207					
RED OAKS	1,149	244	1,844	365	514	84	804	159	903	190					
OTHER RED OAKS	875	225	2,131	294	845	96	911	130	1,080	147					
HICKORY A	558	97	1,375	92	395	20	593	39	680	50					
HICKORY B	321	12	504	20	173	6	208	9	244	9					
HARD MAPLE	--	--	62	11	69	9	26	5	35	6					
SOFT MAPLE	435	111	1,519	281	514	90	501	94	626	119					
ASH	604	87	1,017	128	352	41	408	47	466	59					
SYCAMORE	111	47	884	325	235	81	320	118	416	155					
COTTONWOOD	73	19	853	332	253	95	259	99	330	127					
RIVER BIRCH	119	17	641	76	376	25	312	29	325	37					
BASSWOOD	--	--	104	22	49	10	41	9	52	11					
BLACK WALNUT	395	80	659	96	273	36	275	36	332	50					
BLACK CHERRY	12	1	89	3	31	2	40	2	44	2					
ELM	73	-10	118	-160	43	-78	48	-66	64	-79					
OTHER HARDWOODS	499	77	914	102	393	36	362	38	443	48					
TOTAL HARDWOODS	7,581	1,399	18,321	3,173	5,865	784	7,497	1,244	8,961	1,563					
ALL SPECIES	7,611	1,406	18,389	3,188	5,880	788	7,527	1,251	8,997	1,571					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	RANDOLPH			RAY			SALINE			SCHUYLER			SCOTLAND		
	GROWING : STOCK	SAW-TIMBER : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW-TIMBER : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW-TIMBER : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW-TIMBER : THOUSAND	BD.FT.1/	GROWING : STOCK	SAW-TIMBER : THOUSAND	BD.FT.1/
SOFTWOODS:															
EASTERN REDCEDAR	39	8	21	5	26	8	10	2	14	3					
TOTAL SOFTWOODS	39	8	21	5	26	8	10	2	14	3					
HARDWOODS:															
SELECT WHITE OAKS	2,131	433	1,198	215	555	150	461	98	780	173					
OTHER WHITE OAKS	218	14	108	6	715	48	49	3	58	5					
SELECT RED OAKS	836	214	484	113	228	64	197	48	305	88					
RED OAKS	1,037	210	619	107	725	161	242	46	321	70					
OTHER RED OAKS	1,118	159	966	114	748	192	232	36	481	72					
HICKORY A	759	53	496	27	393	71	180	11	260	19					
HICKORY B	262	10	208	8	262	8	56	3	104	4					
HARD MAPLE	29	6	34	4	--	--	10	2	15	3					
SOFT MAPLE	498	94	725	130	428	107	198	36	516	95					
ASH	467	50	441	48	587	82	137	17	267	37					
SYCAMORE	340	126	345	121	113	48	111	40	270	98					
COTTONWOOD	273	104	364	138	73	19	111	43	265	102					
RIVER BIRCH	365	31	419	34	120	16	73	8	245	23					
BASSWOOD	49	11	54	11	--	--	14	3	28	5					
BLACK WALNUT	314	42	307	40	292	59	89	13	174	26					
BLACK CHERRY	50	3	39	3	6	1	14	1	19	2					
ELM	49	-78	38	-87	73	-3	17	-21	42	-37					
OTHER HARDWOODS	392	41	467	43	412	61	126	14	253	29					
TOTAL HARDWOODS	9,187	1,523	7,312	1,075	5,730	1,084	2,317	401	4,403	814					
ALL SPECIES	9,226	1,531	7,333	1,080	5,756	1,092	2,327	403	4,417	817					

(Table 33 cont. on next page)

(Table 33 cont.)

SPECIES	SHELBY			SULLIVAN			VERNON			WORTH		
	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT. 1/	GROWING : STOCK :	SAW- TIMBER :	THOUSAND BD.FT. 1/
SOFTWOODS:												
EASTERN REDCEDAR	26	6	27	6	34	11	8					2
TOTAL SOFTWOODS	26	6	27	6	34	11	8					2
HARDWOODS:												
SELECT WHITE OAKS	1,427	313	1,395	301	1,256	363	449					92
OTHER WHITE OAKS	128	10	131	10	1,087	75	47					3
SELECT RED OAKS	560	158	583	157	524	153	185					48
RED OAKS	626	135	671	138	1,355	327	225					43
OTHER RED OAKS	798	113	877	116	2,038	594	310					38
HICKORY A	487	37	518	37	955	207	170					11
HICKORY B	179	7	193	8	516	20	67					3
HARD MAPLE	25	6	28	6	--	--	7					2
SOFT MAPLE	676	127	679	128	1,517	388	214					40
ASH	395	53	423	57	1,620	268	136					17
SYCAMORE	404	149	405	149	386	165	122					45
COTTONWOOD	349	136	351	136	283	73	114					44
RIVER BIRCH	274	34	275	34	441	61	93					11
BASSWOOD	39	8	43	9	--	--	14					3
BLACK WALNUT	254	40	287	41	669	145	87					12
BLACK CHERRY	31	2	36	2	10	2	12					1
ELM	56	-56	57	-64	241	26	11					-22
OTHER HARDWOODS	388	45	420	46	1,069	165	135					15
TOTAL HARDWOODS	7,096	1,317	7,372	1,311	13,967	3,032	2,398					406
ALL SPECIES	7,122	1,323	7,399	1,317	14,001	3,043	2,406					408

1/ INTERNATIONAL 1/4-INCH RULE.

Table 34.--Timber removals from growing stock and sawtimber on commercial forest land, by item and species group, Prairie, Missouri, 1971¹

ITEM	GROWING STOCK				SAWTIMBER			
	ALL	SOFTWOODS	SOFT	HARD	ALL	SOFTWOODS	SOFT	HARD
	SPECIES	SPECIES	HARDWOODS	HARDWOODS	SPECIES	HARDWOODS	HARDWOODS	HARDWOODS
THOUSAND BOARD FEET								
CORDS								
ROUNDWOOD PRODUCTS:								
SAWLOGS	66,405	25	38,506	27,874	30,411	11	19,312	11,088
COOPERAGE LOGS	17,379	--	--	17,379	8,261	--	--	8,261
VENEER LOGS	4,532	--	89	4,443	1,697	--	34	1,663
CHARCOAL WOOD	418	--	--	418	51	--	--	51
PULPWOOD	12,684	--	9,051	3,633	4,399	--	3,130	1,269
POSTS	1,532	--	--	1,532	382	--	--	382
FUELWOOD	15,988	--	1,950	14,038	3,112	--	358	2,754
MISCELLANEOUS ³	4,569	--	4,303	266	1,969	--	1,855	114
ALL PRODUCTS	123,507	25	53,899	69,583	50,282	11	24,689	25,582
LOGGING RESIDUES								
OTHER REMOVALS	18,014	--	5,554	12,460	2,472	--	882	1,590
	447,114	--	132,178	314,936	98,246	--	29,271	68,975
TOTAL REMOVALS	588,635	25	191,631	396,979	151,000	11	54,842	96,147

¹/ SEE GLOSSARY FOR TIMBER REMOVALS FROM GROWING STOCK (PAGE 5).

²/ INTERNATIONAL 1/4-INCH RULE.

³/ INCLUDES SHAVING WOOD, HEADING BOLTS, ETC.

Table 35.--Timber removals from growing stock and sawtimber on commercial forest land, by species and county, Prairie, Missouri, 1971¹

Species	All counties			Adair			Andrew			Atchison			Audrain		
	Growing : stock	Sawtimber	Thousand bd.ft.	Growing : stock	Sawtimber	Thousand bd.ft.	Growing : stock	Sawtimber	Thousand bd.ft.	Growing : stock	Sawtimber	Thousand bd.ft.	Growing : stock	Sawtimber	Thousand bd.ft.
Softwoods:															
Eastern redcedar	25	11	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	25	11	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	144,136	36,306	4,608	1,106	1,413	379	973	217	2,072	513					
Other white oaks	36,341	7,864	830	147	188	29	196	44	303	73					
Select red oaks	39,859	9,333	1,176	242	326	72	297	66	621	156					
Red oaks	38,409	8,756	233	47	72	16	53	11	135	37					
Other red oaks	30,696	6,778	844	168	275	59	238	59	601	143					
Hickory A	40,079	9,403	1,143	214	261	56	265	71	619	176					
Hickory B	8,266	1,801	198	38	49	12	49	12	108	25					
Hard maple	5,230	1,282	135	30	108	36	47	16	88	20					
Soft maple	45,167	15,238	752	280	501	193	298	67	1,115	344					
Ash	18,614	4,466	260	52	126	40	132	33	420	122					
Sycamore	20,691	6,475	436	169	278	111	109	24	545	206					
Cottonwood	35,926	12,039	271	71	338	127	205	46	1,600	624					
River birch	6,181	1,484	91	17	25	5	39	10	121	31					
Basswood	365	190	--	--	38	22	--	--	13	9					
Black walnut	13,282	4,712	177	62	494	175	38	16	241	85					
Black cherry	--	3	--	--	--	--	--	--	--	--					
Elm	89,484	20,897	2,403	488	801	199	917	225	2,300	584					
Other hardwoods	15,884	3,962	46	14	98	43	23	7	23	7					
Total hardwoods	588,610	150,989	13,603	3,145	5,391	1,574	3,879	924	10,925	3,155					
All species	588,635	151,000	13,603	3,145	5,391	1,574	3,879	924	10,925	3,155					

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Barton			Bates			Buchanan			Caldwell			Carroll		
	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock
	<u>Cords</u>	<u>Thousand</u> <u>bd.ft.</u>	<u>27</u>	<u>Cords</u>	<u>Thousand</u> <u>bd.ft.</u>	<u>27</u>	<u>Cords</u>	<u>Thousand</u> <u>bd.ft.</u>	<u>27</u>	<u>Cords</u>	<u>Thousand</u> <u>bd.ft.</u>	<u>27</u>	<u>Cords</u>	<u>Thousand</u> <u>bd.ft.</u>	<u>27</u>
Softwoods:															
Eastern redcedar	--	--		25	10		--	--		--	--		--	--	
Total softwoods	--	--		25	10		--	--		--	--		--	--	
Hardwoods:															
Select white oaks	779	175		1,722	419		1,583	416		1,473	382		1,871	425	
Other white oaks	446	92		951	194		134	29		134	29		321	73	
Select red oaks	316	76		1,074	284		376	83		358	87		714	178	
Red oaks	1,055	261		3,045	788		77	19		75	18		174	47	
Other red oaks	292	66		634	144		380	84		371	84		536	133	
Hickory A	444	111		1,068	269		314	81		340	92		689	189	
Hickory B	114	32		240	64		67	12		64	13		99	25	
Hard maple	--	--		--	--		141	26		80	26		106	28	
Soft maple	350	85		1,007	287		791	266		1,558	629		1,489	458	
Ash	396	87		959	229		197	56		248	71		282	67	
Sycamore	393	96		1,510	503		347	126		350	122		334	99	
Cottonwood	171	37		1,253	473		949	316		383	110		2,300	773	
River birch	170	32		427	99		61	12		62	16		131	42	
Basswood	--	--		25	9		25	12		38	16		--	--	
Black walnut	76	28		38	16		557	197		785	280		241	83	
Black cherry	--	--		--	--		--	--		--	--		--	--	
Elm	539	147		1,164	308		1,900	418		1,330	356		2,021	552	
Other hardwoods	595	124		1,372	336		153	60		128	50		120	44	
Total hardwoods	6,136	1,449		16,489	4,422		8,052	2,213		7,777	2,181		11,428	3,216	
All species	6,136	1,449		16,514	4,432		8,052	2,213		7,777	2,381		11,428	3,216	

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Cass			Chariton			Clark			Clay			Clinton		
	: stock	: Sawtimber	: Growing	: stock	: Sawtimber	: Growing	: stock	: Sawtimber	: Growing	: stock	: Sawtimber	: Growing	: stock	: Sawtimber	: Growing
	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords	Thousand bd.ft. <u>27</u>	Cords
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	1,176	260	3,051	783	6,524	1,826	1,383	325	1,361	362					
Other white oaks	1,123	245	375	103	767	191	205	44	125	29					
Select red oaks	424	103	974	246	1,704	435	421	100	331	78					
Red oaks	1,917	440	220	60	425	119	83	22	70	16					
Other red oaks	320	66	894	222	944	218	468	99	468	104					
Hickory A	657	165	771	223	1,462	381	417	110	285	72					
Hickory B	168	32	157	38	195	50	87	13	76	12					
Hard maple	25	8	180	35	207	54	107	15	81	16					
Soft maple	405	159	1,522	443	1,555	580	443	105	1,029	342					
Ash	498	130	461	116	357	82	196	46	244	66					
Sycamore	652	261	548	160	279	69	151	37	391	133					
Cottonwood	194	70	1,805	650	1,091	390	751	255	958	314					
River birch	81	21	161	42	171	53	75	17	76	17					
Basswood	--	--	--	--	25	11	--	--	25	16					
Black walnut	342	119	203	74	342	123	51	21	506	179					
Black cherry	--	--	--	--	--	--	--	--	--	--					
Elm	622	175	3,353	817	2,892	650	1,728	376	1,786	461					
Other hardwoods	717	175	84	32	104	24	54	15	130	48					
Total hardwoods	9,321	2,429	14,759	4,044	19,044	5,256	6,620	1,600	7,942	2,265					
All species	9,321	2,429	14,759	4,044	19,044	5,256	6,620	1,600	7,942	2,265					

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Cooper			Dade			Davless			DeKalb			Gentry		
	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock	Growing : stock	Sawtimber	: stock
	Cords	Thousand bd.ft. 2/	Cords	Cords	Thousand bd.ft. 2/	Cords	Cords	Thousand bd.ft. 2/	Cords	Cords	Thousand bd.ft. 2/	Cords	Cords	Thousand bd.ft. 2/	Cords
Softwoods:	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	3,595	1,128	1,319	265	2,857	665	1,223	328	1,904	414					
Other white oaks	1,968	403	1,360	270	509	117	134	44	312	59					
Select red oaks	459	101	520	120	813	181	290	68	598	134					
Red oaks	2,600	525	2,253	472	148	34	54	13	143	34					
Other red oaks	411	79	312	53	555	124	270	59	463	89					
Hickory A	895	178	652	112	667	135	247	70	479	98					
Hickory B	287	53	230	42	125	25	46	12	90	25					
Hard maple	25	9	--	--	135	27	81	26	141	47					
Soft maple	946	350	180	48	1,539	653	495	184	761	297					
Ash	487	118	295	50	252	67	104	29	197	54					
Sycamore	1,371	522	184	46	322	117	93	26	344	134					
Cottonwood	616	201	74	16	307	91	327	119	320	103					
River birch	129	33	81	19	52	13	32	7	50	10					
Basswood	--	--	--	--	25	12	--	3	25	12					
Black walnut	253	90	443	157	481	169	190	65	646	227					
Black cherry	--	--	--	--	--	--	--	--	--	--					
Elm	599	123	501	108	1,832	428	746	191	1,330	313					
Other hardwoods	845	194	619	116	130	54	34	15	154	55					
Total hardwoods	15,486	4,107	9,023	1,894	10,749	2,912	4,366	1,259	7,957	2,105					
All species	15,486	4,107	9,023	1,894	10,749	2,912	4,366	1,259	7,957	2,105					

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Greene			Grundy			Harrison			Henry			Holt		
	Growing : stock :	Sawtimber : Thousand bd.ft.2/ :	Cords :	Growing : stock :	Sawtimber : Thousand bd.ft.2/ :	Cords :	Growing : stock :	Sawtimber : Thousand bd.ft.2/ :	Cords :	Growing : stock :	Sawtimber : Thousand bd.ft.2/ :	Cords :	Growing : stock :	Sawtimber : Thousand bd.ft.2/ :	Cords :
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	2,952	665	1,762	414	813	3,588	1,106	262	1,356	262	183	29	1,356	337	29
Other white oaks	2,232	444	303	73	147	633	888	183	178	183	120	336	178	73	73
Select red oaks	680	150	520	123	239	1,056	483	239	336	120	418	72	336	17	17
Red oaks	3,331	679	81	21	44	189	1,753	44	72	418	99	348	72	74	74
Other red oaks	447	78	431	104	188	866	455	188	295	99	167	64	295	72	72
Hickory A	1,028	179	427	119	201	890	687	201	197	167	42	81	197	12	12
Hickory B	349	64	81	25	38	177	197	38	64	42	--	81	64	26	26
Hard maple	--	3	162	57	41	180	--	41	--	--	--	--	--	--	--
Soft maple	186	43	1,070	408	284	915	626	284	638	161	160	54	638	218	218
Ash	437	80	214	55	85	353	703	85	187	160	316	113	187	54	54
Sycamore	341	105	164	37	141	438	970	141	310	316	89	308	310	113	113
Cottonwood	92	21	276	62	141	532	353	141	50	353	59	50	308	89	89
River birch	94	19	53	13	24	103	264	24	25	264	--	12	50	10	10
Basswood	--	3	--	--	12	25	--	12	--	--	--	30	25	12	12
Black walnut	380	134	63	22	228	633	89	228	468	30	--	--	468	165	165
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	704	130	1,375	301	622	2,670	771	622	1,328	171	192	102	1,328	279	279
Other hardwoods	912	177	55	23	52	126	900	52	102	192	--	--	102	46	46
Total hardwoods	14,165	2,974	7,037	1,857	3,300	13,374	10,245	2,469	6,146	2,469	--	--	6,146	1,626	1,626
All species	14,165	2,974	7,037	1,857	3,300	13,374	10,245	2,469	6,146	2,469	--	--	6,146	1,626	1,626

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Jackson			Jasper			Johnson			Knox			Lafayette		
	Growing : stock	Sawtimber		Growing : stock	Sawtimber		Growing : stock	Sawtimber		Growing : stock	Sawtimber		Growing : stock	Sawtimber	
	Cords	Thousand bd.ft.2/		Cords	Thousand bd.ft.2/		Cords	Thousand bd.ft.2/		Cords	Thousand bd.ft.2/		Cords	Thousand bd.ft.2/	
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	1,681	390		1,727	363		1,325	287		2,926	707		652	151	
Other white oaks	452	87		1,255	280		1,407	291		509	117		475	107	
Select red oaks	200	41		740	188		350	74		823	190		205	51	
Red oaks	855	180		2,629	635		1,938	403		158	38		836	201	
Other red oaks	211	36		509	114		479	96		596	133		268	60	
Hickory A	437	86		829	186		812	169		750	181		447	118	
Hickory B	121	21		230	53		280	53		122	25		107	21	
Hard maple	25	8		--	2		25	9		95	20		13	6	
Soft maple	881	373		511	145		870	281		948	338		476	149	
Ash	259	49		703	176		547	106		220	52		396	93	
Sycamore	276	100		816	268		513	132		170	43		372	91	
Cottonwood	1,415	583		221	47		1,026	370		454	139		615	185	
River birch	67	13		219	45		196	42		120	40		152	32	
Basswood	--	--		--	--		--	--		--	--		--	--	
Black walnut	570	200		114	42		127	45		190	65		127	48	
Black cherry	--	--		--	--		--	--		--	--		--	--	
Elm	614	164		919	237		669	134		1,918	494		561	148	
Other hardwoods	545	131		953	207		963	206		42	13		578	143	
Total hardwoods	8,609	2,462		12,375	2,988		11,527	2,698		10,041	2,595		6,280	1,604	
All species	8,609	2,462		12,375	2,988		11,527	2,698		10,041	2,595		6,280	1,604	

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Lawrence			Lewis			Lincoln			Linn			Livingston		
	: Growing : : stock :	: Sawtimber : : stock :	: Growing : : stock :	: Growing : : stock :	: Sawtimber : : stock :	: Growing : : stock :	: Growing : : stock :	: Sawtimber : : stock :	: Growing : : stock :	: Growing : : stock :	: Sawtimber : : stock :	: Growing : : stock :	: Growing : : stock :	: Sawtimber : : stock :	: Growing : : stock :
	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>	<u>Thousand bd. ft. $\frac{2}{1}$</u>	<u>Cords</u>
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	2,754	622	5,741	1,612	7,994	2,022	2,561	772	1,852	451					
Other white oaks	2,061	459	785	176	1,294	279	241	73	232	59					
Select red oaks	683	156	1,369	327	2,226	521	499	122	499	117					
Red oaks	3,190	667	295	75	471	115	84	23	89	21					
Other red oaks	439	88	844	193	1,462	326	541	133	546	124					
Hickory A	889	177	1,188	293	1,672	358	448	131	470	124					
Hickory B	310	53	183	38	320	75	102	25	102	25					
Hard maple	--	--	149	31	228	41	114	27	153	40					
Soft maple	132	35	1,006	356	1,905	655	1,472	526	1,702	634					
Ash	329	62	298	71	552	130	330	89	323	88					
Sycamore	239	69	263	73	386	91	237	52	235	51					
Cottonwood	80	21	723	248	1,825	683	531	123	539	129					
River birch	76	19	112	33	163	36	91	21	98	24					
Basswood	--	--	--	--	--	--	--	--	13	4					
Black walnut	304	111	241	84	278	97	228	81	101	38					
Black cherry	--	--	--	--	--	--	--	--	--	--					
Elm	574	125	2,518	604	4,356	1,016	2,215	510	2,039	453					
Other hardwoods	843	184	24	9	80	16	49	24	62	29					
Total hardwoods	12,903	2,848	15,739	4,223	25,212	6,461	9,743	2,732	9,055	2,411					
All species	12,903	2,848	15,739	4,223	25,212	6,461	9,743	2,732	9,055	2,411					

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Macon			Marion			Mercer			Monroe			Nodaway		
	Growing : : stock	Sawtimber : : stock	: : stock	Growing : : stock	Sawtimber : : stock	: : stock	Growing : : stock	Sawtimber : : stock	: : stock	Growing : : stock	Sawtimber : : stock	: : stock	Growing : : stock	Sawtimber : : stock	: : stock
	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords	Thousand bd.ft. 2/	Cords
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	6,233	1,587	4,220	1,008	2,250	517	4,199	1,032	1,589	1,032	1,589	1,032	1,589	1,032	1,589
Other white oaks	1,008	205	749	147	428	103	723	176	232	176	232	176	232	176	232
Select red oaks	1,563	344	1,346	313	679	157	1,184	275	484	275	484	275	484	275	484
Red oaks	289	64	326	82	109	26	207	50	90	50	90	50	90	50	90
Other red oaks	1,164	247	734	163	513	109	917	212	477	212	477	212	477	212	477
Hickory A	1,455	303	1,030	220	574	129	1,133	287	419	287	419	287	419	287	419
Hickory B	250	50	172	38	108	25	189	38	87	38	87	38	87	38	87
Hard maple	169	41	206	53	141	46	142	31	94	31	94	31	94	31	94
Soft maple	793	240	887	325	229	51	923	272	469	272	469	272	469	272	469
Ash	387	81	288	72	156	37	352	83	183	83	183	83	183	83	183
Sycamore	239	54	239	67	113	26	328	91	149	91	149	91	149	91	149
Cottonwood	375	89	1,333	553	169	40	577	151	324	151	324	151	324	151	324
River birch	132	27	107	34	48	10	112	26	62	26	62	26	62	26	62
Basswood	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Black walnut	253	90	203	71	38	14	139	45	76	45	76	45	76	45	76
Black cherry	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Elm	3,259	702	2,299	518	1,331	310	2,889	683	1,642	683	1,642	683	1,642	683	1,642
Other hardwoods	55	14	45	8	28	9	29	8	80	8	80	8	80	8	80
Total hardwoods	17,624	4,138	14,184	3,678	6,914	1,609	14,043	3,460	6,457	3,460	6,457	3,460	6,457	3,460	6,457
All species	17,624	4,138	14,184	3,678	6,914	1,609	14,043	3,460	6,457	3,460	6,457	3,460	6,457	3,460	6,457

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Pettis			Pike			Platte			Putnam			Ralls		
	Growing : stock :	Sawtimber :	Cords :	Growing : stock :	Sawtimber :	Cords :	Growing : stock :	Sawtimber :	Cords :	Growing : stock :	Sawtimber :	Cords :	Growing : stock :	Sawtimber :	Cords :
		Thousand bd.ft. <u>27</u>			Thousand bd.ft. <u>27</u>			Thousand bd.ft. <u>27</u>			Thousand bd.ft. <u>27</u>			Thousand bd.ft. <u>27</u>	
Softwoods:															
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	1,399	308		11,254	3,202	2,003	423	3,208	742	5,453	1,538				
Other white oaks	1,496	301		1,445	323	303	44	625	132	732	176				
Select red oaks	460	105		2,399	542	561	111	982	224	1,222	283				
Red oaks	2,210	464		453	104	115	25	178	43	210	51				
Other red oaks	379	78		1,673	380	614	119	715	158	825	183				
Hickory A	746	151		2,069	461	553	112	837	176	1,073	263				
Hickory B	228	53		361	88	113	25	148	38	177	38				
Hard maple	25	9		283	61	234	49	140	28	155	31				
Soft maple	1,494	565		1,795	583	764	258	551	169	781	255				
Ash	778	219		693	172	238	58	265	60	271	61				
Sycamore	710	250		518	132	341	121	186	49	245	68				
Cottonwood	673	215		1,381	461	885	283	373	112	447	131				
River birch	168	40		183	45	75	14	82	26	112	32				
Basswood	--	--		--	--	25	12	13	9	--	--				
Black walnut	152	50		316	115	506	179	127	48	215	79				
Black cherry	--	--		--	--	--	--	--	--	--	--				
Elm	558	119		5,081	1,178	2,427	463	2,085	504	2,500	575				
Other hardwoods	998	258		85	18	146	57	57	25	23	7				
Total hardwoods	12,474	3,185		29,989	7,865	9,903	2,353	10,572	2,543	14,441	3,771				
All species	12,474	3,185		29,989	7,865	9,903	2,353	10,572	2,543	14,441	3,771				

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Randolph			Ray			Saline			Schuyler			Scotland		
	: Growing : stock :	: Sawtimber : stock :	: Growing : stock :	: Growing : stock :	: Sawtimber : stock :	: Growing : stock :	: Growing : stock :	: Sawtimber : stock :	: Growing : stock :	: Growing : stock :	: Sawtimber : stock :	: Growing : stock :	: Growing : stock :	: Sawtimber : stock :	: Growing : stock :
	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords	Thousand bd.ft.2/	Cords
Softwoods:	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods:															
Select white oaks	5,172	1,345	2,679	591	1,077	272	1,176	291	1,176	272	1,176	291	2,430	676	
Other white oaks	874	191	419	73	908	189	187	44	187	189	187	44	250	73	
Select red oaks	1,230	282	786	171	331	77	297	71	297	77	297	71	782	224	
Red oaks	202	48	171	38	1,440	320	56	14	56	320	56	14	228	70	
Other red oaks	857	188	734	153	320	66	202	49	202	66	202	49	408	99	
Hickory A	1,095	241	798	173	570	124	276	66	276	124	276	66	700	209	
Hickory B	192	38	140	25	166	32	41	12	41	32	41	12	73	12	
Hard maple	135	31	154	29	38	15	34	10	34	15	34	10	67	10	
Soft maple	559	159	1,150	412	958	338	337	122	337	338	337	122	682	236	
Ash	257	51	287	67	504	118	78	20	78	118	78	20	172	42	
Sycamore	183	49	381	132	731	263	70	19	70	263	70	19	161	45	
Cottonwood	553	154	868	262	2,938	1,230	160	50	160	1,230	160	50	446	137	
River birch	93	21	92	19	168	42	33	8	33	42	33	8	106	37	
Basswood	--	--	25	10	--	--	--	--	--	--	--	--	--	--	
Black walnut	127	40	481	173	139	44	76	25	76	44	76	25	101	37	
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Elm	2,268	524	2,572	557	517	113	680	170	680	113	680	170	1,395	338	
Other hardwoods	46	12	150	58	711	175	20	7	20	175	20	7	26	7	
Total hardwoods	13,843	3,374	11,887	2,943	11,516	3,418	3,723	978	3,723	3,418	3,723	978	8,027	2,252	
All species	13,843	3,374	11,887	2,943	11,516	3,418	3,723	978	3,723	3,418	3,723	978	8,027	2,252	

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Shelby			Sullivan			Vernon			Worth		
	Growing : : stock	Sawtimber : : stock	Growing : : stock	Growing : : stock	Sawtimber : : stock	Growing : : stock	Growing : : stock	Sawtimber : : stock	Growing : : stock	Growing : : stock	Sawtimber : : stock	Growing : : stock
	<u>Cords</u>	<u>Thousand bd.ft.2/</u>	<u>Cords</u>	<u>Cords</u>	<u>Thousand bd.ft.2/</u>	<u>Cords</u>	<u>Cords</u>	<u>Thousand bd.ft.2/</u>	<u>Cords</u>	<u>Cords</u>	<u>Thousand bd.ft.2/</u>	<u>Cords</u>
Softwoods:												
Eastern redcedar	--	--	--	--	--	--	--	1	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	1	--	--	--	--
Hardwoods:												
Select white oaks	3,159	794	3,203	789		1,646		375	922		210	
Other white oaks	535	132	544	132		1,370		301	187		44	
Select red oaks	1,116	284	889	204		816		201	271		61	
Red oaks	263	71	150	35		2,865		705	44		11	
Other red oaks	651	153	683	158		878		206	234		49	
Hickory A	1,283	395	738	175		1,549		401	237		53	
Hickory B	128	25	137	38		315		84	47		12	
Hard maple	108	31	153	41		--		--	40		10	
Soft maple	677	202	896	302		1,003		227	145		30	
Ash	240	56	285	69		1,140		274	78		19	
Sycamore	239	69	203	46		1,214		303	74		16	
Cottonwood	442	130	331	75		647		155	101		23	
River birch	78	21	78	22		532		113	27		7	
Basswood	--	--	--	--		--		--	--		--	
Black walnut	114	41	152	54		25		15	25		8	
Black cherry	--	--	--	--		--		--	--		--	
Elm	1,927	500	2,136	512		1,259		326	664		150	
Other hardwoods	57	26	73	26		1,585		356	7		4	
Total hardwoods	11,017	2,930	10,651	2,678		16,844		4,042	3,103		707	
All species	11,017	2,930	10,651	2,678		16,844		4,043	3,103		707	

1/ International 1/4-inch rule.

Table 36.--Annual mortality of growing stock and sawtimber on commercial forest land, by cause and softwoods and hardwoods, Prairie, Missouri, 1971

CAUSE	GROWING STOCK			SAWTIMBER		
	ALL	SOFTWOODS	HARDWOODS	ALL	SOFTWOODS	HARDWOODS
	SPECIES			SPECIES		
	THOUSAND CUBIC FEET			THOUSAND BOARD FEET ^{1/}		
DISEASE	2,367	--	2,367	7,217	--	7,217
FIRE	234	--	234	--	--	--
WEATHER	540	--	540	2,296	--	2,296
SUPPRESSION	78	--	78	--	--	--
UNKNOWN	1,469	--	1,469	1,954	--	1,954
LOGGING	58	--	58	--	--	--
ALL CAUSES	4,746	--	4,746	11,467	--	11,467

^{1/} INTERNATIONAL 1/4-INCH RULE.

Table 37.--Annual mortality of growing stock and sawtimber on commercial forest land, by species, Prairie, Missouri, 1971

SPECIES	GROWING STOCK	SAWTIMBER
	THOUSAND CUBIC FEET	THOUSAND BOARD FEET ^{1/}
HARDWOODS:		
SELECT WHITE OAKS	928	944
OTHER WHITE OAKS	150	--
SELECT RED OAKS	303	929
RED OAKS	665	903
OTHER RED OAKS	413	1,841
HICKORY A	157	385
HICKORY B	59	--
HARD MAPLE	58	--
SOFT MAPLE	78	--
ASH	114	503
COTTONWOOD	88	471
ELM	1,676	5,491
OTHER HARDWOODS	57	--
TOTAL HARDWOODS	4,746	11,467

^{1/} INTERNATIONAL 1/4-INCH RULE.

Table 38.---Output of timber products by source of material and softwoods and hardwoods, Prairie, Missouri, 1969

PRODUCT AND SPECIES GROUP	STANDARD UNIT/	TOTAL		ROUNDWOOD PRODUCTS				PLANT BYPRODUCTS	
		NO. OF UNITS	M CU. FT.	NO. OF UNITS	M CU. FT.	NO. OF UNITS	M CU. FT.	NO. OF UNITS	M CU. FT.
SAW LOGS: SOFTWOODS HARDWOODS TOTAL	M BD. FT.	11	2	11	2	--	--	--	--
		41,315	7,123	30,362	5,244	10,953	1,879	--	--
		41,326	7,125	30,373	5,246	10,953	1,879	--	--
VENEER LOGS: SOFTWOODS HARDWOODS TOTAL	M BD. FT.	--	--	--	--	--	--	--	--
		2,770	605	1,644	358	1,126	247	--	--
		2,770	605	1,644	358	1,126	247	--	--
COOPERAGE LOGS: SOFTWOODS HARDWOODS TOTAL	M BD. FT.	--	--	--	--	--	--	--	--
		9,205	1,509	8,376	1,373	829	136	--	--
		9,205	1,509	8,376	1,373	829	136	--	--
PULPWOOD: SOFTWOODS HARDWOODS TOTAL	STD. CORDS	--	--	--	--	--	--	--	--
		30,416	2,377	12,901	1,002	6,464	502	11,051	873
		30,416	2,377	12,901	1,002	6,464	502	11,051	873
POSTS: SOFTWOODS HARDWOODS TOTAL	M PIECES	--	--	--	--	--	--	--	--
		341	145	284	121	57	24	--	--
		341	145	284	121	57	24	--	--
CHARCOAL WOOD: SOFTWOODS HARDWOODS TOTAL	STD. CORDS	--	--	--	--	--	--	--	--
		1,764	123	472	33	1,106	77	186	13
		1,764	123	472	33	1,106	77	186	13
OTHER: 2/ SOFTWOODS HARDWOODS TOTAL	M CU. FT.	--	--	--	--	--	--	--	--
		979	979	361	361	--	--	618	618
		979	979	361	361	--	--	618	618
FUELWOOD: SOFTWOODS HARDWOODS TOTAL	STD. CORDS	--	--	--	--	--	--	--	--
		67,415	4,210	20,278	1,263	43,122	2,686	4,015	261
		67,415	4,210	20,278	1,263	43,122	2,686	4,015	261
ALL PRODUCTS: SOFTWOODS HARDWOODS	M CU. FT.	2	2	2	2	--	--	--	--
		17,071	17,071	9,755	9,755	5,551	5,551	1,765	1,765
		17,071	17,071	9,755	9,755	5,551	5,551	1,765	1,765

Table 39.--Forest products harvested by ownership class and product, Prairie, Missouri, 1969

OWNERSHIP CLASS	SAW LOGS M BD.FT.1/	COOPERAGE LOGS M BD.FT.1/	VENEER LOGS M BD.FT.1/	PULP- WOOD CORDS2/	CHARCOAL: WOOD CORDS2/	POSTS M PIECES	FUEL- WOOD CORDS2/	MISCEL- LANEOUS M CU.FT.
DERAL: CORPS OF ENGINEERS: HARDWOODS	29	--	--	--	--	--	--	--
TOTAL	29	--	--	--	--	--	--	--
PRIVATE: INDUSTRIAL: HARDWOODS	2	864	14	--	--	--	--	--
FARM AND OTHER: SOFTWOODS HARDWOODS	11 41,284	-- 8,341	-- 2,756	-- 19,365	-- 1,578	-- 341	-- 63,400	-- 361
TOTAL	41,297	9,205	2,770	19,365	1,578	341	63,400	361
LAND OWNERS: SOFTWOODS HARDWOODS	11 41,315	-- 9,205	-- 2,770	-- 19,365	-- 1,578	-- 341	-- 63,400	-- 361
TOTAL	41,326	9,205	2,770	19,365	1,578	341	63,400	361

1/ INTERNATIONAL 1/4-INCH RULE.

2/ STANDARD CORDS, ROUGH WOOD BASIS.

Table 40.--Volume of primary plant residue, by kind of material and type of use, Prairie, Missouri, 1969

(Thousand cubic feet)

SOURCE INDUSTRY AND KIND OF RESIDUE	VOLUME BY TYPE OF USE								
	FIBER1/	CHARCOAL			FUEL2/		OTHER3/		NOT USED4/
	HARD-	SOFT-	HARD-	SOFT-	HARD-	SOFT-	HARD-	SOFT-	HARD-
	WOODS	WOODS	WOODS	WOODS	WOODS	WOODS	WOODS	WOODS	WOODS
LUMBER:									
COARSE	604	--	13	--	130	--	3	1	945
FINE	164	--	--	--	14	--	361	--	635
TOTAL	768	--	13	--	144	--	364	1	1,580
ALL OTHER:									
COARSE	105	--	--	--	41	--	57	--	256
FINE	--	--	--	--	76	--	197	--	475
TOTAL	105	--	--	--	117	--	254	--	731
ALL INDUSTRIES:									
COARSE	709	--	13	--	171	--	60	1	1,201
FINE	164	--	--	--	90	--	558	--	1,110
TOTAL	873	--	13	--	261	--	618	1	2,311

1/ FOR MANUFACTURE OF PULP, HARDBOARD, OR ROOFING FELT.

2/ ALL RESIDUE USED FOR INDUSTRIAL OR DOMESTIC FUEL WHETHER SOLD OR GIVEN AWAY.

3/ INCLUDES USES SUCH AS LIVESTOCK BEDDING, MULCH, SMALL DIMENSION, AND SPECIALTY

ITEMS.
4/ INCLUDES RESIDUE BURNED AS WASTE.

Table 41.--Timber products output from roundwood, by species and product, Prairie, Missouri, 1969

SPECIES	SAW LOGS		VENEER LOGS		COOPERAGE LOGS		CHARCOAL WOOD		OTHER PRODUCTS ^{2/}		ALL PRODUCTS	
	M BD. FT. 1/	M CU. FT.	M BD. FT. 1/	M CU. FT.	M BD. FT. 1/	M CU. FT.	M CU. FT.	M CU. FT.	M CU. FT.	M CU. FT.	M CU. FT.	M CU. FT.
SOFTWOODS:												
EASTERN REDCEDAR	11	2	--	--	--	--	--	--	--	--	2	
TOTAL SOFTWOODS	11	2	--	--	--	--	--	--	--	--	2	
HARDWOODS:												
WHITE OAKS	2,933	513	--	--	9,205	1,509	610	44	2,882	4,948		
RED OAKS	3,703	648	24	5	--	--	330	23	258	934		
BLACK OAKS	2,317	405	--	--	--	--	520	37	442	884		
HICKORY	608	97	670	150	--	--	118	6	212	465		
HARD MAPLE	251	38	--	--	--	--	--	--	--	38		
SOFT MAPLE	10,206	1,620	--	--	--	--	--	--	451	2,071		
ASH	855	134	--	--	--	--	--	--	79	213		
COTTONWOOD	5,542	852	23	5	--	--	--	--	1,021	1,878		
BASSWOOD	208	27	8	2	--	--	--	--	--	29		
BLACK WALNUT	7,881	1,729	2,042	443	--	--	--	--	--	2,172		
BLACK CHERRY	3	--	--	--	--	--	--	--	--	--		
ELM	1,883	295	3	--	--	--	--	--	284	579		
BIRCH	234	32	--	--	--	--	--	--	16	48		
SYCAMORE	3,651	572	--	--	--	--	--	--	112	684		
OTHER HARDWOODS	1,040	161	--	--	--	--	--	--	202	363		
TOTAL HARDWOODS	41,315	7,123	2,770	605	9,205	1,509	1,578	110	5,959	15,306		
ALL SPECIES	41,326	7,125	2,770	605	9,205	1,509	1,578	110	5,959	15,308		

1/ INTERNATIONAL 1/4-INCH RULE.

2/ STANDARD CORDS, ROUGH WOOD BASIS.

3/ INCLUDES POSTS, FUELWOOD, SHAVING BOLTS, HEADING BOLTS, ETC.

Table 42.--Average annual managed harvest for 1972-1981 from
harvest cuttings and thinnings, on commercial forest land,
by species and kind of material, Prairie, Missouri

SPECIES	: GROWING STOCK 1/ :			: SAWTIMBER 1/ :			: ROUGH AND ROTTEN TREES		
	: POLETIMBER : SAWTIMBER :		: TREES :	: TOTAL :		: TREES :	: SHORT-LOG : OTHER :		
	: TREES :			: TREES :					
	CORDS			THOUSAND			CORDS		
							BOARD		
							FEET 2/		
SOFTWOODS:									
EASTERN REDCEDAR	--	--	--	--	--	253	--	253	
TOTAL SOFTWOODS	--	--	--	--	--	253	--	253	
HARDWOODS:									
SELECT WHITE OAKS	85,911	18,430	67,481	647	55,456	18,443		37,013	
OTHER WHITE OAKS	17,721	6,772	10,949	17	7,557	2,912		4,645	
SELECT RED OAKS	16,165	1,886	14,279	252	8,139	1,595		6,544	
RED OAKS	23,975	6,633	17,342	268	13,570	3,912		9,658	
OTHER RED OAKS	12,746	6,012	6,734	1,235	13,126	3,924		9,202	
HICKORY A	21,392	7,063	14,329	556	9,177	1,936		7,241	
HICKORY B	4,075	3,569	506	--	3,684	355		3,329	
HARD MAPLE	583	127	456	--	3,025	--		3,025	
SOFT MAPLE	15,976	4,621	11,355	2,120	26,303	4,658		21,645	
ASH	6,606	2,898	3,708	278	10,101	354		9,747	
SYCAMORE	10,810	1,000	9,810	545	6,936	1,620		5,316	
COTTONWOOD	11,659	608	11,051	2,775	6,102	848		5,254	
RIVER BIRCH	5,886	2,595	3,291	233	5,633	1,304		4,329	
BASSWOOD	2,291	873	1,418	216	4,380	291		4,089	
BLACK WALNUT	9,051	1,924	7,127	208	10,607	2,468		8,139	
BLACK CHERRY	--	--	--	--	1,962	266		1,696	
ELM	10,582	3,481	7,101	133	28,848	2,722		26,126	
OTHER HARDWOODS	11,468	4,544	6,924	77	21,392	2,519		18,873	
NONCOMMERCIAL SPECIES	--	--	--	--	393	--		393	
TOTAL HARDWOODS	266,897	73,036	193,861	9,560	236,391	50,127		186,264	
ALL SPECIES	266,897	73,036	193,861	9,560	236,644	50,127		186,517	

1/ CUTTINGS OF LESS THAN 3 CORDS PER ACRE, OR THE EQUIVALENT IN BOARD FEET, ARE EXCLUDED.

2/ INTERNATIONAL 1/4-INCH RULE.

Table 43.--Average annual managed harvest¹ of growing stock for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and forest type, Prairie, Missouri

(Thousand cubic feet)

SPECIES	ALL FOREST TYPES	POST- BLACKJACK OAK	BLACK- SCARLET OAK	WHITE OAK	OAK-GUM- CYPRESS	ELM-ASH- COTTONWOOD	MAPLE- BEECH
HARDWOODS:							
SELECT WHITE OAKS	6,787	48	1,311	4,521	693	68	146
OTHER WHITE OAKS	1,400	990	348	62	--	--	--
SELECT RED OAKS	1,277	--	671	342	66	120	78
RED OAKS	1,894	24	1,622	230	--	13	5
OTHER RED OAKS	1,007	--	105	--	696	202	4
HICKORY A	1,690	52	599	394	238	383	24
HICKORY B	322	44	76	115	59	28	--
HARD MAPLE	46	--	--	--	--	--	46
SOFT MAPLE	1,262	--	--	--	47	1,215	--
ASH	522	--	30	2	9	477	4
SYCAMORE	854	--	173	--	42	639	--
COTTONWOOD	921	--	--	66	--	855	--
RIVER BIRCH	465	--	--	--	172	293	--
BASSWOOD	181	--	56	23	--	99	3
BLACK WALNUT	715	14	287	60	83	268	3
ELM	836	20	103	82	32	596	3
OTHER HARDWOODS	906	42	137	41	194	481	11
TOTAL HARDWOODS	21,085	1,234	5,518	5,938	2,331	5,737	327

1/ CUTTINGS OF LESS THAN 240 CUBIC FEET PER ACRE ARE EXCLUDED.

Table 44.--Average annual managed harvest of growing stock for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and stand-volume class, Prairie, Missouri¹

(Thousand cubic feet)

SPECIES	ALL CLASSES	STAND-VOLUME CLASS (CUBIC FEET PER ACRE)				
		240-	400-	800-	1,200-	1,600+
		399	799	1,199	1,599	1,600+
HARDWOODS:						
SELECT WHITE OAKS	6,787	113	1,169	2,077	1,528	1,900
OTHER WHITE OAKS	1,400	7	496	682	215	--
SELECT RED OAKS	1,277	73	154	493	266	291
RED OAKS	1,894	78	627	414	687	88
OTHER RED OAKS	1,007	19	170	539	149	130
HICKORY A	1,690	88	666	543	244	149
HICKORY B	322	13	60	185	64	--
HARD MAPLE	46	11	35	--	--	--
SOFT MAPLE	1,262	9	109	379	504	261
ASH	522	4	109	154	192	63
SYCAMORE	854	4	157	359	121	213
COTTONWOOD	921	--	215	254	--	452
RIVER BIRCH	465	--	48	182	235	--
BASSWOOD	181	--	26	155	--	--
BLACK WALNUT	715	15	150	295	255	--
ELM	836	1	53	321	387	74
OTHER HARDWOODS	906	13	132	463	9	289
TOTAL HARDWOODS	21,085	448	4,376	7,495	4,856	3,910

1/ CUTTINGS OF LESS THAN 240 CUBIC FEET PER ACRE ARE EXCLUDED.

Table 45.--Average annual managed harvest for 1972-1981, by harvest cuttings of growing stock on commercial forest land, by species and stand-volume class, Prairie, Missouri

(Thousand cubic feet)

SPECIES	ALL CLASSES		STAND-VOLUME CLASS ^{1/} (CUBIC FEET PER ACRE)				
			240-	400-	800-	1,200-	
			399	799	1,199	1,599	1,600+
HARDWOODS:							
SELECT WHITE OAKS	6,340	89	938	1,885	1,528	1,900	
OTHER WHITE OAKS	1,331	--	496	620	215	--	
SELECT RED OAKS	1,180	66	123	434	266	291	
RED OAKS	1,582	11	410	386	687	88	
OTHER RED OAKS	336	12	72	29	93	130	
HICKORY A	1,408	84	435	496	244	149	
HICKORY B	230	--	46	120	64	--	
HARD MAPLE	36	11	25	--	--	--	
SOFT MAPLE	500	9	73	119	299	--	
ASH	319	2	26	113	178	--	
SYCAMORE	695	--	71	299	121	204	
COTTONWOOD	334	--	75	215	--	44	
RIVER BIRCH	214	--	29	--	185	--	
BASSWOOD	79	--	23	56	--	--	
BLACK WALNUT	608	--	101	252	255	--	
ELM	630	1	6	185	374	64	
OTHER HARDWOODS	840	13	96	433	9	289	
TOTAL HARDWOODS	16,662	298	3,045	5,642	4,518	3,159	

^{1/} CUTTINGS OF LESS THAN 240 CUBIC FEET PER ACRE ARE EXCLUDED.

Table 46.--Average annual managed harvest for 1972-1981, by thinnings of growing stock on commercial forest land, by species and stand-volume class, Prairie, Missouri

(Thousand cubic feet)

SPECIES	ALL CLASSES	STAND-VOLUME CLASS ^{1/} (CUBIC FEET PER ACRE)				
		240-	400-	800-	1,200-	1,600+
		399	799	1,199	1,599	
HARDWOODS:						
SELECT WHITE OAKS	447	24	231	192	--	--
OTHER WHITE OAKS	69	7	--	62	--	--
SELECT RED OAKS	97	7	31	59	--	--
RED OAKS	312	67	217	28	--	--
OTHER RED OAKS	671	7	98	510	56	--
HICKORY A	282	4	231	47	--	--
HICKORY B	92	13	14	65	--	--
HARD MAPLE	10	--	10	--	--	--
SOFT MAPLE	762	--	36	260	205	261
ASH	203	2	83	41	14	63
SYCAMORE	159	4	86	60	--	9
COTTONWOOD	587	--	140	39	--	408
RIVER BIRCH	251	--	19	182	50	--
BASSWOOD	102	--	3	99	--	--
BLACK WALNUT	107	15	49	43	--	--
ELM	206	--	47	136	13	10
OTHER HARDWOODS	66	--	36	30	--	--
TOTAL HARDWOODS	4,423	150	1,331	1,853	338	751

^{1/} CUTTINGS OF LESS THAN 240 CUBIC FEET PER ACRE ARE EXCLUDED.

Table 47.--Average annual managed harvest of sawtimber¹ for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and forest type, Prairie, Missouri

(Thousand board feet)²

SPECIES	ALL FOREST TYPES	POST- BLACKJACK OAK	BLACK- SCARLET OAK	WHITE OAK	OAK-GUM- CYPRESS	ELM-ASH- COTTONWOOD	MAPLE- BEECH
HARDWOODS:							
SELECT WHITE OAKS	24,015	200	4,254	15,923	2,826	201	611
OTHER WHITE OAKS	4,079	2,723	1,356	--	--	--	--
SELECT RED OAKS	5,691	--	3,117	1,355	371	589	259
RED OAKS	6,834	--	5,870	890	--	50	24
OTHER RED OAKS	2,335	--	306	--	1,127	884	18
HICKORY A	5,419	--	2,236	1,123	307	1,753	--
HICKORY B	195	42	--	153	--	--	--
HARD MAPLE	142	--	--	--	--	--	142
SOFT MAPLE	3,853	--	--	--	160	3,693	--
ASH	1,683	--	--	9	15	1,637	22
SYCAMORE	4,368	--	1,035	--	254	3,079	--
COTTONWOOD	4,519	--	--	327	--	4,192	--
RIVER BIRCH	923	--	--	--	190	733	--
BASSWOOD	453	--	137	100	--	216	--
BLACK WALNUT	2,710	65	931	291	380	1,043	--
ELM	2,612	--	403	209	--	2,000	--
OTHER HARDWOODS	2,617	188	329	85	782	1,180	53
TOTAL HARDWOODS	72,448	3,218	19,974	20,465	6,412	21,250	1,129

^{1/} CUTTINGS OF LESS THAN 3 CORDS PER ACRE OR THE EQUIVALENT IN BOARD FEET ARE INCLUDED.

^{2/} INTERNATIONAL 1/4-INCH RULE.

Table 48.--Average annual managed harvest of sawtimber¹
for 1972-1981 from harvest cuttings and thinnings,
on commercial forest land, by species and stand-
volume class, Prairie, Missouri

(Thousand board feet)²

SPECIES	ALL CLASSES	STAND-VOLUME CLASS (BOARD FEET PER ACRE)			
		0- : 1,500-	2,500- : 5,000-		
		1,499	2,499	4,999	7,499
HARDWOODS:					
SELECT WHITE OAKS	24,015	1,657	5,788	10,057	6,513
OTHER WHITE OAKS	4,079	722	2,160	1,038	159
SELECT RED OAKS	5,691	865	1,374	2,270	1,182
RED OAKS	6,834	940	269	1,942	3,683
OTHER RED OAKS	2,335	967	200	419	749
HICKORY A	5,419	1,483	1,457	1,592	887
HICKORY B	195	42	--	153	--
HARD MAPLE	142	53	89	--	--
SOFT MAPLE	3,853	810	--	1,657	1,386
ASH	1,683	223	--	857	603
SYCAMORE	4,368	695	299	1,937	1,437
COTTONWOOD	4,519	952	699	980	1,888
RIVER BIRCH	923	191	157	575	--
BASSWOOD	453	353	100	--	--
BLACK WALNUT	2,710	521	838	435	916
ELM	2,612	219	129	1,228	1,036
OTHER HARDWOODS	2,617	136	397	1,898	186
TOTAL HARDWOODS	72,448	10,829	13,956	27,038	20,625

1/ CUTTINGS OF LESS THAN 3 CORDS PER ACRE, OR THE
EQUIVALENT IN BOARD FEET ARE INCLUDED.

2/ INTERNATIONAL 1/4-INCH RULE.

Table 49.--Average annual managed harvest
for 1972-1981, by harvest cuttings
of sawtimber¹ on commercial forest
land, by species and stand-volume
class, Prairie, Missouri

(Thousand board feet)²

SPECIES	:	ALL	:	STAND-VOLUME CLASS			
				:	(BOARD FEET PER ACRE)		
					0- : 1,500-	2,500- : 5,000-	
	:	CLASSES	:	1,499	2,499	4,999	7,499
HARDWOODS:							
SELECT WHITE OAKS	23,368	1,114	5,684	10,057	6,513		
OTHER WHITE OAKS	4,062	705	2,160	1,038	159		
SELECT RED OAKS	5,439	820	1,167	2,270	1,182		
RED OAKS	6,547	653	269	1,942	3,683		
OTHER RED OAKS	1,100	199	10	142	749		
HICKORY A	4,863	927	1,457	1,592	887		
HICKORY B	195	42	--	153	--		
HARD MAPLE	142	53	89	--	--		
SOFT MAPLE	1,733	278	--	464	991		
ASH	1,405	26	--	776	603		
SYCAMORE	3,815	142	299	1,937	1,437		
COTTONWOOD	1,744	206	699	839	--		
RIVER BIRCH	690	115	--	575	--		
BASSWOOD	237	137	100	--	--		
BLACK WALNUT	2,502	313	838	435	916		
ELM	2,479	86	129	1,228	1,036		
OTHER HARDWOODS	2,540	59	397	1,898	186		
TOTAL HARDWOODS	62,861	5,875	13,298	25,346	18,342		

1/ CUTTINGS OF LESS THAN 3 CORDS PER ACRE, OR THE
EQUIVALENT IN BOARD FEET ARE INCLUDED.

2/ INTERNATIONAL 1/4-INCH RULE.

Table 50.--Average annual managed harvest
for 1972-1981, by thinnings of sawtimber¹
on commercial forest land, by species
and stand-volume class, Prairie, Missouri

(Thousand board feet)²

SPECIES	ALL CLASSES	STAND-VOLUME CLASS (BOARD FEET PER ACRE)				
		0- : 1,500- : 2,500- : 5,000-				
		1,499 : 2,499 : 4,999 : 7,499				
HARDWOODS:						
SELECT WHITE OAKS	647	543	104	--	--	--
OTHER WHITE OAKS	17	17	--	--	--	--
SELECT RED OAKS	252	45	207	--	--	--
RED OAKS	287	287	--	--	--	--
OTHER RED OAKS	1,235	768	190	277	--	--
HICKORY A	556	556	--	--	--	--
SOFT MAPLE	2,120	532	--	1,193	395	--
ASH	278	197	--	81	--	--
SYCAMORE	553	553	--	--	--	--
COTTONWOOD	2,775	746	--	141	1,888	--
RIVER BIRCH	233	76	157	--	--	--
BASSWOOD	216	216	--	--	--	--
BLACK WALNUT	208	208	--	--	--	--
ELM	133	133	--	--	--	--
OTHER HARDWOODS	77	77	--	--	--	--
TOTAL HARDWOODS	9,587	4,954	658	1,692	2,283	--

1/ CUTTINGS OF LESS THAN 3 CORDS PER ACRE OR THE
EQUIVALENT IN BOARD FEET ARE INCLUDED.

2/ INTERNATIONAL 1/4-INCH RULE.

Table 51.--Area of managed harvest¹ for 1972-1981, by harvest cuttings
on commercial forest land, by forest type and stand-age class,
Prairie, Missouri

(Thousand acres)

FOREST TYPE	ALL AGES	STAND-AGE CLASS (YEARS)						
		60-59	60-69	70-79	80-89	90-99	100-119	120-13
POST-BLACKJACK OAK	23.0	--	5.0	6.0	4.0	4.0	--	4.0
BLACK-SCARLET OAK	69.0	--	18.0	10.0	18.0	19.0	4.0	--
WHITE OAK	78.0	--	--	3.0	--	5.0	55.0	15.0
OAK-GUM-CYPRESS	15.0	--	--	4.0	3.0	4.0	--	4.0
ELM-ASH-COTTONWOOD	48.0	16.0	4.0	14.0	4.0	6.0	4.0	--
MAPLE-BEECH	7.0	--	--	--	--	--	3.0	4.0
ALL FOREST TYPES	240.0	16.0	27.0	37.0	29.0	38.0	66.0	27.0

1/ FOR A TEN-YEAR PERIOD.

Table 52.--Area of managed harvest¹ by thinnings on commercial
forest land for 1972-1981, by forest type and stand-
age class, Prairie, Missouri

(Thousand acres)

FOREST TYPE	ALL AGES	STAND-AGE CLASS (YEARS)					
		0-9	10-19	20-29	30-39	40-49	50-59
BLACK-SCARLET OAK	75.0	--	4.0	19.0	23.0	24.0	5.0
WHITE OAK	53.0	--	--	17.0	31.0	5.0	--
OAK-GUM-CYPRESS	37.0	--	--	17.0	16.0	4.0	--
ELM-ASH-COTTONWOOD	103.0	3.0	8.0	20.0	44.0	28.0	--
MAPLE-BEECH	21.0	--	--	5.0	9.0	3.0	4.0
ALL FOREST TYPES	289.0	3.0	12.0	78.0	123.0	64.0	9.0

1/ FOR A 10-YEAR PERIOD.

PRINCIPAL TREE SPECIES IN MISSOURI'S PRAIRIE UNIT⁴

TWOOD SPECIES

tern redcedar. *Juniperus virginiana*

D HARDWOOD SPECIES

es:
hite ash *Fraxinus americana*
reen ash *Fraxinus pennsylvanica*

ck walnut. *Juglans nigra*

l maples:
ugar maple *Acer saccharum*

ory group A:
acan *Carya illinoensis*
hellbark hickory *Carya laciniosa*
agbark hickory. *Carya ovata*
ockernut hickory *Carya tomentosa*

ory group B:
ater hickory *Carya aquatica*
lternut hickory *Carya cordiformis*
lgnut hickory. *Carya glabra* var. *glabra*
er birch *Betula nigra*

ect white oaks:
hite oak *Quercus alba*
ur oak *Quercus macrocarpa*
ramp chestnut oak. *Quercus michauxii*
pinkapin oak *Quercus muehlenbergii*

4.0
5.0
4.0
--
4.0
e oaks:
ramp white oak *Quercus bicolor*
ercup oak *Quercus lyrata*

7.0
er white oaks:
st oak. *Quercus stellata* var. *stellata*

ect red oaks:
orthern red oak. *Quercus rubra*
humard oak . *Quercus shumardii* var. *shumardii*

Red oaks:

Scarlet oak *Quercus coccinea*
Black oak *Quercus velutina*

Other red oaks:

Shingle oak *Quercus imbricaria*
Blackjack oak *Quercus marilandica*
Pin oak *Quercus palustris*

Other hard hardwoods:

Black locust. *Robinia pseudoacacia*
Common persimmon. *Diospyros virginiana*
Honeylocust *Gleditsia triacanthos*
Red mulberry. *Morus rubra*
Osage-orange. *Maclura pomifera*

SOFT HARDWOOD SPECIES

American basswood *Tilia americana*
American sycamore *Platanus occidentalis*
Black cherry. *Prunus serotina*
Butternut *Juglans cinerea*

Cottonwoods:

Eastern cottonwood. *Populus deltoides*

Elms:

American elm. *Ulmus americana*
Slippery elm. *Ulmus rubra*
Rock elm. *Ulmus thomasi*

Soft maples:

Silver maple. *Acer saccharinum*

Other soft hardwoods:

Black willow. *Salix nigra*
Boxelder. *Acer negundo*
Hackberry *Celtis occidentalis*
Kentucky coffeetree *Gymnocladus dioica*
Ohio buckeye. *Aesculus glabra*
Sassafras *Sassafras albidum*

⁴The 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., U.S. Dep. Agric., Agric. Handb. 41, 472 p., 1953.

APPENDIX

ACCURACY OF SURVEY

Forest survey information is based on a sampling procedure designed to provide reliable statistics at the State and Survey Unit levels. Consequently, the reported figures are estimates only. However, a measure of reliability of these figures is given by sampling errors. These sampling errors may be interpreted as meaning that the chances are two out of three that the results for the sample differ by no more than the amount indicated, from the results that would have been obtained if all trees in the Unit had been measured (a 100-percent inventory), using the same tree measurements.

For example, the estimated area of commercial forest land in the Prairie Unit in 1972, 1,940.4 thousand acres, has a sampling error of ± 2.6 percent (± 50.5 thousand acres). The chances are two out of three, then, that the commercial forest area falls between 1,889.9 and 1,990.9 thousand acres ($1,940.4 \pm 50.5$), the limits within which the results of a 100-percent inventory would occur.

Following are sampling errors for total estimated volume, net growth, and removals for both growing stock and sawtimber, and for area of commercial forest land during the 1972 Prairie Survey:

Item	Prairie Unit totals	Sampling error (Percent)
Growing Stock:		
Volume	11,673.6 M cords	4.6
Growth	375.5 M cords	7.5
Removals	588.6 M cords	11.8
Sawtimber:		
Volume	2,458.0 MM bd. ft.	6.3
Growth	66.3 MM bd. ft.	10.2
Removals	151.0 MM bd. ft.	10.8
Commercial forest land	1,940.4 M acres	2.6

As survey data are broken down into units smaller than State or Survey Unit totals, the sampling error increases. The smaller the breakdown, the larger the sampling error. For example, the sampling error for area of commercial forest land in a particular county is higher than that for total commercial forest area in the Survey Unit. An approximation of the increasing sampling error can be obtained from table 53, which shows the sampling errors associated with estimates smaller than totals in the Prairie Unit.

Table 53.--Sampling errors¹ for estimates smaller than unit totals of volume, net growth, and removals, and of area of commercial forest land, Prairie, Missouri, 1972

SAMPLING ERROR (PERCENT)	COMMERCIAL FOREST	GROWING STOCK			SAWTIMBER		
		INVENTORY	GROWTH	REMOVALS	INVENTORY	GROWTH	REMOVALS
	THOUSAND ACRES	MILLION CUBIC FEET			MILLION BOARD FEET ^{2/}		
1	--	--	--	--	--	--	--
2	3,324.1	--	--	--	--	--	--
3	1,477.4	--	--	--	--	--	--
4	831.0	1,215.5	--	--	--	--	--
5	531.9	777.9	66.1	--	3,853.9	--	--
10	133.0	194.5	16.5	64.6	963.5	69.5	174.5
15	59.1	86.4	7.4	28.7	428.2	30.9	77.6
20	33.2	48.6	4.1	16.2	240.9	17.4	43.6
25	21.3	31.1	2.6	10.3	154.2	11.1	27.9
50	5.3	7.8	.7	2.6	38.5	2.8	7.0
100	1.3	1.9	.2	.6	9.6	.7	1.7

^{1/} AT THE 68-PERCENT PROBABILITY LEVEL.

^{2/} INTERNATIONAL 1/4-INCH RULE.

SURVEY PROCEDURE

The major steps in the survey of the
irie Unit were as follows:

1. A total of 96,231 1-acre points
tributed systematically across aerial
tos of the entire area were observed.
se points were classified as either
est land (13,551) or nonforest land
,680) in order to make a preliminary
imate of forest area. Next, 5,134 of
forest points were stereoclassified
to forest type, stand-size class, and
sity. Then 561 points classed as forest
3,515 points classed as nonforest were
ained on the ground to correct the pre-
inary area estimate for errors in clas-
ication and for actual changes in land
since the photos were taken. Some of
points examined were locations of per-
ent sample plots (each of which contained
variable-radius plot with basal area
tor five) established during the 1959
vey. Of the 398 points determined to
on commercial forest land from ground
mination, 184 were at previously unsampled
ations and 10-point variable-radius plots
basal area factor 37.5) were established
ormly over the sample acre. The remaining
points were at formerly established per-
ent plot locations and were remeasured
superimposing 10-point variable-radius
ts (basal area factor 37.5) over the
oting plot in addition to remeasuring
basal area factor five plot. Tree
easurements made on new and remeasured
ts were the basis for estimates of timber
ome, growth, mortality, number of trees,
other forest classifications.

2. Statistics on timber utilization
1969 were obtained from mill surveys
from remeasurement of permanent sample
ts. The Missouri Department of Conser-
ation conducted a canvass of resident saw-
ills, veneer mills, and other primary wood-
ng plants. The North Central Forest
eriment Station canvassed resident pulp-
ills, and the underground mining industry
Missouri, as well as out-of-State sawmills,
mills, and veneer mills to determine
air use of timber from Missouri. Fuel-
ol and fencepost output was based on U.S.
us of Agriculture and Housing figures,
canvass of public and industrial timber
ers, and a canvass of resident wood-
ating plants. Estimates of primary mill
e due used for fuelwood were obtained

from the canvass of Missouri primary wood-
using plants. Timber cut for products by
owner class was determined by a canvass of
all public and industrial timber owners.
The portion of timber cut unaccounted for
by the latter owners was grouped under
"farmer and other owners."

3. To develop wood utilization factors
used in converting timber products output
to timber removals for saw logs, veneer logs,
cooperage logs, pulpwood, and charcoal wood,
486 felled trees throughout the State were
measured. Factors for all other products
were obtained during the 1959-1960 Missouri
utilization study.

4. Field data were sent to St. Paul
where they were edited, punched on cards,
and stored on magnetic tape for later
machine sorting, computing, and tabulation.

MANAGED HARVEST

Managed harvest is the estimated volume
of timber on commercial forest land that
could be cut annually for the next 10 years,
while improving tree stocking and bringing
about a more even distribution of age
classes. In Missouri, annual managed
harvest is shown separately as that from
harvest cutting and from thinnings, and was
determined by computer using an area control
system for determining the number of acres
to be cut annually.

The harvest cut of sawtimber was
calculated from stands of forest types
normally managed for sawtimber whose site
index and age indicated they were ready
for harvest, or would be within the next
10 years. Table 54 shows the site index
used in these calculations for each forest
type to determine whether the objective
of management would be to grow sawtimber
or pulpwood. Included also is the rotation
age for each.

Stands that did not qualify for harvest
during that period were checked to see if
they were overstocked by basal-area stand-
ards, or would be within the next 10 years.
Stands determined to be overstocked were
"thinned" by the computer back to their
recommended basal-area stocking level, and
the volume of sawtimber trees "thinned"
was added to the volume of managed harvest
by thinnings of growing stock and sawtimber.
The volume of poletimber trees "thinned"

Table 54.--Forest type, site index, and rotation age, by management objective, used in calculation of annual allowable cut, Missouri, 1972

Forest type	Site index	Rotation age	Management objective
Years			
Shortleaf pine	50 or higher	60	Sawtimber
	Less than 50	40	Pulpwood
Shortleaf pine-oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Eastern redcedar	35 or higher	55	Sawtimber
	Less than 35	70	Sawtimber
Eastern redcedar-hardwood	45 or higher	50	Sawtimber
	Less than 45	60	Sawtimber
Black-scarlet oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
White oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Post-blackjack oak	All sites	50	Pulpwood
Oak-gum-cypress	All sites	60	Sawtimber
Cottonwood	All sites	30	Sawtimber
Elm-ash-cottonwood	All sites	50	Sawtimber
Maple-beech	All sites	90	Sawtimber

was added to the growing-stock managed harvest by thinnings. In scheduling thinnings, the computer program first "removes" rough and rotten trees, then short-log trees, and finally, growing-stock trees. The volume of managed harvest from rough, rotten, and short-log (rough) trees is kept separate from that from growing-stock trees.

The harvest cut of growing stock included that of sawtimber in addition to the volume from stands of forest types normally managed for pulpwood that were or would be rotation age within the next 10 years.

Managed harvest is based on the assumptions that all timber will be available and accessible when needed, and that a ready market will exist for every species, size, and grade of material harvested. Further, it assumes that the proper sequence of cutting is known and will be followed, and that logging practices employed will result in an improved forest. Because there is no way of guaranteeing that these assumptions will be carried out during the next 10 years, the managed harvest estimates should be compared with timber removals figures only in a general way.

LOG GRADE

The butt log of every sawtimber tree (965 trees) on every permanent sample plot

in the Prairie Unit, and all of the logs in a smaller sample of trees throughout the State (265 trees) were log-graded. The volume yield by log grade for each tree in the smaller sample was used to distribute the volume of trees in the permanent plot sample into log-grade class. The resulting volumes were expanded to provide an estimate for the entire unit.

Logs are graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber and How To Use Them," published by the Forest Products Laboratory under the designation D1737A, 1961, and USDA Forest Service standards for hardwood tie and timber logs. The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log grade standards, was graded.

Shortleaf pine was graded according to "Interim Southern Pine Log Grades," USDA Forest Service, 1953. All other softwood were graded according to "Specifications for Log Grades of Hardwoods and Softwoods Northern Hemlock and Hardwood Association 1947. The lowest 16-foot log in softwood trees or a shorter log down to 12 feet if a 16-foot butt log was not present, was graded.

Hahn, Jerold T., and Alexander Vasilevsky.

1975. Timber resource of Missouri's Prairie, 1972. North Cent. For. Exp. Stn., St. Paul, Minn. 100 p. (USDA For. Serv. Resour. Bull. NC-26)

The third timber inventory of Missouri's Prairie Forest Survey Unit shows substantial declines in both growing-stock and sawtimber volumes between 1959 and 1972. Commercial forest area declined by one-fifth. Presents highlights and statistics on forest area and timber volume, growth, mortality, ownership, and use in 1972.

OXFORD: 524.1:905.2(778). KEY WORDS: timber volume, growth, utilization, forest area.

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Some Recent Forest Survey Reports Published by
the North Central Forest Experiment Station

- Primary forest products industry and industrial roundwood production, Michigan, 1969, by James E. Blyth and Allen H. Boelter. USDA For. Serv. Resour. Bull. NC-12, 12 p., illus. 1971.
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- Missouri's primary forest products output and industries, 1969, by James E. Blyth and Robert Massengale. USDA For. Serv. Resour. Bull. NC-16, 15 p., illus. 1972.
- Forest area in Wisconsin counties, 1968, by Burton L. Essex. USDA For. Serv. Res. Note NC-135, 4 p., illus. 1972.
- Iowa saw-log production and sawmill industry, 1969, by James E. Blyth and William A. Farris. USDA For. Serv. Res. Note NC-136, 4 p., illus. 1972.
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- Pulpwood production in the North Central Region by county, 1972, by James E. Blyth. USDA For. Serv. Resour. Bull. NC-18, 16 p., illus. 1973.
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- Local net timber volume equations for Wisconsin, by Jerold T. Hahn. USDA For. Serv. Res. Note NC-149, 4 p., illus. 1973.
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PULPWOOD PRODUCTION

in the

NORTH CENTRAL REGION
BY COUNTY

1973



James E. Blyth

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE

U. S. DEPARTMENT OF AGRICULTURE

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1975

PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION,
BY COUNTY, 1973

James E. Blyth

This is the 15th annual report on the pulpwood harvest in Lake States counties and the 14th annual report on the Central States harvest. The Lake States (Michigan, Minnesota, and Wisconsin) and Central States (Illinois, Indiana, Iowa, and Missouri) are discussed separately because the timber types in each area are different and less information can be released about the Central States (more detailed data published on pulpwood production and receipts in the Central States would reveal the operations of individual mills).

Quantities shown may vary slightly from one table to another because of rounding differences. These differences are insignificant.

Pulpmills using North Central States timber in 1973 reported their pulpwood receipts by State and county. Their cooperation is gratefully acknowledged. Thanks are also due to Al Boelter, Staff Forester, Forest Resource Development, Michigan Department of Natural Resources, for collecting data on the Michigan pulpmills.

LAKE STATES

Production Rises 10 Percent

Pulpwood production¹ in the Lake States rose to 4.7 million cords in 1973 from 4.3 million cords in 1972, because pulpmills were operating at a higher rate in 1973. Changes in pulpwood stockpiles during 1973 were nominal compared to the mill inventory at the end of 1972.

¹Pulpwood production is defined as the pulpwood volume from timber land in a specified area that was received at all mills during 1973, whereas pulpwood receipts are defined as the volume of wood received by mills in a specified area regardless of the geographic source.

All but 2 percent of the pulpwood was consumed in the Lake States (table 1). Nine out of 10 cords were roundwood (including chips from roundwood); the remainder was residue from local wood-using plants.² Eighty-four percent of the residue was hardwood. Use of Lake States residue for pulp has climbed an average of 15 percent annually since 1964.

Harvesting of all species, except hemlock, increased. Output of aspen surged higher by 134,000 cords over 1972; harvesting of miscellaneous hardwoods (chiefly maple, elm, ash, and oak) was up by 129,000 cords. More birch pulpwood was cut than ever before.

1973 Pulpwood Production by State

Wisconsin produced 37 percent of the Lake States pulpwood, Michigan 34 percent, and Minnesota 29 percent. Production rose in each of these States.

Wisconsin production rises 221,000 cords.--Demand for hardwoods improved sharply while harvesting of hemlock, pine, and tamarack fell. Wisconsin wood residue shipped to pulpmills rose 46 percent. Four-fifths of the pulpwood output came from northeast and northwest Wisconsin. Top-producing counties were Oneida, Price, and Bayfield.

Michigan expands output 185,000 cords.--Nearly all (98 percent) of the production increase was in hardwoods. Upper Peninsula loggers provided most (75 percent) of the additional roundwood cut. Iron, Baraga, and Delta were the leading pulpwood-producing counties.

²Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping. Residue includes slabs, edgings, veneer cores, sawdust, wood flour, and chips manufactured from these byproducts.

Table 1.--Production and imports of pulpwood, Lake States, 1973

(In standard cords, unpeeled)

SPECIES AND ORIGIN	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
ASPEX								
MICHIGAN	399532	42	4801	404375	0	0	0	404375
MINNESOTA	0	609226	0	609226	0	9023	9023	618249
WISCONSIN	196054	55822	753468	1005344	0	142	142	1005486
EXPORTED 3/	7713	7257	2612	17582	0	0	0	0
TOTAL	603299	672347	760881	2036527	0	9165	9165	2028110
BALSAM FIR								
MICHIGAN	36455	0	781	37236	0	0	0	37236
MINNESOTA	0	60223	0	60223	0	0	0	60223
WISCONSIN	31936	5078	66275	103289	0	23	23	103312
EXPORTED 3/	0	149	0	149	0	0	0	0
TOTAL	68391	65450	67056	200897	0	23	23	200771
PITCH								
MICHIGAN	58701	63	4832	63596	0	0	0	63596
MINNESOTA	0	40690	0	40690	0	0	0	40690
WISCONSIN	818	46	67070	67934	0	0	0	67934
EXPORTED 3/	0	1387	576	1963	0	0	0	0
TOTAL	59519	42186	72478	174183	0	0	0	172220
HFWLOCK								
MICHIGAN	36886	0	1366	38052	0	0	0	38052
WISCONSIN	22940	0	31073	54013	0	0	0	54013
TOTAL	57626	0	32439	90065	0	0	0	90065
PINE								
MICHIGAN	133324	0	1171	134495	0	0	0	134495
MINNESOTA	0	154221	0	154221	0	1100	1100	155321
WISCONSIN	70335	49096	230560	349991	37097	145	37242	387233
EXPORTED 3/	0	1667	0	1667	0	0	0	0
TOTAL	203659	204984	231731	640374	37097	1245	38342	677049
SPRUCE								
MICHIGAN	13823	0	196	14019	0	0	0	14019
MINNESOTA	0	141871	0	141871	0	500	500	142371
WISCONSIN	32476	56939	16247	105662	0	118768	118768	224430
EXPORTED 3/	0	14665	0	14665	0	0	0	0
TOTAL	46299	215275	16443	278017	0	119268	119268	398020
TAMARACK								
MICHIGAN	3968	0	157	4125	0	0	0	4125
MINNESOTA	0	6436	0	6436	0	0	0	6436
WISCONSIN	949	25835	1187	27971	0	0	0	27971
TOTAL	4917	32271	1344	38532	0	0	0	38532
MISC. HARDWOODS								
MICHIGAN	326129	313	24159	350601	0	0	0	350601
MINNESOTA	0	33656	0	33656	0	4107	4107	37763
WISCONSIN	30736	115	767246	798097	0	0	0	798097
EXPORTED 3/	8356	2007	8140	18503	0	0	0	0
TOTAL	365221	36091	795545	800857	0	4107	4107	786461
TOTAL HARDWOODS								
MICHIGAN	1006618	418	37463	1044499	0	0	0	1044499
MINNESOTA	0	1046323	0	1046323	0	14730	14730	1061053
WISCONSIN	386244	192931	1531126	2112301	37097	119078	156175	2268476
EXPORTED 3/	16069	28932	11328	56329	0	0	0	0
TOTAL	1408931	1268604	1581917	4259452	37097	133808	170905	4374028
RESIDUE-SOFTWOOD								
MICHIGAN	11076	0	976	12052	0	0	0	12052
MINNESOTA	0	23632	0	23632	25766	1992	27758	51390
WISCONSIN	3527	961	16741	21229	253685	3607	257292	278521
EXPORTED 3/	13025	1084	3276	17385	0	0	0	0
TOTAL	27628	25677	20993	74298	279451	5599	285050	341963
RESIDUE-HARDWOOD								
MICHIGAN	113247	0	16750	129997	12333	0	12333	142330
MINNESOTA	0	82435	14530	96965	3244	10264	13508	110473
WISCONSIN	28476	0	120980	149456	0	0	0	149456
EXPORTED 3/	7151	0	3181	10332	0	0	0	0
TOTAL	148874	82435	155441	386750	15577	10264	25841	402259
ALL WOOD MATERIAL								
MICHIGAN	1130941	418	55189	1186548	12333	0	12333	1198881
MINNESOTA	0	1152390	14530	1166920	29010	26986	55996	1222916
WISCONSIN	418247	192892	1670847	2282986	290782	122685	413467	2696453
EXPORTED 3/	36245	30016	17785	84046	0	0	0	0
TOTAL	1585433	1376716	1758351	4720500	332125	149671	481796	5118250

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING - PRODUCTION BY STATES - PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE

2/ MOSTLY WESTERN STATES.

3/ PULPWOOD SHIPPED TO MILLS OUTSIDE OF REGION.

Minnesota production inches up 2 percent.--Demand for Minnesota pulpwood remained strong in 1973 after a major production gain in 1972. Pulpwood producers in northeastern Minnesota furnished 54,000 more cords than in 1972, while output dropped slightly in the Central Pine and Rainy River Units. St. Louis, Koochiching, and Itasca Counties supplied 60 percent of the roundwood.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to commercial forest area (fig. 1); second, the amount of pulpwood cut relative to the merchantable volume in major pulpwood species (fig. 2). Heaviest cutting pressure (per 1,000 cords of merchantable volume in principal pulpwood species) was in central and northeast Wisconsin and in Upper Michigan.

Receipts Up 11 Percent

Forty-one Lake States plants received 5.1 million cords of pulpwood in 1973. All but two of these plants used aspen in 1973, and more plants used each species than in 1972 (table 2).

Receipts of hemlock and pine fell, but increased for all other species. Procurement of miscellaneous hardwoods outranked pine for the first time. Birch is becoming a major pulpwood source: receipts were double those in 1969. Deliveries of softwood residue in the Lake States rose for the 8th straight year.

Of the imported wood, 31 percent came from Canada and the remainder from various states. Montana, Wyoming, and South Dakota each supplied more than 70,000 cords, primarily as chips. Since 1969, imports of softwood roundwood from other areas of the U.S. have dropped each year, while imports of softwood residue have surged ahead.

Pulpwood marketing advanced 268,000 cords in Michigan in 1973. Every species group, except spruce, shared the gain. Demand for aspen, miscellaneous hardwoods, and hardwood residue was strong.

In Wisconsin, pulpwood demand expanded 246,000 cords over 1972. Aspen, spruce, miscellaneous hardwoods, and softwood residue receipts were significantly higher, while pine receipts declined. Wisconsin is the principal market for softwood residue from western states.

Pulpwood requirements remained steady at Minnesota mills. Roundwood procurement declined (primarily aspen), but was offset by larger purchases of residue.

Regional Mill Capacity Stable--Sawmill Interest Increasing

Closure of two small pulp mills had little effect on Lake States mill capacity (table 3). Two large firms, formerly not producing Lake States pulp, purchased mills in Wisconsin.

During the last 2 years, Lake States pulp producers have shown increased interest in sawmills. Some have purchased, built, or expanded sawmills, and some are seeking opportunities to purchase chips from sawmills. Competition between sawmills and pulp mills for stumpage has intensified as more sawmills have been built or modified to saw smaller logs.

CENTRAL STATES

Production Dips 2 Percent

After 5 years of rising output, Central States pulpwood production fell slightly to 454,000 cords in 1973 from 463,000 cords in 1972. More than half (54 percent) of the pulpwood was hardwood residue, the only pulpwood category to increase over 1972. The lower output resulted from smaller pulpwood exports to adjacent States.

Only Illinois produced more pulpwood than in 1972 (table 4). Indiana and Missouri are the major suppliers of pulpwood to mills outside the Central States; their export shipments constituted one-fourth of all Central States pulpwood produced (table 5).

Loggers harvested pulpwood in 135 counties: 44 in Illinois, 43 in Indiana, 35 in Missouri, and 13 in Iowa (fig. 3). Procurement areas in Illinois included several additional counties in the south-central section of the State. In the other States, procurement territories were similar to those in 1972.

Receipts Advance 6 Percent

Thirteen Central States' plants received 379,000 cords of pulpwood in 1973 (table 6). Seventeen percent was imported from other States. Additional wood received above the 1972 level was chiefly

hardwood residue. More pulpwood was delivered to Illinois mills than in any previous year.

Pulping capacity remained near 1,500 tons per day (table 7). No significant capacity changes have been reported in the region, but capacity is increasing in

nearby States. Consequently, the decline in exports is likely to be short-lived.

* * *

Other detailed pulpwood production data are found in the Appendix.

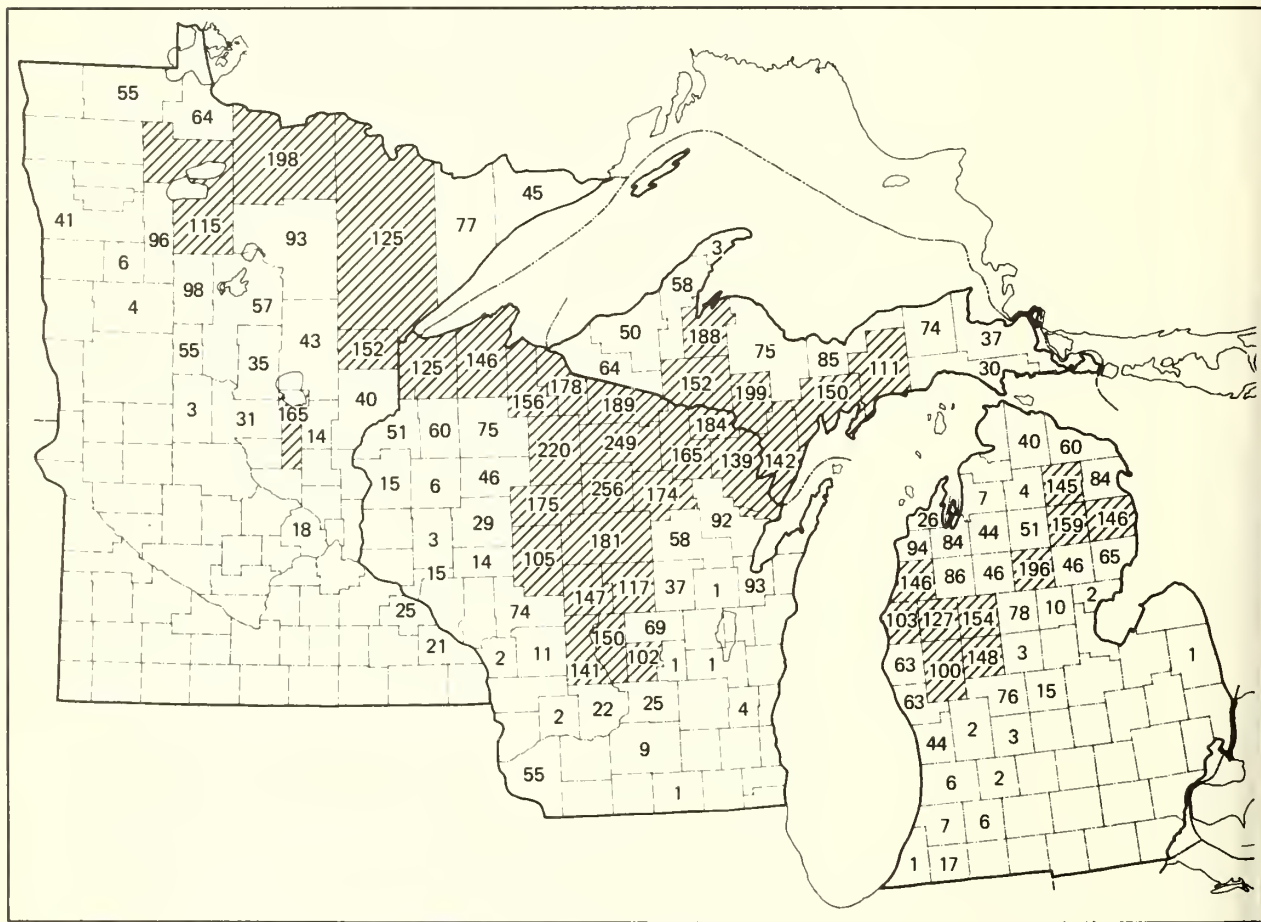


Figure 1.--Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1973. Crosshatching shows counties that supplied 100 or more cords of pulpwood per 1,000 acres of stocked commercial forest land. Acres of stocked commercial forest land were determined during the last forest survey in each State.

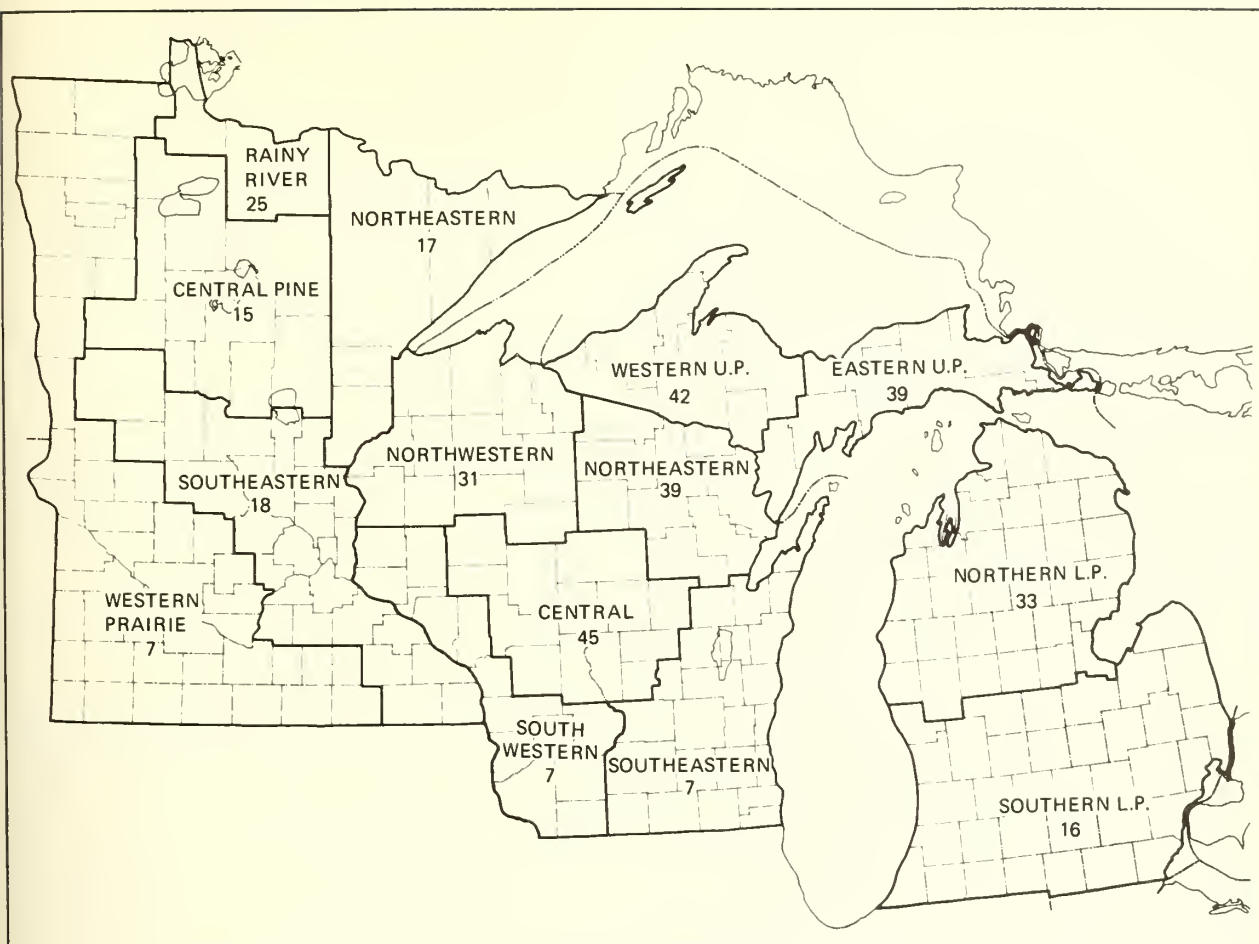


Figure 2.--Cords of pulpwood bolts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1973. The heavy lines delineate the boundaries of the Forest Survey Units in each State.

Table 2.--Plants using the different species of wood for pulping in 1973

(In numbers)

SPECIES AND KIND OF MATERIAL	: LAKE : STATES	: MINNESOTA	: WISCONSIN	: MICHIGAN
ASPEN	39	9	22	8
BALSAM FIR	17	5	9	3
BIRCH	13	2	8	3
HEMLOCK	10	--	9	1
PINE	12	3	5	4
SPRUCE	20	5	12	3
TAMARACK	7	2	4	1
MISCELLANEOUS HARDWOODS	19	2	11	6
WOOD CHIPS (RESIDUE)	16	3	8	5
SLABWOOD AND OTHER RESIDUE	6	1	3	2
TOTAL PLANTS ^{1/}	41	9	24	8

^{1/} SOME PLANTS USE MORE THAN ONE SPECIES, SO NUMBERS IN COLUMNS CANNOT BE ADDED.

Table 3.--Active woodpulp mills in the Lake States, by location, type of pulp produced, and capacity, 1973

		MILL CAPACITY IN TONS PER 24 HOURS 1/				
COMPANY	LOCATION	TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL
MICHIGAN:						
ABITOH CORP.	ALPENA	430	0	0	430	0
CELOTEX CORP.	LANSF	270	0	0	270	0
HOFMNER WALDOFF CORP.	ONTONAGON	220	0	0	0	220
MANISTIQUE PULP AND PAPER CO.	MANISTIQUE	90	0	0	90	0
MEAD CORP.	ESCANABA	750	0	600	150	0
MENASHA CORP.	OTSEGO	225	0	0	0	225
PACKAGING CORP. OF AMERICA	FILER CITY	400	0	0	0	400
WAPPEN CO., S.D.	MUSKEGON	240	0	240	0	0
TOTAL		2625	0	840	940	845
MINNESOTA :						
BLANDIN PAPER CO.	GRAND RAPIDS	220	0	0	220	0
HENNEPIN PAPER CO.	LITTLE FALLS	75	0	0	75	0
BOISE CASCADE CORP.	INTERNATIONAL FALLS	770	0	320	450	0
NORTHWEST PAPER CO.	CLOQUET	520	120	400	0	0
SUPERWOOD CORP.	REMNIDJI	90	0	0	90	0
ST REGIS PAPER CO.	SARTELL	125	0	0	125	0
SUPERWOOD CORP.	OMLUTH	240	0	0	240	0
HOFMNER WALDOFF CORP.	ST PAUL	700	0	0	0	300
CONWED CORP.	CLOQUET	750	0	0	750	0
TOTAL		2690	120	720	1550	300
WISCONSIN :						
AMERICAN CAN CO.	GREEN BAY	210	150	0	60	0
WEYERHAEUSER CO.	ROTHSCHILD	200	200	0	0	0
PADGER PAPER MILLS	PESHTIGO	110	110	0	0	0
APPLETON PAPERS INC.	COMBINED LOCKS	200	0	0	200	0
CONSOLIDATED PAPERS, INC.	APPLETON	180	180	0	0	0
CONSOLIDATED PAPERS, INC.	STEVENS POINT	100	0	0	100	0
CONSOLIDATED PAPERS, INC.	WISCONSIN RAPIDS	625	0	400	225	0
GREEN BAY PACKAGING, INC.	GREEN BAY	200	0	0	0	200
FLAMBEAU PAPER CO.	PARK FALLS	115	115	0	0	0
KIMBERLY-CLARK CORP.	KIMREPLY	115	0	0	115	0
PENTAIR INDUSTRIES	NIAGARA	150	0	0	150	0
MOSINEE PAPER MILLS CO.	MOSINEE	200	0	200	0	0
NEKOOSA-EDWARDS PAPER CO.	NEKOOSA	310	0	310	0	0
NEKOOSA-EDWARDS PAPER CO.	PORT EDWARDS	215	215	0	0	0
OWENS-ILLINOIS	TOMAHAWK	620	0	0	0	620
CHARMIN PAPER PRODUCTS CO.	GREEN BAY	27	27	27	27	27
SCOTT PAPER CO.	OCONTO FALLS	110	110	0	0	0
ST REGIS PAPER CO.	PHINELANDER	120	120	0	0	0
FLINKOTE COMPANY	CORNELL	50	0	0	50	0
SUPERIOR FIBER PRODUCTS CO.	SUPERIOR	180	0	0	180	0
THILMANY PULP AND PAPER CO	KAIKAIUNA	400	0	400	0	0
TOMAHAWK PULP CO., INC.	TOMAHAWK	50	0	0	50	0
WAUSAU PAPER MILLS CO.	HONKAW	145	145	0	0	0
EVANS PRODUCTS CO.	PHILLIPS	100	0	0	100	0
TOTAL		4705	1345	1310	1230	820
ALL STATES		10020	1465	2870	3720	1965

1/ LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1974, AND
1974 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.
2/ CAPACITY NOT AVAILABLE.

Table 4.--Production and imports of pulpwood, Central States, 1973

(In standard cords, unpeeled)¹

SPECIES AND ORIGIN	PRODUCTION BY STATES 2/				IMPORTS				TOTAL RECEIPTS
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
SOFTWOODS									
ILLINOIS	416	0	0	3408	3824	0	0	0	3824
IND., IOWA, MO. 3/	0	0	0	0	0	0	400	400	400
EXPORTED 4/	89	0	0	414	503	0	0	0	0
TOTAL	505	0	0	3822	4327	0	400	400	4224
SOFT HARDWOODS									
ILLINOIS	35934	8747	0	800	45481	3113	183	3296	48777
IND., IOWA, MO. 3/	6430	14129	9385	10524	40468	6604	2222	8826	49294
EXPORTED 4/	1826	7572	0	1695	11093	0	0	0	0
TOTAL	44190	30448	9385	13019	97042	9717	2405	12122	98071
HARD HARDWOODS									
ILLINOIS	16344	400	0	880	17624	0	0	0	17624
IND., IOWA, MO. 3/	7353	14052	18574	7457	47438	5745	2519	8264	55702
EXPORTED 4/	1823	19119	0	11593	32535	0	0	0	0
TOTAL	25520	33571	18574	19930	97597	5745	2519	8264	73326
TOTAL POUNDWOOD									
ILLINOIS	52694	9147	0	5088	66929	3113	183	3296	70225
IND., IOWA, MO. 3/	13783	28181	27961	17981	87906	12349	5141	17490	105396
EXPORTED 4/	3738	26691	0	13702	44131	0	0	0	0
TOTAL	70215	64019	27961	36771	198966	15462	5324	20786	175621
RESIDUE SOFTWOOD									
ILLINOIS	5634	0	4670	1262	11566	16301	4648	20949	32515
IND., IOWA, MO. 3/	0	0	0	0	0	0	4000	4000	4000
EXPORTED 4/	0	165	0	0	165	0	0	0	0
TOTAL	5634	165	4670	1262	11731	16301	8648	24949	36515
RESIDUE HARDWOOD									
ILLINOIS	49727	4908	1193	33842	80670	6651	2661	9312	89982
IND., IOWA, MO. 3/	11027	37298	12540	4674	65539	3181	8079	11260	76799
EXPORTED 4/	17919	41722	1735	35513	96889	0	0	0	0
TOTAL	69673	83928	15468	74029	243098	9832	10740	20572	166781
ALL WOOD MATERIAL									
ILLINOIS	90855	14055	5863	40192	159165	26065	7492	33557	192722
IND., IOWA, MO. 3/	24810	65479	40501	22655	153445	15530	17220	32750	186195
EXPORTED 4/	21657	68578	1735	49215	141185	0	0	0	0
TOTAL	146522	149112	48099	112062	453795	41595	24712	66307	778917

1/ FACTORS USED IN CONVERTING TO STANDARD GREEN CORDS (128 CU. FT.) WERE:

4,500 POUNDS OF SOFT HARDWOOD POUNDWOOD;

5,000 POUNDS OF HARD HARDWOOD OR CONIFEROUS POUNDWOOD;

4,100 POUNDS OF SOFTWOOD CHIPS (GREEN);

4,400 POUNDS OF HARDWOOD CHIPS (GREEN);

2,500 POUNDS OF CHIPS (ALL SPECIES, ORY).

2/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING - PRODUCTION BY STATES - PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

3/ COMBINED TO PREVENT DISCLOSURE OF INDIVIDUAL MILL RECEIPTS.

4/ PULPWOOD SHIPPED TO MILLS OUTSIDE THE REGION.

Table 5.--Central States pulpwood production by state and destination, 1969-1973

(In thousand standard cords)

YEAR	ILLINOIS			INDIANA			IOWA			MISSOURI		
	DESTINATION			DESTINATION			DESTINATION			DESTINATION		
	TOTAL	CENTRAL	OTHER	TOTAL	CENTRAL	OTHER	TOTAL	CENTRAL	OTHER	TOTAL	CENTRAL	OTHER
	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES	: STATES
1969	132	128	4	132	107	25	31	30	1	81	71	10
1970	118	110	8	148	95	53	58	57	1	82	57	25
1971	133	99	34	139	77	62	53	52	1	97	62	35
1972	139	103	36	152	71	81	55	54	1	117	78	39
1973	146	124	22	148	80	68	48	46	2	112	63	49

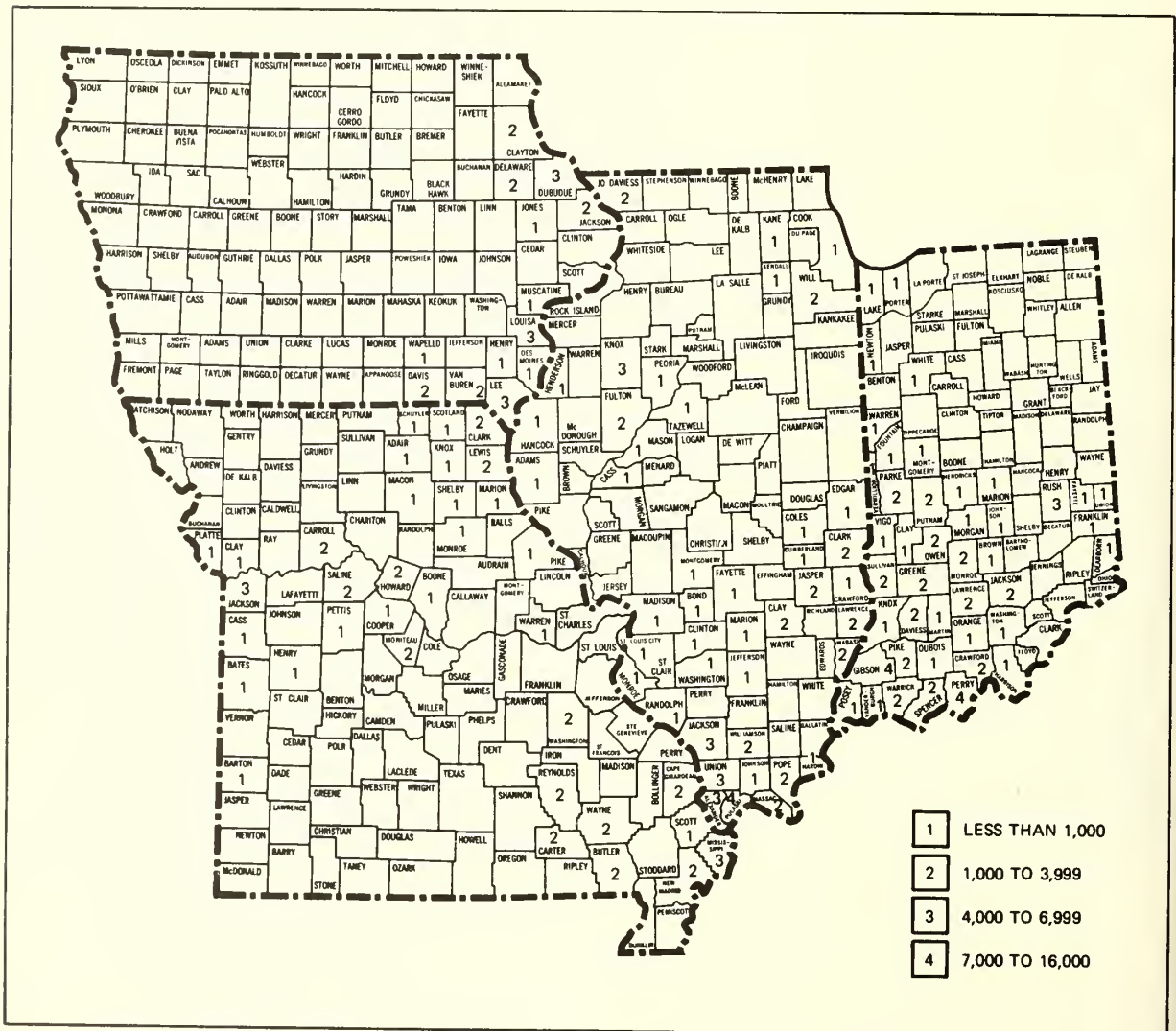


Figure 3.--Harvest of pulpwood bolts in the Central States, by counties, in standard cords, 1973.

Table 6.--Trends in receipts of roundwood and residue
as pulpwood, Central States, 1969-1973

(In thousand standard cords, unpeeled)

TYPE OF MATERIAL AND AREA	1969	1970	1971	1972	1973
ROUNDWOOD					
ILLINOIS	50	62	57	67	70
INDIANA, IOWA, MISSOURI	146	131	107	99	106
TOTAL	196	193	164	166	176
RESIDUE					
ILLINOIS	135	100	107	116	122
INDIANA, IOWA, MISSOURI	64	68	67	74	81
TOTAL	199	168	174	190	203
ALL MATERIAL	395	361	338	356	379

Table 7.--Active woodpulp mills in the Central States, by location,
type of pulp produced, and capacity, 1973

		MILL CAPACITY IN TONS PER 24 HOURS 1/				
COMPANY	LOCATION	TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL
ILLINOIS:						
ALTON BOX BOARD CO.	ALTON	300	0	0	0	300
RIED AND SON . INC.	CHICAGO	40	0	0	40	0
CELOTEX CORP.	PEORIA	190	0	0	190	0
CERTAIN-TEED PRODUCTS CORP.	EAST ST LOUIS	100	0	0	100	0
FLINTKOTE CO . THE	MT CARMEL	40	0	0	40	0
GAF CORP.	JOLIET	100	0	0	100	0
JOHNS-MANVILLE PRODUCTS CORP.	WAUKEGAN	65	0	0	65	0
CELOTEX CORP.	WILMINGTON	30	0	0	30	0
TOTAL	8 PLANTS.....	965	0	0	565	300
INDIANA :						
WESTON PAPER AND MFG. CO.	TERRE HAUTE	270	0	0	0	270
TOTAL	1 PLANT.....	270	0	0	0	270
IOWA :						
CELOTEX CORP.	DURIOQUE	90	0	0	0	90
CONSOLIDATED PACKAGING CORP.	FORT MADISON	140	0	0	0	140
TOTAL	2 PLANTS.....	230	0	0	0	230
MISSOURI :						
GAF CORP.	KANSAS CITY	90	0	0	90	0
HIERBERT FIREBOARD, INC.	BOONEVILLE	60	0	0	60	0
TOTAL	2 PLANTS.....	150	0	0	150	0
ALL STATES	13 PLANTS	1515	0	0	715	800

1/ LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1974, AND

1974 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.

2/ CAPACITY NOT AVAILABLE.

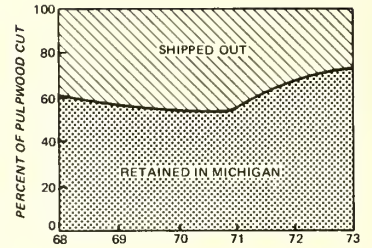
APPENDIX

Table 8.--Lake States pulpwood production, by state of origin and destination, 1969-1973

(In thousand standard cords)

MICHIGAN

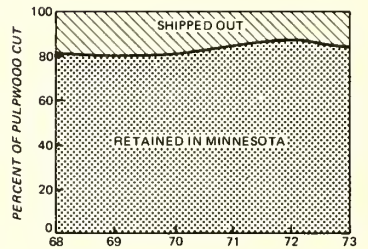
YEAR	: TOTAL : : CUT :	DESTINATION OF PULPWOOD			
		MINNESOTA	WISCONSIN	MICHIGAN	OTHER
1969	1,302	--	537	752	13
1970	1,406	--	610	785	11
1971	1,267	--	567	688	12
1972	1,401	--	470	917	14
1973	1,585	--	418	1,131	36
5-YEAR AVERAGE	1,392	--	520	855	17



MINNESOTA

YEAR	: TOTAL : : CUT :	DESTINATION OF PULPWOOD			
		MINNESOTA	WISCONSIN	MICHIGAN	OTHER
1969	1,192	977	188	--	27
1970	1,224	981	219	*	24
1971	1,196	992	188	*	16
1972	1,354	1,168	166	--	20
1973	1,376	1,152	194	*	30
5-YEAR AVERAGE	1,268	1,054	191	*	23

*Less than 500 cords.



WISCONSIN

YEAR	: TOTAL : : CUT :	DESTINATION OF PULPWOOD			
		MINNESOTA	WISCONSIN	MICHIGAN	OTHER
1969	1,450	17	1,412	9	12
1970	1,656	11	1,627	10	8
1971	1,552	35	1,502	*	15
1972	1,537	28	1,493	2	14
1973	1,758	14	1,671	55	18
5-YEAR AVERAGE	1,590	21	1,541	15	13

*Less than 500 cords.

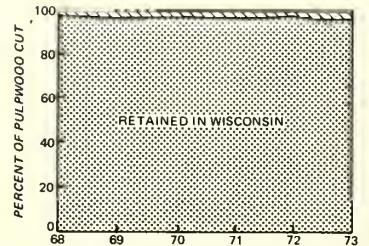


Table 9.--Lake States pulpwood production, by Forest Survey Unit and destination by state, 1973

(In hundred standard cords, roughwood basis)

MICHIGAN					
UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
E. UPPER PENINSULA	3992	2430	0	1555	7
W. UPPER PENINSULA	5631	2835	0	2628	168
N. LOWER PENINSULA	5557	5404	0	0	153
S. LOWER PENINSULA	674	640	0	0	34
TOTAL	15954	11309	0	4183	362

MINNESOTA					
UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
NORTHEASTERN	5457	0	4272	1072	113
CENTRAL PINE	4465	4	3662	713	86
RAINY RIVER	3154	0	2954	104	96
SOUTHEASTERN	529	0	512	12	5
WESTERN PRAIRIE	162	0	124	38	0
TOTAL	13767	4	11524	1939	300

WISCONSIN					
UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
NORTHEASTERN	7494	497	0	6997	0
NORTHWESTERN	6544	55	87	6399	5
CENTRAL	3008	0	29	2944	33
SOUTHWESTERN	353	0	29	213	111
SOUTHEASTERN	184	0	0	154	30
TOTAL	17585	552	145	16709	179

Table 10.--Lake States pulpwood production by species, state, and Survey Unit, 1969-1973

(In thousand standard cords, roughwood basis)

MICHIGAN										
UNIT	ASPEN ANNUAL PRODUCTION					BALSAM FIR ANNUAL PRODUCTION				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
E. 1/2 UPPER PENINSULA	119	124	125	89	93	27	41	26	33	41
W. 1/2 UPPER PENINSULA	184	180	177	188	225	16	25	25	24	26
N. 1/2 LOWER PENINSULA	296	288	242	241	275	1	*	1	3	2
S. 1/2 LOWER PENINSULA	7	4	3	11	10	--	--	--	--	--
TOTAL	606	596	547	529	603	44	66	52	60	69

MINNESOTA										
NORTHEASTERN	204	208	205	241	284	10	9	9	9	13
CENTRAL PINE	289	249	246	260	221	18	22	20	26	28
RAINY RIVER	148	127	135	160	142	12	14	11	31	24
SOUTHEASTERN	5	11	20	25	24	--	*	--	--	--
WESTERN PRAIRIE	14	5	2	3	2	--	--	--	--	*
TOTAL	660	600	608	689	673	40	45	40	66	65

WISCONSIN										
NORTHEASTERN	416	430	402	349	380	28	40	35	25	34
NORTHWESTERN	244	296	302	311	331	22	29	19	23	32
CENTRAL	35	44	31	23	46	*	*	*	1	1
SOUTHWESTERN	*	*	--	1	3	--	--	--	--	--
SOUTHEASTERN	2	1	1	*	1	--	--	--	--	--
TOTAL	697	771	736	684	761	50	69	54	49	67

LAKE STATES	1,963	1,967	1,891	1,902	2,037	134	180	146	175	201
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*LESS THAN 500 CORDS.

(Table 10 continued on next page)

(Table 10 (continued))

MICHIGAN

UNIT	BIRCH					HEMLOCK				
	ANNUAL PRODUCTION					ANNUAL PRODUCTION				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
E. 1/2 UPPER PENINSULA	1	4	1	10	19	11	17	8	17	22
W. 1/2 UPPER PENINSULA	1	2	3	7	16	52	52	34	33	36
N. 1/2 LOWER PENINSULA	21	27	19	19	25	*	*	--	--	--
S. 1/2 LOWER PENINSULA	*	--	--	--	--	--	--	--	--	--
TOTAL	23	33	23	36	60	63	69	42	50	58

MINNESOTA

NORTHEASTERN	3	17	8	15	17	--	--	--	--	--
CENTRAL PINE	*	12	26	26	23	--	--	--	--	--
RAINY RIVER	--	2	1	1	1	--	--	--	--	--
SOUTHEASTERN	--	--	*	*	1	--	--	--	--	--
WESTERN PRAIRIE	--	*	--	--	--	--	--	--	--	--
TOTAL	3	31	35	42	42	--	--	--	--	--

WISCONSIN

NORTHEASTERN	23	32	22	20	30	32	33	28	26	21
NORTHWESTERN	37	42	28	26	40	16	16	13	13	10
CENTRAL	3	2	1	*	1	3	3	1	2	1
SOUTHWESTERN	--	--	--	1	1	--	--	--	--	*
SOUTHEASTERN	--	--	--	--	--	--	--	--	--	--
TOTAL	63	76	51	47	72	51	52	42	41	32
LAKE STATES	89	140	109	125	174	114	121	84	91	90

*LESS THAN 500 CORDS.

MICHIGAN

UNIT	PINE					SPRUCE				
	ANNUAL PRODUCTION					ANNUAL PRODUCTION				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
E. 1/2 UPPER PENINSULA	59	57	80	84	67	20	29	22	20	28
W. 1/2 UPPER PENINSULA	38	34	41	37	36	18	22	22	18	16
N. 1/2 LOWER PENINSULA	109	145	110	102	88	1	*	1	--	*
S. 1/2 LOWER PENINSULA	1	4	4	5	12	--	--	--	--	--
TOTAL	207	240	235	228	203	39	51	45	38	46

MINNESOTA

NORTHEASTERN	133	123	119	121	113	66	64	64	76	83
CENTRAL PINE	74	68	57	66	68	27	31	29	35	35
RAINY RIVER	18	19	26	19	17	60	85	74	80	92
SOUTHEASTERN	*	1	*	1	1	*	*	--	--	--
WESTERN PRAIRIE	12	10	12	9	6	1	1	1	1	5
TOTAL	237	221	214	216	205	154	181	168	192	215

WISCONSIN

NORTHEASTERN	63	72	68	53	43	10	12	9	9	10
NORTHWESTERN	77	96	105	99	100	3	4	3	4	6
CENTRAL	75	87	93	90	85	*	*	*	*	--
SOUTHWESTERN	*	2	1	2	3	--	--	--	--	--
SOUTHEASTERN	1	2	1	2	1	--	--	--	--	--
TOTAL	216	259	268	246	232	13	16	12	13	16
LAKE STATES	660	720	717	690	640	206	248	225	243	277

*LESS THAN 500 CORDS.

(Table 10 continued on next page)

(Table 10 continued)

MICHIGAN

UNIT	TAMARACK					MISCELLANEOUS HARDWOODS				
	ANNUAL PRODUCTION					ANNUAL PRODUCTION				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
E. 1/2 UPPER PENINSULA	1	2	1	2	2	10	18	14	50	93
W. 1/2 UPPER PENINSULA	1	1	2	1	3	38	28	41	97	123
N. 1/2 LOWER PENINSULA	--	--	--	--	--	141	143	136	153	145
S. 1/2 LOWER PENINSULA	--	--	--	--	--	7	7	6	9	5
TOTAL	2	3	3	3	5	196	196	197	309	366

MINNESOTA

NORTHEASTERN	4	5	4	4	4	11	14	12	11	14
CENTRAL PINE	14	23	22	19	16	11	3	*	1	1
RAINY RIVER	2	7	5	8	11	8	9	9	18	16
SOUTHEASTERN	--	--	--	--	1	1	1	9	--	5
WESTERN PRAIRIE	1	1	1	*	1	1	--	--	--	--
TOTAL	21	36	32	31	33	32	27	30	30	36

WISCONSIN

NORTHEASTERN	1	2	2	2	1	87	110	105	128	150
NORTHWESTERN	1	2	1	1	*	61	79	67	84	104
CENTRAL	*	*	*	*	--	81	99	89	111	136
SOUTHWESTERN	--	--	--	--	--	5	4	5	5	6
SOUTHEASTERN	--	--	--	--	--	4	4	3	5	4
TOTAL	2	4	3	3	1	238	296	269	333	400
LAKE STATES	25	43	38	37	39	466	519	496	672	802

*LESS THAN 500 COR05.

MICHIGAN

UNIT	RESIDUE					ALL SPECIES ^{1/}				
	ANNUAL PRODUCTION					ANNUAL PRODUCTION				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
E. 1/2 UPPER PENINSULA	29	37	40	36	35	277	329	317	344	400
W. 1/2 UPPER PENINSULA	54	63	36	54	80	402	407	381	460	563
N. 1/2 LOWER PENINSULA	6	12	12	20	21	575	615	521	538	556
S. 1/2 LOWER PENINSULA	33	40	35	33	40	48	55	48	58	67
TOTAL	122	152	123	143	176	1,302	1,406	1,267	1,400	1,586

MINNESOTA

NORTHEASTERN	6	12	12	15	18	437	452	433	492	546
CENTRAL PINE	4	28	26	33	55	437	436	426	466	447
RAINY RIVER	5	5	8	8	12	253	268	269	325	315
SOUTHEASTERN	30	38	23	32	21	36	51	52	58	53
WESTERN PRAIRIE	--	--	--	--	2	29	17	16	13	16
TOTAL	45	83	69	88	108	1,192	1,224	1,196	1,354	1,377

WISCONSIN

NORTHEASTERN	49	43	42	43	80	709	774	713	655	749
NORTHWESTERN	17	17	17	18	32	478	581	555	579	655
CENTRAL	16	20	24	20	31	213	255	239	247	301
SOUTHWESTERN	27	24	26	27	22	32	30	32	36	35
SOUTHEASTERN	11	9	8	13	12	18	16	13	20	18
TOTAL	120	113	117	121	177	1,450	1,656	1,552	1,537	1,758
LAKE STATES	287	348	309	352	461	3,944	4,286	4,015	4,291	4,721

^{1/} INCLUDES RESIDUE.

Table 11.--Lake States pulpwood production by county and species, 1973

(In hundred standard cords, roughwood basis)

MICHIGAN

UNIT 1/ AND COUNTY	ALL SPECIES	ASPEN	RAI SAM	BIRCH	HEM- LOCK	PINE	SPRUCE	TAM- ARACK	MISC. HWDWS.	CEANO	RESIDUES 2/
E. UPPER PENINSULA											
ALcona	454	50	28	34	29	112	10	3	184	0	
CHIPPEWA	280	40	22	16	23	91	12	3	73	0	
DELTA	932	226	110	46	39	161	122	4	224	0	
LUCIF	791	24	34	21	41	138	27	4	102	0	
MACKINAC	164	21	14	12	0	39	6	1	62	0	
MEMPHIS	722	458	97	11	20	6	45	3	82	0	
SCHOOLCRAFT	701	115	100	42	54	126	57	6	201	0	
TOTAL	3995	934	405	186	215	673	279	24	929	0	351
W. UPPER PENINSULA											
HAPAGA	999	395	35	60	73	77	19	6	334	0	
DICKINSON	889	580	39	26	20	38	44	4	139	0	
GOGHEE	404	156	20	3	108	9	5	1	100	0	
Houghton	323	150	12	6	20	13	4	1	117	0	
IRON	1040	540	81	22	39	38	54	4	262	0	
KEWENAUE	6	8	2	8	8	0	2	0	2	0	
KALAMAZOO	812	204	67	38	74	173	53	9	194	0	
ONTONAGON	360	226	8	5	27	8	3	1	82	0	
TOTAL	5632	2251	264	160	361	356	184	26	1231	0	799
N. LOWER PENINSULA											
ALCONA	461	295	1	31	0	7	8	0	127	0	
ALCONA	170	82	9	24	0	25	1	0	29	0	
ANTHONY	14	11	0	1	0	1	0	0	1	0	
ARFAC	2	1	0	0	0	0	0	0	1	0	
BENJIE	112	63	0	4	0	0	0	0	45	0	
CHEMUNG	133	60	1	25	0	21	8	0	24	0	
CLARE	174	121	0	10	0	15	0	0	29	0	
CRANFORD	151	11	0	0	0	138	0	0	2	0	
GLADWIN	18	11	0	1	0	5	0	0	1	0	
GRAND TRAVERSE	132	102	0	11	0	2	0	0	17	0	
ISCO	155	4	0	0	0	151	0	0	8	0	
ISABELLA	3	3	0	0	0	0	0	0	8	0	
KALAMAZOO	118	60	0	5	0	38	0	0	15	0	
LEAF	368	101	0	6	0	52	0	0	209	0	
LEFANAU	27	21	0	1	0	0	0	0	5	0	
MANISTEE	316	168	0	11	0	13	0	0	124	0	
MASON	159	76	0	7	0	1	0	0	75	0	
MECOSTA	209	153	0	2	0	23	0	0	31	0	
MIDLAND	0	8	0	0	0	0	0	0	0	0	
MISMAUEE	103	75	0	6	0	5	0	0	17	0	
MONTMORENCY	410	166	2	21	0	110	8	0	111	0	
NEWYON	301	157	0	3	0	33	0	0	108	0	
OSCEOLA	91	52	0	1	0	10	0	0	28	0	
OSCEOLA	108	49	0	4	0	32	0	0	19	0	
OSCEOLA	260	158	0	2	0	3	0	0	47	0	
OSCEOLA	474	294	1	28	0	66	8	0	85	0	
OSCEOLA	9	3	0	0	0	3	0	0	3	0	
OSCEOLA ISLE	167	42	2	30	0	3	8	0	40	0	
OSCEOLA COMMON	516	303	0	6	0	54	0	0	153	0	
OSCEOLA	186	59	0	5	0	70	0	0	52	0	
TOTAL	5560	2751	16	249	0	881	1	0	1441	0	213
S. LOWER PENINSULA											
ALLEGAN	8	3	0	0	0	0	0	0	5	0	
BARRE	2	0	0	0	0	0	0	0	2	0	
BEAUFORT	0	0	0	0	0	0	0	0	8	0	
CASS	11	0	0	0	0	10	0	0	1	0	
GRATIOT	7	5	0	0	0	8	0	0	2	0	
IONIA	1	1	0	0	0	0	0	0	8	0	
KALAMAZOO	4	3	0	0	0	0	0	0	1	0	
KENT	2	8	0	0	0	1	0	0	1	0	
LENOX	0	0	0	0	0	0	0	0	8	0	
MONTICALLY	94	73	0	0	0	0	0	0	19	0	
MUSKEGON	40	7	0	0	0	78	0	0	14	0	
OAKLAND	0	0	0	0	0	0	0	0	8	0	
OTTAWA	34	8	0	0	0	33	0	0	1	0	
SAGINAW	0	8	0	0	0	0	0	0	8	0	
SANILAC	0	4	0	0	0	0	0	0	8	0	
VAN HURDEN	6	5	0	0	0	0	0	0	1	0	
TOTAL	672	97	0	0	0	125	0	0	46	0	404
STATE TOTAL	15859	6033	685	595	576	2035	464	50	3654	0	1767

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1973.

2/ COUNTY FIGURES ARE NOT AVAILABLE.

* = LESS THAN 50 CORDS.

(CONTINUED ON NEXT PAGE)

MINNESOTA

UNIT AND COUNTY	1/ ALL SPECIES	2/ ASPEN	3/ BALSAM	4/ BIRCH	5/ HEM- LOCK	6/ PINE	7/ SPRUCE	8/ TAM- ARACK	9/ MISC. HOWDS.	10/ CEDAR	11/ RESIDUES
NORTHWESTERN											
ADIRONDACK	464	179	5	47	0	22	6	x	5	0	
DOUGLASS	292	20	9	0	0	48	200	0	15	0	
IRON	772	262	4	28	0	277	201	x	0	0	
MINNAPOLIS	153	135	x	4	0	14	x	0	0	0	
TOTAL	3697	2047	113	87	0	774	419	39	118	0	
TOTAL	5657	2843	131	166	0	1135	826	39	138	0	179
NORTHERN PINE											
IT-10	304	217	6	24	0	9	16	32	0	0	
IT-11	16	2	2	0	0	11	1	0	0	0	
IT-12	945	514	92	75	0	124	122	14	4	0	
IT-13	517	295	9	42	0	142	13	16	0	0	
IT-14	312	225	1	8	0	27	30	21	0	0	
IT-15	144	51	x	4	0	89	0	0	0	0	
IT-16	400	283	3	2	0	101	2	9	0	0	
IT-17	1214	412	147	74	0	118	172	65	6	0	
IT-18	65	8	0	0	0	57	0	0	0	0	
TOTAL	4488	2207	280	234	0	678	356	157	10	0	546
NORTHWESTERN											
ADIRONDACK	2773	1362	241	12	0	133	763	104	158	0	
DOUGLASS	256	52	2	0	0	31	160	3	8	0	
TOTAL	3155	1414	243	12	0	164	923	107	166	0	126
NORTHEASTERN											
ADIRONDACK	5	0	0	0	0	0	0	0	5	0	
DOUGLASS	21	21	0	0	0	0	0	0	0	0	
IRON	194	173	0	7	0	0	x	8	10	0	
MINNAPOLIS	57	44	0	2	0	11	0	0	0	0	
ADIRONDACK	3	0	0	0	0	3	0	0	0	0	
DOUGLASS	12	0	0	0	0	0	0	0	12	0	
IRON	19	0	0	0	0	0	0	0	19	0	
TOTAL	528	238	0	9	0	14	0	8	46	0	213
NORTHWESTERN											
ADIRONDACK	7	4	0	0	0	0	0	3	0	0	
DOUGLASS	31	0	0	0	0	1	23	7	0	0	
IRON	105	14	1	0	0	58	25	2	0	0	
TOTAL	143	18	1	0	0	59	48	12	0	0	18
STATE TOTAL	13764	6725	655	421	0	2050	2153	323	360	0	1082

(CONTINUED ON NEXT PAGE)

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1973.

2/ COUNTY FIGURES ARE NOT AVAILABLE.

X=LESS THAN 50 CORDS.

UNIT AND COUNTY	1/ ALL SPECIES	2/ ASPFN	3/ RAISAM	4/ BIRCH	5/ HFM- LOCK	6/ PINE	7/ SPRUCE	8/ TAM- APACK	9/ MISC. HWDOS.	10/ CFDAP	11/ RESIDUES
NORTHEASTERN											
FLORENCE	477	278	11	7	26	28	6	1	120	0	
FOREST	856	403	83	19	48	37	23	2	241	0	
LANGLADE	658	435	8	16	13	5	3	3	175	0	
LINCOLN	1011	568	79	37	19	102	8	1	237	0	
MARINETTE	889	595	59	12	8	82	22	x	111	0	
ONONTO	322	259	1	3	9	26	x	x	24	0	
ONEIDA	1396	803	101	77	25	82	34	2	272	0	
SHAWANO 3/	278	112	1	1	56	11	x	x	90	0	
VILAS	804	345	37	128	7	54	7	x	226	0	
TOTAL	7489	3805	340	300	211	427	103	9	1496	0	798
NORTHWESTERN											
ASHLAND	802	376	121	35	17	50	23	1	179	0	
HARPOON	9	0	0	1	0	0	0	0	8	0	
HAYFLELD	1100	653	22	97	6	258	3	x	61	0	
HUMPHRETT	158	4	0	1	0	152	0	1	0	0	
HUHLAS	749	471	3	16	x	239	4	x	16	0	
IRON	657	495	23	42	16	2	5	0	74	0	
POLK	33	5	0	0	0	28	0	0	0	0	
WILF	1297	801	71	107	16	35	12	x	255	0	
WILF	148	77	x	7	1	2	0	0	61	0	
SAWYER	455	176	71	63	7	57	9	0	72	0	
TAYLOR	624	224	12	33	32	24	2	x	297	0	
WASHINGTON	203	25	1	2	0	154	x	1	20	0	
TOTAL	6549	3307	324	404	95	1001	58	3	1043	0	314
CENTRAL											
ADAMS	367	22	0	x	0	184	0	x	161	0	
CHIPPWA	57	16	1	5	4	3	0	x	28	0	
CLARK	280	59	x	x	1	38	0	0	182	0	
EAU CLAIRE	21	2	0	0	0	19	0	0	x	0	
JACKSON	249	6	0	x	0	229	0	x	14	0	
JUNEAU	329	45	0	1	0	141	0	0	142	0	
MARATHON	658	226	4	4	9	18	x	0	397	0	
MARQUETTE	97	1	0	0	0	8	0	0	88	0	
MONROE	24	2	0	0	0	17	0	0	5	0	
PORTAGE	178	33	x	x	2	51	x	x	92	0	
WAUKESHA	57	14	2	4	x	13	0	0	24	0	
WAUSHAHA	79	1	0	0	0	47	x	0	31	0	
WOOD	305	29	x	x	1	80	x	x	195	0	
TOTAL	3010	456	7	14	17	848	0	0	1359	0	309
SOUTHWESTERN											
BUFFALO	1	0	0	0	0	1	0	0	0	0	
DUNN	3	x	0	0	0	3	0	0	x	0	
GRAFTON	80	12	0	6	0	0	0	0	62	0	
LACROSSE	2	0	0	0	0	2	0	0	0	0	
PERIN	6	0	0	0	0	6	0	0	0	0	
PIERCE	0	x	0	0	0	0	0	0	0	0	
WICHITA	2	0	0	0	0	2	0	0	0	0	
SAUK	32	16	0	x	0	16	0	0	x	0	
VERNON	0	x	0	0	0	0	0	0	0	0	
TOTAL	352	28	0	6	0	30	0	0	62	0	226
SOUTHEASTERN											
WISCONSIN	34	12	0	0	2	0	0	0	20	0	
COLUMBIA	21	3	0	x	0	11	0	0	7	0	
DANE	7	0	0	0	0	0	0	0	7	0	
FOONDULAC	0	x	0	0	0	0	0	0	0	0	
GREEN LAKE	0	0	0	0	0	x	0	0	0	0	
MILWAUKEE	2	0	0	0	0	0	0	0	2	0	
OUTAGAMIE	0	0	0	0	0	0	x	0	x	0	
POCK	0	0	0	0	0	x	0	0	0	0	
WASHINGTON	1	0	0	0	0	0	0	0	1	0	
TOTAL	184	15	0	0	2	11	0	0	37	0	119
STATE TOTAL	17584	7611	671	724	325	2317	161	12	3997	0	1765

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1973.

2/ COUNTY FIGURES ARE NOT AVAILABLE.

3/ INCLUDES MENOMINEE COUNTY.

x=LESS THAN 50 CORDS.

Blyth, James E.

1975. Pulpwood production in the North Central Region, 1973. North Cent. For. Exp. Stn., St. Paul, Minn., 16 p., illus. (USDA For. Serv. Resour. Bull. NC-27)

Presents 1973 pulpwood production and receipt data for the Lake States and Central States. Pulpwood production for the Lake States is given by species for each county, and production by Forest Survey Unit is compared with that of previous years. For the Central States, 1973 pulpwood production and receipt data are presented by State, and four production classes are shown by county.

OXFORD: 861.0(77):721:792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.

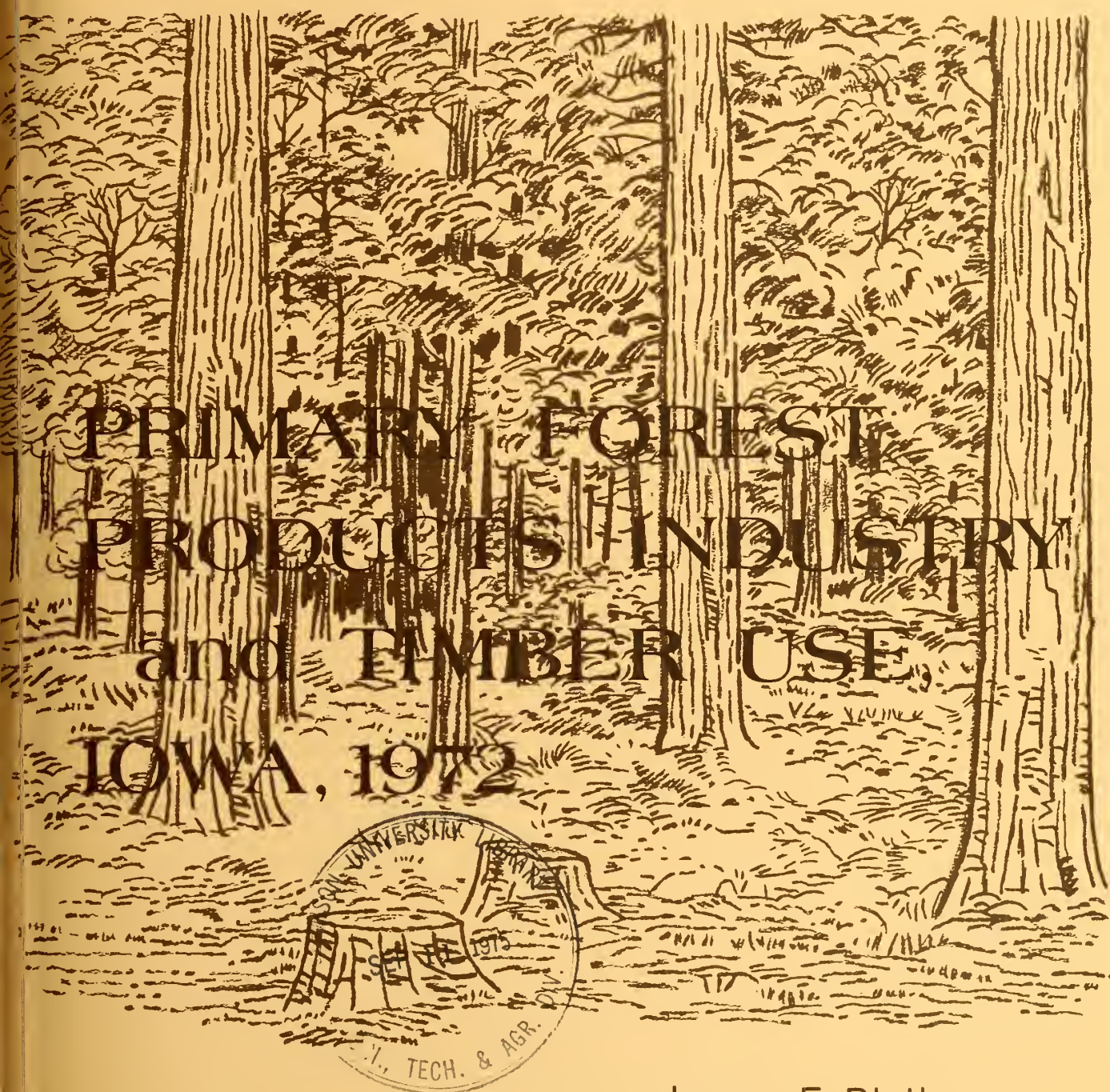
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FOREST SERVICE
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THE AUTHORS: James E. Blyth is a Principal Market Analyst for the Station. William A. Farris is the Assistant State Forester for the Iowa Conservation Commission.

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1975

PRIMARY FOREST PRODUCTS INDUSTRY AND TIMBER USE, IOWA, 1972

James E. Blyth and William A. Farris

HIGHLIGHTS

From 1953 to 1972:

- Total roundwood production in Iowa fell 37 percent to 22.9 million cubic feet.
- Roundwood products cut on private lands remained at more than 95 percent.
- Saw log output declined 18 percent to 53.5 million board feet.
- Veneer log production climbed 10 percent to 5.2 million board feet.
- Pulpwood output rose 1607 percent to 54.6 thousand cords.
- Fuelwood production dropped 59 percent to 156.9 thousand cords.
- Production of posts, cooperage logs, mill timbers, and farm timbers fell 75 percent to 519 thousand cubic feet.
- Active primary wood-using mills declined from several hundred to only 65.

OVERVIEW OF THE INDUSTRY

Rural Iowa is primarily farmland. Forest land has declined significantly from 7 percent of the total land area since 1954.

Nevertheless, a healthy primary wood-using industry exists. More than 95 percent of the commercial forest land is privately owned, and a correspondingly high percent of the timber products are cut on private land.

The number of mills dwindled to 65 in 1972, but the surviving firms are generally larger, better managed, and more financially sound than in the early 1950's.

Fifty-two of the 65 active mills in 1972 were in the Northeast¹ and Southeast Units (fig. 1), near the major timber supply. Most mills used local wood sources.

Markets for Iowa wood products were generally favorable during 1972. Demand was strong for pallets, furniture components, railroad ties, paper, and paperboard.

SAW LOGS--SAWMILLS

Iowa loggers harvested 53.5 million board feet of saw logs in 1972, up 14 percent from 1969. More than half (57 percent) of the saw logs were cut in the Northeast Unit.

Most of the saw logs (50.6 million board feet) were shipped to Iowa sawmills. The remainder, largely black walnut² logs, were exported, primarily to Missouri, Minnesota, and Kansas.

Red oak, cottonwood, elm, white oak, and soft maple accounted for 80 percent of the harvest. More red oak was cut (11.1 million board feet) for saw logs than any other species as output rose 3.8 million board feet over 1969. Red oak was mostly used for railroad ties and furniture.

¹Geographic area used by Forest Survey to report periodic inventories of the Nation's forest resources. See figure 1 for counties encompassed in each of the four Forest Survey Units in Iowa.

²Common and scientific names of all species mentioned in this text report are listed on pages 5-6.

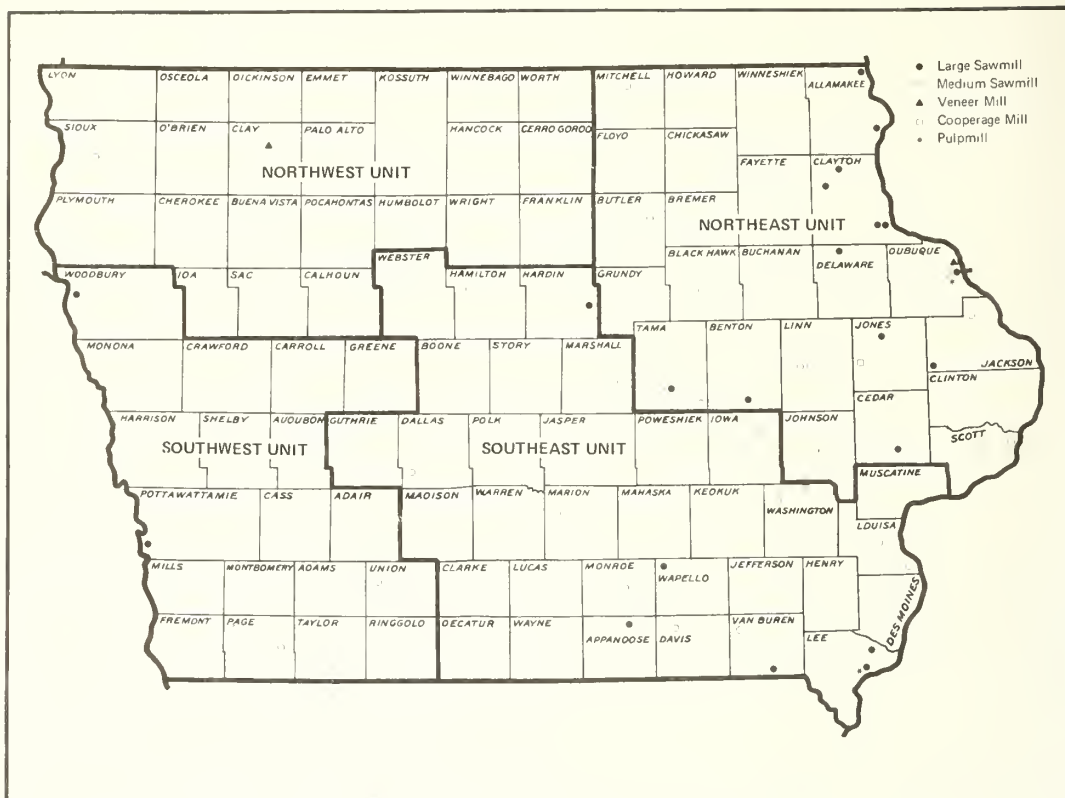


Figure 1.--Primary wood-using plants in Iowa, 1972. Sawmills are classed by volume of lumber produced in 1972: Large = more than one million board feet; Medium = 0.101 to 1.000 million board feet (smaller sawmills not shown).

Cottonwood saw log production climbed 55 percent from 1969 to 10.8 million board feet in 1972. This species was used mainly for pallets, boxes, and crating.

Output of elm saw logs was 7.8 million board feet, about the same as in 1969. Many trees were salvaged after infection by Dutch Elm Disease, a serious killer of elm in the Midwest.

Iowa's 60 sawmills received 59.6 million board feet of saw logs in 1972, an increase of 15.2 million board feet over 1969. Fifteen percent of the receipts came from other states, chiefly Missouri (4.3 million board feet), Illinois (1.1 million board feet), and Wisconsin (1.0 million board feet). Of the 7.5 million board feet

of black walnut received, 6.1 million board feet were procured in other states.

Lumber production in Iowa ranged from 43 to 91 million board feet annually since 1941. The 56 million board feet of lumber sawn in 1972 was used primarily for farm buildings, railroad ties, pallets, furniture and dunnage.

For many years the active sawmill population in Iowa has been declining while the average annual lumber production per mill has been rising. Average lumber production per mill in 1953 was less than 6 thousand board feet for several hundred sawmills. By 1969, average production was 698 thousand board feet at 63 mills and rose to 927 thousand board feet in 1972.

arger mills generally operate more days per ar, are better financed, are more stable ring business downturns, and have greater opportunities for marketing their wood sidues.

VENEER LOGS

Nearly half the 5.2-million-board-feet neer log volume cut in Iowa during 1972 s black walnut. The other major species rvested was red oak (0.9 million board et). Both species are extensively used furniture and other home furnishings.

Only 1.2 million board feet of Iowa neer logs were used in the State. Import customers for Iowa veneer logs in 1972 cluded veneer mills in Wisconsin (1.5 llion board feet), Indiana (0.5 million ard feet), and foreign countries (1.2 llion board feet). Walnut was the prin-al export species. Overall, the trend veneer log output has been slightly nward since 1960.

Hickory is becoming an important veneer species in Iowa. More than half a million ard feet of hickory logs were cut in 1972 mpared with none before 1966. Hickory is preferred species for furniture.

Output of elm veneer logs is falling ause of the decimation of the high quality a resource by Dutch Elm Disease.

Only two Iowa veneer mills were oper-ng in 1972. Both produce high quality eers.

PULPWOOD

Of the 54.6 thousand cords of pulpwood duced in 1972, 30.9 thousand cords were dwood roundwood (including chips from ndwood); the remaining volume was about ally divided between softwood and hardwood nt residue. Softwood residue used for er products came entirely from secondary d-using firms in Iowa such as millwork nts. By contrast, the Iowa hardwood idue used as pulpwood was mainly slabs edgings from sawmills.

Annual pulpwood production is now at twice the amount produced in the ly 60's when no wood residue from Iowa pulped. About 1962, pulp mills began ng Iowa hardwood residue, and in 1968

Iowa softwood residue was first used.

Two pulpmills operate in Iowa along the eastern border; their combined pulping capacity is about 230 tons per 24 hours.

OTHER ROUNDWOOD PRODUCTS

Other products cut in Iowa totaled 10.3 million cubic feet and included cooperage bolts, fuelwood, posts, mine timbers, and farm timbers. Ninety-five percent was fuelwood, and the major species burned were elm and ash. Until the recent energy crisis, fuelwood cutting had been declining rapidly for 2 decades. In 1953 the fuelwood harvest was 2.4 times larger than in 1972.

Demand for mine timbers was low in 1972 because only two underground coal mines were operating in Iowa.

PRIMARY PLANT RESIDUE

During 1972 primary wood-using mills in Iowa generated 2.9 million cubic feet (about 37,000 cords) of coarse residue, 1.8 million cubic feet of fine residue, and 2.7 million cubic feet of bark. Large amounts of all three residue categories were not used (dumped or burned as waste) including 45 percent of the coarse residue. The largest quantity of unused coarse residue was found in northeast Iowa:

Unit	Unused coarse residue (thousand cubic feet)
Northeast	609
Southeast	449
Southwest	262
Northwest	17
All Units	1,337

Nearly half (47 percent) the fine residue was not used:

Unit	Unused fine residue (thousand cubic feet)
Northeast	443
Southeast	167
Southwest	236
Northwest	6
All Units	852

Two-thirds (67 percent) of the bark was disposed of as waste:

<i>Unit</i>	<i>Unused bark (thousand cubic feet)</i>
Northeast	744
Southeast	782
Southwest	289
Northwest	15
All Units	1,830

Clearly, Iowa's primary mill operators have been only partially successful in finding markets for their wood and bark residue. Even large mills have problems. Ten of the 21 large sawmills (each producing more than a million board feet of lumber per year) utilized no more than half of their coarse residue in 1972. Similarly, 11 of these mills sold no more than half their fine residue, and 18 of them sold no more than half their bark.

Estimates of residue in 1972 by type of disposal for each county are shown in the Appendix. Individuals or firms desiring residue can use the county data in seeking sources.

INDUSTRY OUTLOOK

During the next 8 years harvesting of roundwood products in Iowa will probably increase. Some markets, such as furniture and pallets, have weakened recently. However, during the next few years these markets are expected to be strong along with those for railroad ties, paper, and paperboard. Saw logs, pulpwood, and fuelwood will continue to be the dominant products cut in Iowa. Fuelwood production from roundwood has probably increased since 1972 and is likely to remain higher as long as other fuels remain relatively expensive and in short supply.

The number of Iowa primary wood-using mills appears to have stabilized since 1969, and will probably remain around 60 to 70 for several years, but average output per mill will increase. Over the long run, continued land clearing could deplete the commercial timber base below the minimum required to maintain the timber industries with homegrown wood.

The amount of wood and bark residue used should increase. Pulpmills are likely

to procure more coarse residue and farmers will probably use more fine residue for poultry litter and livestock bedding. Both coarse and fine residue will probably be in greater demand as fuelwood. Bark should be in greater demand as a mulch and soil stabilizer.

STUDY METHODS

Industrial roundwood data for 1972 came from a complete canvass of primary wood-using firms using Iowa logs and bolts. All canvassing in Iowa (except pulpmills) was done by the Iowa Conservation Commission through personal contacts with the firms. The North Central Forest Experiment Station sent questionnaires to Iowa pulpmills and out-of-State mills using Iowa roundwood.

The Station also obtained by mail the 1972 timber product output data for public forest land and forest land owned by primary wood-using firms.

Fuelwood, post, and farm timber production in 1972 from private land (other than industrial) was determined by a personal canvass of a sample of Iowa households. The sample was selected by the Statistical Reporting Service, USDA, from the open country stratum and agri-urban substratum of the new rural area sampling frame. The open country sample was proportional to the estimated area of privately owned forest land in each Survey Unit. Households in the sample were personally contacted by the Iowa Conservation Commission.

The Station edited and compiled the data.

DEFINITION OF TERMS

Roundwood products--Saw logs, veneer logs, pulpwood, fuelwood, posts, cooperage bolts, mine timbers, and farm timber
Primary wood-using plant residue--Wood materials (coarse and fine) and bark not utilized for principal products at manufacturing plants using roundwood. These residues include wood products (byproducts) obtained incidental to production of principal products, and wood materials not utilized for some product.

Coarse plant residue--Wood residue suitable
for chipping such as slabs, edgings,
and veneer cores.

Fine plant residue--Wood residue not
suitable for chipping, such as
sawdust and veneer clippings.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED

SOFTWOOD SPECIES

Eastern white pine. *Pinus strobus*
Red pine. *Pinus resinosa*
Eastern redcedar. *Juniperus virginiana*

HARDWOOD SPECIES

White oak:

White oak *Quercus alba*
Swamp white oak *Quercus bicolor*
Bur oak *Quercus macrocarpa*
Swamp chestnut oak. *Quercus michauxii*
Chinkapin oak *Quercus muehlenbergii*
Overcup oak *Quercus lyrata*
Chestnut oak. *Quercus prinus*
Post oak. *Quercus stellata*

Red oak:

Cherrybark oak. *Quercus falcata* var. *pagodaefolia*
Northern red oak. *Quercus rubra*
Scarlet oak *Quercus coccinea*
Southern red oak. *Quercus falcata*
Shingle oak *Quercus imbricaria*
Water oak *Quercus nigra*
Pin oak *Quercus palustris*
Willow oak. *Quercus phellos*
Black oak *Quercus velutina*

Hickory:

Bitternut hickory *Carya cordiformis*
Pignut hickory. *Carya glabra*
Pecan *Carya illinoensis*
Shellbark hickory *Carya laciniosa*
Shagbark hickory. *Carya ovata*
Mockernut hickory *Carya tomentosa*

Hard maple:

Black maple *Acer nigrum*
Sugar maple *Acer saccharum*

Soft maple:

Red maple *Acer rubrum*
Silver maple. *Acer saccharinum*

Ash:

White ash *Fraxinus americana*
Black ash *Fraxinus nigra*
Green ash *Fraxinus pennsylvanica*
Blue ash. *Fraxinus quadrangulata*

Cottonwood:

Eastern cottonwood. *Populus deltoides*
Swamp cottonwood. *Populus heterophylla*

Aspen:

Bigtooth aspen. *Populus grandidentata*
Quaking aspen *Populus tremuloides*

Basswood. *Tilia americana*

Elm:

Winged elm. *Ulmus alata*
American elm. *Ulmus americana*
Slippery elm. *Ulmus rubra*
Rock elm. *Ulmus thomasi*

Black walnut. *Juglans nigra*
Black cherry. *Prunus serotina*
Hackberry *Celtis occidentalis*
Willow. *Salix nigra*

Birch:

Yellow birch. *Betula alleghaniensis*
River birch *Betula nigra*
Paper birch *Betula papyrifera*

APPENDIX

Table 1.--Roundwood production by species, Unit and product, Iowa, 1972

NORTHEAST UNIT				
Species	Product			
	Ssw logs	Veneer logs	Pulpwood	Other
	: Thousand board feet ¹			: products
	: cords ²			: Thousand cubic feet
Softwoods	97	--	--	--
White oak	4,558	10	2,000	329
Red oak	8,750	707	3,600	253
Hickory	464	--	3,600	71
Hard maple	1,538	216	400	--
Soft maple	1,495	108	222	82
Ash	1,104	111	200	164
Cottonwood	2,130	35	222	--
Aspen	158	--	778	13
Basswood	2,017	252	89	240
Elm	5,528	233	222	1,369
Black walnut	1,354	1,650	--	48
Black cherry	100	3	45	--
Hackberry	291	--	89	--
Willow	347	--	--	164
Birch	216	--	222	6
Other hardwoods	91	33	--	85
All species	30,238	3,358	11,689	2,824
SOUTHEAST UNIT				
Softwoods	--	--	--	--
White oak	1,786	8	5,094	72
Red oak	2,296	190	5,094	1
Hickory	315	569	849	33
Hard maple	--	--	--	--
Soft maple	4,529	6	2,335	65
Ash	330	--	--	65
Cottonwood	4,050	50	2,335	--
Aspen	--	--	1,167	--
Basswood	136	--	234	--
Elm	1,426	204	234	391
Black walnut	840	663	--	--
Black cherry	13	--	--	--
Hackberry	236	--	467	--
Willow	61	--	234	--
Birch	256	--	1,167	--
Other hardwoods	2	8	--	64
All species	16,276	1,698	19,210	691

(Table 1 continued on next page)

(Table 1 continued)

SOUTHWEST UNIT				
Softwoods	--	--	--	18
White oak	31	--	--	8
Red oak	3	--	--	--
Hickory	4	--	--	--
Hard maple	--	--	--	--
Soft maple	123	--	--	75
Ash	18	--	--	1,423
Cottonwood	3,695	--	--	--
Aspen	--	--	--	--
Basswood	19	--	--	--
Elm	172	--	--	1,524
Black walnut	386	64	--	--
Black cherry	--	--	--	--
Hackberry	11	--	--	--
Willow	--	--	--	--
Birch	--	--	--	--
Other hardwoods	--	--	--	23
All species	4,462	64	--	3,071
NORTHWEST UNIT				
Softwoods	8	--	--	21
White oak	133	--	--	--
Red oak	30	22	--	--
Hickory	--	--	--	--
Hard maple	30	--	--	--
Soft maple	327	7	--	92
Ash	197	--	--	1,745
Cottonwood	899	--	--	--
Aspen	30	--	--	--
Basswood	33	--	--	--
Elm	682	2	--	1,870
Black walnut	89	36	--	--
Black cherry	--	--	--	--
Hackberry	30	--	--	--
Willow	30	--	--	--
Birch	--	--	--	--
Other hardwoods	--	--	--	1
All species	2,518	67	--	3,729
ALL UNITS				
Softwoods	105	--	--	39
White oak	6,508	18	7,094	409
Red oak	11,079	919	8,694	254
Hickory	783	569	4,449	104
Hard maple	1,568	216	400	--
Soft maple	6,474	121	2,557	314
Ash	1,649	111	200	3,397
Cottonwood	10,774	85	2,557	--
Aspen	188	--	1,945	13
Basswood	2,205	252	323	240
Elm	7,808	439	456	5,154
Black walnut	2,669	2,413	--	48
Black cherry	113	3	45	--
Hackberry	568	--	556	--
Willow	438	--	234	164
Birch	472	--	1,389	6
Other hardwoods	93	41	--	173
All species	53,494	5,187	30,899	10,315

¹International 1/4-inch log rule²Roughwood basis

Table 2.--Roundwood production in Iowa, 1953 and 1972

(In thousand cubic feet)

Product	All species		Softwoods		Hardwoods	
	1953	1972	1953	1972	1953	1972
Saw logs	9,600	9,004	240	17	9,360	8,987
Veneer logs	700	1,157	--	--	700	1,157
Cooperage logs	500	102	--	--	500	102
Pulpwood	200	2,441	--	--	200	2,441
Posts	1,200	185	--	--	1,200	185
Fuelwood	24,000	9,796	--	39	24,000	9,757
Other products ¹	400	232	--	--	400	232
Total	36,600	22,917	240	56	36,360	22,861

¹Includes mine and farm timbers.

Table 3.--Forest products harvested by ownership class, product, and Unit in Iowa, 1972

NORTHEAST UNIT								
Ownership class	Saw logs	Veneer	Cooperage	Pulpwood	Posts	Mine	Fuelwood	Misc.
	Thousand board feet ¹	logs	logs	Cords ²	Thousand pieces	Thousand timbers	Cords ²	Thousand cubic feet
Federal:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	270	--
State:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	84	12	--	9	--	--	--	--
Private:								
Industrial:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	616	66	--	--	--	--	--	--
Farm and other:								
Softwoods	97	--	--	--	--	--	--	--
Hardwoods	29,441	3,280	355	11,680	160	2	37,800	199
All owners:								
Softwoods	97	--	--	--	--	--	--	--
Hardwoods	30,141	3,358	355	11,689	160	2	38,070	199
SOUTHEAST UNIT								
Federal:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
State:								
Softwoods	--	--	--	--	1	--	--	--
Hardwoods	132	34	--	95	--	--	20	--
Private:								
Industrial:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	427	693	28	1,039	--	--	--	--
Farm and other:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	15,717	971	203	18,076	118	8	8,489	23
All owners:								
Softwoods	--	--	--	--	1	--	--	--
Hardwoods	16,276	1,698	231	19,210	118	8	8,509	23
SOUTHWEST UNIT								
Federal:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
State:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
Private:								
Industrial:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
Farm and other:								
Softwoods	--	--	--	--	--	--	269	--
Hardwoods	4,462	64	40	--	42	--	46,507	--
All owners:								
Softwoods	--	--	--	--	--	--	269	--
Hardwoods	4,462	64	40	--	42	--	46,507	--

(Table 3 continued on next page)

(Table 3 continued)

NORTHWEST UNIT

Federal:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
State:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--	--
Private:								
Industrial:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	116	28	--	--	--	--	--	--
Farm and other:								
Softwoods	8	--	--	--	--	--	331	--
Hardwoods	2,394	39	--	--	5	--	57,013	--
All owners:								
Softwoods	8	--	--	--	--	--	331	--
Hardwoods	2,510	67	--	--	5	--	57,013	--
ALL UNITS								
Federal:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	270	--
State:								
Softwoods	--	--	--	--	1	--	--	--
Hardwoods	216	46	--	104	--	--	20	--
Private:								
Industrial:								
Softwoods	--	--	--	--	--	--	--	--
Hardwoods	1,159	787	28	1,039	--	--	--	--
Farm and other:								
Softwoods	105	--	--	--	--	--	600	--
Hardwoods	52,014	4,354	598	29,756	325	10	149,809	222
All owners:								
Softwoods	105	--	--	--	1	--	600	--
Hardwoods	53,389	5,187	626	30,899	325	10	150,099	222

¹International 1/4-inch rule.²Standard cords, roughwood basis.

Table 4.--Saw log production by species and State of destination, Iowa, 1972

(In thousand board feet)¹

NORTHEAST UNIT						
Species	Iowa	Missouri	Minnesota	Kansas	Other States	Total
Softwoods:						
White pine	95	0	0	0	0	95
Red pine	2	0	0	0	0	2
Redcedar	0	0	0	0	0	0
Total swds.	97	0	0	0	0	97
Hardwoods:						
White oak	4,246	0	311	0	1	4,558
Red oak	8,297	0	312	0	141	8,750
Hickory	464	0	0	0	0	464
Hard maple	1,520	0	14	0	4	1,538
Soft maple	1,345	150	0	0	0	1,495
Ash	1,090	0	14	0	0	1,104
Cottonwood	2,118	0	0	0	12	2,130
Aspen	144	0	14	0	0	158
Basswood	1,947	0	70	0	0	2,017
Elm	5,528	0	0	0	0	5,528
Blk. walnut	966	331	14	42	1	1,354
Blk. cherry	100	0	0	0	0	100
Hackberry	291	0	0	0	0	291
Willow	347	0	0	0	0	347
Birch	202	0	14	0	0	216
Other spp.	91	0	0	0	0	91
Total hwd.	28,696	481	763	42	159	30,141
All species	28,793	481	763	42	159	30,238
SOUTHEAST UNIT						
Softwoods:						
White pine	0	0	0	0	0	0
Red pine	0	0	0	0	0	0
Redcedar	0	0	0	0	0	0
Total swds.	0	0	0	0	0	0
Hardwoods:						
White oak	1,762	24	0	0	0	1,786
Red oak	2,284	12	0	0	0	2,296
Hickory	315	0	0	0	0	315
Hard maple	0	0	0	0	0	0
Soft maple	4,260	269	0	0	0	4,529
Ash	330	0	0	0	0	330
Cottonwood	4,009	24	0	0	17	4,050
Aspen	0	0	0	0	0	0
Basswood	136	0	0	0	0	136
Elm	1,426	0	0	0	0	1,426
Blk. walnut	156	199	0	485	0	840
Blk. cherry	13	0	0	0	0	13
Hackberry	235	1	0	0	0	236
Willow	61	0	0	0	0	61
Birch	256	0	0	0	0	256
Other spp.	2	0	0	0	0	2
Total hwd.	15,245	529	0	485	17	16,276
All species	15,245	529	0	485	17	16,276
SOUTHWEST UNIT						
Softwoods:						
White pine	0	0	0	0	0	0
Red pine	0	0	0	0	0	0
Redcedar	0	0	0	0	0	0
Total swds.	0	0	0	0	0	0
Hardwoods:						
White oak	30	1	0	0	0	31
Red oak	3	0	0	0	0	3
Hickory	4	0	0	0	0	4
Hard maple	0	0	0	0	0	0
Soft maple	12	111	0	0	0	123
Ash	11	7	0	0	0	18
Cottonwood	3,695	0	0	0	0	3,695
Aspen	0	0	0	0	0	0
Basswood	14	5	0	0	0	19
Elm	172	0	0	0	0	172
Blk. walnut	222	161	0	3	0	386
Blk. cherry	0	0	0	0	0	0
Hackberry	0	11	0	0	0	11
Willow	0	0	0	0	0	0
Birch	0	0	0	0	0	0
Other spp.	0	0	0	0	0	0
Total hwd.	4,163	296	0	3	0	4,462
All species	4,163	296	0	3	0	4,462

(Table 4 continued on next page)

(Table 4 continued)

NORTHWEST UNIT						
Softwoods:						
White pine	8	0	0	0	0	8
Red pine	0	0	0	0	0	0
Redcedar	0	0	0	0	0	0
Total swds.	8	0	0	0	0	8
Hardwoods:						
White oak	133	0	0	0	0	133
Red oak	30	0	0	0	0	30
Hickory	0	0	0	0	0	0
Hard maple	30	0	0	0	0	30
Soft maple	233	50	0	0	44	327
Ash	195	0	0	0	2	197
Cottonwood	883	0	0	0	16	899
Aspen	30	0	0	0	0	30
Basswood	30	0	0	0	3	33
Elm	660	0	0	0	22	682
Blk. walnut	63	12	0	14	0	89
Blk. cherry	0	0	0	0	0	0
Hackberry	30	0	0	0	0	30
Willow	30	0	0	0	0	30
Birch	0	0	0	0	0	0
Other spp.	0	0	0	0	0	0
Total hws.	2,347	62	0	14	87	2,510
All species	2,355	62	0	14	87	2,518
ALL UNITS						
Softwoods:						
White pine	103	0	0	0	0	103
Red pine	2	0	0	0	0	2
Redcedar	0	0	0	0	0	0
Total swds.	105	0	0	0	0	105
Hardwoods:						
White oak	6,171	25	311	0	1	6,508
Red oak	10,614	12	312	0	141	11,079
Hickory	783	0	0	0	0	783
Hard maple	1,550	0	14	0	4	1,568
Soft maple	5,850	580	0	0	44	6,474
Ash	1,626	7	14	0	2	1,649
Cottonwood	10,705	24	0	0	45	10,774
Aspen	174	0	14	0	0	188
Basswood	2,127	5	70	0	3	2,205
Elm	7,786	0	0	0	22	7,808
Blk. walnut	1,407	703	14	544	1	2,669
Blk. cherry	113	0	0	0	0	113
Hackberry	556	12	0	0	0	568
Willow	438	0	0	0	0	438
Birch	458	0	14	0	0	472
Other spp.	93	0	0	0	0	93
Total hws.	50,451	1,368	763	544	263	53,389
All species	50,556	1,368	763	544	263	53,494

¹International $\frac{1}{4}$ -inch rule.

Table 5.--Saw log production and receipts in Iowa by species, 1969 and 1972

(In thousand board feet)¹

Species	Production			Receipts		
	1969	1972	Change	1969	1972	Change
Softwoods	223	105	-118	223	105	-118
White oak	4,785	6,508	+1,723	4,905	6,758	+1,853
Red oak	7,329	11,079	+3,750	7,771	11,317	+3,546
Hickory	365	783	+418	441	862	+421
Hard maple	1,490	1,568	+78	1,670	1,588	-82
Soft maple	9,434	6,474	-2,960	8,140	6,391	-1,749
Ash	1,213	1,649	+436	1,270	1,697	+427
Cottonwood	6,931	10,774	+3,843	6,296	11,436	+5,140
Aspen	222	188	-34	192	178	-14
Basswood	1,565	2,205	+640	1,672	2,180	+508
Elm	7,976	7,808	-168	8,054	7,840	-214
Black walnut	4,356	2,669	-1,687	2,756	7,509	+4,753
Black cherry	117	113	-4	170	117	-53
Birch	323	472	+149	272	496	+224
Other hardwoods	587	1,099	+512	572	1,147	+575
All species	46,916	53,494	+6,578	44,404	59,621	+15,217

¹International $\frac{1}{4}$ -inch log rule.

Table 6.--Saw log receipts in Iowa by species and State of origin, 1972

(In thousand board feet)¹

Species	NORTHEAST UNIT									
	All States	Iowa	Missouri	Illinois	Wisconsin	Arkansas	Kansas	Nebraska	Minnesota	South Dakota
Softwoods:										
White pine	93	93	0	0	0	0	0	0	0	0
Red pine	2	2	0	0	0	0	0	0	0	0
Total softwoods	95	95	0	0	0	0	0	0	0	0
Hardwoods:										
White oak	4,848	4,692	0	60	72	0	0	0	24	0
Red oak	9,572	9,160	0	80	164	0	0	0	168	0
Hickory	550	536	0	5	6	0	0	0	3	0
Hard maple	1,548	1,510	0	10	16	0	0	0	12	0
Soft maple	2,254	2,247	0	0	3	0	0	0	4	0
Ash	1,235	1,214	0	7	9	0	0	0	5	0
Cottonwood	2,272	2,265	0	0	2	0	0	0	5	0
Aspen	138	134	0	0	1	0	0	0	3	0
Basswood	1,995	1,963	0	10	14	0	0	0	8	0
Elm	6,166	6,129	0	12	17	0	0	0	8	0
Black walnut	2,055	1,025	0	235	671	0	0	0	124	0
Black cherry	104	100	0	2	2	0	0	0	0	0
Hackberry	272	272	0	0	0	0	0	0	0	0
Willow	339	339	0	0	0	0	0	0	0	0
Birch	218	218	0	0	0	0	0	0	0	0
Other species	114	91	0	4	19	0	0	0	0	0
Total hardwoods	33,680	31,895	0	425	996	0	0	0	364	0
All species	33,775	31,990	0	425	996	0	0	0	364	0
SOUTHEAST UNIT										
Hardwoods:										
White oak	1,753	1,354	180	219	0	0	0	0	0	0
Red oak	1,732	1,441	173	118	0	0	0	0	0	0
Hickory	308	243	40	25	0	0	0	0	0	0
Hard maple	40	40	0	0	0	0	0	0	0	0
Soft maple	4,115	3,581	374	160	0	0	0	0	0	0
Ash	394	352	29	13	0	0	0	0	0	0
Cottonwood	4,662	4,326	229	107	0	0	0	0	0	0
Aspen	40	40	0	0	0	0	0	0	0	0
Basswood	168	147	10	11	0	0	0	0	0	0
Elm	1,364	1,347	15	2	0	0	0	0	0	0
Black walnut	97	80	15	2	0	0	0	0	0	0
Black cherry	13	13	0	0	0	0	0	0	0	0
Hackberry	301	284	15	2	0	0	0	0	0	0
Willow	99	99	0	0	0	0	0	0	0	0
Birch	278	240	35	3	0	0	0	0	0	0
Other species	22	2	10	10	0	0	0	0	0	0
Total hardwoods	15,386	13,589	1,125	672	0	0	0	0	0	0
All species	15,386	13,589	1,125	672	0	0	0	0	0	0
SOUTHWEST UNIT										
Hardwoods:										
White oak	64	32	0	0	0	0	0	32	0	0
Red oak	13	13	0	0	0	0	0	0	0	0
Hickory	4	4	0	0	0	0	0	0	0	0
Soft maple	14	14	0	0	0	0	0	0	0	0
Ash	55	47	0	0	0	0	0	8	0	0
Cottonwood	4,273	3,885	0	0	0	0	0	194	0	194
Basswood	17	17	0	0	0	0	0	0	0	0
Elm	236	236	0	0	0	0	0	0	0	0
Black walnut	5,279	224	3,183	0	0	756	705	411	0	0
Total hardwoods	9,955	4,472	3,183	0	0	756	705	645	0	194
All species	9,955	4,472	3,183	0	0	756	705	645	0	194

(Table 6 continued on next page)

(Table 6 continued)

NORTHWEST UNIT										
Softwoods:										
White pine	10	10	0	0	0	0	0	0	0	0
Total softwoods	10	10	0	0	0	0	0	0	0	0
Hardwoods:										
White oak	93	93	0	0	0	0	0	0	0	0
Soft maple	8	8	0	0	0	0	0	0	0	0
Ash	13	13	0	0	0	0	0	0	0	0
Cottonwood	229	229	0	0	0	0	0	0	0	0
Elm	74	74	0	0	0	0	0	0	0	0
Black walnut	78	78	0	0	0	0	0	0	0	0
Total hardwoods	495	495	0	0	0	0	0	0	0	0
All species	505	505	0	0	0	0	0	0	0	0
ALL UNITS										
Softwoods:										
White pine	103	103	0	0	0	0	0	0	0	0
Red pine	2	2	0	0	0	0	0	0	0	0
Total softwoods	105	105	0	0	0	0	0	0	0	0
Hardwoods:										
White oak	6,758	6,171	180	279	72	0	0	32	24	0
Red oak	11,317	10,614	173	198	164	0	0	0	168	0
Hickory	862	783	40	30	6	0	0	0	3	0
Hard maple	1,588	1,550	0	10	16	0	0	0	12	0
Soft maple	6,391	5,850	374	160	3	0	0	0	4	0
Ash	1,697	1,626	29	20	9	0	0	8	5	0
Cottonwood	11,436	10,705	229	107	2	0	0	194	5	194
Aspen	178	174	0	0	1	0	0	0	3	0
Basswood	2,180	2,127	10	21	14	0	0	0	8	0
Elm	7,840	7,786	15	14	17	0	0	0	8	0
Black walnut	7,509	1,407	3,198	237	671	756	705	411	124	0
Black cherry	117	113	0	2	2	0	0	0	0	0
Hackberry	573	556	15	2	0	0	0	0	0	0
Willow	438	438	0	0	0	0	0	0	0	0
Birch	496	458	35	3	0	0	0	0	0	0
Other species	136	93	10	14	19	0	0	0	0	0
Total hardwoods	59,516	50,451	4,308	1,097	996	756	705	645	364	194
All species	59,621	50,556	4,308	1,097	996	756	705	645	364	194

¹International 4-inch rule.

Table 7.--Veneer log and bolt production by species and State or country of destination, Iowa, 1972

(In thousand board feet)¹

Species	Destination							Total
	Iowa	Wisconsin	Indiana	Illinois	Ohio	Missouri	Other States	
Softwoods:								
White pine	0	0	0	0	0	0	0	0
Red pine	0	0	0	0	0	0	0	0
Redcedar	0	0	0	0	0	0	0	0
Total swds.	0	0	0	0	0	0	0	0
Hardwoods:								
White oak	6	5	0	2	5	0	0	18
Red oak	168	743	0	8	0	0	0	919
Hickory	569	0	0	0	0	0	0	569
Hard maple	0	161	33	22	0	0	0	216
Soft maple	0	95	0	0	0	0	26	121
Ash	79	32	0	0	0	0	0	111
Cottonwood	0	0	0	0	0	0	85	85
Aspen	0	0	0	0	0	0	0	0
Basswood	0	252	0	0	0	0	0	252
Elm	204	235	0	0	0	0	0	439
Blk. walnut	149	0	492	230	220	147	21,175	2,413
Blk. cherry	0	3	0	0	0	0	0	3
Hackberry	0	0	0	0	0	0	0	0
Willow	0	0	0	0	0	0	0	0
Birch	0	0	0	0	0	0	0	0
Other spp.	0	0	17	0	0	24	0	41
Total hwd.	1,175	1,526	542	262	225	171	1,286	5,187
All species	1,175	1,526	542	262	225	171	1,286	5,187

¹International 4-inch rule.²Exported to other countries.

Table 8.--Veneer log production in Iowa for selected years,
1960-1972

(In thousand board feet)¹

Species	: 1960	: 1963	: 1966	: 1968	: 1970	: 1972
Red oak	919	551	867	1,385	930	919
Hickory	--	--	7	32	361	569
Hard maple	584	337	245	454	292	216
Soft maple	822	223	320	182	97	121
Cottonwood	1,040	71	849	411	1,121	85
Elm	1,070	34	(²)	641	483	439
Black walnut	³ 3,138	³ 4,339	³ 3,138	³ 3,429	3785	⁴ 2,413
Other hardwoods	1,376	990	1,484	1,148	525	425
All species	8,949	6,545	6,910	7,682	4,594	5,187

¹International 1/4-inch log rule.

²Included with "other hardwoods."

³Does not include exports overseas.

⁴Includes exports overseas.

Table 9.--Iowa pulpwood production by species groups, 1956-1972

(In standard cords, roughwood basis)

Year	From roundwood				From residue		
	Softwoods	Soft	Hard	Total	Softwoods	Hardwoods	Total
		: hardwoods	: hardwoods				
1956	--	15,000	4,000	19,000	--	--	19,000
1957	--	10,487	4,018	14,505	--	--	14,505
1958	--	9,443	5,636	15,079	--	--	15,079
1959	--	11,803	9,326	21,129	--	--	21,129
1960	100	15,376	8,020	23,496	--	--	23,496
1961	--	12,411	10,050	22,461	--	--	22,461
1962	--	14,403	14,087	28,490	--	(¹)	(¹)
1963	--	10,372	9,200	19,572	--	(¹)	(¹)
1964	80	15,320	17,598	32,998	--	(¹)	(¹)
1965	--	12,596	12,082	24,678	--	6,401	31,079
1966	--	13,959	13,190	27,149	--	9,175	36,324
1967	--	11,675	15,365	27,040	--	8,303	35,343
1968	--	12,035	12,842	24,877	2,833	10,152	37,862
1969	40	8,031	8,780	16,851	1,501	13,228	31,580
1970	80	16,321	19,700	36,101	10,227	11,353	57,681
1971	40	14,843	22,976	37,859	7,908	6,770	52,537
1972	--	10,062	20,837	30,899	11,482	12,237	54,618

¹Not available.

Table 10.--Production and disposition of softwood and hardwood plant residue by type of residue, disposal, and county, Iowa, 1972

(In thousand cubic feet)

County or unit and type of use	NORTHEAST UNIT							
	Wood residue							
	Total		Coarse ¹		Fine ²		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Allamakee								
Fiber products	0	153.3	0	153.3	0	0	0	0
Miscellaneous ³	0	39.2	0	0	0	39.2	0	1.9
Not used	0	50.2	0	0	0	50.2	0	97.1
Total	0	242.7	0	153.3	0	89.4	0	99.0
Benton								
Domestic fuel	0	0.7	0	0.7	0	0	0	0.5
Miscellaneous ³	0	57.3	0	0	0	57.3	0	0
Not used	0	98.6	0	98.2	0	.4	0	63.4
Total	0	156.6	0	98.9	0	57.7	0	63.9
Black hawk								
Domestic fuel	0	19.2	0	19.2	0	0	0	12.4
Miscellaneous ³	0	11.2	0	0	0	11.2	0	0
Total	0	30.4	0	19.2	0	11.2	0	12.4
Butler								
Domestic fuel	0	0	0	0	0	0	0	12.4
Miscellaneous ³	0	22.4	0	0	0	22.4	0	0
Not used	0	53.6	0	48.0	0	5.6	0	18.6
Total	0	76.0	0	48.0	0	28.0	0	31.0
Cedar								
Domestic fuel	0	57.6	0	57.6	0	0	0	37.2
Miscellaneous ³	0	33.6	0	0	0	33.6	0	0
Not used	0	136.8	0	86.4	0	50.4	0	55.8
Total	0	228.0	0	144.0	0	84.0	0	93.0
Clayton								
Fiber products	0	332.1	0	332.1	0	0	0	58.9
Domestic fuel	0	47.0	0	47.0	0	0	0	30.4
Miscellaneous ³	0	157.9	0	20.2	0	137.7	0	44.3
Not used	0	95.2	0	0	0	95.2	0	124.3
Total	0	632.2	0	399.3	0	232.9	0	257.9
Delsware								
Fiber products	0	95.0	0	95.0	0	0	0	0
Not used	0	55.4	0	0	0	55.4	0	61.4
Total	0	150.4	0	95.0	0	55.4	0	61.4
Dubuque								
Fiber products	0	57.6	0	57.6	0	0	0	364.6
Miscellaneous ³	0	16.8	0	0	0	16.8	0	0
Not used	0	158.2	0	77.9	0	80.3	0	95.6
Total	0	232.6	0	135.5	0	97.1	0	460.2
Jackson								
Fiber products	0	89.2	0	89.2	0	0	0	57.6
Domestic fuel	0	24.0	0	24.0	0	0	0	15.5
Miscellaneous ³	0	57.8	0	0	0	57.8	0	0
Not used	0	53.7	0	28.7	0	25.0	0	18.5
Total	0	224.7	0	141.9	0	82.8	0	91.6
Johnson								
Domestic fuel	0	22.0	0	22.0	0	0	0	14.2
Miscellaneous ³	0	16.0	0	0	0	16.0	0	0
Not used	0	5.5	0	5.5	0	0	0	3.5
Total	0	43.5	0	27.5	0	16.0	0	17.7
Jones								
Fiber products	0	22.5	0	22.5	0	0	0	14.1
Miscellaneous ³	0	17.8	0	0	0	17.8	0	0
Not used	0	151.1	0	90.0	0	61.1	0	62.3
Total	0	191.4	0	112.5	0	78.9	0	76.4
Linn								
Domestic fuel	0	16.8	0	16.8	0	0	0	10.9
Miscellaneous ³	0	12.8	0	1.9	0	10.9	0	1.2
Not used	0	54.0	0	34.1	0	19.9	0	22.1
Total	0	83.6	0	52.8	0	30.8	0	34.2

(Table 10 continued on next page)

(Table 10 continued)

NORTHEAST UNIT continued

County or unit and type of use	Wood residue							
	Total		Coarse ¹		Fine ²		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Mitchell								
Miscellaneous ³	2.1	2.1	0	0	2.1	2.1	0	0
Not used	3.6	3.6	3.6	3.6	0	0	2.3	2.3
Total	5.7	5.7	3.6	3.6	2.1	2.1	2.3	2.3
Scott								
Fiber products	0	45.6	0	45.6	0	0	0	0
Miscellaneous ³	0	30.4	0	2.4	0	28.0	0	0
Not used	0	0	0	0	0	0	0	31.0
Total	0	76.0	0	48.0	0	28.0	0	31.0
Tama								
Domestic fuel	0.1	35.0	0.1	35.0	0	0	0.1	22.6
Miscellaneous ³	.4	97.6	0	0	.4	97.6	0	0
Not used	.6	132.3	.6	132.3	0	0	.4	85.6
Total	1.1	264.9	.7	167.3	.4	97.6	.5	108.2
All counties Northeastern								
Fiber products	0	795.3	0	795.3	0	0	0	495.2
Domestic fuel	.1	222.3	.1	222.3	0	0	.1	156.1
Miscellaneous ³	2.5	572.9	0	24.5	2.5	548.4	0	47.4
Not used	4.2	1,048.2	4.2	604.7	0	443.5	2.7	741.5
Total	6.8	2,638.7	4.3	1,646.8	2.5	991.9	2.8	1,440.2
SOUTHEAST UNIT								
Appanoose								
Fiber products	0	67.2	0	67.2	0	0	0	0
Miscellaneous ³	0	31.4	0	0	0	31.4	0	0
Not used	0	8.9	0	.7	0	8.2	0	43.8
Total	0	107.5	0	67.9	0	39.6	0	43.8
Dallas								
Miscellaneous ³	0	17.9	0	0	0	17.9	0	0
Not used	0	30.7	0	30.7	0	0	0	19.8
Total	0	48.6	0	30.7	0	17.9	0	19.8
Davis								
Domestic fuel	0	0.4	0	0.4	0	0	0	0.3
Miscellaneous ³	0	4.2	0	0	0	4.2	0	0
Not used	0	6.8	0	6.8	0	0	0	4.4
Total	0	11.4	0	7.2	0	4.2	0	4.7
Hamilton								
Miscellaneous ³	0	1.8	0	0	0	1.8	0	0
Not used	0	7.8	0	6.0	0	1.8	0	3.9
Total	0	9.6	0	6.0	0	3.6	0	3.9
Hardin								
Domestic fuel	0	48.0	0	48.0	0	0	0	31.0
Miscellaneous ³	0	42.0	0	0	0	42.0	0	0
Not used	0	62.0	0	48.0	0	14.0	0	31.0
Total	0	152.0	0	96.0	0	56.0	0	62.0
Iowa								
Miscellaneous ³	0	16.4	0	0	0	16.4	0	0
Not used	0	28.1	0	28.1	0	0	0	18.1
Total	0	44.5	0	28.1	0	16.4	0	18.1
Lee								
Fiber products	0	127.2	0	127.2	0	0	0	0
Miscellaneous ³	0	40.1	0	0	0	40.1	0	51.0
Not used	0	115.3	0	51.3	0	64.0	0	491.9
Total	0	282.6	0	178.5	0	104.1	0	542.9
Louisa								
Miscellaneous ³	0	1.0	0	0	0	1.0	0	0
Not used	0	77.7	0	49.7	0	28.0	0	32.1
Total	0	78.7	0	49.7	0	29.0	0	32.1
Marion								
Miscellaneous ³	0	6.3	0	0	0	6.3	0	0
Not used	0	16.5	0	14.4	0	2.1	0	9.3
Total	0	22.8	0	14.4	0	8.4	0	9.3

(Table 10 continued on next page)

(Table 10 continued)

SOUTHEAST UNIT continued

County or unit and type of use	Wood residue								Bark
	Total		Coarse ¹		Fine ²				
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	
Marshall									
Miscellaneous ³	0	9.2	0	0	0	9.2	0	2.5	
Not used	0	22.0	0	19.7	0	2.3	0	10.2	
Total	0	31.2	0	19.7	0	11.5	0	12.7	
Monroe									
Domestic fuel	0	7.6	0	0.6	0	7.0	0	7.8	
Not used	0	11.4	0	11.4	0	0	0	0	
Total	0	19.0	0	12.0	0	7.0	0	7.8	
Van Buren									
Domestic fuel	0	5.6	0	5.6	0	0	0	3.5	
Miscellaneous ³	0	22.1	0	0	0	22.1	0	0	
Not used	0	117.6	0	86.1	0	31.5	0	55.7	
Total	0	145.3	0	91.7	0	53.6	0	59.2	
Wapelo									
Domestic fuel	0	21.0	0	21.0	0	0	0	13.6	
Miscellaneous ³	0	49.0	0	0	0	49.0	0	0	
Not used	0	63.0	0	63.0	0	0	0	40.7	
Total	0	133.0	0	84.0	0	49.0	0	54.3	
Warren									
Not used	0	7.6	0	4.8	0	2.8	0	3.1	
Total	0	7.6	0	4.8	0	2.8	0	3.1	
Washington									
Domestic fuel	0	19.8	0	19.8	0	0	0	12.8	
Miscellaneous ³	0	15.4	0	0	0	15.4	0	0	
Not used	0	40.8	0	28.2	0	12.6	0	18.2	
Total	0	76.0	0	48.0	0	28.0	0	31.0	
All counties Southeastern									
Fiber products	0	194.4	0	194.4	0	0	0	0	
Domestic fuel	0	102.4	0	95.4	0	7.0	0	69.0	
Miscellaneous ³	0	256.8	0	0	0	256.8	0	53.5	
Not used	0	616.2	0	448.9	0	167.3	0	782.2	
Total	0	1,169.8	0	738.7	0	431.1	0	904.7	
SOUTHWEST UNIT									
Greene									
Domestic fuel	0	2.8	0	0	0	2.8	0	0	
Not used	0	4.8	0	4.8	0	0	0	3.1	
Total	0	7.6	0	4.8	0	2.8	0	3.1	
Page									
Domestic fuel	0	0.6	0	0.6	0	0	0	0	
Miscellaneous ³	0	.4	0	0	0	.4	0	0	
Not used	0	9.0	0	5.7	0	3.3	0	4.1	
Total	0	10.0	0	6.3	0	3.7	0	4.1	
Pottawattamie									
Miscellaneous ³	0	199.2	0	199.2	0	0	0	0	
Not used	0	431.7	0	199.2	0	232.5	0	257.4	
Total	0	630.9	0	398.4	0	232.5	0	257.4	
Union									
Miscellaneous ³	0	3.6	0	0	0	3.6	0	0	
Not used	0	6.2	0	6.2	0	0	0	4.0	
Total	0	9.8	0	6.2	0	3.6	0	4.0	
Woodbury									
Miscellaneous ³	0	51.6	0	15.5	0	36.1	0	20.0	
Not used	0	46.5	0	46.5	0	0	0	20.0	
Total	0	98.1	0	62.0	0	36.1	0	40.0	
All counties Southwestern									
Domestic fuel	0	3.4	0	0.6	0	2.8	0	0	
Miscellaneous ³	0	254.8	0	214.7	0	40.1	0	20.0	
Not used	0	498.2	0	262.4	0	235.8	0	288.6	
Total	0	756.4	0	477.7	0	278.7	0	308.6	

(Table 10 continued on next page)

(Table 10 continued)

NORTHWEST UNIT

County or unit and type of use		Wood residue						Bark	
		Total		Coarse ¹		Fine ²			
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Clay									
Industrial fuel	0	68.4	0	0	0	68.4	0	55.4	
Miscellaneous ³	0	62.1	0	50.0	0	12.1	0	0	
Total	0	130.5	0	50.0	0	80.5	0	55.4	
Franklin									
Miscellaneous ³	0.3	2.5	0	0	0.3	2.5	0	0	
Not used	.5	4.3	.5	4.3	0	0	.3	2.8	
Total	.8	6.8	.5	4.3	.3	2.5	.3	2.8	
Hancock									
Domestic fuel	0	3.1	0	3.1	0	0	0	0	
Miscellaneous ³	0	1.8	0	0	0	1.8	0	0	
Not used	0	0	0	0	0	0	0	2.0	
Total	0	4.9	0	3.1	0	1.8	0	2.0	
Humboldt									
Domestic fuel	0	1.9	0	1.9	0	0	0	0	
Miscellaneous ³	0	1.1	0	0	0	1.1	0	0	
Not used	0	0	0	0	0	0	0	1.2	
Total	0	3.0	0	1.9	0	1.1	0	1.2	
Lyon									
Industrial fuel	0	0.5	0	0.5	0	0	0	0	
Not used	0	.3	0	0	0	.3	0	.3	
Total	0	.8	0	.5	0	.3	0	.3	
Sioux									
Domestic fuel	0	0.5	0	0.5	0	0	0	0	
Miscellaneous ³	0	.8	0	.5	0	.3	0	0	
Not used	0	13.9	0	8.6	0	5.3	0	6.2	
Total	0	15.2	0	9.6	0	5.6	0	6.2	
Wright									
Domestic fuel	0	0.5	0	0.5	0	0	0	0	
Miscellaneous ³	0	2.5	0	0	0	2.5	0	.9	
Not used	0	3.8	0	3.8	0	0	0	1.8	
Total	0	6.8	0	4.3	0	2.5	0	2.7	
All counties Northwestern									
Industrial fuel	0	68.9	0	0.5	0	68.4	0	55.4	
Domestic fuel	0	6.0	0	6.0	0	0	0	0	
Miscellaneous ³	.3	70.8	0	50.5	.3	20.3	0	0.9	
Not used	.5	22.3	.5	16.7	0	5.6	.3	14.3	
Total	.8	168.0	.5	73.7	.3	94.3	.3	70.6	
ALL UNITS									
Total Iowa									
Fiber products	0	989.7	0	989.7	0	0	0	495.2	
Industrial fuel	0	68.9	0	.5	0	68.4	0	55.4	
Domestic fuel	.1	334.1	.1	324.3	0	9.8	.1	225.1	
Miscellaneous ³	2.8	1,155.3	0	289.7	2.8	865.6	0	121.8	
Not used	4.7	2,184.9	4.7	1,332.7	0	852.2	3.0	1,826.6	
Total	7.6	4,732.9	4.8	2,936.9	2.8	1,796.0	3.1	2,724.1	

¹Suitable for chipping such as slabs, edgings, veneer cores, etc.²Not suitable for chipping such as sawdust, veneer clippings, etc.³Livestock bedding, mulch, small dimension, and specialty items.

Blyth, James E., and William A. Farris.

1975. Primary forest products industry and timber use, Iowa, 1972. North Cent. For. Exp. Stn., St. Paul, Minn. 20 p., illus. (USDA For. Serv. Resour. Bull. NC-28)

Discusses recent Iowa forest industry trends, and production of saw logs, veneer logs, pulpwood, and other roundwood products. Comments on outlook for Iowa forest industry and production and use of roundwood and primary wood-using plant wood and bark residue.

OXFORD: 791:792(777). KEY WORDS: saw logs, pulpwood, veneer logs, trends, wood residue, production.

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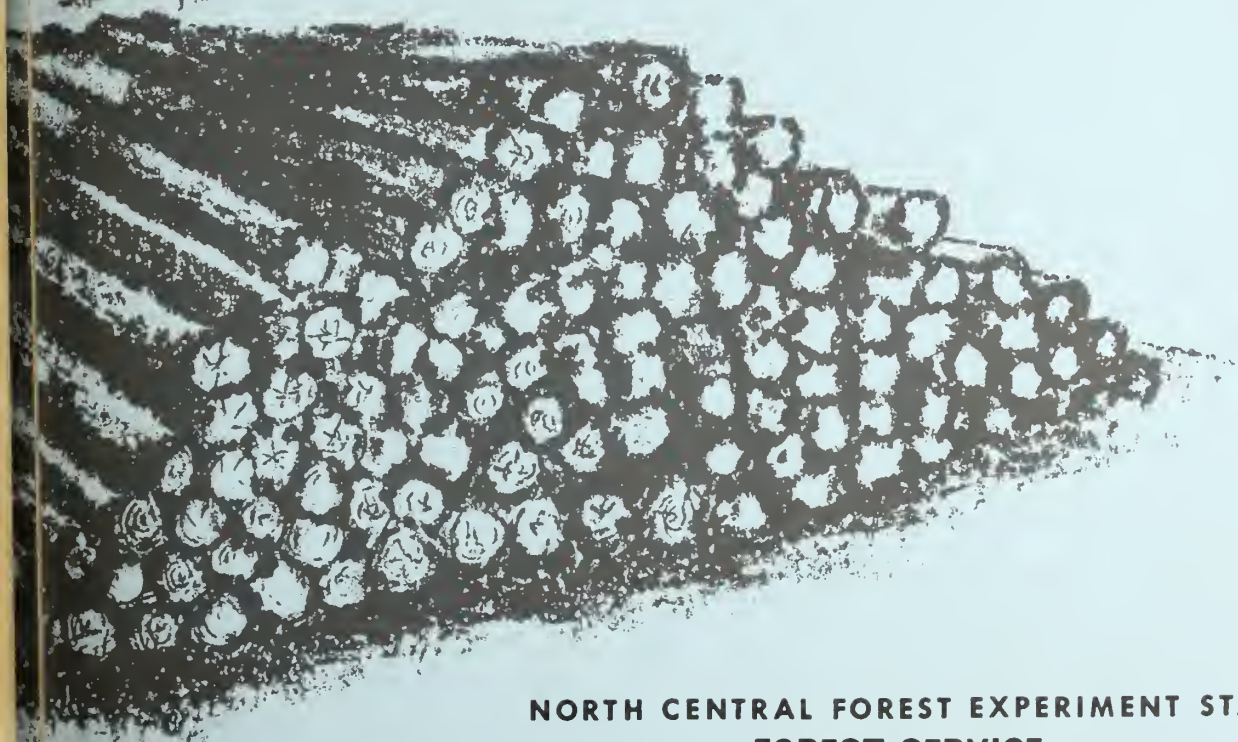
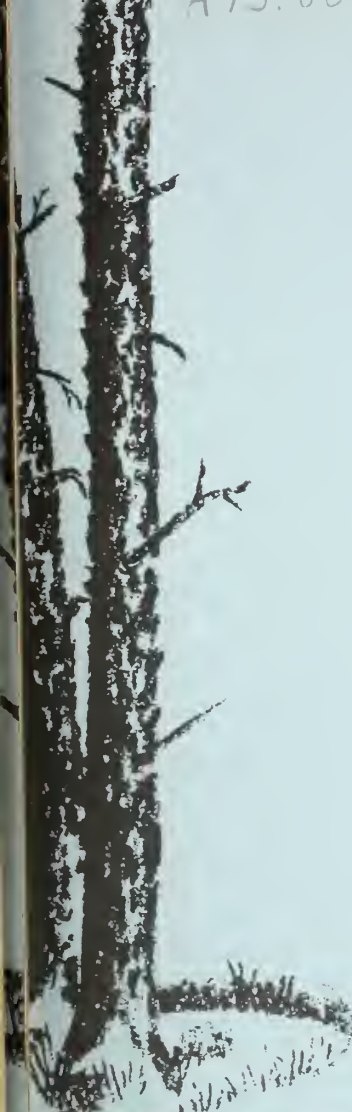
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PULPWOOD PRODUCTION

in the
NORTH CENTRAL REGION
BY COUNTY
1974

JAMES E. BLYTH
JEROLD T. HAHN

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE



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North Central Forest Experiment Station
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The cooperation of pulpmills using North Central States timber in 1973 is gratefully acknowledged. Thanks are also due the Michigan Department of Natural Resources for collecting data on the Michigan pulpmills.

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HIGHLIGHTS

Lake States

Lake States pulpwood production surged to 5.5 million cords in 1974, the third consecutive year that production increased. Harvesting of all species groups, except spruce, increased. Output was an all-time high in each state-- 2.05 million cords in Wisconsin, 1.84 million cords in Michigan, and 1.58 million cords in Minnesota. Most of the additional wood cut above the 1973 level was used to increase woodyard inventories and supply new pulping capacity. Pulpmill capacity in 1974 was about 200 tons per day more than in 1973.

From 1965 to 1974 Lake States pulpwood production did not keep pace with the national trend.

For many years aspen has been the dominant pulpwood species, but its position is slipping. Softwood residue is becoming important in the pulpwood mix.

In 1967, Wisconsin overtook Michigan and became the leading pulpwood producer because its forests increased their share of the wood supplied to the large local pulp industry.

Central States

Pulpwood production hit a peak of 486,000 cords in 1974, the sixth record output in the last 7 years. Production rose because mills outside the area purchased more Central States wood. Hardwood residue, successfully substituted for roundwood, accounted for 58 percent of the pulpwood output. Missouri out-produced Illinois for the first time. If the average annual rate of growth in production in each State continues at the rate of the last decade, Missouri will be the top producer in 1976.

Pulping capacity fell to 1,415 tons per day. One large Illinois pulpmill is phasing out wood use in favor of wastepape

PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION,

BY COUNTY, 1974

James E. Blyth and Jerold T. Hahn

This is the 16th annual report on the pulpwood harvest in Lake States counties and the 15th annual report on the Central States harvest. Pulpwood constitutes more than half of the timber products harvested annually in the Lake States (Michigan, Minnesota, and Wisconsin), and it is an important product in the Central States (Illinois, Indiana, Iowa, and Missouri).

Current detailed pulpwood production^{1/} information is necessary for intelligent planning and decision-making in wood procurement, forest resource management, and forest industry development. Also, researchers need current pulpwood information for planning projects.

Pulpmills using North Central States timber in 1974 reported their pulpwood receipts by species groups and counties of origin. This report presents the results of the survey, analyzes the data where appropriate, compares results with 1973 or earlier years, and discusses trends in pulpwood production and use.

The Lake States and Central States are discussed separately because the timber types in each area are different and less information can be released about the Central States (more detailed data on pulpwood production and receipts in the Central States would reveal the operations of individual mills).

To provide more detailed species information for the Lake States than in

earlier reports, the pine group is now divided into jack, red, and white; birch is shown as white and yellow; and the "miscellaneous hardwood" group formerly reported is now presented as 12 separate species groups.

Minnesota Forest Survey Units differ from those formerly reported to conform to those being used in the fourth survey of Minnesota's forest resource. Appendix table 9 shows the new Unit names and counties within each Unit where pulpwood was harvested in 1974.

LAKE STATES

Production

Lake States pulpwood production climbed to 5.5 million cords in 1974, up 16 percent from 1973. This was the third consecutive year of record production. About half of the three-quarter million cord increase was used to build woodyard inventories. Additional pulping capacity in the Lake States absorbed a significant portion of the remainder.

Lake States mills consumed 99 percent of the pulpwood (table 1). Ninety-one percent was roundwood (including chips from roundwood); the remainder was residue from local wood-using plants.^{2/} Most of the residue (85 percent) was hardwood. Use of Lake States residue as pulpwood increased four-fold during the last decade.

¹ Pulpwood production is defined as the annual pulpwood volume from timber and in a specified area that was received at all mills, whereas pulpwood receipts are defined as the volume of wood received by mills in a specified area regardless of the geographic source.

² Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping. Residue includes slabs, edgings, veneer cores, sawdust, wood flour, and chips manufactured from these byproducts.

Table 1.--*Production and imports of pulpwood,
Lake States, 1974*
(In standard cords, unpeeled)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
BALSAM FIR								
MICHIGAN	32719	0	614	33333	0	0	0	33333
MINNESOTA	0	84107	0	84107	0	0	0	84107
WISCONSIN	41649	7140	84578	133367	0	66	66	133433
EXPORTED 3/	0	1064	0	1064	0	0	0	0
TOTAL	74368	92311	85192	251871	0	66	66	250873
CEDAR								
MICHIGAN	4665	0	242	4907	0	0	0	4907
TOTAL	4665	0	242	4907	0	0	0	4907
HEMLOCK								
MICHIGAN	27049	0	1427	28476	0	0	0	28476
WISCONSIN	25484	0	43244	68728	0	0	0	68728
TOTAL	52533	0	44671	97204	0	0	0	97204
JACK PINE								
MICHIGAN	99979	0	348	100327	0	0	0	100327
MINNESOTA	0	162253	0	162253	1340	17855	19195	181448
WISCONSIN	90979	59408	196843	347230	47842	1501	49343	396573
EXPORTED 3/	0	979	0	979	0	0	0	0
TOTAL	190958	222640	197191	610789	49182	19356	68538	678348
RED PINE								
MICHIGAN	49904	0	1092	50996	0	0	0	50996
MINNESOTA	0	3499	0	3499	0	0	0	3499
WISCONSIN	8876	5622	79326	93824	0	0	0	93824
TOTAL	58780	9121	80418	148319	0	0	0	148319
WHITE PINE								
MICHIGAN	4769	0	238	5007	0	0	0	5007
MINNESOTA	0	7557	0	7557	0	0	0	7557
WISCONSIN	4194	0	13127	17321	0	0	0	17321
TOTAL	8963	7557	13365	29885	0	0	0	29885
SPRUCE								
MICHIGAN	12053	0	41	12094	0	0	0	12094
MINNESOTA	0	141950	0	141950	0	300	300	142250
WISCONSIN	27586	56989	19267	103842	0	57327	57327	161169
EXPORTED 3/	0	7623	0	7623	0	0	0	0
TOTAL	39639	206562	19308	265509	0	57627	57627	315516
TAMARACK								
MICHIGAN	791	0	40	831	0	0	0	831
MINNESOTA	0	10003	0	10003	0	0	0	10003
WISCONSIN	922	33268	1517	35707	0	0	0	35707
TOTAL	1713	43271	1557	46541	0	0	0	46541
ASH								
MICHIGAN	9433	0	167	9600	0	0	0	9600
WISCONSIN	2643	337	41450	44430	0	0	0	44430
EXPORTED 3/	174	0	99	273	0	0	0	0
TOTAL	12250	337	41716	54303	0	0	0	54303
ASPEN								
MICHIGAN	476065	0	5389	481454	0	0	0	481454
MINNESOTA	0	712357	0	712357	0	5895	5895	718252
WISCONSIN	227987	90056	791341	1109384	0	69	69	1109453
EXPORTED 3/	2293	1410	502	4205	0	0	0	0
TOTAL	706345	803823	797232	2307400	0	5964	5964	2309128

(TABLE 1 CONTINUED ON NEXT PAGE)

TABLE 1 CONTINUED)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	REGIONAL				OTHER	CANADA	TOTAL	
	MICHIGAN	MINNESOTA	WISCONSIN	TOTAL	U.S. 2/		IMPORTS	
BALSAM POPLAR								
MICHIGAN	34942	0	1481	36423	0	0	0	36423
MINNESOTA	0	23720	0	23720	0	5751	5751	29471
WISCONSIN	17	0	0	17	0	0	0	17
EXPORTED 3/	42	0	0	42	0	0	0	0
TOTAL	35001	23720	1481	60202	0	5751	5751	65911
BASSWOOD								
MICHIGAN	1485	0	0	1485	0	0	0	1485
WISCONSIN	17	1	6629	6647	0	0	0	6647
EXPORTED 3/	216	0	113	329	0	0	0	0
TOTAL	1718	1	6742	8461	0	0	0	8132
BEECH								
MICHIGAN	28724	0	1416	30140	0	0	0	30140
WISCONSIN	978	0	3773	4751	0	0	0	4751
EXPORTED 3/	576	0	0	576	0	0	0	0
TOTAL	30278	0	5189	35467	0	0	0	34891
WHITE BIRCH								
MICHIGAN	58407	22	1558	59987	0	0	0	59987
MINNESOTA	0	37387	0	37387	0	0	0	37387
WISCONSIN	5876	6060	73612	85548	0	0	0	85548
EXPORTED 3/	155	526	251	932	0	0	0	0
TOTAL	64438	43995	75421	183854	0	0	0	182922
YELLOW BIRCH								
MICHIGAN	16832	0	543	17375	0	0	0	17375
WISCONSIN	3433	36	25719	29188	0	0	0	29188
TOTAL	20265	36	26262	46563	0	0	0	46563
COTTONWOOD								
MICHIGAN	126	0	0	126	0	0	0	126
MINNESOTA	0	1005	0	1005	0	0	0	1005
EXPORTED 3/	0	0	18	18	0	0	0	0
TOTAL	126	1005	18	1149	0	0	0	1131
ELM								
MICHIGAN	10447	0	346	10793	0	0	0	10793
MINNESOTA	0	1650	0	1650	0	0	0	1650
WISCONSIN	14815	515	133380	148710	0	0	0	148710
EXPORTED 3/	808	0	212	1020	0	0	0	0
TOTAL	26070	2165	133938	162173	0	0	0	161153
HICKORY								
WISCONSIN	95	0	1308	1403	0	0	0	1403
TOTAL	95	0	1308	1403	0	0	0	1403
HARD MAPLE								
MICHIGAN	77870	0	3527	81397	0	0	0	81397
WISCONSIN	32521	897	126628	160046	0	0	0	160046
EXPORTED 3/	185	0	186	371	0	0	0	0
TOTAL	110576	897	130341	241814	0	0	0	241443
SOFT MAPLE								
MICHIGAN	78947	0	1823	80770	0	0	0	80770
WISCONSIN	10172	330	74001	84503	0	0	0	84503
EXPORTED 3/	350	0	125	475	0	0	0	0
TOTAL	89469	330	75949	165748	0	0	0	165273

(TABLE 1 CONTINUED ON NEXT PAGE)

(TABLE 1 CONTINUED)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
RED OAK								
MICHIGAN	98437	0	159	98596	0	0	0	98596
MINNESOTA	0	6851	0	6851	0	0	0	6851
WISCONSIN	41	162	80130	80333	0	0	0	80333
EXPORTED 3/	53	0	1408	1461	0	0	0	0
TOTAL	98531	7013	81697	187241	0	0	0	185780
WHITE OAK								
MICHIGAN	4940	0	0	4940	0	0	0	4940
WISCONSIN	39	14	15502	15555	0	0	0	15555
EXPORTED 3/	0	0	529	529	0	0	0	0
TOTAL	4979	14	16031	21024	0	0	0	20495
OTHER HARDWOODS								
MICHIGAN	13954	0	693	14647	0	0	0	14647
MINNESOTA	0	1005	0	1005	0	0	0	1005
WISCONSIN	997	14	10482	11493	0	0	0	11493
TOTAL	14951	1019	11175	27145	0	0	0	27145
TOTAL ROUNDWOOD								
MICHIGAN	1142538	22	21144	1163704	0	0	0	1163704
MINNESOTA	0	1193344	0	1193344	1340	29801	31141	1224485
WISCONSIN	499321	260849	1821857	2582027	47842	58963	106805	2688832
EXPORTED 3/	4852	11602	3443	19897	0	0	0	0
TOTAL	1646711	1465817	1846444	4958972	49182	88764	137946	5077021
RESIDUE, SOFTWOOD								
MICHIGAN	8932	0	527	9459	0	0	0	9459
MINNESOTA	0	34034	0	34034	10853	27839	38692	72726
WISCONSIN	3854	106	24215	28175	220907	7739	228646	256821
EXPORTED 3/	3948	773	1130	5851	0	0	0	0
TOTAL	16734	34913	25872	77519	231760	35578	267338	339006
RESIDUE, HARDWOODS								
MICHIGAN	138273	0	2992	141265	9298	0	9298	150563
MINNESOTA	0	69612	14455	84067	3314	7817	11131	95198
WISCONSIN	31095	590	157591	189276	0	0	0	189276
EXPORTED 3/	9728	6576	5472	21776	0	0	0	0
TOTAL	179096	76778	180510	436384	12612	7817	20429	435037
ALL WOOD MATERIAL								
MICHIGAN	1289743	22	24663	1314428	9298	0	9298	1323726
MINNESOTA	0	1296990	14455	1311445	15507	65457	80964	1392409
WISCONSIN	534270	261545	2003663	2799478	268749	66702	335451	3134929
EXPORTED 3/	18528	18951	10045	47524	0	0	0	0
TOTAL	1842541	1577508	2052826	5472875	293554	132159	425713	5851064

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING -PRODUCTION BY STATES- PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

2/ MOSTLY WESTERN STATES.

3/ PULPWOOD SHIPPED TO MILLS OUTSIDE OF REGION.

4/ PONDEROSA PINE.

Pulpwood cutting from all species groups, except spruce, increased. Major gains were in aspen (271,000 cords) and pine (149,000 cords). Aspen harvesting rose more than 100,000 cords from the previous peak of 1966 while pine harvesting spurted more than 67,000 cords above its 1966 peak. Harvests of birch, tamarack, and miscellaneous hardwoods³ advanced to record levels also.

Because this is the first report with detailed species information on pine, birch, and miscellaneous hardwoods, these groups are discussed below.

More than three-fourths (77 percent) of the pine cut was jack pine. Four-fifths of the birch harvest was white birch (table 2). Hard maple, red oak, soft

Table 2.--Lake States roundwood pulpwood production from pine and birch by State, 1974

(In thousand cords)

Species :	Production			
	Michigan	Minnesota	Wisconsin	Total
Jack pine	191	223	197	611
Red pine	59	9	80	148
White pine	9	8	13	30
TOTAL	259	240	290	789
BIRCH				
White birch	64	44	75	184
Yellow birch	20	*	26	46
TOTAL	84	44	101	230

* Less than 500 cords.

maple, and elm constituted 78 percent of the miscellaneous hardwoods production (table 3).

Wisconsin--The 2.05 million cord output was 294,000 cords higher than in 1973. Miscellaneous hardwoods (primarily maple and red oak) and pine led the advance, but cutting of all principal species increased. Although production rose in all parts of the State, the greatest gain was in central Wisconsin. Oneida, Price, and Lincoln counties led all others.

Michigan--Producers boosted their output sharply (16 percent) to 1.84 million cords. The largest gains were in aspen (103,000 cords), pine (55,000 cords), and miscellaneous hardwoods (59,000 cords). Output climbed more (129,000 cords) in the western Upper Peninsula than elsewhere. Top-producing counties were Marquette, Iron, and Dickinson.

Minnesota--Production increased to 1.58 million cords with the largest gain in aspen (131,000 cords). Demand for Minnesota pulpwood has expanded for three consecutive years. Northeastern Minnesota supplies more than half (58 percent) of the States pulpwood production. Top-producing counties were St. Louis, Koochiching, and Itasca.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to the merchantable

Table 3.--Lake States roundwood pulpwood production from miscellaneous hardwoods by species and State, 1974
(In thousand cords)

Miscellaneous hardwoods	Production (thousand cords)			
	Michigan	Minnesota	Wisconsin	Total
Hard maple	111	1	130	242
Red oak	98	7	82	187
Soft maple	90	*	76	166
Elm	26	2	134	162
Balsam poplar	35	24	1	60
Ash	12	*	42	54
Beech	30	-	5	35
White oak	5	*	16	21
Basswood	2	*	7	9
Other miscellaneous hardwoods	15	2	13	30
TOTAL	424	36	506	966

* Less than 500 cords.

³ Miscellaneous hardwoods are all hardwoods except birch and aspen.

volume in major pulpwood species (fig. 1); and second, the amount of pulpwood cut relative to commercial forest area (fig. 2). Heaviest cutting pressure (per 1,000 cords of merchantable volume in principal pulpwood species) was in central Wisconsin and western Upper Michigan.

Receipts

Forty-one Lake States pulp mills received 5.85 million cords of pulpwood in 1974. Eight more mills used birch and four more used residue chips than in 1973 (table 4).

Receipts of spruce fell, but increased for other major species. For the fourth

successive year, the proportion of hardwood procured increased. Two-thirds of the receipts was hardwood compared with 58 percent a decade earlier. Demand for softwood residue dropped slightly after rising each of the previous 5 years.

Canada furnished 31 percent of the imported wood. Softwood imports from Canada in 1974 slipped to the lowest recorded level. Deliveries of Canadian softwood roundwood continued the irregular long term downtrend established in 1952, but were partially offset by greater receipts of Canadian softwood residues. In 1969, the first Canadian softwood residue entered the Lake States for pulping and Canada now appears to be an established source.

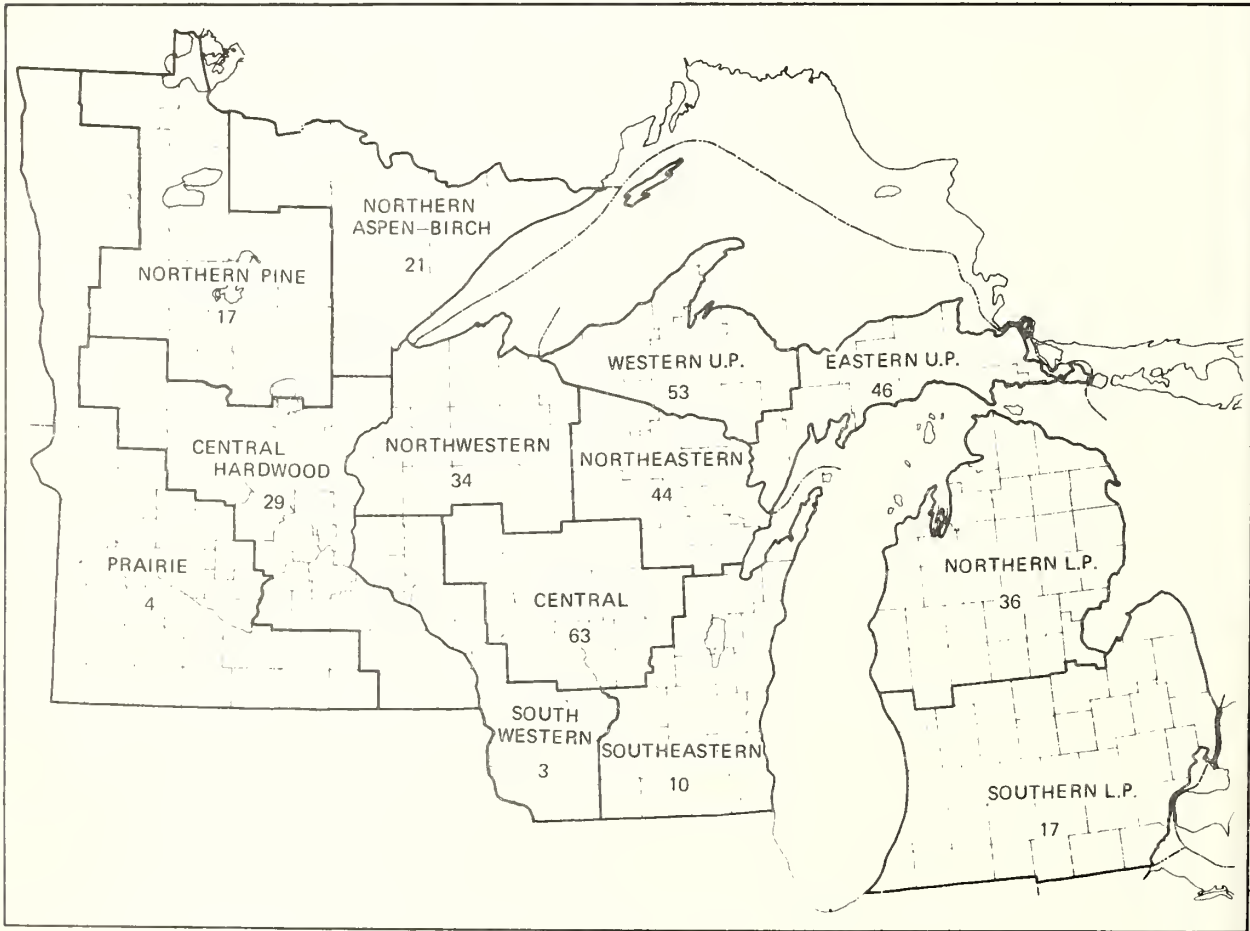


Figure 1.--Cords of pulpwood belts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1974. (The heavy lines delineate the boundaries of the Forest Survey Units in each State.)

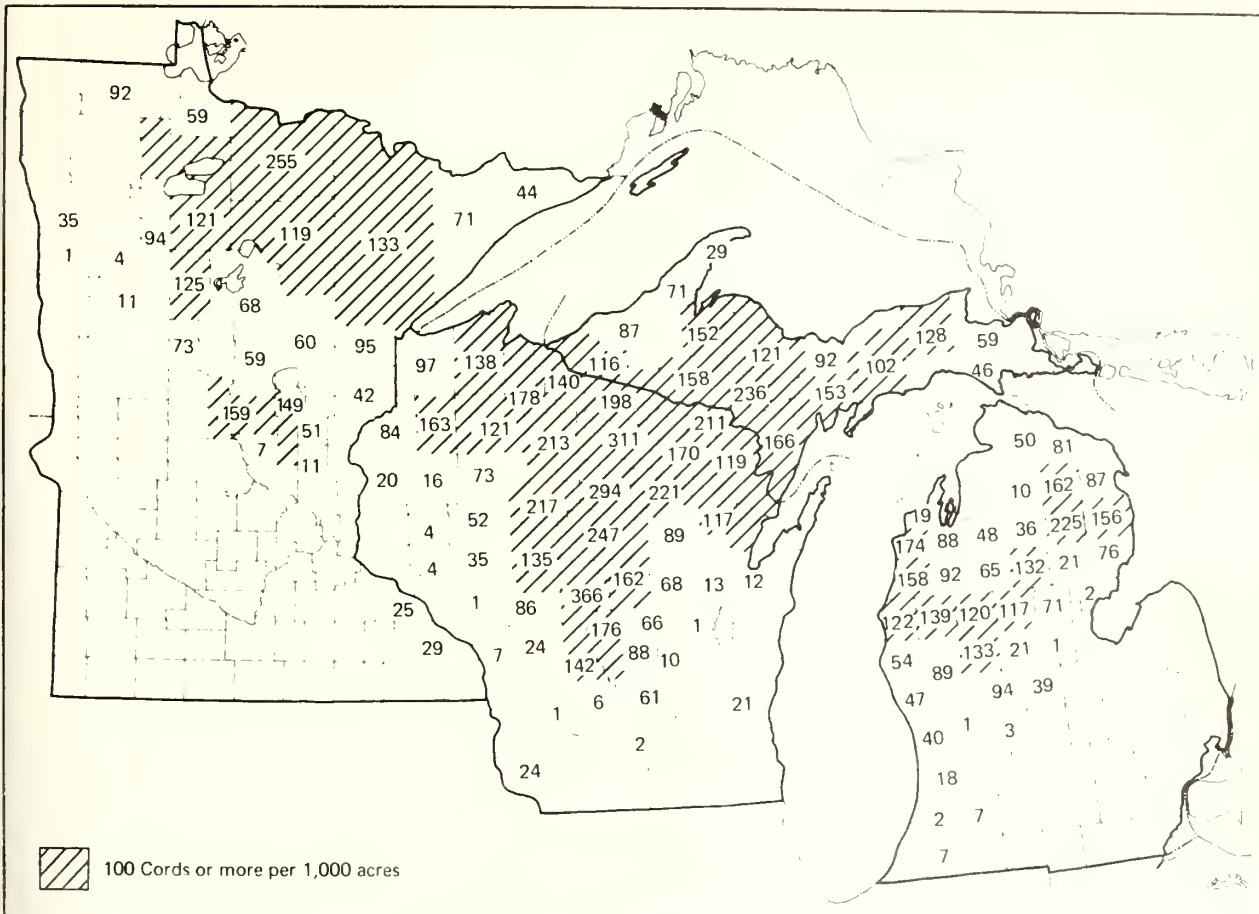


Figure 2.--Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1974. Acres of stocked commercial forest land were determined during the last forest survey in each State.

Table 4.--Plants using the different species of wood for pulping in 1974
(In numbers)

Species and kind of material	Lake States	Minnesota	Wisconsin	Michigan
Aspen	39	9	22	8
Balsam fir	18	5	10	3
Birch	21	2	13	6
Hemlock	12	-	9	3
Pine	12	2	6	4
Spruce	21	5	13	3
Tamarack	6	1	4	1
Maple	17	-	10	7
Oak	12	2	5	5
Other hardwoods	19	2	11	5
Wood chips (residue)	20	6	9	5
Slabwood and other residue	6	1	3	2
Total Plants/	41	9	24	8

1/ Some plants use more than one species, so numbers in columns cannot be added.

Western States supplied all but 4 percent of the imports from other parts of the United States. Wyoming and South Dakota each provided more than 70,000 cords, primarily as softwood chips.

Wisconsin--Wood deliveries surged ahead 438,000 cords, despite a large drop in spruce requirements. Pine and hardwood roundwood markets were excellent.

Minnesota--Pulpwood marketing expanded 169,000 cords. Demand for aspen and pine was strong; birch and hardwood residue markets weakened.

Michigan--Pulpwood demand rose moderately (125,000 cords), mainly in aspen. Hemlock, balsam fir, tamarack, spruce, and softwood residue markets slackened. Michigan mills received only 3 percent of the softwood residue deliveries in the Lake States.

Industry Trends and Analysis

Pulpmill capacity expanded from 10.0 to 10.2 thousand tons per day (table 5). Increases were in the sulfite and mechanical processes. No mills closed or changed ownership. The industry is continuing to invest significantly in pollution control equipment and in sawmills. Captive sawmills supply a reliable quantity of pulpwood from their residues.

During the last decade (1965-1974), Lake States pulpwood production did not keep pace with the national trend (fig. 3). In 1964, the Lake States produced 7.5 percent of the nation's pulpwood; in 1974, they produced 6.9 percent. During this period, pulp and paper industry growth was concentrated in the South. From 1971 to 1974, however, the Lake States relative position improved by 1 percent (from 5.9 to 6.9).

Aspen has been the dominant Lake States pulpwood species for many years, but its position is slipping (fig. 4). During the 1964-1971 period, aspen pulpwood output hovered close to half the total. By 1974, it had declined to 42 percent. Other hardwoods, both roundwood and residue, are increasing as a proportion of all pulpwood cut.

Pine and other softwood roundwood output has been stable since 1964. Use of Lake States softwood residue, minimal from 1964 to 1969, has risen every year since 1969 and is becoming more prominent in the pulpwood mix.

In the early 1960's, Michigan was the leading pulpwood producer. In 1967 Wisconsin took the lead and maintained it (fig. 5). Wisconsin production rose substantially in the last 10 years because the State's pulp-mills increased their use of local wood from 53 percent of their requirements in 1964 to 64 percent in 1974. The greater use of hardwoods created opportunities for the mills to purchase more wood locally.

Minnesota almost overtook Michigan in production during 1972. Then, a large Michigan pulpmill expanded its capacity and purchased much more Michigan wood. Consequently, Michigan pulled away from Minnesota in production during 1973-1974.

CENTRAL STATES

Production

Central States producers raised their pulpwood output to 486,000 cords, a 7 percent gain over 1973. Production rose because mills outside the Central States increased their pulpwood purchases from the region. Most of the gain came from hardwood residue, which increased to 58 percent of pulpwood output (table 6).

Missouri outproduced Illinois for the first time and may not relinquish its new position. Missouri has several large markets within and near the Central States. In 7 of the last 8 years, Missouri expanded its output an average of 25 percent per year.

Loggers harvested pulpwood in 120 counties: 39 in Missouri, 34 in Illinois, 31 in Indiana, and 16 in Iowa (fig. 6). The pulpwood harvest area shrank in southwest Illinois and south central Indiana. Meanwhile, harvesting expanded to 4 more counties in Missouri and 3 more in Iowa than in 1973.

Receipts

The 13 Central States' mills received 353,000 cords of pulpwood, which is down 7 percent from 1973. More of their wood came from the Central States than in 1973. Imports declined 28,000 cords--15,000 cords of roundwood and 13,000 cords of residue. The mills bought hardwood residue heavily. Soft hardwood receipts fell to their lowest level since 1955. After recording peak receipts in 1973, Illinois mills procured 17 percent less wood.

Table 5.--Active woodpulp mills in the Lake States by location, type of pulp produced, and capacity, 1974

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL

MICHIGAN:						
ABITIBI CORP.	ALPENA	430	0	0	430	0
CELOTEX CORP.	L ANSE	270	0	0	270	0
HOERNER WALDORF CORP.	ONTONAGON	220	0	0	0	220
MANISTIQUE PULP AND PAPER CO.	MANISTIQUE	90	0	0	90	0
MEAD CORP.	ESCANABA	750	0	600	150	0
MENASHA CORP.	OTSEGO	225	0	0	0	225
PACKAGING CORP.OF AMERICA	FILER CITY	400	0	0	0	400
WARREN CO., S.D.	MUSKEGON	240	0	240	0	0
TOTAL.....		2625	0	840	940	845
=====						
MINNESOTA :						
BLANDIN PAPER CO.	GRAND RAPIDS	250	0	0	170	80
HENNEPIN PAPER CO.	LITTLE FALLS	75	0	0	75	0
BOISE CASCADE CORP.	INTERNATIONAL FALLS	770	0	320	450	0
POTLATCH CORP.	CLOQUET	520	120	400	0	0
SUPERWOOD CORP.	BEMIDJI	90	0	0	90	0
ST REGIS PAPER CO.	SARTELL	125	0	0	125	0
SUPERWOOD CORP.	DULUTH	350	0	0	350	0
HOERNER WALDORF CORP.	ST PAUL	300	0	0	0	300
CONWED CORP.	CLOQUET	350	0	0	350	0
TOTAL.....		2830	120	720	1610	380
=====						
WISCONSIN :						
AMERICAN CAN CO.	GREEN BAY	210	150	0	60	0
WEYERHAUSER CO.	ROTHSCHILD	200	200	0	0	0
BADGER PAPER MILLS	PESHTIGO	110	110	0	0	0
APPLETON PAPERS INC.	COMBINED LOCKS	200	0	0	200	0
CONSOLIDATED PAPERS , INC.	APPLETON	175	175	0	0	0
CONSOLIDATED PAPERS , INC.	STEVENS POINT	100	0	0	100	0
CONSOLIDATED PAPERS , INC.	WISCONSIN RAPIDS	625	0	400	225	0
GREEN BAY PACKAGING, INC.	GREEN BAY	200	0	0	0	200
FLAMBEAU PAPER CO.	PARK FALLS	115	115	0	0	0
KIMBERLY-CLARK CORP.	KIMBERLY	115	0	0	115	0
PENTAIR INDUSTRIES	NIAGARA	170	0	0	170	0
MOSINEE PAPER MILLS CO.	MOSINEE	200	0	200	0	0
NEKOOSA-EDWARDS PAPER CO.	NEKOOSA	310	0	310	0	0
NEKOOSA-EDWARDS PAPER CO.	PORT EDWARDS	215	215	0	0	0
OWENS-ILLINOIS	TOMAHAWK	620	0	0	0	620
CHARMIN PAPER PRODUCTS CO.	GREEN BAY	2/	2/	2/	2/	2/
SCOTT PAPER CO.	OCONTO FALLS	110	110	0	0	0
ST REGIS PAPER CO.	RHINELANDER	120	120	0	0	0
FLINKOTE COMPANY	CORNELL	50	0	0	50	0
SUPERIOR FIBRE PRODUCTS CO.	SUPERIOR	180	0	0	180	0
THILMANY PULP AND PAPER CO	KAUKAUNA	400	0	400	0	0
TOMAHAWK PULP CO., INC.	TOMAHAWK	50	0	0	50	0
WAUSAU PAPER MILLS CO.	BROKAW	185	185	0	0	0
EVANS PRODUCTS CO.	PHILLIPS	100	0	0	100	0
TOTAL.....		4760	1380	1310	1250	820
=====						
ALL STATES		10215	1500	2870	3800	2045

1/ LOCKWOOD S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1975,AND 1975 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.

2/ CAPACITY NOT AVAILABLE.

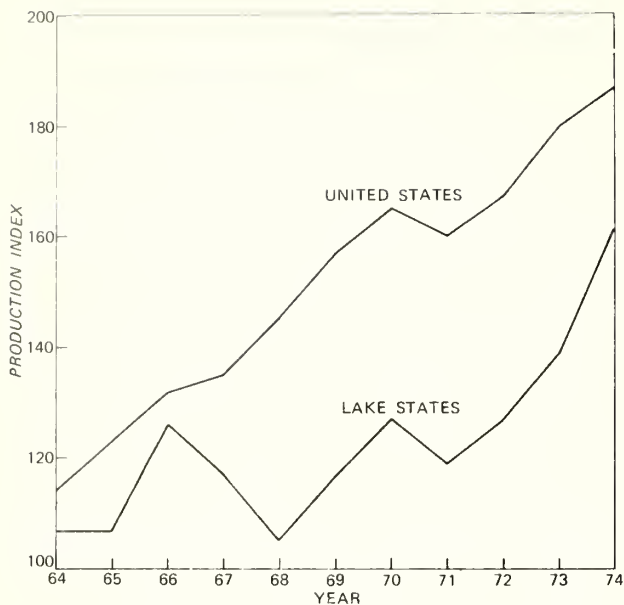


Figure 3.--United States and Lake States pulpwood production indices, 1964-1974. Average annual production for 1961-1963 = 100.

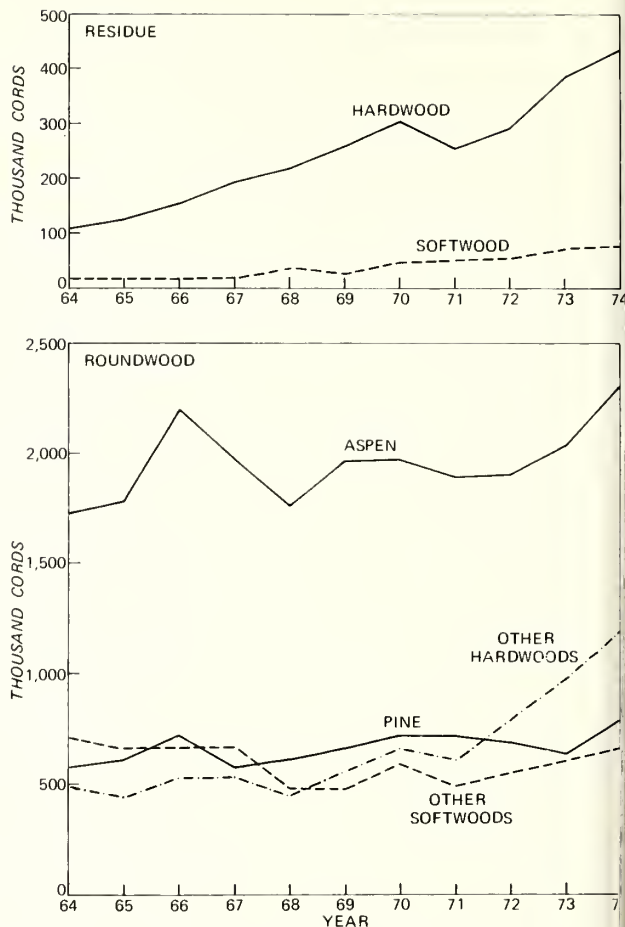


Figure 4.--Lake States pulpwood production by year and type of wood, 1964-1974.

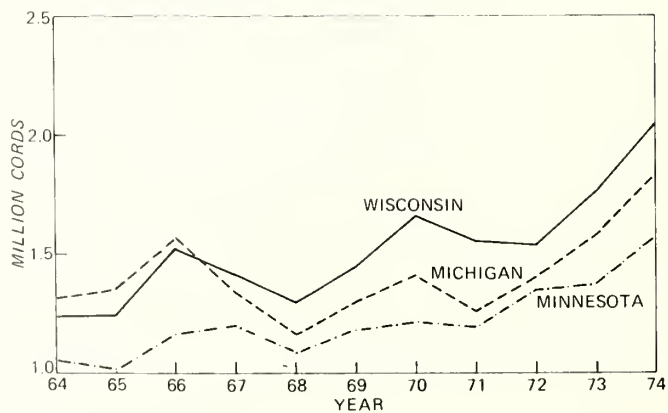


Figure 5.--Lake States pulpwood production by State, 1964-1974.

Table 6.--Production and imports of pulpwood,
Central States, 1974
(In standard cords, unpeeled)^{1/}

SPECIES AND DESTINATION	PRODUCTION BY STATES ^{2/}					IMPORTS			TOTAL RECEIPTS
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
SOFTWOODS									
ILLINOIS	1532	0	0	210	1742	0	0	0	1742
EXPORTED 3/	1174	0	0	146	1320	0	0	0	0
TOTAL	2706	0	0	356	3062	0	0	0	1742
SOFT HARDWOODS									
ILLINOIS	27488	6761	0	835	35084	444	0	444	35528
IND., IOWA, MO. 4/	3382	12651	12902	12648	41583	2448	0	2448	44031
EXPORTED 3/	3366	3859	0	3182	10407	0	0	0	0
TOTAL	34236	23271	12902	16665	87074	2892	0	2892	79559
HARD HARDWOODS									
ILLINOIS	13478	3819	0	884	18181	0	0	0	18181
IND., IOWA, MO. 4/	4011	12585	25023	5368	46987	2222	0	2222	49209
EXPORTED 3/	6253	18104	0	10219	34576	0	0	0	0
TOTAL	23742	34508	25023	16471	99744	2222	0	2222	67390
TOTAL ROUNDWOOD									
ILLINOIS	42498	10580	0	1929	55007	444	0	444	55451
IND., IOWA, MO. 4/	7393	25236	37925	18016	88570	4670	0	4670	93240
EXPORTED 3/	10793	21963	0	13547	46303	0	0	0	0
TOTAL	60684	57779	37925	33492	189880	5114	0	5114	148691
RESIDUE, SOFTWOOD									
ILLINOIS	1033	0	4877	5655	11565	5078	4495	9573	21138
IND., IOWA, MO. 4/	0	0	0	0	0	0	4800	4800	4800
EXPORTED 3/	0	0	0	2443	2443	0	0	0	0
TOTAL	1033	0	4877	8098	14008	5078	9295	14373	25938
RESIDUE, HARDWOODS									
ILLINOIS	36089	2840	2954	30196	72079	11089	18	11107	83186
IND., IOWA, MO. 4/	11669	45502	10586	20382	88139	5366	2057	7423	95562
EXPORTED 3/	22735	52874	2286	43918	121813	0	0	0	0
TOTAL	70493	101216	15826	94496	282031	16455	2075	18530	178748
ALL WOOD MATERIAL									
ILLINOIS	79620	13420	7831	37780	138651	16611	4513	21124	159775
IND., IOWA, MO. 4/	19062	70738	48511	38398	176709	10036	6857	16893	193602
EXPORTED 3/	33528	74837	2286	59908	170559	0	0	0	0
TOTAL	132210	158995	58628	136086	485919	26647	11370	38017	353377

^{1/} FACTORS USED IN CONVERTING TO STANDARD GREEN CORDS (128 CU. FT.) WERE:

4,500 POUNDS OF SOFT HARDWOOD ROUNDWOOD;

5,000 POUNDS OF HARD HARDWOOD OR CONIFEROUS ROUNDWOOD;

4,100 POUNDS OF SOFTWOOD CHIPS (GREEN);

4,400 POUNDS OF HARDWOOD CHIPS (GREEN);

2,500 POUNDS OF CHIPS (ALL SPECIES DRY)

^{2/} VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING -PRODUCTION BY STATES- PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

^{3/} PULPWOOD SHIPPED TO MILLS OUTSIDE THE REGION.

^{4/} COMBINED TO PREVENT DISCLOSURE OF INDIVIDUAL MILL RECEIPTS.

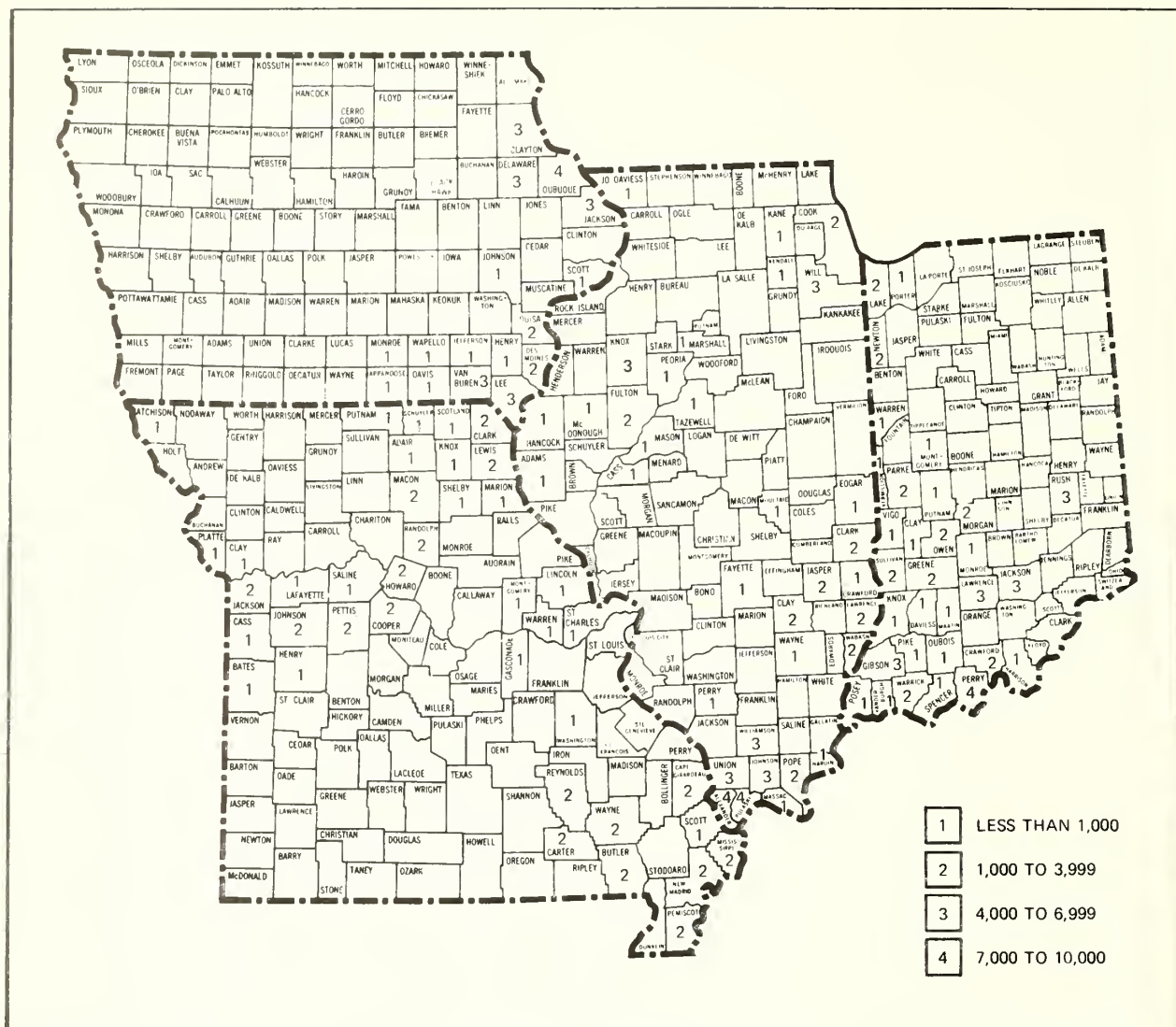


Figure 6.--Harvest of pulpwood bolts in the Central States by counties, in standard cords, 1974.

Industry Trends and Analysis

Pulping capacity was 1,415 tons per day, 100 tons below 1973 (table 7). One national firm is converting its large pulping operation in Illinois to use of wastepaper from a combination of pulpwood and wastepaper. Loss of this mill will be temporarily unsettling to its wood supplies. The long term affects on these

producers is uncertain because other pulp-mills in the area will buy wood from some of them.

Hardwood residue became the dominant source of Central States pulpwood in 1968 and is extending its position yearly (fig. 7). Since 1964 soft hardwood pulpwood harvests declined irregularly while hard hardwood harvests generally rose until 1970, then began declining.

Table 7.--Active woodpulp mills in the
Central States by location, type of
pulp produced, and capacity, 1974

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL
ILLINOIS:						
ALTON BOX BOARD CO.	ALTON	200	0	0	0	200
BIRD AND SON , INC.	CHICAGO	40	0	0	40	0
CELOTEX CORP.	PEORIA	190	0	0	190	0
CERTAIN-TEED PRODUCTS CORP.	EAST ST LOUIS	100	0	0	100	0
FLINTKOTE CO , THE	MT CARMEL	40	0	0	40	0
GAF CORP.	JOLIET	100	0	0	100	0
JOHNS-MANVILLE PRODUCTS CORP.	WAUKEGAN	65	0	0	65	0
CELOTEX CORP.	WILMINGTON	30	0	0	30	0
TOTAL.....	8 PLANTS.....	765	0	0	565	200
INDIANA :						
WESTON PAPER AND MFG. CO.	TERRE HAUTE	270	0	0	0	270
TOTAL.....	1 PLANT.....	270	0	0	0	270
IOWA :						
CELOTEX CORP.	DUBUQUE	90	0	0	0	90
CONSOLIDATED PACKAGING CORP.	FORT MADISON	140	0	0	0	140
TOTAL.....	2 PLANTS.....	230	0	0	0	230
MISSOURI :						
GAF CORP.	KANSAS CITY	90	0	0	90	0
HUEBERT FIBREBOARD, INC.	BOONEVILLE	60	0	0	60	0
TOTAL.....	2 PLANTS.....	150	0	0	150	0
ALL STATES	13 PLANTS	1415	0	0	715	700

- 1/ LOCKWOOD S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1975, AND
1975 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.
2/ CAPACITY NOT AVAILABLE.

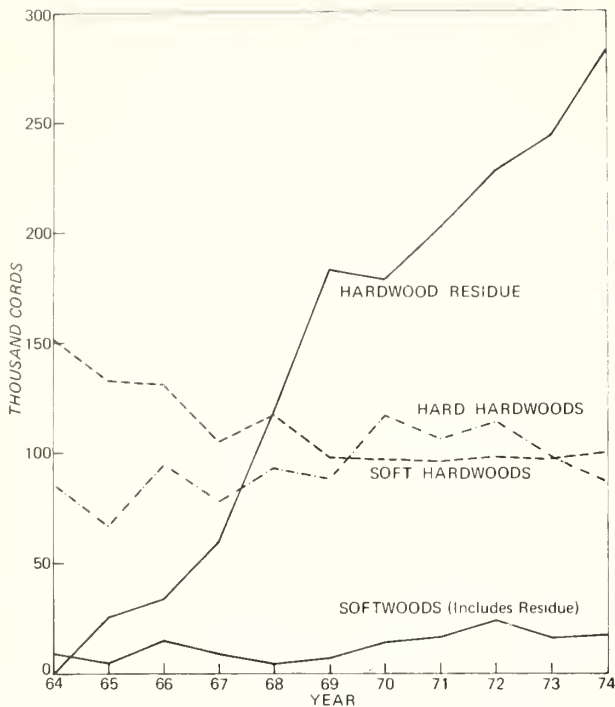


Figure 7.--Central States pulpwood production by year and type of wood, 1964-1974.

Hardwood residue has been successfully substituted for roundwood for several reasons. Strict air pollution control laws and enforcement caused many sawmills and veneer mills to find pulpwood

markets for their wood residues. Many mills sell residue chips profitably. Pulp-mill operators like residue chips because they require less handling and processing than roundwood, use less storage space, and the supply is steady except during deep recessions.

All four Central States increased pulpwood production from 1964 to 1974 (fig. 8). If the average annual rate of growth in output during this period continues in each State, Missouri will be the top producer in 1976.

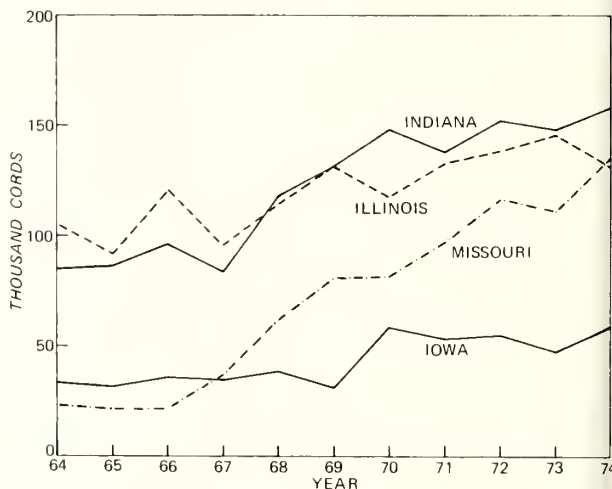


Figure 8.--Central States pulpwood production by State, 1964-1974.

* * *

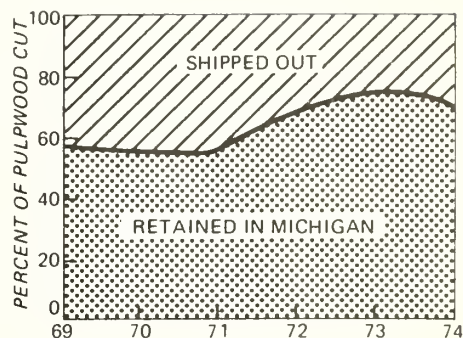
Other detailed pulpwood production, receipt, and trend data are found in the Appendix.

APPENDIX

Table 8.--Lake States pulpwood production
by State of origin and destination, 1970-
1974
(In thousand standard cords)

Michigan

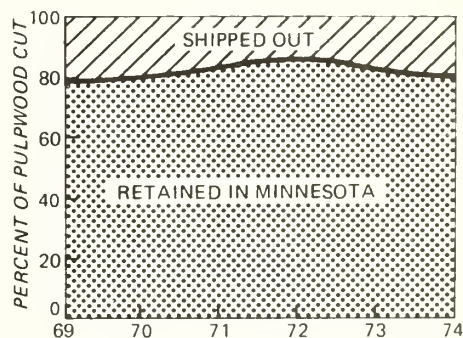
Year	:Total: : cut	Destination of pulpwood			
		:Minnesota	:Wisconsin	:Michigan	:Other
1970	1,406	--	610	785	11
1971	1,267	--	567	688	12
1972	1,401	--	470	917	14
1973	1,585	--	418	1,131	36
1974	1,843	--	534	1,290	19
5-Year average	1,500	--	520	962	18



Minnesota

Year	:Total: : cut	Destination of pulpwood			
		:Minnesota	:Wisconsin	:Michigan	:Other
1970	1,224	981	219	*	24
1971	1,196	992	188	*	16
1972	1,354	1,168	166	--	20
1973	1,376	1,152	194	*	30
1974	1,578	1,297	262	*	19
5-Year average	1,346	1,118	206	*	22

*Less than 500 cords.



Wisconsin

Year	:Total: : cut	Destination of pulpwood			
		:Minnesota	:Wisconsin	:Michigan	:Other
970	1,656	11	1,627	10	8
971	1,552	35	1,502	*	15
972	1,537	28	1,493	2	14
973	1,758	14	1,671	55	18
974	2,053	14	2,004	25	10
5-Year average	1,711	20	1,659	18	13

*Less than 500 cords.

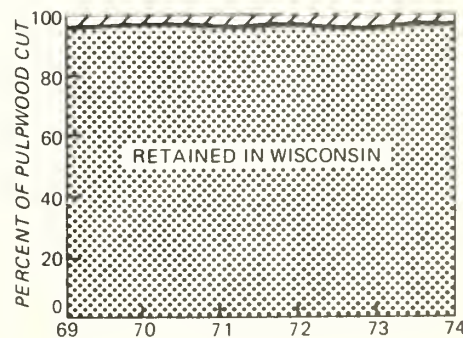


Table 9.--Lake States pulpwood production by
Forest Survey Unit and destination by
State, 1974
(In hundred standard cords, roughwood basis)

MICHIGAN					
UNIT	:	TOTAL	DESTINATION OF PULPWOOD		
	:	CUT	MICHIGAN:	MINNESOTA:	WISCONSIN: OTHER
E. UPPER PENINSULA		4666	2725	0	1941 0
W. UPPER PENINSULA		6917	3534	0	3270 113
N. LOWER PENINSULA		6141	5966	0	131 44
S. LOWER PENINSULA		700	672	0	0 28
TOTAL		18424	12897	0	5342 185

MINNESOTA					
UNIT	:	TOTAL	DESTINATION OF PULPWOOD		
	:	CUT	MICHIGAN:	MINNESOTA:	WISCONSIN: OTHER
NORTHEASTERN		9168	0	7540	1529 99
CENTRAL PINE		5637	0	4508	1038 91
RAINY RIVER		936	0	914	22 0
SOUTHEASTERN		34	0	8	26 0
TOTAL		15775	0	12970	2615 190

WISCONSIN					
UNIT	:	TOTAL	DESTINATION OF PULPWOOD		
	:	CUT	MICHIGAN:	MINNESOTA:	WISCONSIN: OTHER
NORTHEASTERN		8459	234	0	8225 0
NORTHWESTERN		7309	12	22	7275 0
CENTRAL		4131	0	40	4081 10
SOUTHWESTERN		378	0	83	220 75
SOUTHEASTERN		251	0	0	236 15
TOTAL		20528	246	145	20037 100

Table 10.--Lake States pulpwood production
by species, State, and Forest Survey
Unit, 1970-1974

(In thousand standard cords, roughwood basis)

Michigan

Unit	Aspen					Balsam fir				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	124	125	89	93	119	41	26	33	41	40
W. 1/2 Upper Peninsula	180	177	188	225	294	25	25	24	26	32
N. 1/2 Lower Peninsula	288	242	241	275	282	*	1	3	2	2
S. 1/2 Lower Peninsula	4	3	11	10	11	--	--	--	--	--
Total	596	547	529	603	706	66	52	60	69	74
Minnesota										
Northern aspen-birch	326	328	373	407	460	23	20	40	37	52
Northern pine	256	249	264	228	282	22	20	26	28	41
Central hardwood	18	31	52	38	62	*	--	--	*	--
Prairie	--	--	--	--	--	--	--	--	--	--
Total	600	608	689	673	804	45	40	66	65	93
Wisconsin										
Northeastern	430	402	349	380	383	40	35	25	34	49
Northwestern	296	302	311	331	342	29	19	23	32	35
Central	44	31	23	46	71	*	*	1	1	1
Southwestern	*	--	1	3	1	--	--	--	--	--
Southeastern	1	1	*	1	*	--	--	--	--	--
Total	771	736	684	761	797	69	54	49	67	85
Lake States	1,967	1,891	1,902	2,037	2,307	180	146	175	201	252

*Less than 500 cords.

Michigan

Unit	Birch					Hemlock				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	4	1	10	19	24	17	8	17	22	13
W. 1/2 Upper Peninsula	2	3	7	16	35	52	34	33	36	39
N. 1/2 Lower Peninsula	27	19	19	25	25	*	--	--	--	*
S. 1/2 Lower Peninsula	--	--	--	--	*	--	--	--	--	--
Total	33	23	36	60	84	69	42	50	58	52
Minnesota										
Northern aspen-birch	18	9	16	18	15	--	--	--	--	--
Northern pine	12	26	26	23	24	--	--	--	--	--
Central hardwood	1	*	*	1	5	--	--	--	--	--
Prairie	*	--	--	--	*	--	--	--	--	--
Total	31	35	42	42	44	--	--	--	--	--
Wisconsin										
Northeastern	32	22	20	30	38	33	28	26	21	32
Northwestern	42	28	26	40	59	16	13	13	10	9
Central	2	1	*	1	5	3	1	2	1	3
Southwestern	--	--	1	1	*	--	--	--	--	--
Southeastern	--	--	--	--	*	--	--	--	*	1
Total	76	51	47	72	102	52	42	41	32	45
Lake States	140	109	125	174	230	121	84	91	90	97

*Less than 500 cords.

(TABLE 10 CONTINUED ON NEXT PAGE)

(TABLE 10 CONTINUED)

Michigan

Unit	Pine					Spruce				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	57	80	84	67	87	29	22	20	28	19
W. 1/2 Upper Peninsula	34	41	37	36	36	22	22	18	18	20
N. 1/2 Lower Peninsula	145	110	102	88	127	*	1	--	*	1
S. 1/2 Lower Peninsula	4	4	5	12	9	--	--	--	--	--
Total	240	235	228	203	259	51	45	38	46	40
Minnesota										
Northern aspen-birch	136	142	136	125	139	122	119	140	159	154
Northern pine	83	72	79	77	98	59	49	52	54	51
Central hardwood	2	*	1	3	2	*	--	--	*	*
Prairie	--	--	--	*	*	--	--	*	2	2
Total	221	214	216	205	239	181	168	192	215	207
Wisconsin										
Northeastern	72	68	53	43	62	12	9	9	10	13
Northwestern	96	105	99	100	100	4	3	4	6	6
Central	87	93	90	85	125	*	*	*	--	*
Southwestern	2	1	2	3	2	--	--	--	--	--
Southeastern	2	1	2	1	2	--	--	--	--	*
Total	259	268	246	232	291	16	12	13	16	19
Lake States	720	717	690	640	789	248	225	243	277	266

*Less than 500 cords.

Michigan

Unit	Tamarack					Miscellaneous hardwoods				
	Annual production					Annual production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	2	1	2	2	1	18	14	50	93	124
W. 1/2 Upper Peninsula	1	2	1	3	1	28	41	97	123	148
N. 1/2 Lower Peninsula	--	--	--	--	--	143	136	153	145	144
S. 1/2 Lower Peninsula	--	--	--	--	--	7	6	9	5	8
Total	3	3	3	5	2	196	197	309	366	424
Minnesota										
Northern aspen-birch	10	8	12	14	25	20	18	29	29	24
Northern pine	25	23	19	17	18	3	*	1	2	6
Central hardwood	--	--	--	1	--	4	12	--	5	6
Prairie	1	1	*	1	*	--	--	--	--	*
Total	36	32	31	33	43	27	30	30	36	36
Wisconsin										
Northeastern	2	2	2	1	1	110	105	128	150	183
Northwestern	2	1	1	*	1	79	67	84	104	140
Central	*	*	*	--	*	99	89	111	136	174
Southwestern	--	--	--	--	--	4	5	5	6	3
Southeastern	--	--	--	--	--	4	3	5	4	6
Total	4	3	3	1	2	296	269	333	400	506
Lake States	43	38	37	39	47	519	496	672	802	966

*Less than 500 cords.

(TABLE 10 CONTINUED ON NEXT PAGE)

Michigan

(TABLE 10 CONTINUED)

Unit	Residue					All species**				
	Annual production					Annual production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	37	40	36	35	36	329	317	344	400	466
W. 1/2 Upper Peninsula	63	36	54	80	85	407	381	460	563	692
N. 1/2 Lower Peninsula	12	12	20	21	33	615	521	538	556	614
S. 1/2 Lower Peninsula	40	35	33	40	42	55	48	58	67	70
Total	152	123	143	176	196	1,406	1,267	1,400	1,586	1,842
Minnesota										
Northern aspen-birch	***	***	***	***	48	***	***	***	***	917
Northern pine	***	***	***	***	44	***	***	***	***	564
Central hardwood	***	***	***	***	19	***	***	***	***	94
Prairie	***	***	***	***	1	***	***	***	***	3
Total	83	69	88	108	112	1,224	1,196	1,354	1,377	1,578
Wisconsin										
Northeastern	43	42	43	80	85	774	713	655	749	846
Northwestern	17	17	18	32	39	581	555	579	655	731
Central	20	24	20	31	34	255	239	247	301	413
Southwestern	24	26	27	22	32	30	32	36	35	38
Southeastern	9	8	13	12	16	16	13	20	18	25
Total	113	117	121	177	206	1,656	1,552	1,537	1,758	2,053
Lake States	348	309	352	461	514	4,286	4,015	4,291	4,721	5,473

* Less than 500 cords.

** Includes residue, and small quantity of cedar not shown in other parts of table.

*** Not available.

Table 11.--Lake States pulpwood production
by county and species, 1974

(on roughwood basis)

UNIT AND COUNTY 1/	1 BALSAM: FIR	2 CEDAR	3 HEMLOCK	4 JACK: PINE	5 RED: PINE	6 WHITE: PINE	7 SPRUCE	8 TAMA- RACK	9 ASH	10 ASPEN	11 BALSAM: POPLAR	12 BASS- WOOD
E. UPPER PENINSULA												
ALGER	1677	239	1439	7471	2283	201	650	15	270	7938	3640	0
CHIPPEWA	4550	787	2376	14484	4661	1408	2208	306	66	7219	1611	0
OELTA	9715	347	2235	15522	3595	1069	3945	84	640	30850	5963	6
LUCE	5454	298	1842	16887	3138	1079	3308	77	211	10894	3911	0
MACKINAC	2980	233	567	1108	909	165	1689	32	163	6297	2354	0
MENOMINEE	9418	65	2049	567	206	56	4209	246	698	43116	2479	1
SCHOOLCRAFT	6137	598	3092	6792	4739	979	2824	183	381	12499	4659	4
TOTAL	39931	2567	13600	62831	19531	4957	18833	943	2429	118813	24617	11
W. UPPER PENINSULA												
BARAGA	2272	405	6965	1809	1613	585	1205	87	1366	34529	703	0
OICKINSON	3750	147	978	2396	549	250	3130	349	707	68682	2572	11
GOGEBIC	1864	11	10053	660	53	10	755	7	1233	36851	49	58
HOUGHTON	2376	496	8869	1047	1934	532	756	54	411	17347	25	1
IRON	13509	102	2439	2788	1171	293	8200	57	933	51003	336	19
KEWEENAW	86	0	441	0	0	0	85	0	243	3397	2	0
MARQUETTE	7120	933	6534	13697	4128	2159	5573	216	739	55810	2081	11
ONTONAGON	592	4	2632	2	11	4	513	0	1399	26589	58	0
TOTAL	31569	2098	38911	22399	9459	3793	20217	770	7031	294208	5826	100
N. LOWER PENINSULA												
ALCONA	282	0	0	4237	22	22	22	0	133	31182	1340	333
ALPENA	599	0	0	3363	907	22	87	0	155	5564	311	287
ANTRIM	0	0	0	0	0	0	0	0	0	71	0	0
ARENAC	0	0	0	0	0	0	0	0	0	87	0	22
BENZIE	0	0	0	0	0	0	0	0	260	13546	0	0
CHEBOYGAN	121	0	0	2219	0	0	18	0	44	9071	488	89
CLARE	0	0	0	1550	0	0	0	0	0	19806	0	0
CRAWFORD	0	0	0	7850	22	0	0	0	40	1963	0	46
GLADWIN	0	0	0	0	0	0	0	0	69	8254	663	54
GRAND TRAVERSE	0	0	0	551	0	0	0	0	104	8325	0	0
ISOSCO	87	0	0	16663	370	0	0	0	0	672	67	0
ISABELLA	0	0	0	0	0	0	0	0	20	825	0	0
KALKASKA	0	0	0	2597	0	0	0	0	26	7072	0	0
LAKE	0	0	0	10568	0	0	0	0	445	13427	0	0
LEELANAU	0	0	0	0	0	0	0	0	0	1924	0	0
MANISTEE	0	0	0	8309	0	0	0	0	325	14674	0	17
MASON	0	0	0	0	265	0	0	0	312	10422	0	0
MECOSTA	0	0	0	1485	396	0	0	0	12	14205	0	0
MIOLANO	0	0	0	0	0	0	0	0	0	210	0	0
MISSAUKEE	0	0	0	584	0	0	0	0	52	10768	0	0
MONTMORENCY	392	0	0	12711	1447	169	125	0	232	18232	799	377
NEWAYGO	0	0	0	3	3797	0	0	0	47	10711	0	0
OCEANA	0	0	0	0	1824	0	0	0	24	3366	0	0
OGEMAW	0	0	0	0	0	0	0	0	22	4099	44	22
OSCEOLA	0	0	0	0	69	0	0	0	26	13501	0	0
OSCODA	584	0	0	17198	434	0	228	0	159	30502	466	222
OTSEGO	0	0	0	1061	993	0	0	0	0	157	0	0
PRESQUE ISLE	803	0	22	4168	623	0	109	0	133	11188	377	133
ROSCOMMON	0	0	0	10614	93	0	0	0	35	12657	3	5
WEXFORD	0	0	0	0	9321	0	0	0	52	5744	0	0
TOTAL	2868	0	22	105728	20583	213	589	0	2727	282225	4558	1607
S. LOWER PENINSULA												
ALLEGAN	0	0	0	0	186	0	0	0	2	1097	0	0
CASS	0	0	0	0	468	0	0	0	0	0	0	0
GRATIOT	0	0	0	0	0	0	0	0	5	1226	0	0
IONIA	0	0	0	0	0	0	0	0	0	161	0	0
KALAMAZOO	0	0	0	0	0	0	0	0	0	225	0	0
KENT	0	0	0	0	13	0	0	0	1	94	0	0
MONTCALM	0	0	0	0	48	0	0	0	38	7746	0	0
MUSKEGON	0	0	0	0	6060	0	0	0	10	334	0	0
OTTAWA	0	0	0	0	2432	0	0	0	7	11	0	0
ST. JOSEPH	0	0	0	0	0	0	0	0	0	9	0	0
VAN BUREN	0	0	0	0	0	0	0	0	0	196	0	0
TOTAL	0	0	0	0	9207	0	0	0	63	11099	0	0
STATE TOTAL	74368	4665	52533	190958	58780	8963	39639	1713	12250	706345	35001	1718

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON- WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD- WOODS	ALL SPECIES
E. UPPER PENINSULA												
ALGER	6839	2625	853	0	794	0	6158	4318	118	0	1584	49112
CHIPPEWA	1351	1040	177	0	163	0	1256	888	22	0	283	44856
DELTA	4054	4311	770	0	1265	0	5227	4131	106	17	1145	94997
LUCE	5574	3070	768	0	558	0	5024	3557	91	0	1084	66825
MACKINAC	1958	1872	386	0	405	0	2337	1697	47	0	477	25676
MENOMINEE	2594	3035	496	0	4582	95	6679	3228	96	17	562	84494
SCHOOLCRAFT	5062	3669	839	0	1059	0	5203	4348	88	5	1297	64457
TOTAL	27432	19622	4289	0	8826	95	31884	22167	568	39	6432	430417
W. UPPER PENINSULA												
BARAGA	8	2794	2575	0	2031	0	13729	6415	401	0	1252	80744
OICKINSON	4	4473	1230	0	1153	0	8330	4249	746	0	1428	105134
GOGEBIC	1	2396	2559	0	2967	0	7849	5090	30	0	544	73040
HOUGHTON	0	583	590	0	415	0	2139	1605	19	0	50	39249
IRON	3	1657	1519	0	4619	0	14521	3757	135	0	1076	108097
KEWEENAW	0	448	403	0	238	0	418	449	1	0	2	6213
MARQUETTE	37	4288	2342	0	1535	0	15030	6070	1110	0	2093	131506
ONTONAGON	1	3414	4340	0	2848	0	11846	8049	28	0	104	62434
TOTAL	54	20053	15558	0	15806	0	73862	35684	2470	0	6549	606417
N. LOWER PENINSULA												
ALCONA	0	2950	0	0	200	0	140	2422	5419	531	0	49235
ALPENA	20	1882	0	0	400	0	180	2462	1391	55	0	17685
ANTRIM	0	0	0	0	0	0	0	0	4	0	0	75
ARENAC	0	38	0	0	0	0	0	44	0	0	0	191
BENZIE	260	626	52	0	0	0	312	2080	3123	198	260	20717
CHEBOYGAN	0	2554	0	0	22	0	40	1465	348	0	0	16479
CLARE	0	756	0	0	0	0	0	634	3195	46	0	25987
CRAWFORD	189	55	0	0	210	0	68	68	177	18	0	10706
GLADWIN	352	1389	0	104	333	0	84	325	1144	167	52	12990
GRAND TRAVERSE	208	1009	61	0	0	0	520	1040	1560	156	208	13742
IOSCO	0	104	0	0	0	0	0	0	97	18	0	18078
ISABELLA	10	72	0	0	0	0	46	49	910	52	10	1994
KALKASKA	31	285	21	0	0	0	104	520	2082	0	26	12764
LAKE	416	225	43	0	0	0	265	2276	11584	577	416	40242
LEELANAU	10	73	21	0	0	0	44	10	21	0	0	2103
MANISTEE	686	502	88	0	68	0	962	2205	4703	1040	520	34099
MASON	312	728	19	0	0	0	312	1560	4160	312	312	18714
MECOSTA	0	130	0	0	0	0	24	288	2069	160	0	18769
MIOLANO	0	1	0	0	0	0	1	0	24	1	0	237
MISSAUKEE	52	936	0	0	0	0	52	624	1080	208	52	14408
MONTMORENCY	51	2483	0	0	22	0	212	2720	5748	253	10	45983
NEWAYGO	26	63	0	0	0	0	68	1298	10683	130	26	26849
OCEANA	0	48	0	0	0	0	48	199	2248	48	0	7805
OGEHAW	0	361	0	22	0	0	20	135	256	0	0	4981
OSCEOLA	26	521	0	0	0	0	27	3054	2993	55	26	20298
OSCOOA	72	2943	61	0	44	0	1012	2040	10483	512	26	66986
OTSEGO	0	60	0	0	0	0	0	68	0	0	0	2339
PRESQUE ISLE	20	2508	0	0	111	0	20	1620	732	0	0	22567
ROSCOMMON	51	815	0	0	28	0	39	580	9830	148	26	34924
WEXFORD	0	520	52	0	0	0	104	814	3134	129	0	19870
TOTAL	2792	24637	418	126	1438	0	4704	30600	89198	4814	1970	581817
S. LOWER PENINSULA												
ALLEGAN	0	4	0	0	0	0	4	398	742	4	0	2437
CASS	0	0	0	0	0	0	0	0	0	0	0	468
GRATIOT	0	10	0	0	0	0	10	25	486	10	0	1772
IONIA	0	0	0	0	0	0	0	0	0	0	0	161
KALAMAZOO	0	0	0	0	0	0	0	257	23	0	0	505
KENT	0	1	0	0	0	0	1	3	62	1	0	176
MONTCALM	0	77	0	0	0	0	77	273	3444	77	0	11780
MUSKEGON	0	20	0	0	0	0	20	30	899	20	0	7393
OTTAWA	0	14	0	0	0	0	14	21	628	14	0	3141
ST. JOSEPH	0	0	0	0	0	0	0	0	0	0	0	9
VAN BUREN	0	0	0	0	0	0	0	11	11	0	0	218
TOTAL	0	126	0	0	0	0	126	1018	6295	126	0	28060
STATE TOTAL	30278	64438	20265	126	26070	95	110576	89469	98531	4979	14951	1646711

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

MINNESOTA

UNIT AND COUNTY 1/	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMA- RACK	ASH	ASPEN	POPLAR	BASS- WOOD
NORTHERN ASPEN-BIRCH												
CARLTON	366	0	0	2161	24	0	321	92	0	22368	0	0
COOK	3152	0	0	2811	118	0	14570	0	0	8001	0	0
KOOCHICING	28814	0	0	14381	2277	4006	76393	19276	0	193457	15640	0
LAKE	3541	0	0	22666	1605	0	23324	57	0	16832	0	0
ST. LOUIS	15833	0	0	85638	1641	1231	39085	5208	4	219666	7016	0
TOTAL	51706	0	0	127657	5665	5237	153693	24633	4	460324	22656	0
NORTHERN PINE												
AITKIN	1026	0	0	707	0	0	1086	4582	17	29251	0	0
BECKER	418	0	0	2014	0	0	86	397	0	1093	0	1
BELTRAMI	12057	0	0	13032	1089	0	9025	1722	167	54444	58	0
CASS	2477	0	0	16050	827	1182	1465	444	42	35314	0	0
CLEARWATER	1642	0	0	7295	774	0	1686	3549	35	14419	0	0
CROW WING	78	0	0	10062	0	0	25	0	24	11566	0	0
HUBBARD	571	0	0	12997	0	0	442	395	4	36105	0	0
ITASCA	21972	0	0	10871	647	1138	20026	5589	42	88876	852	0
LAKE OF THE WOODS	319	0	0	4874	0	0	12999	289	0	4806	154	0
MAHONOMEN	0	0	0	185	0	0	0	48	0	267	0	0
ROSEAU	45	0	0	8389	0	0	4340	819	0	4050	0	0
WADENA	0	0	0	6243	0	0	18	0	0	2003	0	0
TOTAL	40605	0	0	92719	3337	2320	51198	17834	331	282194	1064	1
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	163	0	0
ISANTI	0	0	0	0	0	0	0	0	0	500	0	0
KANABEC	0	0	0	0	0	0	0	0	0	9854	0	0
MILLE LACS	0	0	0	0	0	0	0	26	0	15563	0	0
MORRISON	0	0	0	1007	0	0	0	0	0	25681	0	0
OTTERTAIL	0	0	0	0	0	0	0	42	0	0	0	0
PINE	0	0	0	1115	0	0	61	24	0	13540	0	0
WABASHA	0	0	0	0	0	0	0	0	0	0	0	0
WINONA	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	2122	0	0	61	92	0	61301	0	0
PRAIRIE												
NORMAN	0	0	0	42	0	0	0	0	0	0	0	0
POLK	0	0	0	100	119	0	1610	712	2	0	0	0
TOTAL	0	0	0	142	119	0	1610	712	2	0	0	0
STATE TOTAL	92311	0	0	222640	9121	7557	206562	43271	337	803823	23720	1

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON- WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD- WOODS	ALL SPECIES
NORTHERN ASPEN-BIRCH												
CARLTON	0	3602	0	0	0	0	29	14	0	0	0	28977
COOK	0	21	0	0	0	0	6	1	0	0	0	28680
KOOCHICHING	0	1219	0	0	645	0	12	16	646	0	0	356782
LAKE	0	3466	0	0	0	0	0	0	0	0	0	71491
ST. LOUIS	0	7200	4	0	6	0	21	83	21	0	0	382657
TOTAL	0	15508	4	0	651	0	68	114	667	0	0	868587
NORTHERN PINE												
AITKIN	0	3446	1	0	19	0	22	7	1592	0	4	41760
BECKER	0	14	0	0	1	0	1	0	10	10	0	4045
BELTRAMI	0	6694	7	0	294	0	394	69	51	2	1	99106
CASS	0	3958	8	0	28	0	60	54	34	0	2	61945
CLEARWATER	0	1080	0	0	57	0	103	9	0	0	0	30649
CROW WING	0	1443	2	0	36	0	4	3	1185	0	2	24432
HUBBARD	0	542	0	0	7	0	4	11	6	0	0	51084
ITASCA	0	6449	14	0	64	0	241	63	8	2	5	156861
LAKE OF THE WOODS	0	0	0	0	0	0	0	0	0	0	0	23441
MAHONEN	0	0	0	0	0	0	0	0	0	0	0	500
ROSEAU	0	0	0	0	0	0	0	0	0	0	0	17643
WAOENA	0	318	0	0	0	0	0	0	0	0	0	8582
TOTAL	0	23944	32	0	506	0	829	216	2886	14	14	520048
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	0	0	163
ISANTI	0	0	0	0	0	0	0	0	0	0	0	500
KANABEC	0	711	0	0	0	0	0	0	735	0	0	7300
MILLE LACS	0	1665	0	0	0	0	0	0	735	0	0	17989
MORRISON	0	1347	0	0	0	0	0	0	735	0	0	28770
OTTERTAIL	0	0	0	0	0	0	0	0	0	0	0	42
PINE	0	799	0	0	0	0	0	0	250	0	0	15789
WABASHA	0	0	0	312	312	0	0	0	312	0	312	1248
WINONA	0	0	0	693	693	0	0	0	693	0	693	2772
TOTAL	0	4522	0	1005	1005	0	0	0	3460	0	1005	74573
PRAIRIE												
NORMAN	0	0	0	0	0	0	0	0	0	0	0	42
POLK	0	21	0	0	3	0	0	0	0	0	0	2567
TOTAL	0	21	0	0	3	0	0	0	0	0	0	2609
STATE TOTAL	0	43995	36	1005	2165	0	897	330	7013	14	1019	1465817

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

WISCONSIN

UNIT AND COUNTY 1/	BALSAM: FIR	CEDAR:	HEMLOCK:	JACK: PINE:	RED: PINE:	WHITE: PINE:	SPRUCE:	TAMA: RACK:	ASH:	ASPEN:	BALSAM: POPLAR:	BASS: WOOD
NORTHEASTERN												
FLORENCE	2102	45	678	2971	783	220	684	18	386	35123	71	83
FOREST	9318	193	4182	1445	3838	369	1932	175	1212	39233	492	271
LANGLADE	2471	0	1116	653	613	67	298	80	1650	51230	0	173
LINCOLN	3057	0	1642	3748	3825	525	516	225	3726	62373	0	2713
MARINETTE	6891	3	923	8313	724	218	2629	120	1422	39850	844	66
OCONTO	512	1	1140	6371	989	136	205	5	202	27376	66	1
ONEIDA	17425	0	3276	6706	7755	664	5601	234	3647	90181	8	502
SHAWANO 2/	254	0	16714	143	915	78	183	0	1081	2552	0	5
VILAS	7058	0	2125	6608	2711	656	1464	0	266	35472	0	132
TOTAL	49088	242	31796	36958	22153	2933	13512	857	13592	383390	1481	3946
NORTHWESTERN												
ASHLAND	14956	0	1214	3534	2257	325	2520	0	3835	36308	0	229
BARRON	0	0	0	30	3	2	0	0	73	1645	0	0
BAYFIELD	2949	0	89	16247	4455	597	153	0	1187	57438	0	72
BURNETT	31	0	0	15865	2531	747	29	174	12	6625	0	0
DOUGLAS	145	0	0	21342	1271	131	33	48	258	31655	0	8
IRON	2690	0	2153	243	250	97	273	0	932	32954	0	446
POLK	0	0	0	3015	711	215	0	21	2	213	0	0
PRICE	9725	0	1534	1267	3369	340	1761	270	4697	62998	0	680
RUSK	10	0	863	55	22	2	28	0	1053	12571	0	208
SAWYER	3270	0	296	2287	3227	368	800	34	2721	35868	0	160
TAYLOR	1535	0	2904	345	959	70	85	19	3384	28791	0	295
WASHBURN	0	0	0	10862	2282	481	0	0	624	35153	0	14
TOTAL	35311	0	9053	75092	21337	3375	5682	566	18778	342219	0	2112
CENTRAL												
ADAMS	0	0	0	17852	6763	1272	0	18	296	1304	0	56
CHIPPEWA	68	0	158	280	157	3	0	40	241	5554	0	15
CLARK	0	0	32	1674	1820	273	0	0	1446	5786	0	161
EAU CLAIRE	0	0	0	2998	1545	329	0	0	0	470	0	0
JACKSON	0	0	0	13810	6002	1095	0	0	200	2537	0	7
JUNEAU	0	0	0	12379	4208	890	11	5	340	6272	0	82
MARATHON	645	0	2633	1203	658	206	46	0	2561	30639	0	33
MARQUETTE	0	0	0	996	413	95	0	0	441	131	0	21
MONROE	0	0	0	2309	1017	176	0	0	48	591	0	1
PORTAGE	60	0	251	3129	2853	603	43	5	572	5822	0	94
WAUPACA	12	0	47	543	333	87	0	10	257	6876	0	10
WAUSHARA	0	0	0	3411	1729	320	0	5	151	133	0	8
WOOD	8	0	28	23401	6309	1524	1	51	2369	4827	0	80
TOTAL	793	0	3149	83985	33807	6873	101	134	8922	70944	0	568
SOUTHWESTERN												
CRAWFORD	0	0	0	0	0	0	0	0	0	12	0	0
DUNN	0	0	0	122	320	23	0	0	11	0	0	0
GRANT	0	0	0	0	0	0	0	0	99	520	0	113
IOWA	0	0	0	8	44	3	0	0	0	0	0	0
LACROSSE	0	0	0	181	395	32	0	0	0	0	0	0
PEPIN	0	0	0	71	112	9	0	0	0	0	0	0
RICHLAND	0	0	0	50	83	7	0	0	0	0	0	0
ST. CROIX	0	0	0	6	16	1	0	0	0	0	0	0
SAUK	0	0	0	116	306	22	0	0	1	0	0	0
TREMPEALEAU	0	0	0	21	35	3	0	0	0	0	0	0
VERNON	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	575	1311	100	0	0	111	532	0	11
SOUTHEASTERN												
BROWN	0	0	0	355	0	0	0	0	0	83	0	0
COLUMBIA	0	0	0	171	1693	75	0	0	178	0	0	0
DANE	0	0	0	0	0	0	13	0	8	0	0	0
FOND DU LAC	0	0	0	0	0	0	0	0	0	23	0	0
GREEN LAKE	0	0	0	44	21	3	0	0	38	5	0	0
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	673	11	96	6	0	0	2	15	0	0
WASHINGTON	0	0	0	0	0	0	0	0	87	0	0	0
WINNEBAGO	0	0	0	0	0	0	0	0	0	21	0	0
TOTAL	0	0	673	581	1810	84	13	0	313	147	0	0
STATE TOTAL	85192	242	44671	197191	80418	13365	19308	1557	41716	797232	1481	674

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON- WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD- WOODS	ALL SPECIES
NORTHEASTERN												
FLORENCE	0	653	882	0	3400	0	5371	882	161	0	228	54741
FOREST	848	1712	1218	0	6240	0	11612	2153	148	0	1490	88081
LANGLADE	511	591	890	0	8615	0	9967	2783	460	0	1294	83462
LINCOLN	0	1420	2351	0	10550	102	12464	4904	1030	0	1067	116238
MARINETTE	767	1282	33	0	4814	0	3409	2608	861	85	255	76117
OCONTO	106	962	153	0	676	0	970	1044	64	10	37	41026
ONEIDA	0	8067	3129	0	4185	0	8740	8448	4218	0	1131	173917
SHAWANO 2/	2829	219	55	0	13665	798	1795	743	148	1	823	43001
VILAS	0	11147	2642	0	1770	0	8627	1831	1216	73	378	84176
TOTAL	5061	26053	11353	0	53915	900	62955	25396	8306	169	6703	760759
NORTHWESTERN												
ASHLAND	0	4460	1521	0	4985	0	9144	5047	721	85	343	91484
BARRON	0	22	90	0	137	0	266	76	53	0	24	2421
BAYFIELD	0	12438	581	0	1569	0	3036	1526	1034	95	134	103600
BURNETT	0	29	39	0	46	0	113	51	49	6	4	26351
DOUGLAS	0	1600	136	0	422	0	516	256	107	9	60	57997
IRON	0	3362	1066	0	1839	0	3705	1089	285	4	235	51623
POLK	0	10	2	0	7	0	10	10	16	3	0	4235
PRICE	0	11328	3840	0	6604	0	11025	4503	838	41	622	125442
RUSK	0	659	801	0	2341	0	3012	1223	410	23	238	23519
SAWYER	0	8208	961	0	3989	0	5575	2985	1526	232	342	72849
TAYLOR	0	3300	2697	0	14084	149	10752	5650	1892	47	404	77362
WASHBURN	0	965	389	0	1035	0	1412	671	586	56	162	54692
TOTAL	0	46381	12123	0	37058	149	48566	23087	7517	601	2568	691575
CENTRAL												
ADAMS	1	142	28	0	670	0	352	892	10861	2283	166	42956
CHIPPEWA	104	652	135	0	1266	0	588	535	532	75	96	10499
CLARK	2	335	286	0	4075	0	2930	4327	9942	2620	337	36046
EAU CLAIRE	0	0	0	0	0	0	0	0	0	0	0	5342
JACKSON	1	163	32	0	571	0	269	515	3064	579	37	28882
JUNEAU	0	0	0	0	807	0	345	915	5310	1398	189	33151
MARATHON	1	712	2070	0	21806	259	9640	10342	6182	23	350	90009
MARQUETTE	0	1	0	0	1493	0	301	988	2747	620	102	8349
MONROE	0	52	10	0	117	0	65	138	438	85	0	5047
PORTAGE	0	196	83	0	2592	0	1005	1803	4415	1254	156	24936
WAUPACA	0	18	30	0	836	0	255	636	433	81	31	10497
WAUSHARA	0	4	1	0	522	0	140	338	575	143	35	7515
WOOD	1	412	84	0	5527	0	2427	5706	17989	5162	134	76040
TOTAL	110	2687	2759	0	40282	259	18317	27135	62488	14323	1633	379269
SOUTHWESTERN												
CRAWFORD	0	0	0	0	0	0	0	0	0	0	0	12
DUNN	0	14	0	0	37	0	22	24	0	0	0	573
GRANT	0	251	0	18	212	0	186	125	1408	529	0	3461
IOWA	0	0	0	0	0	0	0	0	0	0	0	55
LACROSSE	0	0	0	0	0	0	0	0	6	1	0	615
PEPIN	0	0	0	0	0	0	0	0	0	0	0	192
RICHLAND	0	0	0	0	0	0	0	0	0	0	0	140
ST. CROIX	0	0	0	0	0	0	0	0	0	0	0	23
SAUK	0	2	0	0	5	0	3	2	304	53	0	814
TREMPEALEAU	0	0	0	0	0	0	0	0	35	6	0	100
VERNON	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	267	0	18	254	0	211	151	1753	589	0	5985
SOUTHEASTERN												
BROWN	0	0	0	0	0	0	0	0	0	0	0	438
COLUMBIA	8	12	3	0	502	0	122	97	1571	349	106	4890
DANE	0	0	2	0	34	0	18	4	26	0	55	160
FOND DU LAC	0	0	0	0	0	0	0	0	0	0	0	23
GREEN LAKE	10	9	2	0	70	0	36	22	0	0	0	260
MILWAUKEE	0	0	0	0	1494	0	0	0	0	0	0	1494
OUTAGAMIE	0	10	2	0	7	0	11	10	0	0	0	843
WASHINGTON	0	2	18	0	322	0	105	47	36	0	110	727
WINNEBAGO	0	0	0	0	0	0	0	0	0	0	0	21
TOTAL	18	33	27	0	2429	0	292	180	1633	349	271	8856
STATE TOTAL	5189	75421	26262	18	133938	1308	130341	75949	81697	16031	11175	1846444

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1974.

2/ INCLUDES MENOMINEE COUNTY.

Table 12.--*Central States pulpwood production
by State and destination, 1970-1974*
(In thousand standard cords)

Year	Illinois			Indiana			Iowa			Missouri		
	: Destination :			: Destination :			: Destination :			: Destination :		
	Total:	Central:	Other:	Total:	Central:	Other:	Total:	Central:	Other:	Total:	Central:	Other:
	: States:	States:	States:	: States:	States:	States:	: States:	States:	States:	: States:	States:	States:
1970	118	110	8	148	95	53	58	57	1	82	57	25
1971	133	99	34	139	77	62	53	52	1	97	62	35
1972	139	103	36	152	71	81	55	54	1	117	78	39
1973	146	124	22	148	80	68	48	46	2	112	63	49
1974	131	98	33	159	84	75	59	57	2	137	77	60

Table 13.--*Trends in receipts of roundwood
and residue as pulpwood, Central States,
1970-1974*
(In thousand standard cords, unpeeled)

Type of Material and Area:	1970:	1971:	1972:	1973:	1974
Roundwood					
Illinois	62	57	67	70	56
Indiana, Iowa, Missouri	131	107	99	106	93
Total	193	164	166	176	149
Residue					
Illinois	100	107	116	122	104
Indiana, Iowa, Missouri	68	67	74	81	100
Total	168	174	190	203	204
All Material	361	338	356	379	353

Blyth, James E., and Jerold T. Hahn.

1976. Pulpwood production in the North Central Region by county, 1974. USDA For. Serv. Resour. Bull. NC-29, 26 p., illus. North Cent. For. Exp. Stn., St. Paul, Minn.

Discusses 1974 pulpwood production and receipts and recent production trends in the Lake States and Central States. Gives pulpwood production in the Lake States by species for each county, and compares production by Forest Survey Unit with that of previous years. For the Central States, presents 1974 pulpwood production and receipt data by State, and shows four production classes by county.

OXFORD: 861.0(77):792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.

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OXFORD: 861.0(77):792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.



TIMBER IN MISSISSIPPI 1972



BY JOHN S. SPENCER, JR. & BURTON L. ESSEX

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FOREWORD

This report presents Missouri's timber resource in 1972 as found by the third Forest Survey of Missouri. It provides information concerning forest area, timber inventory, growth, mortality, removals, timber products output, future timber supply, and opportunities for forest management. It compares some of these findings with those of the 1959 survey.

Missouri's timber is a resource of primary importance to the State and its economy. In national perspective, the variation in levels of output likely from the State's timber resource will have little effect on nationwide markets except those for charcoal and cooperage. And, because of the predominantly hardwood composition of the State's forests, Missouri timber will play a minor role in helping to solve the Nation's approaching softwood roundwood shortage.

Forest Survey is a continuing endeavor as mandated by the McSweeney-McNary Forest Research Act of 1928. Its objective is to inventory periodically the Nation's forest lands to determine their extent, condition, and volumes of timber, growth, and depletions. This kind of up-to-date information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are charged with the responsibility for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for Forest Survey work done in Michigan, Wisconsin, Minnesota, North Dakota, eastern South Dakota, Nebraska, Iowa, Illinois, Indiana, Missouri, and Kansas.

Fieldwork for the 1972 Missouri Forest Survey was started in January 1970 and was completed in May 1973. Reports on the two previous surveys of Missouri's timber resource are dated 1947 and 1959. These earlier reports provide a basis for comparison with the information in this report for those interested in trends that have developed over the past quarter century.

More accurate survey information was obtained during the 1972 survey than otherwise would have been feasible because of intensified field sampling made possible by extra funding provided the North Central Station by the State Legislature through the Missouri Department of Conservation. The Department also canvassed primary wood-using plants in the State, which helped in estimating the quantity of timber products harvested in Missouri.

Personnel from the National Forests in Missouri installed sample plots on national forest lands, which were used to inventory those lands. The USDA Agricultural Stabilization and Conservation Service and the State Historical Society of Missouri furnished aerial photos used in the survey.

Resource Bulletins reporting statistical highlights and detailed tables on the 1972 timber resource of the five Forest Survey Units in Missouri have been published and are available from the North Central Forest Experiment Station or the Missouri Department of Conservation.

The following persons assisted in the Missouri survey:

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HIGHLIGHTS

Forest Area

Forest land in Missouri totaled 12.9 million acres in 1972, a decline from the 14.3 million acres in 1959.

Commercial forest land amounted to 12.4 million acres in 1972, down from 13.8 million acres in 1959.

The main reason for the decline was the conversion between surveys of 955 thousand acres of commercial forest to wooded pasture.

Farmers, private individuals, and corporations other than forest industries own 84 percent of the commercial area.

Poletimber stands (40 percent of the commercial forest area) and sawtimber stands (32 percent) dominated the State in 1972. In 1959 the same stand-size classes dominated, with 30 percent and 28 percent of the area, respectively.

Oak forest types cover three-fourths of the commercial area. The black-scarlet oak type was the largest with 4.4 million acres, down from 5.2 million acres in 1959.

Timber Volume

Volume of growing stock on commercial forest land was 6.0 billion cubic feet in 1972, a small gain from the 5.7 billion cubic feet in 1959.

Volume in sawtimber trees totaled 15.1 billion board feet in 1972, up from 13.3 billion board feet in 1959.

Growing-stock volume was highest in the Eastern Ozarks Unit with 37 percent of the total.

Hardwoods, chiefly oaks, account for 94 percent of the growing-stock volume.

Average volume per acre of growing stock in 1972 was 485 cubic feet (6.1 cords) compared to 414 cubic feet (5.2 cords) in 1959.

Volume in nongrowing-stock trees--mostly rough trees--amounts to an additional 3.1 billion cubic feet.

Growing-stock inventory is projected to increase to 6.3 billion cubic feet in 2002 assuming a low level of timber removals, or to remain at 6.0 billion cubic feet assuming a high level of removals.

Stand Characteristics

Net annual growth on growing-stock trees amounted to 177 million cubic feet (3.0 percent of inventory) in 1971.

Mortality of growing-stock trees totaled 13.0 million cubic feet (0.2 percent of inventory) in 1971.

Sixty-one percent of the commercial forest is poorly stocked with growing-stock trees. Only 32 percent of the area is medium stocked or better with growing-stock trees.

Sixty-eight percent of the commercial area is capable of growing trees 50 feet and taller at age 50, but only 17 percent of the area is capable of growing trees 70 feet and taller at the same age.

Stands are less than 50 years old on 58 percent of the commercial area.

Timber Use

There were 681 active, primary, wood-using plants in 1969 in the State, down from 1,161 plants in 1958.

The 1969 output of roundwood products was 124 million cubic feet, compared to 136 million cubic feet in 1958.

The 549 active sawmills in 1969 produced 368 million board feet of lumber, compared with 990 sawmills in 1958 that produced 314 million board feet of lumber.

Missouri charcoal kilns produced 125,000 tons in 1969 and loggers in the State produced 54 million board feet of cooperage logs and bolts in the same year, making Missouri the Nation's leading producer of these products.

Growing-stock removals in 1971 were 168 million cubic feet.

Removals of growing stock are projected to increase to 173 million cubic feet in 2002 assuming a low level of removals, or to reach 197 million cubic feet assuming a high level of removals.

Management Opportunities

Forty-two percent of the commercial area is in good condition and does not need treatment to make adequate volume growth over the next decade.

Thirty-one percent of the area lacks a manageable stand, suggesting stand conversion and/or artificial regeneration.

Sixteen percent of the area is composed of stands whose site index and age indicate they are ready for harvest or will be ready within the next decade.

Eleven percent of the area grows stands that are immature and overstocked, suggesting that intermediate treatment would be desirable.

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NOTE

References to information concerning growth, mortality, and removals are dated 1971, but information concerning forest area and timber inventory incorporate changes that occurred during calendar year 1971; therefore, they represent conditions as of January 1, 1972, and are dated 1972.

Additional copies of the Major Forest Type map for Missouri (inside back cover) are available.

TIMBER IN MISSOURI, 1972

John S. Spencer, Jr., and Burton L. Essex

TIMBER RESOURCE TRENDS

Forest Area Declines

From an estimated 30 million acres of forest land at the time of first settlement, Missouri's forested area totaled 14.3 million acres in 1959¹ and declined further to 12.9 million acres in 1972.

Commercial Forest Area Drops 10 Percent

Commercial forest land, which accounted for 28 percent of the State's total land area in 1972 and which made up the bulk of the forest land during the last two surveys, fell from 13.8 million acres in 1959 to 12.4 million acres in 1972 (fig.1). This converts to an annual rate of loss of commercial forest of 0.8 percent compared to an average of 0.2 percent for the rest of the States in the North-Central Region² during the period 1952-1970.³ This substantial decline in the commercial area base is the result of a number of factors, which are discussed below.

Remeasurement of permanent sample plots during the 1972 survey permitted an estimate of the magnitude and direction of land-use change between surveys. This estimate shows that of the 13,818 thousand acres of commercial forest in 1959 the following changes had occurred by 1972:

¹Published 1959 statistics have been adjusted to be comparable with 1972 data because of changed definitions and procedures used during the two surveys. In general, most of the adjustment resulted from application of a more specific definition of wooded pasture in 1972 than was used in 1959. Consequently, a large area classed as commercial forest land in 1959 was classed as wooded pasture (nonforest land) in 1972.

²Michigan, Wisconsin, Minnesota, North Dakota, eastern South Dakota, Nebraska, Kansas, Iowa, Illinois, and Indiana.

³From "The Outlook for Timber in the United States," USDA For. Serv., For. Resour. Rep. 20, October 1973.

Land-use change
between 1959 & 1972

Area
(Thousand
acres)

Commercial forest area in 1959	13,818
Conversion to noncommercial forest land:	
Productive-reserved forest land	166
Conversion to nonforest land:	
Wooded pasture	955
Improved pasture	377
Cropland	230
Rights-of-way	85
Urban development	36
Recreation	33
Other nonforest uses	30
Additions to commercial forest:	
Nonforest land (natural reversion to forest)	391
Noncommercial forest land	68
Commercial forest area in 1972	12,365

Conversion to Pasture Major Reason for Area Loss

As seen in the tabulation above, conversion to pasture is the chief cause of the loss of commercial forest area. The estimated 955 thousand acres changed to wooded pasture and 377 thousand acres to improved pasture⁴ were converted by application of

⁴Improved pasture is defined as land developed for grazing domestic livestock and less than 16.7 percent stocked with live trees. Wooded pasture is defined as improved pasture at least 16.7 percent stocked with live trees but less than 25 percent stocked with growing-stock trees (see Appendix for definition of stocking). Wooded pasture is land stocked sufficiently with trees to be classed as forest land but on which the present highest use is forage production for livestock. The latter is determined by the presence of livestock and the performance of grazing improvements. In the future, if the present highest use of such land changes, as evidenced by the removal of livestock, the land would be classed as forest land.



Figure 2.--Clearing commercial forest land by bulldozer is the most widely used method of converting these lands to pasture. (Photo courtesy of Missouri Department of Conservation.)

Diversions of commercial forest to pasture were greatest in the Southwestern Ozarks Unit⁵ (513 thousand acres) and the Prairie Unit (343 thousand acres).

⁵See figure 1 for location of Forest Survey Units.

Permanent sample plot remeasurement also permitted an estimate of the area of forest land treatment or disturbance between surveys. This estimate shows that on the 11,906 thousand acres that were classed commercial forest in 1959 and did not change classification between surveys, the following treatments occurred:

*Treatment between
1959 and 1972*

	<i>Acres (Thousand acres)</i>
No treatment	9,207
Timber harvesting	2,513
Timber stand improvement, planting and seeding	143
Forest type conversion	43
Total	11,906

*All Survey Units Showed Decline
in Commercial Area*

Area of commercial forests dropped in all Forest Survey Units but the decline was greater in some Units than in others. As seen in table 1, the Southwestern Ozarks Unit showed the largest drop in area, although proportionately, the Prairie Unit's loss was greatest at 19 percent.

acres), both in the Eastern Ozarks Unit, contain the largest commercial forest areas among counties.

Farmers Own Half the Commercial Forest

Farmers, private individuals, and corporations other than forest industries own 84 percent of the commercial forest area. Farmers alone own half of the total and are the group most likely to convert commercial forest to pasture in the future if cattle prices remain high. National forests are the second largest owner with 11 percent of the State's commercial forests.

Forty Percent of Area in Poletimber Stands

Poletimber stands with 40 percent of the commercial forest area, and sawtimber stands with 32 percent, dominate the State. Pole-timber and sawtimber stands constituted the

*Table 1.--Area of commercial forest land by Forest Survey
Unit for 1959 and 1972 and area change since 1959,
Missouri*

Forest Survey Unit	Survey Year		Area change since 1959	
	1959	1972	Thousand acres	Percent
	Thousand acres		Thousand acres	Percent
Eastern Ozarks	4,259.4	4,084.0	-175.4	- 4.1
Southwestern Ozarks	2,815.4	2,311.4	-504.0	-17.9
Northwestern Ozarks	2,146.3	1,920.0	-226.3	-10.5
Prairie	2,408.8	1,940.4	-468.4	-19.4
Riverborder	2,188.4	2,108.9	- 79.5	- 3.6
Total	13,818.3	12,364.7	-1,453.6	-10.5

In addition to commercial forests, Missouri also has 554 thousand acres of non-commercial forest land. A little more than half of this (298 thousand acres) is unproductive and inherently incapable of growing industrial wood (fig. 3), and the remainder (256 thousand acres) is land withdrawn from commercial use, such as U.S. Army Corps of Engineers land around reservoirs and State parks or land adjoining National Scenic Rivers. Although these lands yield few, if any, industrial timber products they do provide recreational, wildlife habitat, scenic, and hydrologic benefits, and, therefore, are valuable assets to the State.

The Eastern Ozarks Survey Unit contains about one-third of the State's commercial forest area. Shannon County (477 thousand acres) and Reynolds County (423 thousand

largest stand-size classes in 1959 also, as shown in table 2, but their areas were smaller than the 1972 areas.

Sapling and seedling stands account for 20 percent of the commercial area and non-stocked area makes up the remaining 8 percent. Sapling and seedling stand area and nonstocked area for 1972 cannot be compared with 1959 areas because the procedures for estimating the number and species of seedlings on the acre being sampled in 1972 were substantially different from those employed in the 1959 survey. It does seem certain, though, that nonstocked area declined between surveys because of natural regeneration and tree planting. An average of 11,845⁶ acres

⁶USDA Forest Service. *Reports of forest and windbarrier planting and seeding, 1959-1972.*



Figure 3.--Cedar glades in the Ozark Mountains. The glades are highly important as wildlife habitat and also produce forage for livestock and redcedar products for industry. (Photo courtesy of Missouri Department of Conservation.)

Table 2.--Area of commercial forest land by stand-size class, Missouri, 1959 and 1972

Stand-size class	1959		1972	
	Thousand acres	Percent	Thousand acres	Percent
Sawtimber	3,858	28	4,002	32
Poletimber	4,105	30	4,967	40
Sapling and seedling	(1)	(1)	2,472	20
Nonstocked areas	(1)	(1)	924	8
All classes	(1)	(1)	12,365	100

¹Areas of sapling and seedling stands and nonstocked areas in 1959 are not comparable with those for 1972 because the procedures for estimating these areas have changed substantially.

were planted or seeded annually to forest trees, primarily shortleaf pine, between surveys.

Even though farmers and other private persons own 84 percent of the commercial forest area, as mentioned earlier, they own 96 percent of the nonstocked commercial forest.

Oak Types Dominate the Forest

Oak forest types cover three quarters of the area of commercial forest land. The black-scarlet oak forest type remains the largest in the State, as it was in 1959, although its area declined 15 percent between surveys. In 1972 the type included 4.4 million acres (36 percent of Missouri's commercial forest), and in 1959 it included 5.2 million acres (37 percent). The white oak type with 2.6 million acres in 1972 and the post-blackjack oak type with 2.5 million acres are the next largest types.

Softwood forest types account for only 6 percent of the State's commercial area (fig. 4).

Only 4 percent of the State's commercial forest area is composed of stands with more than 5,000 board feet per acre. Sixty-six percent of the area contains stand volumes of less than 1,500 board feet per acre. Stand volumes are highest on the national forests where 10 percent of the stands have more than 5,000 board feet per acre.

A measure of how well the forest is being utilized by the various classes of trees composing the forest tells much about the condition and future of the forest. Tree stocking, expressed as a percent of the minimum stocking required to make full use of the site, is one such measure. Overall, stocking of live trees (growing stock, rough, and rotten) in 1972 was good, but stocking of growing-stock trees alone is much lower. Forty-four percent of the commercial forest area is well stocked or better (100 percent stocking or more), and an additional 54 percent is medium stocked (60 to 99 percent stocked) with live trees. However, when only growing-stock trees are considered, the same proportions fall to 2 percent and 30 percent. Further, 61 percent of the forest is poorly stocked (16.7 to 59 percent stocked) with growing-stock trees.

Stocking of Rough and Rotten Trees High

That there is heavy stocking of rough and rotten trees in Missouri's forests is evidenced by the wide difference between the level of stocking of live and of growing-stock trees. Also, 61 percent of the number of live trees in the State at least 1-inch d.b.h. are rough and rotten. And 42 percent of the number of sawtimber trees throughout Missouri are rough and rotten. Most of these trees are rough--those not classed as growing stock because of limbiness, poor form, or noncommercial species.

This large presence of rough (except short-log trees) and rotten trees in the State's forests is an obstacle to intensive forest management. Even though these trees have value esthetically, as wildlife habitat, and for low-value timber products such as fuelwood, their large numbers take up an unacceptable amount of growing space that could better be utilized by more valuable trees. Land owners and land managers will need to be convinced of the profitability of removing such trees before forests can be improved on a large scale. The markets generated by the growing demand for wood, the concurrent rise in wood prices, and the search for ways to increase wood fiber yield, should provide a more favorable climate for the removal of rough and rotten trees.

Short-log trees of some species--especially black walnut--are extremely valuable for veneer logs and other products.

The Forestry Incentives Act of 1973, a program that allocates Federal money to States for distribution to private landowners to offset part of the cost of approved forest improvement projects, provides another vehicle for bringing about rough and rotten tree removal. Missouri ranked 13th out of the 50 States in the apportionment of Federal money for implementation of the Act during 1974. The procedure used to apportion this money is based upon a study of the relative amounts of worthwhile timber investments in each State.⁷

In this study nonindustrial private commercial forest land in each State, in ownerships of less than 500 acres, was grouped into "area cells" of similar forest types,

⁷Mills, Thomas J., Thomas P. Hart, and J. S. McKnight. 1974. *Forestry incentives: how funds were apportioned to States in 1974*. J. For. 72(8):478-482.



Figure 4.--A shortleaf pine plantation approximately 12 years old in Crawford County. Although only a small percentage of the softwood forest types result from plantations, such plantings have esthetic and wildlife values as well as the obvious value as a potential timber crop.

stand-size classes, and site classes. These "area cells" were weighted by the estimated rate of return that investments in stands typical of that cell can earn. The "area cells" were further weighted by the proportion of area within the cell that is capable of earning the above rate of return. The percent of funds apportioned to an individual State was equal to the weighted area in

that State divided by the sum of the weighted areas of all States. The estimated area of commercial forest eligible for the incentive program in Missouri for 1974 was 10.8 million acres. One of the major investment opportunities identified as being sufficiently productive as measured by financial return was timber stand improvement and cull tree removal in the oak-hickory type.

Eighty-Three Percent of Commercial Area on Average or Low Sites

Site index⁸ offers a practical, if inexact, method of estimating the present productivity of forest land, based on the fact that the most productive land usually grows the tallest trees at an index age (50 years in this report). The following tabulation shows the general range in site-index class for various levels of productivity in the Midwest (wide variation exists between species):

<i>Site index class</i>	<i>Description</i>
55 or less	Low site
56 to 70	Average site
More than 70	High site

Site-index measurements made as part of the Missouri survey show that 68 percent of the commercial forest is capable of growing trees 50 feet and taller at age 50, but only 17 percent of the area is capable of growing trees 70 feet and taller at the same age. In general, the best sites are those with deep soils derived from dolomite or limestone, and the poorer sites are on shallow soils or those derived from sandstone.

Site class, a means of grouping lands according to their inherent capacity to grow crops of industrial wood, is a measure of the potential productivity of forest land and should not be confused with site-index class. The following tabulation shows the percent of commercial forest in Missouri in each site class, representing levels of potential growth in cubic feet per acre per year provided that all stands had an optimum distribution of age classes and were fully stocked and adequately protected.

<i>Site class</i> (Cubic feet of potential growth per acre per year)	<i>Percent of commercial forest area</i>
120 or more	(⁹)
85 to 119	4
50 to 84	24
Less than 50	72
Total	100

⁸Site index is the height in feet of average dominant or codominant trees at 50 years of age. For example, site index 50 for white oak means that the height of dominant or codominant trees in that area averages 50 feet at 50 years of age.

⁹Less than 0.5 percent.

Productivity can be improved over that indicated above by fertilizing stands, by planting genetically superior trees, and by type conversion.

Six-Tenths of Timber Younger Than 50 Years

On 58 percent of the commercial area, stands are less than 50 years old¹⁰ and on 81 percent of the area, stands are less than 70 years old (fig. 5). These generally young stands are grouped into 10-year age classes of roughly equal areas up to age 70. Even though most stands are fairly young, there are sizeable areas that are over rotation age, i.e., overmature. Figure 6 shows the area of overmature stands for all the oak types (77 percent of the commercial area) using a rotation age of 80. (This is a conservative representation of the overmature oak area because for stands of site index less than 60 feet, a rotation of 50 years is suggested in table 13. A shorter rotation would mean a larger proportion of the area of the type would be classified as overmature.)

A distribution of areas within age classes as nearly balanced as possible is desirable for those forest types that can best be managed under even-aged conditions, such as the oak types. If the management objective is to perpetuate oaks in oak types, this can best be accomplished by reproducing and growing these species in even-aged groups or stands.¹¹ As shown in figure 6, the oak distribution of area by age classes is reasonably well balanced up to age 80, in spite of a disproportionately large area of stands 40 to 59 years old.

Volume of Growing Stock Rises 5 Percent

Volume of growing stock on commercial forest land increased from 5.7 billion cubic feet in 1959 to 6.0 billion cubic feet in

¹⁰Even though many stands in the State are uneven-aged, stand-age refers to the main stand--those trees of the dominant forest type and stand-size class.

¹¹Clark, F. Bryan, and Richard F. Watt. 1971. *Silvicultural methods for regenerating oaks. In Oak Symp. Proc., Morgantown, W. Virginia, Aug. 16-20, 1971: p. 37-43, illus., Northeast. For. Exp. Stn., Upper Darby, Pa.; and Sander, Ivan L., and F. Bryan Clark. 1971. Reproduction of upland hardwood forests in the Central States. U.S. Dep. Agric., Agric. Handb. 405, 25 p., illus.*



Figure 5.--Most stands in the State are young--less than 50 years old--
like this oak-hickory stand in Crawford County.

1972, a 5 percent gain. Softwood growing-stock volume, although only a minor portion of the total, enlarged by 27 percent while hardwood volume grew by 4 percent. The following tabulation compares growing-stock volumes for 1959 and 1972:

	1959	1972
	(Million cubic feet)	
Softwoods	292	369
Hardwoods	<u>5,425</u>	<u>5,633</u>
Total	<u>5,717</u>	<u>6,002</u>

These volume gains were made despite the 10 percent decline in commercial forest area

mentioned earlier. This seemingly paradoxical situation exists because the areas of sapling and seedling stands and of nonstocked areas, both with low volumes per acre, declined between surveys; but the areas of sawtimber and poletimber stands, with higher volumes per acre, increased.

Growing-stock volume did not increase uniformly throughout the State, and in some Survey Units volume declined between surveys (table 3). Volume was higher in the Eastern Ozarks Unit in 1972 than in any other Unit, with 37 percent of the total volume. Volume in the Eastern Ozarks was also highest in 1959.

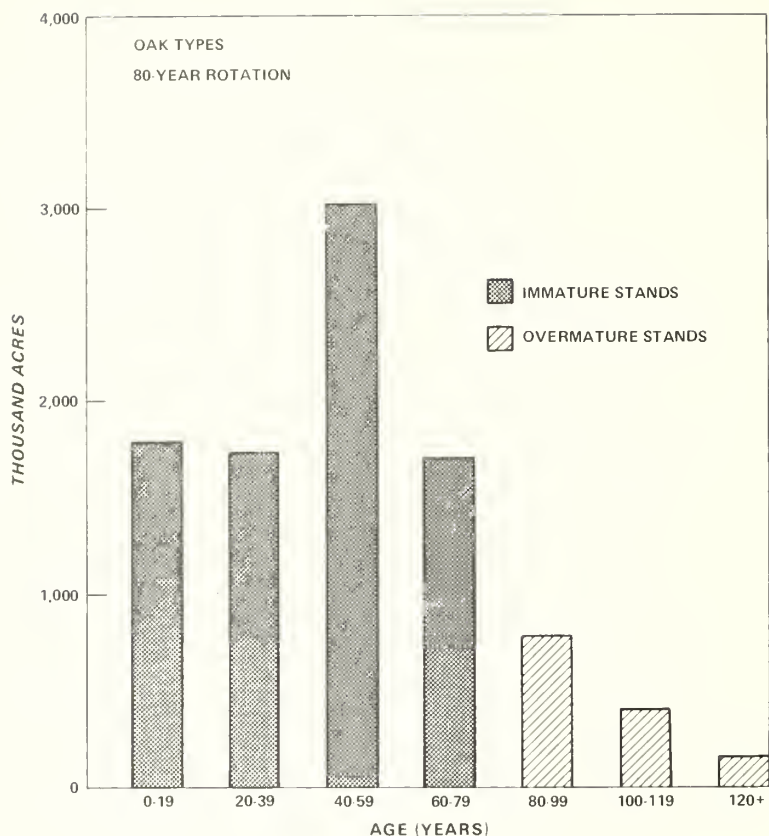


Figure 6.--Area of all oak forest types on commercial forest land by stand age class and undermature and overmature area based on a rotation age of 80 years, Missouri, 1972

Table 3.--Growing-stock volume in 1972 and change since 1959, Missouri

Survey unit	Softwoods		Hardwoods	
	1972	change	1972	change
	volume	since 1959	volume	since 1959
	Million cubic feet	Percent	Million cubic feet	Percent
Eastern Ozarks	253.8	+ 55	1,961.8	+ 28
Northwestern Ozarks	8.0	+129	670.8	+ 8
Southwestern Ozarks	63.8	- 34	787.3	- 9
Riverborder	39.7	+ 44	1,294.1	- 1
Prairie	3.5	(1/)	918.7	- 16
Total	368.8	+ 27	5,632.7	+ 4

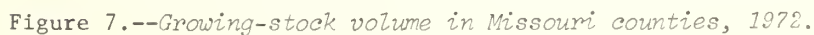
1/ No volume recorded in 1959.

the softwood volume gain probably results from the growth between surveys of smaller trees into poletimber and sawtimber size in plantations.

Substantial volume increases between surveys were made by the red oaks,¹² and smaller increases were made by hickory B, shortleaf pine, and sycamore. Modest volume declines were made by other white oaks, select red oaks, and hickory A. Elm volume dropped precipitately, the result of mortality from Dutch elm disease.

Growing-stock volumes increased between surveys in the 10- to 18-inch diameter classes but declined in diameter classes both smaller and larger (fig. 8).

¹²The red oak group includes scarlet, southern red, and black oaks. See *Principal Tree Species in Missouri* in Appendix for composition of other species groups.



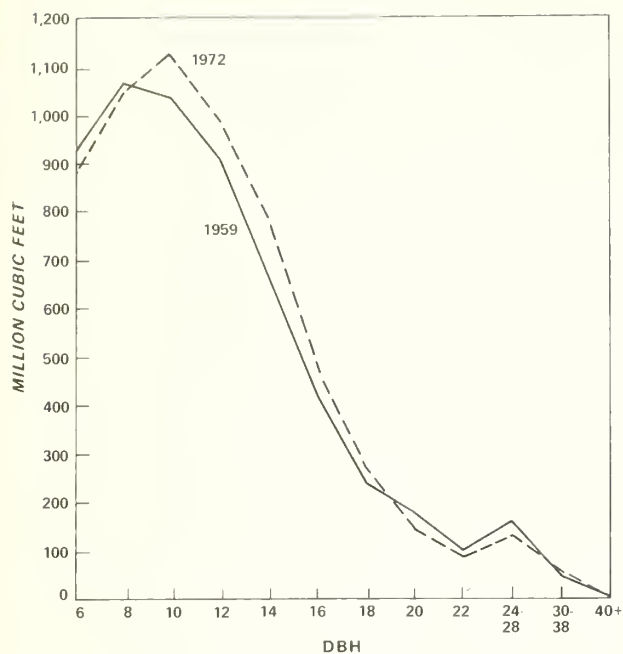


Figure 8.--Distribution of growing-stock volume by diameter class, Missouri, 1959 and 1972

Farmers, private individuals, and corporations other than forest industries own 81 percent of the growing-stock volume, while owning 84 percent of the commercial area. National forests contain 14 percent of the growing-stock volume and 11 percent of the commercial area. A disproportionate share of the shortleaf pine volume (53 percent) is found on national forest land, and farmers, private individuals, and corporations other than forest industries own only 38 percent of the pine volume.

Nongrowing-Stock Volume Equal to Half of Growing-Stock Volume

Volume of nongrowing-stock trees in the State amounts to 3.1 billion cubic feet, in addition to the 6.0 billion cubic feet of growing stock. Most of the nongrowing-stock volume is in cull trees, that is rough or rotten trees; the bulk being in "other rough trees," as seen in the tabulation below. This large volume of rough and rotten trees is further evidence of the dimensions of the cull tree problem and of the potential significance of this heretofore lightly used resource.

Class of timber Volume (Million cubic feet)

Rough trees:	
Short-log trees	485.5
Other rough trees	2,057.9
Rotten trees	456.4
Salvable dead trees	141.0
Total	3,140.8

Short-log trees are sawtimber-sized trees of commercial species that are comparable in every way to a sawtimber tree except in merchantable height, and contain at least one 8- to 11-foot saw log but not a 12-foot or larger saw log. Rough trees are those that do not contain a 12-foot saw log or two noncontiguous 8-foot saw logs because they are crooked or rough or of noncommercial species. Both short-log and rough trees are an important potential source of additional wood fiber when needed, and would lend themselves well to whole-tree chipping when this technology becomes a reality in Missouri.

Black Walnut Volume Equals 97 Million Cubic Feet

The volume of black walnut, a highly valuable species in great demand, diminished slightly between surveys. In 1959, walnut growing-stock volume on commercial forest land was 100 million cubic feet, and in 1972 it amounted to 97 million. In addition to growing-stock volume there was 71 million cubic feet of nongrowing stock on commercial forest land in 1972--in rough trees (49 million cubic feet), short-log trees (14 million), and rotten trees (8 million). In addition to the above volumes on commercial forest land, an estimate was made of black walnut volume on nonforest land because of the interest in this species. Growing-stock volume of these trees, which are highly scattered, is 20 million cubic feet. Rough and rotten black walnut volume on nonforest land totals 28 million cubic feet.

Sawtimber Volume Increased 13 Percent

The sawtimber portion¹³ of the growing-stock volume increased from 13.3 billion

¹³Sawtimber trees are growing-stock trees that contain at least one 12-foot saw log or two noncontiguous saw logs, each 8 feet or longer and at least 9.0 inches d.b.h. for softwoods and at least 11.0 inches d.b.h. for hardwoods.

board feet¹⁴ in 1959 to 15.1 billion board feet in 1972. This amounts to a gain between surveys of 13 percent compared to the 5 percent gain registered by growing-stock volume. Softwood sawtimber volume increased 58 percent and hardwood sawtimber volume gained 10 percent from 1959 to 1972, as shown below:

	1959	1972
	(Million board feet)	
Softwoods	746	1,180
Hardwoods	12,596	13,875
Total	13,342	15,055

Like growing-stock volume, sawtimber volume did not increase in every Survey Unit nor was the rate of increase the same for those Units that did post an increase (table 4). Total sawtimber volume remained highest in the Eastern Ozarks Unit.

Hardwoods make up 13.9 billion board feet or 92 percent of the sawtimber volume, compared to 94 percent of the growing-stock volume. The oaks dominate, as they do growing-stock volume, with 10.6 billion board feet or 71 percent of the sawtimber volume. Softwoods account for 1.2 billion board feet or 8 percent of the sawtimber volume.

Between 1959 and 1972, large sawtimber volume gains were made by red oaks, shortleaf pine, sycamore, select white oaks, hickory B, and cottonwood. Significant volume declines were made by select red oaks and other white oaks, and a large volume loss was recorded for elm.

Ownership of the sawtimber volume is in the same proportion as growing-stock volume. A slight difference is that 61 percent of the shortleaf pine sawtimber is found on national forest land, versus 53 percent of the shortleaf pine growing-stock volume.

Table 4.--Sawtimber volume in 1972 and change since 1959, Missouri

Survey Unit	Softwoods		Hardwoods	
	1972	Change	1972	Change
	volume	since 1959	volume	since 1959
	Million board feet ^{1/}	Percent	Million board feet ^{1/}	Percent
Eastern Ozarks	838.7	+ 90	4,447.8	+ 46
Northwestern Ozarks	35.3	+284	1,548.8	+ 18
Southwestern Ozarks	197.2	- 11	1,888.0	- 5
Riverborder	94.2	+ 30	3,546.9	+ 2
Prairie	14.6	(2/)	2,443.4	- 12
Total	1,180.0	+ 58	13,874.9	+ 10

^{1/} International 1/4-inch rule.

^{2/} No volume recorded for 1959.

The first five counties with the largest sawtimber volumes are all in the Eastern Ozarks Unit and are in the same order as those with highest growing-stock volumes: Shannon (584 million board feet), Reynolds (560), Washington (485), Wayne (461), and Crawford (412). The sixth county, Franklin, is in the Riverborder Unit and contains 409 million board feet of sawtimber.

Average volume per acre of sawtimber in 1972 was 1,218 board feet compared to 966 board feet in 1959. The highest average volume per acre is in the Riverborder Unit, 1,727 board feet.

Seventy Percent of Sawtimber Volume in Lowest Two Log Grades

An estimate of the quality of sawtimber shows that 50 percent of the sawtimber volume is in grade 3 logs. (Log grade standards used for each species are indicated in the Appendix.) Table 5 shows the proportion of sawtimber volume in each log grade for softwoods and hardwoods. The proportion of volume in log grade 1 is significantly higher for sycamore (29 percent) and cottonwood (14 percent) than the hardwood average. Species with above average proportions of sawtimber volume in tie and timber logs, poorest of the four log grades, were other red oaks (58 percent), sweetgum (49 percent), hard maple (38 percent), and hickory B (34 percent).

¹⁴International 1/4-inch log rule.

Table 5.--Percent of sawtimber volume by log grade and softwoods and hardwoods, Missouri, 1972

(In percent)

Log grade	All species	Softwoods	Hardwoods
Grade 1	8	13	8
Grade 2	22	14	23
Grade 3	50	73	47
Tie and timber	20	(¹)	22
Total	100	100	100

¹Less than 0.5 percent.

Sawtimber Volume of Black Walnut Amounts to 217 Million Board Feet

Black walnut sawtimber volume on commercial forest land declined slightly between surveys, from 238 million board feet in 1959 to 217 million in 1972. Sixty-five percent of the 1972 walnut volume is in grade 3 logs, compared with 50 percent of the total sawtimber volume. Twenty-five percent of the walnut volume is in grade 2 logs, 9 percent is in grade 1 logs, and 1 percent is in tie and timber logs. Walnut volume on nonforest land includes 70 million board feet in sawtimber trees and 19 million board feet in

short-log trees. Table 6 shows the sawtimber volume of black walnut on commercial forest land and on nonforest land by tree class.

Growth Rate is 3 Percent

Net annual growth on growing-stock trees amounted to 177 million cubic feet (2.2 million cords) in 1971. Net growth expressed as a percent of growing-stock inventory is 3.0 percent. The growth rate is slightly higher for softwoods (3.5 percent) than for hardwoods (2.9 percent). Growth averages 14.3 cubic feet per acre (0.2 cords).

Table 6.--Sawtimber volume of black walnut on commercial forest land and on nonforest land by tree class and by Forest Survey Unit, Missouri, 1972

(In million board feet¹)

Tree class	Forest Survey Unit					Total
	Eastern: Ozarks	Southwestern Ozarks	Northwestern Ozarks	Prairie	River-border	
Commercial forest land:						
Sawtimber trees	22.7	26.2	18.3	98.0	51.7	216.9
Rough trees	3.1	4.4	7.5	31.2	2.0	48.2
Short-log trees	3.5	2.9	4.3	26.0	2.6	39.3
Rotten trees	1.3	0.5	0.8	4.4	2.7	9.7
Subtotal	30.6	34.0	30.9	159.6	59.0	314.1
Nonforest land:						
Sawtimber trees	7.0	10.3	7.1	31.6	13.5	69.5
Rough trees	11.3	1.4	1.8	28.5	0.9	43.9
Short-log trees	0	2.0	2.9	13.2	1.3	19.4
Rotten trees	1.6	1.0	1.4	1.9	2.5	8.4
Subtotal	19.9	14.7	13.2	75.2	18.2	141.2
Total	50.5	48.7	44.1	234.8	77.2	455.3

¹/ International 1/4-inch rule.

Permanent sample plot remeasurements permitted singling out the various components of gross growth (table 7). Survivor growth, the increment added by trees at least 5.0 inches d.b.h. that were classed as growing-stock trees both at the beginning and at the end of the year, contributed 60 percent of gross growth. Ingrowth, the net volume of growing-stock trees that reached 5.0 inches d.b.h. during the year, added another 21 percent; and growth on ingrowth contributed 9 percent. Growth before death on trees that died during the year, growth on removals before cutting, and growth on trees classed as growing stock at the beginning of the year but as culls at the end of the year (cull increment), together amounted to 10 percent of gross growth.

Mortality of growing-stock trees amounted to 13.0 million cubic feet in 1971, and lowered gross growth 5.6 percent. Expressed as a percent of inventory, mortality was 0.2 percent.

Half of the volume of mortality was caused by diseases. Weather, fire, and suppression by trees or other vegetation were other important causes of tree death. Dutch elm disease was probably the most damaging disease, killing elms over the entire State. Root rots, particularly Armillaria root rot, and oak wilt are other diseases that cause significant tree mortality.

Sawtimber mortality totaled 30 million board feet and amounted to 0.2 percent of sawtimber inventory.

When mortality and cull increment are subtracted from the 231 million cubic feet of gross growth, the resulting 177 million cubic feet of net growth represents 77 percent of gross growth.

Timber Removals Rate 2.8 Percent

Timber removals from growing stock in 1971 were estimated to total 168 million cubic feet or 2.1 million cords (fig. 9). Only 44 percent of total removals was harvested for roundwood products. Other removals¹⁵ accounted for 47 percent and logging residues made up the remaining 9 percent.

¹⁵Other removals are trees removed but not utilized for products or trees left standing but "removed" from the commercial land classification by land-use change.

Managed Harvest Compared with Removals

A comparison sensitive to the biological requirements of the State's timber stands is one between timber removals and average annual managed harvest. As described in more detail in the Appendix, managed harvest is the average volume of timber it is advisable to harvest annually from commercial forest land to maintain or increase tree stocking and to bring about a more even distribution of age classes.

In Missouri, annual managed harvest was determined by computer using an area control system for computing the number of acres to be harvested yearly. Managed harvest is shown separately for harvest cutting and for thinnings. The harvest cut of sawtimber was calculated from stands of forest types normally managed for sawtimber whose site index and age indicated they were ready for harvest, or would be within the next 10 years. Stands not yet ready for harvest but overstocked by basal area standards were "thinned" by the computer back to their recommended stocking level. The harvest cut of growing stock included that of sawtimber in addition to the volume from stands of forest types normally managed for pulpwood that were or would be rotation age within the next 10 years. Finally, the computer collated the volume to be cut by species into the type of cut--either harvest cut or thinning and whether for growing-stock or sawtimber.

Implicit in the managed harvest calculations are a number of assumptions: that all timber will be available and accessible when needed; that a ready market will exist for every species, size, and grade of material harvested; and others. Because these assumptions may not be fully functional during the next decade, managed harvest should be regarded as a level closely approaching the ideal as dictated solely by silvicultural criteria. As such, managed harvest should normally represent a somewhat higher volume than actual timber removals which are constrained by problems of economics, markets, availability, accessibility, and landowner ability or willingness to practice forest management. Therefore, managed harvest tends to be liberal, and when actual removals exceed it, especially for long periods, overutilization of the resource is a strong possibility.

Removals about Equal to Managed Harvest

A comparison of growing-stock managed harvest for Missouri during 1972-1981 (156

Table 7.---Annual components of change of growing-stock volume on commercial forest land, by Survey Unit and by softwoods and hardwoods, Missouri, 1971

(In thousand cubic feet)

Survey Unit and species group	Gross growth	Survivor growth	Components of growth										Removals	Net change
			Ingrowth	Growth on ingrowth	Growth on mortality	Growth on removals	Growth on cull	Mortality increment	Cull increment	Net growth				
Eastern Ozarks:														
Softwoods	9,035	5,757	2,205	994	112	459	106	305	787	8,543	2,100	+ 6,443		
Hardwoods	79,150	47,493	16,745	6,369	867	3,890	3,786	2,942	13,418	62,790	38,800	+23,990		
Total	88,785	53,250	18,950	7,363	979	4,349	3,894	3,247	14,205	71,333	40,900	+30,433		
Southwestern Ozarks:														
Softwoods	2,709	1,560	427	81	3	627	11	91	35	2,583	5,100	- 2,517		
Hardwoods	26,815	14,740	7,581	3,173	130	611	580	1,766	2,267	22,782	27,000	- 4,218		
Total	29,524	16,300	8,008	3,254	133	1,238	591	1,857	2,302	25,365	32,100	- 6,735		
Northwestern Ozarks:														
Softwoods	374	194	171	9	--	--	--	--	--	374	241	+ 133		
Hardwoods	23,002	15,392	4,123	1,449	227	294	1,517	739	5,881	16,382	12,400	+ 3,982		
Total	23,376	15,586	4,294	1,458	227	294	1,517	739	5,881	16,756	12,641	+ 4,115		
Prairie:														
Softwoods	110	57	50	3	--	--	--	--	--	110	2	+ 108		
Hardwoods	43,984	23,331	9,691	4,902	1,919	856	3,285	4,746	9,679	29,559	46,500	-16,941		
Total	44,094	23,388	9,741	4,905	1,919	856	3,285	4,746	9,679	29,669	46,502	-16,833		
Riverborder:														
Softwoods	1,791	550	628	448	--	70	95	--	315	1,476	856	+ 620		
Hardwoods	43,111	28,790	8,144	2,368	735	1,567	1,507	2,366	8,044	32,701	34,700	- 1,999		
Total	44,902	29,340	8,772	2,816	735	1,637	1,602	2,366	8,359	34,177	35,556	- 1,379		
State:														
Softwoods	14,619	8,118	3,481	1,535	115	1,156	214	396	1,137	13,086	8,299	+ 4,787		
Hardwoods	216,062	129,746	46,284	18,261	3,878	7,218	10,675	12,559	39,289	164,214	159,400	+ 4,814		
Total	230,681	137,864	49,765	19,796	3,993	8,374	10,889	12,955	40,426	177,300	167,699	+ 9,601		



Figure 9.--The rate of timber removals from growing stock in 1971 was 2.8 percent of growing-stock volume. (Photo courtesy of Missouri Department of Conservation.)

million cubic feet) with 1971 growing-stock removals (157 million cubic feet) suggests no statewide overutilization. The timber removals used in this comparison are not the total removals referred to earlier (168 million cubic feet). The volume of removals from land classed as commercial forest in 1959 but classed as wooded pasture (nonforest land) in 1972 because of a change in defini-

tion, was deducted from total removals in order to make the comparison valid. These lands would have been classed as wooded pasture in 1959 had the same definition used in 1971 been applied; hence the portion of 1971 removals represented by trees left standing but "removed" from the commercial forest classification by definitional land-use change would not have been so "removed."

Overutilization of growing stock did occur in two of the five Forest Survey Units in the State--the Prairie and Southwestern Ozarks Units. The excess of removals over managed harvest was most extreme in the Prairie Unit where removals were double the volume of managed harvest.

The 508 million board feet of sawtimber removals over the State (adjusted from the 542 million board feet of total removals shown in the Appendix tables, as the volume of growing-stock removals was adjusted above) were practically equal to the 509 million board feet of annual managed harvest. Hardwoods were somewhat overutilized, but softwoods were underutilized by almost the same amount. Sawtimber overutilization occurred in the Prairie and Southwestern Ozarks Units, as it did for growing stock. Removals of sawtimber in the Prairie Unit were double managed harvest.

All species were not uniformly utilized. Of oak growing stock only red oaks--the species group with the largest volume in the State--and other red oaks were overutilized in three of the five Survey Units. Elm was the species most overutilized in terms of volume, but much of the elm removals were associated with the salvage of mortality caused by the Dutch elm disease. Cottonwood, soft maple, and sycamore were heavily utilized throughout the

State. Select white oaks were the most underutilized species in terms of growing-stock volume. Other species whose removals were significantly less than managed harvest were other white oaks, hickory, shortleaf pine, and select red oaks. Table 8 shows the volume by which each major species is underutilized or overutilized for both growing stock and sawtimber.

Potential Harvest 3.3 Times Greater than Annual Managed Harvest

What volume of harvest could be expected if all of the State's commercial forest land area were distributed evenly by age classes and if all stands were fully stocked with growing-stock trees? How would this potential annual managed harvest compare with the annual managed harvest? To suggest answers to these questions an estimate of Missouri's potential annual harvest was made for each forest type by the same site-index groupings shown in table 13 in the Appendix. Site-class values based on normal yield tables were used to represent potential yield. Assumptions were made that stands would be harvested at the age of culmination of mean annual increment, that an equal area of each forest type would be harvested annually (area of commercial forest divided by rotation age of the type), and that rotation age

Table 8.--Underutilized or overutilized volume by species for growing stock and sawtimber, Missouri, 1972

Species	Underutilized		Overutilized	
	Growing stock	Sawtimber	Growing stock	Sawtimber
	Thousand cubic feet	Thousand board feet ^{1/}	Thousand cubic feet	Thousand board feet ^{1/}
Shortleaf pine	1,125	13,368	--	--
Select white oaks	9,213	22,928	--	--
Other white oaks	2,878	4,481	--	--
Select red oaks	986	14,895	--	--
Red oaks	--	16,359	1,250	--
Other red oaks	--	--	2,693	6,910
Hickory A	1,518	3,224	--	--
Hickory B	1,626	--	--	1,858
Soft maple	--	--	2,227	12,958
Tupelo and blackgum	643	750	--	--
Ash	--	--	370	962
Sycamore	--	--	1,217	7,597
Cottonwood	--	--	3,532	18,835
Black walnut	244	--	--	1,364
Elm	--	--	7,420	22,399
Other species	--	--	311	1,781
Total	18,233	76,005	19,020	74,664

^{1/} International 1/4-inch rule.

closely approximated age of culmination of mean annual increment. Rotation ages used were the same as those used in the calculation of annual managed harvest shown in table 13. Potential harvest, then, represents a level of annual sustained yield that approaches the maximum attainable. Although this potential cannot be achieved in the foreseeable future, it provides a benchmark against which future progress toward a more productive forest can be measured.

To estimate potential harvest, average site index was applied to the most appropriate available normal yield curve to determine mean annual increment per acre at culmination. This increment was multiplied by the rotation age (assumed to approximate age at culmination) to estimate normal harvest volume per acre. Finally, the resulting harvest per acre was multiplied by the area to be harvested annually, yielding potential annual managed harvest. These steps and a

comparison of potential annual managed harvest with annual managed harvest that was discussed earlier, are shown in table 9.

The total estimated potential annual harvest (509 million cubic feet) is 3.3 times greater than present managed harvest (156 million). The oak types alone could contribute an additional 239 million cubic feet annually over the present managed harvest of 121 million cubic feet if all stands were fully managed for timber production over an entire rotation. Softwood types could yield a harvest greater by 21 million cubic feet than the present managed harvest of 10 million cubic feet, under the same managed conditions. In terms of the proportion of increase of potential over present managed harvest, the maple-beech type is highest with an increase of 397 percent, followed closely by the eastern redcedar-hardwood type with 385 percent, and the post-blackjack oak type with 254 percent.

Table 9.--*Estimation of potential managed harvest after one complete rotation by forest type and site index; and comparison with annual managed harvest, Missouri*

Forest type	: Site : index : class :	: Commer- : cial : forest : area :	: Rota- : tion : age :	: Annual : harvest : area :	: Average : site : index :	: Normal : yield : harvest : volume : per acre :	: Potential : annual : managed : harvest ¹ :	: Annual : managed : harvest :
	<u>Feet</u>	<u>M acres</u>	<u>Years</u>	<u>M acres</u>	<u>Feet</u>	<u>Cu. ft.</u>	<u>Million cubic feet</u>	
Shortleaf pine	+50	100.0	60	1.67	59	3540	6.4	3.4
	-50	16.0	40	.40	43	1240		
Shortleaf pine-oak	+60	123.1	80	1.54	68	6160	16.6	4.8
	-60	158.0	50	3.16	51	2250		
Eastern redcedar	+35	47.8	55	.87	41	1210	1.5	0.6
	-35	40.5	70	.58	30	700		
E. redcedar-hdwd.	+45	96.3	50	1.93	57	1900	6.3	1.3
	-45	163.1	60	2.72	36	960		
Black-scarlet oak	+60	2124.7	80	26.56	70	4960	191.1	59.9
	-60	2284.7	50	45.69	51	1300		
White oak	+60	632.7	80	7.91	71	4240	91.8	39.6
	-60	2011.8	50	40.24	48	1450		
Post-blackjack oak	A11	2488.2	50	49.76	50	1550	77.1	21.8
Oak-gum-cypress	A11	177.7	60	2.96	72	2640	7.8	4.5
Cottonwood	A11	4.8	30	0.16	95	3900	0.6	0.2
Elm-ash-cottonwood	A11	660.6	50	13.21	73	3800	50.2	17.2
Maple-beech	A11	310.8	90	3.45	59	4320	14.9	3.0
Nonstocked	+50	531.5	60	8.86	62	3840	44.6	--
	-50	392.4	40	9.81	40	1080		
Total		12364.7					508.9	156.3

¹/ Does not include harvest from thinnings.

TIMBER PRODUCTS OUTPUT

1969 Output of Timber Products 136 Million Cubic Feet

Missouri's harvest of roundwood products in 1969¹⁶ was 124 million cubic feet, compared to 136 million cubic feet in 1958. The 1969 harvest included 75 million cubic feet from growing-stock trees and 49 million from nongrowing-stock sources. In addition to roundwood output, plant byproducts added another 12 million cubic feet, bringing the 1969 total timber products output to 136 million cubic feet.

Wood-using industries,¹⁷ including both primary and secondary manufacturing plants, accounted for 21,300¹⁸ employees or 4.9 percent of all employees of manufacturing firms in the State in 1972. These industries also paid wages of \$157.9 million (4.0 percent of State total) and made new capital expenditures of \$23.1 million (6.6 percent of State total). Value added by manufacture, the difference between the cost of goods purchased by an enterprise and the sales value of its product, amounted to \$307.8 million in 1972 (3.8 percent of State total). These figures suggest something about the importance of timber to the State's economy.

Missouri boasts three major primary wood-using industries--lumber, charcoal, and cooperage. Other industries exist--veneer, wood pulp products, post and pole treating, tool handle production--but not of the same magnitude as the three major ones.

The total number of active, primary, wood-using plants dropped sharply between 1946 and 1958 and again between 1958 and 1969. Not all kinds of plants declined between surveys, some increased. In general, the average mill has been getting larger and average production per mill has increased.

¹⁶Timber products output information is dated 1969 rather than 1971 because the independent study that provided output data was conducted in 1969.

¹⁷U.S. Bureau of Census, *Standard Industrial Code (SIC) 24, Lumber and Wood Products; and SIC 26, Paper and Allied Products*.

¹⁸1972 Census of Manufactures (Preliminary Report).

Sawmills Produced 368 Million Board Feet of Lumber in 1969

Of the 681 active, primary, wood-using plants in the State in 1969, 549 or 81 percent of them were sawmills. The 990 sawmills in 1958 represented 85 percent of the 1,161 total plants. Small sawmills, those producing less than 1 million board feet of lumber annually, dominated during both surveys, but the proportion of small sawmills declined from 89 percent of all sawmills in 1958 to 77 percent in 1969. Seven mills sawed 5 million board feet of lumber in 1969 compared with 5 in 1958 and 2 in 1946. The greatest concentrations of sawmills producing at least 1 million board feet annually are in the Eastern Ozarks and Southwestern Ozarks Units (fig. 10).

Missouri sawmills produced 368 million board feet of lumber in 1969, compared to 314 million board feet in 1958. Lumber production has generally increased since 1951 when a post-Depression low of 153 million board feet was sawn. In 1969, the average output per mill was 670 thousand board feet, more than double the average of 320 thousand board feet in 1958.

Sawmills acquired 390 million board feet of saw logs in 1969, 95 percent of which were produced in the State (fig. 11). Half of the 20 million board feet of saw logs shipped into Missouri was from neighboring Illinois and the remainder came from adjacent States and Indiana. Two-thirds (257 million board feet) of the volume of logs received at sawmills was from oak species. Cottonwood (25 million board feet), sycamore (20 million), soft maple (19 million), shortleaf pine (15 million), hickory (15 million), and black walnut (14 million) were other major species received. The species shipped into Missouri in the largest quantity was black walnut (4 million board feet), most of which came from Iowa and Kansas.

Missouri loggers harvested 21 percent more saw logs in 1969 (379 million board feet) than in 1958 (314 million board feet). The volume of most species harvested increased slightly between surveys except for a precipitous drop in white oak volume (from 121 million board feet in 1958 to 66 million in 1969), which was practically offset by a

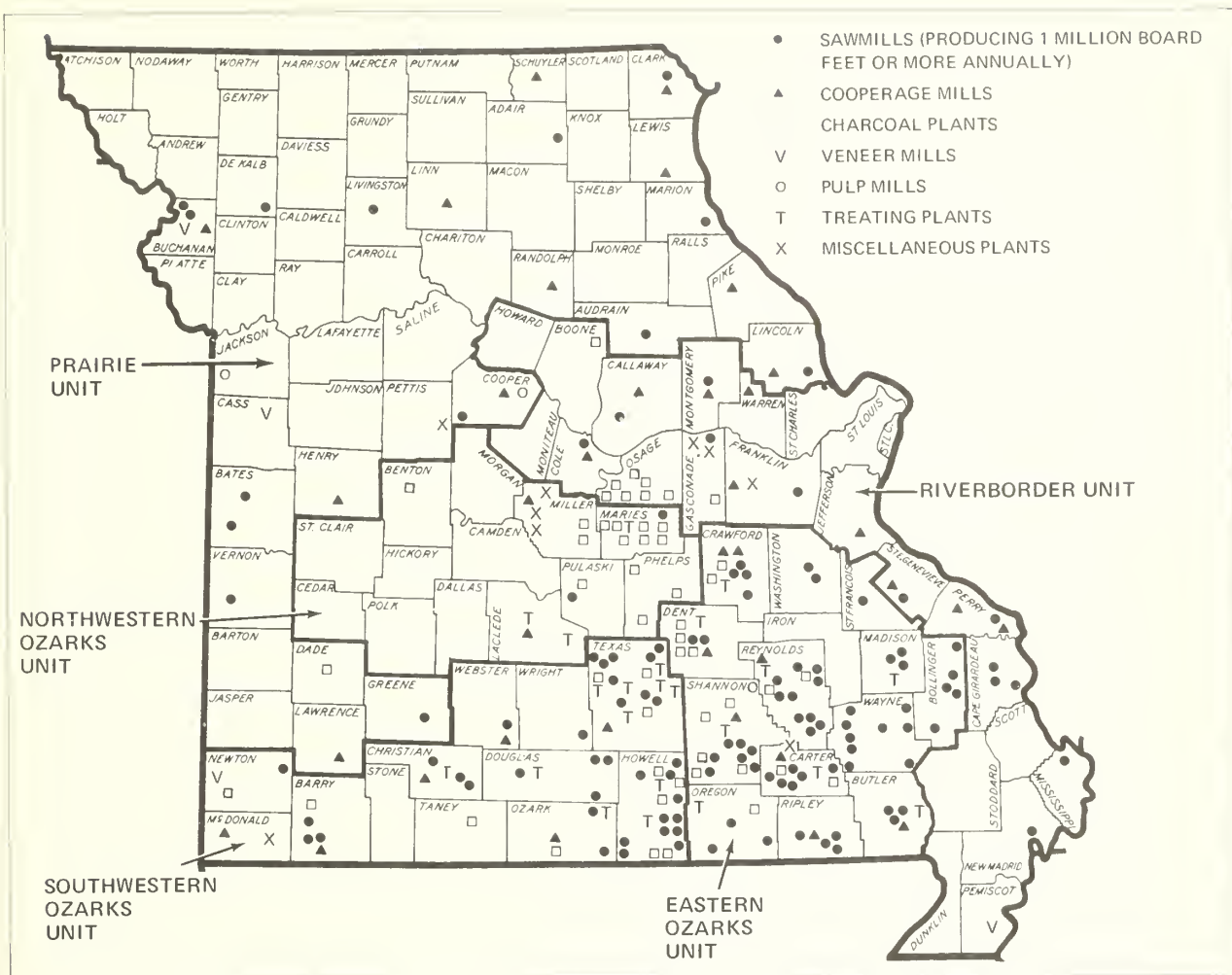


Figure 10.--Primary wood-using plants in Missouri, 1969

large gain in black oak volume (from 69 million board feet in 1958 to 117 million in 1969). Nine million board feet of Missouri-produced saw logs were exported to nearby States, primarily to Kansas, Illinois, and Kentucky.

Missouri is Leading Charcoal-Producing State

Missouri charcoal kilns turned out about 125,000 tons in 1969 out of a nationwide total of 500,000 tons, making it number one among States. The 52 active charcoal plants in 1969 represented a slight decline from the 60 plants operating in 1958. However, the volume of wood received at plants increased six times between surveys--from 3.2 million cubic feet in 1958 to 20.0 million in 1969.

Oak (86 percent) and hickory (12 percent) comprise most of the 16.7 million cubic feet of roundwood received at charcoal plants in 1969. Plant byproducts provided the remaining 3.3 million cubic feet. Essentially all the wood used for charcoal originated in Missouri.

The charcoal industry is an important consumer of low grade hardwoods, significant in Missouri with its large proportion of rough and rotten trees.

Cooperage Log Production Highest in Country

Loggers in Missouri produced 54 million board feet of cooperage logs and bolts in



Figure 11.--Missouri sawmills procured 390 million board feet of saw logs in 1969, 370 million of which was harvested in the State, as these oak saw logs were. (Photo courtesy of Missouri Department of Conservation.)

1969, more than any other State. Fifty-two million board feet of this total was shipped to cooperage mills within the State, the remainder sent out-of-State. Missouri cooperage mills also received 3 million board feet from Illinois and 2 million from Iowa for total log receipts of 57 million.

The number of cooperage plants remained constant at 36 between 1958 and 1969, but production of cooperage logs and their use nearly doubled between surveys because production per mill increased.

The Riverborder Unit provided 40 percent and the Eastern Ozarks Unit 27 percent of the cooperage logs produced in the State in 1969. Practically all of these logs were white oak.

Future Pulpwood Production Potential is High

Pulpwood production in 1969 was 81,000 cords, roundwood equivalent, a huge increase over the 1,200 cords produced in 1955. Two-thirds of the 1969 production was from plant byproducts,¹⁹ the remainder from roundwood. The output of roundwood pulpwood has remained stable since 1964, but plant byproducts use in pulping has risen sharply. Only a small volume of Missouri byproducts are used in pulp mills within the State; most of it is shipped to Illinois.

Two pulp mills manufacturing fiberboard, roof insulation board, and roofing felt, are currently operating in Missouri. The combined capacity of these mills is 170 groundwood tons per 24 hours.

The potential is high for much greater pulpwood production in the future. The large volume of unused plant residue and the large number of cull trees throughout the State, presently unusable for high value products, offers a rich source of raw materials to a pulp and paper industry that is progressively hard pressed to locate new additional supplies of pulpwood in much of the rest of the country.

¹⁹Plant byproducts are slabs, edgings, veneer cores, sawdust, etc., used for products.

Output of Other Products Generally Declines

Other timber products are harvested in substantially less quantities than the above products, and the output of most has declined between surveys. For example, production of veneer logs fell from 7 million board feet in 1958 to 4.6 million in 1969. This decline was prompted by a shift of markets for Missouri logs from low value container veneers to high value face veneers. As a result, the species mix of veneer log output has changed from largely cottonwood and soft maple to chiefly black walnut and pecan. Overseas markets claimed 1.2 million board feet of black walnut veneer logs.

Production of round and split posts sank from 16 million pieces in 1958 to 4 million in 1969. Some of this drop is explained by the unknown but growing number of square sawn posts produced in the State.

Round pole production climbed from 62 thousand poles in 1958 to 90 thousand in 1969. Part of the increase is due to the growing number of shortleaf pines reaching pole size.

60 Percent of Plant Residues Unused

Primary wood-using plants generated a total of 31.5 million cubic feet of residues in 1969. Uses were found for 12.6 million cubic feet, chiefly for fiber products (4.4 million cubic feet), charcoal (3.3 million), and fuel (2.7 million). However, 18.8 million cubic feet (60 percent) of the total was unused. Of the unused portion, 7.9 million cubic feet (100,000 cords) was coarse residue suitable for chipping, and 9.4 million cubic feet (118,987 cords) was fine residue, primarily in the form of sawdust and shavings useful for livestock bedding, mulch, soil conditioners, and others.

This large volume of unused plant residues represents a rich vein of resources, more of which will probably be exploited by industry or private entrepreneurs in the future. Most of the plant residues are concentrated in the Eastern Ozarks and Southwestern Ozarks Units, and most of the residues presently used are exported, chiefly to Illinois and Kentucky. Increasing demand in those two States makes the outlook for Missouri residues bright.

FUTURE TIMBER SUPPLY

A recent projection of potential United States demand for roundwood shows a rise from the 1970 level of 12.7 billion cubic feet to 20.7 billion cubic feet by the year 2000.²⁰ This projection is based on the assumption that through the projection period relative wholesale prices of lumber and plywood would be 30 percent, miscellaneous products and fuelwood 15 percent, and paper and board 10 percent above 1970 average prices. This "medium" projection of the three sets of price assumptions²¹ suggests that national softwood demand will increase 47 percent from 9.7 billion cubic feet in 1970 to 14.3 billion cubic feet in 2000. Hardwood demand is projected to spurt 113 percent, from 3.0 billion cubic feet in 1970 to 6.4 billion cubic feet in 2000.

Projected national supplies of roundwood--assuming 1970 levels of timber management, cutting practices, and policies--are estimated to increase from 12.2 billion cubic feet in 1970 to 18.8 billion cubic feet in 2000. This is a technical potential assuming no problems of operability or availability and, therefore, may not be realized. Softwood supplies are projected to increase from 9.0 billion cubic feet in 1970 to 11.5 billion cubic feet in 2000, considerably short of the above-projected demand of 14.3 billion cubic feet. Hardwood supplies are projected to increase from 3.2 billion cubic feet in 1970 to 7.3 billion cubic feet in 2000, somewhat more than the projected demand of 6.4 billion cubic feet in 2000. In spite of the apparent adequate supply of hardwoods to meet demand at the end of the century, the outlook for hardwoods is clouded by problems of tree quality, size, markets, and availability.

In general these projections suggest stringent timber demand-supply relations by 2000, more so for softwoods than for

hardwoods and more so for some timber products than for others. How will Missouri fit into this national picture? Will the State's supply of growing stock, which increased by 5 percent between 1959 and 1972, continue to increase and if so, for how long? Will the present condition of growth exceeding removals by 6 percent be maintained? And will softwoods, which make up only 6 percent of the 1972 growing-stock volume, increase their proportion of total volume appreciably? The remainder of this section of the report seeks to suggest possible answers to these and other questions by a closer look at computer-generated projections of Missouri's timber resource 30 years into the future.

These projections were of two kinds--one assumes a low level of future timber removals, reflecting recent trends, and the other assumes a high level of removals, reflecting a departure from these trends. Assumed removals for both sets of projections were prepared for individual timber products, then summed. Separate projections were made for softwoods and for hardwoods. A stand projection technique²² was used involving input of number of trees, radial growth, mortality rates, and removal rates, all by 2-inch diameter classes, along with assumed total removals by year and assumed ingrowth into the 2-inch d.b.h. class.

Assumptions common to both low and high option projections include: (1) the total area of commercial forest land will decline at an annual rate of 0.217 percent or 27,000 acres per year, compared to an annual rate of 0.809 percent or 111,812 acres per year from 1959 to 1972; (2) radial growth as estimated from measurement of permanent plots during the last two surveys will decline over time in relation to the increase of basal area per acre of trees; (3) the intensity of forest management practiced will continue at the rate indicated by recent trends; (4) that use of both softwoods and hardwoods for pulpwood will increase, but use of softwoods will increase at a faster rate; and (5) that the volume of "other" removals will drop during the period as more of these trees are utilized.

²⁰USDA Forest Service. 1973. *The outlook for timber in the United States*. For. Resour. Rep. 20, 367 p.

²¹Other projections were based on the assumptions that (1) 1970 wholesale prices of timber products relative to average wholesale prices of all commodities and to most competing materials would remain at 1970 levels, and (2) that relative wholesale prices of timber products would rise from the 1970 trend level through the projection period much as in the past.

²²USDA Forest Service. 1970. *TRAS, a computer program for the projection of timber volume*. U.S. Dep. Agric., Agric. Handb. 377, 24 p.

Low Removals Option Projection

The low option projection assumes that softwood removals will increase at an average annual rate of 1.93 percent from 8.3 million cubic feet in 1972 to 13.1 million cubic feet in 2002, and that hardwood removals will remain virtually constant at 160.0 million cubic feet throughout the projection period. Total removals are projected to be lower in every year of the period than for the high option and, as a result, growth and inventory volumes are projected to go higher.

This projection shows growth rising slightly from 177 million cubic feet in 1972 to 179 million cubic feet in 2002 (fig. 12). During the last decade of the period the growth curve is almost flat. Timber removals are projected to increase at a somewhat faster rate than growth, rising from 168 million cubic feet in 1972 to 173 million cubic feet in 2002. Removals remain lower than growth throughout the period, although the two curves tend toward one another during the last 2 decades.

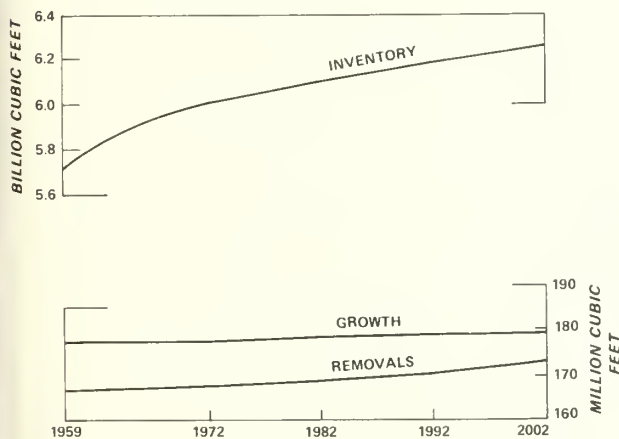


Figure 12.--Removals, net growth, and inventory of growing stock in Missouri, 1959 and 1972, and low removals option projections for 1982-2002.

Growing-stock inventory would build up under the above condition of an excess of growth over removals from 6.0 billion cubic feet in 1972 to 6.3 billion cubic feet in 2002. The inventory curve begins to flatten out in response to the converging growth and

removals volumes in the last 2 decades of the period.

When the growing-stock projections of softwoods and hardwoods are observed separately, important differences are visible: the volume of softwood growth is projected to increase 22.1 percent between 1972 and 2002, but the volume of hardwood growth is projected to decline 0.5 percent during the same period. The softwood growth rate in 1972 was 3.6 percent of inventory and is projected to fall off to 3.1 percent of inventory in 2002. The 1972 hardwood growth rate was a somewhat lower 2.9 percent of inventory and is projected to dip only to 2.8 percent in 2002. Softwoods, with their higher growth rates, are projected to have a larger proportion of the total volume of growth--7.4 percent of the total in 1972 and 8.9 percent in 2002. Softwood removals are projected to increase 57.8 percent between 1972 and 2002, but hardwood removals are only projected to increase 0.4 percent. Softwoods amounted to 4.9 percent of the 1972 total removals volume but are projected to constitute 7.6 percent of the 2002 removals. Softwoods will comprise a slightly higher proportion of growing-stock inventory also, increasing from 6.1 percent of the total in 1972 to 8.2 percent in 2002.

High Removals Option Projection

Under the high removals option it is assumed that softwood growing-stock removals will double, from 8.3 million cubic feet in 1972 to 16.6 million cubic feet in 2002, for an average annual rate of increase of 3.3 percent. Hardwood removals are assumed to advance modestly from 159.4 million cubic feet in 1972 to 180.0 million cubic feet in 2002, a 0.4 percent average annual rate of increase. Total removals are higher throughout the projection period than for the low removals option. Total removals are projected to exceed growth by about 1990 and, as a consequence, growing-stock inventory is projected to turn down immediately after that date (fig. 13).

Growth rises slightly during the first decade of this projection, then declines slightly for the remainder of the period. Growth, which was 177 million cubic feet in 1972, is projected to advance to 178 million cubic feet in 1982 then to sag to 176 million cubic feet in 2002. Timber removals, which

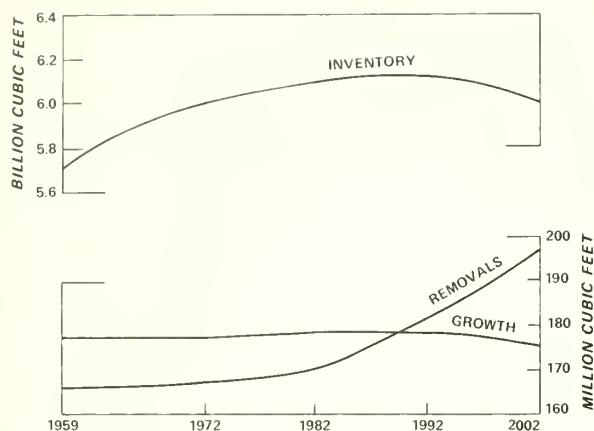


Figure 13.--Removals, net growth, and inventory of growing stock in Missouri, 1959 and 1972, and high removals option projections for 1982-2002.

had only a minimal impact on projected growth, are projected to rise throughout the period, modestly during the first decade and more sharply during the last 2 decades. Removals are projected to progress from 168 million cubic feet in 1972 to 197 million cubic feet in 2002, a 17 percent gain.

Inventory of growing stock is projected to increase at a slower rate each year until 1990, when removals are projected to exceed growth, then decline. The 1972 inventory of 6.0 billion cubic feet would rise to 6.1 billion cubic feet in 1990 and fall back to 6.0 billion cubic feet by 2002.

Significant differences between the softwoods and the hardwoods projection are evident upon close scrutiny, just as in the case of the low removals option. The volume growth on softwoods is projected to increase 16.8 percent between 1972 and 2002 (22.1 percent for the low option), but growth on hardwoods is projected to decline by 2.4 percent (0.5 percent for the low option) during the same period. Softwoods are projected to account for a somewhat larger proportion of the volume of growth at the end of the period than at the beginning; from 7.4 percent in 1972 to 8.7 percent in 2002. Softwood removals are projected to increase 100 percent during the period (57.8 percent for the low removals option), but hardwood removals are projected to increase only 12.9 percent (0.4 percent for the low option). Under this option softwoods would substantially

increase their share of the total removals volume, from 4.9 percent of the 1972 removals to 8.4 percent of the removals in 2002. Growing-stock inventory would also be weighted somewhat more heavily to softwoods in 2002 (7.7 percent) than in 1972 (6.1 percent).

What Do the Projections Mean?

These two projections--the low and high removals options--probably set the upper and lower limits of the timber situation in Missouri for the next 30 years. The actual situation probably can be expected to fall somewhere between the two. Because there are many unforeseen elements in the mix of economic relations that will determine the actual future level of timber removals, the projections are most meaningful for the first decade.

Several conclusions can be drawn for the projections: first, the State's timber resource will remain overwhelmingly hardwood despite some increase in softwood inventory. Therefore, Missouri will figure only minimally in the efforts to abate the Nation's coming softwood roundwood shortage mentioned earlier.

Second, growing-stock inventory will remain very close to its 1972 volume. Timber removals were only slightly lower than growth in 1972. Thus if removals follow recent trends, only a slight inventory gain is possible and, as seems more likely, if removals increase, they cannot increase much without surpassing growth and triggering a turn-down of inventory unless the lowered stand basal area results in substantially lower mortality.

Third, the total volume of growth is not expected to increase significantly under the present level of forest management assumed for the next 30 years. In States like Missouri in which 87 percent of the commercial forest area is privately owned and the volume of timber harvested annually is determined by the forces of supply and demand in the marketplace and the unrelated decisions of many individual landowners, the annual volume of growth becomes an important guide to planners and others concerned with the statewide level of removals that can be sustained. If growth

does not increase, the opportunity for removals to increase without causing a reduction in timber supplies, is diminished.

Other changes will be wrought in the State's forests that are more difficult to predict. For instance, the extent of future clearing of commercial forest land for pasture and cropland can only be guessed, yet it is an important variable in the forest situation equation. The degree of success of the Forestry Incentives Act or other programs to elicit active and prolonged participation in forest management activities from the State's numerous private landowners is similarly unquantifiable. However, the participation of the private landowner is crucial to real improvement of Missouri's forests.

The level of forest management in the future will likely rise, although the projections discussed above assumed no change

from recent trends. To the extent that forest management intensifies, the projections will prove to be conservative. Cultural work probably will be more widespread in the future, including release of light-demanding oak and hickory seedlings from their more shade-tolerant competitors in order to reproduce oak-hickory stands. Thinning also should be more prevalent, serving to maintain fast growth rates on sawtimber crop trees and to keep stands in healthy vigorous condition, the better to withstand insect and disease attacks. More of the pines planted in the future will be raised from seeds collected from genetically superior trees.

The developing public interest in the environment, the growing awareness that wild land is a precious and shrinking resource, the burgeoning demand for outdoor recreation, and the energy crisis all will also have far-reaching impacts on the management of Missouri's forests.

FOREST MANAGEMENT OPPORTUNITIES

Public interest is currently high in exploring opportunities for increasing supplies of timber nationally at a time when the future promises higher demands for timber products concurrent with a diminishing commercial forest area. The Forest and Rangeland Renewable Resources Planning Act of 1974 (PL 93-378) gave impetus to such interest. This law directs the Secretary of Agriculture to collect, analyze, and report information about the renewable resources of the Nation's forest, range, and related lands that would be useful in determining how best to meet the needs of the country for goods and services obtainable from renewable resources on these lands. One objective of the law is to identify and evaluate renewable resource investment opportunities in order that those yielding the most meaningful social and economic benefits can be accomplished first with the limited resources available for such investments.

The forest management opportunities presented in this section of the report are much less detailed and less comprehensive than those envisioned in PL 93-378. However, they do provide an estimate by broad treatment classes of the area that could be treated in order to improve or expand the State's forest resources.

Before proceeding with a discussion of opportunities for future treatment, it is

useful to consider the kind and extent of vegetative change that has occurred in the recent past. Today's forest is a product of past actions taken and natural occurrences in an earlier forest.

Remeasurement in 1972 of permanent sample plots established in 1959 permitted an estimate of the type of vegetation modification on lands other than national forests during the 13-year period between surveys. These estimates are shown for each forest type in table 10.

Timber Harvesting Most Extensive Past Treatment

Three-fourths of the commercial forest land in other than national forest ownership showed no treatment or significant change between surveys. Timber harvesting was the dominant treatment, occurring on 2.2 million acres (20 percent of the commercial area). Harvesting includes partial cutting and clear-cutting with or without subsequent artificial regeneration. Natural regeneration occurred on 302 thousand acres (3 percent of the area). Much of this area was land classed as cropland or pasture (nonforest land) in 1959 but which became sufficiently stocked with trees by 1972 to be classed as commercial forest. A higher proportion of the eastern redcedar (31 percent) and eastern redcedar hardwood (20 percent) forest types resulted from natural

Table 10.--Area of commercial forest land in 1972 by forest type and type of treatment or change since 1959, all owners except National Forest, Missouri

(In thousand acres)

Forest type	Treatment or change							
	Total	No change	Harvest	Natural regeneration	Timber stand improvement	Physiographic change	Stand conversion	Planted or seeded
Shortleaf pine	11.0	9.2	1.0	0.8	--	--	--	--
Eastern redcedar	79.1	54.6	--	24.5	--	--	--	--
E. redcedar-hardwood	197.0	117.2	23.0	40.0	--	14.3	2.5	--
Shortleaf pine-oak	108.8	64.4	40.2	--	2.1	--	2.1	--
Post-blackjack oak	2,444.6	1,954.1	396.3	37.7	20.5	36.0	--	--
Black-scarlet oak	3,771.1	2,828.8	836.6	52.0	25.3	12.3	16.1	--
White oak	2,372.8	1,830.5	497.8	17.3	11.9	--	4.7	10.6
Oak-gum-cypress	177.7	146.4	31.3	--	--	--	--	--
Elm-ash-cottonwood	651.3	499.3	127.5	15.8	7.5	--	--	1.2
Cottonwood	4.8	4.8	--	--	--	--	--	--
Maple-beech	310.8	196.6	71.0	43.2	--	--	--	--
Nonstocked	913.9	591.4	189.3	70.5	51.9	5.1	5.7	--
Total	11,042.9	8,297.3	2,214.0	301.8	119.2	67.7	31.1	11.8

regeneration between surveys than for any other type. Timber stand improvement and artificial regeneration were carried out on 131 thousand acres (1 percent) of the area. The physiographic change that occurred on 68 thousand acres is largely the result of land being drained sufficiently by 1972 to be classed commercial forest land after being classed as noncommercial forest land (unproductive) in 1959 by virtue of being underwater or otherwise too moist to grow commercial tree crops. Stands were converted from one forest type to another on 31 thousand acres.

Information similar to the above for all forest types on the 1,321.8 thousand acres of national forest land was provided by the National Forests in Missouri and is shown in the following tabulation:

Treatment	Area (Thousand acres)
No change	402.8
Harvest	527.4
Planting and seeding	57.7
Site preparation	41.2
Release and thinning	292.3
Pruning	0.4
Total	1,321.8

Opportunities for Future Treatment

Future treatment opportunity estimates are based on physical rather than economic

criteria and were made from annual managed harvest information. As mentioned earlier, and in more detail in the Appendix, annual managed harvest in Missouri was determined by computer using an area control system for computing the number of acres to be treated each year. Stands to be harvested were selected because their site index and age indicated they were now or would within 10 years be at rotation age. Stands selected for thinning were those not yet ready for harvest and overstocked by basal area standards now or prospectively within 10 years. Because the computer first schedules rough and rotten trees, then short-log trees, and finally, growing-stock trees to be "removed" from stands to be thinned, the estimate of area to be treated is that for thinning and cull tree removal combined. Estimates of the area that could be treated by stand conversion or regeneration were also made from computer-generated managed harvest information. These estimates were broken into that from nonstocked commercial forest land, from sparsely stocked²³ commercial forest land, and from nonforest land. Acres to be harvested are not included because these areas are assumed to be regenerated immediately following logging.

²³Stands in which stocking in relation to age of the stand is so low that they are not expected to reach a level of stocking adequate for commercial timber production by rotation age.

Treatments for commercial forest land are based on biological or silvicultural standards that must be met by individual stands, and represent the sum of treatment opportunities between 1972 and 1981. On the other hand, the area of nonforest land shown in the stand conversion and regeneration column in table 11 is the total area of idle cropland and wooded pasture in the State. An unknown but probably very small amount of this nonforest land will be converted or regenerated to forest by 1981. Most of these lands will return to agricultural production, be developed for uses other than timber production, or remain as they are. Nevertheless, the areas of idle cropland and wooded pasture are included in table 11 because reversion of these lands to forest is essentially the only way to expand the commercial timber base or to maintain it in the face of continuing diversions to other uses (fig. 14).

No Treatment Needed on Two-Fifths of Commercial Area

According to the criteria described above, 5.3 million acres of commercial forest need no treatment (table 11). These stands are immature and are satisfactorily stocked with trees without being overstocked. Thus, these stands are likely to make adequate growth for at least the next decade without man's intervention. This is not to say, however, that these stands could not profit from some kinds of treatment other than those shown in table 11. For instance, fertilization could increase the growth rate of some stands, and pruning could improve the quality of sawtimber trees for some timber products.

A higher proportion of the area of softwood forest types (59 percent) need no treatment than do hardwood types (41 percent).

Table 11.--Area of nonforest land and of commercial forest land by forest type and class of treatment needed for the decade 1972 to 1981, Missouri

(In thousand acres)

Land class and forest type	Total area	Class of treatment needed					
		No treatment needed on commercial forest land	Harvest on commercial land	Thinning and cull: tree removal on commercial forest land	Stand conversion or regeneration: On nonstocked commercial forest land	On sparse stocked commercial forest land	On noncommercial forest land
Nonforest land:							
Idle cropland	193.0	0	0	0	0	0	193.0
Wooded pasture	2,803.1	0	0	0	0	0	2,803.1
Subtotal	2,996.1	0	0	0	0	0	2,996.1
Commercial forest land ^{2/}							
Shortleaf pine	116.0	57.6	20.6	37.8	--	--	0
Eastern redcedar	88.3	66.9	13.6	--	--	7.8	0
E. redcedar-hardwood	296.8	150.1	39.7	5.7	37.4	63.9	0
Shortleaf pine-oak	281.1	188.5	53.8	24.2	--	14.6	0
Post-blackjack oak	2,770.9	1,185.3	493.1	--	282.7	809.8	0
Black-scarlet oak	4,620.9	1,907.0	711.3	747.9	211.5	1,043.2	0
White oak	2,785.9	1,270.0	471.9	235.3	141.4	667.3	0
Oak-gum-cypress	205.7	71.3	26.7	44.7	28.0	35.0	0
Elm-ash-cottonwood	755.5	251.0	121.3	184.7	94.9	103.6	0
Cottonwood	4.8	3.2	1.6	--	--	--	0
Maple-beech	438.8	102.7	31.9	50.3	128.0	125.9	0
Subtotal	12,364.7	5,253.6	1,985.5	1,330.6	923.9	2,871.1	0
Total	15,360.8	5,253.6	1,985.5	1,330.6	923.9	2,871.1	2,996.1

^{1/} Stocking in relation to age of the stand is so low that the stand is not expected to reach a level of stocking adequate for commercial timber production by rotation age.

^{2/} Nonstocked area is distributed into each forest type.

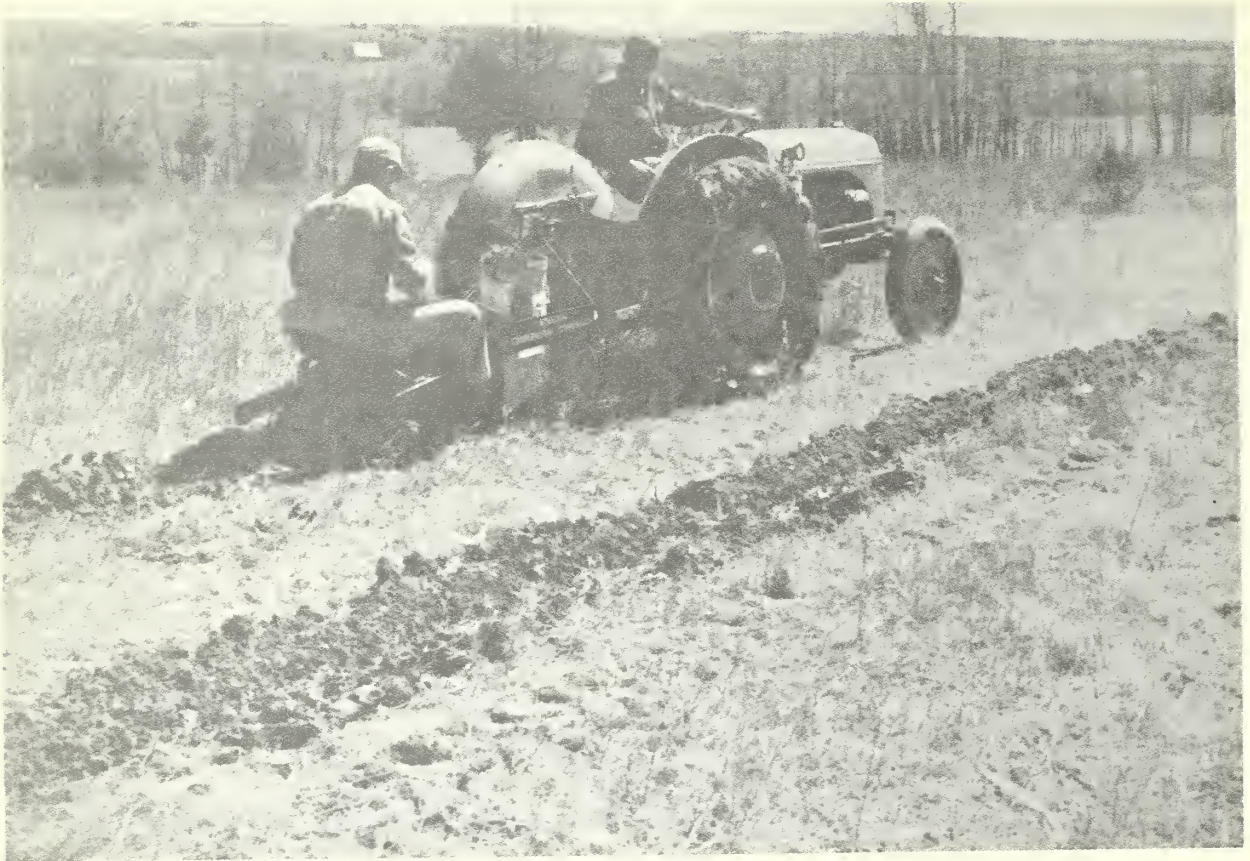


Figure 14.--Machine-planting shortleaf pine on formerly nonforest land. Planting, seeding, or natural regeneration of idle cropland are ways that the decline of commercial forest area can be countered. (Photo courtesy of Missouri Department of Conservation.)

This arises from the relative youth of many softwood stands. Two-thirds of the shortleaf pine-oak stands and three-fourths of the eastern redcedar stands need no treatment.

One-third of Area Lacks Adequate Tree Stocking

A total of 3.8 million acres of commercial forest land (31 percent of the total) are either nonstocked or so sparsely stocked as to require stand conversion and/or artificial regeneration to produce a manageable stand. Nonstocked areas account for 0.9 million acres and sparsely stocked stands for the remaining 2.9 million acres. Many of these stands were logged, burned, or otherwise disturbed in the past and did not regenerate to trees before a stand of grass, perennial weeds, shrubs, or brush became established. Livestock grazing on some of

these areas after the primary disturbance probably prevented some areas from returning to trees. Some nonstocked and sparsely stocked stands are at the low end of the site-quality scale.

The largest area that could benefit from stand conversion or regeneration on nonstocked land is in the Prairie Unit (0.3 million acres). Largest areas of sparsely stocked commercial forest needing treatment are in the Eastern Ozarks Unit (0.8 million acres) and in the Northwestern Ozarks Unit (0.7 million acres). If the 3.0 million acres of nonforest land are included, a maximum of 6.8 million acres could be converted or regenerated.

Only 16 percent of the area of softwood forest types is in the nonstocked or sparsely stocked classes as compared to 32 percent of

the hardwood types. None of the 116 thousand acres of the shortleaf pine type (much of which is in plantations) are in these classes, and only 5 percent of the shortleaf pine-oak and 9 percent of the eastern redcedar types are so classed. Among hardwood types, the maple-beech type contains the largest proportion of area (58 percent) in need of conversion or regeneration. Some of this area is on sites where Dutch elm disease-killed elms were a large component of the stand. Other sites are marginal for producing average or better quality sugar maple and other species associated with the type, and would be better suited to growing different species, perhaps shortleaf pine. The post-blackjack oak type, with 39 percent of its area non-stocked or sparsely stocked, ranks second in proportion of area in this class. Generally speaking, this type occupies the poorer sites in the State--soils that are shallow, dry, stoney, and often located on ridgetops or upper slopes. Trees associated with this type are often too small to be used for high value forest products such as saw logs, suggesting that some sites might be better utilized if they were converted to pine or, on extremely poor sites, perhaps to pasture.

The acres shown as nonstocked or sparsely stocked are a realistic estimate of the area on which a manageable stand is not present now or in the foreseeable future with natural plant succession. Ideally, some kind of treatment is called for, but pragmatically, none is possible now on many acres for economic or technical reasons. Some poor hardwood sites can be converted to shortleaf pine, and this is the only species with which planting is contemplated in the near future. Obviously, planting those sites too poor to grow merchantable crops of pine is not practical. Most hardwood sites on which advance hardwood reproduction is missing at the time of logging or disturbance are extremely difficult to regenerate to desirable hardwoods. Oaks can be planted on suitable sites²⁴ but the cost of subsequent cultural operations needed to remove competition from the oak seedlings is prohibitive, making oak planting a marginal investment at present. Little is known of the technical or economic requirements for planting or seeding other hardwood species. Therefore, many nonstocked and

sparsely stocked hardwood sites will probably remain so for the immediate future.

Timber Harvest is Appropriate Treatment on One-sixth of Area

Stands whose site index and age indicate they are ready for harvest or will be ready within the next decade total 2.0 million acres (fig. 15). The largest area of stands ready for harvest is in the Eastern Ozarks Unit (0.7 million acres) followed by the Southwestern Ozarks Unit (0.4 million), the Riverborder Unit (0.4 million), the Northwestern Ozarks Unit (0.3 million), and the Prairie Unit (0.2 million).

Even-aged management is anticipated, and the harvest area is the area of final harvest or reproduction cut. The area of intermediate cuts is included under the category, "thinning and cull tree removal." Regeneration of these harvested acres is assumed to occur soon after logging, either naturally or by artificial means. Therefore, none of this area is included in the class of treatment, "stand conversion or regeneration."

There is no difference between softwoods and hardwoods in the proportion of area of each in the harvest class--both equal 16 percent of their totals. The largest area in the harvest category is the black-scarlet oak type with 711 thousand acres (36 percent of the total harvest area).

The acres designated for harvest are based on silvicultural considerations rather than management or economic ones. Some of the area will not be available for harvest because of owner preference, and some may not be accessible because of difficult terrain or attendant road construction problems. However, harvest and prompt regeneration of these mature and overmature stands represents a major opportunity to increase the future supply of timber in the State.

One-tenth of Area Overcrowded with Young Trees

Stands that are both immature and overstocked exist on 1.3 million acres of commercial forest (11 percent of the total). These stands are those classed in need of thinning and cull-tree removal in order to control spacing, improve species composition, release desirable trees, and accelerate growth.

²⁴Russell, T. E. 1971. *Seeding and planting upland oaks. In Oak Symp. Proc., Morgantown, W. Virginia, Aug. 16-20, 1971: p. 49-54. Northeast. For. Exp. Stn., Upper Darby, Pa.*

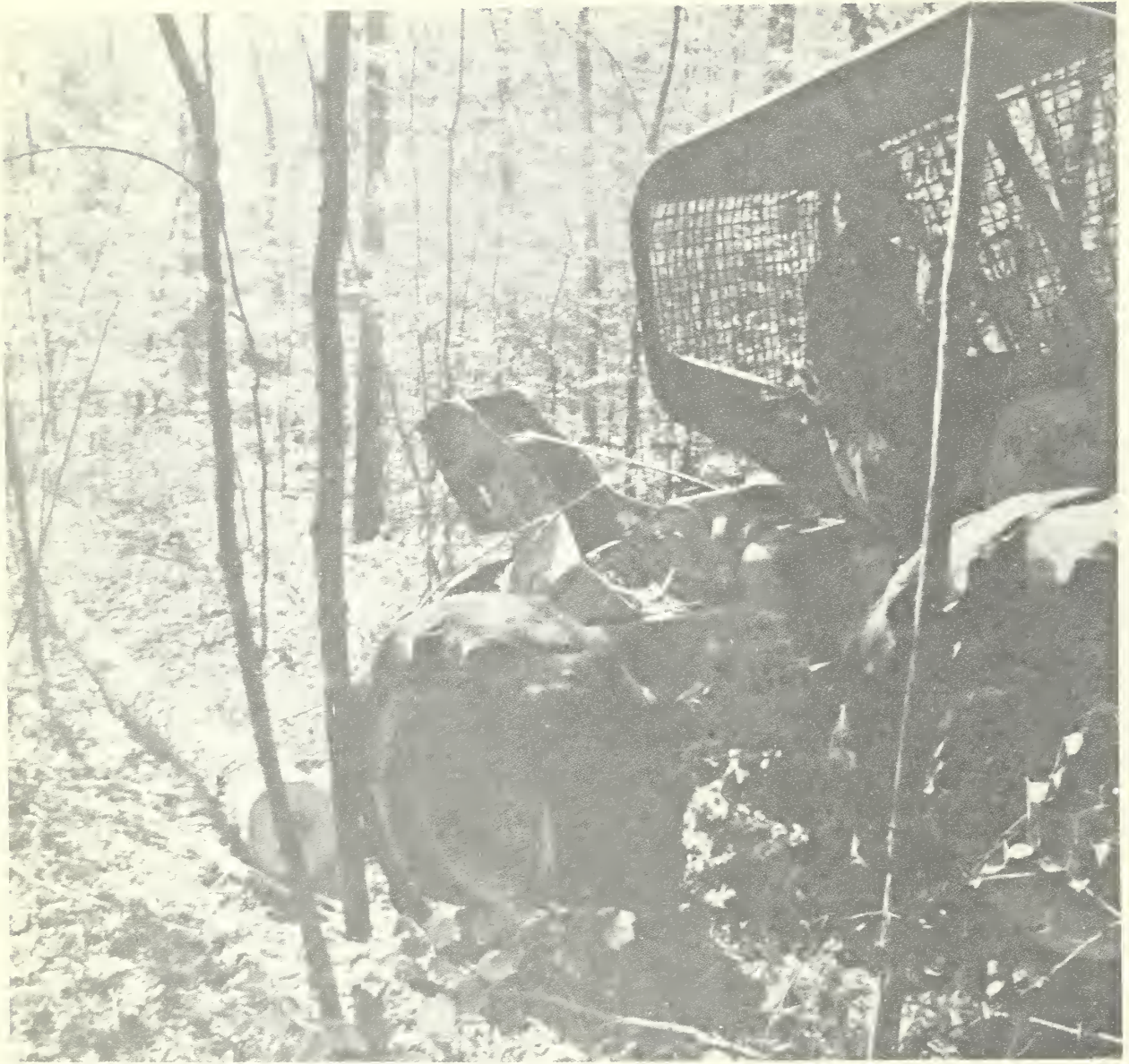


Figure 15.--*Sixteen percent of the commercial forest is ready for harvest, based on the criteria of stand age and site index.*
(Photo courtesy of the Missouri Department of Conservation.)

More stands in need of thinning are found in the Eastern Ozarks Unit (0.6 million acres) than in any other Unit, followed by the Prairie Unit (0.3 million), the Southwestern Ozarks Unit (0.2 million), the Riverborder Unit (0.1 million), and the Northwestern Ozarks Unit (0.1 million).

The proportion of softwoods (9 percent) in this treatment class is somewhat smaller

than that of hardwoods (11 percent). However, the shortleaf pine type boasts the highest proportion of all types in need of intermediate cutting with 33 percent. Much of this area is in shortleaf pine plantations that are advanced enough to benefit from thinning. None of the eastern redcedar or post-blackjack oak types were found to fit the criteria for this treatment class.

As with the other treatment classes, if economic considerations were imposed in the process of selecting acres to be treated, the area of thinning and cull tree removal probably would be substantially reduced. For some stands, especially those on poorer sites, thinning will remain--for the immediate future at least--an economically unfeasible investment because of limited growth response or lack of markets.

Landowners who wish to consider forest management opportunities on their own lands in greater detail will find professional advice available from Missouri Department of Conservation Service Foresters (fig. 16). Addresses and phone numbers of the State's Service Foresters are available from: Missouri Department of Conservation, 2901 North Ten Mile Drive, P.O. Box 180, Jefferson City, Missouri 65101.



Figure 16.--A Missouri Department of Conservation Service Forester discusses the growth of a shortleaf pine with a landowner. (Photo courtesy of Missouri Department of Conservation.)

APPENDIX

Accuracy of Survey

Forest Survey information is based on a sampling procedure designed to provide reliable statistics at the State and Survey Unit levels. Consequently, the reported figures are estimates only. However, a measure of reliability of these figures is given by sampling errors. These sampling errors may be interpreted as meaning that the chances are two out of three that the results for the sample differ, by no more than the amount indicated, from the results that would have been obtained if all trees in the State had been measured (a 100-percent inventory), using the same tree measurements.

For example, the estimated area of commercial forest land in the State in 1972, 12,364.7 thousand acres, has a sampling error of ± 0.78 percent (± 96.4 thousand acres). The chances are two out of three, then, that the commercial forest area falls between 12,268.3 and 12,461.1 thousand acres ($12,364.7 \pm 96.4$), the limits within which the results of a 100-percent inventory would occur.

Item	State totals	Sampling error ²⁵ (Percent)
Growing stock:		
Volume	6,001.5 MM cubic feet	1.54
Growth	177.3 MM cubic feet	2.19
Removals	167.7 MM cubic feet	4.18
Sawtimber:		
Volume	15,054.9 MM board feet	2.17
Growth	363.5 MM board feet	3.01
Removals	542.0 MM board feet	7.58
Commercial forest land	12,364.7 M acres	0.78

As survey data are broken down into units smaller than State or Survey Unit totals, the sampling error increases. The smaller the breakdown, the larger the sampling error. For example, the sampling error for area of commercial forest land in a particular county is much higher than that for total commercial area in the State. An approximation of the increasing sampling error can be obtained from table 12, which shows the sampling errors associated with estimates smaller than totals in Missouri.

²⁵At the 68-percent probability level.

Survey Procedure

The major steps in the Missouri survey were as follows:

1. A total of 215,977 points (small circles on a clear plastic overlay, each representing a ground area of 1 acre) were distributed systematically across aerial photos of the entire State. These points were observed and classified as either forest land (72,745) or nonforest land (143,232) in order to make a preliminary estimate of forest area. Next, 28,004 of the forest points were stereoclassified as to forest type, stand-size class, and density. Then 3,555 of these 1-acre points classed as forest and 7,059 of them classed as nonforest were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken. Some of the points examined were locations of permanent sample plots (each of which contained one variable-radius plot with basal area factor five) established during the 1959 survey. Of the 2,914 points determined to be on commercial forest land from ground examination, 1,274 were at previously unsampled locations and 10-point variable-radius plots (basal area factor 37.5) were established uniformly over the sample acre. The remaining 1,640 points were at formerly established permanent plot locations and were remeasured by superimposing 10-point variable-radius plots (basal area factor 37.5) over the existing plot in addition to remeasuring the basal area factor five plot. Tree measurements made on new and remeasured plots were the basis for estimates of timber volume, growth, mortality, number of trees, and other forest classifications.

2. Statistics on timber utilization in 1969 were obtained from mill surveys and from remeasurement of permanent sample plots. The Missouri Department of Conservation canvassed resident sawmills, veneer mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed resident pulpmills, and the underground mining industry in Missouri, as well as out-of-State sawmills, pulpmills, and veneer mills to determine their use of timber from Missouri. Fuelwood and fencepost output was based on U.S. Census of Agriculture and Housing figures, a canvass of public and industrial timber owners, and a canvass of resident wood-treating plants. Estimates of primary mill residue used for fuelwood were obtained from the canvass

Table 12.--Sampling errors¹ for estimates smaller than State totals of volume, net growth and removals, and of area of commercial forest land in Missouri, 1972

Sampling error	Commercial forest			Growing stock			Sawtimber		
	Volume	Growth	Removals	Volume	Growth	Removals	Volume	Growth	Removals
(Percent)	Thousand acres	Million cubic feet			Million board feet ^{2/}				
1	7,467.1	14,212.9	853.6	2,930.1	71,068.3	3,297.5	31,142.3		
2	1,866.8	3,553.2	213.4	732.5	17,767.1	824.4	7,785.6		
3	829.7	1,579.2	94.8	325.6	7,896.5	366.4	3,460.3		
4	466.7	888.3	53.3	183.1	4,441.8	206.1	1,946.4		
5	298.7	568.5	34.1	117.2	2,842.7	131.9	1,245.7		
10	74.7	142.1	8.5	29.3	710.7	33.0	311.4		
15	33.2	63.2	3.8	13.0	315.9	14.7	138.4		
20	18.7	35.5	2.1	7.3	177.7	8.2	77.9		
25	11.9	22.7	1.4	4.7	113.7	5.3	49.8		
50	3.0	5.7	0.3	1.2	28.4	1.3	12.5		
100	0.7	1.4	0.1	0.3	7.1	0.3	3.1		

^{1/} At the 68-percent probability level.

^{2/} International 1/4-inch rule.

of Missouri primary wood-using plants. Timber cut for products by owner class was determined by a canvass of all public and industrial timber owners. The portion of timber cut unaccounted for by the latter owners was grouped under "farmer and other owners."

3. To develop wood utilization factors used in converting timber products output to timber removals for saw logs, veneer logs, cooperage logs, pulpwood, and charcoal wood, 486 felled trees throughout the State were measured. Factors for all other products were obtained during the 1959-1960 Missouri utilization study.

4. Field data were sent to St. Paul where they were edited, punched on cards, and stored on magnetic tape for later machine sorting, computing, and tabulation.

Managed Harvest

Managed harvest is the estimated volume of timber on commercial forest land that could be cut annually for the next 10 years, while improving tree stocking and bringing about a more even distribution of age classes. In Missouri, annual managed harvest is shown separately from harvest cutting and from thinnings, and was determined by computer using an area control system for determining the number of acres to be cut annually.

The harvest cut of sawtimber was calculated from stands of forest types normally

managed for sawtimber whose site index and age indicated they were ready for harvest, or would be within the next 10 years. Table 13 shows the site index used in these calculations for each forest type to determine whether the objective of management would be to grow sawtimber or pulpwood. Included also is the rotation age for each.

Stands that did not qualify for harvest during that period were checked to see if they were overstocked by basal area standards, or would be within the next 10 years. Stands determined to be overstocked were "thinned" by the computer back to their recommended basal-area stocking level, and the volume of sawtimber trees "thinned" was added to the volume of allowable cut by thinnings of growing stock and sawtimber. The volume of pole timber trees "thinned" was added to the growing-stock allowable cut by thinnings. In scheduling thinnings, the computer program first "removes" rough and rotten trees, then short-log trees, and finally, growing-stock trees. The volume of allowable cut from rough, rotten, and short-log (rough) trees is kept separate from that from growing-stock trees.

The harvest cut of growing stock included that of sawtimber in addition to the volume from stands of forest types normally managed for pulpwood that were or would be rotation age within the next 10 years.

Table 13.--Forest type, site index, and rotation age by management objective used in calculation of managed harvest, Missouri, 1972

Forest type	Site index ¹	Rotation age ¹	Management objective
Years			
Shortleaf pine	50 or higher	60	Sawtimber
	Less than 50	40	Pulpwood
Shortleaf pine-oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Eastern redcedar	35 or higher	55	Sawtimber
	Less than 35	70	Sawtimber
E. redcedar-hardwood	45 or higher	50	Sawtimber
	Less than 45	60	Sawtimber
Black-scarlet oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
White oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Post-blackjack oak	All sites	50	Pulpwood
Oak-gum-cypress	All sites	60	Sawtimber
Cottonwood	All sites	30	Sawtimber
Elm-ash-cottonwood	All sites	50	Sawtimber
Maple-beech	All sites	90	Sawtimber

¹Recommended by timber management researchers.

Managed harvest is based on the assumptions that all timber will be available and accessible when needed, and that a ready market will exist for every species, size, and grade of material harvested. Further, it assumes that the proper sequence of cutting is known and will be followed, and that logging practices employed will result in an improved forest. Because there is no way of guaranteeing that these assumptions will be carried out during the next 10 years, the allowable cut estimates should be compared with timber removals figures only in a general way.

Log Grade

In Missouri the butt log of every sawtimber tree (6,962 trees) on every permanent sample plot was graded for quality. Additionally, all of the logs in a smaller sample of trees throughout the State (265 trees) were graded. The volume yield by log grade for each tree in the latter sample was used to distribute the volume of trees in the former sample into log-grade classes. The resulting volumes by log-grade classes were expanded to provide an estimate for the entire State.

Logs were graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber and How To Use Them" published by the Forest

Products Laboratory under the designation D1737A, 1961, and USDA Forest Service standards for hardwood tie and timber logs. The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded.

Shortleaf pine was graded according to "Interim Southern Pine Log Grades," USDA Forest Service, 1953. All other softwoods were graded according to "Specifications for Log Grades of Hardwoods and Softwoods," Northern Hemlock and Hardwood Association, 1947. The lowest 16-foot log in softwood trees or a shorter log down to 12 feet if a 16-foot butt log was not present, was graded.

Definition of Terms

Land-Use Classes

Gross area.--The entire area of land and water as determined by the Bureau of Census, 1960.

Land area.--The area of dry land and land temporarily or partially covered by water such as marshes, swamps, flood plains, streams, sloughs, and estuaries. Canals less than 1/8-mile wide, and lakes, reservoirs, and ponds smaller than 40 acres are included as land area. These figures are from the Bureau of Census, 1960.

Forest land.--Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Includes afforested areas. The minimum forest area classified was 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas were classed as forest if less than 120 feet in width.

Commercial forest land.--Forest land that is producing or is capable of producing crops of industrial wood and that is not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both inaccessible and inoperable areas.

Noncommercial forest land.--(a) Unproductive--forest land incapable of yielding crops of industrial wood because of adverse site conditions, (b) Productive-reserved--forest land withdrawn from commercial timber use through statute or administrative regulation, or exclusively used for Christmas tree production.

Nonforest land.--Land that has never supported forests, and land formerly forested where forest use is precluded by development for nonforest uses, such as cropland, improved pasture, residential areas, and city parks. Also includes improved roads and adjoining rights-of-way, powerline clearings, and certain areas of water classified by the Bureau of Census as land. Unimproved roads, streams, canals, and nonforest strips in forest areas must be more than 120 feet wide, and clearings in forest areas must be more than 1 acre in size, to qualify as nonforest land.

Ownership Classes

National forest.--Federal lands that have been designated by executive order or statute as national forests or purchase units, and other lands under the administration of the USDA Forest Service.

Other Federal.--Federal lands other than national forest.

State, county, and municipal.--Lands owned by States, counties, or local public agencies, or lands leased by them for more than 50 years.

Forest industry.--Lands owned by companies or individuals operating primary wood-using plants.

Farmer-owned.--Lands owned by operators of farms. A farm must include 10 or more acres from which the sale of agricultural products totals \$50 or more annually, or if less than 10 acres, the yield must be at least \$250 annually.

Miscellaneous private.--Privately owned lands other than forest industry- or farmer-owned.

Tree Classes

All live trees.--Growing-stock, rough and rotten trees 1 inch d.b.h. and larger.

Growing-stock trees.--All live trees of commercial species except rough and rotten trees.

Desirable trees.--Growing-stock trees having no serious defects in quality limiting present or prospective use, and of relatively high vigor and containing no pathogens that may result in death or serious deterioration before rotation age. These are trees that would be favored by forest managers in silvicultural operations.

Acceptable trees.--Trees meeting the standards for growing stock but not qualifying as desirable trees.

Sawtimber trees.--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs, each 8 feet or longer. At least 33 percent of the gross volume of the tree must be sound wood. Softwoods must be at least 9.0 inches d.b.h. and hardwoods at least 11.0 inches.

Poletimber trees.--Growing-stock trees of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size, and of good form and vigor.

Saplings.--Live trees of commercial species 1.0 to 5.0 inches d.b.h. and of good form and vigor.

Seedlings.--Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive according to regional standards. (Examples of seedlings not expected to survive are those that are diseased or heavily damaged by logging, browsing, or fire). Only softwood seedlings over 6 inches and hardwood seedlings over 1 foot in height are counted.

Rotten trees.--Live trees (any size) of commercial species that do not contain a merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of rot (that is, when more than 50 percent of the cull volume of the tree is rotten).

Rough trees.--Live trees that do not contain at least one merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of roughness and poor form, as well as all live noncommercial species.

Short-log (rough trees).--Sawtimber-sized trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Stocking

The degree of utilization of land by trees as measured in terms of basal area and/or the number of trees in a stand compared to the basal area and/or number of trees required to utilize fully the growth potential of the land.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees do reach 5 inches d.b.h.

Stocking of all live trees, growing-stock trees, and desirable trees are recorded separately and stands are grouped into the following stocking classes.

Stocking Classes

Overstocked stands.--Stands in which stocking of trees is 133 percent or more.

Fully stocked stands.--Stands in which stocking of trees is from 100 to 133 percent.

Medium-stocked stands.--Stands in which stocking of trees is from 60 to 100 percent.

Poorly stocked stands.--Stands in which stocking of trees is from 16.7 to 60 percent.

Nonstocked areas.--Commercial forest land on which stocking of trees is less than 16.7 percent.

Area-Condition Classes

Class 10.--Areas fully stocked with desirable trees but not overstocked.

Class 20.--Areas fully stocked with desirable trees, but overstocked with all live trees.

Class 30.--Areas medium to fully stocked with desirable trees, and with less than 30 percent of the area controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Class 40.--Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees and/or conditions that ordinarily prevent occupancy by desirable trees.

Class 50.--Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.

Class 60.--Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.

Class 70.--Areas poorly stocked with desirable trees, and poorly stocked with growing-stock trees.

Stand-Size Classes

Stand.--A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Sawtimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber or poletimber trees and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, and with half or more of this stocking in sawtimber and/or poletimber trees and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands.--Stands at least 16.7 percent stocked with growing-stock trees and with saplings and/or seedlings comprising more than half of this stocking.

Nonstocked areas.--Commercial forest land on which stocking of growing-stock trees is less than 16.7 percent.

Other Classifications

Site index.--An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Site classes.--A classification of forest land in terms of inherent capacity to grow crops of industrial wood expressed in cubic-foot growth per acre per year.

Stand-age.--Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Basal area.--The area in square feet of the cross section at breast height of a single tree. When the basal area of all the trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Forest Types

A classification of forest land based upon the species forming a plurality of live-tree stocking. Major forest types in Missouri are:

Shortleaf pine.--Forests in which shortleaf pine comprises a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Eastern redcedar.--Forests in which eastern redcedar comprises a plurality of the stocking. (Common associates include oak and hickory.)

Eastern redcedar-hardwood.--Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking but in which eastern redcedar comprises 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

Shortleaf pine-oak.--Forests in which upland oaks comprise a plurality of the stocking, but in which shortleaf pine comprises 25 to 50 percent of the stocking.

Post-blackjack oak.--Forest in which post oak or blackjack oak, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Black-scarlet oak.--Forests in which upland oaks or hickory, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent, or where white oak or post and blackjack oak comprise a plurality. (Common associates include yellow-poplar, elm, maple, and black walnut.)

White oak.--Forests in which white oak and other white oak species, singly or in combination, comprise a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Oak-gum-cypress.--Bottomland forests in which bottomland oaks such as pin, swamp white, and shingle oaks, along with tupelo, blackgum, sweetgum, and cypress, singly or in combination, comprise a plurality of the stocking. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

Elm-ash-cottonwood.--Forests in which elm, ash, or cottonwood, singly or in combination, comprises a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple.)

Cottonwood.--Forests in which cottonwood comprises a plurality of the stocking.

Maple-beech.--Forests in which hard maple or beech, singly or in combination, comprises a plurality of the stocking. (Common associates include elm and basswood.)

Timber Volume

Volume of growing stock.--The volume of sound wood in the bole of growing-stock trees 5.0 inches d.b.h. and over, from a 1-foot stump to a minimum of 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs. Growing-stock volumes are shown in cubic feet and cords. Conversion from one unit of measure to another may be accomplished by a factor of 79 cubic feet per solid wood cord.

Volume of sawtimber.--Net volume of the saw log portion of live sawtimber trees in board feet, International $\frac{1}{4}$ -inch rule, from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

Upper stem portion.--That part of the bole of sawtimber trees above the merchantable sawtimber top to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Growth and Mortality

Net annual growth of growing stock.--Net annual growth of growing stock is the change in volume of sound wood that occurred during 1971 in growing-stock trees that were 5.0 inches d.b.h. or larger at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than 5.0 inches d.b.h. at the beginning of the year that grew sufficiently during the year to be reclassified into the 5.0-inch-or-larger d.b.h. classes (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year but were reclassified during the year as growing-stock trees,

plus

the annual change in volume of sound wood that occurred during the year on growing-stock trees that died during the year,

plus

the annual change in volume of sound wood that occurred in growing-stock trees included among timber removals for the year.

plus

the annual change in volume of sound wood in trees that had been classified as growing stock at the beginning of the year but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the years the trees were classified as growing stock was included,

minus

the volume of sound wood in growing-stock trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as growing stock at the beginning of the year, but were reclassified during the year as rough or rotten trees.

Net annual growth of sawtimber.--Net annual growth of sawtimber is the change in volume of sound wood that occurred during 1971 in trees that were sawtimber size at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than sawtimber size at the beginning of the year that grew sufficiently during the year to be reclassified as sawtimber trees (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year, but were reclassified during the year as sawtimber trees,

plus

the annual change in volume of sound wood that occurred during the year on sawtimber trees that died during the year,

plus

the annual change in volume of sound wood that occurred in sawtimber trees included among timber removals for the year.

plus

The annual change in volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the year the trees were classified as sawtimber was included,

minus

the volume of sound wood in sawtimber trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees.

Mortality of growing stock.--The volume of sound wood in growing-stock trees dying annually from natural causes. Natural causes include fire, insects, disease, animal damage, weather, and suppression.

Mortality of sawtimber.--The net board-foot volume of sawtimber trees dying annually from natural causes.

Timber Removals

Timber removals from growing stock.--The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals. Roundwood products are logs, bolts, or other round sections cut and used from trees. Logging residues are the unused portions of cut trees plus unused trees killed by logging. Other removals are growing-stock trees removed but not utilized for products or trees left standing but "removed" from the commercial forest land classification by land use change--examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Timber removals from sawtimber.--The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals.

Timber products output.--All timber products cut from roundwood, and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulp chips or other products.

Plant byproducts.--Wood products, such as pulpwood chips, obtained incidental to production of other manufactured products.

Plant residues.--Wood materials from manufacturing plants not utilized for some product.

Principal Tree Species in Missouri²⁶

SOFTWOOD SPECIES

Shortleaf pine *Pinus echinata*
 Baldcypress . . . *Taxodium distichum* var. *distichum*
 Eastern redcedar *Juniperus virginiana*

HARD HARDWOOD SPECIES

Ashes:

White ash *Fraxinus americana*
 Green ash *Fraxinus pennsylvanica*
 Blue ash *Fraxinus quadrangulata*

American beech *Fagus grandifolia*

Black walnut *Juglans nigra*

Hard maples:

Black maple *Acer nigrum*
 Sugar maple *Acer saccharum*

Hickory group A:

Pecan *Carya illinoensis*
 Shellbark hickory *Carya laciniosa*
 Shagbark hickory *Carya ovata*
 Mockernut hickory *Carya tomentosa*

Hickory group B:

Water hickory *Carya aquatica*
 Bitternut hickory *Carya cordiformis*
 Pignut hickory *Carya glabra* var. *glabra*
 Black hickory *Carya texana*

River birch *Betula nigra*

Select white oaks:

White oak *Quercus alba*
 Bur oak *Quercus macrocarpa*
 Swamp chestnut oak *Quercus michauxii*
 Chinkapin oak *Quercus muehlenbergii*

White oaks:

Swamp white oak *Quercus bicolor*
 Overcup oak *Quercus lyrata*

Other white oak:

Post oak *Quercus stellata* var. *stellata*

Select red oaks:

Cherrybark oak *Quercus falcata* var. *pagodaefolia*
 Northern red oak *Quercus rubra*
 Shumard oak. . . *Quercus shumardii* var. *shumardii*

Red oaks:

Scarlet oak *Quercus coccinea*
 Southern red oak . . *Quercus falcata* var. *falcata*
 Black oak *Quercus velutina*

Other red oaks:

Shingle oak *Quercus imbricaria*
 Blackjack oak *Quercus marilandica*
 Water oak *Quercus nigra*
 Pin oak *Quercus palustris*
 Willow oak *Quercus phellos*

Other hard hardwoods:

Black locust *Robinia pseudoacacia*
 Common persimmon *Diospyros virginiana*
 Flowering dogwood *Cornus florida*
 Honeylocust *Gleditsia triacanthos*
 Red mulberry *Morus rubra*
 Sugarberry *Celtis laevigata*
 Osage-orange *Maclura pomifera*

SOFT HARDWOOD SPECIES

American basswood *Tilia americana*

American sycamore *Platanus occidentalis*

Black cherry *Prunus serotina*

Butternut. *Juglans cinerea*

Cottonwoods:

Eastern cottonwood *Populus deltoides*

Elms:

Winged elm *Ulmus alata*
 American elm *Ulmus americana*
 Slippery elm *Ulmus rubra*
 Rock elm *Ulmus thomasi*

Soft maples:

Red maple *Acer rubrum* var. *rubrum*
 Silver maple *Acer saccharinum*

Sweetgum *Liquidambar styraciflua*

Tupelo and blackgum:

Blackgum *Nyssa sylvatica* var. *biflora*
 Black tupelo . . . *Nyssa sylvatica* var. *sylvatica*
 Water tupelo *Nyssa aquatica*

Yellow-poplar. *Liriodendron tulipifera*

Other soft hardwoods:

Black willow *Salix nigra*
 Boxelder *Acer negundo*
 Cucumbertree *Magnolia acuminata*
 Hackberry. *Celtis occidentalis*
 Kentucky coffeetree. *Gymnocladus dioica*
 Northern catalpa *Catalpa speciosa*
 Ohio Buckeye *Aesculus glabra*
 Sassafras *Sassafras albidum*

²⁶The 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., U.S. Dep. Agric., Agric. Handb. 41, 472 p. 1953.

Tables²⁷

Text tables:

1. Area of commercial forest land by Forest Survey Unit for 1959 and 1972, and area change since 1959 (see page 4).
2. Area of commercial forest land by stand-size class, 1959 and 1972 (see page 5).
3. Growing-stock volume in 1972 and change since 1959 (see page 10).
4. Sawtimber volume in 1972 and change since 1959 (see page 13).
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8. Underutilized or overutilized volume by species for growing stock and sawtimber (see page 18).
9. Estimation of potential managed harvest after one complete rotation by forest type and site index; and comparison with annual managed harvest (see page 19).
10. Area of commercial forest land in 1972 by forest type and type of treatment or change since 1959, all owners except National Forest (see page 28).
11. Area of nonforest land and of commercial forest land by forest type and class of treatment needed for the decade 1972 to 1981 (see page 29).
12. Sampling errors for estimates smaller than State totals of volume, net growth and removals, and of area of commercial forest land (see page 35).
13. Forest type, site index, and rotation age by management objective used in calculation of annual managed harvest (see page 36).

²⁷Tables containing growth, mortality, and removals information are dated 1971. Tables containing forest area and timber inventory information are dated 1972 and represent conditions as of January 1, 1972, following changes to the area and inventory estimated to have occurred during calendar year 1971. Forest industry information is dated 1969 and results from a separate study of industry use of timber products during calendar year 1969.

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14. Area of land by land class, 1959 and 1972.
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17. Area of commercial forest land by ownership class and ownership-size class.
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21. Area of commercial forest land by area-condition and ownership class.
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28. Area of commercial forest land by forest type and area-condition class.
29. Area of commercial forest land by forest type and site-index class.
30. Area of commercial forest land by stocking class of growing-stock trees and stand-size class.
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32. Area of commercial forest land by forest type, stand-size, and site class.
33. Area of commercial forest land by county and stand-size class.
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35. Area of noncommercial forest land by ownership class.
- 35a. Area of commercial forest land by ownership class.

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38. Number of growing-stock trees on commercial forest land by species groups and Forest Survey Unit.

39. Number of short-log trees on commercial forest land by species and diameter class.

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41. Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods.

42. Net volume of growing stock and sawtimber on commercial forest land by ownership class and species group.

43. Net volume of growing stock on commercial forest land by species and diameter class.

44. Net volume of sawtimber on commercial forest land by species and diameter class.

45. Net volume of growing stock on commercial forest land by species and Forest Survey Unit.

46. Net volume of sawtimber on commercial forest land by species and Forest Survey Unit.

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60. Timber removals from growing stock on commercial forest land by species and Forest Survey Unit.

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63. Net annual growth and removals of sawtimber on commercial forest land by species.

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65. Net annual growth and removals of sawtimber on commercial forest land by ownership class and softwoods and hardwoods.

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79. Average annual managed harvest for 1972-1981 by thinnings of growing stock

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80. Average annual managed harvest of sawtimber for 1972-1981 from harvest cuttings and thinnings on commercial forest land by species and forest type.

81. Average annual managed harvest of sawtimber for 1972-1981 from harvest cuttings and thinnings on commercial forest land by species and stand-volume class.

82. Average annual managed harvest for 1972-1981 by harvest cuttings of sawtimber on commercial forest land and by species and stand-volume class.

83. Average annual managed harvest for 1972-1981 by thinnings of sawtimber on commercial forest land and by species and stand-volume class.

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86. Output of roundwood products by source and softwoods and hardwoods.

Table 14.--Area of land by land class,
Missouri, 1959 and 1972

(In thousand acres)

Land class	: 1959 ¹	: 1972
Commercial forest land:		
Shortleaf pine type	277.89	116.00
Eastern red cedar type	103.77	88.30
Eastern red cedar hardwood type	185.28	259.40
Shortleaf pine-oak type	569.79	281.10
Post-blackjack oak type	1,775.63	2,488.20
Black scarlet oak type	5,164.02	4,409.40
White oak type	1,611.91	2,644.50
Oak-gum-cypress type	269.66	177.70
Elm-ash-cottonwood type	1,283.91	660.60
Cottonwood type	1.80	4.80
Maple-beech type	85.23	310.80
Nonstocked	2,489.37	923.90
Subtotal	13,818.26	12,364.70
Noncommercial forest land:		
Unproductive	357.76	298.30
Productive-reserved	90.30	256.10
Subtotal	448.06	554.40
Nonforest land	30,047.98	31,270.20
Total	44,314.30	44,189.30

¹Figures have been adjusted from those published previously for 1959 to conform to 1972 land classes because of changes in survey definitions and procedures.

Table 15.--Area by land class and Forest Survey Unit, Missouri, 1972

(In thousand acres)

Land class	: All	: Eastern	: Southwestern	: Northwestern	: Prairie	: Riverborder
	: units	: Ozarks	: Ozarks	: Ozarks		
Forest land:						
Commercial	12,364.7	4,084.0	2,311.4	1,920.0	1,940.4	2,108.9
Productive reserved	256.1	97.3	22.6	73.6	46.5	16.1
Unproductive	298.3	63.3	109.3	77.4	15.9	32.4
Total	12,919.1	4,244.6	2,443.3	2,071.0	2,002.8	2,157.4
Nonforest land:						
Cropland ¹	20,954.6	1,074.6	1,551.8	1,513.3	12,640.8	4,174.1
Pasture and range ¹	3,278.6	157.2	422.7	384.2	1,970.9	343.6
Wooded pasture	2,803.1	182.6	629.6	657.7	988.4	344.8
Other ²	4,233.9	504.0	392.9	403.3	1,945.3	988.4
Total	31,270.2	1,918.4	2,997.0	2,958.5	17,545.4	5,850.9
Total area ³	44,189.3	6,163.0	5,440.3	5,029.5	19,548.2	8,008.3

¹Source: 1969 Census of Agriculture.

²Includes marshland, industrial and urban areas, other nonforest land, and 77,700 acres classed as water by forest survey standards but defined by the Bureau of Census as land.

³Source: United States Bureau of the Census, Land and water areas of the United States, 1970.

Table 16.--Area of commercial forest land by ownership class and Forest Survey Unit, Missouri, 1972

(In thousand acres)

Ownership class	: All	: Eastern	: Southwestern	: Northwestern	: Prairie	: Riverborder
	: units	: Ozarks	: Ozarks	: Ozarks		
National Forest	1,321.8	870.0	328.5	114.1	--	9.2
Other Federal	67.2	5.8	3.0	42.0	3.3	13.1
State, county, and municipal	219.0	162.8	10.5	8.5	14.6	22.6
Forest industry	362.3	307.3	39.5	0.7	0.4	14.4
Farmer-owned	6,136.8	1,264.7	1,151.6	1,054.1	1,314.9	1,351.5
Miscellaneous private	4,257.6	1,473.4	778.3	700.6	607.2	698.1
All ownerships	12,364.7	4,084.0	2,311.4	1,920.0	1,940.4	2,108.9

Table 17.--Area of commercial forest land
by ownership class and ownership-size
class, Missouri, 1972

(In thousand acres)

Ownership class	: All size : : of owner : : classes :	1 to 500 : acres :	500 to : 5,000 acres :	: 5,000 acres : or more
National Forest	1,321.8	--	--	1,321.8
Other Federal	67.2	--	--	67.2
State, county, and municipal	219.0	--	--	219.0
Forest industry	362.3	29.8	13.0	319.5
Farmer and miscellaneous private	10,394.4	8,814.1	1,107.4	472.9
All ownerships	12,364.7	8,843.9	1,120.4	2,400.4

Table 18.--Area of commercial forest land by stand-size and ownership
class, and Forest Survey Unit, Missouri, 1972

(In thousand acres)

Stand-size class	: All : : ownerships :	: National : : Forest :	: Other : : Federal :	: State, : : county, and : : municipal :	: Forest : : industry :	: Farmer and : : miscellaneous : : private
All units						
Sawtimber	4,002.1	320.7	21.0	63.8	115.6	3,481.0
Poletimber	4,967.0	683.2	4.6	100.0	132.8	4,046.4
Sapling and seedling	2,471.7	307.9	28.9	47.0	110.4	1,977.5
Nonstocked areas	923.9	10.0	12.7	8.2	3.5	889.5
All classes	12,364.7	1,321.8	67.2	219.0	362.3	10,394.4
Eastern Ozarks						
Sawtimber	1,145.7	219.7	2.3	42.8	97.6	783.3
Poletimber	1,971.3	515.5	3.0	81.8	110.9	1,260.1
Sapling and seedling	827.5	130.2	0.5	35.2	98.8	562.8
Nonstocked areas	139.5	4.6	--	3.0	--	131.9
All classes	4,084.0	870.0	5.8	162.8	307.3	2,738.1
Southwestern Ozarks						
Sawtimber	705.3	68.3	--	7.0	11.4	618.6
Poletimber	741.2	97.9	1.6	--	13.0	628.7
Sapling and seedling	698.9	158.7	1.4	1.7	11.6	525.5
Nonstocked areas	166.0	3.6	--	1.8	3.5	157.1
All classes	2,311.4	328.5	3.0	10.5	39.5	1,929.9
Northwestern Ozarks						
Sawtimber	572.6	29.8	12.4	--	--	530.4
Poletimber	751.8	64.0	--	6.4	0.7	680.7
Sapling and seedling	398.7	18.5	18.0	2.1	--	360.1
Nonstocked areas	196.9	1.8	11.6	--	--	183.5
All classes	1,920.0	114.1	42.0	8.5	0.7	1,754.7
Prairie						
Sawtimber	735.8	--	2.2	2.4	0.4	730.8
Poletimber	744.4	--	--	8.6	--	735.8
Sapling and seedling	111.2	--	--	2.5	--	108.7
Nonstocked areas	349.0	--	1.1	1.1	--	346.8
All classes	1,940.4	--	3.3	14.6	0.4	1,922.1
Riverborder						
Sawtimber	842.7	2.9	4.1	11.6	6.2	817.9
Poletimber	758.3	5.8	--	3.2	8.2	741.1
Sapling and seedling	435.4	0.5	9.0	5.5	--	420.4
Nonstocked areas	72.5	--	--	2.3	--	70.2
All classes	2,108.9	9.2	13.1	22.6	14.4	2,049.6

Table 19.--Area of commercial forest land by stand-volume and ownership class, Missouri, 1972

(In thousand acres)

Stand volume per acre (board feet) ^{1/}	All ownerships	National Forest	Other Federal	State, county, and municipal	Forest industry	Farmer and miscellaneous private
Less than 1,500	8,159.0	570.2	50.8	128.2	235.3	7,174.5
1,500 to 5,000	3,739.3	613.8	16.0	79.2	126.7	2,903.6
More than 5,000	466.4	137.8	.4	11.6	.3	316.3
All classes	12,364.7	1,321.8	67.2	219.0	362.3	10,394.4

^{1/} International 1/4-inch rule.

Table 20.--Area of commercial forest land by stocking class based on selected stand components, Missouri, 1972

(In thousand acres)

Stocking percentage	Stocking classified in terms of					
	All trees	Growing-stock trees			Rough and rotten trees	Inhibiting vegetation
		Total	Desirable	Acceptable		
150-159	4.3	--	--	--	--	--
140-149	45.1	--	--	--	--	--
130-139	235.7	3.5	--	--	9.5	--
120-129	879.0	19.0	--	6.1	5.4	--
110-119	1,701.6	64.9	--	30.8	9.5	--
100-109	2,565.0	188.7	--	102.0	59.3	--
90-99	2,778.8	379.5	--	241.2	178.3	--
80-89	2,159.5	734.3	--	614.3	467.5	--
70-79	1,113.7	1,072.3	--	1,018.3	885.1	--
60-69	577.1	1,462.9	4.8	1,450.3	1,550.6	--
50-59	213.2	1,870.9	--	1,923.0	2,057.0	--
40-49	58.7	1,970.1	23.5	2,099.6	2,432.1	1.6
30-39	14.9	1,867.5	50.7	2,034.3	2,065.9	.9
20-29	18.1	1,455.3	156.3	1,500.0	1,560.5	6.2
10-19	--	820.3	386.3	877.9	857.3	19.2
Less than 10	--	455.5	11,743.1	466.9	226.7	12,336.8
Total	12,364.7	12,364.7	12,364.7	12,364.7	12,364.7	12,364.7

Table 21.--Area of commercial forest land by area-condition and ownership class, Missouri, 1972

(In thousand acres)

Area-condition class	All ownerships	National Forest	Other Federal	State, county, and municipal	Forest industry	Farmer and miscellaneous private
40	4.8	--	--	--	--	4.8
50	303.6	173.7	9.1	6.0	3.0	111.8
60	3,764.7	822.6	23.4	93.7	178.1	2,646.9
70	8,291.6	325.5	34.7	119.3	181.2	7,630.9
All classes	12,364.7	1,321.8	67.2	219.0	362.3	10,394.4

Table 22.--Area of commercial forest land by site and ownership class,
Missouri, 1972

(In thousand acres)

Site class (cubic feet of growth per acre per year)	All ownerships	National Forest	Other Federal ^{1/}	State, county, and municipal	Forest industry	Farmer and miscellaneous private
165 or more	3.1	--	--	--	--	3.1
120 to 164	29.2	--	--	--	2.6	26.6
85 to 119	528.2	46.6	9.2	11.3	9.4	451.7
50 to 84	2,886.8	355.5	19.9	79.3	104.6	2,327.5
Less than 50	8,917.4	919.7	38.1	128.4	245.7	7,585.5
All classes	12,364.7	1,321.8	67.2	219.0	362.3	10,394.4

^{1/} Bureau of Sport Fisheries and Wildlife, U.S.D.I.

Table 23.--Area of commercial forest land by forest type and ownership class, Missouri, 1972

(In thousand acres)

Forest type	All ownerships	National Forest ^{1/}	Other Federal	State, county, and municipal	Forest industry	Farmer and miscellaneous private
Shortleaf pine	116.0	107.6	0.5	--	--	7.9
Eastern redcedar	88.3	9.2	--	1.4	--	77.7
Eastern redcedar-hardwood	259.4	59.1	--	2.2	--	198.1
Shortleaf pine-oak	281.1	166.8	--	11.0	54.0	49.3
Post-blackjack oak	2,488.2	43.6	15.5	23.8	84.7	2,320.6
Black-scarlet oak	4,409.4	701.0	9.1	106.5	173.5	3,419.3
White oak	2,644.5	215.2	1.2	48.8	20.9	2,358.4
Oak-gum-cypress	177.7	--	8.0	6.5	--	163.2
Elm-ash-cottonwood	660.6	9.3	20.2	6.5	23.9	600.7
Cottonwood	4.8	--	--	--	1.8	3.0
Maple-beech	310.8	--	--	4.1	--	306.7
Nonstocked ^{2/}	923.9	10.0	12.7	8.2	3.5	889.5
All forest types	12,364.7	1,321.8	67.2	219.0	362.3	10,394.4

^{1/} Estimates of area of some forest types for National Forest owner differ from those shown in current timber management plans for the National Forests in Missouri.

^{2/} See glossary for stand-size classes.

Table 24.--Area of noncommercial forest land by forest type,
Missouri, 1972

(In thousand acres)

Forest type	All areas	Productive reserved areas	Unproductive areas
Shortleaf pine	1.0	1.0	--
Eastern redcedar	43.7	1.7	42.0
Eastern redcedar-hardwood	63.1	.3	62.8
Shortleaf pine-oak	1.3	1.3	--
Post-blackjack oak	183.1	63.4	119.7
Black-scarlet oak	147.2	93.9	53.3
White oak	91.1	70.6	20.5
Oak-gum-cypress	.1	.1	--
Elm-ash-cottonwood	23.7	23.7	--
Maple-beech	.1	.1	--
All forest types	554.4	256.1	298.3

Table 25.--Area of land and forest land by county, Missouri, 1972

COUNTY	LAND AREA	FOREST LAND		COMMERCIAL FOREST AS A PERCENT OF LAND AREA
		ALL FOREST	NON- COMMERCIAL	
		THOUSAND ACRES		PERCENT
ADAIR	365.8	52.6	3.3	13
ANDREW	278.9	16.2	.1	6
ATCHISON	351.5	14.0	.1	4
AUDRAIN	442.9	29.3	.2	7
BARRY	501.0	197.1	14.5	36
BARTON	380.2	25.7	.1	7
BATES	538.4	49.5	.2	9
BENTON	470.5	200.2	33.6	35
BOLLINGER	397.5	203.5	1.8	51
BOONE	438.3	112.6	3.0	25
BUCHANAN	258.4	19.8	.1	8
BUTLER	457.8	173.9	5.8	37
CALDWELL	275.2	17.8	.1	6
CALLAWAY	534.4	179.0	3.5	33
CAMDEN	409.6	230.9	17.6	52
CAPE GIRARDEAU	367.3	91.1	3.7	24
CARROLL	446.0	27.1	.2	6
CARTER	323.9	270.6	18.8	78
CASS	446.5	34.9	.4	8
CEDAR	317.4	81.1	8.9	23
CHARITON	482.4	42.1	.2	9
CHRISTIAN	362.9	136.7	8.3	35
CLARK	323.6	53.6	.4	16
CLAY	263.6	22.5	.5	8
CLINTON	268.7	18.9	.4	7
COLE	245.7	79.8	1.9	32
COOPER	361.9	49.0	.4	13
CRAWFORD	486.4	324.5	3.6	66
DADE	322.6	49.1	10.0	12
DALLAS	343.7	131.2	5.0	37
DAVIESS	360.3	32.6	.3	9
DEKALB	270.7	13.9	.1	5
DENT	483.5	316.4	8.2	64
DOUGLAS	517.6	254.4	8.3	48
DUNKLIN	347.5	20.1	--	6
FRANKLIN	597.6	243.7	9.2	39
GASCONADE	332.4	157.4	3.1	46
GENTRY	312.3	25.9	.2	8
GREENE	433.0	58.9	.4	14
GRUNDY	278.4	27.1	.7	9
HARRISON	460.8	45.1	.4	10
HENRY	469.6	60.4	21.6	8
HICKORY	254.0	108.0	8.0	39
HOLT	292.9	18.9	.1	6
HOWARD	301.7	63.6	1.1	21
HOWELL	588.8	277.3	6.7	46
IRON	354.5	289.2	4.1	80
JACKSON	385.6	22.6	.1	6
JASPER	410.9	46.8	.4	11
JEFFERSON	427.3	219.8	3.3	51
JOHNSON	528.6	54.1	3.5	10
KNOX	327.7	33.0	.3	10
LACLEDE	492.8	204.2	9.0	40
LAFAYETTE	404.2	22.0	.1	5
LAWRENCE	396.2	50.2	.7	12
LEWIS	324.9	48.0	.5	15
LINCOLN	400.1	86.0	6.6	20

(TABLE 25 CONTINUED ON NEXT PAGE)

(TABLE 25 CONTINUED)

COUNTY	LAND AREA	FOREST LAND			COMMERCIAL FOREST AS A PERCENT OF LAND AREA
		ALL	NON-		
		FOREST	COMMERCIAL	COMMERCIAL	
- - - - - THOUSAND ACRES - - - - -					PERCENT
LINN	398.4	30.5	1.2	29.3	7
LIVINGSTON	339.4	30.4	.1	30.3	9
MCDONALD	345.6	170.6	3.7	166.9	48
MACON	520.7	63.9	.7	63.2	12
MADISON	317.4	230.5	2.8	227.7	72
MARIES	335.8	143.6	6.5	137.1	41
MARION	280.3	42.7	.6	42.1	15
MERCER	291.0	29.0	.3	28.7	10
MILLER	384.0	165.4	13.0	152.4	40
MISSISSIPPI	265.7	13.8	.9	12.9	5
MONITEAU	268.0	61.1	1.5	59.6	22
MONROE	428.2	51.9	1.4	50.5	12
MONTGOMERY	341.7	104.4	2.3	102.1	30
MORGAN	379.0	166.7	4.5	162.2	43
NEW MADRID	434.8	15.5	--	15.5	4
NEWTON	402.5	105.9	2.3	103.6	26
NODAWAY	561.3	25.4	.1	25.3	5
OREGON	501.8	323.0	6.6	316.4	63
OSAGE	388.9	174.3	4.1	170.2	44
OZARK	468.1	259.1	22.8	236.3	50
PEMISCOT	315.4	11.8	--	11.8	4
PERRY	301.4	104.6	1.2	103.4	34
PETTIS	434.4	40.9	.3	40.6	9
PHELPS	433.3	221.1	8.4	212.7	49
PIKE	435.9	93.0	.9	92.1	21
PLATTE	273.1	32.6	.3	32.3	12
POLK	410.9	87.1	3.7	83.4	20
PULASKI	352.3	183.5	7.9	175.6	50
PUTNAM	331.5	40.9	.4	40.5	12
RALLS	306.0	47.7	.4	47.3	15
RANDOLPH	309.5	49.8	.6	49.2	16
RAY	366.8	38.8	.4	38.4	10
REYNOLDS	523.1	436.5	13.5	423.0	81
RIPLEY	409.0	274.2	4.5	269.7	66
ST. CHARLES	352.6	90.1	.5	89.6	25
ST. CLAIR	446.2	148.0	24.9	123.1	28
ST. FRANCOIS	292.3	148.4	7.3	141.1	48
STE. GENEVIEVE	319.6	156.6	4.8	151.8	47
ST. LOUIS	358.8	68.9	2.8	66.1	18
SALINE	484.6	32.2	.7	31.5	7
SCHUYLER	195.8	13.5	.1	13.4	7
SCOTLAND	282.2	21.4	.1	21.3	8
SCOTT	269.5	18.0	--	18.0	7
SHANNON	639.4	518.4	41.4	477.0	75
SHELBY	320.8	35.2	.3	34.9	11
STODDARD	526.8	46.1	--	46.1	9
STONE	287.5	131.9	7.8	124.1	43
SULLIVAN	418.5	38.8	.3	38.5	9
TANEY	393.9	235.7	38.2	197.5	50
TEXAS	757.1	384.3	10.7	373.6	49
VERNON	536.1	64.1	.4	63.7	12
WARREN	272.9	125.1	1.6	123.5	45
WASHINGTON	486.4	359.0	4.0	355.0	73
WAYNE	490.0	376.5	38.2	338.3	69
WEBSTER	377.6	123.4	3.2	120.2	32
WORTH	170.9	12.5	.1	12.4	7
WRIGHT	437.7	166.9	5.4	161.5	37
TOTAL	44,189.3	12,919.1	554.4	12,364.7	28

Table 26.--Area of commercial forest land by forest type, stand-size class, and Forest Survey Unit, Missouri, 1972

(In thousand acres)

STATE TOTAL					
Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling stands	: Nonstocked : areas
Shortleaf pine	116.0	47.7	48.8	19.5	--
Eastern redcedar	88.3	7.5	28.2	52.6	--
Eastern redcedar-hardwood	259.4	25.8	28.5	205.1	--
Shortleaf pine-oak	281.1	87.9	147.9	45.3	--
Post-blackjack oak	2,488.2	528.9	1,174.3	785.0	--
Black-scarlet oak	4,409.4	1,553.7	1,927.1	928.6	--
White oak	2,644.5	1,160.7	1,219.0	264.8	--
Oak-gum-cypress	177.7	81.2	78.4	18.1	--
Elm-ash-cottonwood	660.6	390.8	192.3	77.5	--
Cottonwood	4.8	4.8	--	--	--
Maple-beech	310.8	113.1	122.5	75.2	--
Nonstocked ¹	923.9	--	--	--	923.9
All forest types	12,364.7	4,002.1	4,967.0	2,471.7	923.9
EASTERN OZARKS SURVEY UNIT					
Shortleaf pine	98.2	39.5	39.2	19.5	--
Eastern redcedar	12.4	3.0	1.7	7.7	--
Eastern redcedar-hardwood	20.4	--	1.7	18.7	--
Shortleaf pine-oak	211.7	56.7	122.6	32.4	--
Post-blackjack oak	709.4	142.2	294.4	272.8	--
Black-scarlet oak	1,896.0	603.7	962.8	329.5	--
White oak	836.6	242.7	484.7	109.2	--
Oak-gum-cypress	13.7	7.1	3.6	3.0	--
Elm-ash-cottonwood	78.5	37.1	30.5	10.9	--
Maple-beech	67.6	13.7	30.1	23.8	--
Nonstocked ¹	139.5	--	--	--	139.5
All forest types	4,084.0	1,145.7	1,971.3	827.5	139.5
SOUTHWESTERN OZARKS SURVEY UNIT					
Shortleaf pine	17.8	8.2	9.6	--	--
Eastern redcedar	12.6	--	--	12.6	--
Eastern redcedar-hardwood	85.1	9.0	14.1	62.0	--
Shortleaf pine-oak	65.1	30.1	22.1	12.9	--
Post-blackjack oak	723.8	177.1	258.9	287.8	--
Black-scarlet oak	910.3	331.6	306.1	272.6	--
White oak	287.5	128.9	116.4	42.2	--
Elm-ash-cottonwood	29.5	13.7	7.0	8.8	--
Maple-beech	13.7	6.7	7.0	--	--
Nonstocked ¹	166.0	--	--	--	166.0
All forest types	2,311.4	705.3	741.2	698.9	166.0

(Table 26 continued on next page)

(Table 26 continued)

NORTHWESTERN OZARKS SURVEY UNIT

Forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling stands	: Nonstocked : areas
Eastern redcedar	4.0	--	4.0	--	--
Eastern redcedar-hardwood	38.5	0.8	--	37.7	--
Post-blackjack oak	636.0	134.9	344.6	156.5	--
Black-scarlet oak	630.5	249.4	239.6	141.5	--
White oak	338.9	134.8	163.6	40.5	--
Elm-ash-cottonwood	64.1	52.7	--	11.4	--
Maple-beech	11.1	--	--	11.1	--
Nonstocked ¹	196.9	--	--	--	196.9
All forest types	1,920.0	572.6	751.8	398.7	196.9
PRAIRIE SURVEY UNIT					
Post-blackjack oak	137.5	26.5	101.4	9.6	--
Black-scarlet oak	486.7	187.4	259.0	40.3	--
White oak	480.3	246.5	203.5	30.3	--
Oak-gum-cypress	107.4	47.0	49.2	11.2	--
Elm-ash-cottonwood	294.5	181.4	93.3	19.8	--
Maple-beech	85.0	47.0	38.0	--	--
Nonstocked ¹	349.0	--	--	--	349.0
All forest types	1,940.4	735.8	744.4	111.2	349.0
RIVERBORDER SURVEY UNIT					
Eastern redcedar	59.3	4.5	22.5	32.3	--
Eastern redcedar-hardwood	115.4	16.0	12.7	86.7	--
Shortleaf pine-oak	4.3	1.1	3.2	--	--
Post-blackjack oak	281.5	48.2	175.0	58.3	--
Black-scarlet oak	485.9	181.6	159.6	144.7	--
White oak	701.2	407.8	250.8	42.6	--
Oak-gum-cypress	56.6	27.1	25.6	3.9	--
Elm-ash-cottonwood	194.0	105.9	61.5	26.6	--
Cottonwood	4.8	4.8	--	--	--
Maple-beech	133.4	45.7	47.4	40.3	--
Nonstocked ¹	72.5	--	--	--	72.5
All forest types	2,108.9	842.7	758.3	435.4	72.5

¹See glossary for stand-size classes.

Table 27.---Area of commercial forest land by forest type and stand-age class, Missouri, 1972

(In thousand acres)

Forest type	All ages	Stand-age class (years)										
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-119 : 120+
Shortleaf pine	116.0	11.3	9.8	6.1	27.5	19.7	30.8	10.8	--	--	--	--
Eastern redcedar	88.3	15.4	27.8	3.1	6.3	--	5.4	16.0	8.1	6.2	--	--
Eastern redcedar-hardwood	259.4	57.7	98.1	33.1	14.3	17.1	7.5	16.7	--	2.2	2.6	--
Shortleaf pine-oak	281.1	13.7	28.3	14.0	42.1	77.6	62.9	23.6	14.4	--	4.5	--
Post-blackjack oak	2,488.2	259.6	447.5	191.9	290.5	317.8	299.0	207.2	160.2	106.6	72.2	85.5
Black-scarlet oak	4,409.4	378.9	458.1	282.0	632.9	803.2	775.2	412.7	277.8	125.8	133.7	100.2
White oak	2,644.5	103.6	137.5	112.6	218.6	436.1	382.3	359.8	272.2	151.2	189.5	213.8
Oak-gum-cypress	177.7	11.6	.9	46.8	38.5	24.0	19.4	6.7	4.0	4.8	8.5	7.0
Elm-ash-cottonwood	660.6	48.0	25.9	106.9	129.1	138.7	82.6	52.3	26.9	24.6	15.5	8.0
Cottonwood	4.8	--	--	3.0	--	1.8	--	--	--	--	--	--
Maple-beech	310.8	60.9	11.4	31.3	53.6	40.3	25.7	17.2	21.9	13.0	15.7	10.6
Nonstocked ^{1/}	923.9	335.5	221.7	86.1	69.5	34.9	48.3	37.7	30.3	21.6	31.1	--
All forest types	12,364.7	1,296.2	1,467.0	916.9	1,522.9	1,911.2	1,739.1	1,160.7	815.8	456.0	473.3	435.2
												170.4

^{1/} See glossary for stand-size classes.

Table 28.--Area of commercial forest land by forest type and area-condition class, Missouri, 1972

(In thousand acres)

Forest type	All area : conditions	Class : 40	Class : 50	Class : 60	Class : 70
Shortleaf pine	116.0	--	51.4	48.6	16.0
Eastern redcedar	88.3	--	--	15.1	73.2
Eastern redcedar-hardwood	259.4	--	--	66.0	193.4
Shortleaf pine-oak	281.1	--	20.1	177.3	83.7
Post-blackjack oak	2,488.2	--	28.2	516.6	1,943.4
Black-scarlet oak	4,409.4	--	107.1	1,605.6	2,696.7
White oak	2,644.5	4.8	67.4	1,027.8	1,544.5
Oak-gum-cypress	177.7	--	8.0	52.1	117.6
Elm-ash-cottonwood	660.6	--	21.4	183.7	455.5
Cottonwood	4.8	--	--	4.8	--
Maple-beech	310.8	--	--	67.1	243.7
Nonstocked	923.9	--	--	--	923.9
All forest types	12,364.7	4.8	303.6	3,764.7	8,291.6

Table 29.--Area of commercial forest land by forest type and site-index class, Missouri, 1972

(In thousand acres)

Forest type	All : classes	Site-index class (height in feet at 50 years)							
		20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+
Shortleaf pine	116.0	--	3.1	12.9	66.0	25.8	8.2	--	--
Eastern redcedar	88.3	15.3	50.4	22.6	--	--	--	--	--
Eastern redcedar-hardwood	259.4	13.7	115.9	67.0	30.5	23.4	6.2	2.7	--
Shortleaf pine-oak	281.1	--	7.2	53.7	97.1	86.3	36.8	--	--
Post-blackjack oak	2,488.2	79.2	474.8	761.1	720.7	272.0	149.6	30.8	--
Black-scarlet oak	4,409.4	8.2	95.8	616.1	1,564.6	1,242.2	624.6	234.1	23.8
White oak	2,644.5	4.1	345.3	638.1	1,024.3	361.1	199.5	66.7	5.4
Oak-gum-cypress	177.7	--	--	29.7	25.6	19.2	26.2	47.9	29.1
Elm-ash-cottonwood	660.6	--	8.6	29.9	94.9	159.2	133.8	130.3	103.9
Cottonwood	4.8	--	--	--	--	--	--	--	4.8
Maple-beech	310.8	--	13.5	74.0	100.8	48.7	50.3	13.1	10.4
Nonstocked ^{1/}	923.9	44.6	92.8	255.0	318.8	101.3	66.9	35.3	9.2
All forest types	12,364.7	165.1	1,207.4	2,560.1	4,043.3	2,339.2	1,302.1	560.9	186.6

^{1/} See glossary for stand-size classes.

Table 30.--Area of commercial forest land by stocking class of growing-stock trees and stand-size class, Missouri, 1972

(In thousand acres)

Stocking : percentage :	All : stands :	Sawtimber : stands :	Poletimber : stands :	Sapling and : seedling : stands :	Nonstocked : areas :
134 or more	3.5	--	3.5	--	--
100 to 133	272.7	128.5	121.4	22.8	--
60 to 100	3,648.9	1,341.8	1,726.5	580.6	--
17 to 60	7,502.4	2,531.8	3,104.4	1,856.9	9.3
Less than 17	937.2	--	11.2	11.4	914.6
All classes	12,364.7	4,002.1	4,967.0	2,471.7	923.9

Table 31.--Area of commercial forest land by forest type and basal-area class, Missouri, 1972

(In thousand acres)

Forest type	: All : : classes :	Basal-area class (square feet per acre)							
		0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159
Shortleaf pine	116.0	3.1	6.3	15.6	18.8	22.2	42.6	7.4	--
Eastern redcedar	88.3	13.7	14.0	31.2	24.3	5.1	--	--	--
Eastern redcedar-hardwood	259.4	49.7	38.5	79.6	57.7	28.1	5.8	--	--
Shortleaf pine-oak	281.1	--	7.6	97.2	79.4	65.0	22.0	9.9	--
Post-blackjack oak	2,488.2	69.4	230.2	765.1	831.1	399.4	183.3	9.7	--
Black-scarlet oak	4,409.4	101.2	306.0	1,282.5	1,459.3	953.8	287.2	19.4	--
White oak	2,644.5	23.9	120.6	582.9	999.7	642.8	249.8	24.8	--
Oak-gum-cypress	177.7	3.6	11.5	29.5	50.9	25.2	31.0	18.5	7.5
Elm-ash-cottonwood	660.6	21.0	45.4	153.0	142.6	173.0	83.4	27.5	14.7
Cottonwood	4.8	--	--	--	--	1.8	3.0	--	--
Maple-beech	310.8	41.7	28.9	89.2	90.7	36.9	19.6	3.8	--
Nonstocked ^{1/}	923.9	151.5	285.9	341.8	112.0	32.7	--	--	--
All forest types	12,364.7	478.8	1,094.9	3,467.6	3,866.5	2,386.0	927.7	121.0	22.2

^{1/} See Definitions of Terms in Appendix.

Table 32.--Area of commercial forest land by forest type, stand-size class, and site class, Missouri, 1972

(In thousand acres)

Forest type and stand-size class	All site : 165 cu. ft. : 120 to 165 : 85 to 120 : 50 to 85 : Less than					
	classes :	or more :	cu. ft. :	cu. ft. :	cu. ft. :	50 cu. ft.
Shortleaf pine						
Sawtimber	47.7	--	--	9.4	28.3	10.0
Poletimber	48.8	--	--	3.7	27.2	17.9
Sapling and seedling	19.5	--	--	--	5.0	14.5
All stands	116.0	--	--	13.1	60.5	42.4
Eastern redcedar						
Sawtimber	7.5	--	--	--	--	7.5
Poletimber	28.2	--	--	--	--	28.2
Sapling and seedling	52.6	--	--	--	--	52.6
All stands	88.3	--	--	--	--	88.3
Eastern redcedar-hardwood						
Sawtimber	25.8	--	--	--	.4	25.4
Poletimber	28.5	--	--	--	3.5	25.0
Sapling and seedling	205.1	--	--	--	13.8	191.3
All stands	259.4	--	--	--	17.7	241.7
Shortleaf pine-oak						
Sawtimber	87.9	--	--	--	30.0	57.9
Poletimber	147.9	--	--	--	47.7	100.2
Sapling and seedling	45.3	--	--	--	18.6	26.7
All stands	281.1	--	--	--	96.3	184.8
Post-blackjack oak						
Sawtimber	528.9	--	--	--	60.2	468.7
Poletimber	1,174.3	--	--	26.8	156.5	991.0
Sapling and seedling	785.0	--	--	12.0	112.1	660.9
All stands	2,488.2	--	--	38.8	328.8	2,120.6
Black-scarlet oak						
Sawtimber	1,553.8	--	--	86.7	539.3	927.8
Poletimber	1,927.0	--	--	86.1	684.2	1,156.7
Sapling and seedling	928.6	--	--	39.8	219.5	669.3
All stands	4,409.4	--	--	212.6	1,443.0	2,753.8
White oak						
Sawtimber	1,163.3	--	--	18.9	185.4	959.0
Poletimber	1,216.4	--	--	25.1	161.5	1,029.8
Sapling and seedling	264.8	--	--	7.3	55.6	202.5
All stands	2,644.5	--	--	51.3	401.9	2,191.3
Oak-gum-cypress						
Sawtimber	81.3	--	--	31.5	23.9	25.9
Poletimber	78.4	--	--	13.2	41.1	24.1
Sapling and seedling	18.0	--	--	1.1	5.8	11.1
All stands	177.7	--	--	45.8	70.8	61.1
Elm-ash-cottonwood						
Sawtimber	390.9	7.0	27.4	89.7	165.5	101.3
Poletimber	192.2	--	--	28.0	70.9	93.3
Sapling and seedling	77.5	--	3.9	16.1	19.0	38.5
All stands	660.6	7.0	31.3	133.8	255.4	233.1
Cottonwood						
Sawtimber	4.8	--	1.8	3.0	--	--
Poletimber	--	--	--	--	--	--
Sapling and seedling	--	--	--	--	--	--
All stands	4.8	--	1.8	3.0	--	--
Maple-beech						
Sawtimber	109.1	--	--	6.6	45.6	56.9
Poletimber	123.2	--	--	3.1	37.8	82.3
Sapling and seedling	78.5	--	--	3.9	9.8	64.8
All stands	310.8	--	--	13.6	93.2	204.0
Nonstocked ^{1/}	923.9	--	--	37.3	126.3	760.3
All types	12,364.7	7.0	33.1	549.3	2,893.9	8,881.4

^{1/} See glossary for stand-size classes.

Table 33.--Area of commercial forest land by county and stand-size class, Missouri, 1972

(In thousand acres)

County	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Adair	49.3	13.8	25.8	2.5	7.2
Andrew	16.1	5.0	6.3	0.7	4.1
Atchison	13.9	5.7	5.7	0.7	1.8
Audrain	29.1	11.6	11.5	1.4	4.6
Barry	182.6	56.5	57.0	57.2	11.9
Barton	25.6	11.2	5.4	1.5	7.5
Bates	49.3	22.4	11.9	3.0	12.0
Benton	166.6	54.2	61.3	32.8	18.3
Bollinger	201.7	67.7	90.0	35.1	8.9
Boone	109.6	39.0	39.5	27.2	3.9
Buchanan	19.7	6.5	7.6	1.1	4.5
Butler	168.1	51.9	75.3	30.9	10.0
Caldwell	17.7	7.4	6.1	0.7	3.5
Callaway	175.5	63.0	68.5	38.5	5.5
Camden	213.3	64.2	82.3	44.3	22.5
Cape Girardeau	87.4	38.1	28.9	17.6	2.8
Carroll	26.9	11.7	10.5	1.4	3.3
Carter	251.8	67.8	120.4	56.3	7.3
Cass	34.5	14.2	9.6	2.9	7.8
Cedar	72.2	24.1	25.2	14.2	8.7
Chariton	41.9	18.5	14.7	2.4	6.3
Christian	128.4	37.7	41.2	39.8	9.7
Clark	53.2	21.1	21.2	2.7	8.2
Clay	22.0	7.5	9.3	1.1	4.1
Clinton	18.5	7.6	7.1	1.1	2.7
Cole	77.9	25.2	28.2	20.9	3.6
Cooper	48.6	17.9	17.5	4.4	8.8
Crawford	320.9	93.6	155.3	60.8	11.2
Dade	39.1	12.2	14.3	3.4	9.2
Dallas	126.2	40.7	47.1	25.0	13.4
Daviess	32.3	11.4	15.3	1.5	4.1
DeKalb	13.8	5.9	4.6	0.6	2.7
Dent	308.2	77.0	152.8	67.6	10.8
Douglas	246.1	74.1	79.4	73.7	18.9
Dunklin	20.1	12.6	4.2	2.5	0.8
Franklin	234.5	102.3	82.4	43.3	6.5
Gasconade	154.3	60.5	63.0	27.1	3.7
Gentry	25.7	7.8	11.0	1.1	5.8
Greene	58.5	18.3	21.9	5.4	12.9
Grundy	26.4	10.5	8.7	1.0	6.2
Harrison	44.7	17.2	19.5	2.2	5.8
Henry	38.8	16.2	10.6	2.8	9.2
Hickory	100.0	32.9	37.1	19.4	10.6
Holt	18.8	5.5	8.2	1.1	4.0
Howard	62.5	21.7	20.3	17.9	2.6
Howell	270.6	91.0	84.6	75.9	19.1
Iron	285.1	75.6	149.1	53.2	7.2
Jackson	22.5	6.2	6.9	2.0	7.4
Jasper	46.4	20.3	11.4	2.7	12.0
Jefferson	216.5	87.6	78.6	42.3	8.0
Johnson	50.6	17.9	15.3	3.8	13.6
Knox	32.7	12.4	14.3	1.6	4.4
Laclede	195.2	54.5	75.9	44.7	20.1
Lafayette	21.9	9.9	5.1	1.7	5.2
Lawrence	49.5	19.8	16.7	4.4	8.6
Lewis	47.5	18.1	20.8	2.0	6.6
Lincoln	79.4	30.5	35.8	3.8	9.3

(Table 33 continued on next page)

(Table 33 continued)

County	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Linn	29.3	11.1	10.5	1.5	6.2
Livingston	30.3	10.9	11.4	1.6	6.4
McDonald	166.9	54.7	58.8	42.5	10.9
Macon	63.2	20.6	31.0	3.0	8.6
Madison	227.7	64.5	114.9	41.8	6.5
Maries	137.1	34.3	58.9	31.8	12.1
Marion	42.1	15.1	20.4	2.0	4.6
Mercer	28.7	11.2	12.0	1.2	4.3
Miller	152.4	44.7	61.2	30.8	15.7
Mississippi	12.9	6.5	4.4	1.2	0.8
Moniteau	59.6	16.4	21.7	18.7	2.8
Monroe	50.5	19.9	20.4	2.4	7.8
Montgomery	102.1	37.4	38.3	22.7	3.7
Morgan	162.2	51.1	66.1	29.8	15.2
New Madrid	15.5	7.8	4.9	1.8	1.0
Newton	103.6	35.7	32.6	27.2	8.1
Nodaway	25.3	8.7	10.2	1.5	4.9
Oregon	316.4	85.9	137.7	79.3	13.5
Osage	170.2	60.2	64.5	39.1	6.4
Ozark	236.3	76.4	73.6	69.5	16.8
Pemiscot	11.8	6.9	4.0	0.3	0.6
Perry	103.4	43.7	36.9	20.2	2.6
Pettis	40.6	15.8	13.7	3.7	7.4
Phelps	212.7	56.3	92.2	46.5	17.7
Pike	92.1	35.8	41.0	4.2	11.1
Platte	32.3	7.8	15.6	1.5	7.4
Polk	83.4	24.8	31.8	16.2	10.6
Pulaski	175.6	48.9	70.3	39.3	17.1
Putnam	40.5	14.4	18.0	1.9	6.2
Ralls	47.3	18.9	19.4	2.0	7.0
Randolph	49.2	18.2	22.2	2.1	6.7
Ray	38.4	11.1	17.7	1.9	7.7
Reynolds	423.0	123.3	213.6	74.5	11.6
Ripley	269.7	73.4	129.0	57.9	9.4
St. Charles	89.6	42.9	27.4	16.2	3.1
St. Clair	123.1	41.9	42.4	23.9	14.9
St. Francois	141.1	34.6	63.4	35.6	7.5
St. Louis	66.1	27.0	20.2	16.1	2.8
Ste. Genevieve	151.8	54.2	62.3	31.4	3.9
Saline	31.5	12.0	9.3	2.9	7.3
Schuyler	13.4	4.8	5.4	0.7	2.5
Scotland	21.3	8.9	7.4	1.1	3.9
Scott	18.0	11.3	4.4	2.0	0.3
Shannon	477.0	122.0	228.3	112.2	14.5
Shelby	34.9	15.4	13.2	1.4	4.9
Stoddard	46.1	27.9	9.9	7.5	0.8
Stone	124.1	35.4	40.0	40.1	8.6
Sullivan	38.5	15.1	15.4	1.9	6.1
Taney	197.5	45.6	52.4	84.2	15.3
Texas	373.6	110.5	128.7	108.6	25.8
Vernon	63.7	33.3	14.4	3.4	12.6
Warren	123.5	50.5	45.8	20.9	6.3
Washington	355.0	110.1	174.2	59.5	11.2
Wayne	338.3	98.3	167.3	62.8	9.9
Webster	120.2	40.7	38.7	32.4	8.4
Worth	12.4	4.6	5.2	0.6	2.0
Wright	161.5	47.0	54.2	47.8	12.5
All counties	12,364.7	4,002.1	4,967.0	2,471.7	923.9

Table 34.--Area of commercial forest land by county and forest type,
Missouri, 1972

(In thousand acres)

County	All : forest : types	Short- : leaf : pine	Eastern : red- : cedar	Eastern : redcedar- : hardwood	Shortleaf : pine-oak	Post- : blackjack : oak	Black- : scarlet : oak	White : oak	Oak-gum- : cypress	Elm-ash- : cottonwood	Cotton- : wood	Maple- : beech	Non- : stocked
Adair	49.3	--	--	--	--	1.6	14.4	17.5	2.8	3.6	--	2.2	7.2
Andrew	16.1	--	--	--	--	.3	3.6	3.9	.7	1.7	--	1.8	4.1
Atchison	13.9	--	--	--	--	.3	3.2	3.9	.6	3.5	--	1.6	1.8
Audrain	29.1	--	--	--	--	.5	5.2	7.0	1.9	8.3	--	1.6	4.6
Barry	182.6	2.0	1.4	11.0	6.6	53.6	71.3	22.2	--	1.8	--	1.6	11.9
Barton	25.6	--	--	--	--	2.3	5.9	2.8	1.3	5.0	--	.8	7.5
Bates	49.3	--	--	--	--	5.4	10.7	4.9	3.1	11.6	--	1.6	12.0
Benton	166.6	--	.2	3.1	--	52.5	54.2	29.7	--	7.5	--	1.1	18.3
Bollinger	201.7	2.0	.7	7.1	7.1	34.5	92.8	43.9	1.3	5.4	--	4.4	8.9
Boone	109.6	--	3.3	7.1	--	16.0	25.6	34.8	1.8	9.1	.2	7.8	3.9
Buchanan	19.7	--	--	--	--	.2	3.0	3.5	1.4	4.8	--	2.3	4.5
Butler	168.1	9.2	.8	1.2	8.8	26.0	65.0	28.6	4.0	9.8	--	4.7	10.0
Caldwell	17.7	--	--	--	--	.2	3.0	3.8	1.0	5.2	--	1.0	3.5
Callaway	175.5	--	4.2	9.4	--	28.0	42.1	58.5	3.4	12.7	.2	11.5	5.5
Camden	213.3	--	.7	4.3	--	69.3	72.4	37.6	--	5.0	--	1.5	22.5
Cape Girardeau	87.4	--	2.4	5.2	--	10.8	18.6	32.7	1.1	7.5	.2	6.1	2.8
Carroll	26.9	--	--	--	--	.5	5.7	7.4	1.6	7.1	--	1.3	3.3
Carter	231.8	9.5	.7	1.0	15.1	43.8	117.1	51.0	.3	2.9	--	3.1	7.3
Cass	34.5	--	--	--	--	6.3	11.2	4.9	1.4	2.7	--	.2	7.8
Cedar	72.2	--	--	1.5	--	22.1	23.4	12.4	--	3.6	--	.5	8.7
Chariton	41.9	--	--	--	--	.5	6.8	9.8	3.2	13.1	--	2.2	6.3
Christian	128.4	1.1	.7	6.5	3.7	38.5	48.5	16.5	--	2.7	--	.7	9.7
Clark	53.2	--	--	--	--	1.1	13.1	17.8	3.1	7.3	--	2.6	8.2
Clay	22.0	--	--	--	--	.3	4.1	4.6	1.5	5.8	--	1.6	4.1
Clinton	18.5	--	--	--	--	.2	3.1	3.3	1.6	6.4	--	1.2	2.7
Cole	77.9	--	2.9	6.1	--	12.1	18.2	23.7	1.3	5.2	.1	4.7	3.6
Cooper	48.6	--	--	--	--	12.0	15.0	6.2	2.5	3.8	--	.3	8.8
Crawford	320.9	1.9	--	--	--	56.5	154.3	69.3	.8	8.5	--	5.0	11.2
Dade	39.1	--	.9	.8	11.7	8.5	12.1	4.5	1.6	2.8	--	.4	9.2
Dallas	126.2	--	--	2.9	--	40.2	41.7	22.3	--	4.9	--	.8	13.4
Davies	32.3	--	--	--	--	.8	9.2	11.5	1.5	3.2	--	2.0	4.1
DeKalb	13.8	--	--	--	--	.2	2.9	3.5	.9	2.6	--	1.0	2.7
Dent	308.2	4.2	.9	1.2	13.2	57.6	148.7	63.4	.5	3.4	--	4.3	10.8
Douglas	246.1	3.3	.7	3.6	8.9	78.4	97.8	30.3	--	2.4	--	1.8	18.9
Dunklin	20.1	--	--	--	--	.4	1.7	1.0	5.7	9.7	.2	.6	.8
Franklin	234.5	--	8.3	13.0	.6	28.4	55.0	89.0	3.0	16.3	.3	14.1	6.5
Gasconade	154.3	--	3.2	7.7	--	26.5	35.4	58.6	2.5	9.1	.1	7.5	3.7
Gentry	25.7	--	--	--	--	.5	6.1	6.9	1.2	3.3	--	1.9	5.8
Greene	58.5	--	--	--	--	13.9	18.4	7.1	2.6	3.2	--	.4	12.9
Grundy	26.4	--	--	--	--	.4	4.8	7.1	1.1	4.6	--	2.2	6.2
Harrison	44.7	--	--	--	--	1.0	11.4	14.5	2.7	7.2	--	2.1	5.8
Henry	38.8	--	--	--	--	5.2	9.1	3.9	2.1	8.1	--	1.2	9.2
Hickory	100.0	--	--	1.9	--	31.7	33.2	17.9	--	4.1	--	.6	10.6
Holt	18.8	--	--	--	--	.3	3.3	3.8	1.3	3.7	--	2.4	4.0
Howard	62.5	--	2.6	4.6	--	7.6	15.2	18.8	.9	5.2	.1	4.9	2.6
Howell	270.6	3.2	.6	3.4	8.3	86.7	113.1	32.5	--	2.0	--	1.7	19.1
Iron	285.1	3.9	.6	1.1	15.0	49.5	139.3	60.6	.4	3.8	--	3.7	7.2
Jackson	22.5	--	--	--	--	2.8	6.6	2.0	.8	2.5	--	.4	7.4
Jasper	46.4	--	--	--	--	6.8	12.2	5.6	2.5	6.5	--	.8	12.0
Jefferson	216.5	--	8.5	10.5	--	29.2	53.2	80.9	3.0	11.1	.1	12.0	8.0
Johnson	50.6	--	--	--	--	8.4	14.0	5.6	2.3	5.7	--	1.0	13.6
Knox	32.7	--	--	--	--	.8	8.7	11.1	1.8	4.5	--	1.4	4.4
Laclede	195.2	--	.4	4.5	--	67.8	62.9	33.5	--	5.0	--	1.0	20.1
Lafayette	21.9	--	--	--	--	2.7	5.4	2.4	1.3	4.4	--	.5	5.2
Lawrence	49.5	--	--	--	--	12.2	16.6	7.2	2.4	2.2	--	.3	8.6
Lewis	47.5	--	--	--	--	1.3	12.3	17.0	2.4	5.7	--	2.2	6.6
Lincoln	79.4	--	--	--	--	2.2	21.2	28.3	4.3	11.1	--	3.0	9.3

(Table 34 continued on next page)

(Table 34 continued)

County	All : types	Short- : leaf : pine	Eastern : red- : cedar	Eastern : hardwood	Shortleaf : pine-oak	Post- : blackjack : oak	Black- : scarlet : oak	White : oak	Oak-gum : cypress	Elm-ash : cottonwood	Cotton- : wood	Maple : beech	Non- : stocked
Linn	29.3	--	--	--	--	.3	4.3	5.9	1.7	8.7	--	2.2	6.2
Livingston	30.3	--	--	--	--	.3	5.0	6.2	1.8	7.9	--	2.7	6.4
McDonald	166.9	--	.2	2.0	3.5	54.8	71.0	21.7	--	1.9	--	.9	10.9
Macon	63.2	--	--	--	--	1.7	17.6	22.3	3.5	6.2	--	3.3	8.6
Nadison	227.7	9.6	.6	1.5	17.4	34.9	102.8	44.3	.6	5.0	--	4.5	6.5
Baries	137.1	--	--	3.3	--	48.6	45.2	24.3	--	3.1	--	.5	12.1
Marion	42.1	--	--	--	--	1.4	11.8	15.6	2.2	4.4	--	2.1	4.6
Mercer	28.7	--	--	--	--	.7	7.7	9.8	1.4	3.1	--	1.7	4.3
Miller	152.4	--	--	3.0	--	50.6	48.8	27.8	--	5.7	--	.8	15.7
Mississippi	12.9	--	--	--	--	--	--	--	3.1	7.9	.5	.6	.8
Moniteau	59.6	--	2.3	4.2	--	9.4	15.1	16.7	1.3	3.3	--	4.5	2.8
Monroe	50.5	--	--	--	--	1.1	11.7	16.3	2.9	8.4	--	2.3	7.8
Montgomery	102.1	--	1.7	7.9	--	16.2	22.7	30.7	1.9	9.9	.3	7.1	3.7
Morgan	162.2	--	.5	2.5	--	53.5	55.5	30.3	--	3.7	--	1.0	15.2
New Nadrid	15.5	--	--	--	--	--	--	--	3.2	10.1	.4	.8	1.0
Newton	103.6	--	.1	1.2	2.1	33.7	42.4	13.0	--	2.5	--	.5	8.1
Nodaway	25.3	--	--	--	--	.3	5.1	6.0	1.7	5.1	--	2.2	4.9
Oregon	316.4	7.0	1.3	1.9	19.0	59.2	142.9	61.8	.4	4.5	--	4.9	13.5
Osage	170.2	--	6.3	8.6	--	26.7	42.7	55.5	3.2	10.8	.2	9.8	6.4
Ozark	236.3	.9	1.6	10.7	6.4	73.6	92.5	29.1	--	3.5	--	1.2	16.8
Pemiscot	11.8	--	--	--	--	--	--	.3	2.4	7.4	.4	.7	.6
Perry	103.4	--	2.7	5.7	.5	13.4	24.2	38.7	1.3	7.6	.2	6.5	2.6
Pettis	40.6	--	--	--	--	9.1	11.6	5.2	2.3	4.4	--	.6	7.4
Phelps	212.7	--	1.1	3.7	--	76.1	71.9	37.8	--	3.4	--	1.0	17.7
Pike	92.1	--	--	--	--	2.3	24.7	32.9	4.8	12.2	--	4.1	11.1
Platte	32.3	--	--	--	--	.6	7.0	6.9	2.2	4.8	--	3.4	7.4
Poik	83.4	--	1.1	1.9	--	25.5	25.4	13.9	--	4.5	--	.5	10.6
Pulaski	175.6	--	--	3.5	--	60.9	57.7	30.2	--	5.2	--	1.0	17.1
Putnam	40.5	--	--	--	--	1.0	11.0	14.0	2.2	4.3	--	1.8	6.2
Ralls	47.3	--	--	--	--	1.1	12.2	16.8	2.5	5.5	--	2.2	7.0
Randolph	49.2	--	--	--	--	1.5	13.9	18.7	2.7	4.1	--	1.6	6.7
Ray	38.4	--	--	--	--	.8	8.7	9.8	2.7	6.6	--	2.1	7.7
Reynolds	423.0	7.2	.9	1.3	18.8	71.8	205.2	92.4	.7	6.8	--	6.3	11.6
Ripley	269.7	10.3	.8	1.2	17.1	46.8	119.2	51.6	1.2	6.9	--	5.2	9.4
St. Charles	89.6	--	1.9	6.2	--	7.7	17.0	30.0	1.1	14.7	.6	7.3	3.1
St. Clair	123.1	--	--	2.4	--	37.2	38.2	21.2	--	8.4	--	.8	14.9
St. Francois	141.1	1.2	.9	2.2	6.1	26.9	62.0	26.2	.4	4.2	--	3.5	7.5
St. Genevieve	151.8	--	3.8	7.1	3.2	24.5	37.4	53.7	2.8	6.7	--	8.7	3.9
St. Louis	66.1	--	2.4	5.6	--	6.3	14.6	20.1	1.0	7.3	.2	5.8	2.8
Saline	31.5	--	--	--	--	5.6	8.3	3.4	1.6	4.7	--	.6	7.3
Schuyler	13.4	--	--	--	--	.3	3.4	4.3	.6	1.7	--	.6	2.5
Scotland	21.3	--	--	--	--	.3	4.3	6.5	1.3	4.0	--	1.0	3.9
Scott	18.0	--	--	--	--	.5	6.5	4.7	1.7	2.5	.1	1.7	.3
Shannon	477.0	8.3	1.1	2.3	25.2	88.3	227.3	97.8	1.1	5.3	--	5.8	14.5
Shelby	34.9	--	--	--	--	.8	8.4	12.1	1.7	5.6	--	1.4	4.9
Stoddard	46.1	--	--	--	--	1.4	13.6	8.2	9.0	9.3	.2	3.6	.8
Stone	124.1	.3	.9	9.4	2.9	36.8	45.7	16.9	--	2.0	--	.6	8.6
Sullivan	38.5	--	--	--	--	.8	9.4	12.3	1.9	5.8	--	2.2	6.1
Taney	197.5	--	4.3	28.1	3.4	58.4	62.9	22.9	--	9	--	1.3	15.3
Texas	373.6	6.8	1.4	4.6	12.9	118.8	151.3	46.9	--	2.7	--	2.4	25.8
Vernon	63.7	--	--	--	--	7.5	15.2	8.2	4.5	13.9	--	1.8	12.6
Warren	123.5	--	2.8	6.5	--	16.4	27.1	44.6	1.9	10.6	.2	7.1	6.3
Washington	355.0	10.3	1.1	2.1	16.8	59.1	165.7	75.6	.4	5.8	--	6.9	11.2
Wayne	338.3	13.6	1.1	1.9	20.4	54.5	153.7	70.1	1.6	6.2	--	5.3	9.9
Webster	120.2	--	.1	2.1	2.5	38.7	50.1	15.2	--	2.5	--	.6	8.4
North	12.4	--	--	--	--	.3	3.1	3.8	.7	1.9	--	.6	2.0
Wright	161.5	.2	.6	2.5	3.9	52.0	63.7	20.3	--	4.6	--	1.2	12.5
Total	12,364.7	116.0	88.3	259.4	281.1	2,488.2	4,409.4	2,644.5	177.7	660.6	4.8	310.8	923.9

1/ Counties in western and northern Missouri contain only bottomland oaks -- no gum or cypress.

Table 35.--*Area of noncommercial forest land
by ownership class, Missouri, 1972*

(In thousand acres)

Ownership class	: All : areas	: Productive : : reserved : : areas : areas	: Unproductive : areas
National forest	30.6	--	30.6
Other public	266.3	256.1	10.2
Forest industry	3.6	--	3.6
Farmer and mi-cellaneous private	253.9	--	253.9
All ownerships	554.4	256.1	298.3

Table 35a.--*Area of commercial forest land,
by ownership class, Missouri, 1972*

Ownership class	: Thousand : acres
National Forest	1,321.8
Other Federal	
Indian	.3
Miscellaneous Federal	66.9
Total other Federal	67.2
State	186.8
County and municipal	32.2
Forest industry <u>1</u> /	362.3
Farmer-owned	6,136.8
Miscellaneous private	
Individual	3,625.8
Corporate	631.8
Total miscellaneous private	4,257.6
All ownerships	12,364.7

1/ Not including 261 thousand acres of
farmer-owned and miscellaneous private lands
leased to forest industry.

Table 36.--Number of all live trees on commercial forest land by species and diameter class, Missouri, 1972

(In thousand trees)

Species	All : classes	Diameter class (inches at breast height)																
		1.0- : 2.9	3.0- : 4.9	5.0- : 6.9	7.0- : 8.9	9.0- : 10.9	11.0- : 12.9	13.0- : 14.9	15.0- : 16.9	17.0- : 18.9	19.0- : 20.9	21.0- : 22.9	23.0- : 24.9	25.0- : 26.9	27.0- : 28.9	28.0- : 29.9	29.0- : 30.9	31.0- : 32.9
Softwoods:																		
Shortleaf pine	156689	66850	38048	22137	14891	8564	4435	1235	325	155	49	--	--	--	--	--	--	--
Cypress	255	--	--	--	17	35	15	47	32	44	17	20	16	12	--	--	--	--
Eastern redcedar	179641	117248	38908	13598	6231	2711	836	181	123	--	5	--	--	--	--	--	--	--
Total softwoods	336585	184098	76956	35535	21139	11310	5286	1463	480	199	71	20	16	12	--	--	--	--
Hardwoods:																		
Select white oaks	1006149	517391	191715	109888	73012	47613	29423	19471	8843	3973	2037	1130	1371	280	2	--	--	--
Other white oaks	876134	441731	206134	107462	50697	32072	18283	10451	4896	2158	1214	559	449	28	--	--	--	--
Select red oaks	109063	51407	16569	10646	9628	7588	4451	3489	2259	1279	700	391	560	90	6	--	--	--
Red oaks	1156199	625719	219301	112020	76005	53885	33012	17506	9305	4296	2336	1325	1273	215	1	--	--	--
Other red oaks	351776	208391	68242	33371	18489	11057	5752	3096	1663	930	439	143	165	33	5	--	--	--
Hickory A	509452	337882	92130	41128	18503	10414	5176	2361	850	575	251	66	103	13	--	--	--	--
Hickory B	756971	546620	123422	45982	21997	11018	4770	1865	914	251	88	15	28	1	--	--	--	--
Hard maple	96795	67166	15955	6178	3529	1964	911	550	224	155	64	58	34	7	--	--	--	--
Soft maple	86500	68715	7836	3777	1575	1682	1131	630	488	179	138	132	154	52	11	--	--	--
Beech	615	360	193	--	--	11	19	7	10	3	3	6	2	1	--	--	--	--
Sweetgum	5137	2024	1830	388	258	299	173	65	48	29	13	--	8	2	--	--	--	--
Tupelo and blackgum	98564	78352	11271	4356	1436	1028	849	455	466	197	57	49	38	10	--	--	--	--
Ash	177406	108459	35132	16135	8500	4799	2489	1034	333	295	74	78	63	15	--	--	--	--
Sycamore	17476	5953	2298	2603	1861	1378	1139	745	593	330	184	145	184	54	9	--	--	--
Cottonwood	5366	2321	176	529	663	329	325	276	234	163	104	67	110	58	11	--	--	--
River birch	8507	1635	2162	2326	968	485	307	296	131	93	39	20	29	11	5	--	--	--
Yellow-poplar	122	--	--	60	19	10	22	4	--	--	3	--	--	4	--	--	--	--
Basswood	5408	3005	494	492	427	462	253	120	51	50	16	17	13	8	--	--	--	--
Black walnut	66088	24955	12989	10423	8328	4133	2599	1402	753	315	119	31	41	--	--	--	--	--
Black cherry	25997	15381	5790	2532	1307	418	258	155	104	12	36	--	4	--	--	--	--	--
Elm	415044	289090	76506	27933	11658	5013	2412	1156	521	312	206	84	117	36	--	--	--	--
Other hardwoods	947443	789621	103546	27340	13115	6528	3398	1797	1053	440	280	122	168	35	--	--	--	--
Noncommercial species	274623	243676	25903	4411	477	104	45	--	--	7	--	--	--	--	--	--	--	--
Total hardwoods	6996835	4429854	1219594	569980	322452	202290	117197	66931	33739	16042	8401	4438	4914	953	50	--	--	--
All species	7333420	4613952	1296550	605515	343591	213600	122483	68394	34219	16241	8472	4458	4930	965	50	--	--	--

Table 37.--Number of growing-stock trees on commercial forest land
by species and diameter class, Missouri, 1972

(In thousand trees)

Species	All classes	Diameter class (inches at breast height)																
		1.0- 2.9	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9	29.0- 30.9		
Softwoods:																		
Shortleaf pine	123875	44532	29929	20317	14550	8470	4370	1193	325	146	43	--	--	--	--	--	--	
Cypress	171	--	--	--	17	--	--	31	28	38	17	18	13	7	2	--	--	
Eastern redcedar	139360	92811	31417	9033	3977	1495	471	93	63	--	--	--	--	--	--	--	--	
Total softwoods	263406	137343	61346	29350	18544	9965	4841	1317	416	184	60	18	13	7	2	--	--	
Hardwoods:																		
Select white oaks	525505	204050	127339	71437	49481	31829	19572	13008	5045	1996	871	417	370	88	2	--	--	
Other white oaks	367128	144035	97511	63227	30556	16356	8463	4525	1681	551	130	65	28	--	--	--	--	
Select red oaks	59946	22224	11454	6877	6400	5032	2800	2231	1385	749	289	186	279	40	--	--	--	
Red oaks	661947	302004	147735	80426	52886	36511	21682	11391	5384	2097	1036	376	362	56	1	--	--	
Other red oaks	87526	41155	21423	12099	5901	3399	1392	962	547	345	166	52	62	23	--	--	--	
Hickory A	222849	115009	56076	27742	11648	6173	3225	1691	574	428	158	46	69	10	--	--	--	
Hickory B	281847	162981	66478	27756	13179	6767	2731	1217	552	107	50	7	22	--	--	--	--	
Hard maple	43180	28497	8141	3223	1603	907	487	225	59	23	--	9	3	3	--	--	--	
Soft maple	27436	20539	2236	1752	678	724	547	379	280	78	82	75	55	11	--	--	--	
Beech	202	--	192	--	--	--	--	--	10	--	--	--	--	--	--	--	--	
Sweetgum	1935	463	686	169	161	245	117	23	48	22	--	--	1	--	--	--	--	
Tupelo and blackgum	27586	17791	5057	2309	909	538	395	191	285	79	--	17	11	4	--	--	--	
Ash	42289	19295	7627	6803	3843	2341	1321	610	193	135	28	42	40	11	--	--	--	
Sycamore	12064	2656	2067	2042	1300	1178	1003	622	475	297	141	119	137	25	2	--	--	
Cottonwood	3660	1084	176	414	547	270	240	259	219	164	88	62	89	45	3	--	--	
River birch	4615	250	993	1632	816	408	212	144	65	45	23	9	11	3	4	--	--	
Yellow-poplar	86	--	--	23	19	10	22	4	--	--	4	--	--	4	--	--	--	
Basswood	2140	956	495	--	217	186	148	83	37	18	--	--	--	--	--	--	--	
Black walnut	20453	2130	4237	5002	4302	2093	1283	769	408	162	50	17	--	--	--	--	--	
Black cherry	4025	658	2202	523	299	88	111	115	13	12	--	--	4	--	--	--	--	
Elm	69389	36670	15528	8826	4393	2178	993	413	174	116	30	18	44	5	1	--	--	
Other hardwoods	108904	73088	17738	7720	4282	2807	1585	912	452	155	90	32	43	--	--	--	--	
Total hardwoods	2574712	1195535	595391	330002	193420	120040	68329	39774	17886	7579	3236	1549	1630	328	13	--	--	
All species	2838118	1332878	656737	359352	211964	130005	73170	41091	18302	7763	3296	1567	1643	335	15	--	--	

Table 38.--Number of growing-stock trees on commercial forest land by species groups and Forest Survey Unit, Missouri, 1972

Species group	All classes	ALL UNITS															
		Diameter class (inches at breast height)															
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0-49.9	50.0-59.9	60.0-69.9
Softwoods	263,406	137,343	61,346	29,350	18,544	9,965	4,841	1,317	416	184	60	18	13	7	2		
Hardwoods	2,574,712	1,195,535	595,391	330,002	193,420	120,040	68,329	39,774	17,886	7,579	3,236	1,549	1,630	328	13		
All species	2,838,118	1,332,878	656,737	359,352	211,964	130,005	73,170	41,091	18,302	7,763	3,296	1,567	1,643	335	15		
EASTERN OZARKS																	
Softwoods	111,711	45,599	24,806	17,042	12,302	7,122	3,507	877	324	96	36	--	--	--	--		
Hardwoods	1,127,432	575,358	262,547	122,215	71,446	47,409	26,396	13,356	5,673	1,780	722	257	242	30	1		
All species	1,239,143	620,957	287,353	139,257	83,748	54,531	29,903	14,233	5,997	1,876	758	257	242	30	1		
NORTHWESTERN OZARKS																	
Softwoods	20,812	17,471	1,854	793	317	153	132	52	14	26	--	--	--	--	--		
Hardwoods	318,882	149,207	65,302	45,566	26,493	15,138	7,871	5,379	2,238	942	347	204	157	38	--		
All species	339,694	166,678	67,156	46,359	26,810	15,291	8,003	5,431	2,252	968	347	204	157	38	--		
SOUTHWESTERN OZARKS																	
Softwoods	80,751	47,363	20,806	6,441	3,258	1,650	915	267	20	24	7	--	--	--	--		
Hardwoods	462,668	239,646	105,608	52,128	27,987	16,581	10,283	6,120	2,600	926	431	178	164	16	--		
All species	543,419	287,009	126,414	58,569	31,245	18,231	11,198	6,387	2,620	950	438	178	164	16	--		
PRAIRIE																	
Softwoods	2,405	1,809	--	286	117	133	34	16	10	--	--	--	--	--	--		
Hardwoods	268,167	75,999	70,789	55,584	28,049	15,951	8,336	6,241	3,255	1,819	856	473	642	165	8		
All species	270,572	77,808	70,789	55,870	28,166	16,084	8,370	6,257	3,265	1,819	856	473	642	165	8		
RIVERBORDER																	
Softwoods	47,727	25,101	13,880	4,788	2,550	907	253	105	48	38	17	18	13	7	2		
Hardwoods	397,563	155,325	91,145	54,509	39,445	24,961	15,443	8,678	4,120	2,112	880	437	425	79	4		
All species	445,290	180,426	105,025	59,297	41,995	25,868	15,696	8,783	4,168	2,150	897	455	438	86	6		

Table 39.--*Number of short-log trees on commercial forest land by species and diameter class, Missouri, 1972*

(In thousand trees)

Species	All classes	Diameter class (inches at breast height)								
		9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	23.0-	
		10.9	12.9	14.9	16.9	18.9	20.9	22.9	28.9	29.0+
Softwoods:										
Shortleaf pine	30	--	21	--	--	9	--	--	--	--
Cypress	24	19	--	--	--	--	--	2	3	--
Eastern redcedar	572	429	103	27	13	--	--	--	--	--
Total softwoods	626	448	124	27	13	9	--	2	3	--
Hardwoods:										
Select white oaks	9,065	--	3,781	2,580	1,324	625	318	206	186	45
Other white oaks	5,063	--	2,587	1,560	596	217	59	28	13	3
Select red oaks	920	--	320	247	167	48	43	27	49	19
Red oaks	5,965	--	2,915	1,414	951	304	158	105	93	25
Other red oaks	1,382	--	826	252	97	133	23	14	35	2
Hickory A	1,003	--	500	254	137	72	14	6	20	--
Hickory B	1,067	--	729	178	127	32	--	--	--	1
Hard maple	209	--	48	70	66	--	21	4	--	--
Soft maple	369	--	115	81	64	36	25	20	26	2
Sweetgum	14	--	--	14	--	--	--	--	--	--
Tupelo and blackgum	285	--	183	55	12	25	--	6	4	--
Ash	514	--	307	162	--	38	4	3	--	--
Sycamore	148	--	35	58	14	--	9	8	15	9
Cottonwood	36	--	--	16	--	--	7	--	8	5
River birch	122	--	14	88	8	--	--	12	--	--
Basswood	24	--	--	--	14	--	7	--	--	3
Black walnut	912	--	434	252	154	47	9	--	16	--
Black cherry	63	--	--	18	25	--	20	--	--	--
Elm	772	--	345	234	85	42	36	5	20	5
Other hardwoods	617	--	304	150	55	50	28	13	11	6
Total hardwoods	28,550	--	13,443	7,683	3,896	1,669	781	457	496	125
All species	29,176	448	13,567	7,710	3,909	1,678	781	459	499	125

Table 40.--Net volume of growing stock and sawtimber on commercial forest land by species, Missouri, 1959 and 1972

Species	Growing stock		Sawtimber	
	: 1959 ¹	: 1972	: 1959 ¹	: 1972
	Million cubic feet		Million board feet ²	
Softwoods:				
Shortleaf pine	249.0	305.0	625.7	1,032.4
Cypress	15.7	7.4	77.4	34.4
Eastern redcedar	25.4	56.4	34.1	113.2
Other softwoods	1.4	--	8.4	--
Total softwoods	291.5	368.8	745.6	1,180.0
Hardwoods:				
Select white oak	1,519.2	1,539.7	3,671.2	3,921.0
Other white oak	708.9	650.2	1,403.6	1,156.8
Select red oaks	344.7	299.9	1,212.2	1,010.6
Red oaks	1,330.3	1,620.0	2,984.6	4,104.6
Other red oaks	139.4	160.6	387.8	428.6
Hickory A	315.6	296.1	564.4	615.9
Hickory B	192.9	258.7	280.0	413.1
Hard maple	43.2	38.4	67.2	56.4
Soft maple	58.7	62.4	157.5	206.3
Beech	0.4	0.3	1.6	1.3
Sweetgum	11.8	8.0	33.4	23.4
Tupelo and blackgum	23.7	33.9	78.9	99.4
Ash	107.6	103.9	221.1	215.3
Sycamore	71.5	125.0	214.2	473.4
Cottonwood	43.2	65.3	194.4	306.9
River birch	11.0	26.0	30.1	66.4
Yellow poplar	0.2	1.6	0.6	4.6
Basswood	4.1	6.5	6.2	18.4
Black walnut	100.2	96.9	238.3	216.9
Black cherry	10.6	8.2	13.5	22.0
Elm	240.5	93.0	542.9	153.4
Other hardwoods	147.7	138.1	292.6	360.2
Total hardwoods	5,425.4	5,632.7	12,596.3	13,874.9
All species	5,716.9	6,001.5	13,341.9	15,054.9

¹Figures have been adjusted from those published previously for 1959 to conform to 1972 volumes because of changes in survey definitions and procedures.

²International $\frac{1}{4}$ -inch rule.

Table 41.--*Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods, Missouri, 1972*
(In million cubic feet)

Class of timber	: All : : species	: Softwoods	: Hardwoods
Growing stock trees:			
Saw log trees:			
Saw log portion	2,147.1	168.3	1,978.8
Upper stem portion	904.6	43.3	861.3
Total sawtimber	3,051.7	211.6	2,840.1
Poletimber trees	2,949.8	157.2	2,792.6
Total growing stock	6,001.5	368.8	5,632.7
Cull trees:			
Rough cull trees:			
Sawtimber	759.1	8.1	751.0
Poletimber	1,298.8	16.7	1,282.1
Total rough cull	2,057.9	24.8	2,033.1
Short log cull trees:			
Sawtimber	484.4	5.0	479.4
Poletimber	1.1	--	1.1
Total short log	485.5	5.0	480.5
Rotten cull trees:			
Sawtimber	298.3	2.8	295.5
Poletimber	158.1	1.5	156.6
Total rotten cull	456.4	4.3	452.1
Total cull	2,999.8	34.1	2,965.7
Salvable dead trees:			
Sawtimber	89.9	6.9	83.0
Poletimber	51.1	3.3	47.8
Total salvable dead	141.0	10.2	130.8
All classes	9,142.3	413.1	8,729.2

Table 42.--*Net volume of growing stock and sawtimber on commercial forest land by ownership class and species group, Missouri, 1972*

GROWING STOCK (In million cubic feet)					
Ownership class	: All : : species	: Shortleaf : : pine	: Other : : softwoods	: Soft : : hardwoods	: Hard : : hardwoods
National Forest	831.9	163.0	3.6	18.9	646.4
Other Federal	39.2	0.2	0.2	23.7	15.1
State, county, and municipal	124.8	7.9	2.9	7.7	106.3
Forest industry	165.2	19.1	0.4	20.6	125.1
Farmer and miscellaneous private	4,840.4	114.8	56.7	444.7	4,224.2
All ownerships	6,001.5	305.0	63.8	515.6	5,117.1
SAWTIMBER (In million board feet ¹)					
National Forest	2,187.4	629.9	6.4	43.5	1,507.6
Other Federal	115.6	1.2	1.4	71.6	41.4
State, county, and municipal	325.7	23.9	11.1	15.2	275.5
Forest industry	402.1	31.3	0.2	41.8	328.8
Farmer and miscellaneous private	12,024.1	346.1	128.5	1,447.6	10,101.9
All ownerships	15,054.9	1,032.4	147.6	1,619.7	12,255.2

¹International $\frac{3}{4}$ -inch rule.

Table 43.--Net volume of growing stock on commercial forest land by species and diameter class, Missouri, 1972

(In million cubic feet)

Species	All : : classes :	5.0- : : 6.9 :	7.0- : : 8.9 :	9.0- : : 10.9 :	11.0- : : 12.9 :	13.0- : : 14.9 :	15.0- : : 16.9 :	17.0- : : 18.9 :	19.0- : : 20.9 :	21.0- : : 22.9 :	23.0- : : 28.9 :	29.0- : : 38.9 :	39.0+ :
Softwoods	305.0	47.6	74.1	79.8	62.5	24.2	9.5	5.4	1.9	--	--	--	--
Shortleaf pine	7.4	--	0.1	--	--	0.5	0.7	1.4	0.9	1.2	1.3	1.0	0.3
Cypress	56.4	18.0	17.4	12.1	5.8	1.6	1.5	--	--	--	--	--	--
Eastern redcedar													
Total softwoods	368.8	65.6	91.6	91.9	68.3	26.3	11.7	6.8	2.8	1.2	1.3	1.0	0.3
Hardwoods	1,539.7	196.1	255.2	280.5	270.8	247.7	131.8	67.8	35.6	20.7	24.0	9.3	0.2
Select white oaks	650.2	150.4	141.7	124.7	97.7	73.8	36.8	15.1	5.0	3.2	1.8	--	--
Other white oaks	299.9	19.9	31.4	44.5	38.3	45.6	37.8	26.1	13.6	12.5	24.6	5.6	--
Select red oaks	1,620.0	198.9	270.6	323.1	293.2	220.2	140.6	72.3	43.8	18.7	25.0	5.8	7.8
Red oaks	160.6	24.8	25.8	26.0	16.4	18.2	15.0	14.2	8.0	3.3	5.5	3.4	--
Other red oaks	296.1	62.5	55.5	51.6	45.9	35.3	15.4	15.1	6.5	2.8	4.3	1.2	--
Hickory A	258.7	58.1	60.1	56.4	37.1	23.7	14.9	3.8	2.4	0.5	1.7	--	--
Hickory B	38.4	7.9	8.1	8.3	6.8	4.0	1.6	0.7	--	0.4	0.3	0.3	--
Hard maple	62.4	5.0	4.7	8.0	8.7	8.6	8.8	2.8	4.5	4.8	4.9	1.6	--
Soft maple													
Beech	0.3	--	--	--	--	--	0.3	--	--	--	--	--	--
Sweetgum	8.0	0.3	0.8	2.5	1.6	0.4	1.5	0.7	--	--	0.2	--	--
Tupelo and blackgum	33.9	5.0	4.4	4.6	4.7	3.6	7.1	2.6	--	0.8	0.6	0.5	--
Ash	103.9	15.8	19.0	21.2	17.5	12.2	5.4	4.9	1.3	2.1	2.7	1.8	--
Sycamore	125.0	5.9	7.7	12.4	16.9	15.0	16.5	13.4	8.0	8.6	15.2	4.8	0.6
Cottonwood	65.3	1.0	3.1	2.9	4.6	6.5	7.6	7.9	6.1	4.7	9.7	9.8	1.4
River birch	26.0	4.3	4.3	3.5	3.2	3.2	1.8	1.7	1.1	0.5	1.1	0.5	0.8
Yellow poplar	1.6	0.1	--	0.1	0.4	0.1	--	--	0.1	--	0.2	0.6	--
Basswood	6.5	--	0.8	1.3	1.7	1.3	0.8	0.6	--	--	--	--	--
Black walnut	96.9	11.8	20.3	17.2	16.7	14.3	8.9	5.2	1.9	0.6	--	--	--
Black cherry	8.2	1.1	1.4	0.7	1.9	2.0	0.4	0.4	--	--	0.3	--	--
Elm	93.0	20.4	19.6	17.4	12.8	6.8	4.9	4.4	1.3	0.9	3.4	0.5	0.6
Other hardwoods	138.1	16.1	19.8	26.5	24.2	20.7	13.6	7.9	4.8	1.7	2.8	--	--
Total hardwoods	5,632.7	805.4	954.3	1,033.4	921.1	763.2	471.5	267.6	144.0	86.8	128.3	45.7	11.4
All species	6,001.5	871.0	1,045.9	1,125.3	989.4	789.5	483.2	274.4	146.8	88.0	129.6	46.7	11.7

Table 44.--Net volume of sawtimber on commercial forest land by species and diameter class, Missouri, 1972

(In million board feet¹)

Species	All classes	Diameter class (inches at breast height)											
		9.0-	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-	23.0-	25.0-	27.0-	29.0-	31.0+
		10.9	12.9	14.9	16.9	18.9	20.9	22.9	24.9	26.9	28.9	30.9	33.0+
Softwoods:													
Shortleaf pine	1,032.4	434.0	351.2	144.3	56.9	33.0	13.0	--	--	--	--	--	--
Cypress	34.4	--	--	2.3	3.5	7.0	4.6	5.7	5.8	4.5	4.5	1.0	1.0
Eastern redcedar	113.2	63.7	32.0	9.1	8.4	--	--	--	--	--	--	--	--
Total softwoods	1,180.0	497.7	383.2	155.7	68.8	40.0	17.6	5.7	5.8	4.5	4.5	1.0	1.0
Hardwoods:													
Select white oaks	3,921.0	--	1,335.9	1,206.0	635.6	317.8	170.1	97.2	117.0	40.5	--	--	--
Other white oaks	1,156.8	--	496.1	366.5	175.8	74.2	23.2	13.9	7.1	--	--	--	--
Select red oaks	1,010.6	--	181.6	233.0	185.6	138.3	68.9	58.6	114.2	30.4	--	--	--
Red oaks	4,104.6	--	1,469.4	1,108.4	714.9	360.0	218.0	96.5	112.6	24.5	--	--	--
Other red oaks	428.6	--	85.8	93.6	79.3	75.1	41.4	15.6	23.1	12.7	--	--	--
Hickory A	615.9	--	230.8	165.8	74.0	69.8	31.9	13.7	23.9	6.0	--	--	--
Hickory B	413.1	--	186.1	112.9	73.7	17.8	10.3	2.7	9.6	--	--	--	--
Hard maple	56.4	--	26.5	16.2	7.4	2.4	--	1.9	1.0	1.0	--	--	--
Soft maple	206.3	--	44.5	43.1	41.3	12.2	20.0	19.8	20.1	5.3	--	--	--
Beech	1.3	--	--	--	1.3	--	--	--	--	--	--	--	--
Sweetgum	23.4	--	7.8	2.1	7.3	5.0	--	--	1.2	--	--	--	--
Tupelo and blackgum	99.4	--	21.6	16.9	36.2	12.8	--	4.3	4.3	3.3	--	--	--
Ash	215.3	--	70.5	53.0	26.2	23.4	5.6	10.2	16.9	9.5	--	--	--
Sycamore	473.4	--	68.9	67.8	77.5	65.8	38.9	46.7	80.5	24.5	--	--	--
Cottonwood	306.9	--	23.0	35.2	40.3	41.8	31.7	25.8	51.9	50.6	--	--	--
River birch	66.4	--	14.3	14.6	8.3	9.6	7.4	3.2	4.1	2.5	--	--	--
Yellow-poplar	4.6	--	2.0	.5	--	--	.7	--	--	1.4	--	--	--
Basswood	18.4	--	7.3	5.4	3.3	2.4	--	--	--	--	--	--	--
Black walnut	216.9	--	72.3	65.4	42.5	26.0	8.0	2.7	--	--	--	--	--
Black cherry	22.0	--	7.0	9.4	1.7	2.0	--	--	1.9	--	--	--	--
Elm	153.4	--	55.1	29.7	21.5	19.8	5.5	4.2	15.1	1.9	--	--	--
Other hardwoods	360.2	--	108.7	100.7	70.2	35.7	24.4	8.4	12.1	--	--	--	--
Total hardwoods	13,874.9	--	4,515.2	3,746.2	2,323.9	1,311.9	706.0	425.4	618.6	214.1	13.6	--	--
All species	15,054.9	497.7	4,898.4	3,901.9	2,392.7	1,351.9	723.6	431.1	624.4	218.6	14.6	--	--

¹/ International 1/4-inch rule.

Table 45.--*Net volume of growing stock on commercial forest land by species and Forest Survey Unit, Missouri, 1972*

(In million cubic feet)

SPECIES	: ALL : : UNITS :	EASTERN : OZARKS :	SOUTHWESTERN : OZARKS :	NORTHWESTERN : OZARKS :	PRAIRIE : :	RIVERBORDER
SOFTWOODS:						
SHORTLEAF PINE	305.0	245.2	54.3	4.2	--	1.3
CYPRESS	7.4	--	--	--	--	7.4
EASTERN REDCEDAR	56.4	8.6	9.5	3.8	3.5	31.0
TOTAL SOFTWOODS	368.8	253.8	63.8	8.0	3.5	39.7
HARDWOODS:						
SELECT WHITE OAKS	1,539.7	500.4	150.6	184.6	242.9	461.2
OTHER WHITE OAKS	650.2	179.3	138.9	132.2	59.9	139.9
SELECT RED OAKS	299.9	66.4	49.2	31.3	58.5	94.5
RED OAKS	1,620.0	861.0	297.3	196.8	101.6	163.3
OTHER RED OAKS	160.6	42.0	22.6	13.9	66.8	15.3
HICKORY A	296.1	84.5	28.1	22.1	84.3	77.1
HICKORY B	258.7	108.6	46.3	29.2	24.5	50.1
HARD MAPLE	38.4	5.8	3.9	.3	5.3	23.1
SOFT MAPLE	62.4	3.8	.3	3.0	44.2	11.1
BEECH	.3	--	--	--	--	.3
SWEETGUM	8.0	3.5	--	--	--	4.5
TUPELO AND BLACKGUM	33.9	16.3	6.0	2.9	--	8.7
ASH	103.9	10.2	10.8	5.8	32.0	45.1
SYCAMORE	125.0	23.4	8.1	28.0	31.4	34.1
COTTONWOOD	65.3	2.2	--	--	29.5	33.6
RIVER BIRCH	26.0	5.3	--	.5	17.7	2.5
YELLOW-POPLAR	1.6	--	--	--	--	1.6
BASSWOOD	6.5	--	.4	--	5.4	.7
BLACK WALNUT	96.9	14.7	13.3	9.3	37.8	21.8
BLACK CHERRY	8.2	1.6	.7	.7	2.6	2.6
ELM	93.0	22.1	6.9	4.3	33.2	26.5
OTHER HARDWOODS	138.1	10.7	3.9	5.9	41.1	76.5
TOTAL HARDWOODS	5,632.7	1,961.8	787.3	670.8	918.7	1,294.1
ALL SPECIES	6,001.5	2,215.6	851.1	678.8	922.2	1,333.8

Table 46.--*Net volume of sawtimber on commercial forest land by species
and Forest Survey Unit, Missouri, 1972*

(In million board feet¹)

SPECIES	: ALL : : UNITS :	EASTERN : : OZARKS :	SOUTHWESTERN : : OZARKS :	NORTHWESTERN : : OZARKS :	: PRAIRIE :	: RIVERBORDER
SOFTWOODS:						
SHORTLEAF PINE	1,032.4	818.4	186.7	25.7	--	1.6
CYPRESS	34.4	--	--	--	--	34.4
EASTERN REDCEDAR	113.2	20.3	10.5	9.6	14.6	58.2
TOTAL SOFTWOODS	1,180.0	838.7	197.2	35.3	14.6	94.2
HARDWOODS:						
SELECT WHITE OAKS	3,921.0	1,005.1	379.6	488.1	685.6	1,362.6
OTHER WHITE OAKS	1,156.8	326.9	297.7	211.8	102.8	217.6
SELECT RED OAKS	1,010.6	179.8	164.6	96.8	202.8	366.6
RED OAKS	4,104.6	2,168.8	749.2	485.2	264.9	436.5
OTHER RED OAKS	428.6	115.8	48.6	30.6	192.3	41.3
HICKORY A	615.9	159.6	53.4	39.9	170.6	192.4
HICKORY B	413.1	205.1	71.0	34.0	15.4	87.6
HARD MAPLE	56.4	14.2	8.4	--	10.0	23.8
SOFT MAPLE	206.3	9.6	1.3	8.4	149.0	38.0
BEECH	1.3	--	--	--	--	1.3
SWEETGUM	23.4	4.3	--	--	--	19.1
TUPELO AND BLACKGUM	99.4	52.7	13.7	8.6	--	24.4
ASH	215.3	21.6	25.9	12.4	66.7	88.7
SYCAMORE	473.4	69.4	26.0	89.0	154.6	134.4
COTTONWOOD	306.9	9.7	--	--	137.5	159.7
RIVER BIRCH	66.4	17.2	--	3.2	36.2	9.8
YELLOW-POPLAR	4.6	--	--	--	--	4.6
BASSWOOD	18.4	--	--	--	14.9	3.5
BLACK WALNUT	216.9	22.7	26.2	18.3	98.0	51.7
BLACK CHERRY	22.0	4.9	2.7	2.0	3.6	8.8
ELM	153.4	37.3	10.1	5.9	58.1	42.0
OTHER HARDWOODS	360.2	23.1	9.6	14.6	80.4	232.5
TOTAL HARDWOODS	13,874.9	4,447.8	1,888.0	1,548.8	2,443.4	3,546.9
ALL SPECIES	15,054.9	5,286.5	2,085.2	1,584.1	2,458.0	3,641.1

¹/ INTERNATIONAL 1/4-INCH RULE.

Table 47.--Net volume of growing stock on commercial forest land by species and forest type, Missouri, 1972

(In million cubic feet)

SPECIES	ALL FOREST TYPES	SHORTLEAF PINE	EASTERN REDCEAR	EASTERN REDCEAR- HARDWOOD	SHORTLEAF PINE-OAK	POST- BLACKJACK OAK	BLACK- SCARLET OAK
SOFTWOODS:							
SHORTLEAF PINE	305.0	82.1	--	0.2	93.1	16.4	80.8
CYPRESS	7.4	--	--	--	--	--	--
EASTERN REDCEDAR	56.4	.5	15.0	13.6	.3	4.7	7.1
TOTAL SOFTWOODS	368.8	82.6	15.0	13.8	93.4	21.1	87.9
HAROWOODS:							
SELECT WHITE OAKS	1,539.7	6.5	2.0	8.9	19.9	62.6	396.9
OTHER WHITE OAKS	650.2	1.7	.6	7.2	8.4	400.6	153.9
SELECT RED OAKS	299.9	.2	.3	3.9	3.4	11.1	149.8
RED OAKS	1,620.0	9.7	1.4	5.2	38.9	167.2	1,162.1
OTHER RED OAKS	160.6	.4	--	--	1.9	39.5	44.2
HICKORY A	296.1	--	.3	2.0	2.7	30.9	129.9
HICKORY B	258.7	1.3	--	1.5	3.5	64.6	108.4
HARD MAPLE	38.4	--	.1	--	--	.5	6.5
SOFT MAPLE	62.4	--	--	--	.2	.2	.6
BEECH	.3	--	--	--	--	--	.1
SWEETGUM	8.0	--	--	--	--	.2	1.9
TUPELO AND BLACKGUM	33.9	.7	--	--	1.0	.6	13.6
ASH	103.9	--	.2	2.1	--	4.9	16.6
SYCAMORE	125.0	--	.2	.9	--	1.1	14.4
COTTONWOOD	65.3	--	--	--	--	--	--
RIVER BIRCH	26.0	--	--	--	--	--	.2
YELLOW-POPLAR	1.6	--	--	--	--	--	.6
BASSWOOD	6.5	--	--	--	--	--	.9
BLACK WALNUT	96.9	--	.2	.9	.2	5.0	28.1
BLACK CHERRY	8.2	--	--	--	--	.7	3.4
ELM	93.0	.5	--	2.2	.1	5.4	17.1
OTHER HARDWOODS	138.1	--	.2	1.9	--	3.8	8.6
TOTAL HAROWOODS	5,632.7	21.0	5.5	36.7	80.2	798.9	2,257.8
ALL SPECIES	6,001.5	103.6	20.5	50.5	173.6	820.0	2,345.7

(TABLE 47 CONTINUED ON NEXT PAGE)

(TABLE 47 CONTINUED)

SPECIES	WHITE OAK	OAK- GUM- CYPRESS	ELM- ASH- COTTONWOOD	COTTON- WOOD	MAPLE- BEECH	NON- STOCKED
SOFTWOODS:						
SHORTLEAF PINE	29.2	--	1.4	--	0.3	1.5
CYPRESS	--	5.3	2.1	--	--	--
EASTERN REDCEDAR	7.5	.1	2.5	--	2.6	2.5
TOTAL SOFTWOODS	36.7	5.4	6.0	--	2.9	4.0
HARDWOODS:						
SELECT WHITE OAKS	974.4	19.3	21.0	--	20.2	8.0
OTHER WHITE OAKS	63.5	1.1	3.0	--	2.0	8.2
SELECT RED OAKS	105.5	7.8	5.5	--	10.6	1.8
RED OAKS	204.2	4.9	12.0	--	6.5	7.9
OTHER RED OAKS	9.4	43.3	17.1	--	2.3	2.5
HICKORY A	86.0	13.1	20.6	--	7.5	3.1
HICKORY B	58.1	4.7	5.4	--	9.9	1.3
HARD MAPLE	14.2	--	.2	--	16.6	.3
SOFT MAPLE	.7	1.8	57.9	--	.8	.2
BEECH	--	--	--	--	.2	--
SWEETGUM	.9	1.5	2.9	--	.6	--
TUPELO AND BLACKGUM	12.7	4.2	.4	--	.5	.2
ASH	24.5	4.0	46.2	.1	3.9	1.4
SYCAMORE	9.1	1.3	87.3	--	9.5	1.2
COTTONWOOD	2.9	.4	50.2	9.0	.8	2.0
RIVER BIRCH	.7	4.9	19.9	--	.3	--
YELLOW-POPLAR	.5	--	--	--	.5	--
BASSWOOD	1.1	.5	2.5	--	1.5	--
BLACK WALNUT	28.9	1.6	18.8	--	8.7	4.5
BLACK CHERRY	1.7	--	2.0	--	.1	.3
ELM	21.3	2.9	24.9	--	16.3	2.3
OTHER HARDWOODS	11.8	7.5	91.6	.2	8.9	3.6
TOTAL HARDWOODS	1,632.1	124.8	489.4	9.3	128.2	48.8
ALL SPECIES	1,668.8	130.2	495.4	9.3	131.1	52.8

Table 48.--*Net volume of sawtimber on commercial forest land by species and forest type, Missouri, 1972*

(In million board feet¹)

Species	All : forest : types	Shortleaf : pine	Eastern : redcedar	Eastern : redcedar : hardwood	Shortleaf : pine-oak	Post- : black-jack : oak	Black- : scarlet : oak	White : oak	Oak-gum- : cypress	Elm-ash- : cotton- : wood	Cotton- : wood	Maple- : beech : stocked	Non- : stocked
Softwoods:													
Shortleaf pine	1,032.4	267.9	--	1.4	302.3	44.5	298.9	105.3	--	6.3	--	1.0	4.8
Cypress	34.4	--	--	--	--	--	--	--	24.7	9.7	--	--	--
Eastern redcedar	113.2	.7	31.5	16.4	.9	8.1	25.9	15.4	--	4.6	--	3.7	6.0
Total softwoods	1,180.0	268.6	31.5	17.8	303.2	52.6	324.8	120.7	24.7	20.6	--	4.7	10.8
Hardwoods:													
Select white oaks	3,921.0	14.5	4.3	21.3	47.2	154.6	964.2	2,499.8	62.7	69.2	--	61.9	21.3
Other white oaks	1,156.8	2.7	.7	20.8	10.6	633.5	335.9	124.6	1.7	8.2	--	2.5	15.6
Select red oaks	1,010.6	--	.9	10.0	4.4	37.5	496.6	350.9	39.5	23.2	--	41.8	5.8
Red oaks	4,104.6	18.2	2.4	11.6	79.3	366.6	2,992.7	543.1	24.3	31.9	--	19.2	15.3
Other red oaks	428.6	--	--	--	2.3	68.3	96.2	31.5	155.7	63.4	--	7.0	4.2
Hickory A	615.9	--	--	3.2	6.2	48.7	250.3	181.6	36.7	64.5	--	19.1	5.6
Hickory B	413.1	--	--	1.3	5.7	95.3	179.0	93.3	7.1	5.7	--	23.9	1.8
Hard maple	56.4	--	--	--	--	--	11.8	14.1	--	--	--	29.7	.8
Soft maple	206.3	--	--	--	--	--	--	--	7.0	193.9	--	4.2	1.2
Beech	1.3	--	--	--	--	--	.6	--	--	--	--	.7	--
Sweetgum	23.4	--	--	--	--	--	6.3	--	4.4	11.1	--	.7	--
Tupelo and blackgum	99.4	1.4	--	--	1.2	1.5	40.4	37.8	14.4	.8	--	1.1	.8
Ash	215.3	--	.3	2.4	--	7.2	37.3	46.8	3.3	107.5	--	9.2	1.3
Sycamore	473.4	--	--	2.1	--	2.9	45.9	30.3	8.4	338.6	--	39.4	5.8
Cottonwood	306.9	--	--	--	--	--	--	12.9	1.9	242.8	38.4	3.8	7.1
River birch	66.4	--	--	--	--	--	1.0	--	11.3	53.1	--	1.0	--
Yellow-poplar	4.6	--	--	--	--	--	1.4	1.8	--	--	--	1.4	--
Basswood	18.4	--	--	--	--	--	2.1	3.2	2.2	5.6	--	5.3	--
Black walnut	216.9	--	1.3	.5	--	6.8	68.6	54.5	4.5	50.5	--	17.5	12.7
Black cherry	22.0	--	--	--	--	2.6	4.8	6.6	--	6.8	--	--	1.2
Elm	153.4	--	--	--	--	2.4	30.1	32.7	3.0	47.5	--	33.2	4.5
Other hardwoods	360.2	--	.8	4.0	--	5.6	14.9	22.3	17.9	272.3	--	17.0	5.4
Total hardwoods	13,874.9	36.8	10.7	77.2	156.9	1,433.5	5,580.1	4,088.7	406.0	1,596.6	38.4	339.6	110.4
All species	15,054.9	305.4	42.2	95.0	460.1	1,486.1	5,904.9	4,209.4	430.7	1,617.2	38.4	344.3	121.2

¹/ International 1/4-inch rule.

Table 49.--*Net volume of sawtimber on commercial forest land by species and log grade class, Missouri, 1972*

(In million board feet¹)

SPECIES	: ALL : : GRADES :	: LOG : : GRADE 1 :	: LOG : : GRADE 2 :	: LOG : : GRADE 3 :	: TIE AND : TIMBER :
SOFTWOODS:					
SHORTLEAF PINE	1,032.4	148.7	145.4	738.3	--
CYPRESS	34.4	5.0	6.7	22.7	--
EASTERN REDCEAR	113.2	.1	15.5	96.5	1.1
TOTAL SOFTWOODS	1,180.0	153.8	167.6	857.5	1.1
HARDWOODS:					
SELECT WHITE OAKS	3,921.0	322.8	883.7	1,883.3	831.2
OTHER WHITE OAKS	1,156.8	38.7	139.7	724.3	254.1
SELECT RED OAKS	1,010.6	158.9	308.5	433.5	109.7
RED OAKS	4,104.6	195.1	959.4	1,990.5	959.6
OTHER RED OAKS	428.6	16.9	42.9	122.1	246.7
HICKORY A	615.9	35.8	117.4	283.1	179.6
HICKORY B	413.1	13.5	65.1	196.1	138.4
HARD MAPLE	56.4	--	5.7	29.2	21.5
SOFT MAPLE	206.3	8.9	72.3	94.2	30.9
BEECH	1.3	--	--	--	1.3
SWEETGUM	23.4	3.7	3.7	4.5	11.5
TUPELO AND BLACKGUM	99.4	5.6	55.5	9.3	29.0
ASH	215.3	6.2	104.8	103.2	1.1
SYCAMORE	473.4	137.9	136.6	178.7	20.2
COTTONWOOD	306.9	44.2	53.1	170.6	39.0
RIVER BIRCH	66.4	10.3	23.3	23.8	9.0
YELLOW-POPLAR	4.6	.6	1.6	1.7	.7
BASSWOOD	18.4	--	5.9	11.2	1.3
BLACK WALNUT	216.9	20.7	54.8	140.2	1.2
BLACK CHERRY	22.0	--	3.9	15.1	3.0
ELM	153.4	8.7	47.8	70.7	26.2
OTHER HARDWOODS	360.2	40.4	78.9	120.1	120.8
TOTAL HARDWOODS	13,874.9	1,068.9	3,164.6	6,605.4	3,036.0
ALL SPECIES	15,054.9	1,222.7	3,332.2	7,462.9	3,037.1

1/ INTERNATIONAL 1/4-INCH RULE.

Table 50.--*Walnut volume on nonforest land by diameter class and class of timber, Missouri, 1972*

Diameter class (inches at breast height)	: Growing : stock :	: Sawtimber : trees :	: Rough : trees :	: Short-log : trees :	: Rotten : trees :
	<u>Thousand</u> <u>cubic feet</u>	<u>Thousand</u> <u>board feet</u> ^{1/}	<u>Thousand</u> <u>cubic feet</u>	<u>Thousand</u> <u>board feet</u> ^{1/}	<u>Thousand</u> <u>cubic feet</u>
5.0-6.9	591.3	--	2,969.5	--	104.1
7.0-8.9	2,905.8	--	4,636.4	--	--
9.0-10.9	3,645.2	--	3,347.3	--	224.0
11.0-12.9	2,476.5	13,623.2	3,674.3	1,793.1	677.6
13.0-14.9	4,632.0	23,206.5	3,053.1	4,600.2	171.9
15.0-16.9	3,345.6	18,125.1	2,664.7	7,069.6	522.4
17.0-18.9	316.1	1,478.4	276.7	5,096.7	574.0
19.0-20.9	1,288.9	6,597.4	926.8	--	396.7
21.0-22.9	284.7	1,316.8	1,402.2	--	47.0
23.0-28.9	995.9	5,207.3	665.8	--	486.3
29.0-38.9	--	--	--	900.1	738.1
All diameters	20,482.0	69,554.7	23,616.8	19,459.7	3,942.1

1/ International 1/4-inch rule.

Table 51.--*Net volume of growing stock, sawtimber, and rough and rotten trees on commercial forest land by individual species, Missouri, 1972*

Species	: Growing : stock	: Sawtimber	: Rough and : Rotten trees
	<u>Million cubic feet</u>	<u>Million board feet^{1/}</u>	<u>Million cubic feet</u>
Softwoods:			
Shortleaf pine	305.0	1,032.4	5.9
Baldcypress	7.4	34.4	3.1
Eastern redcedar	56.4	113.2	25.1
Total softwoods	368.8	1,180.0	34.1
Hardwoods:			
Select white oak group			
White oak	1,425.2	3,610.3	543.3
Bur oak	19.7	60.5	24.1
Chinkapin oak	55.0	139.9	82.0
Overcup oak	5.2	14.1	2.4
Swamp chestnut oak	3.5	14.2	2.6
Swamp white oak	31.1	82.0	26.6
Other white oak group			
Post oak	650.2	1,156.8	480.4
Select red oak group			
Cherrybark oak	3.8	17.1	1.6
Northern red oak	288.4	958.6	101.5
Shumard oak	7.7	34.9	2.9
Red oak group			
Black oak	1,290.4	3,247.5	543.2
Scarlet oak	311.6	815.1	76.0
Southern red oak	18.0	42.0	7.0
Other red oak group			
Blackjack oak	64.4	114.2	147.1
Pin oak	58.4	209.9	25.7
Shingle oak	30.9	75.0	42.9
Water oak	.3	1.2	--
Willow oak	6.6	28.3	1.9
Hickory A group			
Mockernut hickory	134.8	276.7	56.3
Pecan	9.4	30.4	2.9
Shagbark hickory	118.8	232.3	46.3
Shellbark hickory	33.1	76.5	9.6
Hickory B group			
Bitternut hickory	33.8	36.1	16.0
Black hickory	58.2	91.8	17.1
Pignut hickory	166.4	283.5	85.7
Water hickory	.3	1.7	.3

(Table 51 continued on next page)

(Table 51 continued)

Species	: Growing : stock	: Sawtimber : board feet ^{1/}	: Rough and : rotten trees
	<u>Million cubic feet</u>	<u>Million board feet^{1/}</u>	<u>Million cubic feet</u>
Hardwoods (cont.):			
Hard maple group			
Black maple	.2	--	--
Sugar maple	38.2	56.4	37.6
Soft maple group			
Red maple	2.6	1.4	3.7
Silver maple	59.8	204.9	59.2
American beech	.3	1.3	1.1
Sweetgum	8.0	23.4	3.0
Tupelo and blackgum group			
Blackgum	30.8	89.4	15.4
Black tupelo	2.9	9.0	2.6
Water tupelo	.2	1.0	.2
Ash group			
White ash	57.7	111.2	50.8
Green ash	44.1	100.3	21.9
Blue ash	2.1	3.8	1.7
Sycamore group			
American sycamore	125.0	473.4	20.6
Cottonwood group			
Eastern cottonwood	65.3	306.9	11.6
Birch group			
River birch	26.0	66.4	12.1
Yellow poplar	1.6	4.6	.1
Basswood group			
American basswood	6.5	18.4	8.3
Black walnut	96.9	216.9	71.3
Black cherry	8.2	22.0	15.7
Elm group			
American elm	60.2	103.4	96.6
Rock elm	5.4	6.1	6.3
Slippery elm	23.0	42.5	22.8
Winged elm	4.4	1.4	2.3
Other hardwoods			
Boxelder	6.1	20.5	16.0
Ohio buckeye	.6	--	2.0
Sugarberry	2.3	10.0	1.1
Hackberry	33.5	75.3	23.8
Flowering dogwood	.3	--	4.7
Common persimmon	3.8	1.3	6.4
Honeylocust	13.3	35.7	34.7
Kentucky coffeetree	4.6	13.4	2.5
Butternut	1.3	2.6	2.8
Red mulberry	1.3	4.6	12.2
Black locust	5.4	5.6	8.2
Sassafras	1.4	1.1	5.3
Northern catalpa	--	--	.2
Black willow	64.0	189.1	14.2
Osage orange	--	--	12.4
Cucumber tree	.2	1.0	--
Noncommercial	--	--	8.9
Total hardwoods	<u>5,632.7</u>	<u>13,874.9</u>	<u>2,965.7</u>
All species	6,001.5	15,054.9	2,999.8

^{1/} International 1/4-inch rule.

Table 52.--*Net volume of timber in rough, rotten, and short-log (cull) trees on commercial forest land by species and cull tree class, Missouri, 1972*

(In million cubic feet)

Species	: All : cull : trees	: Rough : trees	: Short-log : trees ^{1/}	: Rotten : trees
Softwoods:				
Shortleaf pine	5.9	4.6	0.3	1.0
Cypress	3.1	.3	.6	2.2
Eastern redcedar	25.1	20.0	4.1	1.0
Total softwoods	34.1	24.9	5.0	4.2
Hardwoods:				
Select white oaks	681.0	445.7	161.8	73.5
Other white oaks	480.4	353.0	67.5	59.9
Select red oaks	106.0	59.6	18.3	28.1
Red oaks	626.2	401.1	100.2	124.9
Other red oaks	217.6	160.3	23.1	34.2
Hickory A	115.1	88.4	17.0	9.7
Hickory B	119.1	91.5	15.0	12.6
Hard maple	37.6	27.6	3.8	6.2
Soft maple	62.9	39.9	11.0	12.0
Beech	1.1	.8	--	.3
Sweetgum	3.0	2.0	.2	.8
Tupelo and blackgum	18.2	9.0	3.9	5.3
Ash	74.4	57.2	7.3	9.9
Sycamore	20.6	8.1	5.7	6.8
Cottonwood	11.6	4.8	1.7	5.1
River birch	12.1	6.4	2.5	3.2
Yellow-poplar	.1	.1	--	--
Basswood	8.3	4.9	.6	2.8
Black walnut	71.3	49.4	13.8	8.1
Black cherry	15.7	12.4	1.8	1.5
Elm	128.0	98.1	14.0	15.9
Other hardwoods	146.5	104.2	11.3	31.0
Noncommercial species	8.9	8.6	--	.3
Total hardwoods	2,965.7	2,033.1	480.5	452.1
All species	2,999.8	2,058.0	485.5	456.3

^{1/} Volumes are for trees 9.0 inches d.b.h. and larger for softwoods and 11.0 inches d.b.h. and larger for hardwoods. Volumes for rough and rotten trees are for trees 5.0 inches d.b.h. and larger.

Table 53.--*Net volume of short-log trees on commercial forest land by species and diameter class, Missouri, 1972*

(In million board feet¹)

Species	:	All	:	Diameter class (inches at breast height)																	
	:	9.0-	:	11.0-	:	13.0-	:	15.0-	:	17.0-	:	19.0-	:	21.0-	:	23.0-	:	29.0-	:	39.0+	
	classes	10.9	:	12.9	:	14.9	:	16.9	:	18.9	:	20.9	:	22.9	:	28.9	:	38.9	:		
Softwoods:																					
Shortleaf pine	2.5	--	1.1	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cypress	2.6	1.4	--	--	--	--	--	--	.4	.8	--	--	--	--	--	--	--	--	--	--	
Eastern redcedar	20.1	13.4	5.4	1.0	.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total softwoods	25.2	14.8	6.5	1.0	.3	1.4	--	.4	.8	--	--	--	--	--	--	--	--	--	--	--	
Hardwoods:																					
Select white oaks	550.1	--	161.4	141.7	91.9	53.7	30.5	24.5	33.2	13.2	--	--	--	--	--	--	--	--	--	--	
Other white oaks	253.2	--	105.7	83.1	36.8	17.0	5.3	3.1	1.7	.5	--	--	--	--	--	--	--	--	--	--	
Select red oaks	55.7	--	10.9	12.6	10.5	2.9	4.3	3.8	6.8	3.6	.3	--	--	--	--	--	--	--	--	--	
Red oaks	319.8	--	110.5	70.6	63.1	25.4	16.1	13.6	14.1	6.2	.2	--	--	--	--	--	--	--	--	--	
Other red oaks	72.5	--	30.1	14.1	6.6	12.4	2.0	1.6	5.4	.3	--	--	--	--	--	--	--	--	--	--	
Hickory A	59.6	--	21.9	13.3	9.1	7.2	1.9	1.2	5.0	--	--	--	--	--	--	--	--	--	--	--	
Hickory B	44.7	--	26.6	8.4	7.8	1.6	--	--	--	.3	--	--	--	--	--	--	--	--	--	--	
Hard maple	8.7	--	1.4	2.6	3.2	--	1.2	.3	--	--	--	--	--	--	--	--	--	--	--	--	
Soft maple	24.4	--	4.0	4.3	4.7	2.9	2.1	1.8	3.9	--	.7	--	--	--	--	--	--	--	--	--	
Sweetgum	.6	--	--	.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tupelo and blackgum	8.8	--	3.7	2.3	.5	1.2	--	.5	.6	--	--	--	--	--	--	--	--	--	--	--	
Ash	16.2	--	7.6	6.2	--	1.9	.2	.3	--	--	--	--	--	--	--	--	--	--	--	--	
Sycamore	10.1	--	.9	3.2	.2	--	.4	1.1	2.5	1.8	--	--	--	--	--	--	--	--	--	--	
Cottonwood	3.5	--	--	1.0	--	--	.3	--	1.1	1.1	--	--	--	--	--	--	--	--	--	--	
River birch	7.7	--	.7	4.7	.6	--	--	1.7	--	--	--	--	--	--	--	--	--	--	--	--	
Basswood	1.8	--	--	--	.8	--	.6	--	--	.4	--	--	--	--	--	--	--	--	--	--	
Black walnut	39.3	--	12.7	9.8	8.2	4.3	1.1	--	3.2	--	--	--	--	--	--	--	--	--	--	--	
Black cherry	4.3	--	--	.3	2.0	--	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
Elm	35.2	--	11.5	9.1	4.9	2.3	2.5	.5	2.3	1.2	.9	--	--	--	--	--	--	--	--	--	
Other hardwoods	27.2	--	6.9	7.3	3.2	3.0	2.3	1.0	1.9	1.6	--	--	--	--	--	--	--	--	--	--	
Total hardwoods	1,543.4	--	516.5	395.2	254.1	135.8	72.8	55.0	81.7	30.2	2.1	--	--	--	--	--	--	--	--	--	
All species	1,568.6	14.8	523.0	396.2	254.4	137.2	72.8	55.4	82.5	30.2	2.1	--	--	--	--	--	--	--	--	--	

¹/ International 1/4-inch rule.

Table 54.--Cubic foot volume in all live trees by species and diameter class, Missouri, 1972

(In million cubic feet)

Species	: All : classes	Diameter class (inches at breast height)															
		5.0- : 6.9	7.0- : 8.9	9.0- : 10.9	11.0- : 12.9	13.0- : 14.9	15.0- : 16.9	17.0- : 18.9	19.0- : 20.9	21.0- : 22.9	23.0- : 24.9	25.0- : 26.9	27.0- : 28.9	29.0- : 30.9	31.0- : 32.9	33.0- : 34.9	35.0- : 36.9
Softwoods:																	
Shorthleaf pine	310.9	51.1	75.4	80.3	62.8	24.3	9.5	5.5	2.0	--	--	--	--	--	--	--	--
Cypress	10.5	--	.1	.1	.3	1.0	1.1	2.0	.9	1.3	1.6	1.0	1.1	1.1	--	--	--
Eastern redcedar	81.4	23.8	25.1	18.4	8.8	2.8	2.5	--	--	--	--	--	--	--	--	--	--
Total softwoods	402.8	74.9	100.6	98.8	71.9	28.1	13.1	7.5	2.9	1.3	1.6	1.0	1.1	1.1	--	--	--
Hardwoods:																	
Select white oaks	2,221.1	275.1	350.1	387.2	372.0	336.6	199.7	110.4	63.6	43.2	59.6	23.4	--	--	--	--	--
Other white oaks	1,130.6	229.2	211.3	214.2	178.8	138.2	74.8	38.6	20.4	11.1	12.6	1.4	--	--	--	--	--
Select red oaks	406.4	28.4	43.6	60.4	52.4	59.6	49.5	33.6	19.8	16.9	32.8	8.7	--	--	--	--	--
Red oaks	2,245.9	260.2	360.6	438.3	403.8	297.2	201.5	107.9	68.6	40.7	47.6	11.5	8.0	--	--	--	--
Other red oaks	378.3	59.0	66.9	66.8	53.1	39.8	31.0	24.9	15.0	6.1	10.7	4.1	.9	--	--	--	--
Hickory A	410.9	82.8	79.2	79.1	64.7	45.3	20.0	18.6	9.5	4.0	6.2	1.5	--	--	--	--	--
Hickory B	377.4	81.8	89.8	82.9	57.3	31.9	21.2	6.8	3.2	.6	1.8	.1	--	--	--	--	--
Hard maple	75.9	14.3	15.9	15.1	10.8	7.4	4.6	3.1	1.3	1.9	1.0	.5	--	--	--	--	--
Soft maple	125.1	12.6	10.5	16.8	17.5	13.7	14.2	5.8	6.1	7.3	10.3	6.6	3.7	--	--	--	--
Beech	1.4	--	--	--	.2	.1	.3	.1	.2	.4	.1	--	--	--	--	--	--
Sweetgum	11.3	.8	1.3	3.1	2.2	1.0	1.5	.9	.1	--	.3	.1	--	--	--	--	--
Tupelo and blackgum	52.3	9.2	6.0	7.4	8.8	5.6	8.6	3.6	.3	1.3	1.0	.5	--	--	--	--	--
Ash	178.9	35.4	36.6	36.0	28.5	17.0	7.0	7.8	2.4	2.9	3.4	1.9	--	--	--	--	--
Sycamore	145.4	7.1	10.1	14.1	18.0	17.3	18.7	14.1	9.2	9.4	18.4	7.3	1.7	--	--	--	--
Cottonwood	76.6	1.4	3.9	3.4	5.0	6.7	8.0	7.9	6.5	4.9	11.2	11.5	6.2	--	--	--	--
River birch	37.8	5.8	5.1	4.1	4.0	5.4	3.0	2.9	1.6	1.2	2.1	1.3	1.3	--	--	--	--
Yellow-poplar	1.6	.2	.1	.1	.4	.1	--	--	.1	--	--	.6	--	--	--	--	--
Basswood	14.9	1.5	1.9	2.9	2.3	1.8	1.0	1.2	.5	.7	.6	.5	--	--	--	--	--
Black walnut	168.1	23.4	35.4	28.9	28.0	22.4	14.5	8.3	4.1	1.1	2.0	--	--	--	--	--	--
Black cherry	23.6	6.0	5.9	2.7	2.9	2.6	1.7	.4	1.1	--	.3	--	--	--	--	--	--
Elm	220.8	57.9	47.4	35.0	25.5	16.6	11.3	9.2	5.3	3.1	6.1	1.9	1.5	--	--	--	--
Other hardwoods	284.7	52.7	49.8	48.5	39.5	30.9	22.2	13.8	10.3	4.8	8.1	4.1	--	--	--	--	--
Noncommercial species	8.9	6.4	1.6	.5	.3	--	--	.1	--	--	--	--	--	--	--	--	--
Total hardwoods	8,597.9	1,251.2	1,433.0	1,547.5	1,376.0	1,097.2	714.3	420.0	249.2	161.6	236.2	87.5	24.2	--	--	--	--
All species	9,000.7	1,326.1	1,533.6	1,646.3	1,447.9	1,125.3	727.4	427.5	252.1	162.9	237.8	88.5	25.3	--	--	--	--

Table 55.--Net volume of growing stock and sawtimber on commercial forest land by county and species group, Missouri, 1972

County	Growing stock								Sawtimber							
	All	Soft-	White	Red	Hickory	Black	Other	All	Soft-	White	Red	Hickory	Black	Other		
	species	woods	oak	oak	group	walnut	hdwds	species	woods	oak	oak	group	walnut	hdwds		
	Thousand cords								Million board feet							
Adair	290.2	1.1	113.2	74.5	36.7	9.7	55.0	52.0	0.4	21.1	14.6	3.3	1.6	11.0		
Andrew	79.4	0.3	25.4	19.2	9.3	3.1	22.1	15.6	0.1	4.9	4.0	1.0	0.5	5.1		
Atchison	92.8	0.2	27.4	18.1	9.4	3.6	34.1	20.6	0.1	5.7	4.2	1.3	0.7	8.6		
Audrain	191.0	0.4	50.9	35.6	18.0	8.0	78.1	42.4	0.2	10.8	8.1	2.4	1.5	19.4		
Barry	863.6	78.7	288.1	369.8	72.9	13.1	41.0	166.8	17.3	53.8	76.6	9.6	2.0	7.5		
Barton	138.6	0.4	32.2	38.0	18.7	7.6	41.7	32.5	0.1	7.1	10.2	3.7	1.9	9.5		
Bates	288.7	0.9	64.7	79.1	38.8	14.4	90.8	67.8	0.3	14.4	20.9	7.5	3.5	21.2		
Benton	755.6	7.6	347.9	263.9	56.0	10.1	70.1	144.4	2.7	62.9	54.8	6.7	1.6	15.7		
Bollinger	1,387.0	114.3	433.4	616.5	124.7	10.1	88.0	275.7	30.3	72.0	133.6	19.7	1.3	18.8		
Boone	793.4	21.0	371.0	164.8	74.7	15.1	146.8	164.5	3.0	74.9	38.2	12.0	2.9	33.5		
Buchanan	112.4	0.3	27.5	21.7	10.7	5.9	46.3	23.5	0.1	5.6	4.8	1.4	1.1	10.5		
Butler	1,257.6	181.1	323.6	531.2	95.6	8.1	118.0	261.5	48.5	50.8	120.6	15.0	0.9	25.7		
Caldwell	109.9	0.3	27.6	20.7	10.6	4.7	46.0	24.9	0.1	6.1	4.8	1.5	0.9	11.5		
Callaway	1,306.1	30.9	632.2	279.4	126.1	24.2	213.3	266.5	4.4	126.0	64.8	19.9	4.5	46.9		
Camden	935.1	11.3	443.5	338.0	71.1	12.9	58.3	173.1	3.8	78.4	68.2	7.9	2.1	12.7		
Cape Girardeau	717.8	15.7	358.2	141.0	66.6	12.8	123.5	156.5	2.5	77.1	34.7	11.5	2.5	28.2		
Carroll	182.3	0.5	51.5	35.6	17.9	7.1	69.7	41.2	0.2	11.0	8.4	2.4	1.4	17.8		
Carter	1,695.2	231.6	515.7	732.8	146.3	10.6	58.2	318.0	60.5	79.6	144.6	21.6	1.3	10.4		
Cass	191.0	0.8	65.5	59.8	24.7	10.0	30.2	40.9	0.3	13.1	14.6	4.3	2.4	6.2		
Cedar	324.1	2.8	147.0	112.3	24.3	4.5	33.2	62.8	1.0	26.9	23.6	3.0	0.6	7.7		
Chariton	283.5	0.6	73.1	51.1	25.6	12.3	120.8	65.7	0.2	16.5	12.5	3.6	2.4	30.5		
Christian	593.3	47.5	200.6	252.7	51.7	9.4	31.4	113.5	11.4	36.6	51.3	6.8	1.4	6.0		
Clark	328.9	1.3	119.1	76.1	36.7	12.0	83.7	70.2	0.4	25.6	17.7	4.6	2.3	19.6		
Clay	133.6	0.4	34.5	27.0	13.3	6.2	52.2	27.5	0.1	6.8	5.8	1.6	1.1	12.1		
Clinton	124.7	0.3	26.1	22.3	10.9	5.4	59.7	28.0	0.1	5.6	4.9	1.3	1.0	15.1		
Cole	535.0	17.2	255.8	113.7	50.6	9.5	88.2	107.2	2.6	50.6	25.9	7.8	1.7	18.6		
Cooper	289.4	1.6	105.7	88.3	39.7	13.1	41.0	58.6	0.4	20.5	19.9	5.9	3.1	8.8		
Crawford	2,195.8	178.1	696.7	981.7	198.5	15.3	125.5	412.1	46.8	108.5	198.5	29.7	1.9	26.7		
Dade	208.5	1.4	73.8	62.9	30.1	10.1	30.2	39.9	0.4	13.7	13.5	4.1	2.3	5.9		
Dallas	571.3	5.8	263.0	200.8	43.0	7.8	50.9	108.1	2.1	47.0	41.0	5.2	1.2	11.6		
Davies	197.7	0.8	74.5	48.9	23.3	7.0	43.2	39.1	0.3	15.0	10.6	2.4	1.3	9.5		
DeKalb	78.9	0.3	24.1	17.1	8.4	3.0	26.0	17.6	0.1	5.4	3.9	1.2	0.6	6.4		
Dent	2,061.9	201.7	654.4	931.6	185.8	13.7	74.7	374.0	53.2	97.3	181.2	27.0	1.6	13.7		
Douglas	1,157.8	105.6	387.0	495.7	99.8	17.2	52.5	226.4	27.4	71.6	101.6	13.2	2.7	9.9		
Dunklin	269.8	24.1	19.2	35.1	18.7	0.7	172.0	75.2	8.7	4.2	11.2	5.5	0.2	45.4		
Franklin	1,907.8	54.1	959.5	397.9	181.0	32.1	283.2	408.7	8.0	205.0	98.3	31.3	5.9	60.2		
Gasconade	1,230.0	29.1	632.2	263.3	119.3	19.9	166.2	250.0	4.2	127.5	61.9	19.2	3.4	33.8		
Gentry	138.2	0.5	45.5	33.4	16.3	5.3	37.2	26.7	0.2	8.7	6.8	1.8	0.9	8.3		
Green	321.0	2.1	119.1	97.8	46.3	15.2	40.5	61.2	0.7	22.1	21.0	6.3	3.4	7.7		
Grundy	149.3	0.5	48.2	31.4	15.2	6.1	47.9	33.6	0.2	10.7	7.6	2.2	1.2	11.7		
Harrison	284.3	1.0	97.1	65.1	31.6	10.1	79.4	59.1	0.4	20.1	14.4	3.6	1.9	18.7		
Henry	221.4	0.8	55.2	61.7	29.0	11.1	63.6	49.5	0.2	11.6	15.7	5.2	2.7	14.1		
Hickory	456.5	4.3	211.6	160.5	35.0	6.4	38.7	87.3	1.6	38.2	33.2	4.2	0.9	9.2		
Holt	101.3	0.3	27.3	20.9	10.4	4.9	37.5	20.1	0.1	5.3	4.3	1.2	0.8	8.4		
Howard	429.0	13.3	196.2	90.2	40.0	8.4	80.9	90.2	2.0	40.6	21.3	6.6	1.6	18.1		
Howell	1,303.2	104.3	440.7	571.9	111.7	18.5	56.1	260.6	25.7	83.6	122.3	15.1	3.1	10.8		
Iron	2,009.4	198.8	634.9	906.5	177.3	13.3	78.6	364.8	49.4	95.3	177.3	26.1	1.6	15.1		
Jackson	99.7	0.7	27.7	29.4	15.4	5.3	21.2	19.4	0.3	5.1	6.6	2.1	1.2	4.1		
Jasper	263.5	0.9	77.0	77.5	35.5	14.0	58.6	60.0	0.3	16.6	20.0	6.6	3.3	13.2		
Jefferson	1,675.1	49.0	864.3	362.7	162.2	27.3	209.6	349.9	7.2	181.1	87.9	27.3	4.8	41.6		
Johnson	268.2	1.5	82.7	78.1	38.3	13.7	53.9	56.0	0.5	16.5	18.5	6.0	3.1	11.4		
Knox	207.5	0.8	74.3	48.4	23.4	7.1	53.5	42.9	0.2	15.3	10.8	2.7	1.3	12.6		
Lackde	843.0	10.3	399.4	303.5	63.6	11.7	54.5	152.6	3.5	68.5	60.0	7.0	2.0	11.6		
Lafayette	126.9	0.4	31.6	35.8	16.8	6.2	36.1	29.9	0.1	7.1	9.4	3.2	1.6	8.5		
Lawrence	297.7	1.6	114.1	93.3	40.9	13.8	34.0	62.0	0.5	23.3	21.7	6.2	3.2	7.1		
Lewis	301.3	1.1	113.6	71.5	34.2	10.3	70.6	62.6	0.4	23.7	16.2	3.9	2.0	16.4		
Lincoln	516.7	1.8	188.2	120.8	58.5	17.5	129.9	106.9	0.6	38.8	26.9	6.6	3.4	30.6		

(Table 55 continued on next page)

(Table 55 continued)

County	Growing stock							Sawtimber						
	All	Soft-	White oak	Red oak	Hickory	Black	Other	All	Soft-	White oak	Red oak	Hickory	Black	Other
	: species	: woods	: group	: group	: group	: walnut	: hwdws	: species	: woods	: group	: group	: group	: walnut	: hwdws
	Thousand cords							Million board feet						
Linn	179.5	0.4	44.3	32.0	15.8	8.8	78.2	41.1	0.1	10.0	7.8	2.3	1.6	19.3
Livingston	175.4	0.5	44.2	32.9	16.8	8.1	72.9	38.3	0.2	9.3	7.4	2.2	1.5	17.7
McDonald	817.2	39.1	283.9	369.7	73.7	12.3	38.5	157.8	9.9	52.2	76.4	9.9	2.1	7.3
Macon	388.3	1.5	147.1	96.8	46.1	13.4	83.4	74.9	0.5	29.2	20.7	4.7	2.2	17.6
Madison	1,621.1	235.8	477.3	680.6	133.4	10.6	83.4	303.2	58.4	73.6	132.6	19.8	1.2	17.6
Maries	603.9	6.8	290.1	219.3	46.2	8.1	33.4	104.1	2.5	48.4	40.5	4.8	1.2	6.7
Marion	269.4	1.0	103.4	65.4	31.8	9.0	58.8	53.3	0.3	20.6	14.1	3.3	1.7	13.3
Mercer	172.8	0.7	64.6	42.5	20.4	5.7	38.9	35.9	0.2	13.6	9.5	2.4	1.1	9.1
Miller	690.7	7.2	322.7	242.9	51.3	9.1	57.5	126.4	2.6	56.0	48.0	5.8	1.4	12.6
Mississippi	193.6	11.0	9.1	9.2	5.8	0.8	157.7	51.2	4.1	1.8	2.4	2.2	0.2	40.5
Moniteau	369.1	12.6	174.4	85.0	36.3	7.1	53.7	71.9	1.7	33.6	19.3	5.4	1.2	10.7
Monroe	318.1	1.1	110.8	70.6	34.3	11.9	89.4	68.2	0.4	23.6	16.3	4.2	2.3	21.4
Montgomery	760.8	18.3	342.9	154.8	70.6	15.6	158.6	159.6	3.0	68.2	35.7	11.1	3.1	38.5
Morgan	755.0	9.0	360.2	273.9	56.4	9.7	45.8	140.0	3.3	63.7	55.4	6.4	1.5	9.7
New Madrid	210.9	12.4	10.9	11.4	7.5	0.6	168.1	55.9	4.5	2.2	3.1	2.5	0.1	43.5
Newton	488.8	24.2	172.0	217.9	43.5	7.4	23.8	96.6	5.9	32.3	46.4	6.0	1.3	4.7
Nodaway	146.0	0.4	42.1	30.5	14.8	6.4	51.8	30.7	0.2	8.7	6.6	1.8	1.1	12.3
Oregon	1,988.0	243.6	612.2	860.0	177.0	13.0	82.2	378.5	65.0	97.0	172.3	26.7	1.6	15.9
Osage	1,219.8	35.9	587.5	266.7	117.0	22.1	190.6	248.8	5.0	117.4	62.1	18.5	4.1	41.7
Ozark	1,095.8	73.7	376.5	475.1	95.5	18.0	57.0	214.6	17.8	70.7	99.4	12.7	2.8	11.2
Pemiscot	176.9	11.9	10.3	11.4	8.3	0.6	134.4	46.8	4.3	1.6	2.9	2.5	0.1	35.4
Perry	830.8	20.1	414.0	173.0	79.0	14.2	130.5	176.4	3.0	87.6	42.3	13.3	2.6	27.6
Pettis	244.4	1.1	82.9	73.0	33.1	11.4	42.9	50.8	0.3	16.3	16.9	5.3	2.7	9.3
Phelps	957.7	15.1	454.0	358.2	71.8	12.6	46.0	168.1	5.4	75.3	68.6	7.5	2.1	9.2
Pike	594.0	2.2	216.8	139.5	67.4	20.3	147.8	123.2	0.7	44.8	31.1	7.7	3.9	35.0
Platte	171.0	0.5	49.3	39.8	19.6	8.0	53.8	30.0	0.2	8.1	7.4	2.0	1.3	11.0
Polk	368.2	7.0	162.4	125.1	27.2	5.6	40.9	69.2	2.1	28.1	25.3	3.3	1.0	9.4
Pulaski	772.1	8.1	361.7	278.5	59.3	10.7	53.8	138.7	2.9	61.5	54.2	6.6	1.6	11.9
Putnam	245.0	1.0	92.3	59.9	28.7	8.3	54.8	49.4	0.3	18.8	13.2	3.2	1.5	12.4
Ralls	295.8	1.1	112.4	70.0	33.6	10.4	68.3	62.3	0.4	24.0	16.0	4.1	2.0	15.8
Randolph	306.4	1.2	122.9	76.1	36.6	9.7	59.9	61.5	0.4	25.1	16.9	4.0	1.8	13.3
Ray	218.1	0.7	67.7	49.3	24.7	9.1	66.6	41.5	0.3	12.5	10.0	2.6	1.5	14.6
Reynolds	2,996.5	295.9	944.7	1,338.8	265.3	20.4	131.4	560.1	77.2	146.1	268.9	39.5	2.5	25.9
Ripley	1,848.6	272.4	539.7	768.9	154.4	11.8	101.4	350.0	71.6	82.2	151.3	22.6	1.4	20.9
St. Charles	786.6	15.3	330.6	134.5	66.1	17.0	223.1	182.2	2.7	72.9	33.1	11.9	3.8	57.8
St. Clair	557.6	5.0	246.5	188.5	42.1	8.2	67.3	109.3	1.8	45.0	39.8	5.5	1.1	16.1
St. Francois	863.8	77.4	269.1	378.7	78.9	6.1	53.6	158.6	19.2	41.2	74.9	11.7	0.7	10.9
St. Louis	500.7	15.9	218.4	97.6	45.6	10.7	112.5	111.4	2.3	47.3	24.0	7.9	2.3	27.6
Ste. Genevieve	1,140.1	35.5	580.4	253.6	115.1	18.4	137.1	227.6	4.0	117.6	60.5	17.5	3.0	25.0
Saline	175.1	0.8	52.3	50.9	23.4	8.4	39.3	37.8	0.2	10.6	12.4	3.9	2.0	8.7
Schuyler	76.4	0.3	27.7	17.7	8.7	2.7	19.3	15.8	0.1	5.7	4.0	1.0	0.5	4.5
Scotland	135.6	0.4	45.0	28.5	13.3	5.4	43.0	30.4	0.2	10.0	7.0	1.8	1.0	10.4
Scott	241.1	5.9	53.9	65.4	42.9	0.3	72.7	65.3	2.2	14.6	20.8	10.0	0.1	17.6
Shannon	3,169.6	346.8	992.9	1,412.1	282.0	20.7	115.1	584.2	90.7	151.7	277.3	41.6	2.5	20.4
Shelby	228.5	0.8	82.3	51.3	24.4	7.9	61.8	50.7	0.3	18.1	12.3	3.1	1.6	15.3
Stoddard	594.4	29.0	106.8	146.4	83.3	0.7	228.2	163.2	10.6	27.7	45.8	20.7	0.2	58.2
Stone	566.0	36.2	195.2	245.3	49.9	9.5	29.9	106.1	7.9	35.3	49.6	6.4	1.4	5.5
Sullivan	235.7	0.9	82.2	53.7	25.8	8.7	64.4	50.5	0.3	17.5	12.4	3.2	1.6	15.5
Taney	757.4	52.5	265.1	312.3	68.8	15.0	43.7	138.3	10.0	48.7	61.8	8.6	1.9	7.3
Texas	1,811.6	176.0	598.0	778.1	155.4	26.0	78.1	351.0	46.7	108.5	157.0	20.4	4.2	14.2
Vernon	403.9	1.0	97.8	113.2	54.2	19.6	118.1	98.2	0.3	22.7	30.9	11.1	5.0	28.2
Warren	995.1	25.3	482.8	200.5	92.1	17.6	176.8	212.1	4.2	100.7	48.2	15.4	3.4	40.2
Washington	2,533.4	308.0	780.2	1,091.1	220.3	17.1	116.7	484.7	82.1	123.3	221.1	33.1	2.2	22.9
Wayne	2,417.7	326.8	729.2	1,040.0	204.0	15.7	102.0	461.1	85.8	113.4	210.2	30.6	2.0	19.1
Webster	574.6	28.8	201.2	257.3	51.1	8.7	27.5	112.6	7.0	37.6	54.4	6.9	1.4	5.3
Worth	75.7	0.3	26.2	17.7	8.5	2.6	20.4	15.6	0.1	5.4	3.8	1.0	0.5	4.8
Wright	743.6	41.4	256.2	326.5	67.3	12.1	40.1	140.9	10.2	46.4	65.6	8.8	1.9	8.0
All counties	75,966.8	4,667.9	27,721.8	26,338.2	7,017.5	1,226.4	8,995.0	15,054.9	1,180.0	5,077.8	5,543.8	1,029.0	216.9	2,007.4

Table 56.--Green weight of merchantable stem in all live trees by species and diameter class, Missouri, 1972

(In million kilograms, green weight)

Species	All classes	Diameter class (inches at breast height)																	39.0+
		5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9	28.0- 29.9	29.0- 30.9	30.0- 31.9			
Softwoods:																			
Shorleaf pine	7,192	1,182	1,744	1,858	1,453	562	220	127	46	--	--	--	--	--	--	--	--	--	--
Cypress	237	--	2	2	7	23	25	45	20	29	36	23	25	25	25	25	25	25	25
Eastern redcedar	1,366	399	421	309	148	47	42	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	8,795	1,581	2,167	2,169	1,608	632	287	172	66	29	36	23	25	25	25	25	25	25	25
Hardwoods:																			
Select white oaks	64,478	7,986	10,164	11,240	10,799	9,772	5,797	3,205	1,846	1,254	1,730	679	6						
Other white oaks	32,309	6,550	6,038	6,121	5,110	3,949	2,138	1,103	583	317	360	40	--						
Select red oaks	11,982	837	1,286	1,781	1,545	1,757	1,459	991	584	498	967	256	21						
Red oaks	63,161	7,318	10,141	12,326	11,356	8,358	5,667	3,034	1,929	1,145	1,339	323	225						
Other red oaks	10,982	1,713	1,942	1,939	1,542	1,155	900	723	435	177	311	119	26						
Hickory A	11,741	2,366	2,263	2,260	1,849	1,294	572	532	271	114	177	43	--						
Hickory B	11,126	2,412	2,648	2,444	1,689	940	625	200	94	18	53	3	--						
Hard maple	1,893	357	397	377	269	185	115	77	32	47	25	12	--						
Soft maple	2,724	274	229	366	381	298	309	126	133	159	224	144	81						
Beech	33	--	--	--	5	2	7	2	5	10	2	--	--						
Sweetgum	256	18	29	71	50	23	34	20	2	--	7	2	--						
Tupelo and blackgum	1,187	209	136	168	200	127	195	82	7	29	23	11	--						
Ash	3,894	771	797	784	620	370	152	170	52	63	74	41	--						
Sycamore	3,430	167	238	333	425	408	441	333	217	222	434	172	40						
Cottonwood	1,704	31	87	76	111	149	178	176	144	109	249	256	138						
River birch	789	121	106	86	83	113	63	61	33	25	44	27	27						
Yellow-poplar	28	3	2	2	7	2	--	--	2	--	--	10	--						
Basswood	276	28	35	54	43	33	19	22	9	13	11	9	--						
Black walnut	4,422	616	931	760	737	589	381	218	108	29	53	--	--						
Black cherry	491	125	123	56	61	54	35	8	23	--	6	--	--						
Elm	5,408	1,418	1,161	857	625	407	277	225	130	76	149	46	37						
Other hardwoods	6,717	1,243	1,175	1,144	932	729	524	326	243	113	191	97	--						
Noncommercial species	242	174	43	14	8	--	--	3	--	--	--	--	--						
Total hardwoods	239,273	34,737	39,971	43,259	38,447	30,714	19,888	11,637	6,882	4,418	6,429	2,290	601						
All species	248,068	36,318	42,138	45,428	40,055	31,346	20,175	11,809	6,948	4,447	6,465	2,313	626						

Table 57.--*Net annual growth of growing stock on commercial forest land by species and Forest Survey Unit, Missouri, 1971*

(In cords)

SPECIES	: ALL : UNITS	: EASTERN : OZARKS	: SOUTHWESTERN : OZARKS	: NORTHWESTERN : OZARKS	: PRAIRIE	: RIVERBORDER
SOFTWOODS:						
SHORTLEAF PINE	135,665	104,312	28,558	1,791	--	1,004
CYPRESS	2,598	--	--	--	--	2,598
EASTERN REDCEDAR	27,375	3,830	4,138	2,938	1,390	15,079
TOTAL SOFTWOODS	165,638	108,142	32,696	4,729	1,390	18,681
HARDWOODS:						
SELECT WHITE OAKS	444,321	171,794	49,355	51,839	59,501	111,832
OTHER WHITE OAKS	148,997	38,190	35,164	32,867	19,058	23,718
SELECT RED OAKS	122,210	28,936	22,126	11,328	23,973	35,847
RED OAKS	744,892	446,328	132,771	72,770	37,983	55,040
OTHER RED OAKS	75,140	12,008	6,962	3,692	46,325	6,153
HICKORY A	93,030	25,708	8,165	5,649	26,050	27,458
HICKORY B	76,800	29,190	13,635	8,699	12,186	13,090
HARD MAPLE	9,307	2,159	1,074	44	1,094	4,936
SOFT MAPLE	42,036	1,183	89	1,332	33,165	6,267
BEECH	117	--	--	--	--	117
SWEETGUM	4,078	919	--	--	--	3,159
TUPELO AND BLACKGUM	7,877	3,330	1,039	324	--	3,184
ASH	54,390	3,768	3,176	1,990	25,599	19,857
SYCAMORE	73,000	16,789	5,088	11,344	15,736	24,043
COTTONWOOD	35,592	418	--	--	15,031	20,143
RIVER BIRCH	17,420	2,804	--	12	13,154	1,450
YELLOW-POPLAR	815	--	--	--	--	815
BASSWOOD	2,054	--	152	--	1,633	269
BLACK WALNUT	32,620	3,329	4,440	2,635	16,085	6,131
BLACK CHERRY	2,224	394	213	113	1,346	158
ELM	12,992	3,069	1,013	-234	2,976	6,168
OTHER HARDWOODS	78,748	4,493	3,924	2,965	23,267	44,099
TOTAL HARDWOODS	2,078,660	794,809	288,386	207,369	374,162	413,934
ALL SPECIES	2,244,298	902,951	321,082	212,098	375,552	432,615

Table 58.--*Net annual growth of sawtimber on commercial forest land by species and Forest Survey Unit, Missouri, 1971*

(In thousand board feet¹)

SPECIES	: ALL : : UNITS :	EASTERN : : OZARKS :	SOUTHWESTERN : : OZARKS :	NORTHWESTERN : : OZARKS :	: PRAIRIE : :	: RIVERBORDER :
SOFTWOODS:						
SHORTLEAF PINE	29,445	21,192	7,219	892	--	142
CYPRESS	996	--	--	--	--	996
EASTERN REDCEDAR	3,395	241	368	156	361	2,269
TOTAL SOFTWOODS	33,836	21,433	7,587	1,048	361	3,407
HARDWOODS:						
SELECT WHITE OAKS	70,163	17,738	8,479	9,186	12,914	21,846
OTHER WHITE OAKS	13,613	3,110	4,379	2,431	1,256	2,437
SELECT RED OAKS	27,332	4,875	5,382	2,034	6,351	8,690
RED OAKS	115,398	62,598	22,334	11,770	7,840	10,856
OTHER RED OAKS	12,590	2,748	1,064	192	7,834	752
HICKORY A	10,387	1,714	954	606	2,682	4,431
HICKORY B	6,065	2,237	1,332	533	434	1,529
HARD MAPLE	1,210	423	176	--	200	411
SOFT MAPLE	8,779	191	47	418	6,627	1,496
BEECH	42	--	--	--	--	42
SWEETGUM	740	90	--	--	--	650
TUPELO AND BLACKGUM	1,645	852	201	77	--	515
ASH	7,456	672	677	442	3,462	2,203
SYCAMORE	21,266	3,111	1,446	3,611	5,841	7,257
COTTONWOOD	12,341	122	--	--	5,644	6,575
RIVER BIRCH	2,693	719	--	6	1,497	471
YELLOW-POPLAR	198	--	--	--	--	198
BASSWOOD	463	--	--	--	336	127
BLACK WALNUT	4,635	404	668	425	2,659	479
BLACK CHERRY	394	113	48	4	77	152
ELM	-1,728	546	-55	-246	-2,517	544
OTHER HARDWOODS	13,967	269	189	580	2,821	10,108
TOTAL HARDWOODS	329,649	102,532	47,321	32,069	65,958	81,769
ALL SPECIES	363,485	123,965	54,908	33,117	66,319	85,176

1/ INTERNATIONAL 1/4-INCH RULE.

Table 59.--Timber removals from growing stock and sawtimber on commercial forest land by item and species group, Missouri, 1971¹

Item	Growing stock										Sawtimber									
	All		Shortleaf : pine		Other		Soft		Hard		All		Shortleaf : pine		Other		Soft		Hard	
	species										species									
Thousand board feet ^{2/}																				
<u>Cords</u>																				
Roundwood products:																				
Saw logs	609,005	29,608	6,847	135,940	436,610	247,615	14,022	2,573	68,340	162,680										
Cooperage logs	97,467	--	--	1,468	95,999	46,581	--	--	563	46,018										
Veneer logs	8,506	--	--	2,013	6,493	3,136	--	--	708	2,428										
Charcoal wood	67,077	--	--	620	66,457	7,799	--	--	85	7,714										
Pulpwood	20,752	865	--	12,202	7,685	6,998	94	--	4,224	2,680										
Posts	22,001	9,242	405	582	11,772	3,374	448	21	163	2,742										
Poles	3,374	3,349	--	--	25	462	--	--	--	--										
Fuelwood	98,492	--	454	9,507	88,531	18,587	--	78	1,753	16,756										
Mine timbers	1,216	--	--	--	1,216	114	--	--	--	114										
Handle bolts	4,594	--	--	316	4,278	1,778	--	--	135	1,643										
Miscellaneous ^{3/}	11,312	--	1,906	5,722	3,684	4,871	--	822	2,465	1,584										
All products	943,796	43,064	9,612	168,370	722,750	341,315	15,026	3,494	78,436	244,359										
Logging residues	189,783	3,269	219	19,038	167,257	23,636	374	61	2,818	20,383										
Other removals	989,201	40,430	8,456	224,460	715,855	177,065	2,324	1,784	44,565	128,392										
Total removals	2,122,780	86,763	18,287	411,868	1,605,862	542,016	17,724	5,339	125,819	393,134										

^{1/} See glossary for timber removals from growing stock.

^{2/} International 1/4-inch rule.

^{3/} Includes shaving wood, heading bolts, etc.

Table 60.--Timber removals from growing stock on commercial forest land by species and Forest Survey Unit, Missouri, 1971

(In cords)

SPECIES	: ALL : : UNITS :	EASTERN : : OZARKS :	SOUTHWESTERN : : OZARKS :	NORTHWESTERN : : OZARKS :	PRAIRIE : :	RIVERBORDER
SOFTWOODS:						
SHORTLEAF PINE	86,763	26,076	59,539	34	--	1,114
CYPRESS	8,998	111	--	--	--	8,887
EASTERN REDCEDAR	9,154	393	4,883	3,017	25	836
OTHER SOFTWOODS	135	--	135	--	--	--
TOTAL SOFTWOODS	105,050	26,580	64,557	3,051	25	10,837
HARDWOODS:						
SELECT WHITE OAKS	450,433	100,021	52,602	31,208	144,136	122,466
OTHER WHITE OAKS	193,486	53,865	54,436	41,890	36,341	6,954
SELECT RED OAKS	113,028	18,272	8,524	2,238	39,859	44,135
RED OAKS	528,004	221,881	169,727	42,775	38,409	55,212
OTHER RED OAKS	74,282	20,883	4,140	--	30,696	18,563
HICKORY A	74,215	17,904	430	--	40,079	15,802
HICKORY B	66,222	21,017	22,505	8,911	8,266	5,523
HARD MAPLE	11,827	2,874	140	431	5,230	3,152
SOFT MAPLE	57,672	2,393	253	1,873	45,167	7,986
BEECH	835	76	--	--	--	759
SWEETGUM	12,343	5,153	--	--	--	7,190
TUPELO AND BLACKGUM	6,003	4,559	659	25	--	760
ASH	45,291	1,899	1,533	1,546	18,614	21,699
SYCAMORE	60,503	9,101	9,189	6,938	20,691	14,584
COTTONWOOD	82,017	1,014	140	684	35,926	44,253
RIVER BIRCH	6,841	291	38	25	6,181	306
YELLOW-POPLAR	1,886	152	--	--	--	1,734
BASSWOOD	531	13	115	--	365	38
BLACK WALNUT	23,687	772	3,000	4,013	13,282	2,620
BLACK CHERRY	280	140	51	76	--	13
ELM	134,815	5,583	13,301	10,167	89,484	16,280
OTHER HARDWOODS	73,529	3,278	989	4,162	15,884	49,216
TOTAL HARDWOODS	2,017,730	491,141	341,772	156,962	588,610	439,245
ALL SPECIES	2,122,780	517,721	406,329	160,013	588,635	450,082

Table 61.--*Timber removals from sawtimber on commercial forest land by species and Forest Survey Unit, Missouri, 1971*

(In thousand board feet¹)

SPECIES	: ALL : : UNITS :	EASTERN : : OZARKS :	SOUTHWESTERN : : OZARKS :	NORTHWESTERN : : OZARKS :	: PRAIRIE :	: RIVERBOROER
SOFTWOODS:						
SHORTLEAF PINE	17,724	8,995	8,260	15	--	454
CYPRESS	2,009	44	--	--	--	1,965
EASTERN REDCEDAR	3,324	123	1,734	1,209	11	247
OTHER SOFTWOODS	6	--	6	--	--	--
TOTAL SOFTWOODS	23,063	9,162	10,000	1,224	11	2,666
HARWOODS:						
SELECT WHITE OAKS	118,832	29,390	12,489	7,590	36,306	33,057
OTHER WHITE OAKS	43,639	15,827	11,427	6,855	7,864	1,666
SELECT RED OAKS	24,625	5,186	1,966	558	9,333	7,582
RED OAKS	124,959	62,976	35,425	8,363	8,756	9,439
OTHER RED OAKS	16,889	5,927	832	--	6,778	3,352
HICKORY A	18,870	6,059	58	--	9,403	3,350
HICKORY B	16,467	7,112	4,680	1,710	1,801	1,164
HARD MAPLE	3,303	1,101	57	165	1,282	698
SOFT MAPLE	20,818	1,062	120	846	15,238	3,552
BEECH	308	30	--	--	--	278
SWEETGUM	4,392	2,098	--	--	--	2,294
TUPELO AND BLACKGUM	2,625	1,965	305	4	--	351
ASH	10,836	651	489	571	4,466	4,659
SYCAMORE	23,039	4,064	3,486	3,133	6,475	5,881
COTTONWOOD	33,054	432	69	324	12,039	20,190
RIVER BIRCH	1,772	114	11	18	1,484	145
YELLOW-POPLAR	873	70	--	--	--	803
BASSWOOD	280	8	63	--	190	19
BLACK WALNUT	7,678	276	980	775	4,712	935
BLACK CHERRY	137	64	16	46	3	8
ELM	30,605	2,057	2,330	1,321	20,897	4,000
OTHER HARDWOODS	14,952	769	197	721	3,962	9,303
TOTAL HARDWOODS	518,953	147,238	75,000	33,000	150,989	112,726
ALL SPECIES	542,016	156,400	85,000	34,224	151,000	115,392

¹/ INTERNATIONAL 1/4-INCH RULE.

Table 62.--*Net annual growth and removals of growing stock on commercial forest land by species, Missouri, 1971*

(In thousand cubic feet)

Species	: Net annual : growth	: Annual : timber : removals
Softwoods:		
Shortleaf pine	10,718	6,854
Cypress	205	711
Eastern redcedar	2,162	723
Other softwoods	--	11
Total softwoods	13,085	8,299
Hardwoods:		
Select white oaks	35,101	35,586
Other white oaks	11,772	15,285
Select red oaks	9,655	8,929
Red oaks	58,847	41,713
Other red oaks	5,936	5,868
Hickory A	7,349	5,862
Hickory B	6,066	5,232
Hard maple	735	934
Soft maple	3,320	4,556
Beech	9	66
Sweetgum	322	975
Tupelo and blackgum	623	474
Ash	4,297	3,578
Sycamore	5,766	4,780
Cottonwood	2,813	6,479
River birch	1,377	540
Yellow poplar	64	149
Basswood	162	42
Black walnut	2,576	1,871
Black cherry	176	22
Elm	1,026	10,650
Other hardwoods	6,221	5,809
Total hardwoods	164,213	159,400
All species	177,298	167,699

Table 63.--*Net annual growth and removals of sawtimber on commercial forest land by species, Missouri, 1971*

(In thousand board feet¹)

Species	Net annual growth	Annual timber removals
Softwoods:		
Shortleaf pine	29,445	17,724
Other yellow pine	--	--
Cypress	996	2,009
Eastern redcedar	3,395	3,324
Other softwoods	--	6
Total softwoods	33,836	23,063
Hardwoods:		
Select white oak	70,163	118,832
Other white oak	13,613	43,639
Select red oaks	27,332	24,625
Red oaks	115,398	124,959
Other red oaks	12,590	16,889
Hickory A	10,387	18,870
Hickory B	6,065	16,467
Hard maple	1,210	3,303
Soft maple	8,779	20,818
Beech	42	308
Sweetgum	740	4,392
Tupelo and blackgum	1,645	2,625
Ash	7,456	10,836
Sycamore	21,266	23,039
Cottonwood	12,341	33,054
River birch	2,693	1,772
Yellow poplar	198	873
Basswood	463	280
Black walnut	4,635	7,678
Black cherry	394	137
Elm	-1,728	30,605
Other hardwoods	13,967	14,952
Noncommercial species	--	--
Total hardwoods	329,649	518,953
All species	363,485	542,016

¹International $\frac{1}{4}$ -inch rule.

Table 64.--*Net annual growth and removals of growing stock on commercial forest land by ownership class and softwoods and hardwoods, Missouri, 1971*

(In thousand cubic feet)

Ownership class	Net annual growth			Annual removals		
	All	Softwoods	Hardwoods	All	Softwoods	Hardwoods
	species	species	species	species	species	species
National Forest	25,308	5,909	19,399	7,191	1,340	5,851
Other public	5,382	507	4,875	469	39	430
Forest industry	7,000	625	6,375	2,564	114	2,450
Farmer and miscellaneous private	139,608	6,044	133,564	157,475	6,806	150,669
All ownerships	177,298	13,085	164,213	167,699	8,299	159,400

Table 65.--*Net annual growth and removals of sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Missouri, 1971*

(In thousand board feet¹)

Ownership class	Net annual growth			Annual removals		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
National Forest	55,098	18,246	36,852	29,971	5,935	24,036
Other public	11,804	907	10,897	1,867	138	1,729
Forest industry	12,715	975	11,740	10,395	595	9,800
Farmer and miscellaneous private	283,868	13,708	270,160	499,783	16,395	483,388
All ownerships	363,485	33,836	329,649	542,016	23,063	518,953

¹International 1/4-inch rule.

Table 66.--*Annual mortality of growing stock and sawtimber on commercial forest land by species, Missouri, 1971*

Species	Growing stock	Sawtimber
	Thousand cubic feet	Thousand board feet ^{1/}
Softwoods:		
Shortleaf pine	337	935
Eastern redcedar	59	--
Total softwoods	396	935
Hardwoods:		
Select white oaks	1,846	2,407
Other white oaks	837	919
Select red oaks	563	2,010
Red oaks	3,181	7,381
Other red oaks	804	3,020
Hickory A	337	638
Hickory B	254	328
Hard maple	58	--
Soft maple	182	159
Ash	278	980
Sycamore	173	--
Cottonwood	523	2,856
Black walnut	348	879
Black cherry	52	--
Elm	2,624	7,060
Other hardwoods	499	923
Total hardwoods	12,559	29,560
All species	12,955	30,495

^{1/} International 1/4-inch rule.

Table 67.--Annual mortality of growing stock and sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Missouri, 1971

Ownership class	Growing stock			Sawtimber		
	All	Softwoods	Hardwoods	All	Softwoods	Hardwoods
	species			species		
	Thousand cubic feet			Thousand board feet ¹		
National Forest	1,663	179	1,484	3,808	504	3,304
Other public	352	12	340	890	30	860
Forest industry	346	21	325	815	25	790
Farmer and miscellaneous private	10,594	184	10,410	24,982	376	24,606
All ownerships	12,955	396	12,559	30,495	935	29,560

¹International 1/4-inch rule.

Table 68.--Annual mortality of growing stock and sawtimber on commercial forest land by cause and softwoods and hardwoods, Missouri, 1971

Cause	Growing stock			Sawtimber		
	All	Softwoods	Hardwoods	All	Softwoods	Hardwoods
	species			species		
	Thousand cubic feet			Thousand board feet ^{1/}		
Disease	6,118	--	6,118	15,530	--	15,530
Fire	467	--	467	232	--	232
Weather	1,948	167	1,781	7,713	935	6,778
Suppression	346	38	308	--	--	--
Unknown and other	3,502	140	3,362	5,195	--	5,195
Logging	574	51	523	1,825	--	1,825
All causes	12,955	396	12,559	30,495	935	29,560

^{1/} International 1/4-inch rule.

Table 69.--Output of timber products by source of material and soft-woods and hardwoods, Missouri, 1969

Product and species group	Standard unit	Total	Roundwood products						Plant byproducts	
			Growing stock		Nongrowing stock					
			No. of units	M. cu. ft.	No. of units	M. cu. ft.	No. of units	M. cu. ft.	No. of units	M. cu. ft.
Saw logs										
Softwoods	M. bd. ft.	18,478	3,308	18,467	3,306	11	2	--	--	--
Hardwoods		360,952	63,013	259,093	45,231	101,859	17,782	--	--	--
Total		379,430	66,321	277,560	48,537	101,870	17,784	--	--	--
Veneer logs										
Softwoods	M. bd. ft.	--	--	--	--	--	--	--	--	--
Hardwoods		4,626	1,014	3,066	672	1,560	342	--	--	--
Total		4,626	1,014	3,066	672	1,560	342	--	--	--
Cooperage logs										
Softwoods	M. bd. ft.	--	--	--	--	--	--	--	--	--
Hardwoods		53,675	8,845	48,602	8,009	5,073	836	--	--	--
Total		53,675	8,845	48,602	8,009	5,073	836	--	--	--
Pulpwood										
Softwoods	Std. cords	--	--	--	--	--	--	--	--	--
Hardwoods		80,609	6,326	16,329	1,262	8,152	630	56,128	4,434	4,434
Total		80,609	6,326	16,329	1,262	8,152	630	56,128	4,434	4,434
Poles										
Softwoods	M. pieces	89,500	265	89,500	265	--	--	--	--	--
Hardwoods		700	2	700	2	--	--	--	--	--
Total		90,200	267	90,200	267	--	--	--	--	--
Mine timbers										
Softwoods	M. cu. ft.	--	--	--	--	--	--	--	--	--
Hardwoods		128	128	96	96	32	32	--	--	--
Total		128	128	96	96	32	32	--	--	--
Posts										
Softwoods	M. pieces	1,519	1,152	1,036	786	483	366	--	--	--
Hardwoods		2,548	1,348	1,852	976	696	372	--	--	--
Total		4,067	2,500	2,888	1,762	1,179	738	--	--	--
Charcoal wood										
Softwoods	Std. cords	1,414	99	--	--	--	--	1,414	99	99
Hardwoods		283,864	19,812	75,966	5,299	162,627	11,344	45,271	3,169	3,169
Total		285,278	19,911	75,966	5,299	162,627	11,344	46,685	3,268	3,268
Other ²										
Softwoods	M. cu. ft.	475	475	338	338	--	--	137	137	137
Hardwoods		3,190	3,190	1,106	1,106	39	39	2,045	2,045	2,045
Total		3,665	3,665	1,444	1,444	39	39	2,182	2,182	2,182
Fuelwood										
Softwoods	Std. cords	2,031	130	580	37	1,020	65	431	28	28
Hardwoods		419,246	27,071	120,035	7,745	257,365	16,606	41,846	2,720	2,720
Total		421,277	27,201	120,615	7,782	258,385	16,671	42,277	2,748	2,748
All products										
Softwoods	M. cu. ft.	5,429	5,429	4,732	4,732	433	433	264	264	264
Hardwoods		130,749	130,749	70,398	70,398	47,983	47,983	12,368	12,368	12,368
Total		136,178	136,178	75,130	75,130	48,416	48,416	12,632	12,632	12,632

¹M (meaning thousand) board feet by International 1/4-inch rule. Cords are on a rough wood, 128 cubic feet basis.

²Other (industrial production) includes handle bolts, shaving bolts, heading stock, etc.

Table 70.--Timber products output from roundwood by species and product, Missouri, 1969

Species	Saw logs	Veneer logs	Cooperage logs	Charcoal wood	Other 3/4 products	All products
	M. bd. ft. 1/ cu. ft.	M. bd. ft. 1/ cu. ft.	M. bd. ft. 1/ cu. ft.	Cords 2/ M. cu. ft.	M. cu. ft.	M. cu. ft.
Softwoods:						
Shortleaf pine	15,235	2,645	0	0	0	1,378
Cypress	187	33	0	0	0	2
Eastern redcedar	2,567	545	0	0	0	464
Other softwoods	489	85	0	0	0	13
Total softwoods	18,478	3,308	0	0	0	1,857
Hardwoods:						
White oaks	66,265	11,820	45	10	8,623	17,743
Red oaks	68,345	12,178	24	5	0	1,628
Black oak	116,507	20,785	0	0	0	3,126
Hickory	15,060	2,562	1,013	226	0	1,577
Hard maple	1,670	273	0	0	0	0
Soft maple	15,888	2,515	26	6	10	573
Beech	273	46	0	0	0	3
Sweetgum	3,306	525	34	7	115	4
Blackgum	2,750	431	0	0	0	18
Ash	3,549	589	0	0	10	287
Cottonwood	24,557	3,783	488	111	10	1,230
Basswood	309	41	8	2	0	0
Yellow-poplar	958	150	20	4	0	0
Black walnut	12,593	2,760	2,836	614	0	0
Black cherry	146	20	0	0	0	1
Elm	6,123	964	3	0	40	12
Birch	484	67	0	0	10	95
Sycamore	20,190	3,196	129	29	27	22
Other hardwoods	1,979	308	0	0	0	212
Total hardwoods	360,952	63,013	4,626	1,014	8,845	28,866
All species	379,430	66,321	4,626	1,014	8,845	30,723
						123,546

1/ International 1/4-inch rule.

2/ Standard cords, rough wood basis.

3/ Includes posts, fuelwood, shaving bolts, heading bolts, etc.

Table 71.--Forest products harvested by ownership class and product,
Missouri, 1969

Ownership class	Saw logs	Cooperage logs	Veneer logs	Pulp-wood	Charcoal wood	Posts	Fuel-wood	Poles	Mine timbers	Handle bolts	Miscellaneous
	<u>M</u> bd.ft. ^{1/}	<u>M</u> bd.ft. ^{1/}	<u>M</u> bd.ft. ^{1/}	<u>Cords</u> ^{2/}	<u>Cords</u> ^{2/}	<u>M pieces</u>	<u>Cords</u> ^{2/}	<u>Pieces</u>	<u>M</u> cu. ft.	<u>M</u> bd.ft. ^{1/}	<u>M</u> cu. ft.
Federal:											
National Forest:											
Softwoods	5,612	--	--	--	--	480	--	650	--	--	--
Hardwoods	33,813	107	35	--	2,738	1	6,751	--	--	--	--
U.S.Army:											
Hardwoods	475	--	--	--	--	--	--	--	--	--	--
Corps of Engineers:											
Softwoods	--	--	--	--	--	4	--	--	--	--	--
Hardwoods	138	4	--	--	--	--	--	--	--	--	--
Total	40,038	111	35	--	2,738	491	6,751	650	--	--	--
State:											
Softwoods	126	--	--	--	--	25	--	--	--	--	--
Hardwoods	1,681	112	--	--	591	--	8	--	--	100	--
Total	1,807	112	--	--	591	25	8	--	--	100	--
Private:											
Industrial:											
Softwoods	585	--	--	--	--	--	--	--	--	--	--
Hardwoods	12,024	1,011	14	--	15,691	--	--	--	--	--	--
Farm and other:											
Softwoods	12,155	--	--	--	--	1,004	1,600	88,850	--	--	338
Hardwoods	312,821	52,441	4,577	24,481	219,573	2,547	370,641	700	128	2,443	743
Total	337,585	53,452	4,591	24,481	235,264	3,551	372,241	89,550	128	2,443	1,081
All owners:											
Softwoods	18,478	--	--	--	--	1,519	1,600	89,500	--	--	338
Hardwoods	360,952	53,675	4,626	24,481	238,593	2,548	377,400	700	128	2,543	743
Total	379,430	53,675	4,626	24,481	238,593	4,067	379,000	90,200	128	2,543	1,081

1/ International 1/4-inch rule.

2/ Standard cords, rough wood basis.

Table 72.--Volume of primary plant residue by kind of material and type
of use, Missouri, 1969

(In thousand cubic feet)

Source industry and kind of residue	Volume by type of use									
	Fiber ^{1/}	Charcoal		Fuel ^{2/}		Other ^{3/}		Not used ^{4/}		
	Hard- woods	Soft- woods	Hard- woods	Soft- woods	Hard- woods	Soft- woods	Hard- woods	Soft- woods	Hard- woods	
Lumber:										
Coarse	3,252	99	2,944	25	1,355	59	18	548	6,922	
Fine	250	--	--	3	406	78	1,264	426	8,112	
Total	3,502	99	2,944	28	1,761	137	1,282	974	15,034	
All other:										
Coarse	726	--	183	--	758	--	57	--	463	
Fine	206	--	42	--	201	--	706	--	2,348	
Total	932	--	225	--	959	--	763	--	2,811	
All industries:										
Coarse	3,978	99	3,127	25	2,113	59	75	548	7,385	
Fine	456	--	42	3	607	78	1,970	426	10,460	
Total	4,434	99	3,169	28	2,720	137	2,045	974	17,845	

1/ For manufacture of pulp, hardboard, or roofing felt.

2/ All residue used for industrial or domestic fuel whether sold or given away.

3/ Includes uses such as livestock bedding, mulch, small dimension, and specialty items.

4/ Includes residue burned as waste.

Table 73.--Removals,¹ net annual growth, and inventory of growing stock on commercial forest land, Missouri, 1972 and low removals option projections² to 2002

(In million cubic feet)

Year	Removals			Growth			Inventory		
	All	Soft-	Hard-	All	Soft-	Hard-	All	Soft-	Hard-
	species	woods	woods	species	woods	woods	species	woods	woods
1972	167.7	8.3	159.4	177.3	13.1	164.2	6,001.5	368.8	5,632.7
1982	168.8	8.8	160.0	178.5	14.4	164.1	6,096.7	422.7	5,674.0
1992	170.7	10.7	160.0	179.2	15.4	163.8	6,187.4	474.6	5,712.8
2002	173.1	13.1	160.0	179.3	16.0	163.3	6,260.9	512.8	5,748.1

¹Timber removals includes volume "lost" due to land clearing, flooding, thinning, or changes in land use, in addition to timber cut and used.

²Based on the following assumptions: (a) that the overall removals rate will be lower than that for the high removals option; (b) that annual removals rates will differ for each timber product, but that the average annual removals rate for softwoods will be 1.93 percent and for hardwoods, 0.01 percent; (c) that the total area of commercial forest land will decline at an annual rate of 0.217 percent; (d) that radial growth will decline over time in relation to the increase of basal area per acre of trees; (e) that the intensity of forest management practiced will continue at the rate indicated by recent trends; (f) that use of both softwoods and hardwoods for pulpwood will increase, but use of softwoods will increase at a faster rate; and (g) that the volume of "other" removals will drop during the period as more of these trees are utilized.

Table 74.--Removals,¹ net annual growth, and inventory of growing stock on commercial forest land, Missouri, 1972, and high removals option projections² to 2002

(In million cubic feet)

Year	Removals			Growth			Inventory		
	All	Soft-	Hard-	All	Soft-	Hard-	All	Soft-	Hard-
	species	woods	woods	species	woods	woods	species	woods	woods
1972	167.7	8.3	159.4	177.3	13.1	164.2	6,001.5	368.8	5,632.7
1982	170.2	9.2	161.0	178.4	14.4	164.0	6,093.5	421.5	5,672.0
1992	181.7	12.9	168.8	178.1	15.1	163.0	6,116.2	457.3	5,658.9
2002	196.6	16.6	180.0	175.6	15.3	160.3	5,988.8	461.0	5,527.8

¹Timber removals includes volume "lost" due to land clearing, flooding, thinning, or changes in land use, in addition to timber cut and used.

²Based on the following assumptions: (a) that the overall removals rate will be higher than that for the low removals option; (b) that annual removals rates will differ for each timber product, but that the average annual removals rate for softwoods will be 3.33 percent and for hardwoods, 0.43 percent; (c) that the total area of commercial forest land will decline at an annual rate of 0.217 percent; (d) that radial growth will decline over time in relation to the increase of basal area per acre of trees; (e) that the intensity of forest management practiced will continue at the rate indicated by recent trends; (f) that use of both softwoods and hardwoods for pulpwood will increase but use of softwoods will increase at a faster rate; and (g) that the volume of "other" removals will drop during the period as more of these trees are utilized.

Table 75.--Average annual managed harvest for 1972-1981, from harvest cuttings and thinnings on commercial forest land by species and kind of material, Missouri

Species	Growing stock ^{1/}			Sawtimber ^{1/}		Rough and rotten trees	
	Total	Pole timber	Saw timber	Total	Total	Short log	Other
		trees	trees			trees	
		Cords		Thousand bd.ft. ^{2/}		Cords	
Softwoods:							
Shortleaf pine	95,506	27,178	68,328	29,053	3,037	51	2,986
Cypress	7,013	25	6,988	2,563	2,228	494	1,734
Eastern redcedar	11,456	7,278	4,178	1,729	6,051	1,038	5,013
Total softwoods	113,975	34,481	79,494	33,345	11,316	1,583	9,733
Hardwoods:							
Select white oaks	538,555	170,239	368,316	108,722	226,911	61,607	165,304
Other white oaks	217,658	96,455	121,203	40,500	126,329	23,760	102,569
Select red oaks	118,355	20,823	97,532	31,843	41,290	8,279	33,011
Red oaks	478,772	142,418	336,354	124,128	204,608	37,331	167,277
Other red oaks	35,480	13,633	21,847	7,639	53,645	7,468	46,177
Hickory A	88,722	33,658	55,064	15,533	33,228	4,683	28,545
Hickory B	82,618	47,365	35,253	13,023	33,912	5,013	28,899
Hard maple	11,861	5,912	5,949	1,714	18,026	1,824	16,202
Soft maple	25,837	7,341	18,496	4,809	34,480	5,544	28,936
Beech	25	--	25	11	722	--	722
Sweetgum	4,064	519	3,545	1,538	1,860	215	1,645
Tupelo and blackgum	13,760	5,861	7,899	3,113	9,455	2,632	6,823
Ash	37,732	13,948	23,784	7,757	30,279	4,367	25,912
Sycamore	41,265	6,164	35,101	9,745	11,569	3,075	8,494
Cottonwood	32,114	2,697	29,417	10,383	7,482	1,177	6,305
River birch	10,975	3,634	7,341	1,962	7,050	1,899	5,151
Yellow-poplar	1,279	114	1,165	266	126	--	126
Basswood	2,810	873	1,937	378	4,557	291	4,266
Black walnut	25,279	8,405	16,874	3,293	19,987	4,772	15,215
Black cherry	1,911	557	1,354	568	4,520	266	4,254
Elm	32,355	13,709	18,646	3,790	49,064	6,355	42,709
Other hardwoods	63,039	22,167	40,872	12,875	47,544	5,152	42,392
Noncommercial species	--	--	--	--	1,165	--	1,165
Total hardwoods	1,864,466	616,492	1,247,974	403,590	967,809	185,710	782,099
All species	1,978,441	650,973	1,327,468	436,935	979,125	187,293	791,832

^{1/} Cuttings of less than 3 cords per acre, or the equivalent in board feet, are excluded.

^{2/} International 1/4-inch rule.

Table 76.--Average annual managed harvest of growing stock for 1972-1981, from harvest cuttings and thinnings, on commercial forest land by species and forest type, Missouri¹

(In thousand cubic feet)

Species	All : forest : types	Short- : leaf : pine	Eastern : redcedar	Eastern : redcedar : hardwood	Shortleaf : pine-oak	Post- : blackjack : oak	Black- : scarlet : oak	White : oak	Oak-gum- : cypress	Elm-ash- : cottonwood	Cottonwood	Maple- : beech
Softwoods:												
Shortleaf pine	7,545	2,544	--	26	2,447	436	1,442	547	--	92	--	11
Cypress	554	--	--	--	--	--	--	--	443	111	--	--
Eastern redcedar	905	33	372	217	28	24	--	165	--	38	--	28
Total softwoods	9,004	2,577	372	243	2,475	460	1,442	712	443	241	--	39
Hardwoods:												
Select white oaks	42,546	230	142	434	528	1,767	12,101	25,334	764	812	--	434
Other white oaks	17,195	56	--	108	266	12,093	3,311	1,312	--	19	--	30
Select red oaks	9,350	--	40	81	101	542	5,923	2,098	66	191	--	308
Red oaks	37,823	410	63	123	1,169	3,119	28,054	4,326	--	420	--	139
Other red oaks	2,803	15	--	--	23	825	442	50	1,183	261	--	4
Hickory A	7,009	--	--	3	67	504	3,013	1,706	511	1,153	--	52
Hickory B	6,527	45	--	22	98	1,938	2,456	1,350	263	65	--	290
Hard maple	937	--	4	--	--	--	278	340	--	--	--	315
Soft maple	2,041	--	--	--	15	--	--	43	109	1,874	--	--
Beech	2	--	--	--	--	--	--	--	--	--	--	2
Sweetgum	321	--	--	--	--	--	71	--	33	199	--	18
Tupelo and blackgum	1,087	39	--	--	--	16	390	399	161	19	--	63
Ash	2,981	--	--	105	--	100	398	514	105	1,710	3	42
Sycamore	3,260	--	--	7	--	26	511	55	169	2,082	--	410
Cottonwood	2,537	--	--	--	--	--	--	66	--	2,277	194	--
River birch	867	--	--	--	--	--	--	--	274	563	--	30
Yellow-poplar	101	--	--	--	--	--	65	26	--	--	--	10
Basswood	--	--	--	--	--	--	56	23	--	99	--	44
Black walnut	1,997	--	14	45	7	36	655	581	83	442	--	134
Black cherry	151	--	--	--	--	--	70	50	--	24	--	--
Elm	2,556	20	--	87	15	186	452	340	52	903	--	501
Other hardwoods	4,980	--	--	77	--	152	202	279	303	3,838	--	129
Total hardwoods	147,293	815	267	1,092	2,289	21,311	58,448	38,892	4,076	16,951	197	2,955
All species	156,297	3,392	639	1,335	4,764	21,771	59,890	39,604	4,519	17,192	197	2,994

¹/ Cuttings of less than 240 cubic feet per acre are excluded.

Table 77.--Average annual managed harvest of growing stock for 1972-1981, from harvest cuttings and thinnings on commercial forest land by species and stand-volume class, Missouri¹

(In thousand cubic feet)

Species	Stand-volume class (cubic feet per acre)					
	All					
	classes	240-	400-	800-	1,200-	1,600+
		399	799	1,199	1,599	
Softwoods:						
Shortleaf pine	7,545	1,485	2,940	2,254	297	569
Cypress	554	32	45	7	143	327
Eastern redcedar	905	181	177	521	26	--
Total softwoods	9,004	1,698	3,162	2,782	466	896
Hardwood:						
Select white oaks	42,546	2,607	11,680	15,288	8,596	4,375
Other white oaks	17,195	1,564	7,697	4,547	2,286	1,101
Select red oaks	9,350	597	2,466	3,681	2,039	567
Red oaks	37,823	3,077	12,752	13,984	5,875	2,135
Other red oaks	2,803	244	893	886	650	130
Hickory A	7,009	386	2,574	2,730	539	780
Hickory B	6,527	621	2,388	2,316	1,051	151
Hard maple	937	96	202	248	246	145
Soft maple	2,041	9	212	479	774	567
Beech	2	--	2	--	--	--
Sweetgum	321	1	25	141	107	47
Tupelo and blackgum	1,087	58	243	376	319	91
Ash	2,981	151	1,082	809	637	302
Sycamore	3,260	99	977	1,219	381	584
Cottonwood	2,537	--	652	659	27	1,199
River birch	867	--	190	351	326	--
Yellow-poplar	101	--	10	26	--	65
Basswood	222	--	26	155	--	41
Black walnut	1,997	130	579	643	603	42
Black cherry	151	7	40	34	70	--
Elm	2,556	135	323	935	865	298
Other hardwoods	4,980	103	613	2,035	899	1,330
Total hardwoods	147,293	9,885	45,626	51,542	26,290	13,950
All species	156,297	11,583	48,788	54,324	26,756	14,846

^{1/} Cuttings of less than 240 cubic feet per acre are excluded.

Table 78.--Average annual managed harvest for 1972-1981 by harvest cuttings of growing stock on commercial forest land and by species and stand-volume class, Missouri

(In thousand cubic feet)

Species	:		Stand-volume class ^{1/} (cubic feet per acre)				
	: All :						
	: classes :		240-	400-	800-	1,200-	1,600+
			399	799	1,199	1,599	1,600+
Softwoods:							
Shortleaf pine	5,781	790	2,325	1,814	283	569	
Cypress	393	29	--	--	37	327	
Eastern redcedar	875	176	152	521	26	--	
Total softwoods	7,049	995	2,477	2,335	346	896	
Hardwoods:							
Select white oaks	39,007	1,886	9,818	14,482	8,446	4,375	
Other white oaks	16,574	1,413	7,366	4,461	2,233	1,101	
Select red oaks	8,853	435	2,231	3,606	2,014	567	
Red oaks	30,622	1,454	9,047	12,712	5,274	2,135	
Other red oaks	1,989	201	778	350	530	130	
Hickory A	6,276	258	2,086	2,613	539	780	
Hickory B	5,976	477	2,073	2,224	1,051	151	
Hard maple	858	33	186	248	246	145	
Soft maple	1,041	9	125	196	432	279	
Sweetgum	300	--	5	141	107	47	
Tupelo and blackgum	864	34	200	371	168	91	
Ash	2,517	106	833	768	571	239	
Sycamore	2,479	78	652	1,001	381	367	
Cottonwood	946	--	365	469	--	112	
River birch	490	--	45	169	276	--	
Yellow-poplar	65	--	--	--	--	65	
Basswood	120	--	23	56	--	41	
Black walnut	1,767	54	480	588	603	42	
Black cherry	127	7	16	34	70	--	
Elm	2,133	96	189	754	845	249	
Other hardwoods	2,181	100	449	801	310	521	
Total hardwoods	125,185	6,641	36,967	46,044	24,096	11,437	
All species	132,234	7,636	39,444	48,379	24,442	12,333	

^{1/} Cuttings of less than 240 cubic feet per acre are excluded.

Table 79.--Average annual managed harvest for 1972-1981 by thinning
of growing stock on commercial forest land and by species and
stand-volume class, Missouri

(In thousand cubic feet)

Species	Stand-volume class ^{1/} (cubic feet per acre)					
	All					
	classes	240-	400-	800-	1,200-	1,600+
		399	799	1,199	1,599	
Softwoods:						
Shortleaf pine	1,764	695	615	440	14	--
Cypress	161	3	45	7	106	--
Eastern redcedar	30	5	25	--	--	--
Total softwoods	1,955	703	685	447	120	--
Hardwoods:						
Select white oaks	3,539	721	1,862	806	150	--
Other white oaks	621	151	331	86	53	--
Select red oaks	497	162	235	75	25	--
Red oaks	7,201	1,623	3,705	1,272	601	--
Other red oaks	814	43	115	536	120	--
Hickory A	733	128	488	117	--	--
Hickory B	551	144	315	92	--	--
Hard maple	79	63	16	--	--	--
Soft maple	1,000	--	87	283	342	288
Beech	2	--	2	--	--	--
Sweetgum	21	1	20	--	--	--
Tupelo and blackgum	223	24	43	5	151	--
Ash	464	45	249	41	66	63
Sycamore	781	21	325	218	--	217
Cottonwood	1,591	--	287	190	27	1,087
River birch	377	--	145	182	50	--
Yellow-poplar	36	--	10	26	--	--
Basswood	102	--	3	99	--	--
Black walnut	230	76	99	55	--	--
Black cherry	24	--	24	--	--	--
Elm	423	39	134	181	20	49
Other hardwoods	2,799	3	164	1,234	589	809
Total hardwoods	22,108	3,244	8,659	5,498	2,194	2,513
All species	24,063	3,947	9,344	5,945	2,314	2,513

^{1/} Cuttings of less than 240 cubic feet per acre are excluded.

Table 80.--Average annual managed harvest of sawtimber¹ for 1972-1981, from harvest cuttings and thinnings, on commercial forest land by species and forest type, Missouri

(In thousand board feet²)

Species	All : forest : types	Short- : leaf : pine	Eastern : redcedar	Eastern : redcedar : hardwood	Shortleaf : pine-oak	Post- : blackjack : oak	Black- : scarlet : oak	White : oak	Oak-gum- : cypress	Elm-ash- : cottonwood	Cotton- : wood	Maple- : beech
Softwoods:												
Shortleaf pine	29,970	9,517	--	153	10,270	1,380	5,735	2,431	--	449	--	35
Cypress	2,570	--	--	--	--	--	--	--	2,070	500	--	--
Eastern redcedar	2,060	58	1,089	407	79	--	1	251	--	175	--	--
Total softwoods	34,600	9,575	1,089	560	10,349	1,380	5,736	2,682	2,070	1,124	--	35
Hardwoods:												
Select white oaks	134,238	378	331	1,093	1,701	6,563	36,603	79,729	3,281	2,738	--	1,821
Other white oaks	45,358	56	--	576	695	30,568	9,925	3,358	--	60	--	120
Select red oaks	37,961	--	113	393	8	2,225	25,070	7,346	695	943	--	1,168
Red oaks	133,408	1,190	110	469	3,186	9,988	99,488	17,242	188	1,134	--	413
Other red oaks	8,910	--	--	--	128	2,574	1,338	273	3,439	1,140	--	18
Hickory A	20,899	--	--	77	265	1,421	8,395	5,092	1,569	4,018	--	62
Hickory B	13,567	--	--	80	264	3,216	5,384	2,803	586	89	--	1,145
Hard maple	1,857	--	--	--	--	--	566	603	--	--	--	688
Soft maple	6,542	--	--	--	--	--	--	--	473	6,069	--	--
Beech	11	--	--	--	--	--	--	--	--	--	--	11
Sweetgum	1,547	--	--	--	--	--	275	--	61	1,177	--	34
Tupelo and blackgum	3,209	60	--	--	3	77	1,150	1,277	491	33	--	118
Ash	9,188	--	10	108	--	311	1,465	1,135	150	5,987	--	22
Sycamore	13,984	--	--	71	--	135	2,363	305	1,052	8,732	--	1,326
Cottonwood	12,127	--	--	--	--	--	--	327	--	10,913	887	--
River birch	2,652	--	--	--	--	--	--	--	679	1,856	--	117
Yellow-poplar	266	--	--	--	--	--	--	--	--	--	--	25
Basswood	615	--	--	--	--	--	135	106	--	216	--	162
Black walnut	5,828	--	86	52	--	65	2,192	1,449	380	1,379	--	225
Black cherry	568	--	--	--	--	35	190	236	--	107	--	--
Elm	6,269	--	--	--	--	19	1,242	995	54	2,691	--	1,268
Other hardwoods	15,443	--	--	299	--	224	439	535	1,138	12,391	--	417
Total hardwoods	474,447	1,684	650	3,218	6,250	57,421	196,357	122,911	14,236	61,673	887	9,160
All species	509,047	11,259	1,739	3,778	16,599	58,801	202,093	125,593	16,306	62,797	887	9,195

^{1/} Cuttings of less than 3 cords per acre or the equivalent in board feet included.
^{2/} International 1/4-inch rule.

Table 81.--Average annual managed harvest of sawtimber¹ for 1972-1981,
from harvest cuttings and thinnings on commercial forest land
by species and stand-volume class, Missouri

(In thousand board feet²)

Species	:	All	Stand-volume class (board feet per acre)											
			:	0-	:	1,500-	:	2,500-	:	5,000-	:	7,500-	:	10,000+
	:	classes	:	1,499	:	2,499	:	4,999	:	7,499	:	9,999	:	10,000+
Softwoods:														
Shortleaf pine		29,970		9,193		6,539		12,189		2,049		--		--
Cypress		2,570		348		169		550		416		--		1,087
Eastern redcedar		2,060		1,284		776		--		--		--		--
Total softwoods		34,600		10,825		7,484		12,739		2,465		--		1,087
Hardwoods:														
Select white oaks		134,238		28,665		31,647		60,609		12,436		656		225
Other white oaks		45,358		16,398		15,970		8,535		3,772		683		--
Select red oaks		37,961		8,567		8,499		16,762		4,133		--		--
Red oaks		133,408		30,110		36,114		51,403		13,502		2,279		--
Other red oaks		8,910		3,511		1,859		2,791		749		--		--
Hickory A		20,899		4,130		7,216		5,117		3,043		237		1,156
Hickory B		13,567		4,227		3,577		4,437		1,326		--		--
Hard maple		1,857		496		800		561		--		--		--
Soft maple		6,542		961		385		2,541		1,748		--		907
Beech		11		11		--		--		--		--		--
Sweetgum		1,547		18		34		1,335		--		160		--
Tupelo and blackgum		3,209		466		397		1,591		755		--		--
Ash		9,188		2,064		1,567		2,755		2,337		--		465
Sycamore		13,984		3,548		2,520		3,771		2,248		--		1,897
Cottonwood		12,127		1,389		1,935		3,197		1,888		--		3,718
River birch		2,652		578		274		1,800		--		--		--
Yellow-poplar		266		131		--		--		135		--		--
Basswood		615		353		100		162		--		--		--
Black walnut		5,828		1,775		1,505		1,632		916		--		--
Black cherry		568		378		--		--		190		--		--
Elm		6,269		766		785		3,202		1,484		--		32
Other hardwoods		15,443		975		3,209		6,455		422		--		4,382
Total hardwoods		474,447		109,517		118,393		178,656		51,084		4,015		12,782
All species		509,047		120,342		125,877		191,395		53,549		4,015		13,869

^{1/} Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

^{2/} International 1/4-inch rule.

Table 82.--Average annual managed harvest for 1972-1981 by harvest cuttings of sawtimber¹ on commercial forest land and by species and stand-volume class, Missouri

(In thousand board feet²)

Species	:	All	Stand-volume class (board feet per acre)						
			:	0-	1,500-	2,500-	5,000-	7,500-	:
Softwoods:									
Shortleaf pine		23,767	4,922	6,203	10,593	2,049	--	--	
Cypress		1,803	120	--	180	416	--	1,087	
Eastern redcedar		1,862	1,196	666	--	--	--	--	
Total softwoods		27,432	6,238	6,869	10,773	2,465	--	1,087	
Hardwoods:									
Select white oaks		126,008	24,204	29,799	58,688	12,436	656	225	
Other white oaks		44,338	15,615	15,809	8,459	3,772	683	--	
Select red oaks		36,398	7,358	8,145	16,762	4,133	--	--	
Red oaks		116,361	19,820	30,273	50,487	13,502	2,279	--	
Other red oaks		7,442	2,588	1,591	2,514	749	--	--	
Hickory A		18,937	2,937	6,712	4,852	3,043	237	1,156	
Hickory B		12,728	3,607	3,358	4,437	1,326	--	--	
Hard maple		1,749	388	800	561	--	--	--	
Soft maple		3,479	332	354	645	1,353	--	795	
Sweetgum		1,538	9	34	1,335	--	160	--	
Tupelo and blackgum		2,519	272	221	1,271	755	--	--	
Ash		8,407	1,746	1,185	2,674	2,337	--	465	
Sycamore		11,239	2,394	1,974	3,657	2,248	--	966	
Cottonwood		4,535	643	1,460	2,092	--	--	340	
River birch		2,032	115	117	1,800	--	--	--	
Yellow-poplar		135	--	--	--	135	--	--	
Basswood		399	137	100	162	--	--	--	
Black walnut		5,379	1,363	1,468	1,632	916	--	--	
Black cherry		506	316	--	--	190	--	--	
Elm		5,801	523	672	3,122	1,484	--	--	
Other hardwoods		6,679	761	1,049	3,619	422	--	828	
Total hardwoods		416,609	85,128	105,121	168,769	48,801	4,015	4,775	
All species		444,041	91,366	111,990	179,542	51,266	4,015	5,862	

^{1/} Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

^{2/} International 1/4-inch rule.

Table 83.--Average annual managed harvest for 1972-1981 by thinnings of sawtimber¹ on commercial forest land and by species and stand-volume class, Missouri

(In thousand board feet²)

Species	: All : : classes	Stand-volume class (board feet per acre)					
		0- : 1,500-	1,500- : 2,500-	2,500- : 5,000-	5,000- : 7,500-	7,500- : 10,000+	
		1,499	2,499	4,999	7,499	9,999	
Softwoods:							
Shortleaf pine	6,203	4,271	336	1,596	--	--	--
Cypress	767	228	169	370	--	--	--
Eastern redcedar	198	88	110	--	--	--	--
Total softwoods	7,168	4,587	615	1,966	--	--	--
Hardwoods:							
Select white oaks	8,230	4,461	1,848	1,921	--	--	--
Other white oaks	1,020	783	161	76	--	--	--
Select red oaks	1,563	1,209	354	--	--	--	--
Red oaks	17,047	10,290	5,841	916	--	--	--
Other red oaks	1,468	923	268	277	--	--	--
Hickory A	1,962	1,193	504	265	--	--	--
Hickory B	839	620	219	--	--	--	--
Hard maple	108	108	--	--	--	--	--
Soft maple	3,063	629	31	1,896	395	--	112
Beech	11	11	--	--	--	--	--
Sweetgum	9	9	--	--	--	--	--
Tupelo and blackgum	690	194	176	320	--	--	--
Ash	781	318	382	81	--	--	--
Sycamore	2,745	1,154	546	114	--	--	931
Cottonwood	7,592	746	475	1,105	1,888	--	3,378
River birch	620	463	157	--	--	--	--
Yellow poplar	131	131	--	--	--	--	--
Basswood	216	216	--	--	--	--	--
Black walnut	449	412	37	--	--	--	--
Black cherry	62	62	--	--	--	--	--
Elm	468	243	113	80	--	--	32
Other hardwoods	8,764	214	2,160	2,836	--	--	3,554
Total hardwoods	57,838	24,389	13,272	9,887	2,283	--	8,007
All species	65,006	28,976	13,887	11,853	2,283	--	8,007

¹/ Cuttings of less than 3 cords per acre or the equivalent in board feet are included.

²/ International 1/4-inch rule.

Table 84.--Area of managed harvest for 1972-1981¹ by harvest cuttings on commercial forest land and by forest type and stand-age class, Missouri

(In thousand acres)

Forest type	All ages	Stand-age class (years)											
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-119	120-139
Shortleaf pine	20.6	--	--	--	--	--	12.4	8.2	--	--	--	--	--
Eastern redcedar	13.6	--	1.2	--	1.3	--	--	1.8	4.9	4.4	--	--	--
Eastern redcedar-hardwood	39.7	1.1	--	6.4	--	2.7	7.1	7.3	--	2.3	2.7	10.1	--
Shortleaf pine-oak	53.8	--	6.0	--	--	.6	10.2	19.0	14.4	--	3.6	--	--
Post-blackjack oak	493.1	--	--	--	--	--	.5	91.0	113.2	81.3	71.8	85.5	49.8
Black-scarlet oak	711.3	--	--	--	--	--	--	105.2	233.5	113.3	131.9	98.5	28.9
White oak	471.9	--	--	--	--	--	.6	1.1	90.9	59.3	69.4	184.9	65.7
Oak-gum-cypress	26.7	--	--	--	--	2.3	--	.7	4.0	3.0	4.3	7.0	5.4
Elm-ash-cottonwood	121.3	--	--	--	--	--	20.0	28.2	24.8	24.5	14.0	7.7	2.1
Cottonwood	1.6	--	--	1.0	--	.6	--	--	--	--	--	--	--
Maple-beech	31.9	--	--	--	--	--	--	1.2	7.5	1.5	5.5	7.6	8.6
All forest types	1,985.5	1.1	7.2	7.4	1.3	6.2	50.8	263.7	493.2	289.6	303.2	401.3	160.5

¹/ For a ten-year period.

Table 85.--Area of managed harvest for 1972-1981¹ by thinnings on commercial forest land and by forest type and stand-age class, Missouri

(In thousand acres)

Forest type	All ages	Stand-age class (years)											
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79				
Shortleaf pine	37.8	--	2.4	3.7	14.9	16.8	--	--	--				
Eastern redcedar-hardwood	5.7	5.7	--	--	--	--	--	--	--				
Shortleaf pine-oak	24.2	--	--	--	10.8	13.4	--	--	--				
Black-scarlet oak	747.9	14.5	59.7	95.6	216.1	218.5	136.7	1.9	4.9				
White oak	235.3	7.4	8.9	36.8	68.8	46.6	45.2	16.8	4.8				
Oak-gum-cypress	44.7	2.0	--	20.3	18.4	4.0	--	--	--				
Elm-ash-cottonwood	184.7	3.9	8.0	58.8	65.2	39.2	9.6	--	--				
Maple-beech	50.3	--	--	9.5	21.8	7.9	5.8	5.3	--				
All forest types	1,330.6	33.5	79.0	224.7	416.0	346.4	197.3	24.0	9.7				

¹/ For a 10-year period.

Table 86.--Output of roundwood products by source, and
softwoods and hardwoods, Missouri, 1969

(Thousand cubic feet)

Product and species group	All sources	Growing stock trees ^{1/} Total	Sawtimber	Poletimber	Rough and rotten ^{1/} trees	Salvable dead ^{1/} trees	Other sources ^{2/}
Industrial products							
Saw logs							
Softwood	3,308	3,306	3,306	--	2	--	--
Hardwood	63,013	45,231	43,689	1,542	17,072	192	518
Total	66,321	48,537	46,995	1,542	17,074	192	518
Veneer logs and bolts							
Softwood	--	--	--	--	--	--	--
Hardwood	1,014	672	672	--	252	--	90
Total	1,014	672	672	--	252	--	90
Pulpwood							
Softwood	--	--	--	--	--	--	--
Hardwood	1,892	1,262	1,197	65	306	1	323
Total	1,892	1,262	1,197	65	306	1	323
Miscellaneous indus- trial products							
Cooperage							
Softwood	--	--	--	--	--	--	--
Hardwood	8,845	8,009	7,968	41	814	--	22
Total	8,845	8,009	7,968	41	814	--	22
Piling							
Softwood	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--
Poles							
Softwood	265	265	89	176	--	--	--
Hardwood	2	2	--	2	--	--	--
Total	267	267	89	178	--	--	--
Mine timbers (round)							
Softwood	--	--	--	--	--	--	--
Hardwood	128	96	14	82	11	--	21
Total	128	96	14	82	11	--	21
Posts (round and split)							
Softwood	1,152	786	235	551	3	62	301
Hardwood	1,348	976	698	278	177	4	191
Total	2,500	1,762	933	829	180	66	492
Other							
Softwood	338	338	307	31	--	--	--
Hardwood	17,788	6,405	2,903	3,502	9,342	36	2,005
Total	18,126	6,743	3,210	3,533	9,342	36	2,005
All miscellaneous industrial products							
Softwood	1,755	1,389	631	758	3	62	301
Hardwood	28,111	15,488	11,583	3,905	10,344	40	2,239
Total	29,866	16,877	12,214	4,663	10,347	102	2,540
All industrial products							
Softwood	5,063	4,695	3,937	758	5	62	301
Hardwood	94,030	62,653	57,141	5,512	27,974	233	3,170
Total	99,093	67,348	61,078	6,270	27,979	295	3,471
Fuelwood							
Softwood	102	37	18	19	17	18	30
Hardwood	24,351	7,745	3,683	4,062	3,417	3,913	9,276
Total	24,453	7,782	3,701	4,081	3,434	3,931	9,306
All products							
Softwood	5,165	4,732	3,955	777	22	80	331
Hardwood	118,381	70,398	60,824	9,574	31,391	4,146	12,446
Total	123,546	75,130	64,779	10,351	31,413	4,226	12,777

^{1/} On commercial forest land.

^{2/} Includes trees less than 5.0 inches in diameter, tree tops and limbs from commercial forest areas or material from noncommercial forest land or nonforest land such as fence rows or suburban areas.

Spencer, John S., Jr., and Burton L. Essex.

1976. Timber in Missouri, 1972. USDA For. Serv. Resour. Bull. NC-30, 108 p., illus. North Cent. For. Exp. Stn., St. Paul, Minn.

The third inventory of Missouri's timber resource shows a small gain in growing-stock volume and a somewhat larger gain in sawtimber volume since 1959. Area of commercial forest declined sharply between surveys. Presented are text and statistics on forest area and timber volume, growth, mortality, ownership, stocking, future timber supply, and forest management opportunities.

OXFORD: 524.1:905.2(778). KEY WORDS: timber volume, growth, utilization, forest areas.

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Primary Forest Products Industry & Timber Use Wisconsin, 1973

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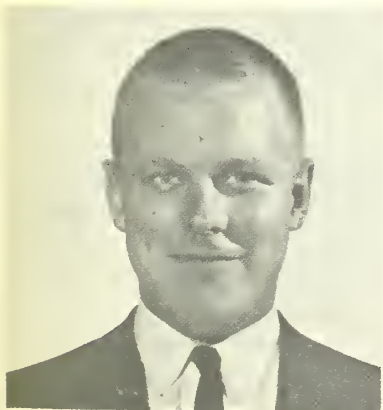
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FOREWORD

This publication contains the results of the first detailed study of forest industry and industrial roundwood production in Wisconsin since 1967. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Also, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks is given to the primary wood-using firms that supplied information for this study. Their cooperation is greatly appreciated.

Quantities shown may vary slightly from one table to another because of rounding differences. These differences are insignificant.

PRIMARY FOREST PRODUCTS INDUSTRY AND TIMBER USE,

WISCONSIN, 1973

James E. Blyth, Eugene F. Landt, James W. Whipple, and Jerold T. Hahn

HIGHLIGHTS

- Active primary wood-using mills declined from 818 in 1967 to 527 in 1973, but the quantity of logs and bolts used per mill increased.

- Ninety-four percent of the 201.3 million cubic feet of industrial roundwood produced in 1973 was pulpwood and saw logs.

- Private landowners supplied 80 percent of the hardwood industrial roundwood, but only 55 percent of the softwood.

- Industrial roundwood (including roundwood chips) production from hardwoods has increased an average of 2.6 percent annually from 1956 to 1973, while industrial roundwood production from softwoods remained steady.

- Between 1967 and 1973 industrial roundwood production shifted slightly from Northeastern Wisconsin to Northwestern and Central Wisconsin. Northeastern Wisconsin remains the leading production area.

- Estimated timber removals (from growing stock on commercial forest land) for industrial roundwood in 1973 were 214.1 million cubic feet compared to 167.9 million cubic feet in 1967.

- Pulpwood production was 1.76 million cords in 1973, up 24 percent from 1967.

- Wisconsin pulp mills purchased 38 percent of their pulpwood requirements from out-of-State in 1973.

- Saw log production rose from 273 million board feet in 1967 to 387 million board feet in 1973, a gain of 42 percent. Eighty-nine percent of the 1973 saw log harvest was hardwood.

- Average lumber output per sawmill doubled between 1967 and 1973.

- Nearly half (48 percent) of the veneer log volume received in Wisconsin in 1973 came from out-of-State.

- Eighty-seven percent of the coarse residue generated at primary mills was used.

- Additional markets are needed for fine residue and bark. Thirty percent of the fine residue and 45 percent of the bark generated at primary mills was not used.

PRIMARY FOREST INDUSTRY--INDUSTRIAL ROUNDWOOD

Wisconsin's primary forest industry comprised 583 active mills¹ in 1973, only one-third of the number of active mills in 1956. Many small mills closed during this period because of intense competition from larger, better financed, and more efficient, mills. Although the industry is dispersed throughout the State, major mills are concentrated in the northern, central, and east-central portions (fig 1).

Industrial roundwood receipts in 1973 at all plants (except treating plants) were 259.7 million cubic feet; 71.8 million cubic was softwood and the remainder hardwood. Since 1956 declining softwood receipts have been more than offset by increasing hardwood receipts. Wisconsin mills (excluding treating plants) imported 25 percent of their roundwood requirements in 1973. Half (52 percent) of the round softwood volume received was from out-of-State.

Industrial roundwood production rose from 141.7 million cubic feet in 1956 to 201.3 million cubic feet in 1973. Softwood production remained steady while hardwood production increases averaged 2.6 percent annually from 1956 to 1973. Of the total industrial roundwood produced in 1973, about 94 percent was pulpwood and saw logs.

¹Mills receiving roundwood or chips from roundwood are primary mills.

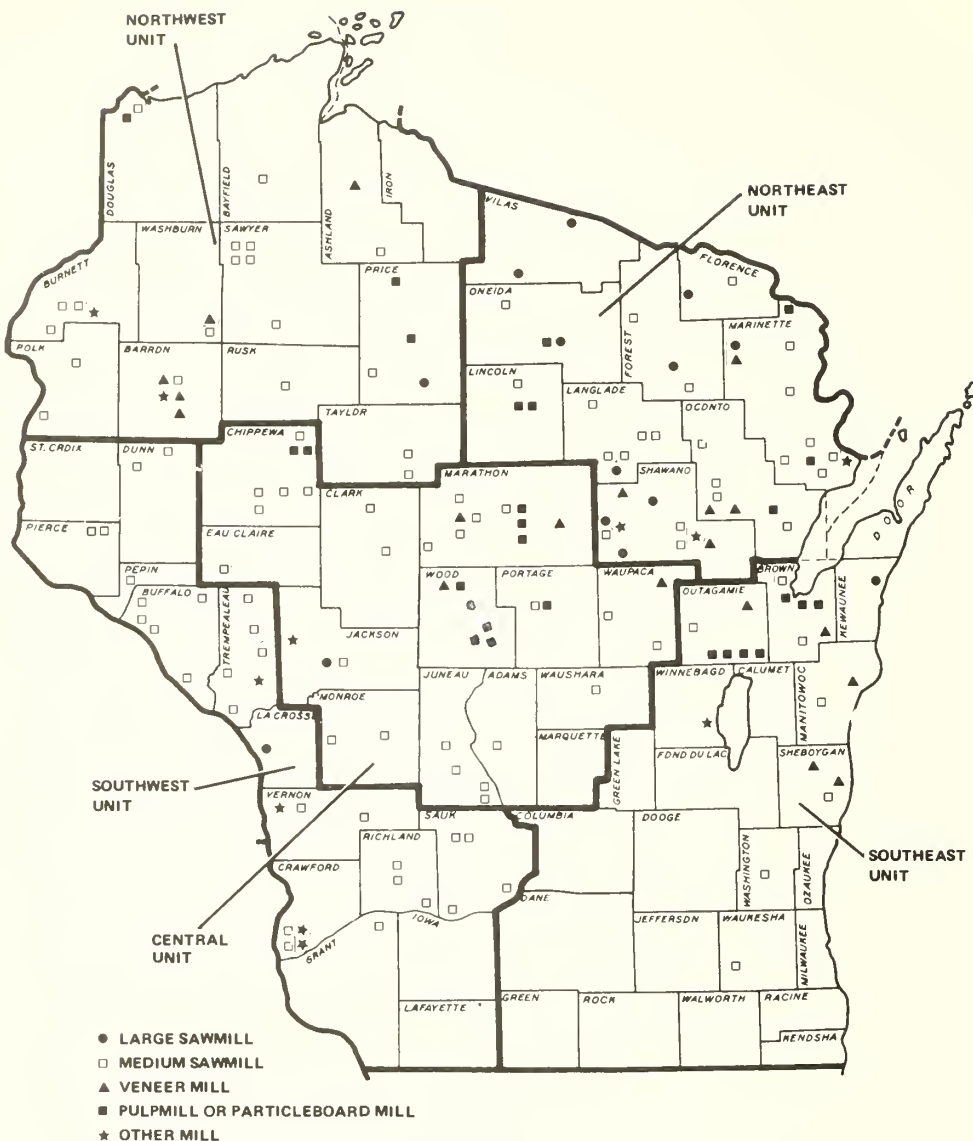


Figure 1.--Primary wood-using plants and Forest Survey Units in Wisconsin, 1973. Sawmills are classed by volume of lumber produced in 1973: large = 5 million board feet or more; medium = 1 to 4.999 million board feet (smaller sawmills not shown).

Between 1967 and 1973 industrial roundwood production shifted slightly from Northeastern Wisconsin to Northwestern and Central Wisconsin.² Northeastern Wisconsin remains the leading production area.

²Geographic area used by Forest Survey to report periodic inventories and use of the Nation's forest resources. See figure 1 for counties encompassed in each of five Forest Survey Units of Wisconsin.

Industrial roundwood production from softwoods was about equally divided between national forests (22 percent), other public (23 percent), forest industry (28 percent), and other private (27 percent). National forests were the major public source of softwood in the Northeast, but State and county land was a more important source in the Northwest.

Private landowners supplied four-fifths of the hardwood industrial roundwood. Nearly

two-thirds of the total came from private owners other than forest industry. Only 4 percent came from Federal land. However, other public land provided 24 percent of the hardwood industrial roundwood harvest in Northeast Wisconsin.

TIMBER REMOVALS FOR INDUSTRIAL ROUNDWOOD

Estimated timber removals (from growing stock on commercial forest land) for industrial roundwood were 214.1 million cubic feet in 1973 (using 1967 Wisconsin tree utilization factors), a 28 percent increase from the 1967 timber removals for industrial roundwood.

The greatest timber removals per 1,000 acres of stocked commercial forest land were in central and northeastern Wisconsin and particularly in Brown, Oneida, Lincoln, and Marathon Counties (fig. 2).

Timber removals in five major species groups--aspen,³ hard maple, oak, jack pine, and red pine--were compared on a county basis with growing-stock volume (fig. 3) and net annual growth (fig. 4). These comparisons show in a rough way where timber overcutting or undercutting (in terms of sustained yield) was likely in 1973.

These indicators of possible over-utilization or underutilization of species in 1973 in specific areas of Wisconsin should be used cautiously in deciding future wood procurement strategy because: (1) wood procurement patterns and volumes change from year to year, (2) the estimates of timber removals are based on logging utilization factors in 1967 which have changed since, (3) timber volumes and net annual growth used in the comparisons were for 1968, (4) stand age structure may mask the extent of under- or overutilization, and (5) apparent overcutting or undercutting may be a temporary timber management tool to improve the stand structure and species mix.

For aspen, overcutting seems likely for 1973 in Iron and Price Counties and several northeastern counties--Oneida, Lincoln, Langlade, Forest, and Marinette. Aspen appears to have been underutilized

³Common and scientific names of all species mentioned in this report are listed on pages 14 and 15.

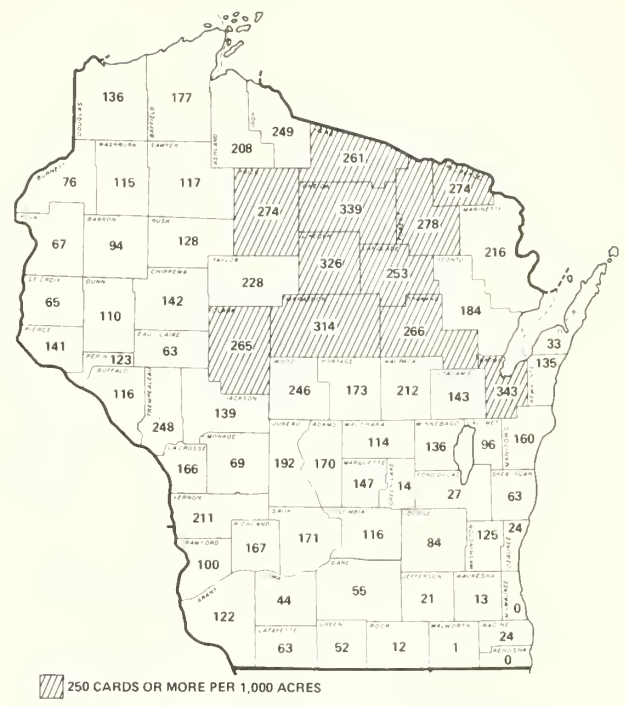


Figure 2.--Cords of timber removals from commercial forest land for industrial roundwood products per 1,000 acres of stocked commercial forest land in Wisconsin counties, 1973.

in 1973 in Barron, Polk, Burnett, Washburn, Marquette, Adams, Monroe, and Waushara Counties. To maintain a sustained yield, some aspen harvesting should probably be shifted from northeastern to northwestern and central Wisconsin.

Hard maple was probably overcut in 1973 in Oneida and several central-tier counties. Hard maple is underutilized in several northwestern counties, and a shift in harvesting to this area could relieve the cutting pressure in other areas.

As for oak, overcutting seemed to be a minor problem in isolated counties. The heaviest cutting was in east central Wisconsin while harvesting was light in northern counties.

Jack pine may have been overcut in central and northwest Wisconsin, but is less certain than for the previous species discussed. Several counties had more than 4 percent of their jack pine growing-stock volume harvested in 1973. However, timber removals in 1973 exceeded annual growing-stock growth only in Taylor County. How

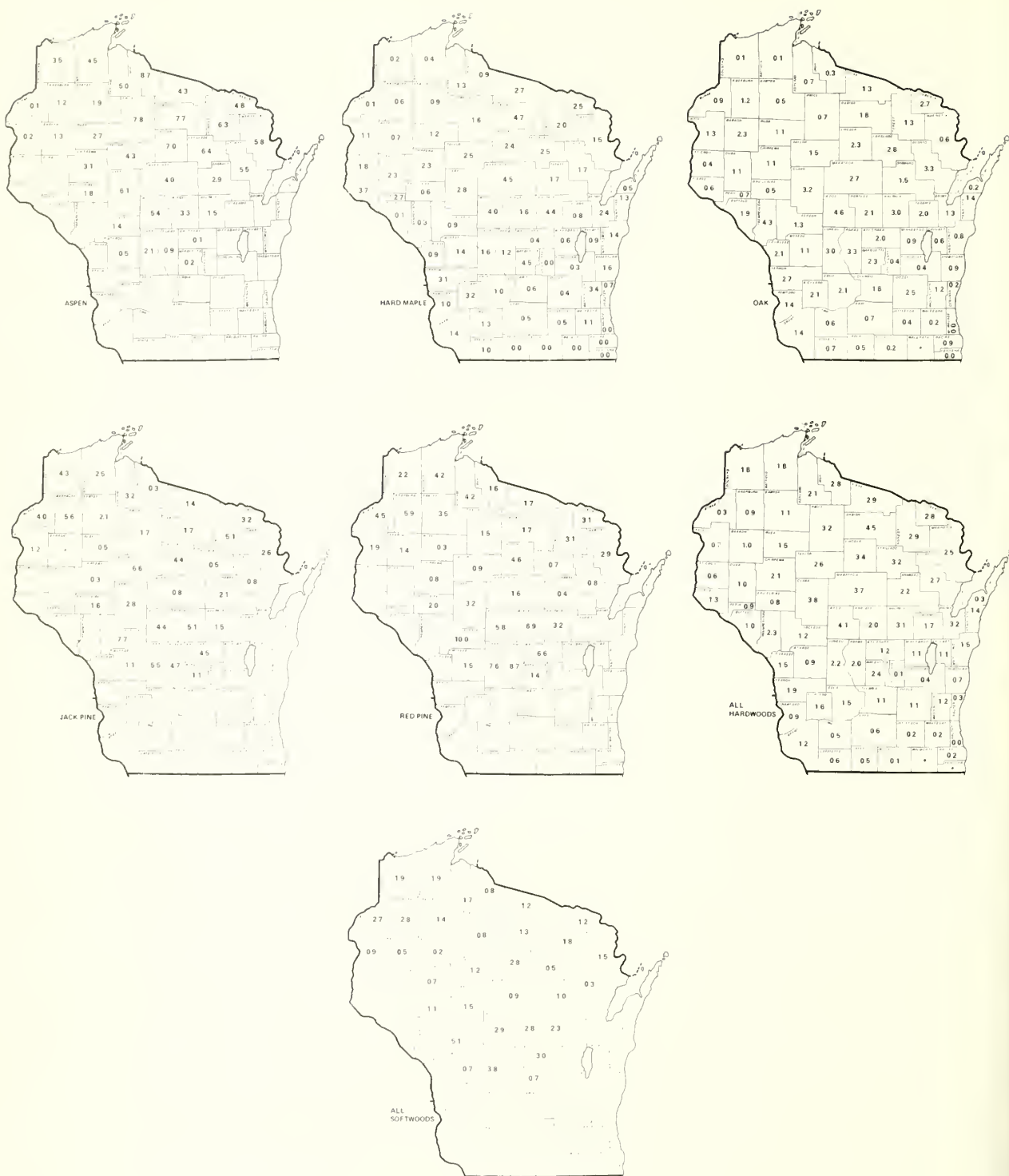


Figure 3.--Timber removals for industrial roundwood as a percent of growing-stock volume in Wisconsin counties, 1973. Softwoods and aspen are shown only in Northeast, Northwest, and Central Wisconsin. (* = less than 0.05 percent).

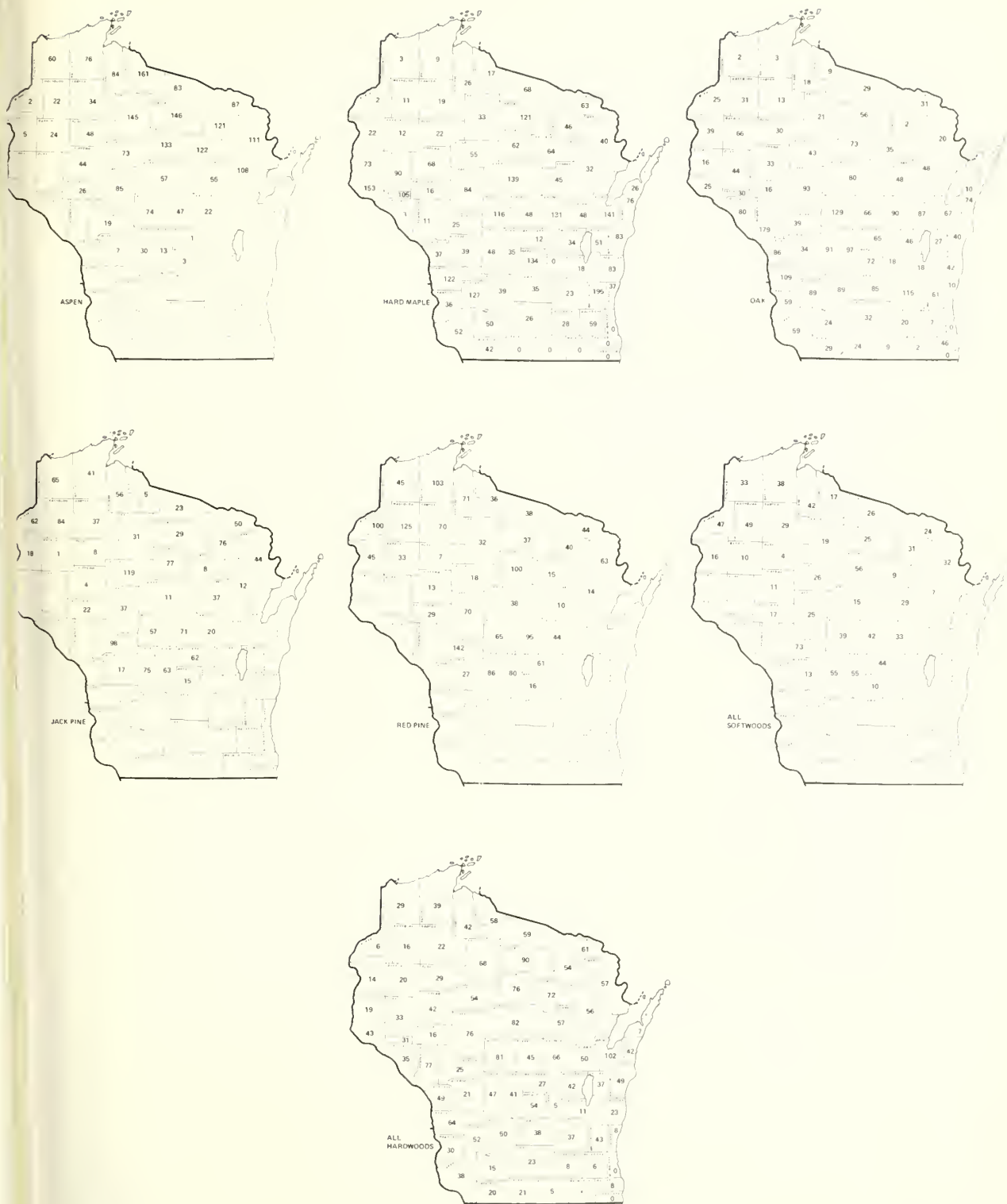


Figure 4.--Timber removals for industrial roundwood as a percent of net annual growth in Wisconsin counties, 1973. Softwoods and aspen are shown only for Northeast, Northwest, and Central Wisconsin.

could several counties have more than 4 percent of their jack pine growing-stock volume cut and not have timber removals exceed annual growth? Probably because ingrowth in these counties is large. Ingrowth is the net annual volume of trees growing into pole timber size. Ingrowth is likely to decline in these counties. As the rate of ingrowth declines the net annual growth will probably fall, and timber removals may exceed annual growth if the current harvest intensity continues.

On the other hand, jack pine may have been underutilized in counties such as Oconto, Polk, Chippewa, Marathon, and Monroe; all have large volumes of jack pine growing stock.

Red pine harvesting in 1973 was heavy in northwest Wisconsin (Bayfield, Burnett, and Washburn Counties) and central Wisconsin (Jackson, Juneau, Adams, Portage, and Lincoln Counties). Red pine logging was light in the Rusk-Taylor-Chippewa County area and the Langlade-Oconto-Shawano County area.

PULPWOOD

Pulpwood production was 1.7 million cords in 1973. Nine out of 10 cords were roundwood; the remainder was wood residue (used at pulpmills) from sawmills, veneer mills, and other mills. Since 1959 residue has become an important pulpwood source (fig. 5).

Until 1951 hardwood constituted less than half of the roundwood produced. Since then the hardwood proportion of the roundwood has grown to about three-fourths of the total. The volume of softwoods harvested has risen slowly. From 1946 to 1962 the annual softwood harvest only exceeded 300,000 cords once. Between 1963 and 1973 the softwood harvest exceeded 300,000 cords every year except one and reached 400,000 cords in 1970.

Aspen is the major hardwood pulping species harvested (fig. 6). Harvesting of other hardwoods began after World War II

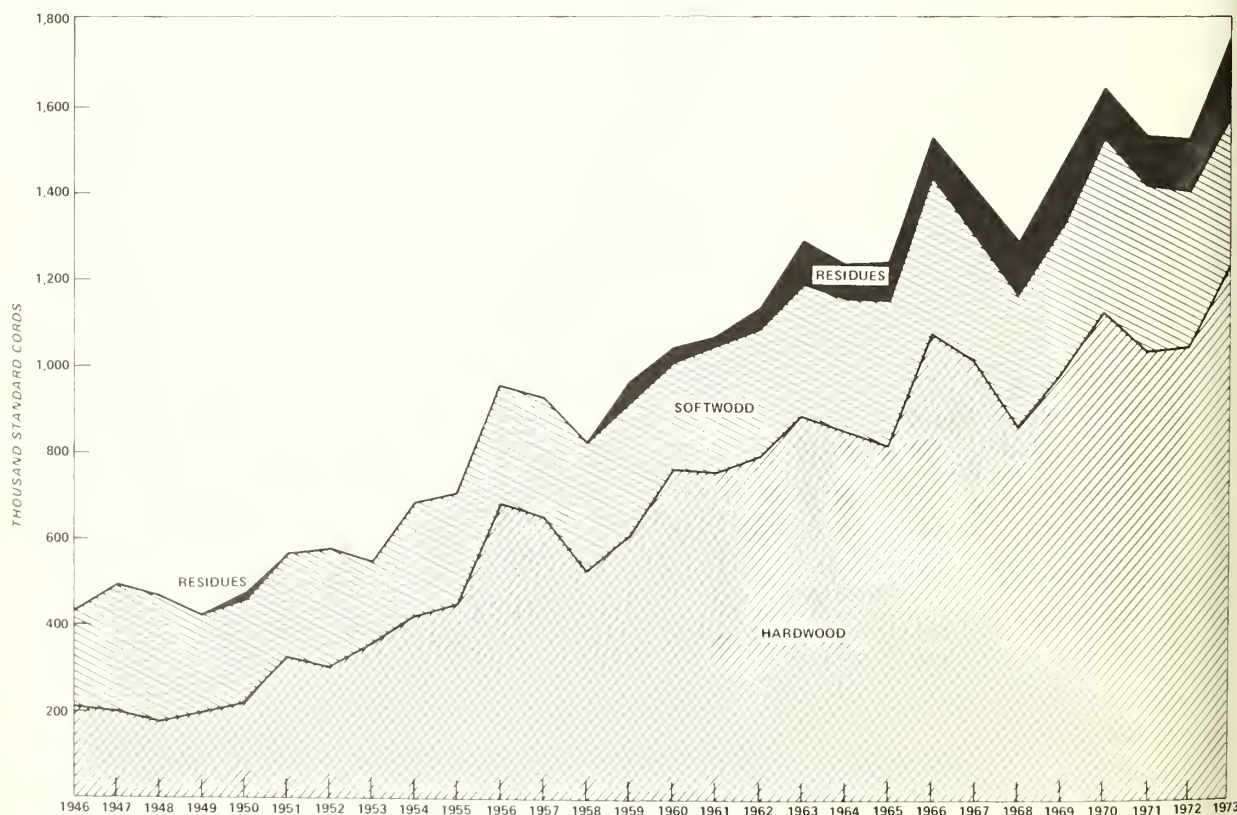


Figure 5.--Wisconsin pulpwood production trends, 1946-1973.

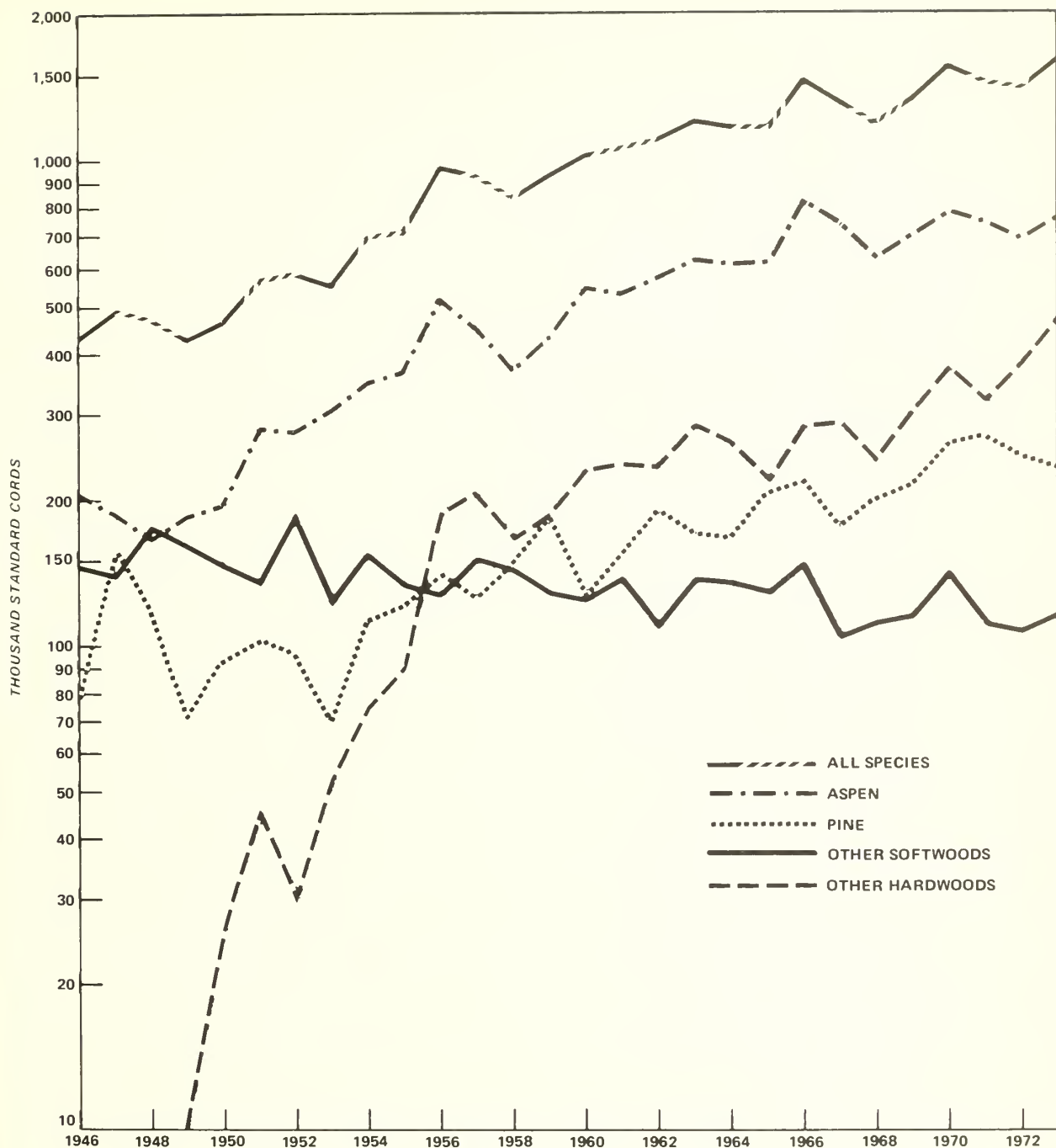


Figure 6.--Wisconsin round pulpwood production by species groups, 1946-1973.

and became an important part of the pulpwood cut by the early 1950's. The aspen harvest peaked out temporarily in 1966, but the volume of other hardwoods cut continues to rise. Other than aspen, important hardwood species cut for pulpwood in 1973 were:

Species	Thousand cords
Hard maple	101
Elm	82
Red oak	73
Soft maple	69
White birch	57

Pine has been the major softwood pulping species for more than 2 decades. Since 1953, pine pulpwood production has increased irregularly. Pine pulpwood cut in 1973 consisted of jack pine (68 percent), red pine (28 percent), and white pine (4 percent). Balsam fir and hemlock pulpwood production move in a narrow almost trendless band while spruce output, never more than 39,000 cords, is about half the annual total 25 years ago.

Most (95 percent in 1973) of Wisconsin's pulpwood remains in the State. Michigan is the principal out-of-State customer.

Twenty-four Wisconsin mills received 2.7 million cords of pulpwood in 1973, a record surpassed in only 3 other years. About 2.3 million cords were roundwood. Wisconsin imports large quantities of pulpwood as shown by the origin and quantity of wood receipts in 1973:

<i>Origin</i>	<i>Receipts</i> (Thousand cords)
Wisconsin	1,671
Michigan	418
Minnesota	194
Western States	291
Canada	122

Michigan Upper Peninsula forests supply large quantities of aspen and pine. Minnesota furnishes mainly aspen, pine, and spruce. Canada's major contribution is spruce. Sawmills in several western States are the chief suppliers of softwood residue chips to Wisconsin.

Pulpwood receipts in Wisconsin topped out temporarily in 1970 (fig. 7). Since 1946, the upward trend in receipts has been interrupted periodically by several sharp declines. These declines are usually a reaction to overbuilding of woodyard inventories at mills.

Demand for mixed hardwood roundwood, softwood residue, and hardwood residue at Wisconsin mills has been strong in recent years; demand for aspen and pine has been stable, and demand for spruce and balsam fir has weakened. Pine overtook spruce in 1959 as the primary softwood species used in Wisconsin.

SAW LOGS

Wisconsin loggers harvested 387 million board feet of saw logs in 1973, up 114 million board feet from 1967. Eighty-nine

percent of the output was hardwoods. The large log harvest was in response to the heavy demand for railroad ties and lumber for furniture, flooring, pallets, crating, and construction. Lumber inventories were low during 1973 because sawmills had difficulty meeting the demand.

Principal species cut were red oak, aspen, elm, and hard maple; major softwoods cut were white pine, red pine, and hemlock.

Wisconsin sawmills sawed all but 4 million board feet of these logs. Principal saw log exports were hard maple to Michigan and walnut to Iowa.

Major production gains since 1967 were in aspen (44 million board feet), elm (27 million board feet), and red oak (12 million board feet). Aspen has found widespread acceptance as pallet lumber and for furniture parts since 1967. In addition, more aspen is used in housing construction since it became eligible for construction lumber grading under softwood rules. Red oak harvesting increased to meet greater demands for furniture stock and railway ties.

Elm saw log production rose rapidly as Dutch Elm Disease spread through Wisconsin from south to north. Many diseased trees were being salvaged. Elm logging intensity has shifted northward with the spread of the disease as shown below:

<i>Wisconsin region</i>	<i>Elm saw log production</i> (Thousand board feet, Int'l 1/4-inch rule)	
	1967	1973
Northeast	9,137	27,904
Northwest	2,259	3,510
Central	5,977	14,548
Southwest	3,627	4,607
Southeast	9,866	7,495

Southeast Wisconsin elm log production was lower in 1973 than in 1967, probably because the volume of elm trees was insufficient to sustain former cutting levels.

Northeast Wisconsin furnished 38 percent of the saw log volume in 1973. Half of the aspen was cut in the Northeast 48 percent of the elm, and 55 percent of the hard maple.

Leading counties producing saw logs were Shawano (includes Menominee County),

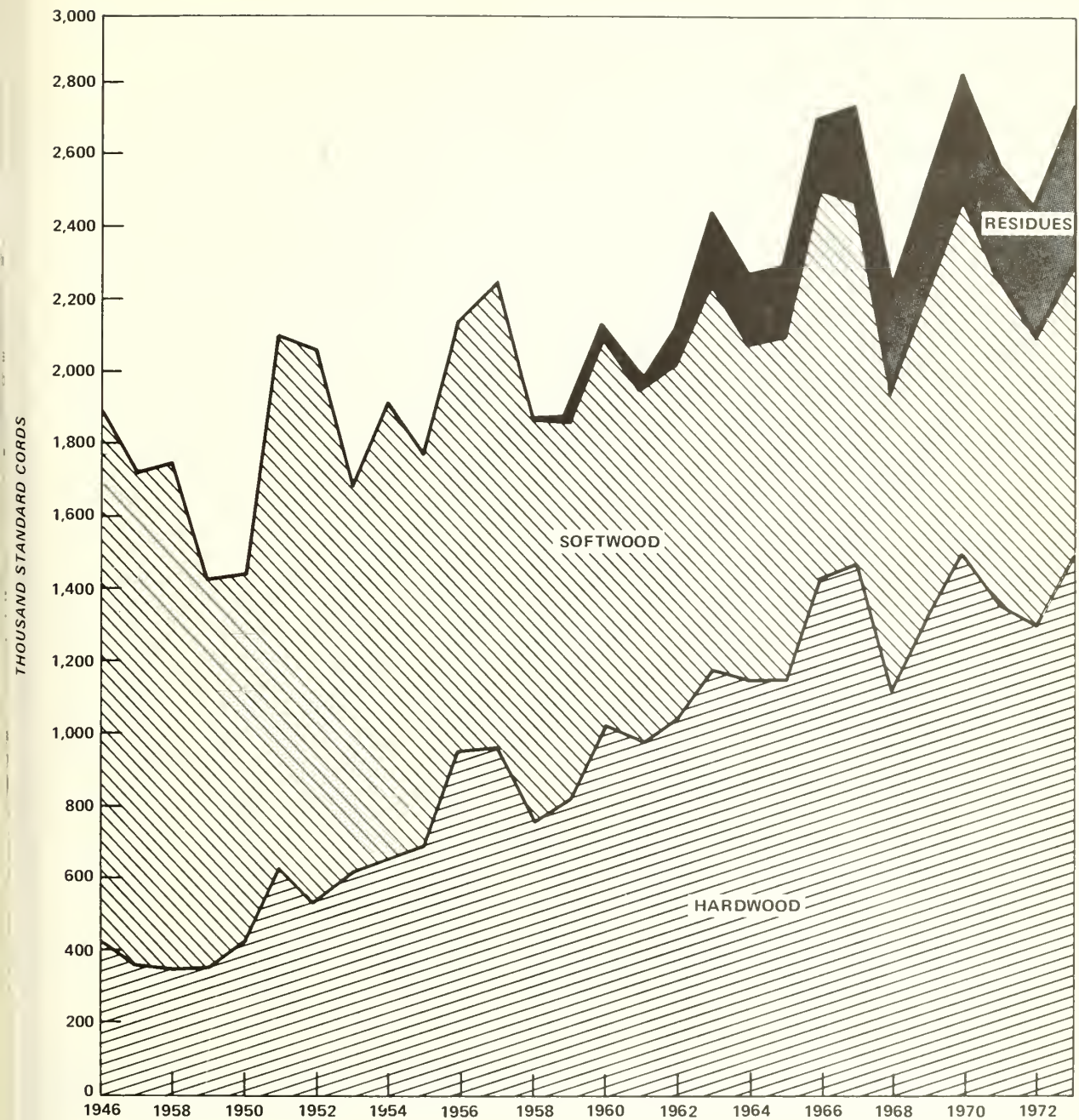


Figure 7.--Pulpwood receipts in Wisconsin, 1946-1973.

Forest, Marathon, and Oneida. Saw logs are harvested in every county except Menasha.

More than 500 Wisconsin sawmills procured 408 million board feet of saw logs in 1973 compared with 288 million board feet procured by over 800 mills in 1967. Imports came chiefly from Michigan (18

million board feet) and Minnesota (7 million board feet).

Lumber production was most heavily concentrated in northeastern counties where 10 of the 15 large sawmills (those cutting 5 million board feet or more of lumber annually) are located (fig. 8). Average

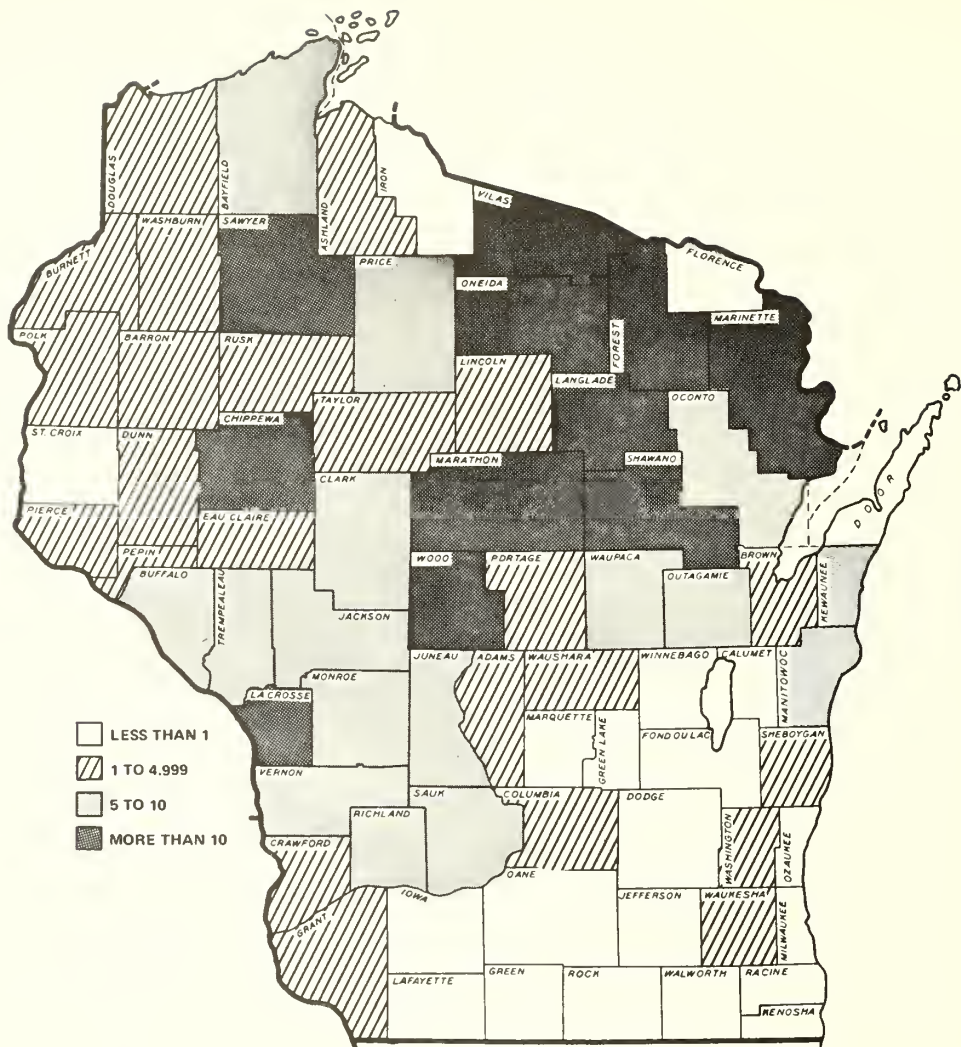


Figure 8.--Lumber production in million board feet in Wisconsin counties, 1973.

lumber output per sawmill was twice as great in 1973 as in 1967 (fig. 9). The average output is rising because many small mills have closed, some active mills are expanding and increasing their sawing efficiency, and new mills are usually larger than average.

VENEER LOGS

Of the 32.2 million board feet of veneer logs cut in 1973 in Wisconsin, 61 percent remained in the State, 35 percent were shipped to Michigan, and the remainder were sent primarily to Indiana and Iowa. All of the walnut harvested was sent to four other States. Aspen was the leading species

cut followed by red oak, elm, and hard maple. Top-producing counties were Iron, Ashland, Shawano (includes Menominee), and Florence.

Nineteen Wisconsin veneer mills received 37.8 million board feet of logs in 1973. Nearly half of the volume came from out-of-State including Michigan (10.9 million board feet), Minnesota (4.1 million board feet), Iowa, Illinois, and Canada. Important species imported and their major sources were hard maple from Michigan and Canada, yellow birch from Michigan, red oak from Minnesota and Iowa, and cottonwood from Minnesota. Compared with 1966, the important changes in veneer log receipts in 1973 were

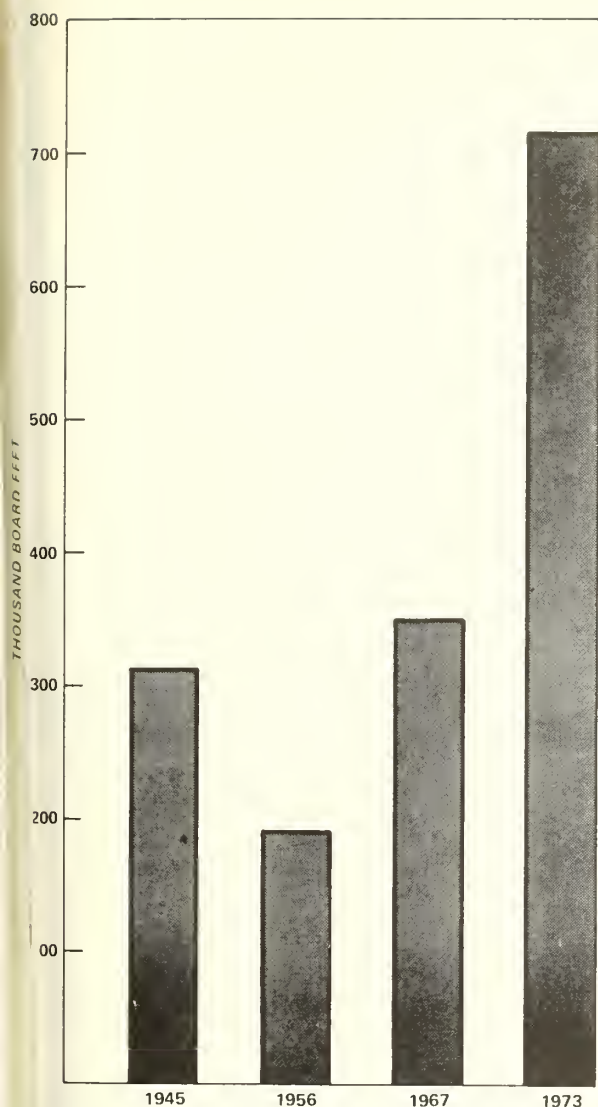


Figure 9.--Average output per sawmill in Wisconsin

Species	1966 (Thousand board feet, Int'l 1/4-inch rule)	1973
Yellow birch	9,595	3,415
Hard maple	8,969	11,442
Softwood	3,775	2,140
Other	4,443	5,999

Container grade veneer log output in Wisconsin dropped sharply from 1952 to 1968 as plastic and paperboard containers were substituted for veneer (fig. 10). Less than 5 percent of the volume in 1973 was container veneer logs. Only 6 Wisconsin container veneer mills remain active compared with

26 in 1956. Standard grade⁴ veneer log production is higher than 2 decades ago and the decline in active Wisconsin standard veneer mills has been less severe than in the container industry.

Veneer log receipts in Wisconsin dropped precipitously from 1956 to 1970, then recovered to the 1968 level by 1973 (fig. 11). For at least a quarter century, Wisconsin mills have depended greatly on Michigan logs and to a significant extent on Minnesota and Canadian logs. Dependence on Michigan logs rose during the last decade while receipts of Canadian logs dropped. Wood from Michigan's Upper Peninsula is probably being substituted for Canadian wood.

OTHER PRODUCTS

Other industrial roundwood products (4 percent of total industrial roundwood) cut in Wisconsin in 1973 were, poles, commercial posts, piling, charcoal wood, particle-board bolts, cooperage logs, and excelsior bolts. About 16 mills received 7 million cubic feet of these products harvested in Wisconsin. Central and northwest Wisconsin are important logging areas for these products.

PRIMARY PLANT RESIDUE

During 1973, Wisconsin primary wood-using plants (excluding pulp mills) generated 20.2 million cubic feet of coarse residue, 12.2 million cubic feet of fine residue, and 14.6 million cubic feet of bark. The amount of each residue class not used (piled, land fill, burned as waste, etc.) was:

Class of residue	Softwood (Percent)	Hardwood (Percent)
Coarse	19	13
Fine	45	28
Bark	50	44

Mill operators did a creditable job of finding users for coarse residue. Markets were insufficient for fine residue and bark. Northeastern Wisconsin had the largest volume of residue not used in each class.

Estimates of residue in 1973 by type of disposal for each county are found in the Appendix. Individuals or firms desiring

⁴Face, core, and specialty veneer logs.

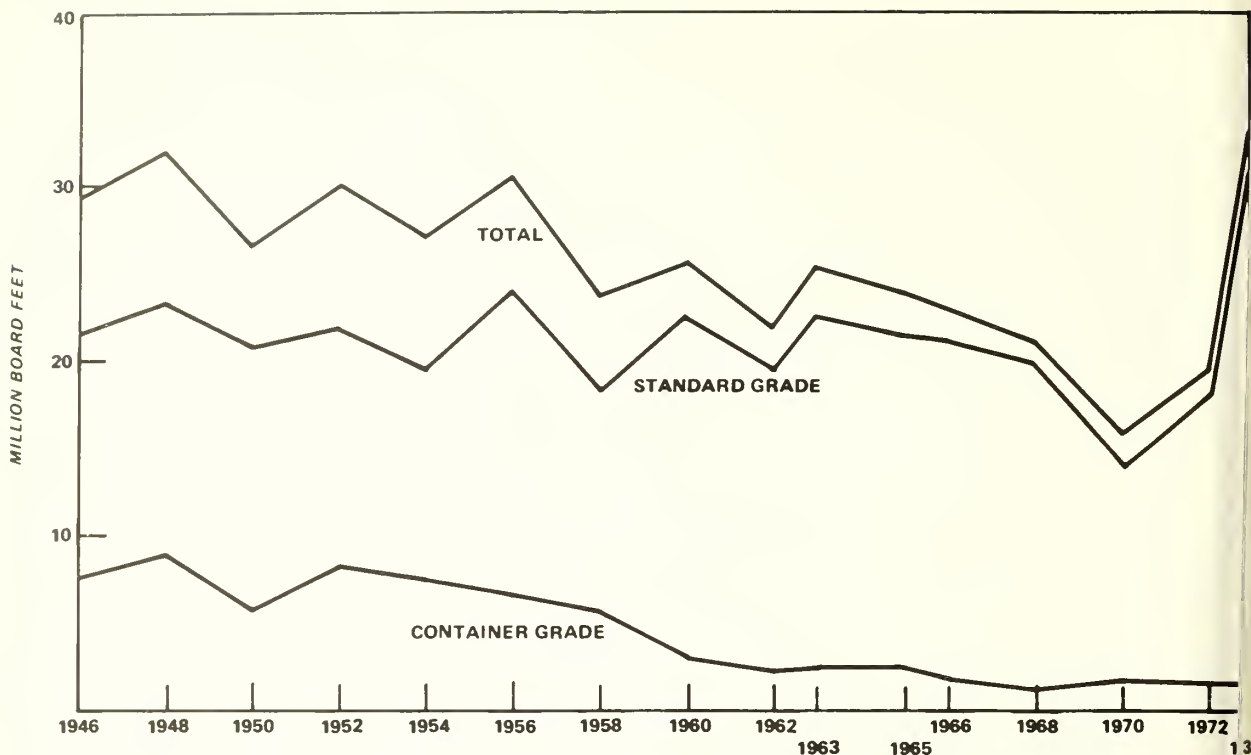


Figure 10.--*Wisconsin veneer log production for selected years, 1946-1973.*

residue can use the county data to pinpoint areas where high concentrations of residue are not used.

OUTLOOK

Industrial roundwood production was probably higher in 1974 than in 1973, but significantly lower in 1975. Industrial roundwood production greatly depends on the strength of the general economy. As the economy improves, pallet, furniture, railroad tie, paper, and paperboard markets should strengthen. These markets are vitally important to Wisconsin's primary wood-using industry. Several primary plants in Wisconsin are expanding or plan to expand.

The proportion of industrial roundwood (including chips from roundwood) produced

from nongrowing-stock sources (such as top and limbwood) is likely to rise significantly by 1985. Consequently, over the next decade annual timber removals for industrial roundwood will probably rise slightly above the 1973 level, but annual industrial roundwood output will probably be moderately higher because of the additional use of nongrowing stock.

Although the 1973 hardwood harvest was heavier in the northeast and some central Wisconsin counties than in northwest Wisconsin, the hardwood harvest in northwest Wisconsin may increase in relation to these other areas.

The large quantity of bark and sawdust not used may become an important supplemental fuel for companies with inadequate supplies of other fuel.



Figure 11.--Veneer log receipts in Wisconsin for selected years, 1946-1973.

APPENDIX

STUDY METHODS

Data for this publication came from a complete canvass of primary wood-using firms using Wisconsin logs and bolts and all public agencies administering commercial forest land. The study was a cooperative effort between the Wisconsin Department of Natural Resources (DNR) and the North Central Forest Experiment Station (NCFES). Special thanks are given to the DNR Area Foresters and Assistant Area Foresters for personally canvassing the Wisconsin mills. The DNR canvassed public agencies (other than Federal) to determine the 1973 timber products harvest on land they administer.

The NCFES canvassed by mail out-of-State mills using Wisconsin roundwood and the Federal agencies. Follow-up on nonrespondents was by telephone. The Station edited and compiled the data.

The authors gratefully acknowledge the fine cooperation of the primary wood-using firms that made this study possible.

DEFINITION OF TERMS

Timber removals for industrial roundwood.--The volume of sound bole wood (between a 1-foot stump and a minimum top diameter of 4.0 inches outside bark or to a point where the central stem breaks into limbs) in pole-timber and sawtimber growing-stock trees on commercial forest land removed annually for industrial roundwood products (including logging residues).

Sawtimber removals for industrial roundwood.--The volume of sound bole wood (between a 1-foot stump and the point on the bole above which a saw log cannot be produced) in sawtimber growing-stock trees on commercial forest land removed annually for industrial roundwood products (including logging residues). The minimum saw log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods.

Industrial roundwood products.--Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, particleboard bolts, excelsior bolts, lath bolts, charcoal bolts, and chips from roundwood.

Commercial forest land.--Forest land that is producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for growing crops of industrial wood generally in excess of 20 cubic feet per acre annually.

Growing-stock trees.--All live pole-timber and sawtimber trees of commercial species except rough and rotten trees. Pole-timber trees are 5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods. Softwood sawtimber trees are 9.0 inches d.b.h. or larger; hardwood sawtimber trees are 11.0 inches d.b.h. or larger.

Net annual growth of growing stock.--The annual change in volume of sound wood in live sawtimber and pole-timber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Volume of growing stock.--The volume of sound wood in the bole of sawtimber and pole-timber trees from stump to a minimum 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs.

Primary wood-using plant residue.--Wood materials (coarse and fine) and bark not utilized for principal products at manufacturing plants using roundwood. These residues include wood products (byproducts) obtained incidental to production of principal products, and wood materials not utilized for some product.

Coarse plant residue.--Wood residue suitable for chipping such as slabs, edges and veneer cores.

Fine plant residue.--Wood residue not suitable for chipping, such as sawdust and veneer clippings.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED

SOFTWOOD SPECIES

Eastern white pine *Pinus strobus*
Red pine *Pinus resinosa*
Jack pine *Pinus banksiana*

Spruce:

- White spruce *Picea glauca*
- Black spruce *Picea mariana*

- Balsam fir *Abies balsamea*
- Eastern hemlock *Tsuga canadensis*
- Tamarack *Larix laricina*
- Northern white-cedar . *Thuja occidentalis*

HARDWOOD SPECIES

White oak:

- White oak *Quercus alba*
- Bur oak *Quercus macrocarpa*
- Chinkapin oak . *Quercus muehlenbergii*
- Swamp white oak . . . *Quercus bicolor*

Red oak:

- Northern red oak *Quercus rubra*
- Black oak *Quercus velutina*
- Pin oak *Quercus palustris*

Hickory:

- Bitternut hickory . *Carya cordiformis*
- Pignut hickory *Carya glabra*
- Shagbark hickory *Carya ovata*

- Yellow birch . . . *Betula alleghaniensis*

Hard maple:

- Black maple *Acer nigrum*
- Sugar maple *Acer saccharum*

Soft maple:

- Red maple *Acer rubrum*
- Silver maple *Acer saccharinum*
- American beech *Fagus grandifolia*

Ash:

- Black ash *Fraxinus nigra*
- White ash *Fraxinus americana*

- Balsam poplar . . . *Populus balsamifera*

Aspen:

- Bigtooth aspen . *Populus grandidentata*
- Quaking aspen . . *Populus tremuloides*

- Eastern cottonwood . . *Populus deltoides*

- American basswood . . . *Tilia americana*

- Black walnut *Juglans nigra*

Elm:

- American elm *Ulmus americana*
- Rock elm *Ulmus thomasi*
- Slippery elm *Ulmus rubra*

- Paper birch *Betula papyrifera*

Table 1.--Industrial roundwood production in Wisconsin,
1956, 1967, and 1973
(In million cubic feet)

Product	All species			Softwoods			Hardwoods		
	1956	1967	1973	1956	1967	1973	1956	1967	1973
Pulpwood	73.6	103.1	124.9	21.0	22.1	27.5	52.6	81.0	97.4
Saw logs	55.0	45.1	64.1	11.9	4.8	7.4	43.1	40.3	56.7
Veneer logs	4.7	3.7	5.2	<u>1/</u>	<u>1/</u>	<u>1/</u>	4.7	3.7	5.2
Cooperage logs	0.4	0.2	0.3	--	--	--	0.4	0.2	0.3
Poles & piling	0.3	0.5	0.3	0.2	0.4	0.3	0.1	0.1	<u>1/</u>
Mine timbers	0.4	--	--	0.3	--	--	0.1	--	--
Posts <u>2/</u>	0.5	0.6	0.5	0.5	0.6	0.5	--	--	--
Miscellaneous <u>3/</u>	6.8	4.7	6.0	0.3	--	--	6.5	4.7	6.0
Total	141.7	157.9	201.3	34.2	27.9	35.7	107.5	130.0	165.6

1/ Less than 50 thousand cubic feet.

2/ Includes only posts processed at fence and treating plants.

3/ Includes logs and bolts used for excelsior, shavings, particleboard, lath, charcoal, and specialty products.

Table 2.--Volume of industrial roundwood production by type of product
in Wisconsin, 1973

Product	Standard units	Thousand standard units			Thousand cubic feet		
		All species	Soft-woods	Hard-woods	All species	Soft-woods	Hard-woods
Pulpwood	Standard cords	1,582	349	1,233	124,898	27,544	97,354
Saw logs	Board feet <u>1/</u>	386,543	43,641	342,902	64,177	7,441	56,736
Veneer logs	Board feet <u>1/</u>	32,224	45	32,179	5,192	8	5,184
Cooperage logs	Board feet <u>1/</u>	2,045	--	2,045	284	--	284
Piling	Linear feet	93	60	33	49	24	25
Poles	Pieces	28	28	--	235	235	--
Posts <u>2/</u>	Pieces	467	467	--	470	470	--
Miscellaneous <u>3/</u>	Cubic feet	5,994	--	5,994	5,994	--	5,994
Total		--	--	--	201,299	35,722	165,577

1/ International 1/4-inch rule.

2/ Includes only posts processed at fence and treating plants.

3/ Includes logs and bolts used for excelsior, shavings, particleboard, lath, charcoal, and specialty products.

Table 3.--Industrial roundwood products output by landowner class and
Unit, Wisconsin, 1973
(In thousand cubic feet)

Unit	Federal		Other public:		Private		All owners	
	National Forest	Other	Soft-wood	Hard-wood	Forest industry/ Softwood:Hardwood:	Other	Soft-wood	Hard-wood
Northeastern	5,520	1,433	125	828	2,229 16,123	4,728 16,419	708 31,785	13,310 66,588
Northwestern	2,333	4,355	420	187	4,349 6,910	3,773 6,098	2,712 33,104	13,587 50,654
Central	--	--	128	--	1,045 2,783	1,295 1,693	5,628 25,034	8,096 29,510
Southwestern	--	--	--	--	--	28	333 13,903	333 13,931
Southeastern	--	--	--	3	8 80	177 388	4,634 396	4,894
All Units	7,853	5,788	673	1,018	7,631 25,896	9,796 24,415	9,769 108,460	35,722 165,577

1/ Primary wood-using firms owning forest land, except sawmills cutting less than 100,000 board feet annually.

Table 4.--Number of active primary wood-using mills by Forest Survey Unit, Wisconsin, 1936, 1956, 1967, and 1973

Kind of mill	All units				Northeastern Unit				Northwestern Unit				Central Unit				Southwestern Unit				Southeastern Unit			
	1936	1956	1967	1973	1936	1956	1967	1973	1936	1956	1967	1973	1936	1956	1967	1973	1936	1956	1967	1973	1936	1956	1967	1973
Pulp mills	31	29	27	24	7	7	6	3	3	3	3	3	8	8	8	7								
Saw mills																								
Large 1/	20	8	6	15	5	5	10	--	--	1	3	1	2	--	--	1	--	--	--	--	1	--	--	1
Medium 2/	57	55	73	101	13	17	23	17	12	19	7	14	25	13	23	27	5	7	7	7				
Small 3/	1,461	1,565	739	411	306	125	93	340	130	73	403	182	95	301	175	75	215	127	75					
Total	1,538	1,628	818	527	324	147	126	357	142	93	413	197	122	314	198	103	220	134	83					
Veneer mills																								
Standard grade	16	21	16	13	8	6	5	3	4	3	6	3	3	1	--	--	3	3	2					
Container	4/ 33	26	10	6	4	1	--	3	2	2	6	1	1	4	1	--	9	5	3					
Total	49	47	26	19	12	7	5	6	6	5	12	4	4	5	1	--	12	8	5					
Cooperage mills	5/ --	5	3	1	--	--	--	--	--	--	--	--	--	2	3	1	3	--	--					
Charcoal plants	2	4	2	1	--	--	1	--	1	--	1	1	1	1	1	--	1	1	--					
Misc. plants 6/	137	40	22	11	6	4	3	8	7	2	9	4	2	9	6	3	8	1	1					
Total	1,757	1,753	898	583	349	165	140	375	158	103	445	214	137	331	209	107	253	152	96					

1/ Annual lumber production of 5 million board feet or more.

2/ Annual lumber production from 1 million to 4.999 million board feet.

3/ Annual lumber production less than 1 million board feet.

4/ Includes cooperage mills.

5/ Included with container veneer mills.

6/ Includes lath, particleboard, treating, fence, excelsior, and speciality plants.

Table 5.--Major industrial roundwood receipts by type of mill in Wisconsin, 1956, 1967, and 1973
(In million cubic feet)

Type of plant	All species			Softwoods			Hardwoods		
	1956	1967	1973	1956	1967	1973	1956	1967	1973
Pulpmills	164.3	195.1	179.2	89.8	79.4	63.0	74.5	115.7	116.2
Sawmills	67.8	47.8	68.0	14.5	5.1	8.8	53.3	42.7	59.2
Other mills ^{1/}	21.5	12.0	12.5	2/	2/	2/	21.5	12.0	12.5
Total	253.6	254.9	259.7	104.3	84.5	71.8	149.3	170.4	187.9

1/ Does not include treating plants.

2/ Less than 0.05 million cubic feet.

Table 6.--Timber removals for industrial roundwood by species, unit,
and county in Wisconsin, 1973
(In thousand cubic feet)

UNIT AND COUNTY	BALSAM: FIR	CEDAR:	HEMLOCK:	JACK: PINE	RED: PINE	WHITE: PINE	SPRUCE:	TAMA-: RACK	ASH:	ASPEN:	POPLAR:	BASS-: WOOD	BEECH:	WHITE BIRCH
NORTHEASTERN														
FLORENCE	86	1	299	82	130	92	56	9	40	2515	63	166	1	55
FOREST	680	39	836	125	312	367	193	16	124	4786	25	669	6	119
LANGLADE	65	9	135	4	37	20	31	22	124	3725	0	298	82	261
LINCOLN	319	1	175	251	546	98	66	8	284	5142	0	291	0	160
MARINETTE	486	42	91	481	294	267	181	3	126	6951	125	35	43	62
OCONTO	11	8	89	159	120	89	3	120	31	3281	30	56	23	637
ONEIDA	828	9	242	435	556	316	279	13	255	8556	8	105	0	102
SHAWANO	11	37	951	71	12	772	3	5	153	1286	8	520	148	912
VILAS	304	1	79	308	445	421	67	2	29	3827	0	110	0	2390
UNIT TOTAL	2790	147	2897	1916	2452	2442	879	78	1166	40069	259	2250	283	2390
NORTHWESTERN														
ASHLAND	1004	9	143	167	248	84	191	5	233	4404	0	156	0	246
BARRON	0	0	0	1	19	70	0	0	18	406	0	63	0	8
BAYFIELD	178	1	50	1464	879	245	27	0	68	6217	0	32	0	875
BURNETT	0	0	0	1111	245	56	0	6	6	63	0	15	0	7
DOUGLAS	61	0	2	1712	196	35	33	3	25	4087	0	5	0	125
IRON	185	6	144	6	44	38	44	0	79	5568	0	83	0	307
POLK	0	0	0	151	68	74	0	0	19	106	0	52	0	10
PRICE	579	0	135	103	150	57	102	3	429	7973	1	214	0	781
RUSK	3	0	9	14	8	42	0	0	111	1868	0	101	0	86
SAWYER	577	0	59	182	370	160	77	0	128	2531	0	103	0	496
TAYLOR	95	0	287	147	28	24	19	2	357	2495	0	203	0	186
WASHBURN	6	0	0	1096	287	55	3	6	27	913	0	169	0	26
UNIT TOTAL	2688	16	829	6154	2542	940	496	25	1500	36631	1	1196	0	3193
CENTRAL														
ADAMS	0	0	0	1059	389	67	0	1	33	206	0	5	0	5
CHIPPEWA	5	0	35	16	20	63	0	2	34	846	0	192	0	46
CLARK	1	0	8	165	120	117	0	0	126	2305	0	105	0	219
EAU CLAIR	0	0	0	103	36	37	0	0	8	339	0	15	0	1
JACKSON	0	0	0	1366	420	159	0	1	21	495	0	31	0	36
JUNEAU	0	0	0	864	230	86	0	0	86	485	0	17	0	17
MARATHON	35	3	112	61	56	101	5	5	336	2063	0	277	35	79
MARQUETTE	0	0	0	47	13	11	0	0	81	14	0	9	0	2
MONROE	0	0	0	96	30	21	0	0	11	88	0	31	0	5
PORTAGE	2	0	18	258	130	108	1	2	40	501	0	14	0	3
WAUPACA	16	0	20	64	53	256	0	2	110	228	1	159	62	50
WAUSHARA	0	4	1	263	99	52	0	0	14	5	0	2	0	0
WOOD	2	0	10	568	105	52	0	0	139	1157	0	42	0	25
UNIT TOTAL	61	7	204	4930	1701	1130	6	13	1039	8732	1	899	97	488

TABLE 6 CONTINUED ON NEXT PAGE

TABLE 6 CONTINUED

UNIT AND COUNTY	BALSAM: FIR	CEDAR:	HEMLOCK:	JACK: PINE	RED: PINE	WHITE: PINE	SPRUCE:	TAMA: RACK	ASH:	ASPEN:	POPLAR:	BALSAM:	WOOD:	BEECH:	WHITE BIRCH
SOUTHWESTERN															
BUFFALO	0	0	0	3	2	1	0	0	3	33	0	30	0	0	5
CRAWFORD	0	0	0	0	0	0	0	0	16	11	0	49	0	0	0
DUNN	0	0	0	9	15	47	0	0	18	54	0	163	0	0	1
GRANT	0	0	0	0	0	2	0	0	22	111	0	50	0	0	47
IOWA	0	0	0	0	0	0	0	0	7	2	0	30	0	0	0
LACROSSE	0	0	0	5	7	5	0	0	11	19	0	58	0	0	6
LAFAYETTE	0	0	0	0	0	0	0	0	5	0	0	13	0	0	0
PEPIN	0	0	0	10	14	26	0	0	11	13	0	60	0	0	2
PIERCE	0	0	0	0	0	7	0	0	22	18	0	128	0	0	2
RICHLAND	0	0	0	5	7	11	0	0	25	8	0	106	0	0	0
ST. CROIX	0	0	0	0	1	10	0	0	10	4	0	41	0	0	2
SAUK	0	0	0	41	71	11	0	0	25	176	0	44	0	0	7
TREMPEALEU	0	0	0	0	15	7	0	0	8	23	0	39	0	0	5
VERNON	0	0	0	0	0	0	0	0	25	33	0	119	0	0	6
UNIT TOTAL	0	0	0	73	132	127	0	0	208	505	0	930	0	0	83
SOUTHEASTERN															
BROWN	0	6	23	0	0	37	0	0	71	109	4	37	23	7	7
CALUMET	0	1	0	0	0	1	0	0	12	6	0	10	3	0	0
COLUMBIA	0	0	0	11	73	20	0	0	25	40	0	7	2	1	1
DANE	0	0	0	0	0	0	0	0	12	1	0	5	0	0	0
DODGE	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0
DOOR	0	25	4	0	2	20	0	1	6	18	11	15	5	11	11
FOND DU LAC	0	0	0	0	0	0	0	0	3	2	0	5	0	0	0
GREEN LAKE	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0
JEFFERSON	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
KEAUWATON	0	3	2	0	0	0	0	0	10	4	4	15	10	6	6
MANITOWOC	0	7	7	0	0	33	0	1	40	27	0	40	39	13	13
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	1	0	0	0	58	1	0	31	11	2	38	9	4	4
OZAUKEE	0	0	0	0	0	0	0	0	7	1	0	3	0	0	0
RACINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
SHEBOYGAN	0	0	0	0	0	7	0	0	30	0	0	12	6	0	0
WALWORTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON	0	1	0	0	0	0	0	0	59	0	0	58	0	0	0
WAUKESHA	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0
WINNEBAGO	0	0	1	0	1	47	0	0	4	1	0	7	5	0	0
UNIT TOTAL	0	44	37	13	76	227	1	2	326	220	21	263	102	42	42
STATE TOTAL	5539	214	3967	13086	6903	4866	1382	118	4239	86157	282	5538	482	6156	6156

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TABLE 6 CONTINUED

UNIT AND COUNTY	YELLOW: : BIRCH:	COTTON- : WOOD:	FLM: : HICKORY:	HARD: : MAPLE:	SOFT: : MAPLE:	RED: : OAK:	WHITE: : OAK:	WALNUT: : OAK:	OTHER: : WOODS:	ALL SPECIES
NORTHEASTERN										
FLORENCE	62	0	647	0	1043	94	160	0	0	9 5600
FOREST	223	0	983	0	1559	235	55	0	0	35 11387
LANGLADE	118	0	1080	5	1247	324	123	13	0	45 7569
LINCOLN	196	0	1008	10	809	348	305	3	0	21 10182
MARINETTE	22	1	496	0	338	426	300	0	0	7 10935
OCONTO	21	8	426	0	174	211	240	47	0	1 5090
ONEIDA	151	2	295	0	713	842	553	0	0	27 15012
SHAWANO	189	1	3221	53	1429	451	621	56	0	24 10124
VILAS	333	2	154	0	1131	327	314	0	0	16 8782
UNIT TOTAL	1515	14	8300	68	8443	3298	2671	179	0	185 84681
NORTHWESTERN										
ASHLAND	114	0	262	0	651	355	134	12	0	9 8427
BARRON	6	2	74	0	88	20	300	28	0	0 1103
BAYFIELD	39	0	68	0	204	153	52	0	0	3 10555
BURNETT	0	0	38	0	12	1	298	20	0	1 1879
DOUGLAS	7	0	29	0	40	28	13	11	0	1 6413
IRON	88	0	123	0	311	133	59	0	0	3 7221
POLK	4	2	70	3	109	20	376	68	0	0 1132
PRICE	217	0	482	1	884	409	190	12	0	15 12737
RUSK	74	0	268	0	325	130	172	38	0	3 3252
SAWYER	63	0	146	0	420	122	144	6	0	4 5588
TAYLOR	126	0	707	0	982	553	187	20	0	9 6427
WASHBURN	9	0	37	0	100	29	284	8	0	2 3057
UNIT TOTAL	747	4	2304	4	4126	1953	2209	223	0	50 67791
CENTRAL										
ADAMS	1	0	80	0	37	93	1036	271	0	5 3288
CHIPPEWA	29	0	333	0	126	133	377	22	0	2 2281
CLARK	10	2	545	9	254	348	1030	209	0	9 5592
EAU CLAIR	1	0	20	0	16	12	134	31	0	2 755
JACKSON	15	6	159	0	59	131	657	118	0	26 3700
JUNEAU	0	0	150	13	70	187	1002	312	0	7 3526
MARATHON	87	0	2329	48	994	865	1224	276	0	25 9016
MARGUETTE	0	2	199	5	63	208	349	95	0	10 1108
MONROE	3	1	77	9	60	83	512	101	0	0 1128
PORTAGE	1	13	188	0	86	142	462	137	0	3 2109
WAUPACA	28	0	479	1	173	215	523	129	0	21 2590
WAUSHARA	0	0	53	0	9	31	392	92	0	0 1027
WOOD	3	0	306	0	155	299	915	252	0	8 4038
UNIT TOTAL	178	24	4928	85	2102	2757	8613	2045	0	118 40158

TABLE 6 CONTINUED ON NEXT PAGE

TABLE 6 CONTINUED

UNIT AND COUNTY	YELLOW: BIRCH:	COTTON- WOOD:	ELM:	HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	WALNUT:	OTHER: HARD- WOODS:	ALL SPECIES
SOUTHWESTERN											
BUFFALO	0	29	41	2	6	22	1146	136	9	9	1477
CRANFORD	0	10	52	5	48	12	521	215	52	14	1005
DUNN	0	6	123	2	141	21	500	45	7	9	1161
GRANT	0	17	78	2	78	30	559	279	100	9	1384
IOWA	0	0	19	0	53	7	151	88	34	5	396
LACROSSE	0	10	97	8	35	45	670	143	38	29	1206
LAFAYETTE	0	2	12	0	14	0	72	27	20	0	165
PEPIN	0	9	63	2	56	15	119	12	0	7	419
PIERCE	2	49	118	7	125	23	145	16	0	5	667
PICHLAND	0	1	60	15	173	38	599	256	0	3	1307
ST.CROIX	0	2	57	2	36	3	65	10	0	1	244
SAUK	0	2	48	25	70	124	1017	317	9	4	1991
TREMPEALEU	0	8	50	9	13	23	1604	261	0	8	2073
VERNON	0	8	132	16	212	46	1345	313	8	9	2272
UNIT TOTAL	2	153	950	95	1060	429	8513	2118	277	112	15767
SOUTHEASTERN											
BROWN	0	56	375	0	74	97	37	21	0	1	978
CALUMET	0	3	77	0	12	32	8	22	0	0	187
COLUMBIA	0	7	43	8	19	34	329	100	6	10	735
DANE	0	8	38	1	14	11	152	54	9	7	312
DODGE	0	3	17	60	7	5	78	66	2	3	253
DOOR	2	4	68	0	30	5	13	3	0	0	243
FOND DU LAC	0	1	30	10	5	5	22	14	0	2	99
GREEN	0	0	5	0	0	1	33	24	57	0	125
GREEN LAKE	0	0	0	0	0	0	26	1	0	0	29
JEFFERSON	0	0	12	0	8	0	19	10	0	0	50
KEWAUNEE	2	5	130	0	34	49	31	20	0	2	329
MANITOWOC	0	7	277	0	61	114	42	28	0	1	737
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	7	200	0	26	86	112	50	0	0	734
OZAUKEE	0	0	6	0	4	0	5	0	0	0	26
RACINE	0	0	6	0	0	0	11	11	0	0	28
ROCK	0	0	7	0	0	0	8	11	1	0	29
SHEBOYGAN	0	1	47	0	36	15	61	13	0	3	231
WALWORTH	0	0	0	0	0	0	1	1	0	0	2
WASHINGTON	0	1	63	0	84	0	75	1	0	0	342
WAUKESHA	0	0	1	0	11	5	16	2	0	0	44
WINNEBAGO	0	0	65	1	8	27	40	8	0	0	215
UNIT TOTAL	4	103	1565	80	433	486	1119	460	75	29	5728
STATE TOTAL	2446	298	1807	332	16164	8913	23125	5025	352	494	214125

Table 7.--Sawtimber removals for industrial roundwood by species, unit,
and county in Wisconsin, 1973
(In thousand board feet, International 1/4-inch rule)

UNIT AND COUNTY	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMA- RACK	ASH	ASPEN	POPULAR	BASS- WOOD	BEECH	WHITE BIRCH
NORTHEASTERN														
FLORENCE	313	3	1550	170	324	449	211	33	151	5339	166	758	4	177
FOREST	2463	182	4508	375	1178	2077	714	60	486	14175	66	2526	31	456
LANGLADE	247	48	691	9	110	161	121	80	469	7175	0	1227	204	282
LINCOLN	1155	5	876	530	1278	418	243	31	948	10760	0	1148	0	895
MARINETTE	1772	117	475	1110	1065	1482	658	14	453	19395	435	157	196	619
OCONTO	44	22	452	335	546	511	11	1	159	10000	90	308	122	265
ONEIDA	3005	37	1222	1157	2237	1753	1011	48	690	22699	22	347	0	2062
SHAWANO	43	140	5117	156	51	4454	15	21	776	3462	42	2797	722	543
VILAS	1105	3	405	901	1930	2340	257	7	81	10556	0	322	3	2734
UNIT TOTAL	10147	557	15296	4743	8719	13575	3241	295	4213	103561	821	9590	1282	8033
NORTHWESTERN														
ASHLAND	3671	47	709	368	715	383	701	16	665	12679	0	628	0	719
BAKRON	0	0	0	3	84	407	0	0	81	2024	0	316	0	32
BAYFIELD	642	4	244	3151	2240	1281	98	1	193	14298	0	151	0	2603
BURNETT	0	0	0	2459	596	262	0	20	32	230	0	83	0	21
DOUGLAS	274	0	10	3598	470	148	118	12	68	8082	0	13	0	331
IRON	670	33	725	12	229	216	165	0	234	15685	0	318	0	844
POLK	0	0	0	318	174	309	0	1	104	443	0	280	0	54
PRICE	2098	0	671	221	341	245	373	12	1369	19072	6	701	0	2304
RUSK	13	0	45	33	37	243	0	0	429	7559	0	462	0	362
SAWYER	2088	0	295	386	1148	823	278	0	448	8576	0	448	0	1382
TAYLOR	344	0	1434	311	62	97	72	8	1072	6580	0	802	0	561
WASHBURN	20	0	0	2486	761	229	12	20	71	4169	0	882	0	103
UNIT TOTAL	9820	84	4133	13346	6857	4753	1817	90	4766	99397	6	5084	0	9316
CENTRAL														
ADAMS	0	0	0	2229	770	188	0	3	102	469	0	24	0	29
CHIPPewa	15	0	173	35	40	343	0	7	167	4063	0	1031	0	189
CLARK	3	0	42	371	271	544	0	0	448	9731	0	528	0	1050
EAU CLAIR	0	0	0	219	75	173	0	0	45	1582	0	79	0	7
JACKSON	0	0	0	3117	941	565	0	3	94	2431	0	167	0	191
JUNEAU	0	0	0	1890	555	311	0	0	300	1316	0	77	0	81
MARATHON	127	16	588	148	136	447	21	28	1385	4461	0	1432	193	378
MARQUETTE	0	0	0	98	33	52	0	0	222	56	0	28	0	11
MONROE	0	0	0	205	83	90	0	0	52	440	0	173	0	24
PORTAGE	6	0	92	566	315	511	3	8	114	1597	0	67	0	12
WAUPACA	61	0	114	135	162	1452	0	11	566	841	5	850	349	195
WAUSHARA	0	21	4	262	226	214	1	0	63	9	0	14	0	0
WOOD	7	0	48	1376	272	214	1	2	482	4918	0	189	0	128
UNIT TOTAL	219	37	1061	10945	3915	5176	26	62	4040	31914	5	4659	542	2295

TABLE 7 CONTINUED ON NEXT PAGE

TABLE 7 CONTINUED

UNIT AND COUNTY	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMA- RACK	ASH	ASPEN	POPLAR	BASS- WOOD	BEECH	WHITE BIRCH
SOUTHWESTERN														
BUFFALO	0	0	0	6	5	10	0	0	18	184	0	158	0	24
CRANFORD	0	0	0	0	0	0	0	0	82	62	0	269	0	3
DUNN	0	0	0	19	36	264	0	0	97	298	0	875	0	7
GRANT	0	0	0	0	3	14	0	0	73	260	0	207	0	126
IOWA	0	0	0	0	0	0	0	0	39	15	0	171	0	1
LACROSSE	0	0	0	10	18	24	0	0	60	109	0	312	0	35
LAFAYETTE	0	0	0	0	0	0	0	0	24	2	0	71	0	1
PEPIN	0	0	0	21	29	62	0	0	65	75	0	320	0	13
PIERCE	0	0	0	0	0	41	0	0	118	104	0	685	0	17
RICHLAND	0	0	0	11	15	51	0	0	134	47	0	572	0	1
ST-CROIX	0	0	0	0	7	63	0	0	55	24	0	224	0	12
SAUK	0	0	0	87	147	34	0	0	135	477	0	232	0	31
TREMPEALEU	0	0	0	0	68	43	0	0	46	135	0	212	0	27
VERNON	0	0	0	0	0	3	0	0	137	183	0	638	0	31
UNIT TOTAL	0	0	0	154	328	609	0	0	1083	1975	0	4946	0	329
SOUTHEASTERN														
BROWN	0	33	118	0	3	220	0	0	264	249	21	199	128	37
CALUMET	0	3	2	0	0	8	0	0	63	34	0	57	17	2
COLUMBIA	0	0	0	22	157	108	0	0	95	136	0	38	4	9
DANE	0	0	0	0	0	0	0	0	55	8	0	27	0	0
DODGE	0	0	0	0	0	0	0	0	33	0	0	28	0	0
DOOR	1	134	24	0	14	114	0	6	33	98	59	78	29	59
FOND DULAC	0	0	0	0	0	0	0	0	17	5	0	25	0	0
GREEN	0	0	0	0	0	0	0	0	8	2	0	22	0	0
GREEN LAKE	0	0	0	1	0	5	0	0	0	0	0	0	0	0
JEFFERSON	0	0	0	0	0	0	0	0	0	0	0	4	0	0
KEWAUNEE	0	15	12	0	0	15	0	0	56	22	21	80	61	28
MANITOWOC	0	36	41	0	0	196	0	7	219	156	0	216	225	66
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	5	2	0	0	336	2	0	170	60	15	209	51	21
OZAUCKEE	0	2	0	0	0	0	0	0	40	5	0	19	0	0
RACINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	3	1	0	0	0	0	0	0	0	0	0
SHEBOYGAN	0	0	0	0	0	43	0	0	160	1	0	65	37	0
WALWORTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON	0	3	0	0	0	0	0	0	309	0	0	308	0	0
WAUKESHA	0	0	0	0	0	0	0	0	52	0	0	0	0	0
WINNEBAGO	0	0	6	0	5	272	0	0	20	7	0	37	23	1
UNIT TOTAL	1	231	205	26	180	1317	2	13	1584	783	116	1412	575	223
STATE TOTAL	20187	909	20695	29214	19999	25430	5086	460	15696	237630	948	25691	2399	20196

TABLE 7 CONTINUED ON NEXT PAGE

TABLE 7 CONTINUED

UNIT AND COUNTY	YELLOW: BIRCH:	COTTON- WOOD:	ELM: HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	WALNUT:	OTHER: HARD- WOODS:	ALL SPECIES
NORTHEASTERN										
FLORENCE	297	0	2905	0	4653	261	524	0	0	35
FOREST	978	0	3535	0	6817	812	304	0	0	107
LANGLADE	458	0	4901	27	5404	1058	616	72	0	139
LINCOLN	766	0	3844	35	2844	1304	1359	16	0	71
MARINETTE	112	8	2244	0	1219	1430	1676	341	0	21
OCONTO	115	45	2234	0	911	811	1347	265	0	5
ONEIDA	1566	12	955	0	2375	2793	1734	0	0	71
SHANAGO	1031	8	16151	197	7624	2228	3423	311	0	122
VILAS	1114	12	441	0	3268	1061	955	0	0	46
UNIT TOTAL	6437	85	37210	259	35115	11758	11938	1005	0	617
NORTHWESTERN										
ASHLAND	457	0	813	0	2015	1005	570	65	0	25
BARON	19	15	370	0	435	86	1633	155	0	2
BAYFIELD	145	0	214	0	642	408	164	1	0	8
BURNETT	2	0	208	0	66	6	1662	110	0	6
DOUGLAS	18	0	79	0	108	75	64	62	0	3
IRON	366	0	414	0	1083	370	211	0	0	9
POLK	22	14	376	16	621	107	2109	383	0	4
PRICE	704	0	1574	4	2773	1326	684	66	0	37
RUSK	342	0	1023	0	1379	491	873	212	0	10
SAWYER	233	0	527	0	1744	368	668	36	0	11
TAYLOR	382	0	2366	2	2919	1676	712	87	0	24
WASHBURN	35	0	104	0	420	80	1546	48	0	5
UNIT TOTAL	2725	29	8068	22	14205	5998	10896	1225	0	144
CENTRAL										
ADAMS	8	0	250	3	111	272	3256	816	0	12
CHIPPewa	98	0	1394	0	642	603	2065	122	0	17
CLARK	53	15	2211	47	947	1241	3962	713	0	26
EAU CLAIR	9	0	111	0	93	67	753	178	0	13
JACKSON	82	29	811	1	304	652	3522	620	0	133
JUNEAU	1	0	461	73	240	627	3840	1224	0	21
MARATHON	449	0	9923	162	4050	2917	4682	938	0	123
MARQUETTE	0	15	539	29	171	571	1583	422	3	28
MONROE	20	4	410	49	322	435	2800	557	0	0
PORTAGE	11	67	612	3	309	476	1678	497	0	9
WAUPACA	150	0	2484	8	925	1041	2691	649	0	117
WAUSHARA	0	0	298	0	37	126	1715	376	0	2
WOOD	24	0	997	1	586	995	3043	795	0	22
UNIT TOTAL	905	130	20501	376	8737	10063	35580	7907	3	523

TABLE 7 CONTINUED ON NEXT PAGE

UNIT AND COUNTY	YELLOW: BIRCH:	COTTON- WOOD:	ELM: HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	WALNUT:	OTHER: HARD- WOODS:	ALL SPECIES
SOUTHWESTERN										
BUFFALO	1	161	224	16	34	6393	757	56	44	8211
CRAWFORD	0	53	278	28	273	2906	1256	292	74	5642
DUNN	1	28	662	16	782	2796	254	44	47	6343
GRANT	0	84	316	13	333	2347	1316	565	48	5808
IOWA	0	3	103	2	302	41	839	507	27	2236
LACROSSE	1	53	527	44	196	3734	835	214	155	6680
LAFAYETTE	0	10	66	3	75	2	403	161	3	932
PEPIN	1	47	340	16	317	83	672	68	36	2165
PIERCE	12	261	634	36	693	126	807	88	0	3648
RICHLAND	0	5	326	82	963	213	3354	0	21	7335
ST. CROIX	1	10	312	11	204	18	366	59	6	1372
SAUK	0	13	262	141	397	672	5688	51	25	10278
TREMPEALEU	1	44	272	52	77	124	8933	0	42	11539
VERNON	0	41	713	88	1182	248	7510	50	46	12638
UNIT TOTAL	18	813	5035	548	5828	2286	46748	11958	1569	600
SOUTHEASTERN										
BROWN	0	301	1789	0	310	521	203	116	0	5
CALUMET	0	18	417	0	64	175	48	126	1	2
COLUMBIA	0	40	178	43	89	165	1837	585	34	39
DANE	0	41	174	4	57	53	768	331	53	27
DODGE	0	19	92	335	39	26	437	371	11	17
DOOR	12	21	369	0	167	26	75	16	0	1
FOND DU LAC	0	5	163	55	28	24	121	78	0	10
GREEN	0	0	24	1	0	5	184	149	316	0
GREEN LAKE	0	0	0	0	0	0	144	7	0	0
JEFFERSON	0	0	64	0	43	0	105	56	0	0
KEWAUNEE	12	26	696	0	191	261	171	112	0	10
MANITOWOC	1	35	1492	0	336	619	234	154	0	4
MILWAUKEE	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	36	1609	0	144	462	619	281	0	0
OZAUKEE	0	0	31	0	22	0	27	2	0	0
RACINE	0	0	29	0	0	0	62	62	0	0
ROCK	0	0	36	0	0	0	46	80	6	0
SHEBOYGAN	0	4	256	1	200	42	339	71	0	18
WALWORTH	0	0	0	0	0	0	5	5	0	0
WASHINGTON	0	5	333	0	464	2	410	10	0	4
WAUKESHA	0	0	5	0	62	27	92	12	3	0
WINNEBAGO	0	2	347	8	49	142	223	47	0	1
UNIT TOTAL	25	553	8104	447	2265	2590	6150	2671	424	138
STATE TOTAL	10110	1610	78918	1652	66150	32605	111312	24766	1996	2022
										755771

Table 8.--*Wisconsin pulpwood production by species group, 1946-1973*
(In thousand standard cords, roughwood basis)

Year	Roundwood							Residue			Total
	Pine	Balsam fir	Hemlock	Spruce	Tama-rack	Aspen	Birch	Other hardwds.	Soft-wood	Hard-wood	
1946	75	48	64	32	3	202	4	1/	1/	1/	428
1947	157	53	50	31	6	187	8	1/	1/	1	493
1948	117	87	51	34	3	167	8	1/	1/	1	468
1949	72	78	47	33	1	184	10	—	1/	2	427
1950	93	69	47	31	1/	195	6	20	1	6	468
1951	102	55	51	30	1	281	28	17	—	—	565
1952	95	76	66	39	1	275	15	15	—	—	582
1953	71	45	51	26	1	306	12	41	—	—	553
1954	113	56	63	31	4	348	27	49	—	—	691
1955	121	48	58	23	4	365	16	75	—	—	710
1956	140	45	56	23	4	507	21	164	—	—	960
1957	126	60	57	27	6	453	27	178	—	—	934
1958	148	62	55	23	6	369	18	147	—	—	828
1959	186	52	49	21	6	431	26	159	5	37	972
1960	124	50	52	18	6	540	27	204	4	27	1,052
1961	154	61	47	23	7	530	34	201	3	18	1,078
1962	188	46	42	15	6	572	41	188	6	36	1,140
1963	170	60	52	19	6	613	50	233	13	86	1,302
1964	168	57	52	20	5	603	41	222	11	65	1,244
1965	207	50	60	15	4	607	24	197	14	75	1,253
1966	215	55	69	17	3	810	39	243	12	73	1,536
1967	174	48	42	13	3	739	41	246	10	101	1,417
1968	199	51	44	11	5	629	57	185	16	101	1,298
1969	216	50	51	13	2	697	62	238	15	106	1,450
1970	259	68	53	16	4	771	76	296	19	94	1,656
1971	268	54	42	12	3	736	51	269	16	101	1,552
1972	246	49	42	13	3	685	47	333	10	110	1,538
1973	232	67	32	16	1	761	73	400	21	155	1,758

1/ Less than 500 cords.

Table 9.--*Pulpwood receipts in Wisconsin by species group, 1946-1973*
(In thousand standard cords, roughwood basis)

Year	Roundwood							Residue			Total
	Pine	Spruce	Balsam fir	Hem-lock	Tama-rack	Aspen	Birch	Other hwdws.	Soft-wood	Hard-wood	
1946	298	645	280	233	16	416	14	1/	1/	1/	1,902
1947	292	687	230	134	19	346	13	1/	1/	1	1,722
1948	307	663	279	136	5	333	17	1/	1/	1	1,741
1949	227	502	244	101	3	332	15	1/	1/	2	1,426
1950	244	441	238	91	3	387	10	21	1	6	1,442
1951	428	678	232	120	10	569	42	18	—	—	2,097
1952	365	732	288	131	6	490	32	15	—	—	2,059
1953	283	529	179	76	2	552	26	42	—	—	1,689
1954	298	608	228	125	5	566	40	49	—	—	1,919
1955	319	471	199	92	5	590	26	75	—	—	1,777
1956	397	445	195	143	9	754	27	166	—	—	2,136
1957	325	578	254	116	14	739	38	183	—	—	2,247
1958	318	479	200	90	18	583	19	159	—	—	1,866
1959	436	345	169	87	17	619	30	165	7	6	1,881
1960	388	389	176	97	26	785	31	208	7	7	2,114
1961	330	350	177	92	19	741	44	196	12	11	1,972
1962	395	317	155	99	19	784	49	206	51	49	2,124
1963	414	341	175	114	22	877	64	235	96	91	2,429
1964	350	314	139	110	20	855	62	233	96	92	2,271
1965	410	300	114	120	19	899	26	219	91	92	2,290
1966	473	301	139	162	11	1,112	44	270	100	89	2,701
1967	415	308	140	100	42	1,115	48	302	135	124	2,729
1968	405	200	100	86	33	860	59	205	160	118	2,226
1969	456	208	81	112	25	978	63	278	192	121	2,514
1970	498	208	111	118	43	1,088	81	333	189	152	2,821
1971	514	167	88	83	37	1,011	53	295	193	140	2,581
1972	443	181	82	69	31	902	48	354	198	142	2,450
1973	387	224	103	54	28	1,006	68	398	279	149	2,696

1/ Less than 500 cords.

Table 10.--Pine and spruce pulpwood receipts in Wisconsin by area of origin, 1946-1973

(In thousand standard cords, roughwood basis)

Year	Pine from:						Spruce from:					
	Wis.	Mich.	Minn.	Other : states	Canada	All : areas	Wis.	Mich.	Minn.	Other : states	Canada	All : areas
1946	75	43	165	9	6	298	32	87	113	16	397	645
1947	116	25	126	20	5	292	31	105	102	4	445	687
1948	117	24	122	29	15	307	34	95	113	6	415	663
1949	72	16	80	47	12	227	33	72	88	8	301	502
1950	93	14	60	49	28	244	31	69	102	13	226	441
1951	99	20	157	99	53	428	30	78	126	38	406	678
1952	92	13	87	129	44	365	39	86	151	3	453	732
1953	67	7	90	78	41	283	25	51	91	26	336	529
1954	112	7	97	49	33	298	31	90	92	18	377	608
1955	118	18	89	61	33	319	23	80	108	20	240	471
1956	136	35	112	87	27	397	23	76	120	26	200	445
1957	124	22	104	49	26	325	28	79	140	38	293	578
1958	147	41	75	33	22	318	23	59	112	22	263	479
1959	184	80	91	56	25	436	21	49	87	11	177	345
1960	123	60	100	80	25	388	18	61	128	1/	182	389
1961	154	47	59	44	26	330	23	65	115	—	147	350
1962	188	86	56	65	—	395	15	58	98	—	146	317
1963	169	90	63	85	7	414	19	64	99	—	159	341
1964	167	90	38	55	—	350	20	49	96	1/	149	314
1965	206	110	25	58	11	410	16	45	87	1/	152	300
1966	215	108	57	92	1	473	18	53	72	4	154	301
1967	174	76	57	105	3	415	14	55	90	4	145	308
1968	199	72	44	82	8	405	11	22	51	1/	116	200
1969	216	91	63	86	1/	456	13	23	53	—	119	208
1970	259	88	71	80	—	498	16	30	52	—	110	208
1971	268	120	68	58	—	514	11	28	39	—	89	167
1972	246	102	49	46	—	443	13	24	53	—	91	181
1973	231	70	49	37	1/	387	16	32	57	—	119	224

1/ Less than 500 cords.

Table 11.--Aspen and other hardwood¹ pulpwood receipts in Wisconsin by area of origin, 1946-1973

(In thousand standard cords, roughwood basis)

Year	Aspen from:						Other hardwoods from:					
	Wis.	Mich.	Minn.	Other : states	Canada	All : areas	Wis.	Mich.	Minn.	Other : states	Canada	All : areas
1946	202	157	57	—	—	416	2/	—	2/	—	—	2/
1947	187	114	32	—	13	346	2/	2/	—	—	—	2/
1948	167	120	27	—	19	333	2/	2/	—	—	—	2/
1949	181	117	12	—	22	332	—	2/	—	—	—	2/
1950	186	178	22	—	1	387	20	1	—	2/	—	21
1951	270	220	56	2/	23	569	17	1	—	—	—	18
1952	269	171	35	—	15	490	15	2/	—	—	—	15
1953	299	223	20	—	10	552	41	1	—	2/	—	42
1954	336	207	13	—	10	566	49	—	—	—	—	49
1955	345	229	10	—	6	590	75	—	—	—	—	75
1956	492	240	21	—	1	754	158	8	—	—	—	166
1957	437	281	16	—	5	739	172	11	—	—	—	183
1958	355	213	11	—	4	583	145	14	2/	—	—	159
1959	409	198	12	—	—	619	155	10	—	—	—	165
1960	522	250	13	—	2/	785	198	10	—	—	—	208
1961	516	208	17	—	—	741	191	5	—	—	—	196
1962	556	215	13	—	—	784	179	27	—	—	—	206
1963	592	269	16	—	2/	877	227	8	—	—	—	235
1964	586	249	20	—	—	855	214	19	2/	—	—	233
1965	605	278	16	—	2/	899	187	32	—	2/	—	219
1966	802	276	34	—	2/	1,112	234	36	2/	—	—	270
1967	738	327	49	—	1	1,115	242	39	21	—	—	302
1968	617	216	27	—	2/	860	181	23	1	—	—	205
1969	688	250	40	—	2/	978	233	44	1	—	—	278
1970	766	265	51	—	6	1,088	292	40	1	—	—	333
1971	714	249	46	—	2	1,011	264	31	—	—	—	295
1972	660	207	35	—	—	902	326	28	—	—	—	354
1973	754	196	56	—	2/	1,006	367	31	2/	—	—	398

1/ "Other hardwood" includes all hardwood roundwood (and chips from roundwood) except aspen and birch.

2/ Less than 500 cords.

Table 12.--Receipts of residue for pulpwood in Wisconsin by area of origin, 1946-1973

(In thousand standard cords, roughwood basis)

Year	Softwoods						Hardwoods					
	Wis.	Mich.	Minn.	Other states	Canada	All areas	Wis.	Mich.	Minn.	Other states	Canada	All areas
1964	11	5	1/	80	--	96	53	37	2	--	--	92
1965	10	3	1	77	--	91	63	27	2	--	--	92
1966	7	2	2	89	--	100	58	30	1	1/	--	89
1967	6	3	2	124	--	135	81	31	12	1/	--	124
1968	14	3	2	141	--	160	81	32	5	--	--	118
1969	14	5	2	171	--	192	83	37	1	--	--	121
1970	12	5	3	169	--	189	81	69	2	--	--	152
1971	9	5	3	176	--	193	85	55	1/	--	--	140
1972	10	3	1	184	1/	198	100	42	--	--	--	142
1973	17	4	1	254	3	279	121	28	--	--	--	149

1/ Less than 500 cords.

Table 13.--Wisconsin pulpwood production by species group and destination, 1973

(In thousand standard cords, roughwood basis)

Species group	Destination of wood				Total
	Wis.	Mich.	Minn.	Other states & Canada	
Roundwood ^{1/}					
Pine	231	1	--	--	232
Balsam fir	66	1	--	--	67
Hemlock	31	1	--	--	32
Spruce	16	2/	--	--	16
Tamarack	1	2/	--	--	1
Aspen	753	5	--	3	761
Birch	67	5	--	1	73
Other hardwoods	368	24	--	8	400
Total	1,533	37	--	12	1,582
Residues:					
Softwoods	17	1	--	3	21
Hardwoods	121	17	14	3	155
All material	1,671	55	14	18	1,758

1/ Includes chips from roundwood.

2/ Less than 500 cords.

Table 14.--Pulpwood receipts in Wisconsin by species group and area of origin, 1973

(In thousand standard cords, roughwood basis)

Species group	Area of Origin					Total
	Wis.	Mich.	Minn.	Other states	Canada	
Roundwood ^{1/}						
Pine	231	70	49	37	2/	387
Balsam fir	66	32	5	--	2/	103
Hemlock	31	23	--	--	--	54
Spruce	16	32	57	--	119	224
Tamarack	1	1	26	--	--	28
Aspen	754	196	56	--	2/	1,006
Birch	67	1	2/	--	--	68
Other hardwoods	367	31	2/	--	--	398
Total	1,533	386	193	37	119	2,268
Residues:						
Softwoods	17	4	1	254	3	279
Hardwoods	121	28	--	--	--	149
All material	1,671	418	194	291	122	2,696

1/ Includes chips from roundwood.

2/ Less than 500 cords.

Unit and county	Taliam: fir	Taliam: hemlock	Jack : pine	Le : pine	White : Spruce	Tamarack : Ash	Aspen : poplar	Balsam: Basswood	Seech: Birch	Yellow: Cotton-	Hickory: maple	Hard : oak	Soft : oak	Red : oak	White: oak	Other : species	All
Northeastern																	
Florence	1,062	2,633	1,040	1,489	306	622	115	259	27,829	769	630	0	514	206	0	2,873	0
Forest	8,322	4,825	1,160	2,199	364	2,271	204	833	40,257	304	4,767	0	4,922	861	1,552	0	89
Langlade	762	1,297	52	378	52	301	272	878	43,535	0	1,696	600	718	843	0	7,884	0
Lincoln	3,902	1,862	3,199	6,511	526	818	103	2,626	56,816	0	1,856	0	2,268	1,388	0	4,058	2
Marquette	5,903	7,699	5,732	2,222	235	2,213	48	1,062	59,483	1,070	1,144	150	1,104	70	1,423	0	7,052
Oconto	149	930	2,020	538	26	39	2	39	25,909	340	75	308	2	0	251	0	1,884
Oneida	10,110	2,335	4,566	3,391	283	3,429	163	3,081	80,302	100	971	0	250	1,416	8	1	0
Shawano	145	5,789	888	81	121	16	36	198	11,917	0	55	400	31	87	0	2,570	0
Vilas	3,683	728	2,917	2,255	233	739	23	352	34,531	0	1,183	0	1,446	899	175	2	21
Unit total	34,038	21,168	21,554	19,066	2,146	10,448	966	9,308	380,579	2,583	11,302	1,225	21,621	8,401	0	33,644	517
Northwestern																	
Ashtland	12,085	1,666	2,080	2,516	376	2,290	54	2,635	37,614	0	925	0	2,693	0	731	0	113
Barron	0	0	0	0	0	0	0	86	0	0	0	0	277	82	145	0	6
Bayfield	2,152	581	18,259	7,083	489	325	5	750	65,295	0	103	0	9,417	302	0	2,080	1,877
Burnett	0	0	12,216	2,819	205	0	67	0	396	0	0	0	0	0	0	0	0
Douglas	312	24	21,905	1,918	106	371	40	316	47,097	0	60	0	1,525	82	0	363	0
Iron	2,258	1,580	74	73	19	482	0	858	49,464	1	574	0	3,653	538	0	1,144	0
Polk	0	0	1,934	762	86	0	0	0	470	0	0	0	0	0	0	0	0
Price	7,115	1,598	1,307	1,863	307	1,232	42	4,229	80,059	0	2,032	0	8,515	2,141	0	4,562	0
Rusk	44	84	169	17	4	0	0	726	7,684	0	380	0	414	589	0	1,917	0
Sawyer	7,084	668	2,304	3,010	393	945	0	1,087	17,599	0	493	0	5,767	514	0	1,151	0
Taylor	1,155	3,196	1,872	339	160	245	26	3,813	22,445	0	1,298	0	1,971	1,361	0	6,429	8
Washburn	69	0	12,348	2,681	322	41	67	325	2,501	0	110	0	153	61	0	413	0
Unit total	32,274	9,397	74,468	23,061	2,467	5,931	301	14,825	330,634	1	6,061	0	34,255	6,144	0	19,472	8
Central																	
Adams	0	0	13,544	4,147	683	0	10	366	2,187	0	30	0	5	1	0	819	0
Chippewa	52	411	214	108	25	0	23	92	1,662	0	21	0	267	269	0	1,766	0
Clark	10	76	2,026	1,497	317	0	0	1,038	5,872	0	148	0	3,225	30	0	3,225	30
Eau Claire	0	0	1,321	456	135	0	0	3	203	0	0	0	0	0	0	0	0
Jackson	0	0	16,471	5,150	1,258	0	12	80	584	0	6	0	6	1	0	175	0
Marathon	0	0	10,751	2,705	647	0	0	722	4,457	0	57	0	50	145	0	1,551	0
Muskegon	431	853	710	653	455	39	0	1,880	22,562	0	239	0	209	5	11,652	413	93
Marquette	0	0	596	158	54	0	0	965	74	0	105	0	0	0	2,412	0	6,234
Portage	0	0	1,219	309	125	0	0	265	176	0	0	0	0	0	45	0	750
Monroe	22	218	3,193	1,533	399	10	26	455	3,297	0	66	0	44	5	1,813	8	684
Neenah	0	0	825	358	108	0	18	0	337	37	0	392	3	303	0	170	0
Waupaca	206	10	3,360	1,071	269	4	0	134	1,400	0	8	0	0	0	72	179	0
Haushara	0	0	6	525	1,172	311	3	6	1,192	2,856	0	164	0	23	2	2,946	3
Wood	23	91	60,755	19,317	4,786	56	77	7,021	45,366	0	862	0	964	487	0	26,980	459
Unit total	744	1,659	60,755	19,317	4,786	56	77	7,021	45,366	0	862	0	964	487	0	26,980	459
Southwestern																	
Buffalo	0	0	35	29	6	0	0	0	0	0	0	0	0	0	0	0	0
Dunn	0	0	119	183	26	0	0	0	25	0	0	0	4	5	0	0	0
Grant	0	0	0	0	0	0	0	227	1,150	0	260	0	576	0	41	486	0
LaCrosse	0	0	64	95	14	0	0	0	0	0	0	0	0	0	0	0	0
Pepin	0	0	131	177	327	0	0	0	0	0	0	0	0	0	0	0	0
Pierce	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
Richland	0	0	66	90	67	0	0	0	0	0	0	0	0	0	0	0	0
Sauk	0	0	534	900	120	0	0	3	1,636	0	0	0	23	2	0	0	0
Vernon	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0
Unit total	0	0	949	1,474	560	0	0	232	2,835	0	260	0	599	9	1	493	0
Southeastern																	
Brown	0	215	0	0	0	0	0	529	1,160	0	0	0	0	0	0	1,020	0
Columbia	0	0	135	920	31	0	0	138	282	0	3	17	9	1	0	243	0
Dane	0	0	0	0	0	0	0	53	0	0	17	0	0	0	0	127	0
Fond du Lac	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0
Green Lake	0	0	7	2	16	0	0	0	0	0	0	0	0	0	0	0	0
Milwaukee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247	0
Outagamie	0	0	0	0	0	8	0	0	0	0	2	0	0	0	8	0	12
Rock	0	0	16	4	3	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0	22	0	0	5	0	0	0	0	44	0
Unit total	0	215	158	926	50	8	0	742	1,467	0	25	19	9	1	0	1,681	0
State total																	
Unit total	67,056	32,439	157,884	63,844	10,009	16,443	1,344	32,128	760,881	2,584	18,510	1,244	57,448	15,035	41	82,270	984
State total																100,625	68,503
																3,457	16,075
																3,104	1,581,908

¹ Includes Menominee County.

Table 16.--*Saw log production and receipts in Wisconsin by species, 1967 and 1973*

(In thousand board feet, International ½-inch rule)

Species	Production			Receipts		
	1967	1973	change	1967	1973	change
Softwoods:						
Balsam fir	136	448	312	136	1,890	1,754
Cedar	769	884	115	769	879	110
Hemlock	3,279	7,031	3,752	3,391	7,095	3,704
Jack pine	476	2,945	2,469	483	4,295	3,812
Red pine	3,604	8,381	4,777	3,564	10,391	6,827
White pine	20,135	23,624	3,489	21,516	26,212	4,696
Spruce	248	259	11	297	303	6
Tamarack	33	69	36	33	69	36
All swds.	28,680	43,641	14,961	30,189	51,134	20,945
Hardwoods:						
Ash	6,571	8,669	2,098	6,730	8,654	1,924
Aspen	30,726	74,339	43,613	34,939	82,192	47,253
Balsam poplar	28	382	354	28	461	433
Basswood	22,061	21,258	-803	22,552	21,935	-617
Beech	1,222	2,029	807	2,399	2,066	-333
White birch	2,899	6,797	3,898	3,004	7,950	4,946
Yellow birch	5,302	5,844	542	6,005	5,930	-75
Cottonwood	1,595	1,598	3	1,657	1,710	53
Elm	30,866	58,064	27,198	31,884	58,687	26,803
Hickory	--	1,395	1,395	--	1,396	1,396
Hard maple	42,010	39,116	-2,894	46,764	40,017	-6,747
Soft maple	12,195	17,776	5,581	12,661	17,982	5,321
Red oak	73,115	84,669	11,554	74,101	87,894	13,793
White oak	11,358	18,527	7,169	11,531	18,684	7,153
Walnut	794	1,300	506	434	402	-32
Other hws.	3,088	1,139	-1,949	3,163	1,197	-1,966
All hws.	243,830	342,902	99,072	257,852	357,157	99,305
All species	272,510	386,543	114,033	288,041	408,291	120,250

Table 17.--Saw log production by unit, species, and State of destination,
Wisconsin, 1973
(In thousand board feet, International 1/4-inch rule)

ALL UNITS						
SPECIES	WISCONSIN	MICHIGAN	MINNESOTA	IOWA	OTHER STATES	TOTAL
SOFTWOODS:						
BALSAM FIR	448	0	0	0	0	448
CEDAR	879	5	0	0	0	884
HEMLOCK	7015	16	0	0	0	7031
JACK PINE	2945	0	0	0	0	2945
PED PINE	8332	49	0	0	0	8381
WHITE PINE	23215	65	344	0	0	23624
SPRUCE	250	9	0	0	0	259
TAMAPACK	69	0	0	0	0	69
TOTAL SWDS	43153	144	344	0	0	43641
HARDWOODS:						
ASH	8597	50	1	21	0	8669
ASPEN	74301	7	31	0	0	74339
RAL. POPLAR	382	0	0	0	0	382
BASSWOOD	20962	219	9	62	6	21258
REECH	2029	0	0	0	0	2029
WH. RIRCH	6793	4	0	0	0	6797
YEL. RIRCH	5645	199	0	0	0	5844
COTTONWOOD	1578	0	10	10	0	1598
FLM	57837	163	0	52	12	58064
HICKORY	1392	0	0	3	0	1395
HARD MAPLE	38390	658	0	62	6	39116
SOFT MAPLE	17730	39	0	0	7	17776
RED OAK	84264	14	104	187	100	84669
WHITE OAK	18353	0	0	104	70	18527
WALNUT	227	0	0	435	638	1300
OTHEP SPP.	1133	0	0	6	0	1139
TOTAL HWDS	339613	1353	155	942	839	342902
ALL SPECIES	782766	1497	499	942	839	386543
NORTHEAST UNIT						
SOFTWOODS:						
BALSAM FIR	119	0	0	0	0	119
CEDAR	511	0	0	0	0	511
HEMLOCK	6364	6	0	0	0	6370
JACK PINE	1286	0	0	0	0	1286
PED PINE	5424	0	0	0	0	5424
WHITE PINE	13112	0	0	0	0	13112
SPRUCE	173	0	0	0	0	173
TAMAPACK	13	0	0	0	0	13
TOTAL SWDS	27002	6	0	0	0	27008
HARDWOODS:						
ASH	2109	0	0	0	0	2109
ASPEN	36906	7	0	0	0	36913
RAL. POPLAR	249	0	0	0	0	249
BASSWOOD	6841	4	0	0	0	6845
REECH	953	0	0	0	0	953
WH. RIRCH	3328	4	0	0	0	3332
YEL. RIRCH	4021	24	0	0	0	4045
COTTONWOOD	87	0	0	0	0	87
FLM	27902	2	0	0	0	27904
HICKORY	142	0	0	0	0	142
HARD MAPLE	21618	27	0	0	0	21645
SOFT MAPLE	5984	3	0	0	0	5987
PED OAK	8237	1	0	0	0	8238
WHITE OAK	943	0	0	0	0	943
WALNUT	0	0	0	0	0	0
OTHEP SPP.	249	0	0	0	0	249
TOTAL HWDS	119569	72	0	0	0	119641
ALL SPECIES	146571	78	0	0	0	146649

(TABLE 17 CONTINUED ON NEXT PAGE)

(TABLE 17 CONTINUED)

NORTHWEST UNIT

SPECIES	WISCONSIN	MICHIGAN	MINNESOTA	IOWA	OTHER STATES	TOTAL
SOFTWOODS:						
BALSAM FIR	328	0	0	0	0	328
CEDAR	84	5	0	0	0	89
HEMLOCK	174	10	0	0	0	184
JACK PINE	621	0	0	0	0	621
RED PINE	2170	49	0	0	0	2219
WHITE PINE	3919	65	344	0	0	4328
SPRUCE	66	9	0	0	0	75
TAMARACK	1	0	0	0	0	1
TOTAL SWDS	7363	138	344	0	0	7845
=====						
HARDWOODS:						
ASH	1523	50	0	0	0	1573
ASPEN	26362	0	0	0	0	26362
BAL. POPLAR	7	0	0	0	0	7
BASSWOOD	3635	215	0	0	0	3850
BEECH	0	0	0	0	0	0
WH. BIRCH	1900	0	0	0	0	1900
YEL. BIRCH	864	175	0	0	0	1039
COTTONWOOD	30	0	0	0	0	30
ELM	3349	161	0	0	0	3510
HICKORY	20	0	0	0	0	20
HARD MAPLE	4268	631	0	0	0	4899
SOFT MAPLE	1622	36	0	0	0	1658
RED OAK	7959	13	0	0	0	7972
WHITE OAK	1160	0	0	0	0	1160
WALNUT	0	0	0	0	0	0
OTHER SPP.	11	0	0	0	0	11
TOTAL HWDS	52710	1281	0	0	0	53991
=====						
ALL SPECIES	60073	1419	344	0	0	61836

CENTRAL UNIT

SOFTWOODS:						
BALSAM FIR	0	0	0	0	0	0
CEDAR	39	0	0	0	0	39
HEMLOCK	363	0	0	0	0	363
JACK PINE	1038	0	0	0	0	1038
RED PINE	637	0	0	0	0	637
WHITE PINE	4368	0	0	0	0	4368
SPRUCE	11	0	0	0	0	11
TAMARACK	42	0	0	0	0	42
TOTAL SWDS	6498	0	0	0	0	6498
=====						
HARDWOODS:						
ASH	2546	0	0	0	0	2546
ASPEN	9014	0	0	0	0	9014
BAL. POPLAR	5	0	0	0	0	5
BASSWOOD	4444	0	0	0	0	4444
BEECH	525	0	0	0	0	525
WH. BIRCH	1152	0	0	0	0	1152
YEL. BIRCH	727	0	0	0	0	727
COTTONWOOD	134	0	0	0	0	134
ELM	14548	0	0	0	0	14548
HICKORY	269	0	0	0	0	269
HARD MAPLE	5614	0	0	0	0	5614
SOFT MAPLE	5470	0	0	0	0	5470
RED OAK	21825	0	0	0	0	21825
WHITE OAK	4526	0	0	0	0	4526
WALNUT	3	0	0	0	0	3
OTHER SPP.	387	0	0	0	0	387
TOTAL HWDS	71189	0	0	0	0	71189
=====						
ALL SPECIES	77687	0	0	0	0	77687

(TABLE 17 CONTINUED ON NEXT PAGE)

(TABLE 17 CONTINUED)

SOUTHWEST UNIT

SPECIES	WISCONSIN	MICHIGAN	MINNESOTA	IOWA	OTHER STATES	TOTAL
SOFTWOODS:						
BALSAM FIR	0	0	0	0	0	0
CEDAR	0	0	0	0	0	0
HEMLOCK	0	0	0	0	0	0
JACK PINE	0	0	0	0	0	0
RED PINE	73	0	0	0	0	73
WHITE PINE	513	0	0	0	0	513
SPRUCE	0	0	0	0	0	0
TAMARACK	0	0	0	0	0	0
TOTAL SWDS	586	0	0	0	0	586
=====						
HARDWOODS:						
ASH	943	0	1	21	0	965
ASPEN	1464	0	31	0	0	1495
BAL. POPLAR	0	0	0	0	0	0
BASSWOOD	4679	0	9	62	6	4756
BEECH	0	0	0	0	0	0
WH. BIRCH	183	0	0	0	0	183
YEL. BIRCH	10	0	0	0	0	10
COTTONWOOD	765	0	10	10	0	785
ELM	4543	0	0	2	12	4607
HICKORY	527	0	0	3	0	530
HARD MAPLE	4975	0	0	62	6	5043
SOFT MAPLE	2033	0	0	0	7	2040
RED OAK	40788	0	104	187	100	41179
WHITE OAK	9479	0	0	104	70	9653
WALNUT	137	0	0	416	381	934
OTHER SPP.	375	0	0	6	0	381
TOTAL HWDS	70901	0	155	923	582	72561
=====						
ALL SPECIES	71487	0	155	923	582	73147

SOUTHEAST UNIT

SOFTWOODS:						
BALSAM FIR	1	0	0	0	0	1
CEDAR	245	0	0	0	0	245
HEMLOCK	114	0	0	0	0	114
JACK PINE	0	0	0	0	0	0
RED PINE	28	0	0	0	0	28
WHITE PINE	1303	0	0	0	0	1303
SPRUCE	0	0	0	0	0	0
TAMARACK	13	0	0	0	0	13
TOTAL SWDS	1704	0	0	0	0	1704
=====						
HARDWOODS:						
ASH	1476	0	0	0	0	1476
ASPEN	555	0	0	0	0	555
BAL. POPLAR	121	0	0	0	0	121
BASSWOOD	1363	0	0	0	0	1363
BEECH	551	0	0	0	0	551
WH. BIRCH	230	0	0	0	0	230
YEL. BIRCH	23	0	0	0	0	23
COTTONWOOD	562	0	0	0	0	562
ELM	7495	0	0	0	0	7495
HICKORY	434	0	0	0	0	434
HARD MAPLE	1915	0	0	0	0	1915
SOFT MAPLE	2621	0	0	0	0	2621
RED OAK	5455	0	0	0	0	5455
WHITE OAK	2245	0	0	0	0	2245
WALNUT	87	0	0	19	257	363
OTHER SPP.	111	0	0	0	0	111
TOTAL HWDS	25244	0	0	19	257	25520
=====						
ALL SPECIES	26948	0	0	19	257	27224

Table 18.--Saw log production by unit, county, and species, Wisconsin, 1973

(In thousand board feet, International 1/4-inch rule)

UNIT AND COUNTY	BALSAM: FTR	CFDAR: HEMLOCK	JACK: PINE	RED: PINE	WHITE: PINE	TAMA: SPRUCE	ASH: RACK	ASPEN: POPLAR	BASS: WOOD	BEECH: BIRCH	WHITE: BIRCH
NORTHEASTERN											
FLORENCE	0	3	442	79	397	30	0	74	1037	0	643
FOREST	10	185	2468	812	1912	48	0	312	7986	0	1503
LANGLADE	23	51	145	47	92	34	0	278	436	0	833
LINCOLN	5	5	94	196	331	2	1	388	1004	0	770
MARINETTE	34	89	151	181	697	6	0	226	5294	209	117
OCONTO	0	15	61	455	504	0	0	150	4587	18	267
ONEIDA	27	35	156	1548	1699	0	0	19	10321	0	140
SHAWANO	0	125	2754	12	4411	11	12	659	1615	22	2503
VILAS	20	3	99	1552	2330	42	0	3	4633	0	69
UNIT TOTAL	119	511	6370	5424	13112	173	13	2109	36913	249	6845
NORTHWESTERN											
ASHLAND	115	50	9	300	320	28	0	92	3023	0	442
BARRON	0	4	0	77	405	0	0	56	571	0	289
BAYFIELD	9	4	0	148	575	2	0	27	3990	0	133
BURNETT	0	0	0	182	122	0	0	33	170	0	76
DOUGLAS	194	0	0	113	150	10	0	0	797	0	0
IRON	5	35	60	200	212	25	0	45	252	0	199
POLK	0	0	0	48	393	0	1	101	362	0	278
PRICE	1	0	0	6	194	10	0	467	4300	7	269
RUSK	0	0	10	34	241	0	0	281	3488	0	392
SAWYER	0	0	14	9	755	0	0	219	5398	0	352
TAYLOR	4	0	91	7	71	0	0	252	1178	0	538
WASHBURN	0	0	0	235	175	0	0	0	2833	0	882
UNIT TOTAL	128	89	184	621	4328	75	1	1573	26362	7	3850
CENTRAL											
ADAMS	0	0	0	7	76	0	0	18	131	0	19
CHIPPEWA	0	0	0	11	357	0	0	145	2850	0	1053
CLARK	0	0	10	40	529	0	0	226	1116	0	510
EAU CLAIRE	0	0	0	2	150	0	0	39	104	0	82
JACKSON	0	0	0	441	356	0	0	79	1385	0	172
JUNEAU	0	0	0	134	111	0	0	148	629	0	67
MARATHON	0	17	229	34	371	11	30	1003	970	0	1364
MARQUETTE	0	0	0	0	42	0	0	12	45	0	6
MONROE	0	0	0	5	70	0	0	49	415	0	127
PORTAGE	0	0	0	45	444	0	0	10	125	0	53
WAUPACA	0	0	110	89	1426	0	12	540	627	5	826
WAUSHARA	0	22	4	5	181	0	0	50	0	0	10
WOOD	0	0	10	325	162	0	0	227	617	0	155
UNIT TOTAL	0	39	363	1038	4368	11	42	2546	9014	5	4444
UNIT TOTAL	0	39	363	1038	4368	11	42	2546	9014	5	4444

TABLE 18 CONTINUED ON NEXT PAGE

TABLE 18 CONTINUED

UNIT AND COUNTY	BALSAM: FIR	CEDAR:	HEMLOCK:	JACK: PINE	PED: PINE	WHITE: PINE	SPRUCE:	TAMA: RACK	ASH:	ASPEN:	POPLAR:	BALSAM:	BASS- WOOD	BEECH:	WHITE BIRCH
SOUTHWESTERN															
BUFFALO	0	0	0	0	0	9	0	0	11	183	0	0	164	0	23
CRAWFORD	0	0	0	0	0	0	0	0	81	60	0	0	269	0	2
DUNN	0	0	0	0	6	259	0	0	90	285	0	0	810	0	5
GRANT	0	0	0	0	3	14	0	0	20	81	0	0	155	0	0
IOWA	0	0	0	0	0	0	0	0	19	13	0	0	91	0	0
LACROSSE	0	0	0	0	2	22	0	0	55	108	0	0	323	0	34
LAFAYETTE	0	0	0	0	0	0	0	0	21	0	0	0	73	0	0
PEPIN	0	0	0	0	0	8	0	0	60	73	0	0	331	0	11
PIERCE	0	0	0	0	0	40	0	0	115	100	0	0	708	0	15
RICHLAND	0	0	0	0	0	39	0	0	133	46	0	0	533	0	0
ST. CROIX	0	0	0	0	7	43	0	0	50	22	0	0	222	0	10
SAUK	0	0	0	0	0	14	0	0	133	223	0	0	230	0	26
TREMPEALEU	0	0	0	0	55	42	0	0	40	133	0	0	218	0	26
VERNON	0	0	0	0	0	3	0	0	137	168	0	0	629	0	31
UNIT TOTAL	0	0	0	0	73	513	0	0	965	1495	0	0	4756	0	183
SOUTHEASTERN															
BROWN	0	35	28	0	3	219	0	0	154	69	22	0	206	124	39
CALUMET	0	3	2	0	0	8	0	0	65	34	0	0	59	17	2
COLUMBIA	0	0	0	0	6	103	0	0	63	91	0	0	39	0	7
DANE	0	0	0	0	0	0	0	0	45	8	0	0	16	0	0
DODGE	0	0	0	0	0	0	0	0	34	0	0	0	29	0	0
DOOR	1	143	24	0	14	114	0	6	34	98	61	81	28	61	61
FOND DU LAC	0	0	0	0	0	0	0	0	18	1	0	0	25	0	0
GREEN	0	0	0	0	0	2	0	0	1	2	0	0	2	0	0
JEFFERSON	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
KEAUWATON	0	16	12	0	0	15	0	0	58	22	22	83	59	29	29
MANITOWOC	0	38	40	0	0	105	0	7	227	157	0	210	216	69	69
MILWAUKEE	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0
OUTAGAMIE	0	5	2	0	0	315	0	0	176	60	16	165	50	22	22
OZAUKIE	0	2	0	0	0	0	0	0	41	5	0	20	0	0	0
RACINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHEBOYGAN	0	0	0	0	0	42	0	0	166	1	0	67	34	0	0
WALWORTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON	0	3	0	0	0	0	0	0	314	0	0	318	0	0	0
WAUKESHA	0	0	0	0	0	0	0	0	54	0	0	0	0	0	0
WINNEBAGO	0	0	6	0	5	270	0	0	21	7	0	39	23	1	1
UNIT TOTAL	1	245	114	0	28	1303	0	13	1476	555	121	1363	551	230	230
STATE TOTAL	448	884	7031	2945	8381	23624	259	69	8669	74339	382	21258	2029	6797	6797

TABLE 18 CONTINUED ON NEXT PAGE

TABLE 18 CONTINUED

UNIT AND COUNTY	YELLOW: BIRCH:	COITON- WOOD:	ELM:	HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	WALNUT:	OTHER: HARD- WOODS:	ALL SPECIES
NORTHEASTERN											
FLORENCE	246	0	869	0	2823	76	93	0	0	16	6895
FOREST	722	0	1721	0	4847	384	282	0	0	32	23742
LANGLADE	200	0	3960	26	3723	393	505	70	0	44	11060
LINCOLN	384	0	2364	11	1288	545	1005	16	0	33	8882
MARINETTE	21	8	1839	0	540	595	1593	330	0	0	13899
OCONTO	41	47	2153	0	774	455	1184	255	0	6	11272
ONEIDA	1107	12	383	0	889	1150	473	0	0	0	19133
SHAWANO	912	8	14545	105	6267	1968	2877	272	0	109	40348
VILAS	412	12	70	0	494	401	226	0	0	9	11418
UNIT TOTAL	4045	87	27904	142	21645	5987	8238	943	0	249	146649
NORTHWESTERN											
ASHLAND	209	0	186	0	505	132	389	63	0	0	6024
BARRON	1	16	292	0	260	70	1201	151	0	0	3409
BAYFIELD	5	0	17	0	162	0	39	1	0	0	6877
BURNETT	0	0	74	0	64	7	1614	106	0	7	2686
DOUGLAS	0	0	0	0	0	0	54	60	0	0	1378
IRON	169	0	122	0	453	31	98	0	0	0	1951
POLK	0	14	324	16	373	109	1532	372	0	3	3967
PRICE	222	0	604	4	797	493	332	64	0	0	8279
RUSK	251	0	590	0	727	307	684	205	0	1	7493
SAWYER	97	0	287	0	936	84	505	34	0	0	9268
TAYLOR	84	0	1003	0	580	425	369	58	0	0	4801
WASHBURN	1	0	11	0	42	0	1155	46	0	0	5703
UNIT TOTAL	1039	30	3510	20	4899	1648	7972	1160	0	11	61836
CENTRAL											
ADAMS	0	0	30	3	19	48	928	186	0	0	1502
CHIPPEWA	38	0	978	0	571	506	1773	119	0	14	8549
CLARK	39	15	1510	40	505	631	1345	287	0	0	6912
EAU CLAIR	8	0	86	0	87	66	619	172	0	12	1433
JACKSON	80	30	800	1	270	600	3249	562	0	134	8452
JUNEAU	0	0	128	71	97	265	2187	721	0	0	4834
MARATHON	398	0	7509	70	2483	1266	2545	378	0	109	19346
MARQUETTE	0	15	16	28	8	35	1188	315	3	0	1731
MONROE	20	4	325	48	306	414	2625	525	0	0	4988
PORTAGE	2	70	182	1	152	202	790	245	0	0	2385
WAUPACA	127	0	2399	7	774	939	2264	544	0	118	11270
WAUSHARA	0	0	268	0	21	90	1247	241	0	0	2226
WOOD	15	0	317	0	321	408	1065	231	0	0	4059
UNIT TOTAL	727	134	14548	269	5614	5470	21825	4526	3	387	77687

TABLE 18 CONTINUED ON NEXT PAGE

TABLE 18 CONTINUED

UNIT AND COUNTY	: : BIPCH:	: : YELLOW:COTTON--:	: : ELM:HICKORY:	: : HARD: : MAPLE:	: : SOFT: : MAPLE:	: : RED: : OAK:	: : WHITE: : OAK:	: : WALNUT:	: : OTHER: : HARD--:	: : ALL : WOODS:SPECIES
SOUTHWESTERN										
BUFFALO	0	144	185	15	30	123	6057	735	2	23
CRAWFORD	0	55	277	27	254	66	2634	1021	200	23
DUNN	0	29	587	15	696	111	2561	246	0	30
GRANT	0	77	200	12	174	40	1451	819	359	22
IOWA	0	3	95	2	122	40	596	425	105	3
LACROSSE	0	55	493	42	187	273	3282	651	193	149
LAFAYETTE	0	10	56	3	62	0	244	125	75	1
PEPIN	0	26	305	15	305	85	541	66	0	37
PIERCE	10	270	627	35	670	130	669	86	0	25
RICHLAND	0	6	293	80	847	135	2537	1048	0	5
ST.CROIX	0	10	258	10	195	18	244	57	0	5
SAUK	0	13	258	137	292	638	4907	1363	0	3
TREMPEALEU	0	45	253	51	72	127	8500	1381	0	30
VERNON	0	42	720	86	1137	254	6956	1630	0	25
UNIT TOTAL	10	785	4607	530	5043	2040	41179	9653	934	381
SOUTHEASTERN										
BROWN	0	311	1483	0	213	539	192	113	0	6
CALUMET	0	19	431	0	62	142	46	122	1	2
COLUMBIA	0	41	118	41	55	151	1635	492	33	20
DANE	0	42	151	4	38	50	604	206	45	17
DODGE	0	20	95	325	38	27	424	360	10	18
DOOR	11	22	238	0	162	27	65	16	0	1
FOND DULAC	0	5	168	54	27	24	94	75	0	10
GREEN	0	0	23	1	0	5	144	60	270	0
GREEN LAKE	0	0	0	0	0	0	108	7	0	0
JEFFERSON	0	0	66	0	41	0	102	55	0	0
KEWAUNEE	11	27	716	0	166	270	162	108	0	10
MANITOWOC	1	30	1399	0	307	637	199	150	0	4
MILWAUKEE	0	0	0	0	5	0	2	3	1	0
OUTAGAMIE	0	38	1552	0	61	451	563	270	0	0
OZAUKEE	0	0	32	0	22	0	26	2	0	0
RACINE	0	0	30	0	0	0	60	60	0	0
ROCK	0	0	38	0	0	30	7	0	0	0
SHEBOYGAN	0	0	257	1	194	83	325	69	0	19
WALWORTH	0	0	0	0	0	0	5	5	0	0
WASHINGTON	0	5	335	0	417	0	363	9	0	3
WAUKESHA	0	0	5	0	60	28	89	11	3	0
WINNEBAGO	0	2	358	8	47	147	217	45	0	1
UNIT TOTAL	23	562	7495	434	1915	2621	5455	2245	363	111
STATE TOTAL	5844	1598	58064	1395	39116	17776	84669	18527	1300	1139

Table 19.--Saw log receipts in Wisconsin by unit, species, and State of origin, 1973

(In thousand board feet, International 1/4-inch rule)

ALL UNITS						
SPECIES	ALL STATES	WISCONSIN	MICHIGAN	MINNESOTA	IOWA	CANADA
SOFTWOODS:						
BALSAM FIR	1890	448	2	1440	0	0
CEDAR	879	879	0	0	0	0
HEMLOCK	7095	7015	80	0	0	0
JACK PINE	4295	2945	1020	330	0	0
RED PINE	10391	8332	1814	245	0	0
WHITE PINE	26212	23215	2712	285	0	0
SPRUCE	303	250	53	0	0	0
TAMARACK	69	69	0	0	0	0
TOTAL SOFTWOODS	51174	43153	5681	2300	0	0
HARDWOODS:						
ASH	8654	8597	41	10	6	0
ASPEN	82192	74301	7667	221	3	0
BALSAM POPLAR	461	382	79	0	0	0
BASSWOOD	21935	20962	365	575	31	2
BEECH	2066	2029	37	0	0	0
WHITE BIRCH	7950	6793	1150	7	0	0
YELLOW BIRCH	5930	5645	285	0	0	0
COTTONWOOD	1710	1578	0	126	6	0
ELM	58687	57837	722	102	26	0
HICKORY	1396	1392	0	1	3	0
HARD MAPLE	40017	38390	1608	10	9	0
SOFT MAPLE	17982	17730	146	100	6	0
RED OAK	87894	84264	95	3080	455	0
WHITE OAK	18684	18353	0	260	71	0
WALNUT	402	227	0	63	112	0
OTHER SPECIES	1197	1133	51	10	3	0
TOTAL HARDWOODS	357157	339613	12246	4565	731	2
ALL SPECIES	408291	382766	17927	6865	731	2

(TABLE 19 CONTINUED BELOW)

(TABLE 19 CONTINUED)

NORTHEASTERN UNIT

SPECIES	ALL STATES	WISCONSIN	MICHIGAN	IOWA	CANADA
SOFTWOODS:					
BALSAM FIR	127	125	2	0	0
CEDAR	535	535	0	0	0
HEMLOCK	6571	6491	80	0	0
JACK PINE	2294	1274	1020	0	0
RED PINE	7253	5439	1814	0	0
WHITE PINE	15028	12316	2712	0	0
SPRUCE	263	210	53	0	0
TAMARACK	12	13	0	0	0
TOTAL SOFTWOODS	32084	26403	5681	0	0
HARDWOODS:					
ASH	2366	2325	41	0	0
ASPEN	44753	37086	7667	0	0
BALSAM POPLAR	327	248	79	0	0
BASSWOOD	8375	7992	365	16	2
BEECH	1293	1256	37	0	0
WHITE BIRCH	4873	3723	1150	0	0
YELLOW BIRCH	4618	4333	285	0	0
COTTONWOOD	54	54	0	0	0
ELM	30485	29763	722	0	0
HICKORY	200	200	0	0	0
HARD MAPLE	25091	23483	1608	0	0
SOFT MAPLE	6014	5868	146	0	0
RED OAK	9269	9174	95	0	0
WHITE OAK	1392	1392	0	0	0
OTHER SPECIES	502	451	51	0	0
TOTAL HARDWOODS	139612	127348	12246	16	2
ALL SPECIES	171696	153751	17927	16	2

(TABLE 19 CONTINUED ON NEXT PAGE)

(TABLE 19 CONTINUED)

NORTHWESTERN UNIT

SPECIES	: : ALL : : STATES : WISCONSIN: MINNESOTA		
SOFTWOODS:			
BALSAM FIR	1762	322	1440
CEDAR	54	54	0
HEMLOCK	64	64	0
JACK PINE	921	591	330
RED PINE	2212	1967	245
WHITE PINE	2972	3693	245
SPRUCE	40	40	0
TAMARACK	1	1	0
TOTAL SOFTWOODS	9032	6732	2300
HARDWOODS:			
ASH	1303	1303	0
ASPEN	24502	24329	120
BALSAM POPLAR	7	7	0
BASSWOOD	2745	2745	0
WHITE BIRCH	1736	1736	0
YELLOW BIRCH	773	773	0
COTTONWOOD	30	30	0
ELM	3200	3200	0
HICKORY	20	20	0
HARD MAPLE	3722	3722	0
SOFT MAPLE	1655	1655	0
RED OAK	7459	7459	0
WHITE OAK	1234	1234	0
OTHER SPECIES	10	10	0
TOTAL HARDWOODS	43402	42222	120
ALL SPECIES	57434	54954	2420

(TABLE 19 CONTINUED BELOW)

(TABLE 19 CONTINUED)

CENTRAL UNIT

SPECIES	: : ALL : : STATES : WISCONSIN: IOWA : MINNESOTA		
SOFTWOODS:			
CEDAR	23	23	0
HEMLOCK	275	275	0
JACK PINE	1068	1068	0
RED PINE	733	733	0
WHITE PINE	4402	4402	0
TAMARACK	42	42	0
TOTAL SOFTWOODS	6543	6543	0
HARDWOODS:			
ASH	2315	2315	0
ASPEN	10583	10583	0
BASSWOOD	4011	4011	0
BEECH	128	128	0
WHITE BIRCH	924	924	0
YELLOW BIRCH	479	479	0
COTTONWOOD	93	93	0
ELM	12524	12524	0
HICKORY	281	281	0
HARD MAPLE	4441	4441	0
SOFT MAPLE	5611	5611	0
RED OAK	25751	25751	0
WHITE OAK	4857	4857	0
WALNUT	210	79	68
OTHER SPECIES	373	373	0
TOTAL HARDWOODS	72581	72450	68
ALL SPECIES	79124	78993	68

(TABLE 19 CONTINUED ON NEXT PAGE)

(TABLE 19 CONTINUED)

SOUTHWESTERN UNIT

SPECIES	ALL STATES	WISCONSIN	MINNESOTA	IOWA
SOFTWOODS:				
RED PINE	10	10	0	0
WHITE PINE	392	392	0	0
TOTAL SOFTWOODS	402	402	0	0
HARDWOODS:				
ASH	885	869	10	6
ASPEN	1442	1398	41	3
BASSWOOD	5030	4440	575	15
WHITE BIRCH	173	166	7	0
YELLOW BIRCH	10	10	0	0
COTTONWOOD	930	798	126	6
ELM	4014	3886	102	26
HICKORY	439	435	1	3
HARD MAPLE	4589	4570	10	9
SOFT MAPLE	1738	1632	100	6
RED OAK	40876	37341	3080	455
WHITE OAK	8948	8617	260	71
WALNUT	102	58	0	44
OTHER SPECIES	195	182	10	3
TOTAL HARDWOODS	69371	64402	4322	647
ALL SPECIES	69773	64804	4322	647

(TABLE 19 CONTINUED BELOW)

(TABLE 19 CONTINUED) SOUTHEASTERN UNIT

SPECIES	ALL STATES	WISCONSIN
SOFTWOODS:		
BALSAM FIR	1	1
CEDAR	267	267
HEMLOCK	185	185
JACK PINE	12	12
RED PINE	183	183
WHITE PINE	2412	2412
TAMARACK	13	13
TOTAL SOFTWOODS	3073	3073
HARDWOODS:		
ASH	1785	1785
ASPEN	906	906
BALSAM POPLAR	127	127
BASSWOOD	1774	1774
BEECH	645	645
WHITE BIRCH	244	244
YELLOW BIRCH	50	50
COTTONWOOD	603	603
ELM	8464	8464
HICKORY	456	456
HARD MAPLE	2174	2174
SOFT MAPLE	2964	2964
PED OAK	4539	4539
WHITE OAK	2253	2253
WALNUT	90	90
OTHER SPECIES	117	117
TOTAL HARDWOODS	27191	27191
ALL SPECIES	30264	30264

Table 20.--*Veneer log production in Wisconsin
for selected years, 1946-1973*
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

Year	Standard veneer ^{1/} logs	Container veneer logs	Total
1946	21,655	7,612	29,267
1948	23,184	8,842	32,026
1950	20,820	5,832	26,652
1952	21,764	8,192	29,956
1954	19,463	7,646	27,109
1956	23,917	6,486	30,403
1958	18,265	5,475	23,740
1960	22,417	3,050	25,467
1962	19,570	2,349	21,919
1963	22,552	2,651	25,203
1965	21,279	2,503	23,782
1966	21,089	1,778	22,867
1968	19,794	1,243	21,037
1970	14,157	1,657	15,814
1972	17,990	1,475	19,465
1973	30,820	1,404	<u>2/32,224</u>

^{1/} Face, core, and specialty veneer logs.

^{2/} Includes Wisconsin veneer logs received at Iron Wood Products Co.; such receipts are not shown for previous years.

Table 21.--*Veneer log receipts in Wisconsin
for selected years, 1946-1973*
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

Year	Standard veneer ^{1/} logs	Container veneer logs	Total
1946	52,485	15,631	68,116
1948	56,087	15,704	71,791
1950	49,269	13,666	62,935
1952	43,634	15,866	59,500
1954	43,870	15,703	59,573
1956	53,234	13,715	66,949
1958	36,772	6,291	43,063
1960	46,903	4,395	51,298
1962	33,971	3,546	37,517
1963	38,145	3,773	41,918
1965	39,468	3,636	43,104
1966	39,498	2,664	42,162
1968	35,572	1,999	37,571
1970	27,368	2,528	29,896
1972	34,140	2,351	36,491
1973	35,279	2,525	37,804

^{1/} Includes face, core, and specialty veneer logs.

Table 22.--Veneer log receipts in Wisconsin by area of origin for selected years, 1946-1973
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

Year	State or country of origin					Total receipts
	Wisconsin	Michigan	Minnesota	Other states	Canada	
1946	28,813	33,834	1,139	919	3,411	68,116
1948	31,553	27,052	4,811	1,066	$\frac{1}{7}$ 7,309	71,791
1950	26,198	19,917	4,919	924	$\frac{1}{10}$ 10,977	62,935
1952	28,899	15,775	5,826	1,516	7,484	59,500
1954	26,527	15,537	7,962	3,286	6,261	59,573
1956	30,298	18,932	7,221	3,405	7,093	66,949
1958	23,488	8,078	7,027	916	3,554	43,063
1960	24,249	8,659	8,380	5,207	4,803	51,298
1962	18,846	4,950	6,177	2,777	4,767	37,517
1963	23,788	5,918	6,148	1,726	4,338	41,918
1965	22,547	8,044	6,111	1,621	4,781	43,104
1966	20,458	8,265	5,207	2,642	5,590	42,162
1968	18,853	8,001	3,518	2,679	4,520	37,571
1970	15,148	7,347	2,951	1,747	2,703	29,896
1972	18,172	10,893	3,457	1,552	2,417	36,491
1973	19,643	10,922	4,083	1,950	1,206	37,804

$\frac{1}{7}$ Includes nominal quantity from other countries.

Table 23.--Veneer log production and receipts by species in Wisconsin, 1966 and 1973
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

Species	Production			Receipts		
	1966	1973	Change	1966	1973	Change
White pine	69	45	- 24	146	45	-101
Ash	594	355	-239	822	463	-359
Aspen	358	11,538	11,180	484	445	- 39
Balsam poplar	23	21	- 2	23	21	- 2
Basswood	2,072	1,149	-923	3,775	2,140	-1,635
Beech	65	41	- 24	149	581	432
White birch	207	195	- 12	570	769	199
Yellow birch	1,893	843	-1,050	9,595	3,415	-6,180
Cottonwood	122	54	- 68	1,782	1,109	-673
Elm	3,090	4,890	1,800	4,443	5,999	1,556
Hard maple	3,951	4,090	139	8,969	11,442	2,473
Soft maple	1,129	654	-475	1,618	1,000	-618
Red oak	7,234	7,312	78	9,298	10,195	897
White oak	191	118	- 73	188	80	-108
Walnut	765	667	- 98	33	--	- 33
Other species	1,104	252	-852	267	100	-167
All species	22,867	32,224	9,357	42,162	37,804	-4,358

Table 24.--Veneer log production by species and State of destination,
Wisconsin, 1973
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

SPECIES	DESTINATION							TOTAL
	WISCONSIN	MICHIGAN	IOWA	INDIANA	MISSOURI	KENTUCKY	OTHER STATES	
SOFTWOODS:								
BALSAM FIR	0	0	0	0	0	0	0	0
CEDAR	0	0	0	0	0	0	0	0
HEMLOCK	0	0	0	0	0	0	0	0
JACK PINE	0	0	0	0	0	0	0	0
RED PINE	0	0	0	0	0	0	0	0
WHITE PINE	45	0	0	0	0	0	0	0
SPRUCE	0	0	0	0	0	0	0	45
TAMARACK	0	0	0	0	0	0	0	0
TOTAL SWDS	45	0	0	0	0	0	0	45
HARDWOODS:								
ASH	355	0	0	0	0	0	0	355
ASPEN	210	11328	0	0	0	0	0	11538
BAL. POPLAR	21	0	0	0	0	0	0	21
BASSWOOD	1149	0	0	0	0	0	0	1149
BEECH	41	0	0	0	0	0	0	41
WH. BIRCH	195	0	0	0	0	0	0	195
YEL. BIRCH	779	64	0	0	0	0	0	843
COTTONWOOD	54	0	0	0	0	0	0	54
ELM	4810	0	0	0	0	0	0	4810
HICKORY	0	0	5	75	0	0	0	80
HARD MAPLE	4090	0	0	0	0	0	0	4090
SOFT MAPLE	654	0	0	0	0	0	0	654
RED OAK	7129	0	0	0	0	0	0	7129
WHITE OAK	70	0	0	121	0	62	0	253
WALNUT	0	0	0	0	0	48	0	48
OTHER SPP.	41	0	302	297	45	23	0	608
TOTAL HWDS	19598	11392	314	697	45	133	0	32224
L SPECIES	19643	11392	314	697	45	133	0	32224

Table 25.--Veneer log receipts in Wisconsin by species and area of
origin, 1973
(In thousand board feet, International $\frac{1}{4}$ -inch rule)

SPECIES	ALL STATES	WISCONSIN	MICHIGAN	MINNESOTA	IOWA	CANADA	ILLINOIS
SOFTWOODS:							
WHITE PINE	45	45	0	0	0	0	0
TOTAL SOFTWOODS	45	45	0	0	0	0	0
HARDWOODS:							
ASH	463	355	69	10	29	0	0
ASPEN	445	210	225	10	0	0	0
BALSAM POPLAR	21	21	0	0	0	0	0
BASSWOOD	2140	1149	347	504	136	0	4
BEECH	581	41	540	0	0	0	0
WHITE BIRCH	769	195	317	202	0	0	0
YELLOW BIRCH	3415	779	2416	2	218	55	0
COTTONWOOD	1109	54	0	1011	44	0	0
ELM	5999	4810	841	317	31	0	0
HARD MAPLE	11442	4090	5445	467	316	1124	0
SOFT MAPLE	1000	654	186	83	77	0	0
RED OAK	10195	7129	481	1468	1088	27	2
WHITE OAK	80	70	1	9	0	0	0
OTHER SPECIES	100	41	54	0	5	0	0
TOTAL HARDWOODS	37759	19598	10922	4083	1944	1206	6
L SPECIES	37804	19643	10922	4083	1944	1206	6

Table 26.--Veneer log production by unit, county, and species, Wisconsin, 1973

(In thousand board feet, International 1/4-inch rule)

UNIT AND COUNTY	BALSAM FIR	CEDAR-HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMA RACK	ASH	ASPEN	BALSAM POPLAR	BASS WOOD	BEECH	WHITE BIRCH
NORTHEASTERN													
FLORENCE	0	0	0	0	0	0	0	23	0	0	0	0	4
FOREST	0	0	0	0	45	0	0	3	0	0	39	0	0
LANGLADE	0	0	0	0	0	0	0	11	3	0	55	0	2
LINCOLN	0	0	0	0	0	0	0	3	3	0	0	0	2
MARINETTE	0	0	0	0	0	0	0	10	7	0	14	12	7
OCONTO	0	0	0	0	0	0	0	6	25	0	51	2	8
ONEIDA	0	0	0	0	0	0	0	3	3	0	0	0	21
SHAWANO	0	0	0	0	0	0	0	97	12	21	372	21	27
VILAS	0	0	0	0	0	0	0	2	427	0	0	0	49
UNIT TOTAL	0	0	0	0	45	0	0	158	480	21	531	35	120
NORTHWESTERN													
ASHLAND	0	0	0	0	0	0	0	4	2793	0	0	0	7
BARRON	0	0	0	0	0	0	0	7	12	0	19	0	2
BAYFIELD	0	0	0	0	0	0	0	4	228	0	0	0	7
BURNETT	0	0	0	0	0	0	0	0	0	0	9	0	0
DOUGLAS	0	0	0	0	0	0	0	0	0	0	0	0	0
IRON	0	0	0	0	0	0	0	4	7922	0	0	0	7
POLK	0	0	0	0	0	0	0	7	12	0	12	0	5
PRICE	0	0	0	0	0	0	0	0	0	0	0	0	0
RUSK	0	0	0	0	0	0	0	0	10	0	0	0	5
SAWYER	0	0	0	0	0	0	0	0	0	0	0	0	5
TAYLOR	0	0	0	0	0	0	0	0	8	0	0	0	0
WASHBURN	0	0	0	0	0	0	0	1	0	0	5	0	5
UNIT TOTAL	0	0	0	0	0	0	0	27	10985	0	45	0	43
CENTRAL													
ADAMS	0	0	0	0	0	0	0	5	0	0	0	0	1
CHIPPewa	0	0	0	0	0	0	0	7	12	0	10	0	2
CLARK	0	0	0	0	0	0	0	5	6	0	3	0	1
EAU CLAIR	0	0	0	0	0	0	0	7	2	0	0	0	2
JACKSON	0	0	0	0	0	0	0	0	0	0	0	0	0
JUNEAU	0	0	0	0	0	0	0	0	0	0	0	0	0
MAPATHON	0	0	0	0	0	0	0	7	3	0	62	0	1
MARQUETTE	0	0	0	0	0	0	0	0	0	0	0	0	0
MONROE	0	0	0	0	0	0	0	0	0	0	51	0	0
PORTAGE	0	0	0	0	0	0	0	5	0	0	2	0	1
WAUPACA	0	0	0	0	0	0	0	15	1	0	48	1	1
WAUSHARA	0	0	0	0	0	0	0	1	0	0	2	0	0
WOOD	0	0	0	0	0	0	0	5	10	0	4	0	1
UNIT TOTAL	0	0	0	0	0	0	0	57	34	0	182	1	10

TABLE 26 CONTINUED ON NEXT PAGE

TABLE 26 CONTINUED

UNIT AND COUNTY	BALSAM: FIR	CEDAR:	HEMLOCK:	JACK: PINE	RED: PINE	WHITE: PINE	SPRUCE:	TAMA: RACK	ASH:	ASPEN:	BALSAM: POPLAR	BASS: WOOD	BEECH:	WHITE BIRCH
SOUTHWESTERN														
BUFFALO	0	0	0	0	0	0	0	0	7	2	0	0	0	2
CRAWFORD	0	0	0	0	0	0	0	0	4	2	0	9	0	1
DUNN	0	0	0	0	0	0	0	0	11	11	0	94	0	2
GRANT	0	0	0	0	0	0	0	0	4	2	0	0	0	1
IOWA	0	0	0	0	0	0	0	0	21	2	0	85	0	1
LACROSSE	0	0	0	0	0	0	0	0	7	2	0	0	0	2
LAFAYETTE	0	0	0	0	0	0	0	0	4	2	0	0	0	1
PEPIN	0	0	0	0	0	0	0	0	7	2	0	0	0	2
PIERCE	0	0	0	0	0	0	0	0	7	2	0	0	0	1
RICHLAND	0	0	0	0	0	0	0	0	6	2	0	57	0	1
ST. CROIX	0	0	0	0	0	0	0	0	7	2	0	10	0	2
SAUK	0	0	0	0	0	0	0	0	6	2	0	11	0	1
TREMPEALEU	0	0	0	0	0	0	0	0	7	2	0	1	0	2
VERNON	0	0	0	0	0	0	0	0	4	2	0	31	0	1
UNIT TOTAL	0	0	0	0	0	0	0	0	102	37	0	298	0	21
SOUTHEASTERN														
BROWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALUMET	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLUMBIA	0	0	0	0	0	0	0	0	4	2	0	0	0	1
DANE	0	0	0	0	0	0	0	0	0	0	0	8	0	0
DODGE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOND DULAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GREEN	0	0	0	0	0	0	0	0	7	0	0	20	0	0
GREEN LAKE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JEFFERSON	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MANITOWOC	0	0	0	0	0	0	0	0	0	0	0	14	3	0
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	0	0	0	0	0	0	0	0	0	51	0	0
OZAUKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RACINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHEBOYGAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALWORTH	0	0	0	0	0	0	0	0	0	0	0	0	2	0
WASHINGTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAUKESHA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WINNEBAGO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIT TOTAL	0	0	0	0	0	0	0	0	11	2	0	93	5	1
STATE TOTAL	0	0	0	0	0	45	0	0	355	11538	21	1149	41	195

TABLE 26 CONTINUED ON NEXT PAGE

TABLE 26CONTINUED

UNIT AND COUNTY	YELLOW: BIRCH:	COITON-: WOOD:	ELM: HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	WALNUT:	OTHER: HARD-: WOODS:	ALL SPECIES
NORTHEASTERN										
FLORENCE	0	0	1469	0	689	0	93	0	0	2278
FOREST	0	0	163	0	121	0	10	0	0	381
LANGLADE	71	0	195	0	169	3	34	0	0	543
LINCOLN	71	0	27	0	4	0	15	0	0	125
MARINETTE	77	0	58	0	50	10	35	1	0	281
OCONTO	73	0	99	0	59	66	128	2	0	519
ONEIDA	72	0	27	0	4	0	15	0	0	145
SHAWANO	74	0	777	0	871	132	429	32	0	2878
VILAS	19	0	0	0	0	0	0	0	0	497
UNIT TOTAL	457	0	2815	0	1967	211	759	35	0	13 7647
NORTHWESTERN										
ASHLAND	76	0	49	0	23	1	11	0	0	2964
BARRON	1	0	65	0	109	1	372	0	0	589
BAYFIELD	76	0	49	0	23	1	6	0	0	394
BURNETT	0	0	138	0	0	0	0	0	0	147
DOUGLAS	0	0	0	0	0	0	0	0	0	0
IRON	76	0	49	0	23	1	6	0	0	8088
POLK	22	0	64	0	242	1	541	0	0	1 907
PRICE	11	0	0	0	0	0	0	0	0	11
RUSK	21	0	37	0	239	0	95	0	0	407
SAWYER	21	0	0	0	239	0	22	0	0	287
TAYLOR	0	0	0	0	0	0	28	0	0	36
WASHBURN	21	0	3	0	256	3	330	0	0	624
UNIT TOTAL	325	0	454	0	1154	8	1411	0	0	2 14454
CENTRAL										
ADAMS	8	0	43	0	4	4	12	0	0	77
CHIPPewa	1	0	66	0	3	1	213	0	0	316
CLARK	8	0	52	0	4	5	142	2	0	228
EAU CLAIR	1	0	27	0	3	1	117	0	0	161
JACKSON	0	0	0	0	0	24	41	0	0	65
JUNEAU	0	0	0	0	0	0	0	0	0	0
MARATHON	8	0	135	0	142	11	113	1	0	483
MARQUETTE	0	0	0	0	0	0	33	0	0	33
MONROE	0	0	89	0	0	18	41	0	0	199
PORTAGE	8	0	43	0	4	4	52	0	0	119
WAUPACA	12	0	81	0	92	70	141	23	0	486
WAUSHARA	0	0	0	0	0	1	3	4	0	11
WOOD	8	0	51	0	4	10	77	1	0	171
UNIT TOTAL	54	0	587	0	256	149	985	31	0	3 2349

TABLE 26CONTINUED ON NEXT PAGE

TABLE 26 CONTINUED

UNIT AND COUNTY	YELLOW: BIRCH	COTTON- WOOD	ELM: HICKORY	HARD: MAPLE	SOFT: MAPLE	RED: OAK	WHITE: OAK	WALNUT:	OTHER: HARD- WOODS:	ALL SPECIES
SOUTHWESTERN										
BUFFALO	1	22	45	0	3	1	156	0	55	316
CRAWFORD	0	0	12	0	12	2	196	0	88	379
DUNN	1	0	95	0	65	9	159	1	44	510
GRANT	0	0	17	0	61	2	155	0	199	468
IOWA	0	0	12	0	180	2	229	0	79	635
LACROSSE	1	0	51	0	3	91	359	2	15	545
LAFAYETTE	0	0	12	0	12	2	155	0	34	224
PEPIN	1	22	45	0	3	1	117	0	0	201
PIERCE	1	0	27	0	3	1	120	0	0	164
RICHLAND	0	0	43	0	93	83	755	0	0	1056
ST.-CROIX	1	0	64	0	3	1	117	0	0	208
SAUK	0	0	14	0	97	55	644	2	52	904
TREMPEALEU	1	0	27	0	3	1	181	0	0	239
VERNON	0	0	12	0	12	2	351	0	51	487
UNIT TOTAL	7	44	476	0	550	253	3694	5	617	6336
SOUTHEASTERN										
BROWN	0	0	137	0	0	0	5	0	0	142
CALUMET	0	0	0	0	0	0	0	0	0	0
COLUMBIA	0	0	12	0	12	2	155	0	0	190
DANE	0	0	0	0	0	0	77	10	6	101
DODGE	0	0	0	0	0	0	0	0	0	0
DOOR	0	0	142	0	0	0	8	0	0	150
FOND DULAC	0	0	0	0	0	0	24	0	0	24
GREEN	0	0	2	0	0	0	37	25	38	129
GREEN LAKE	0	0	0	0	0	0	33	0	0	33
JEFFERSON	0	0	0	0	0	0	0	0	0	0
KEAUWATON	0	0	4	0	20	0	4	0	0	28
MANITOWOC	0	6	143	0	20	3	30	0	0	219
MILWAUKEE	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	110	0	80	26	37	0	0	304
OZAUKIE	0	0	0	0	0	0	0	0	0	0
RACINE	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	0	0	0	15	12	6	33
SHEBOYGAN	0	4	8	0	0	2	4	0	0	20
WALWORTH	0	0	0	0	0	0	0	0	0	0
WASHINGTON	0	0	0	0	31	0	33	0	0	64
WAUKESHA	0	0	0	0	0	0	1	0	0	1
WINNEBAGO	0	0	0	0	0	0	0	0	0	0
UNIT TOTAL	0	10	558	0	163	33	463	47	50	1438
STATE TOTAL	843	54	4890	0	4090	654	7312	118	667	32224

Table 27.--Production of poles, piling, posts, and miscellaneous products¹
by unit, county, and species, Wisconsin, 1973
(In thousand cubic feet)

Unit and county :	Cedar :	Jack : pine :	Red : pine :	Aspen :	White : birch :	Elm :	Red : oak :	White : oak :
Northeastern:								
Forest	5	--	--	--	--	--	--	--
Lincoln	--	--	4	158	--	--	--	--
Marinette	25	--	--	806	--	--	--	--
Oconto	5	--	--	230	--	--	--	--
Oneida	3	--	24	--	--	--	--	--
Shawano ^{2/}	15	--	--	--	--	25	--	--
Vilas	--	--	--	30	--	--	--	--
Unit total	53	--	28	1,224	--	25	--	--
Northwestern:								
Ashland	--	--	--	182	--	--	--	--
Barron	--	--	4	237	--	--	--	--
Bayfield	--	12	221	--	--	--	--	--
Burnett	--	120	3	--	--	--	--	--
Douglas	--	1	25	--	--	--	--	--
Iron	--	--	4	--	--	--	--	--
Price	--	--	--	394	--	--	--	--
Rusk	--	--	--	474	--	--	--	--
Sawyer	--	--	56	79	--	--	--	--
Taylor	--	--	--	316	--	--	--	--
Washburn	--	85	32	158	--	--	--	--
Unit total	--	218	345	1,840	--	--	--	--
Central:								
Adams	--	--	62	--	--	--	--	--
Chippewa	--	--	7	158	--	--	--	--
Clark	--	--	--	1,264	158	--	158	--
Eau Claire	--	--	--	237	--	--	--	--
Jackson	--	--	--	158	--	--	2	2
Juneau	--	--	--	--	--	--	--	2
Monroe	--	--	1	--	--	--	--	--
Portage	--	--	--	158	--	--	--	--
Waupaca	--	--	10	--	--	--	--	--
Wood	--	--	--	632	--	--	--	--
Unit total	--	--	80	2,607	158	--	160	4
Southwestern:								
Crawford	--	--	--	--	--	--	--	28
Grant	--	--	--	--	--	--	--	29
Iowa	--	--	--	--	--	--	--	10
LaCrosse	--	--	--	--	--	--	--	22
Lafayette	--	--	--	--	--	--	--	4
Richland	--	--	--	--	--	--	--	63
Sauk	--	--	--	--	--	--	--	66
Trempealeau	--	--	5	--	--	--	--	5
Vernon	--	--	--	2	--	1	--	13
Unit total	--	--	5	2	--	1	--	240
Southeastern:								
Columbia	--	--	--	--	--	--	--	11
Dane	--	--	--	--	--	--	--	15
Green	--	--	--	--	--	--	--	8
Rock	--	--	--	--	--	--	--	8
Unit total	--	--	--	--	--	--	--	42
State total	53	218	458	5,673	158	26	160	286

^{1/} Includes cooperage logs, charcoal bolts, particleboard bolts, and excelsior bolts.

Table 28.--Volume of residue produced at Wisconsin primary wood-using mills by kind of material, type of use, county, and unit, 1973
(In thousand cubic feet)

COUNTY OR UNIT AND TYPE OF USE	NORTHEASTERN									
	WOOD RESIDUE									
	TOTAL	COARSE 1/	FINE 2/	BARK						
	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD
FLORENCE										
FIBER PRODUCTS	80.7	348.3	90.7	348.3	0	0	0	0	0	0
DOMESTIC FUEL	3.6	2.0	3.3	1.9	.3	.1	2.1	1.3	1.3	1.3
MISCELLANEOUS 3/	7.9	67.3	0	0	7.9	67.3	0	0	0	0
NOT USED	41.2	136.9	.2	0	41.0	136.9	50.7	224.4	224.4	224.4
TOTAL	133.4	554.5	94.2	350.2	49.2	204.3	52.8	225.7	225.7	225.7
FOREST										
FIBER PRODUCTS	139.5	671.7	178.7	607.9	.8	63.8	0	0	0	0
INDUSTRIAL FUEL	54.2	79.2	7.2	21.6	47.0	57.6	93.0	275.9	275.9	275.9
DOMESTIC FUEL	48.1	67.4	48.1	57.4	0	0	19.2	43.5	43.5	43.5
MISCELLANEOUS 3/	3.0	92.4	0	0	3.0	92.4	0	0	0	0
NOT USED	52.3	124.9	16.4	25.4	35.9	99.5	20.8	143.8	143.8	143.8
TOTAL	297.1	1035.6	210.4	722.3	86.7	313.3	133.0	463.2	463.2	463.2
LANGLADE										
FIBER PRODUCTS	20.5	705.2	20.5	663.2	0	42.0	0	0	0	0
INDUSTRIAL FUEL	1.2	133.0	0	0	1.2	133.0	0	116.1	116.1	116.1
DOMESTIC FUEL	3.6	75.3	3.6	75.3	0	0	.8	9	9	9
MISCELLANEOUS 3/	5.7	108.5	0	0	5.7	108.5	5.8	110.4	110.4	110.4
NOT USED	87.2	238.8	50.5	57.6	36.7	181.2	35.4	223.0	223.0	223.0
TOTAL	118.2	1260.8	74.6	796.1	43.6	464.7	42.0	450.4	450.4	450.4
LINCOLN										
FIBER PRODUCTS	0	144.0	0	144.0	0	0	0	0	0	0
CHARCOAL	.1	4.1	.1	4.1	0	0	0	2.7	2.7	2.7
INDUSTRIAL FUEL	.1	88.2	.1	4.2	0	84.0	.1	95.7	95.7	95.7
DOMESTIC FUEL	6.5	7.7	6.5	7.7	0	0	8.0	5.0	5.0	5.0
MISCELLANEOUS 3/	4.8	6.6	0	0	4.8	6.6	0	0	0	0
NOT USED	12.6	13.1	4.1	6.5	8.5	6.6	6.5	4.4	4.4	4.4
TOTAL	24.1	263.7	10.8	166.5	13.3	97.2	14.6	107.8	107.8	107.8
MARINETTE										
FIBER PRODUCTS	4.8	660.2	4.8	393.0	0	267.2	0	424.4	424.4	424.4
INDUSTRIAL FUEL	19.0	468.2	15.9	279.2	3.1	189.0	10.2	56.8	56.8	56.8
DOMESTIC FUEL	45.5	171.7	38.5	167.0	7.0	4.7	20.1	48.3	48.3	48.3
MISCELLANEOUS 3/	21.7	137.3	0	0	21.7	137.3	3.1	337.9	337.9	337.9
NOT USED	66.5	118.0	40.3	35.6	26.2	82.4	29.6	867.4	867.4	867.4
TOTAL	157.5	1555.4	99.5	874.8	58.0	680.6	63.0	867.4	867.4	867.4

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

NORTHEASTERN, CONT.

COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE					BARK				
	TOTAL	COARSE 1/	FINE 2/	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD
OCONTO										
FIBER PRODUCTS	12.5	250.1	12.5	250.1	0	0	0	0	0	0
INDUSTRIAL FUEL	0	172.1	0	64.9	0	107.2	0	0	0	74.2
DOMESTIC FUEL	14.9	84.9	14.9	56.9	0	28.0	0	10.2	10.2	21.6
MISCELLANEOUS 3/	7.3	48.0	0	1.0	7.3	47.0	0	5.4	5.4	51.8
NOT USED	44.6	215.9	23.1	71.0	21.5	144.9	0	17.1	17.1	170.0
TOTAL	79.3	771.0	50.5	443.9	28.8	327.1	0	32.7	32.7	317.6
ONEIDA										
FIBER PRODUCTS	0	424.1	0	424.1	0	0	0	0	0	0
INDUSTRIAL FUEL	3.2	79.8	2.0	0	1.2	79.8	0	1.3	1.3	147.3
DOMESTIC FUEL	12.4	31.1	12.3	31.0	.1	.1	.1	7.7	7.7	20.2
MISCELLANEOUS 3/	2.5	103.0	0	22.8	2.5	80.2	0	0	0	0
NOT USED	61.3	230.4	35.8	87.4	25.5	143.0	0	23.1	23.1	197.9
TOTAL	79.4	868.4	50.1	565.3	29.3	303.1	0	32.1	32.1	365.4
SHAWANO 3/										
FIBER PRODUCTS	270.0	1044.0	270.0	1044.0	0	0	0	0	0	0
INDUSTRIAL FUEL	92.2	397.4	2.9	43.5	89.3	353.9	0	122.3	122.3	419.0
DOMESTIC FUEL	13.6	124.4	13.6	88.7	0	35.7	0	8.1	8.1	15.8
MISCELLANEOUS 3/	26.5	213.6	0	14.3	26.5	199.3	0	14.5	14.5	141.3
NOT USED	93.2	1278.5	73.0	875.4	20.2	403.1	0	86.3	86.3	796.1
TOTAL	495.5	3057.9	359.5	2065.9	136.0	992.0	0	231.2	231.2	1372.2
VILAS										
FIBER PRODUCTS	701.5	1126.4	589.4	902.4	112.1	224.0	.1	.1	.1	0
INDUSTRIAL FUEL	51.4	33.6	0	0	51.4	33.6	0	131.0	131.0	86.8
DOMESTIC FUEL	25.8	2.3	25.8	2.3	0	0	0	16.6	16.6	1.5
MISCELLANEOUS 3/	10.9	0	0	0	10.9	0	0	0	0	0
NOT USED	140.5	250.8	4.6	9.0	135.9	241.8	0	250.4	250.4	501.8
TOTAL	930.1	1413.1	619.8	913.7	310.3	499.4	0	398.1	398.1	590.1
ALL COUNTIES NORTHEASTERN										
FIBER PRODUCTS	1229.5	5374.0	1116.6	4777.0	112.9	597.0	.1	.1	.1	0
CHARCOAL	.1	4.1	.1	4.1	0	0	0	0	0	2.7
INDUSTRIAL FUEL	221.3	1451.5	28.1	413.4	193.2	1038.1	0	357.9	357.9	1639.4
DOMESTIC FUEL	174.0	566.8	166.6	498.2	7.4	68.6	0	92.8	92.8	166.6
MISCELLANEOUS 3/	90.3	776.7	0	38.1	90.3	738.6	0	28.8	28.8	351.8
NOT USED	599.4	2607.3	248.0	1167.9	351.4	1439.4	0	519.9	519.9	2599.3
TOTAL	2314.6	10780.4	1559.4	6898.7	755.2	3881.7	0	999.5	999.5	4759.8

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

NORTHWESTERN

COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE					BARK	
	TOTAL	COARSE 1/	FINE 2/				
	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD	SOFTHWOOD : HARDWOOD
ASHLAND							
FIBER PRODUCTS	4.7	630.6	4.7	299.4	0	331.2	0
INDUSTRIAL FUEL	2.8	78.0	0	6.2	2.8	71.8	3.1
DOMESTIC FUEL	.1	0	.1	0	0	0	0
MISCELLANEOUS 3/	0	33.0	0	30.9	0	2.1	0
NOT USED	11.4	8.1	7.2	3.8	4.2	4.3	4.0
TOTAL	19.0	749.7	12.0	340.3	7.0	409.4	7.1
BARRON							
FIBER PRODUCTS	0	141.3	0	141.3	0	0	0
INDUSTRIAL FUEL	0	373.4	0	85.6	0	287.8	0
DOMESTIC FUEL	18.5	57.6	18.5	56.3	0	1.3	12.0
MISCELLANEOUS 3/	10.9	96.2	0	0	10.9	96.2	0
NOT USED	.3	1.4	.3	1.4	0	0	.2
TOTAL	29.7	669.9	18.8	284.6	10.9	385.3	12.2
BAYFIELD							
FIBER PRODUCTS	0	180.0	0	180.0	0	0	0
INDUSTRIAL FUEL	0	105.0	0	0	0	105.0	0
DOMESTIC FUEL	8.2	7.5	8.2	7.5	0	0	5.4
MISCELLANEOUS 3/	3.4	2.3	0	0	3.4	2.3	0
NOT USED	44.5	48.9	27.2	29.5	17.3	19.4	17.3
TOTAL	56.1	343.7	35.4	217.0	20.7	126.7	22.7
BURNETT							
CHARCOAL	0	43.6	0	43.6	0	0	0
INDUSTRIAL FUEL	0	0	0	0	0	0	19.9
DOMESTIC FUEL	14.3	1.2	14.3	1.2	0	0	52.4
MISCELLANEOUS 3/	13.7	54.1	0	0	13.7	54.1	0
NOT USED	88.8	80.5	59.4	68.3	29.4	12.2	101.3
TOTAL	116.8	179.4	73.7	113.1	43.1	64.3	173.6
DOUGLAS							
FIBER PRODUCTS	86.4	9.6	86.4	9.6	0	0	0
CHARCOAL	0	.4	0	0	0	.4	0
DOMESTIC FUEL	16.9	1.4	12.5	1.0	4.4	.4	8.0
MISCELLANEOUS 3/	6.9	1.1	3.6	.6	3.3	.5	2.3
NOT USED	62.5	17.2	6.5	7.3	56.0	9.9	39.2
TOTAL	172.7	29.7	109.0	18.5	63.7	11.2	49.5

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

NORTHWESTERN, CONT.

		WOOD RESIDUE							
		TOTAL		COARSE 1/		FINE 2/		BARK	
		SOFTWOOD : HARDWOOD		SOFTWOOD : HARDWOOD		SOFTWOOD : HARDWOOD		SOFTWOOD : HARDWOOD	
POLK		10.3	56.9	10.3	56.9	0	0	5.7	31.2
FIBER PRODUCTS		4.5	85.9	4.5	85.9	0	0	3.9	61.0
CHARCOAL		26.0	27.6	24.1	23.4	1.9	4.2	1.5	1.0
DOMESTIC FUEL		8.3	67.2	0	0	8.3	67.2	0	0
MISCELLANEOUS 3/		16.3	43.7	2.5	11.4	13.8	32.3	15.7	21.4
NOT USED									
TOTAL		65.4	281.3	41.4	177.6	24.0	103.7	26.8	114.6
PRICE		0	282.8	0	224.6	0	58.2	0	0
FIBER PRODUCTS		0	103.8	0	89.1	0	14.7	0	43.0
DOMESTIC FUEL		0	31.4	0	0	0	31.4	0	0
MISCELLANEOUS 3/		7.6	133.0	4.8	34.3	2.8	98.7	3.1	181.7
NOT USED									
TOTAL		7.6	551.0	4.8	348.0	2.8	203.0	3.1	224.7
RUSK		0	7.4	0	7.4	0	0	0	4.8
INDUSTRIAL FUEL		9.7	49.2	9.7	49.2	0	0	6.2	31.8
DOMESTIC FUEL		4.8	20.9	0	0	4.8	20.9	0	0
MISCELLANEOUS 3/		.8	263.1	0	158.5	.8	104.6	0	102.4
NOT USED									
TOTAL		15.3	340.6	9.7	215.1	5.6	125.5	6.2	139.0
SAWYER		0	235.2	0	235.2	0	0	0	0
FIBER PRODUCTS		0	258.4	0	158.4	0	100.0	0	0
INDUSTRIAL FUEL		5.9	86.1	5.9	85.9	0	.2	2.8	.1
DOMESTIC FUEL		20.5	74.6	15.5	12.4	5.0	62.2	0	0
MISCELLANEOUS 3/		60.2	231.6	33.9	67.6	26.3	164.0	32.9	361.2
NOT USED									
TOTAL		86.6	885.9	55.3	559.5	31.3	326.4	35.7	361.3
TAYLOR		1.3	85.7	1.3	85.7	0	0	.7	55.4
DOMESTIC FUEL		2.5	129.4	0	51.8	2.5	77.6	0	33.5
MISCELLANEOUS 3/		3.5	45.5	3.3	27.1	.2	18.4	2.1	17.5
NOT USED									
TOTAL		7.3	260.6	4.6	164.6	2.7	96.0	2.8	106.4
WASHBURN		0	45.0	0	45.0	0	0	0	0
FIBER PRODUCTS		0	0	0	0	0	0	1.2	0
CHARCOAL		18.1	6.7	18.1	6.7	0	0	11.7	4.4
DOMESTIC FUEL		11.3	4.9	2.3	1.8	9.0	3.1	1.4	1.2
MISCELLANEOUS 3/		16.4	336.7	8.5	185.3	7.9	151.4	5.7	174.8
NOT USED									
TOTAL		45.8	393.3	28.9	238.8	16.9	154.5	20.0	180.4

COUNTY OR UNIT AND TYPE OF USE		WOOD RESIDUE							
TOTAL		COARSE 1/		FINE 2/		BARK			
: SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD :			
ALL COUNTIES NORTHWESTERN									
FIBER PRODUCTS		101.4	1581.4	101.4	1192.0	0	389.4	5.7	147.4
CHARCOAL		4.5	129.9	4.5	129.5	0	4	5.1	89.1
INDUSTRIAL FUEL		2.8	822.2	0	257.6	2.8	564.6	23.0	712.9
DOMESTIC FUEL		119.0	426.8	112.7	406.0	6.3	20.8	100.7	176.0
MISCELLANEOUS 3/		82.3	515.1	21.4	97.5	60.9	417.6	3.7	35.1
NOT USED		312.3	1209.7	153.6	594.5	158.7	615.2	221.5	943.7
TOTAL		622.3	4685.1	393.6	2677.1	228.7	2008.0	359.7	2104.2
CENTRAL									
ADAMS									
FIBER PRODUCTS		1.4	143.8	1.2	122.4	.2	21.4	0	0
DOMESTIC FUEL		3.0	1.4	2.8	1.4	.2	0	1.8	.8
NOT USED		2.2	50.8	.1	0	2.1	50.8	.9	79.1
TOTAL		6.6	196.0	4.1	123.8	2.5	72.2	2.7	79.9
CHIPPEWA									
FIBER PRODUCTS		0	204.2	0	204.2	0	0	0	14.0
CHARCOAL		0	57.1	0	57.1	0	0	0	36.9
INDUSTRIAL FUEL		0	13.8	0	0	0	13.8	0	0
DOMESTIC FUEL		4.5	56.8	4.3	56.8	.2	0	2.8	27.6
MISCELLANEOUS 3/		2.6	306.4	.1	110.9	2.5	195.5	.1	37.8
NOT USED		3.0	137.1	2.0	60.7	1.0	76.4	1.2	200.1
TOTAL		10.1	775.4	6.4	489.7	3.7	285.7	4.1	316.4
CLARK									
FIBER PRODUCTS		0	70.5	0	0	0	70.5	0	0
CHARCOAL		2.4	2.4	2.4	2.4	0	0	1.6	1.6
DOMESTIC FUEL		6.0	38.0	6.0	38.0	0	0	4.0	24.7
MISCELLANEOUS 3/		19.8	101.1	9.6	38.4	10.2	62.7	6.2	24.8
NOT USED		.2	161.3	.1	157.0	.1	4.3	.1	101.5
TOTAL		28.4	373.3	18.1	235.8	10.3	137.5	11.9	152.6
EAU CLAIRE									
FIBER PRODUCTS		0	9.2	0	9.2	0	0	0	5.9
CHARCOAL		8.1	38.6	8.1	38.6	0	0	5.2	24.6
DOMESTIC FUEL		2.4	12.1	0	.4	2.4	11.7	0	.5
MISCELLANEOUS 3/		18.2	40.8	10.0	15.5	8.2	25.3	6.4	10.0
NOT USED		28.7	100.7	18.1	63.7	10.6	37.0	11.6	41.0
TOTAL		28.7	100.7	18.1	63.7	10.6	37.0	11.6	41.0

TABLE 28 CONTINUED

WOOD RESIDUE									
COUNTY OR UNIT AND TYPE OF USE	TOTAL	COARSE 1/	FINE 2/	BARK					
SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD : SOFTWOOD : HARDWOOD :									
JACKSON									
FIBER PRODUCTS	0	339.8	0	83.2	0	0			
CHARCOAL	0	11.6	0	11.6	0	0			
INDUSTRIAL FUEL		86.4	0	0	0	55.8			
DOMESTIC FUEL	10.4	21.2	10.4	21.2	0	6.7			
MISCELLANEOUS 3/	10.0	89.1	0	0	89.1	0			
NOT USED	17.0	74.1	13.2	17.1	57.0	189.7			
TOTAL	37.4	622.2	23.6	392.9	229.3	253.7			
JUNEAU									
FIBER PRODUCTS	16.6	270.6	15.8	261.6	.8	9.0			
DOMESTIC FUEL	6.2	65.3	6.2	65.3	0	4.0			
MISCELLANEOUS 3/	7.3	136.9	0	0	136.9	0			
NOT USED	7.1	56.2	1.5	7.2	49.0	5.6			
TOTAL	37.2	529.0	23.5	334.1	13.7	194.9			
MARATHON									
FIBER PRODUCTS	4.8	439.5	4.8	439.5	0	0			
DOMESTIC FUEL	48.5	182.2	45.7	129.0	2.8	53.2			
MISCELLANEOUS 3/	27.2	254.1	.2	.3	27.0	253.8			
NOT USED	.7	71.5	.6	3.7	.1	67.8			
TOTAL	81.2	947.3	51.3	572.5	29.9	374.8			
MARQUETTE									
DOMESTIC FUEL	.6	4.0	.6	4.0	0	0			
MISCELLANEOUS 3/	.2	1.8	0	0	.2	1.8			
NOT USED	.1	.8	0	.2	.1	.6			
TOTAL	.9	6.6	.6	4.2	.3	2.4			
MONROE									
FIBER PRODUCTS	0	288.0	0	288.0	0	0			
CHARCOAL	0	45.6	0	45.6	0	0			
MISCELLANEOUS 3/	0	194.6	0	0	194.6	0			
TOTAL	0	528.2	0	333.6	0	194.6			
PORTAGE									
INDUSTRIAL FUEL	4.8	8.6	4.8	8.6	0	0			
DOMESTIC FUEL	18.7	89.9	15.2	76.3	3.5	13.6			
MISCELLANEOUS 3/	5.4	34.5	0	0	5.4	34.5			
NOT USED	25.3	27.5	14.2	16.5	11.1	11.0			
TOTAL	54.2	160.5	34.2	101.4	20.0	59.1			

TABLE 28 CONTINUED ON NEXT PAGE

COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE				BARK	
	TOTAL	COARSE 1/	FINE 2/			
	SOFTWOOD : HARDWOOD :	SOFTWOOD : HARDWOOD :	SOFTWOOD : HARDWOOD :	SOFTWOOD : HARDWOOD :	SOFTWOOD :	HARDWOOD :
WAUPACA						
FIBER PRODUCTS	33.7	274.3	13.7	274.3	0	0
INDUSTRIAL FUEL	0	66.6	0	66.6	0	49.3
DOMESTIC FUEL	3.8	62.2	3.8	62.2	0	16.7
MISCELLANEOUS 3/	21.9	178.8	0	178.8	21.9	18.6
NOT USED	0	0	0	0	0	41.7
TOTAL	59.4	581.9	17.5	338.7	21.9	243.2
WAUSHARA						
DOMESTIC FUEL	24.7	176.1	15.6	111.2	9.1	64.9
TOTAL	24.7	176.1	15.6	111.2	9.1	64.9
WOOD						
FIBER PRODUCTS	73.7	406.3	73.7	406.3	0	0
INDUSTRIAL FUEL	43.0	360.8	0	47.5	43.0	47.6
NOT USED	3.5	1.1	2.2	.7	1.3	1.4
TOTAL	120.2	768.2	75.9	454.5	44.3	95.0
ALL COUNTIES CENTRAL						
FIBER PRODUCTS	130.2	2437.0	129.2	2252.9	1.0	184.1
CHARCOAL	2.4	125.9	2.4	125.9	0	5.6
INDUSTRIAL FUEL	47.8	536.2	4.8	144.7	43.0	73.9
DOMESTIC FUEL	134.5	735.7	118.7	604.0	15.8	50.7
MISCELLANEOUS 3/	96.8	1309.4	9.9	150.0	86.9	1061.1
NOT USED	77.3	621.2	43.9	278.6	33.4	79.1
TOTAL	489.0	5765.4	308.9	3556.1	180.1	250.3
SOUTHWESTERN						
BUFFALO						
FIBER PRODUCTS	0	331.2	0	331.2	0	0
CHARCOAL	0	53.4	0	53.4	0	0
INDUSTRIAL FUEL	0	1.4	0	1.4	0	0
DOMESTIC FUEL	.2	53.6	.2	53.6	0	0
MISCELLANEOUS 3/	.1	206.9	0	0	.1	26.0
NOT USED	0	80.0	0	19.2	206.9	79.9
TOTAL	.3	726.5	.2	458.8	.1	190.7
CRAWFORD						
FIBER PRODUCTS	0	238.3	0	238.3	0	0
CHARCOAL	0	10.3	0	10.3	0	0
DOMESTIC FUEL	0	18.8	0	18.8	0	0
MISCELLANEOUS 3/	0	128.4	0	0	0	12.0
NOT USED	0	84.8	0	2.6	128.4	13.6
TOTAL	0	480.6	0	270.0	0	163.6

TABLE 28 CONTINUED

COUNTY OR UNIT AND TYPE OF USE		WOOD RESIDUE							
TOTAL		COARSE 1/		FINE 2/		BARK			
SOFTWOOD : HARDWOOD :		SOFTWOOD : HARDWOOD :		SOFTWOOD : HARDWOOD :		SOFTWOOD : HARDWOOD :			
DUNN									
FIBER PRODUCTS	4.8	192.0	4.8	192.0	0	0	3.1	62.0	
DOMESTIC FUEL	4.5	15.1	4.5	15.1	0	0	2.9	9.7	
MISCELLANEOUS 3/	4.4	117.5	0	0	4.4	117.5	0	62.0	
NOT USED	2.7	9.3	1.1	3.8	1.6	5.5	.7	2.4	
TOTAL	16.4	333.9	10.4	210.9	6.0	123.0	6.7	136.1	
GRANT									
INDUSTRIAL FUEL	0	6.3	0	6.3	0	0	0	4.1	
DOMESTIC FUEL	.3	163.8	.3	163.1	0	.7	.2	5.2	
MISCELLANEOUS 3/	.2	98.2	0	0	.2	98.2	0	20.0	
NOT USED	0	39.8	0	25.1	0	14.7	0	96.4	
TOTAL	.5	308.1	.3	194.5	.2	113.6	.2	125.7	
IOWA									
DOMESTIC FUEL	.5	1.4	.5	1.4	0	0	.3	.9	
NOT USED	.3	5.4	0	2.9	.3	2.5	0	1.8	
TOTAL	.8	6.8	.5	4.3	.3	2.5	.3	2.7	
LACROSSE									
FIBER PRODUCTS	0	480.0	0	480.0	0	0	0	0	
DOMESTIC FUEL	1.2	1.7	1.2	1.7	0	0	.8	1.0	
MISCELLANEOUS 3/	.7	92.4	0	0	0	92.4	0	155.0	
NOT USED	.7	190.7	0	1.4	.7	189.3	0	155.8	
TOTAL	1.9	764.8	1.2	483.1	.7	281.7	.8	311.8	
LAFAYETTE									
DOMESTIC FUEL	0	3.5	0	3.5	0	0	0	2.3	
MISCELLANEOUS 3/	0	2.1	0	0	0	2.1	0	0	
TOTAL	0	5.6	0	3.5	0	2.1	0	2.3	
LEPIN									
FIBER PRODUCTS	0	144.0	0	144.0	0	0	0	0	
DOMESTIC FUEL	1.0	3.4	1.0	3.4	0	0	.6	1.4	
MISCELLANEOUS 3/	0	85.9	0	0	0	85.9	0	0	
NOT USED	.6	.1	0	0	.6	.1	0	93.8	
TOTAL	1.6	233.4	1.0	147.4	.6	86.0	.6	95.2	
PIERCE									
FIBER PRODUCTS	1.9	191.0	1.9	191.0	0	0	0	0	
INDUSTRIAL FUEL	0	0	0	0	0	0	1.1	66.4	
DOMESTIC FUEL	0	3.2	0	3.2	0	0	0	2.0	
MISCELLANEOUS 3/	1.1	108.5	0	0	1.1	108.5	0	2.5	
NOT USED	0	4.7	0	0	0	4.7	.1	54.5	
TOTAL	3.0	307.4	1.9	194.2	1.1	113.2	1.2	125.4	

TABLE 28 CONTINUED ON NEXT PAGE

COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE				BARK			
	TOTAL	COARSE 1/	FINE 2/					
	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD
RICHLAND								
FIBER PRODUCTS	0	279.5	0	279.5	0	0	0	0
INDUSTRIAL FUEL	.9	0	.9	0	0	0	.6	0
DOMESTIC FUEL	2.0	23.2	.9	23.2	1.1	0	.6	9.6
MISCELLANEOUS 3/	0	142.4	0	3.6	0	138.8	0	94.1
NOT USED	0	40.2	0	.2	0	40.0	0	94.3
TOTAL	2.9	485.3	1.8	306.5	1.1	178.8	1.2	198.0
SAUK								
FIBER PRODUCTS	0	178.0	0	178.0	0	0	0	0
INDUSTRIAL FUEL	0	4.4	0	4.4	0	0	0	0
DOMESTIC FUEL	.9	175.6	.9	175.6	0	0	.6	96.8
MISCELLANEOUS 3/	.5	219.3	0	0	.5	219.3	0	146.0
NOT USED	0	17.8	0	17.8	0	0	0	0
TOTAL	1.4	595.1	.9	375.8	.5	219.3	.6	242.8
TREMPEALEAU								
FIBER PRODUCTS	0	64.8	0	64.8	0	0	0	0
CHARCOAL	0	197.5	0	197.5	0	0	0	65.9
INDUSTRIAL FUEL	0	.7	0	.7	0	0	0	0
DOMESTIC FUEL	.4	85.2	.4	85.2	0	0	.3	9.0
MISCELLANEOUS 3/	.3	149.1	0	0	.3	149.1	0	76.9
NOT USED	.8	58.1	.5	2.6	.3	55.5	.9	74.8
TOTAL	1.5	555.4	.9	350.8	.6	204.6	1.2	226.6
VERNON								
FIBER PRODUCTS	0	210.4	0	210.4	0	0	0	11.2
DOMESTIC FUEL	.1	55.1	.1	55.1	0	0	.1	28.8
MISCELLANEOUS 3/	.1	53.2	0	0	.1	53.2	0	17.0
NOT USED	0	104.5	0	1.8	0	102.7	0	115.9
TOTAL	.2	423.2	.1	267.3	.1	155.9	.1	172.9
ALL COUNTIES SOUTHWESTERN								
FIBER PRODUCTS	6.7	2309.2	6.7	2309.2	0	0	3.1	73.2
CHARCOAL	0	261.2	0	261.2	0	0	0	65.9
INDUSTRIAL FUEL	.9	12.8	.9	12.8	0	0	1.7	70.5
DOMESTIC FUEL	11.1	603.6	10.0	602.9	1.1	.7	6.5	204.7
MISCELLANEOUS 3/	6.7	1403.9	0	3.6	6.7	1400.3	0	667.0
NOT USED	5.1	635.4	1.6	77.4	3.5	558.0	1.7	1044.0
TOTAL	30.5	5226.1	19.2	3267.1	11.3	1959.0	13.0	2125.3

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

TABLE 20. CONTINUED									
COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE								
	TOTAL		COARSE 1/		FINE 2/		BARK		
	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	BARK
GREEN									
DOMESTIC FUEL	0	1.4	0	1.4	0	0	0	0	.9
MISCELLANEOUS 3/	0	4.2	0	0	0	4.2	0	0	0
NOT USED	0	5.8	0	5.8	0	0	0	0	3.7
TOTAL	0	11.4	0	7.2	0	4.2	0	0	4.6
GREEN LAKE									
DOMESTIC FUEL	0	2.3	0	2.3	0	0	0	0	1.0
MISCELLANEOUS 3/	0	1.2	0	.2	0	1.0	0	0	.3
NOT USED	.1	1.1	.1	.4	0	.7	0	0	.4
TOTAL	.1	4.6	.1	2.9	0	1.7	0	0	1.7
JEFFERSON									
NOT USED	0	13.6	0	8.6	0	5.0	0	0	5.6
TOTAL	0	13.6	0	8.6	0	5.0	0	0	5.6
KEWAUNEE									
FIBER PRODUCTS	25.2	298.9	25.2	298.9	0	0	0	0	0
INDUSTRIAL FUEL	0	0	0	0	0	0	0	0	18.9
DOMESTIC FUEL	1.5	3.9	1.5	3.9	0	0	0	.8	2.5
MISCELLANEOUS 3/	9.2	101.8	0	0	9.2	101.8	.8	9.5	10.9
NOT USED	1.0	.1	.6	0	.4	.1	15.5	160.8	15.5
TOTAL	36.9	404.7	27.3	302.8	9.6	101.9	17.1	191.7	17.1
MANITOWOC									
FIBER PRODUCTS	16.9	309.5	16.9	207.4	0	102.1	0	0	0
INDUSTRIAL FUEL	0	0	0	0	0	0	0	0	70.3
DOMESTIC FUEL	5.9	29.8	5.9	29.8	0	0	0	3.5	19.0
MISCELLANEOUS 3/	11.7	193.8	0	63.5	11.7	130.3	10.9	133.9	10.9
NOT USED	3.5	16.4	1.7	8.9	1.8	7.5	1.1	5.8	1.1
TOTAL	38.0	549.5	24.5	309.6	13.5	239.9	15.5	229.0	15.5
MILWAUKEE									
DOMESTIC FUEL	0	1.4	0	1.4	0	0	0	0	.9
MISCELLANEOUS 3/	0	.8	0	0	0	.8	0	0	0
TOTAL	0	2.2	0	1.4	0	.8	0	0	.9
OUTAGAMIE									
FIBER PRODUCTS	38.4	176.3	38.4	176.3	0	0	0	0	0
INDUSTRIAL FUEL	0	7.8	0	0	0	7.8	0	0	0
DOMESTIC FUEL	4.3	55.0	4.3	55.0	0	0	2.7	30.8	2.7
MISCELLANEOUS 3/	13.7	83.0	0	0	13.7	83.0	1.2	5.6	1.2
NOT USED	11.2	51.4	0	0	11.2	51.4	23.6	114.9	23.6
TOTAL	67.6	373.5	42.7	231.3	24.9	142.2	27.5	151.3	27.5

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

SOUTHEASTERN, CONT.

		WOOD RESIDUE							
		TOTAL		COARSE 1/		FINE 2/		BARK	
		: SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD :		: SOFTWOOD : HARDWOOD :	
OZAUKEE									
DOMESTIC FUEL		0	1.0	0	1.0	0	0	0	.6
MISCELLANEOUS 3/		0	.6	0	0	0	.6	0	0
TOTAL		0	1.6	0	1.0	0	.6	0	.6
RACINE									
MISCELLANEOUS 3/		0	4.2	0	0	0	4.2	0	0
NOT USED		0	7.2	0	7.2	0	0	0	4.7
TOTAL		0	11.4	0	7.2	0	4.2	0	4.7
ROCK									
NOT USED		0	5.7	0	3.6	0	2.1	0	2.3
TOTAL		0	5.7	0	3.6	0	2.1	0	2.3
SHEBOYGAN									
FIBER PRODUCTS		0	87.8	0	44.1	0	43.7	0	0
CHARCOAL		0	27.0	0	27.0	0	0	0	0
INDUSTRIAL FUEL		0	24.1	0	5.7	0	18.4	0	19.0
DOMESTIC FUEL		1.2	5.0	1.2	5.0	0	0	.8	2.4
MISCELLANEOUS 3/		0	8.3	0	0	0	8.3	0	0
NOT USED		2.9	19.1	1.4	10.6	1.5	8.5	1.0	49.6
TOTAL		4.1	171.3	2.6	92.4	1.5	78.9	1.8	71.0
WALWORTH									
DOMESTIC FUEL		0	.8	0	.5	0	.3	0	.3
TOTAL		0	.8	0	.5	0	.3	0	.3
WASHINGTON									
FIBER PRODUCTS		0	74.9	0	74.9	0	0	0	48.4
DOMESTIC FUEL		.2	1.7	.2	1.7	0	0	.1	1.1
MISCELLANEOUS 3/		0	50.5	0	4.1	0	46.4	0	2.7
NOT USED		.1	20.8	0	12.7	.1	8.1	0	8.2
TOTAL		.3	147.9	.2	93.4	.1	54.5	.1	60.4
WAUKESHA									
DOMESTIC FUEL		0	1.2	0	1.2	0	0	0	.8
MISCELLANEOUS 3/		0	99.5	0	62.4	0	37.1	0	40.3
TOTAL		0	100.7	0	63.6	0	37.1	0	41.1

TABLE 28 CONTINUED ON NEXT PAGE

TABLE 28 CONTINUED

SOUTHEASTERN, CONT.

COUNTY OR UNIT AND TYPE OF USE	WOOD RESIDUE									
	TOTAL					FINE 2/				
	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	SOFTWOOD : HARDWOOD	BARK
WINNEBAGO										
INDUSTRIAL FUEL	0	5.0	0	5.0	0	0	0	0	0	3.2
DOMESTIC FUEL	3.7	3.7	3.7	3.6	0	.1	.1	2.1	2.3	0
MISCELLANEOUS 3/	1.5	2.0	0	0	1.5	2.0	0	0	0	0
NOT USED	2.0	2.1	.9	.3	1.1	1.8	1.8	.6	.3	
TOTAL	7.2	12.8	4.6	8.9	2.6	3.9	2.7	2.7	5.0	
ALL COUNTIES SOUTHEASTERN										
FIBER PRODUCTS	92.1	1070.1	92.1	900.7	0	169.4	0	0	40.4	
CHARCOAL	0	27.0	0	27.0	0	0	0	0	0	
INDUSTRIAL FUEL	39.1	36.9	0	10.7	0	26.2	0	0	111.4	
DOMESTIC FUEL	55.8	228.8	39.1	228.4	0	.4	22.6	22.6	114.3	
MISCELLANEOUS 3/	28.3	690.7	0	130.2	55.8	560.5	19.7	19.7	248.7	
NOT USED	28.3	239.1	9.3	131.6	19.0	107.5	44.7	44.7	396.4	
TOTAL	215.3	2292.6	140.5	1428.6	74.8	864.0	87.0	87.0	919.2	
ALL UNITS										
TOTAL WISCONSIN										
FIBER PRODUCTS	1559.9	12771.7	1446.0	11431.8	113.9	1339.9	14.5	14.5	386.8	
CHARCOAL	7.0	548.1	7.0	547.7	0	.4	6.7	6.7	231.6	
INDUSTRIAL FUEL	272.8	2859.6	33.8	839.2	239.0	2020.4	433.3	433.3	3595.3	
DOMESTIC FUEL	477.7	2561.7	447.1	2339.5	30.6	222.2	301.7	301.7	1071.7	
MISCELLANEOUS 3/	331.9	4695.8	31.3	419.4	300.6	4276.4	77.2	77.2	1887.9	
NOT USED	1022.4	5312.7	456.4	2250.0	566.0	3062.7	824.6	824.6	5726.4	
TOTAL	3671.7	28749.6	2421.6	17827.6	1250.1	10922.0	1658.0	1658.0	12099.7	

1/ SUITABLE FOR CHIPPING SUCH AS SLABS, EDGINGS, VENEER CORES, ETC.

2/ NOT SUITABLE FOR CHIPPING SUCH AS SAWDUST, VENEER CLIPPINGS, ETC.

3/ LIVESTOCK BEDDING, MULCH, SMALL DIMENSION, AND SPECIALTY ITEMS.

Blyth, James E., Eugene F. Landt, James W. Whipple, and Jerold T. Hahn.

1976. Primary forest products industry and timber use, Wisconsin, 1973. USDA For. Serv. Resour. Bull. NC-31, 61 p., illus. North Cent. For. Exp. Stn., St. Paul, Minn.

Discusses recent Wisconsin forest industry trends; timber removals for industrial roundwood in 1973; production and receipts in 1973 of pulpwood, saw logs, veneer logs, and other industrial roundwood products. Shows trends in pulpwood and veneer log production and compares saw log production in 1967 and 1973. Discusses primary wood-using plant residue and its disposition.

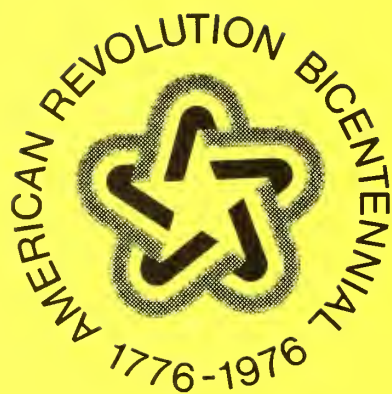
OXFORD: 791:792(775). KEY WORDS: pulpwood, saw logs, veneer logs, production, trends, wood residue, timber removals.

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VENEER-LOG PRODUCTION AND RECEIPTS NORTH CENTRAL REGION 1974

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James E. Blyth
Jerold T. Hahn

THE AUTHORS



James E. Blyth, Principal Market Analyst, received his bachelor's degree in forestry from Iowa State University in 1954, served 3 years in the Air Force as a Procurement Officer, and received his master's degree in forest economics from Iowa State in 1960. He joined the Lake States Forest Experiment Station in St. Paul, Minnesota, in 1960 and worked on timber removals research in Forest Survey. In 1962 he transferred to the Duluth field office and did forest products marketing research in the Lake States for 4 years. In 1966, he returned to the St. Paul Office of the North Central Forest Experiment Station. He is now in charge of the timber products and removals phase of the Forest Resources Evaluation Work Unit. He has authored more than 40 papers on forest industries, forest products marketing, and timber removals in the North Central Region.



Jerold T. Hahn is a mensurationist for the Forest Evaluation Research Project at the Station. A graduate of the University of Illinois, Hahn holds both a Bachelor of Science and Master of Science in Forestry. Jerold spent his first 2 years with the North Central Station on a Forest Survey field crew and the last 8 as a mensuration and data-compilation expert specializing in computer analysis. He has authored several publications on volume and growth estimates, resource inventories, and forest products output.

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VENEER-LOG PRODUCTION AND RECEIPTS,

NORTH CENTRAL REGION, 1974

James E. Blyth and Jerold T. Hahn

This report of 1974 veneer-log production and receipts¹ in the North Central Region is divided into two sections--Lake States (Minnesota, Wisconsin, and Michigan) and Central States (Indiana, Illinois, Iowa, and Missouri)--because different species are grown and used as veneer logs in each area. Moreover, less information can be released about the Central States because more detailed data would reveal the operations of individual mills. Export data are reported for Canada but not for other countries.

All but one veneer mill using North Central Region timber in 1974 reported their veneer-log receipts by species and State of origin. Their cooperation is gratefully acknowledged. Receipts were estimated for the nonresponding mill. Statistics for one large mill are not included in this report to avoid disclosure of its operations (fig. 1); data for the other large mill previously excluded are now included.

Of the 58 active veneer mills in the Region in 1974, 40 were standard² veneer mills and 18 were container³ veneer mills. From 1972 to 1974, one standard veneer mill and one container veneer mill closed; three standard veneer mills began operations.

LAKE STATES

Production

Lake States loggers harvested 68.7 million board feet of veneer logs in 1974.

¹*Production is the volume of veneer logs cut from a specific area; receipts are the volume of veneer logs received by mills in a specific area regardless of geographic source.*

²*Commercial, face, and specialty veneer mills that manufacture veneer used in doors, skins, furniture, wall panels, specialty plywood, and similar items.*

³*Mills that manufacture veneers used in boxes, crates, packing cases, and other wood veneer containers.*

Five species comprised 84 percent of the total volume:

<i>Species</i>	<i>Thousand board feet</i>
Aspen	24.3
Hard maple	11.7
Red oak	11.1
Elm	6.2
Yellow birch	4.2

Most of the harvest (64.1 million board feet) was standard veneer logs; the remainder was container veneer logs.

Hard maple regained its position ahead of red oak as a veneer species (fig. 2). Excluding aspen, the major changes in veneer log production between 1972 and 1974 were:

<i>Species</i>	<i>Thousand board feet</i>	<i>Percent</i>
Hard maple	+2,451	+26
Red oak	+1,404	+14
Elm	+1,061	+21
Yellow birch	-1,015	-20
Soft maple	+976	+94

The long-term downtrend in the yellow birch harvest continued in 1974.

Wisconsin produced 37.3 million board feet of logs. Aspen and red oak were the principal species cut. The elm harvest rose 1.3 million board feet from 1972, probably because Dutch Elm Disease was spreading rapidly through Wisconsin and many high quality logs were being salvaged from infected trees. Walnut and red oak were the primary species shipped outside the Lake States from Wisconsin.

Michigan cut 25.9 million board feet of veneer logs, principally from aspen, hard maple, and yellow birch. The elm harvest dropped below one-half million board feet,

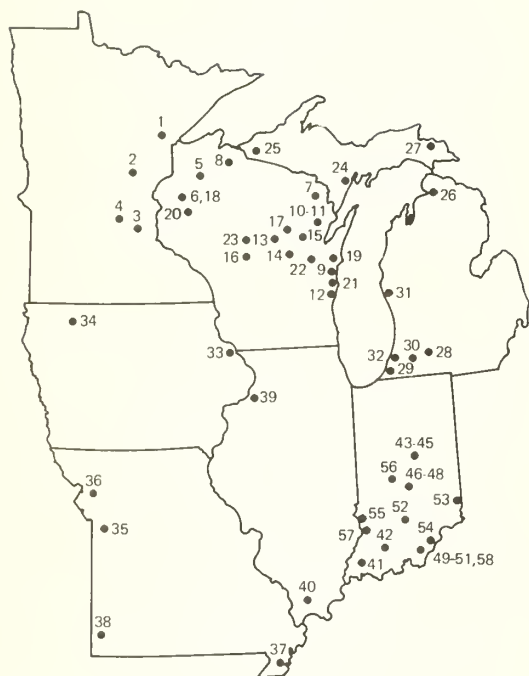


Figure 1.--Location of active veneer mills in the North Central Region, 1974.

MINNESOTA				
Type of mill	Number	Name of mill	Location	
Standard	1	Diamond International Co. ^{1/}	Cloquet	
	2	Wahkon Veneer Mills	Wahkon	
Container	3	Allen Wood Products, Inc.	Hopkins	
	4	Elk River Box Co.	Elk River	
WISCONSIN				
Standard	5	Birchwood Lumber & Veneer Co.	Birchwood	
	6	Birchwood Mfg. Co.	Rice Lake	
	7	Louisiana-Pacific Corp.	Goodman	
	8	Louisiana-Pacific Corp.	Mellen	
	9	Eggers Plywood Co.	Two Rivers	
	10	Gillett Veneer & Plywood Co.	Gillett	
	11	Linwood, Inc.	Gillett	
	12	Larson Plywood Co., Inc.	Sheboygan	
	13	Hatley Veneer Co., Inc.	Hatley	
	14	Marion Plywood Corp.	Marion	
	15	Weber Veneer & Plywood Co.	Shawano	
	16	Weyerhaeuser Co.	Marshfield	
	17	Wisconsin Timber & Land Co.	Mattoon	
Container	18	Brunette Box & Veneer	Rice Lake	
	19	Dufek Mfg. Co.	Denmark	
	20	Ebner Box Factory	Cameron	
	21	Konz Container Co.	Howard Grove	
	22	Seymour Woodenware Co.	Seymour	
	23	Standard Container Co.	Edgar	
MICHIGAN				
Standard	24	Anthony & Co.	Escanaba	
	25	Iron Wood Products	Bessemer	
	26	Manthei Bros.	Petoskey	
	27	Soo Hardwoods, Inc.	Sault Ste. Marie	
Container	28	A. C. Hensel Mfg. Co.	Augusta	
	29	Nelson R. Anderson Co.	Stevensville	
	30	Fruit Growers Package Co.	Paw Paw	
	31	Michigan Crate & Basket	Shelby	
	32	Riverside Package Co.	Riverside	
IOWA				
Standard	33	R. S. Bacon Veneer Co.	Dubuque	
	34	Iowa Veneers, Inc.	Spencer	
MISSOURI				
Standard	35	Vario Veneer Corp.	Pleasant Hill	
	36	Missouri Valley Walnut Co.	St. Joseph	
Container	37	Betz Tipton Veneer Co.	Caruthersville	
	38	Crumbliss Wood Products	Neosho	
ILLINOIS				
Standard	39	Swords Veneer & Lumber Co.	Rock Island	
	40	The Martin Bros. Container & Timber Products, Inc.	Karnak	
INDIANA				
Standard	41	Evansville Veneer Co.	Evansville	
	42	Jasper Veneer Mills	Jasper	
	43	Central Veneer, Inc.	Indianapolis	
	44	Curry Miller Veneers, Inc.	Indianapolis	
	45	Indiana Veneers, Inc.	Indianapolis	
	46	David R. Webb Co.	Edinburg	
	47	Amos Thompson Corp.	Edinburg	
	48	Hill Bros. Veneer Co., Inc.	Edinburg	
	49	B. L. Curry & Sons	New Albany	
	50	Chester B. Stem, Inc.	New Albany	
	51	Adams Custom Veneer Co.	New Albany	
	52	National Veneer & Lumber Co.	Seymour	
	53	Pierson-Holowell Co., Inc.	Lawrenceburg	
	54	Roberts & Strack Veneer Co.	Clarksville	
	55	Ford Sawmill Inc. (Veneer Div.)	Vincennes	
	56	Theising Veneer Co., Inc.	Mooreville	
Container	57	Farrell Box Co., Inc.	Decker	
	58	New Albany Box & Basket Co., Inc.	New Albany	

^{1/} Receipts not recorded to avoid disclosure of operations at this mill.

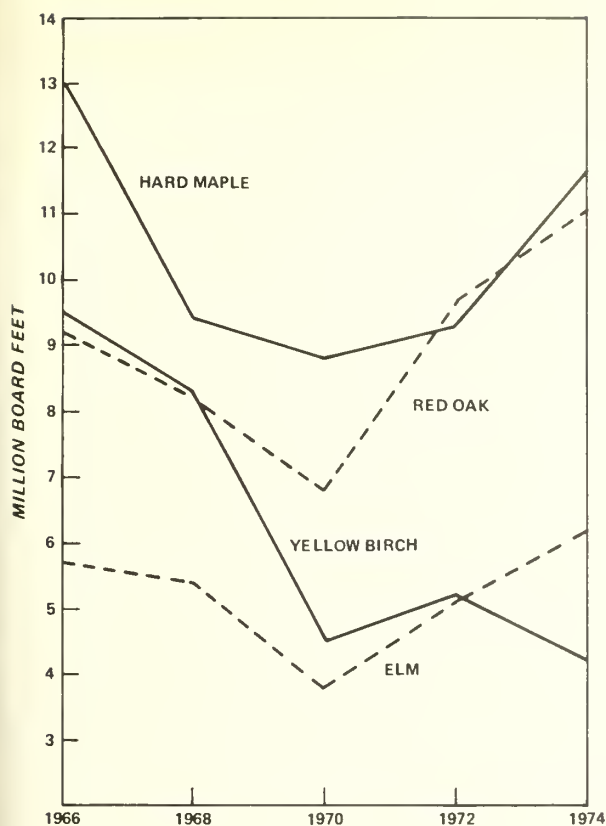


Figure 2.--Veneer-log production of four major species for selected years, Lake States, 1966-1974.

probably because the quantity of elm remaining in Michigan is small. Of the total cut, 39 percent was shipped to Wisconsin and 12 percent was shipped beyond the Lake States. Important species shipped out-of-State were hard maple, yellow birch, and red oak.

In Minnesota, 93 percent of the 5.4 million board feet of veneer logs cut was procured by out-of-State mills. Cottonwood, aspen, elm, and red oak were the dominant species cut.

Mill Receipts

Lake States veneer mills received 67.5 million board feet of logs in 1974 including imports of 4.1 million board feet. Imports from Canada fell 1 million board feet (33 percent) compared to 1972 while log receipts from other States (primarily Iowa) rose half a million board feet. Excluding aspen,

major increases in demand over 1972 were for hard maple, soft maple, and red oak.

Nineteen Wisconsin veneer mills received 41.6 million board feet of logs, 5.1 million board feet more than in 1972. Red oak, hard maple, and elm were the primary species procured. One-fourth of the volume came from Michigan including more than half of the hard maple and yellow birch receipts.

Michigan's mills procured 25.3 million board feet of veneer logs. Imports from Canada were off 44 percent from 1972 and no other wood was purchased outside the Lake States.

Minnesota veneer plants received 0.6 million board feet of logs, up 17 percent from 1972.

Plant Residue⁴

More than 99 percent of the coarse residue generated at Lake States veneer mills in 1974 was used. On the other hand, 36 percent of the fine residue and 41 percent of the bark were not used. The primary use (69 percent) for coarse residue was in fiber products. Important uses for fine residue were industrial fuel (32 percent) and fiber products (28 percent). More than half (58 percent) the bark was used for industrial fuel. Disposal problems appear to be significant for fine residue and bark. The only problem with coarse residue disposal might be in finding higher value markets.

CENTRAL STATES

Production

Central States veneer-log production continued to rebound in 1974 from the low point in 1970 (fig. 3). The harvest was 29.1 million board feet, up 11 percent from 1972. Eighty-five percent (24.8 million board feet) was standard veneer logs, the remainder was used for container veneer.

⁴Plant residue at veneer mills is classed as: (1) bark; (2) coarse (wood)--suitable for chipping, such as veneer cores; or (3) fine (wood)--not suitable for chipping, such as veneer clippings.

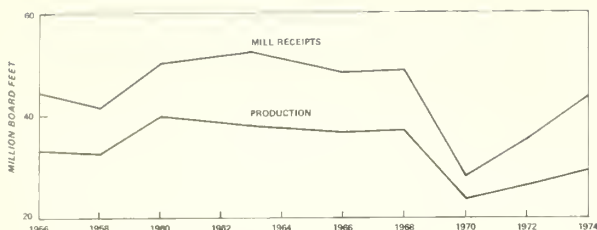


Figure 3.--Veneer-log production and mill receipts in the Central States, 1956-1974.

Principal species cut were:

Species	Million board feet
Walnut	8.5
White oak	5.2
Cottonwood	4.0
Red oak	2.9

Walnut and the oaks were used primarily in furniture and decorative paneling. Cottonwood was used chiefly for containers and pallets.

Important harvest changes between 1972 and 1974 were:

Species	Thousand board feet	Percent
White oak	+1,861	+56
Red oak	+1,217	+70
Walnut	-1,486	-15
Pecan (hickory)	-1,232	-51

Red oak and white oak harvests were the highest recorded in the last 2 decades.

Exports moved slightly higher (3 percent) than in 1972 to 5.5 million board feet; they were mainly to Kentucky (46 percent), Wisconsin (34 percent), and Ohio (13 percent).

Indiana loggers cut half of the Central States veneer log volume. Iowa edged out Illinois for second place in production after being 1.5 million board feet behind in 1972. Only Missouri cut a smaller volume of veneer logs than in 1972.

Mill Receipts

Twenty-six Central States mills received 39.7 million board feet of veneer logs in 1974, a rise of 4.7 million board feet from 1972. These mills imported 16.2 million board feet of logs from 20 other States and Canada including more than 1 million board feet from each of 6 States--Ohio, Kentucky, Oklahoma, Wisconsin, Michigan, and Pennsylvania. Major imports included black cherry from Pennsylvania, pecan from Oklahoma, and white oak from Ohio.

Indiana's 18 veneer mills procured 76 percent of the total log receipts in 1974 including 85 percent or more of the black cherry, hard maple, pecan, red oak, white oak, and yellow-poplar.

Plant Residue

Most wood residue (90 percent) was used so the only significant disposal problem may be in upgrading the uses. On the other hand, 30 percent of the bark was disposed of as waste, a significant increase from only 12 percent in 1972. Industrial fuel was the primary use for both wood and bark residue.

Table 1.--*Production and imports of veneer logs, Lake States, 1974*
(In thousand board feet, International 1/4-inch log rule)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/								IMPORTS			TOTAL : RECEIPTS 2/
	:								:			
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL		OTHER	U.S.	CANADA	IMPORTS			
PINE												
EXPORTED 3/	0	0	10	10	0	0	0	0	0	0	0	
TOTAL	0	0	10	10	0	0	0	0	0	0	0	
OTHER SOFTWOODS												
WISCONSIN	0	0	60	60	0	0	0	0	0	60		
TOTAL	0	0	60	60	0	0	0	0	0	60		
ASH												
MICHIGAN	40	0	0	40	0	0	0	0	0	40		
WISCONSIN	79	19	684	782	39	0	0	39	0	821		
EXPORTED 3/	46	11	12	69	0	0	0	0	0	0	0	
TOTAL	165	30	696	891	39	0	39	861				
ASPEN												
MICHIGAN	9056	1060	11130	21246	0	42	42	21288				
MINNESOTA	0	15	41	56	0	0	0	56				
WISCONSIN	241	0	2674	2915	0	0	0	2915				
EXPORTED 3/	0	43	0	43	0	0	0	0				
TOTAL	9297	1118	13845	24260	0	42	42	24259				
BASSWOOD												
MICHIGAN	367	0	0	367	0	5	5	372				
MINNESOTA	0	189	0	189	0	0	0	189				
WISCONSIN	133	399	1270	1802	223	0	223	2025				
EXPORTED 3/	24	0	5	29	0	0	0	0				
TOTAL	524	588	1275	2387	223	5	228	2586				
BEECH												
MICHIGAN	120	0	0	120	0	0	0	120				
WISCONSIN	390	0	30	420	0	0	0	420				
EXPORTED 3/	200	0	0	200	0	0	0	0				
TOTAL	710	0	30	740	0	0	0	540				
BLACK CHERRY												
MICHIGAN	21	0	0	21	0	0	0	21				
WISCONSIN	10	0	28	38	15	0	15	53				
EXPORTED 3/	11	0	4	15	0	0	0	0				
TOTAL	42	0	32	74	15	0	15	74				

TABLE 1 CONTINUED ON NEXT PAGE

TABLE 1 CONTINUED

BUTTERNUT									
WISCONSIN	0	0	11	11	0	0	0	0	11
EXPORTED 3/	1	40	182	223	0	0	0	0	0
TOTAL	1	40	193	234	0	0	0	0	11
COTTONWOOD									
MICHIGAN	292	0	0	292	0	0	0	0	292
MINNESOTA	0	41	0	41	0	0	0	0	41
WISCONSIN	0	1081	190	1271	170	0	0	170	1441
EXPORTED 3/	0	0	173	173	0	0	0	0	0
TOTAL	292	1122	363	1777	170	0	0	170	1774
ELM									
MICHIGAN	19	0	0	19	0	0	0	0	19
MINNESOTA	0	15	0	15	0	0	0	0	15
WISCONSIN	260	597	4674	5531	112	0	0	112	5643
EXPORTED 3/	110	320	164	594	0	0	0	0	0
TOTAL	389	932	4838	6159	112	0	0	112	5677
GUM									
MICHIGAN	6	0	0	6	0	0	0	0	6
TOTAL	6	0	0	6	0	0	0	0	6
HARD MAPLE									
MICHIGAN	1148	0	0	1148	0	0	0	0	1148
MINNESOTA	0	107	0	107	0	0	0	0	107
WISCONSIN	5790	135	3530	9455	244	983	1227	10682	10682
EXPORTED 3/	985	0	11	996	0	0	0	0	0
TOTAL	7923	242	3541	11706	244	983	1227	11937	11937
PAPER BIRCH									
MICHIGAN	634	32	0	666	0	0	0	0	666
WISCONSIN	293	141	177	611	0	30	30	30	641
TOTAL	927	173	177	1277	0	30	30	30	1307
PECAN (HICKORY)									
WISCONSIN	0	0	0	0	1	0	0	1	1
EXPORTED 3/	30	0	2	32	0	0	0	0	0
TOTAL	30	0	2	32	1	0	0	1	1
RED OAK									
MICHIGAN	108	0	0	108	0	0	0	0	108
MINNESOTA	0	26	0	26	0	0	0	0	26
WISCONSIN	528	781	8705	10014	930	20	950	10964	10964
EXPORTED 3/	456	0	503	959	0	0	0	0	0
TOTAL	1092	807	9208	11107	930	20	950	11098	11098

TABLE 1 CONTINUED ON NEXT PAGE

MICHIGAN	267	0	0	0	267	0	0	0	267	0	0	267
MINNESOTA	0	310	1131	0	0	128	0	0	128	0	0	128
WISCONSIN	308	0	0	1749	169	0	0	0	169	0	0	169
TOTAL	575	310	1131	2016	297	0	0	0	297	0	0	297
SYCAMORE												
MICHIGAN	28	0	0	28	0	0	0	0	0	0	0	28
TOTAL	28	0	0	28	0	0	0	0	0	0	0	28
WALNUT												
EXPORTED 3/	264	17	690	971	0	0	0	0	0	0	0	0
TOTAL	264	17	690	971	0	0	0	0	0	0	0	0
WHITE OAK												
MICHIGAN	6	0	0	6	0	0	0	0	0	0	0	6
MINNESOTA	2	3	66	71	1	0	0	0	1	0	0	72
WISCONSIN	362	7	115	484	0	0	0	0	0	0	0	0
EXPORTED 3/												
TOTAL	370	10	181	561	1	0	0	0	1	0	0	78
YELLOW BIRCH												
MICHIGAN	449	0	6	455	0	323	0	323	323	0	0	778
MINNESOTA	2183	20	999	3202	0	666	0	666	666	0	0	3868
WISCONSIN	515	0	0	515	0	0	0	0	0	0	0	0
EXPORTED 3/												
TOTAL	3147	20	1005	4172	0	989	0	989	989	0	0	4646
YELLOW-POPLAR												
MICHIGAN	163	0	0	163	0	0	0	0	0	0	0	163
MINNESOTA	0	0	64	64	0	0	0	0	0	0	0	64
WISCONSIN												
EXPORTED 3/	163	0	64	227	0	0	0	0	0	0	0	227
TOTAL												
OTHER HARDWOODS												
WISCONSIN	4	0	1	5	1	0	0	0	1	0	0	6
EXPORTED 3/	0	1	0	1	0	0	0	0	0	0	0	0
TOTAL	4	1	1	6	1	0	0	0	1	0	0	6
ALL SPECIES												
MICHIGAN	12724	1092	11136	24952	0	370	0	370	370	0	0	25322
MINNESOTA	0	393	41	434	128	0	0	0	128	0	0	562
WISCONSIN	10221	3486	24294	38001	1905	1699	0	1699	3604	0	0	41605
EXPORTED 3/	3004	439	1871	5314	0	0	0	0	0	0	0	0
TOTAL	25949	5410	37342	68701	2033	2069	0	2069	4102	0	0	67489

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING PRODUCTION BY STATES PRESENT THE AMOUNT OF VENEER LOGS CUT IN EACH STATE.
2/ PRODUCTION MINUS EXPORTS PLUS IMPORTS.
3/ VENEER LOGS SHIPPED TO STATES OUTSIDE THE LAKE STATES AND TO CANADA.

Table 2.--*Mills using five species of Lake States veneer logs, by location, 1974*
(In numbers)

Location	: Red oak	: Hard maple	: Yellow birch	: Elm	: Aspen
Lake States	15	17	11	17	16
Indiana	5	7	--	2	--
Illinois	1	--	--	1	--
Iowa	2	1	--	2	--
Ohio	--	2	--	--	--
Kentucky	1	1	--	1	--
Canada	1	1	1	1	1
Total	25	29	12	24	17

Table 3.--*Veneer-log production and receipts in the Lake States by species, 1972 and 1974*
(In thousand board feet, International 1/4-inch log rule)

Species	Production			Receipts		
	: 1972	: 1974	: change	: 1972	: 1974	: change
Ash	603	891	+288	629	861	+232
Aspen	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>
Basswood	2873	2387	-486	3100	2586	-514
Beech	1065	740	-325	748	540	-208
Black cherry	151	74	-77	128	74	-54
Butternut	346	234	-112	2	11	+9
Cottonwood	1268	1777	+509	1276	1774	+498
Elm	5098	6159	+1061	5255	5677	+422
Hard maple	9255	11706	+2451	9421	11937	+2516
Paper birch	1223	1277	+54	1457	1307	-150
Pecan (hickory)	86	32	-54	4	1	-3
Red oak	9703	11107	+1404	10089	11098	+1009
Soft maple	1040	2016	+976	1185	2313	+1128
Walnut	1376	971	-405	--	--	--
White oak	287	561	+274	202	78	-124
Yellow birch	5187	4172	-1015	6349	4646	-1703
Other species	57	337	+280	49	327	+278
Total	39618	44441	+4823	39894	43230	+3336

1/ Comparison was not meaningful because log production and receipts for one veneer mill were included in 1974 but not in previous years.

Table 4.--Veneer-log production by species group for selected years,
Lake States, 1946-1974
(In million board feet, International 1/4-inch log rule)

Year	Ash	Aspen	Bass- wood	Beech	Yellow : birch	Cotton- wood	Elm	Hard : maple	Soft : maple	Red : oak	White : oak	Paper : birch	Walnut : species	Other : species	All : species
1946	2.3	4.0	10.4	5.6	1/26.8	0.4	16.6	2/40.3	--	3/3.1	--	--	--	1.1	110.6
1952	--	1.4	10.4	3.1	1/18.2	--	11.5	2/23.8	--	3/5.1	--	--	--	4/4.7	78.2
1954	.8	.3	9.2	3.2	1/17.3	2.7	10.5	2/20.9	--	3/5.5	--	--	--	1.6	72.0
1956	.7	.8	10.3	5.7	1/20.3	2.1	9.6	20.1	3.7	3/4.5	--	--	.3	.9	79.0
1958	.6	1.7	7.1	1.8	1/13.1	2.2	8.9	9.7	2.2	3/4.8	--	--	.2	.4	52.7
1960	1.0	2.1	6.2	1.0	1/14.1	1.9	5.1	10.9	2.9	3/7.6	--	--	.6	.6	54.0
1963	.6	1.5	6.6	.3	1/10.9	.4	5.7	10.5	2.2	3/8.9	--	--	2.3	.6	50.5
1965	.7	.6	6.0	.5	1/11.3	1.4	6.3	11.8	1.8	3/9.0	--	--	.9	1.4	51.7
1966	1.1	.7	4.5	.5	1/ 9.5	1.4	5.7	13.1	1.5	9.1	.3	--	1.5	2.0	50.9
1968	1.0	.6	3.6	.5	8.3	1.4	5.4	9.4	1.2	8.2	.5	1.9	1.7	1.8	45.5
1970	.4	1.3	3.2	.3	4.4	1.3	3.8	8.8	.8	6.8	.3	1.2	.6	1.2	34.4
1972	.6	2.6	2.9	1.1	5.2	1.3	5.1	9.2	1.0	9.7	.3	1.2	1.4	.6	42.2
1974	.9	24.2	2.4	.7	4.2	1.8	6.1	11.7	2.0	11.1	.6	1.3	1.0	.7	68.7

1/ Includes paper birch.

2/ Includes soft maple.

3/ Includes white oak.

4/ Includes ash and cottonwood.

Table 5.--Veneer-log production for selected years and type of industry, Lake States, 1946-1974

(In million board feet, International 1/4-inch log rule)

Year	Standard	Container	Total
1946	72.7	37.9	110.6
1948	71.7	45.1	116.8
1950	47.3	39.3	86.6
1952	46.8	31.4	78.2
1954	45.3	26.7	72.0
1956	51.6	27.4	79.0
1958	40.3	12.4	52.7
1960	46.5	7.5	54.0
1962	41.0	6.6	47.6
1963	43.9	6.6	50.5
1965	44.6	7.1	51.7
1966	45.0	5.9	50.9
1968	40.6	4.9	45.5
1970	29.4	5.0	34.4
1972	38.0	4.2	42.2
1974	64.1	4.6	68.7

Table 6.--Lake States veneer-log production, receipts, exports, and imports for selected years, 1946-1972

(In million board feet, International 1/4-inch log rule)

Year	Produced in the Lake: States and received at Lake States Mills:	Exported ^{1/}	Imported ^{2/}	Total production in: Lake States	Total receipts in Lake States
1946	109.7	0.9	5.9	110.6	115.6
1948	116.0	.8	12.0	116.8	128.0
1950	86.0	.6	15.7	86.6	101.7
1952	77.8	.4	12.1	78.2	89.9
1954	71.6	.4	12.1	72.0	83.7
1956	78.7	.3	13.4	79.0	92.1
1958	51.5	1.2	6.0	52.7	57.5
1960	51.9	2.1	12.5	54.0	64.4
1963	45.0	5.5	7.7	50.5	52.7
1965	49.0	2.7	7.6	51.7	56.6
1966	45.8	5.1	9.6	50.9	55.4
1968	39.7	5.8	7.9	45.5	47.6
1970	31.4	3.0	5.6	34.4	37.0
1972	37.7	4.5	4.6	42.2	42.3
1974	63.4	5.3	4.1	68.7	67.5

^{1/} From Lakes States to other States and Canada.

^{2/} From other States and Canada into Lakes States.

Table 7.--Veneer-log receipts in the Lake States by species groups
for selected years, 1952-1974

Year	Ash	Aspen	Bass- wood	Beech	Yellow birch	Cotton- wood	Elm	Hard maple	Soft maple	Red oak	White oak	Paper birch	Other species	All species
1952	--	1.4	10.9	3.2	1/27.1	--	11.7	2/24.9	--	3/5.3	--	--	4/5.4	89.9
1954	.8	.3	10.3	3.2	1/25.0	2.7	10.9	2/22.4	--	3/6.5	--	--	1.6	83.7
1956	.7	.8	10.6	5.7	1/28.5	3.0	10.2	21.9	4.7	3/5.0	--	--	1.0	92.1
1958	.6	1.7	7.3	1.8	1/17.2	2.2	9.2	9.6	2.5	3/5.0	--	--	.4	57.5
1960	1.1	2.1	6.8	.9	1/18.9	3.3	6.2	12.2	3.6	3/8.4	--	--	.9	64.4
1963	.7	1.6	6.7	.3	1/14.3	.7	4.9	11.1	2.6	3/9.3	--	--	.5	52.7
1965	.7	.6	6.3	.5	1/14.5	2.1	6.3	13.2	1.9	3/9.3	--	--	1.2	56.6
1966	1.1	.7	4.8	.5	1/14.7	2.3	5.8	12.8	1.8	9.7	.2	--	1.0	55.4
1968	1.0	.6	3.9	.5	10.2	2.1	5.2	9.0	1.3	8.3	.2	4.0	1.3	47.6
1970	.3	1.3	3.6	.3	6.1	1.4	3.8	9.0	.9	7.7	.2	1.9	.5	37.0
1972	.6	2.4	3.1	.7	6.3	1.3	5.3	9.4	1.2	10.1	.2	1.5	.2	42.3
1974	.9	24.3	2.6	.5	4.6	1.8	5.7	11.9	2.3	11.1	.1	1.3	.4	67.5

1/ Includes paper birch.

2/ Includes soft maple.

3/ Includes white oak.

4/ Includes ash and cottonwood.

Table 8.--Production and disposition of
hardwood veneer plant residue by type
of residue and use, Lake States, 1974
(In thousand cubic feet)

State and type of use	Wood residue			Bark
	Total	Coarse 1/	Fine 2/	
Michigan				
Fiber products	625.6	625.6	--	--
Industrial fuel	166.6	23.2	143.4	144.1
Domestic fuel	16.0	16.0	--	--
Miscellaneous <u>3/</u>	38.9	38.9	--	16.8
Not used <u>4/</u>	1001.6	5.4	996.2	624.0
Total	1848.7	709.1	1139.6	784.9
Minnesota				
Industrial fuel	5.1	2.4	2.7	3.4
Domestic fuel	10.3	9.8	.5	8.0
Miscellaneous <u>3/</u>	8.0	3.6	4.4	--
Not used <u>4/</u>	17.7	--	17.7	6.1
Total	41.1	15.8	25.3	17.5
Wisconsin				
Fiber products	1531.3	685.2	846.1	--
Industrial fuel	1017.7	190.3	827.4	1060.3
Domestic fuel	23.5	23.5	--	--
Miscellaneous <u>3/</u>	385.5	256.1	129.4	4.5
Not used <u>4/</u>	74.8	8.4	66.4	223.1
Total	3032.8	1163.5	1869.3	1287.9
All Lake States				
Fiber products	2156.9	1310.8	846.1	--
Industrial fuel	1189.4	215.9	973.5	1207.8
Domestic fuel	49.8	49.3	.5	8.0
Miscellaneous <u>3/</u>	432.4	298.6	133.8	21.3
Not used <u>4/</u>	1094.1	13.8	1080.3	853.2
Total	4922.6	1888.4	3034.2	2090.3

1/ Suitable for chipping such as veneer cores.

2/ Not suitable for chipping such as veneer clippings.

3/ Livestock bedding, mulch, small dimension and specialty items.

4/ Including residues burned as waste.

Table 9.--*Production and imports of veneer logs, Central States, 1974*
(In thousand board feet, International 1/4-inch log rule)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/						IMPORTS				TOTAL :RECEIPTS 2/
	ILLINOIS :	INDIANA :	IOWA :	MISSOURI :	REGIONAL :	LAKE :	STATES :	OTHER :	U.S. :	IMPORTS :	
PINE											
INDIANA	0	0	0	0	0	0	0	12	12	12	12
ILL., IOWA, MO.	0	0	14	0	14	10	10	0	10	10	24
TOTAL	0	0	14	0	14	10	10	12	22	22	36
ASH											
INDIANA	29	389	0	0	418	1	250	251	669	669	669
ILL., IOWA, MO.	32	15	151	16	214	27	34	61	275	275	275
EXPORTED 3/	0	81	39	0	120	0	0	0	0	0	0
TOTAL	61	485	190	16	752	28	284	312	944	944	944
BASSWOOD											
INDIANA	0	6	0	0	6	24	0	24	30	30	30
ILL., IOWA, MO.	0	0	34	0	34	5	0	5	39	39	39
EXPORTED 3/	0	0	223	0	223	0	0	0	0	0	0
TOTAL	0	6	257	0	263	29	0	29	69	69	69
BLACK CHERRY											
INDIANA	0	161	0	0	161	11	611	622	783	783	783
ILL., IOWA, MO.	0	0	22	0	22	4	0	4	26	26	26
EXPORTED 3/	0	0	15	0	15	0	0	0	0	0	0
TOTAL	0	161	37	0	198	15	611	626	809	809	809
BUTTERNUT											
INDIANA	0	19	4	0	23	220	2	222	245	245	245
ILL., IOWA, MO.	0	0	26	0	26	3	0	3	29	29	29
TOTAL	0	19	30	0	49	223	2	225	274	274	274
COTTONWOOD											
INDIANA	352	2029	0	0	2381	173	18	191	2572	2572	2572
ILL., IOWA, MO.	856	0	4	550	1410	0	1633	1633	3043	3043	3043
EXPORTED 3/	0	0	165	0	165	0	0	0	0	0	0
TOTAL	1208	2029	169	550	3956	173	1651	1824	5615	5615	5615
ELM											
INDIANA	0	32	0	0	32	72	10	82	114	114	114
ILL., IOWA, MO.	277	2	193	0	472	92	36	128	600	600	600
EXPORTED 3/	0	0	157	3	160	0	0	0	0	0	0
TOTAL	277	34	350	3	664	164	46	210	714	714	714

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

GUM											
INDIANA	43	302	0	0	345	0	71	345	0	71	416
ILL., IOWA, MO.	651	0	0	0	651	0	3	651	0	3	654
EXPORTED 3/	4	0	0	4	8	0	0	8	0	0	0
TOTAL	698	302	0	4	1004	0	74	1004	0	74	1070
HARD MAPLE											
INDIANA	1	603	0	0	604	347	4/284	604	347	631	1235
ILL., IOWA, MO.	0	0	46	0	46	11	0	46	11	11	57
EXPORTED 3/	0	220	248	0	468	0	0	468	0	0	0
TOTAL	1	823	294	0	1118	358	284	1118	358	642	1292
PAPER BIRCH											
INDIANA	0	0	0	0	0	0	5/27	0	0	27	27
TOTAL	0	0	0	0	0	0	27	0	0	27	27
PECAN (HICKORY)											
INDIANA	63	414	0	118	595	30	2549	595	30	2579	3174
ILL., IOWA, MO.	19	0	345	74	438	2	4	438	2	6	444
EXPORTED 3/	0	102	1	30	133	0	0	133	0	0	0
TOTAL	82	516	346	222	1166	32	2553	1166	32	2585	3618
RED OAK											
INDIANA	22	1167	0	0	1189	624	1430	1189	624	2054	3243
ILL., IOWA, MO.	20	0	505	1	526	54	5	526	54	59	585
EXPORTED 3/	51	217	948	13	1229	0	0	1229	0	0	0
TOTAL	93	1384	1453	14	2944	678	1435	2944	678	2113	3828
SOFT MAPLE											
INDIANA	25	219	0	0	244	0	17	244	0	17	261
ILL., IOWA, MO.	90	0	0	0	90	0	319	90	0	319	409
EXPORTED 3/	0	0	297	1	298	0	0	298	0	0	0
TOTAL	115	219	297	1	632	0	336	632	0	336	670
SYCAMORE											
INDIANA	20	675	0	0	695	0	57	695	0	57	752
ILL., IOWA, MO.	150	0	0	33	183	0	91	183	0	91	274
EXPORTED 3/	0	0	0	19	19	0	0	19	0	0	0
TOTAL	170	675	0	52	897	0	148	897	0	148	1026
WALNUT											
INDIANA	1081	2217	1010	633	4941	572	2092	4941	572	2664	7605
ILL., IOWA, MO.	395	13	1002	379	1789	280	433	1789	280	713	2502
EXPORTED 3/	126	1013	0	649	1788	0	0	1788	0	0	0
TOTAL	1602	3243	2012	1661	8518	852	2525	8518	852	3377	10107

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

WHITE OAK	904	2885	67	113	3969	207	63032	3239	7208
INDIANA	89	26	153	107	375	13	83	96	471
ILL., IOWA, MO.	125	588	59	59	831	0	0	0	0
EXPORTED 3/									
TOTAL	1118	3499	279	279	5175	220	3115	3335	7679
YELLOW BIRCH									
INDIANA	1	9	0	0	10	0	21	21	31
TOTAL	1	9	0	0	10	0	21	21	31
YELLOW-POPLAR									
INDIANA	15	1194	0	0	1209	0	58	58	1267
ILL., IOWA, MO.	0	0	1	0	1	0	0	0	1
EXPORTED 3/	0	14	0	1	15	0	0	0	0
TOTAL	15	1208	1	1	1225	0	58	58	1268
OTHER HARDWOODS									
INDIANA	165	127	0	57	349	0	177	177	526
ILL., IOWA, MO.	14	0	0	64	78	0	50	50	128
EXPORTED 3/	0	51	1	0	52	0	0	0	0
TOTAL	179	178	1	121	479	0	227	227	654
ALL SPECIES									
INDIANA	2721	12448	1081	921	17171	2281	10718	12999	30170
ILL., IOWA, MO.	2593	56	2496	1224	6369	501	2691	3192	9561
EXPORTED 3/	306	2286	2153	779	5524	0	0	0	0
TOTAL	5620	14790	5730	2924	29064	2782	13409	16191	39731
1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING PRESENT THE AMOUNT OF VENEER LOGS CUT IN EACH STATE.									
2/ PRODUCTION MINUS EXPORTS PLUS IMPORTS.									
3/ VENEER LOGS SHIPPED TO STATES OUTSIDE THE CENTRAL STATES AND TO CANADA.									
4/ INCLUDES 111 THOUSAND BOARD FEET FROM CANADA.									
5/ FROM CANADA.									
6/ INCLUDES 22 THOUSAND BOARD FEET FROM CANADA.									

Table 10.--Veneer-log production and receipts in the
Central States by species, 1972 and 1974
(In thousand board feet, International 1/4-inch log rule)

Species	Production			Receipts		
	: 1972	: 1974	: Change	: 1972	: 1974	: Change
Ash	392	752	+ 360	542	944	+ 402
Basswood	263	263	--	36	69	+ 33
Black cherry	86	198	+ 112	855	809	- 46
Butternut	43	49	+ 6	381	274	- 107
Cottonwood	3478	3956	+ 478	4855	5615	+ 760
Elm	495	664	+ 169	342	714	+ 372
Gum	490	1004	+ 514	606	1070	+ 464
Hard maple	1136	1118	- 18	2425	1292	-1133
Pecan (hickory)	2398	1166	-1232	5690	3618	-2072
Red oak	1727	2944	+1217	1569	3828	+2259
Soft maple	445	632	+ 187	515	670	+ 155
Sycamore	682	897	+ 215	854	1026	+ 172
Walnut	10004	8518	-1486	10984	10107	- 877
White oak	3314	5175	+1861	4034	7679	+3645
Yellow-poplar	1150	1225	+ 75	1231	1268	+ 37
Other species	109	503	+ 394	137	748	+ 611
Total	26212	29064	+2852	35056	39731	+4675

Table 11.--Veneer-log production by species groups for selected
years, Central States, 1956-1974
(In million board feet, International 1/4-inch log rule)

Year	: Cotton- : wood	: Elm	: Hard : maple	: Pecan :(hickory)	: Red : oak	: Soft : maple	: Sycamore	: Walnut	: White : oak	: Yellow- : poplar	: Other : species	: All : species
1956	8.0	0.9	0.8	0.1	1.1	1.8	0.6	10.6	3.4	1.6	4.2	33.1
1958	8.9	.6	1.1	.1	1.0	.5	.5	10.8	2.6	1.1	5.2	32.4
1960	11.2	2.0	1.2	.1	1.5	1.2	2.5	13.2	1.6	1.6	3.8	39.9
1963	7.4	.7	1.6	.8	.9	1.0	1.8	15.5	1.4	2.3	4.6	38.0
1966	6.2	<u>1</u> /.7	1.4	1.1	2.3	.5	1.0	14.7	1.9	3.0	3.9	36.7
1968	4.1	.7	1.3	3.0	2.1	.4	1.2	16.1	3.6	1.3	3.2	37.0
1970	4.8	.6	.8	1.5	1.3	.5	1.3	8.1	1.7	.8	2.1	23.5
1972	3.5	.5	1.1	2.4	1.7	.4	.7	10.0	3.3	1.2	1.4	26.2
1974	4.0	.7	1.1	1.2	2.9	.6	.9	8.5	5.2	1.2	2.8	29.1

1/ Estimated.

Table 12.--Veneer-log receipts by species groups for selected years,
Central States, 1956-1974

(In million board feet, International 1/4-inch log rule)

Year	Cotton- wood	Elm	Hard maple	Pecan (hickory)	Red oak	Soft maple	Sycamore	Walnut	White oak	Yellow- poplar	Other species	All species
1956	10.9	0.8	1.2	0.6	1.3	0.8	1.3	11.4	6.7	2.8	6.6	44.4
1958	10.2	.6	1.7	.3	1.3	.3	1.2	13.0	4.8	1.9	6.3	41.6
1960	10.4	1.0	2.9	.2	1.4	.5	2.3	17.1	3.6	2.8	8.0	50.2
1963	8.6	1.0	3.1	1.6	.9	.8	2.0	21.2	2.3	2.8	7.9	52.2
1966	6.7	<u>1</u> /1.0	3.6	1.6	2.0	.4	1.2	17.9	2.1	4.4	7.3	48.2
1968	5.7	1.0	2.7	4.9	2.3	.5	1.1	18.4	5.2	1.9	5.1	48.8
1970	4.7	.5	1.3	3.0	.8	.6	1.4	10.0	2.0	1.1	2.6	28.0
1972	4.9	.3	2.4	5.7	1.6	.5	.9	11.0	4.0	1.2	2.6	35.1
1974	5.6	.7	1.3	3.6	3.8	.7	1.0	10.1	7.7	1.3	3.9	39.7

1/ Estimated.

Table 13.--Production and disposition of
hardwood veneer plant residue by type
of residue and use, Central States,
1974

(In thousand cubic feet)

State and type of use	:	Wood residue		:	Bark
	:	Total	:Coarse 1/	: Fine 2/	:
Illinois, Iowa and Missouri					
Fiber products		63.2	63.2	--	--
Industrial fuel		315.4	62.9	252.5	49.8
Domestic fuel		5.9	5.9	--	1.6
Miscellaneous <u>3/</u>		28.3	28.3	--	--
Not used <u>4/</u>		283.7	107.0	176.7	244.1
Total		696.5	267.3	429.2	295.5
Indiana					
Fiber products		337.5	141.4	196.1	--
Industrial fuel		1446.1	395.9	1050.2	723.3
Domestic fuel		33.6	18.7	14.9	--
Miscellaneous <u>3/</u>		364.7	272.9	91.8	83.0
Not used <u>4/</u>		19.8	15.5	4.3	128.6
Total		2201.7	844.4	1357.3	934.9
All Central States					
Fiber products		400.7	204.6	196.1	--
Industrial fuel		1761.5	458.8	1302.7	773.1
Domestic fuel		39.5	24.6	14.9	1.6
Miscellaneous <u>3/</u>		393.0	301.2	91.8	83.0
Not used <u>4/</u>		303.5	122.5	181.0	372.7
Total		2898.2	1111.7	1786.5	1230.4

1/ Suitable for chipping, such as veneer cores.

2/ Not suitable for chipping, such as veneer clippings.

3/ Livestock bedding, mulch, small dimension and specialty items.

4/ Including residues burned as waste.

Blyth, James E., and Jerold T. Hahn.

1976. Veneer-log production and receipts, North Central Region, 1974. USDA For. Serv. Resour. Bull. NC-32, 16 p., illus. North Cent. For. Exp. Stn., St. Paul, Minn.

Shows 1974 veneer-log production and receipts by species in the Lake States (Michigan, Minnesota, and Wisconsin) and in the Central States (Illinois, Indiana, Iowa, and Missouri). Comparisons are made with similar data for 1972. Includes tables showing veneer-log production and receipts (for selected years) since 1946 in the Lake States and since 1956 in the Central States.

OXFORD: 832.20:792(77). KEY WORDS: imports, exports, wood residue, bark, veneer mills.

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FOREST STATISTICS FOR IOWA 1974



THE SECOND FOREST
INVENTORY OF IOWA
SHOWS THAT

1.5

MILLION ACRES

OF COMMERCIAL FOREST
LAND SUPPORTED MORE THAN



BILLION

CUBIC FEET OF GROWING STOCK IN 1974

ARNOLD J. OSTROM

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THE AUTHOR

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FOREWORD

Forest Resource Evaluation is a continuing endeavor as mandated by the McSweeney-McNary Forest Research Act of 1928. Its objective is to inventory periodically the Nation's forest land to determine its extent, condition, and volumes of timber, growth, and depletions. This kind of up-to-date information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are charged with the responsibility for conducting these inventories and publishing summary reports for individual States.

Fieldwork for the 1974 Iowa Forest Inventory was begun in May 1973 and completed in June 1974. This report presents some of the statistical highlights of that inventory.

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Highlights	1
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FOREST STATISTICS FOR IOWA, 1974

Arnold J. Ostrom

HIGHLIGHTS

Area

Four percent of the land area in Iowa is forested.

Commercial forest land totaled 1,458,700 acres in 1974.

Most of the commercial forest land is in the eastern part of the State along the Mississippi River, and in a band along the eastern half of the Iowa-Missouri border.

Farmers own two-thirds of the commercial forest land.

The oak forest types account for 56 percent of the commercial area and are broken down into the white oak-red oak-hickory type (515,000 acres), white oak type (150,000 acres), and bur oak type (149,000 acres).

Sawtimber stands account for more than half the commercial forest area.

Volume

The State's commercial forest land supports 1,055 million cubic feet of growing stock. Included in the total volume of growing stock are 3,486 million board feet of sawtimber.

Hardwoods make up 99 percent of the growing-stock inventory.

Oaks, soft maple, elm, and cottonwood are the leading species and make up two-thirds of the hardwood growing-stock volume.

Volume in rough and rotten trees (non-growing-stock trees) is 308 million cubic feet.

Volume of growing-stock timber averages 723 cubic feet per acre of commercial forest land.

Growth and Mortality

Net annual growth of growing-stock trees totaled 48 million cubic feet. The growth rate was 4.6 percent of inventory volume.

Mortality of growing-stock trees in 1973 amounted to 6.9 million cubic feet. Elm, hit hard by Dutch elm disease, accounted for almost two-thirds of this total.

Timber Products

Iowa loggers harvested 53.5 million board feet of saw logs in 1972 of which 80 percent was red oak, cottonwood, elm, white oak, and soft maple.

Iowa's 60 sawmills received 59.6 million board feet of saw logs in 1972; 15 percent came from other States.

Fifty-five thousand cords of pulpwood were produced in 1972, about twice the volume as in the early 1960's.

HOW THE FOREST INVENTORY IS MADE

The method of survey is essentially a sampling procedure designed to provide reliable statistics primarily for States and Survey Units. A total of 398,046, 1-acre points distributed systematically across aerial photos of the entire State were observed. A photo interpreter classified these points as either forest land (19,111), questionable (1,662), or nonforest land (377,273) in order to make a preliminary estimate of forest area. Next, 9,541 of the forest points and 831 of the questionable points were stereoclassified as to

forest type, stand-size class, and density. Then, 636 points classed as forest, 55 points classed as questionable, and 11,940 points classed as nonforest were examined on the ground. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassifications.

Estimates of timber volume, growth, mortality, and forest classifications were based on tree measurements recorded at 531 ground sample locations distributed within the commercial forest land base. A 10-point cluster of plots (37.5 basal area factor) were systematically spaced on an acre at each of these sample locations.

Ownership information was collected by contacting local landowners and from public records.

All field data were sent to St. Paul where they were edited, punched on cards, and stored on magnetic tape for later electronic computer sorting, computing, and tabulating.

Industrial roundwood data for 1972 came from a complete canvass of primary wood-using firms using Iowa logs and bolts. All canvassing in Iowa (except pulpmills) was done by the Iowa Conservation Commission through personal contacts with the firms. The North Central Forest Experiment Station sent questionnaires to Iowa pulpmills and out-of-State mills using Iowa roundwood.

The Station also obtained by mail questionnaire the 1972 timber product output data for public forest land and forest land owned by primary wood-using firms. The portion of timber products output unaccounted for by public and private industrial owners was grouped under "farm and other owners."

Fuelwood, post, and farm timber production in 1972 from private land (other than industrial) was determined by a canvass of a sample of Iowa households. Households in the sample were contacted by Iowa Conservation Commission personnel.

RELIABILITY OF THE DATA

Statistical analysis of these data indicates the following sampling errors in

terms of one standard error (two times out of three):

<i>Item</i>	<i>State totals</i>	<i>Sampling error (Percent)</i>
Commercial forest land	1,458.7 M acres	2.25
Growing-stock volume	1,055 MM cu. ft.	3.96
Sawtimber volume	3,486 MM bd. ft.	4.67
Per million acres of commercial forest land		2.72
Per billion cubic feet of growing stock		4.07
Per billion board feet of sawtimber		8.63

As survey data are broken down into units smaller than State totals, the sampling error increases. The percent error figure doubles as the area or volume is divided by four.

DEFINITION OF TERMS

Land-Use Classes

Gross area.--The entire area of land and water as determined by the Bureau of Census, 1970.

Land area.--The area of dry land and land temporarily or partially covered by water such as marshes, swamps, flood plains, streams, sloughs, and estuaries. Canals less than 1/8-mile wide and lakes, reservoirs, and ponds smaller than 40 acres are included as land area. These figures are from the Bureau of Census, 1970.

Forest land.--Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Includes afforested areas. The minimum forest area classified was 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas were classed as forest if less than 120 feet wide.

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

by statute or administrative regulation. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both inaccessible and inoperable areas.

Noncommercial forest land.--(a) Unproductive--forest land incapable of yielding crops of industrial wood because of diverse site conditions. (b) Productive--reserved--forest land withdrawn from commercial timber use through statute or administrative regulation, or exclusively used for Christmas tree production.

Nonforest land.--Land that has never supported forests, and land formerly forested where forest use is precluded by development for nonforest uses, such as cropland, improved pasture, residential areas, and city parks. Also includes improved roads and adjoining rights-of-way, powerline clearings, and certain areas of water classified by the Bureau of Census as land. Improved roads, streams, canals, and nonforest strips in forest areas must be more than 120 feet wide, and clearings in forest areas must be more than 1 acre in size, to qualify as nonforest land.

Ownership Classes

Miscellaneous Federal.--Federal land other than national forest.

State, county, and municipal.--Land owned by States, counties, or local public agencies, or land leased by them for more than 50 years.

Forest industry.--Land owned by companies or individuals operating primary wood-using plants.

Farmer-owned.--Land owned by operators of farms. A farm must include 10 or more acres from which the sale of agricultural products totals \$50 or more annually, or if less than 10 acres, the yield must be at least \$250 annually.

Miscellaneous private.--Privately owned land other than forest industry or farmer-owned.

Tree Classes

All live trees.--Growing-stock, rough, or rotten trees 1 inch d.b.h. and larger.

Growing-stock trees.--All live trees of commercial species qualifying as desirable or acceptable trees. Excludes rough, rotten, and dead trees.

Desirable trees.--Growing-stock trees having no serious defects in quality limiting present or prospective use, and of relatively high vigor and containing no pathogens that may result in death or serious deterioration before rotation age. These trees would be favored by forest managers in silvicultural operations.

Acceptable trees.--Trees meeting the standards for growing stock but not qualifying as desirable trees.

Sawtimber trees.--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs, each 8 feet or longer. At least 33 percent of the gross volume of the tree must be sound wood. Softwoods must be at least 9.0 inches d.b.h. and hardwoods at least 11.0 inches.

Poletimber trees.--Growing-stock trees of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size, and of good form and vigor.

Saplings.--Live trees of commercial species 1.0 to 5.0 inches d.b.h. and of good form and vigor.

Seedlings.--Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive according to regional standards. (Examples of seedlings not expected to survive are those that are diseased or heavily damaged by logging, browsing, or fire.) Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Rotten trees.--Live trees (any size) of commercial species that do not contain a merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of rot (that is, when more than 50 percent of the cull volume of the tree is rotten).

Rough trees.--Live trees that do not contain at least one merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of roughness and poor form, as well as all live noncommercial species.

Short-log (rough trees).--Sawtimber-sized trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Stand-Size Classes

Stand.--A minimum of 1 acre of forest land that is stocked by forest trees of any size.

Sawtimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber or poletimber trees and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, and with half or more of this stocking in sawtimber and/or poletimber trees and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands.--Stands at least 16.7 percent stocked with growing-stock trees and with saplings and/or seedlings comprising more than half of this stocking.

Nonstocked areas.--Commercial forest land on which stocking of growing-stock trees is less than 16.7 percent.

Stocking

The degree trees utilize land as measured in terms of basal area and/or the number of trees in a stand compared to the basal area and/or number of trees required to utilize fully the growth potential of the land.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees do reach 5 inches d.b.h.

Forest Types

A classification of forest land based upon the species forming a plurality of live-tree stocking. Major forest types in Iowa are:

Eastern redcedar-hardwood.--Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking but in which eastern redcedar comprises 25 to 50 percent of the stocking.

White oak-red oak-hickory.--Forests in which white oak, northern red oak, black oak, northern pin oak, bur oak, shagbark or bitternut hickory, singly or in combination, comprises a plurality of the stocking. Common associates include white or green ash, sugar maple, and occasionally black cherry, butternut, bigtooth aspen, and black walnut. The type is often referred to by the generic term "oak-hickory."

White oak.--Forests in which white oak singly comprises more than 50 percent of the stocking of the primary typing species for the oak-hickory type. Associated species are black oak, northern red oak, bur oak, shagbark and bitternut hickories, white ash, and bigtooth aspen.

Bur oak.--Forests in which bur oak singly comprises more than 50 percent of the stocking of the primary typing species for the oak-hickory type. Associated species include northern pin oak, northern red oak, white oak, black oak, basswood, American elm, green ash, boxelder, hackberry, cottonwood, and hophornbeam.

Elm-ash-cottonwood.--Forests in which elm, ash, or cottonwood, singly or in combination, comprises a plurality of the stocking. Associates include black willow, sycamore, boxelder, silver maple, river birch, and other moist site hardwood species.

Cottonwood.--Forests in which cottonwood singly comprises a plurality of the stocking of the major typing species of the elm-ash-cottonwood type.

Hard maple-basswood.--Forests in which sugar maple or basswood, singly or in combination, comprises a plurality of the stocking. Associated species include American elm, green ash, yellow birch, white pine, and northern red oak.

Aspen.--Forests in which quaking aspen or bigtooth aspen, singly or in combination, comprises a plurality of the stocking. Associates include bur oak, green ash, American elm, paper birch, and boxelder.

Timber Volume

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

Volume of sawtimber.--Net volume of the saw log portion of live sawtimber trees in board feet, International 1/4-inch rule, from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

Upper stem portion.--That part of the bole of sawtimber trees above the merchantable sawtimber top to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Growth and Mortality

Net annual growth of growing stock.--The annual change in volume of sound wood in live growing-stock and sawtimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Net annual growth of sawtimber.--The annual change in volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

Mortality of growing stock.--The volume of sound wood in growing-stock trees dying annually from natural causes. Natural causes include fire, insects, disease, animal damage, weather, and suppression.

Mortality of sawtimber.--The net board-foot volume of sawtimber trees dying annually from natural causes.

Timber Products

Timber products output.--All timber products cut from roundwood, and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and

limbwood. Byproducts from primary manufacturing plants include slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulp chips or other products.

Primary wood-using plant residue.--Wood materials (coarse and fine) and bark not utilized for principal products at manufacturing plants using roundwood. These residues include wood products (byproducts) obtained incidental to production of principal products, and wood materials not utilized for some product.

Coarse plant residue.--Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Fine plant residue.--Wood residue not suitable for chipping, such as sawdust and veneer clippings.

PRINCIPAL TREE SPECIES IN IOWA

SOFTWOOD SPECIES

Balsam fir *Abies balsamea*
Eastern redcedar *Juniperus virginiana*
Eastern white pine *Pinus strobus*

HARDWOOD SPECIES

Select white oaks:

White oak *Quercus alba*
Swamp white oak *Quercus bicolor*
Bur oak *Quercus macrocarpa*
Chinkapin oak *Quercus muehlenbergii*

Other white oaks:

Overcup oak *Quercus lyrata*
Post oak . *Quercus stellata* var. *stellata*

Select red oaks:

Northern red oak *Quercus rubra*

Other red oaks:

Northern pin oak . . *Quercus ellipsoidalis*
Shingle oak *Quercus imbricaria*
Pin oak *Quercus palustris*
Black oak *Quercus velutina*

Hickory:

Bitternut hickory . . . *Carya cordiformis*
Shellbark hickory . . . *Carya laevis*
Shagbark hickory . . . *Carya ovata*
Mockernut hickory . . . *Carya tomentosa*

Hard maple:
 Black maple. *Acer nigrum*
 Sugar maple. *Acer saccharum*

Soft maple:
 Silver maple *Acer saccharinum*

Ashes:
 White ash. *Fraxinus americana*
 Black ash. *Fraxinus nigra*
 Green ash. *Fraxinus pennsylvanica*

Eastern cottonwood *Populus deltoides*

Aspens:
 Bigtooth aspen . . . *Populus grandidentata*
 Quaking aspen. . . . *Populus tremuloides*

American basswood. *Tilia americana*

Elms:
 American elm *Ulmus americana*
 Slippery elm *Ulmus rubra*
 Rock elm *Ulmus thomasi*

Black walnut *Juglans nigra*
 Black cherry *Prunus serotina*
 Hackberry. *Celtis occidentalis*

Willows:
 Black willow *Salix nigra*

Birches:
 River birch. *Betula nigra*
 Paper birch. *Betula papyrifera*

Other hardwoods:
 Boxelder *Acer negundo*
 Ohio buckeye *Aesculus glabra*
 Honeylocust. *Gleditsia triacanthos*
 Kentucky coffeetree. . *Gymnocladus dioicus*
 Butternut. *Juglans cinerea*
 Osage-orange *Maclura pomifera*
 Red mulberry *Morus rubra*
 American sycamore *Platanus occidentalis*
 Black locust *Robinia pseudoacacia*

Noncommercial species

3. Area of commercial forest land, by ownership class and Forest Survey Unit.

4. Area of commercial forest land, by stand-size, ownership class, and Forest Survey Unit.

5. Area of commercial forest land, by forest type and ownership class.

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Table 1.--Area of land, by land class and Forest Survey Unit, Iowa, 1974
(In thousand acres)

Land class	: All : units	: Northeast :	: Southeast :	: Western :
Forest land:				
Commercial	1,458.7	584.5	659.4	214.8
Productive reserved	75.9	23.1	43.4	9.4
Unproductive	26.7	6.9	5.5	14.3
Total forest	1,561.3	614.5	708.3	238.5
Nonforest land:				
Nonforest with trees				
Wooded pasture	189.3	101.8	68.1	19.4
Wooded strips	179.5	33.7	74.7	71.1
Improved pasture w/trees	314.4	86.6	161.8	66.0
Cropland with trees	160.8	48.4	27.6	84.8
Idle farmland with trees	13.8	--	13.8	--
Windbreaks	8.0	--	--	8.0
Total nonforest w/trees	865.8	270.5	346.0	249.3
Nonforest without trees				
Cropland without trees ^{1/}	28,131.4	7,087.6	8,021.5	13,022.3
O. farmland without trees	3,606.1	719.6	1,568.4	1,318.1
Marsh	70.3	29.6	8.4	32.3
Urban and other	1,632.7	464.5	657.0	511.2
Total nonforest wo/trees	33,440.5	8,301.3	10,255.3	14,883.9
Total nonforest	34,306.3	8,571.8	10,601.3	15,133.2
Total land area ^{2/}	35,867.6	9,186.3	11,309.6	15,371.7

^{1/} Source: 1969 Census of Agriculture.

^{2/} Source: United States Bureau of the Census, Land and Water Area of the United States, 1970.

Table 2.--Area of land and forest land, by county, Iowa, 1974

Survey unit and county	: All land ¹ : Thousand : acres	: All forest : Thousand : acres	Forest land		Commercial forest : as a percent of : land area
			Commercial : Thousand : acres	Non- commercial : Thousand : acres	
Northeastern					Percent
Allamakee	406.8	101.8	100.3	1.5	25
Benton	459.3	15.3	14.7	.6	3
Black Hawk	363.5	12.9	9.8	3.1	3
Bremer	281.0	12.6	12.2	.4	4
Buchanan	363.6	11.2	10.3	.9	3
Butler	372.5	9.3	8.8	.5	3
Cedar	374.4	15.6	15.2	.4	4
Chickasaw	323.4	8.1	7.8	.3	2
Clayton	498.8	84.4	82.1	2.3	16
Clinton	443.8	24.0	23.6	.4	5
Delaware	365.8	19.4	17.1	2.3	5
Dubuque	391.8	38.2	36.7	1.5	9
Fayette	465.9	28.0	27.2	.8	6
Floyd	321.9	7.7	7.3	.4	2
Grundy	320.6	.7	.6	.1	--
Howard	301.4	6.5	6.2	.3	2
Jackson	412.0	57.6	56.3	1.3	14
Johnson	396.4	25.2	19.1	6.1	5
Jones	374.4	28.3	27.4	.9	7
Linn	458.8	32.3	28.3	4.0	6
Mitchell	298.8	5.0	4.8	.2	2
Scott	290.3	10.8	10.4	.4	4
Tama	460.8	19.8	19.2	.6	4
Winneshiek	440.3	39.8	39.1	.7	9
Total	9,186.3	614.5	584.5	30.0	6
Southeastern					
Appanoose	334.7	30.5	25.2	5.3	8
Boone	366.7	22.4	18.0	4.4	5
Clarke	274.5	22.5	22.2	.3	8
Dallas	382.0	19.2	17.4	1.8	5
Davis	325.9	26.8	25.9	.9	8
Decatur	339.2	29.2	28.0	1.2	8
Des Moines	261.2	26.0	25.0	1.0	10
Guthrie	381.4	25.5	24.4	1.1	6
Hamilton	369.5	6.2	6.0	.2	2
Hardin	367.2	9.5	8.9	.6	2
Henry	281.6	23.0	21.9	1.1	8
Iowa	373.6	18.2	18.0	.2	5
Jasper	470.0	12.0	11.3	.7	2
Jefferson	279.0	17.8	17.6	.2	6
Keokuk	370.5	16.0	15.8	.2	4
Lee	337.5	50.7	50.0	.7	15
Louisa	258.0	22.2	22.2	--	9
Lucas	277.6	31.7	29.4	2.3	11
Madison	361.0	26.0	25.4	.6	7
Mahaska	366.0	15.5	15.1	.4	4
Marion	362.9	26.7	17.4	9.3	5
Marshall	367.4	8.5	7.9	.6	2
Monroe	278.4	34.4	34.1	.3	12
Muscatine	283.2	19.2	18.7	.5	7
Polk	380.0	17.3	10.1	7.2	3
Poweshiek	377.0	7.6	7.3	.3	2
Story	363.5	5.5	5.2	.3	1
Van Buren	311.6	38.2	36.0	2.2	12
Wapello	279.4	23.3	23.0	.3	8
Warren	365.8	24.2	22.7	1.5	6
Washington	363.5	18.7	17.2	1.5	5
Wayne	340.3	15.9	14.8	1.1	4
Webster	459.5	17.9	17.3	.6	4
Total	11,309.6	708.3	659.4	48.9	6

(Table 2 cont. on next page)

(Table 2 cont.)

Survey unit and county	All land ¹	All forest	Forest land		Commercial forest as a percent of land area
			Commercial	Non- commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Western					
Adair	364.2	6.2	5.7	.5	2
Adams	272.6	7.6	7.1	.5	3
Audubon	286.7	1.3	1.1	.2	--
Buena Vista	366.3	2.4	2.1	.3	1
Calhoun	365.6	.6	0.5	.1	--
Carroll	367.3	1.0	.5	.5	--
Cass	357.8	2.7	2.5	.2	1
Cerro Gordo	368.1	.9	.6	.3	--
Cherokee	366.7	4.7	4.0	.7	1
Clay	364.9	3.9	3.4	.5	1
Crawford	458.2	4.6	4.2	.4	1
Dickinson	242.9	.6	.4	.2	--
Emmet	252.3	2.7	2.0	.7	1
Franklin	375.0	3.3	2.7	.6	1
Fremont	335.2	14.0	12.4	1.6	4
Greene	364.1	6.4	5.8	.6	2
Hancock	364.9	.9	.5	.4	--
Harrison	445.3	30.5	28.2	2.3	6
Humboldt	278.4	2.5	2.2	.3	1
Ida	275.8	.5	.3	.2	--
Kossuth	626.6	2.5	2.3	.2	--
Lyon	376.3	1.7	1.6	.1	--
Mills	285.8	12.7	11.9	.8	4
Monona	447.5	25.1	22.5	2.6	5
Montgomery	270.1	4.7	4.2	.5	2
O'Brien	367.9	1.3	1.1	.2	--
Osceola	254.6	.1	.1	--	--
Page	342.4	7.3	6.9	.4	2
Palo Alto	358.7	1.5	1.4	.1	--
Plymouth	552.3	5.2	4.8	.4	1
Pocahontas	371.6	.8	.8	--	--
Pottawattamie	616.4	13.9	12.9	1.0	2
Ringgold	344.1	15.2	14.1	1.1	4
Sac	370.0	1.7	1.4	.3	--
Shelby	375.7	1.8	1.6	.2	--
Sioux	490.3	1.0	.7	.3	--
Taylor	337.7	10.3	9.5	.8	3
Union	272.0	15.4	14.5	.9	5
Winnebago	256.7	.3	.2	.1	--
Woodbury	557.6	14.5	12.6	1.9	2
Worth	256.1	1.6	1.1	.5	--
Wright	369.0	2.6	2.4	.2	1
Total	15,371.7	238.5	214.8	23.7	1
STATE TOTAL	35,867.6	1,561.3	1,458.7	102.6	4

¹1970 Bureau of the Census estimates.

Table 3.--Area of commercial forest land, by ownership class and Forest Survey Unit, Iowa, 1974
(In thousand acres)

Ownership class	: All : : units : :	: North- : : eastern : :	: South- : : eastern : :	: Western : :
Public	111.2	58.6	37.0	15.6
Forest industry	16.7	3.7	13.0	--
Farmer	987.0	384.7	443.6	158.7
Miscellaneous private	343.8	137.5	165.8	40.5
All ownerships	1458.7	584.5	659.4	214.8

Table 4.--Area of commercial forest land, by stand-size, ownership class, and Forest Survey Unit, Iowa, 1974
(In thousand acres)

Unit and stand-size class	: All : : ownerships : :	: Public : :	: Forest : : industry : :	: Farmer : :	: Misc. : : private : :
Northeastern Unit					
Sawtimber	375.2	34.3	2.6	249.9	88.4
Poletimber	123.2	12.8	.7	86.4	23.3
Sapling and seedling	61.0	11.5	--	33.7	15.8
Nonstocked	25.1	--	.4	14.7	10.0
All classes	584.5	58.6	3.7	384.7	137.5
Southeastern Unit					
Sawtimber	316.8	31.8	6.0	192.9	86.1
Poletimber	179.4	5.2	3.7	126.1	44.4
Sapling and seedling	152.8	--	3.2	117.1	32.5
Nonstocked	10.4	--	.1	7.5	2.8
All classes	659.4	37.0	13.0	443.6	165.8
Western Unit					
Sawtimber	89.4	3.2	--	61.8	24.4
Poletimber	54.0	3.1	--	36.5	14.4
Sapling and seedling	64.5	5.7	--	58.1	.7
Nonstocked	6.9	3.6	--	2.3	1.0
All classes	214.8	15.6	--	158.7	40.5
All Units					
Sawtimber	781.4	69.3	8.6	504.6	198.9
Poletimber	356.6	21.1	4.4	249.0	82.1
Sapling and seedling	278.3	17.2	3.2	208.9	49.0
Nonstocked	42.4	3.6	.5	24.5	13.8
All classes	1458.7	111.2	16.7	987.0	343.8

Table 5.--Area of commercial forest land, by forest type
and ownership class, Iowa, 1974
(In thousand acres)

Forest types	: All : :ownerships:	Public	: Forest : : Industry:	Farmer	: Misc. : Private
Eastern redcedar-hardwood	34.9	--	.2	34.7	--
White oak-red oak-hickory	514.8	18.0	7.1	384.9	104.8
White oak	150.1	10.9	2.4	104.4	32.4
Bur oak	148.7	4.7	1.6	83.3	59.1
Elm-ash-cottonwood	404.1	68.6	3.4	242.6	89.5
Cottonwood	12.3	3.1	--	6.2	3.0
Hard maple-basswood	143.6	2.4	1.5	98.5	41.2
Aspen	7.8	--	--	7.8	--
Nonstocked	42.4	3.5	.5	24.6	13.8
Total all forest types	1458.7	111.2	16.7	987.0	343.8

Table 6.--Area of commercial forest land, by forest type, stand-size, class,
and Forest Survey Unit, Iowa, 1974
(In thousand acres)

Forest Survey Unit and forest type	: All : stands	: Sawtimber : stands	: Poletimber : stands	: Sapling and : seedling : : stands :	Nonstocked areas
Northeastern Unit					
Eastern redcedar-hardwood	11.5			11.5	
White oak-red oak-hickory	198.4	121.6	61.2	15.6	
White oak	34.9	26.3	8.6		
Bur oak	41.9	31.9	5.3	4.7	
Elm-ash-cottonwood	155.1	103.7	35.6	15.8	
Hard maple-basswood	109.8	83.9	12.5	13.4	
Aspen	7.8	7.8			
Nonstocked	25.1				25.1
All forest types	584.5	375.2	123.2	61.0	25.1
Southwestern Unit					
Eastern redcedar-hardwood	10.6			10.6	
White oak-red oak-hickory	272.6	96.1	95.0	81.5	
White oak	107.1	67.5	39.6		
Bur oak	62.0	38.9	6.6	16.5	
Elm-ash-cottonwood	177.9	108.0	33.5	36.4	
Hard maple-basswood	18.8	6.3	4.7	7.8	
Nonstocked	10.4				10.4
All forest types	659.4	316.8	179.4	152.8	10.4
Western Unit					
Eastern redcedar-hardwood	12.8			12.8	
White oak-red oak-hickory	43.8	9.2	12.7	21.9	
White oak	8.1		8.1		
Bur oak	44.8	19.2	25.6		
Elm-ash-cottonwood	71.1	39.1	7.6	24.4	
Cottonwood	12.3	12.3			
Hard maple-basswood	15.0	9.6		5.4	
Nonstocked	6.9				6.9
All forest types	214.8	89.4	54.0	64.5	6.9
All Units					
Eastern redcedar-hardwood	34.9			34.9	
White oak-red oak-hickory	514.8	226.9	168.9	119.0	
White oak	150.1	93.8	56.3		
Bur oak	148.7	90.0	37.5	21.2	
Elm-ash-cottonwood	404.1	250.8	76.7	76.6	
Cottonwood	12.3	12.3			
Hard maple-basswood	143.6	99.8	17.2	26.6	
Aspen	7.8	7.8			
Nonstocked	42.4				42.4
All forest types	1458.7	781.4	356.6	278.3	42.4

Table 7.--Number of all live trees on commercial forest land, by species and diameter class, Iowa, 1974
(In thousand trees)

Species	All classes	Diameter Class (inches at breast height)																29.0- : 39.0+
		1.0- : 2.9	3.0- : 4.9	5.0- : 6.9	7.0- : 8.9	9.0- : 10.9	11.0- : 12.9	13.0- : 14.9	15.0- : 16.9	17.0- : 18.9	19.0- : 20.9	21.0- : 22.9	23.0- : 28.9	29.0- : 38.9				
Softwoods:																		
White and red pine	9	--	--	--	--	--	--	--	9	--	--	--	--	--	--	--	--	
Eastern redcedar	13,160	7,556	3,160	1,168	728	325	145	53	16	9	--	--	--	--	--	--	--	
Other softwoods	99	--	65	34	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total softwoods	13,268	7,556	3,225	1,202	728	325	145	53	25	9	--	--	--	--	--	--	--	
Hardwoods:																		
Select white oaks	54,411	13,613	11,274	7,944	7,300	4,650	2,851	2,486	1,686	1,108	613	373	409	104	--	--	--	
Select red oaks	18,084	3,314	2,993	2,020	2,549	2,000	1,658	1,245	791	544	384	235	273	73	5	--	--	
Other white oaks	634	303	--	172	101	18	--	22	9	6	--	3	--	--	--	--	--	
Other red oaks	15,933	4,733	3,435	2,841	1,643	1,186	953	494	228	224	77	40	51	26	2	--	--	
Hickory	72,068	38,738	18,374	7,525	3,494	1,832	1,140	511	267	127	37	5	15	3	--	--	--	
Hard maple	11,837	5,577	1,791	1,540	790	649	406	411	204	224	99	43	92	11	--	--	--	
Soft maple	32,721	13,099	9,355	3,131	2,228	1,458	1,366	818	415	252	182	150	146	106	15	--	--	
Ash	22,295	13,925	2,747	2,254	1,483	785	386	234	160	83	99	64	53	22	--	--	--	
Cottonwood	3,732	203	465	646	332	358	418	273	250	159	174	112	211	97	34	--	--	
Aspen	10,422	5,334	2,454	998	601	533	373	72	14	23	9	8	3	--	--	--	--	
Basswood	26,054	12,427	5,371	2,558	1,720	1,427	736	725	457	272	136	112	97	15	1	--	--	
Fir	90,002	54,510	17,520	8,481	4,312	2,068	1,101	735	505	307	190	112	129	27	5	--	--	
Black walnut	10,554	3,449	2,172	1,485	1,453	861	470	329	181	75	51	19	9	--	--	--	--	
Black cherry	11,160	4,102	3,429	1,873	855	375	271	154	50	40	9	--	--	2	--	--	--	
Hackberry	18,084	10,643	4,652	1,327	557	498	133	84	63	37	26	13	41	7	3	--	--	
Willow	19,142	10,451	3,062	2,376	1,269	697	471	327	237	140	55	35	22	--	--	--	--	
Birch	4,492	2,442	395	545	299	310	164	219	59	22	23	3	9	2	--	--	--	
Other hardwoods	29,595	12,562	6,336	4,149	2,816	1,864	795	447	305	131	81	30	52	23	4	--	--	
Noncommercial species	103,215	85,436	13,982	3,155	536	102	--	--	--	--	4	--	--	--	--	--	--	
Total hardwoods	554,435	284,861	109,807	55,020	34,338	21,671	13,692	9,586	5,881	3,774	2,249	1,357	1,612	518	69	--	--	
Total all species	567,703	302,417	113,032	56,222	35,066	21,996	13,837	9,639	5,906	3,783	2,249	1,357	1,612	518	69	--	--	

Table 8.--Number of growing-stock trees on commercial forest land, by species and diameter class, Iowa, 1974
(In thousand trees)

Species	All classes	Diameter Class (inches at breast height)													
		1.0- 2.9	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 39.0+	
Softwoods:															
Eastern redcedar	8,672	5,887	1,377	674	515	89	74	39	8	9	--	--	--	--	
Other softwoods	99	--	64	35	--	--	--	--	--	--	--	--	--	--	
Total softwoods	8,771	5,887	1,441	709	515	89	74	39	8	9	--	--	--	--	
Hardwoods:															
Select white oaks	34,754	5,233	7,747	5,933	5,742	3,361	1,985	1,936	1,236	719	394	192	241	35	
Select red oaks	12,879	1,858	2,565	1,437	2,039	1,334	1,122	964	568	421	248	150	145	27	
Other white oaks	264	--	--	113	101	19	--	22	--	6	--	3	--	--	
Other red oaks	9,602	2,680	2,089	1,608	1,068	866	617	342	108	127	40	20	24	11	
Hickory	52,068	25,174	14,228	6,360	3,031	1,589	949	416	200	83	32	--	6	--	
Hard maple	8,757	3,730	1,698	1,133	680	537	251	314	174	117	59	18	45	1	
Soft maple	20,951	7,847	5,951	2,082	1,468	1,150	926	640	285	190	164	94	91	56	
Ash	14,636	8,676	1,822	1,790	973	606	331	151	116	48	64	25	24	10	
Cottonwood	3,336	203	465	439	251	344	392	273	242	158	171	109	194	75	
Aspen	5,083	2,184	898	821	402	358	314	54	14	23	9	3	--	--	
Basswood	15,256	6,815	3,247	1,578	1,015	1,026	442	487	352	163	54	42	29	6	
Elm	49,443	25,745	12,065	5,280	2,898	1,551	689	483	304	202	84	62	67	12	
Black walnut	6,736	869	1,925	1,284	1,148	612	354	309	146	46	32	11	--	--	
Black cherry	6,071	2,816	1,508	819	495	145	183	87	14	--	4	--	--	--	
Hackberry	12,115	6,119	3,951	987	423	341	109	54	39	27	16	14	33	2	
Willow	8,679	3,305	1,784	1,368	802	619	358	202	130	69	23	7	12	--	
Birch	1,929	636	73	356	220	252	138	148	54	22	18	4	8	--	
Other hardwoods	7,365	1,786	2,939	864	832	568	109	107	80	40	18	8	11	3	
Total hardwoods	269,924	105,676	64,955	34,252	23,588	15,278	9,269	6,989	4,062	2,461	1,430	762	933	238	
Total all species	278,695	111,563	66,396	34,961	24,103	15,367	9,343	7,028	4,070	2,470	1,430	762	933	238	

Table 9.--Net volume of growing stock on commercial forest land, by species and diameter class, Iowa, 1974
(In million cubic feet)

Species	All classes	Diameter Class (inches at breast height)									
		5.0- : 6.9 :	7.0- : 8.9 :	9.0- : 10.9 :	11.0- : 12.9 :	13.0- : 14.9 :	15.0- : 16.9 :	17.0- : 18.9 :	19.0- : 20.9 :	21.0- : 22.9 :	23.0- : 29.0- : 39.0+ :
Softwoods	5.7	1.3	2.0	.7	.7	.6	.2	.2	--	--	--
Eastern redcedar	.1	.1	--	--	--	--	--	--	--	--	--
Other softwoods											
Total softwoods	5.8	1.4	2.0	.7	.7	.6	.2	.2	--	--	--
Hardwoods:											
Select white oaks	231.7	13.8	27.5	27.9	25.9	36.7	31.1	23.4	15.7	9.4	15.9
Select red oaks	126.3	4.0	10.7	12.2	15.3	18.7	15.7	15.4	11.2	8.3	11.1
Other white oaks	1.6	.3	.4	.1	--	.4	--	.2	--	.2	--
Other red oaks	43.2	3.3	5.0	7.4	7.8	6.3	2.8	4.2	1.8	1.0	1.6
Hickory	78.7	16.0	15.8	15.2	13.5	8.3	5.4	2.6	1.4	--	.5
Hard maple	38.3	3.3	3.8	5.0	3.6	6.4	4.8	4.2	2.5	1.2	3.3
Soft maple	109.5	5.8	8.9	12.1	15.2	15.2	10.1	9.0	9.5	6.1	7.6
Ash	35.3	4.3	5.1	5.3	4.7	3.0	3.2	2.2	3.1	1.6	1.9
Cottonwood	91.7	1.5	1.5	3.6	6.8	6.8	8.1	7.0	9.7	8.1	20.3
Aspen	17.4	2.2	3.0	3.7	5.0	1.2	.4	1.0	.4	.2	.3
Basswood	57.7	3.6	5.3	9.6	6.6	9.8	9.5	5.9	2.5	2.1	2.0
Elm	95.4	12.8	16.9	14.2	10.1	9.8	8.4	8.0	4.0	4.0	5.3
Black walnut	31.8	3.0	5.9	5.3	4.7	5.8	3.5	1.4	1.6	.6	--
Black cherry	11.5	2.1	2.6	1.5	2.8	1.9	.4	--	.2	--	--
Hackberry	15.9	2.1	2.1	2.7	1.6	1.2	1.0	.9	.8	.7	2.6
Willow	31.0	3.3	4.4	5.8	5.1	4.3	3.3	2.7	1.0	.4	.7
Birch	14.1	.9	1.4	2.3	2.1	3.1	1.7	.9	.8	.2	.7
Other hardwoods	17.8	1.8	3.4	3.9	1.3	1.8	2.1	1.0	.8	.5	.3
Total hardwoods	1,048.9	84.1	123.7	137.8	132.1	140.7	111.5	90.0	67.0	44.6	74.7
Total all species	1,054.7	85.5	125.7	138.5	132.8	141.3	111.7	90.2	67.0	44.6	74.7
											8.8
											33.9
											8.8

Table 10.--Net volume of sawtimber on commercial forest land, by species and diameter class, Iowa, 1974
(In million board feet)¹

Species	All classes	Diameter class (inches at breast height)									
		9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+
softwoods:											
Eastern redcedar	11.5	3.8	2.9	2.3	1.1	1.4	--	--	--	--	--
Total softwoods	11.5	3.8	2.9	2.3	1.1	1.4	--	--	--	--	--
ardwoods:											
Select white oaks	812.4	--	129.2	182.0	156.1	116.3	82.3	48.9	81.1	16.5	--
Select red oaks	511.2	--	79.1	99.6	80.4	75.0	60.8	42.6	56.4	15.6	1.7
Other white oaks	4.7	--	--	2.4	--	1.4	--	.9	--	--	--
Other red oaks	144.2	--	42.0	33.3	14.3	22.3	8.4	5.4	8.4	8.4	1.7
Hickory	164.5	--	71.3	42.4	27.3	14.8	6.8	--	1.9	--	--
Hard maple	137.0	--	21.9	36.1	24.0	23.0	11.9	5.0	14.6	.5	--
Soft maple	361.7	--	65.4	70.1	44.8	39.3	42.6	27.2	35.5	31.9	4.9
Ash	99.1	--	19.9	14.9	17.6	9.7	15.6	7.5	9.9	4.0	--
Cottonwood	436.4	--	31.9	35.3	40.7	36.9	53.3	42.4	105.2	63.9	26.8
Aspen	37.6	--	21.8	4.7	2.3	4.7	1.8	1.1	1.2	--	--
Basswood	199.4	--	32.7	52.9	48.8	30.6	10.9	10.5	9.7	3.3	--
Elm	243.2	--	48.7	46.9	42.0	36.6	19.0	18.6	24.7	5.9	.8
Black walnut	88.3	--	22.6	28.5	18.6	8.7	7.2	2.7	--	--	--
Black cherry	23.6	--	12.7	8.4	1.6	--	.9	--	--	--	--
Hackberry	43.2	--	9.4	6.0	4.9	4.5	3.7	2.9	11.2	.6	--
Willow	82.0	--	23.9	20.2	16.1	11.9	5.2	1.6	3.1	--	--
Birch	43.4	--	9.1	15.0	7.7	4.0	3.4	.9	3.3	--	--
Other hardwoods	43.1	--	6.5	8.9	10.9	5.6	3.8	1.6	4.4	1.4	--
Total hardwoods	3,475.0	--	648.1	707.6	558.1	445.3	337.6	219.8	370.6	152.0	35.9
Total all species	3,486.5	3.8	651.0	709.9	559.2	446.7	337.6	219.8	370.6	152.0	35.9

¹/ International 1/4-inch rule.

Table 11.--Net volume of growing stock on commercial forest land, by species and forest type, Iowa, 1974
(In million cubic feet)

Species	All forest types	Eastern red cedar	White oak: red oak	White oak: hickory	Bur oak	Elm-ash: cottonwood	Cottonwood	Sugar maple: Basswood	Aspen
Softwoods:									
Eastern redcedar	5.7	3.8	.6	.4	.5	--	--	.4	--
Other softwoods	.1	--	.1	--	--	--	--	--	--
Total softwoods	5.8	3.8	.7	.4	.5	--	--	.4	--
Hardwoods:									
Select white oaks	231.7	1.2	63.4	91.0	56.5	11.3	--	8.1	.2
Select red oaks	126.3	--	93.6	12.2	2.7	3.1	--	14.5	.2
Other white oaks	1.6	--	.5	1.0	.1	--	--	--	--
Other red oaks	43.2	.5	27.6	10.2	3.6	1.2	--	.1	--
Hickory	78.7	.8	58.4	7.2	3.5	3.5	--	5.3	--
Hard maple	38.3	--	11.4	.6	--	2.2	--	24.1	--
Soft maple	109.5	--	.5	.7	1.7	106.4	--	.2	--
Ash	35.3	.4	8.4	2.8	.7	20.3	--	2.7	--
Cottonwood	91.7	.7	2.7	--	.8	60.5	26.8	.2	--
Aspen	17.4	--	7.0	1.1	.4	4.0	--	2.3	2.6
Basswood	57.7	.3	12.7	3.5	3.0	4.2	--	34.0	--
Elm	95.4	--	24.8	5.8	7.4	33.2	.2	23.8	.2
Black walnut	31.8	.6	8.9	3.0	2.1	13.0	.6	3.6	--
Black cherry	11.5	--	6.0	.8	.2	3.5	--	.8	.2
Hackberry	15.9	--	2.1	.2	1.4	11.3	.1	.8	--
Willow	31.0	--	--	--	.2	30.7	.1	--	--
Birch	14.1	.7	1.7	--	.2	10.9	--	.6	--
Other hardwoods	17.8	--	4.8	.4	1.0	9.0	.6	2.0	--
Total hardwoods	1,048.9	5.2	334.5	140.5	85.5	328.3	28.4	123.1	3.4
Total all species	1,054.7	9.0	335.2	140.9	86.0	328.3	28.4	123.5	3.4

Table 12.--Net volume of sawtimber on commercial forest land, by species and forest type, Iowa, 1974
(In million board feet)¹

Species	All forest types	Forest types									
		Eastern redcedar	White oak-red oak-hickory	White oak	Bur oak	Elm-ash-Cottonwood	Cottonwood	Sugar maple-Basswood	Aspen		
Softwoods:											
Eastern redcedar	11.5	6.6	2.1	1.5	1.3	--	--	--	--		
Total softwoods	11.5	6.6	2.1	1.5	1.3	--	--	--	--		
Hardwoods:											
Select white oaks	812.4	4.3	202.8	322.5	202.6	47.5	--	31.5	1.2		
Select red oaks	511.2	--	375.4	48.4	10.2	13.4	--	62.5	1.3		
Other white oaks	4.7	--	1.4	2.6	.7	--	--	--	--		
Other red oaks	144.2	--	90.1	36.8	12.6	4.7	--	--	--		
Hickory	164.5	--	112.4	18.5	10.1	11.1	--	12.4	--		
Hard maple	137.0	--	37.6	.7	--	9.6	--	89.1	--		
Soft maple	361.7	--	.9	2.5	4.1	353.6	--	.6	--		
Ash	99.1	.6	14.4	2.8	1.5	73.1	--	6.7	--		
Cottonwood	436.4	1.8	12.4	--	3.4	284.3	133.3	1.2	--		
Aspen	37.6	--	13.9	2.8	--	12.0	--	2.0	6.9		
Basswood	199.4	--	39.0	6.7	8.3	16.1	--	129.3	--		
Elm	243.2	--	62.3	8.8	17.8	81.7	--	71.4	1.2		
Black walnut	88.3	2.4	27.4	4.2	5.0	34.4	.7	14.2	--		
Black cherry	23.6	--	8.6	1.4	.8	9.5	--	2.3	1.0		
Hackberry	43.2	--	4.8	--	3.9	33.3	--	1.2	--		
Willow	82.0	--	--	--	.9	81.1	--	--	--		
Birch	43.4	2.6	4.1	--	--	35.3	--	1.4	--		
Other hardwoods	43.1	--	7.9	1.3	1.2	24.5	1.7	6.5	--		
Total hardwoods	3,475.0	11.7	1,015.4	460.0	283.1	1,125.2	135.7	432.3	11.6		
Total all species	3,486.5	18.3	1,017.5	461.5	284.4	1,125.2	135.7	432.3	11.6		

¹/ International 1/4-inch rule.

**Table 13.--Net volume of growing stock on
commercial forest land, by species and
Forest Survey Unit, Iowa, 1974
(In million cubic feet)**

Species	: All : units	: North- : eastern : unit	: South- : eastern : unit	: Western : unit
Softwoods:				
Eastern redcedar	5.7	1.1	2.7	1.9
Other softwoods	.1	.1	--	--
Total softwoods	5.8	1.2	2.7	1.9
Hardwoods:				
Select white oaks	231.7	71.0	129.0	31.7
Select red oaks	126.3	64.5	57.8	4.0
Other white oaks	1.6	.3	1.3	--
Other red oaks	43.2	16.4	26.5	.3
Hickory	78.7	27.5	42.1	9.1
Hard maple	38.3	34.1	4.2	--
Soft maple	109.5	33.4	66.5	9.6
Ash	35.3	16.9	11.1	7.3
Cottonwood	91.7	22.2	34.1	35.4
Aspen	17.4	15.5	1.9	--
Basswood	57.7	36.7	16.9	4.1
Elm	95.4	66.5	16.3	12.6
Black walnut	31.8	16.5	10.8	4.5
Black cherry	11.5	8.5	2.6	.4
Hackberry	15.9	2.7	10.5	2.7
Willow	31.0	10.8	12.0	8.2
Birch	14.1	10.8	3.3	--
Other hardwoods	17.8	4.5	12.1	1.2
Total hardwoods	1,048.9	458.8	459.0	131.1
Total all species	1,054.7	460.0	461.7	133.0

**Table 14.--Net volume of sawtimber on
commercial forest land, by species and
Forest Survey Unit, Iowa, 1974
(In million board feet)¹**

Species	: All : units	: North- : eastern : unit	: South- : eastern : unit	: Western : unit
Softwoods:				
Eastern redcedar	11.5	1.3	6.8	3.4
Total softwoods	11.5	1.3	6.8	3.4
Hardwoods:				
Select white oaks	812.4	275.8	442.3	94.3
Select red oaks	511.2	275.3	220.2	15.7
Other white oaks	4.7	1.4	3.3	--
Other red oaks	144.2	61.2	83.0	--
Hickory	164.5	67.3	79.6	17.6
Hard maple	137.0	121.9	15.1	--
Soft maple	361.7	101.6	224.1	36.0
Ash	99.1	50.8	26.1	22.2
Cottonwood	436.4	102.8	162.9	170.7
Aspen	37.6	29.7	7.9	--
Basswood	199.4	132.8	46.9	19.7
Elm	243.2	170.4	34.0	38.8
Black walnut	88.3	47.4	29.8	11.1
Black cherry	23.6	19.7	3.9	--
Hackberry	43.2	5.4	32.5	5.3
Willow	82.0	34.6	36.2	11.2
Birch	43.4	31.9	11.5	--
Other hardwoods	43.1	8.9	31.5	2.7
Total hardwoods	3,475.0	1,538.9	1,490.8	445.3
Total all species	3,486.5	1,540.2	1,497.6	448.7

^{1/} International 1/4-inch rule.

Table 15.--Net volume of growing stock,
sawtimber, and rough and rotten trees
on commercial forest land, by individual
species, Iowa, 1974

Species	: Growing : stock	: Rough and : rotten trees	: Sawtimber
	: Million : cubic feet	: Million : cubic feet	: Million : board feet ^{1/}
Softwoods:			
Balsam fir	.1	3.9	11.5
Eastern redcedar	5.7	--	--
Total softwoods	5.8	3.9	11.5
Hardwoods:			
Select white oak group			
White oak	148.3	29.8	515.6
Swamp white oak	4.7	1.0	15.6
Bur oak	77.8	44.9	278.4
Chinkapin oak	.9	.4	2.8
Select red oak group			
Northern red oak	126.3	23.9	511.2
Other white oak group			
Overcup oak	.4	--	2.1
Post oak	1.2	.2	2.6
Other red oak group			
Northern pin oak	6.0	2.3	26.4
Shingle oak	3.2	2.0	5.2
Pin oak	4.8	1.4	15.6
Black oak	29.2	11.0	97.0
Hickory			
Bitternut hickory	18.1	3.3	37.9
Shellbark hickory	.4	--	.7
Shagbark hickory	59.0	7.3	121.3
Mockernut hickory	1.2	--	4.6
Hard maple group			
Black maple	13.0	2.6	36.9
Sugar maple	25.3	6.9	100.1
Soft maple group			
Silver maple	109.5	29.1	361.7
Ash group			
White ash	10.1	2.6	15.5
Black ash	1.5	--	3.7
Green ash	23.7	6.3	79.9
Cottonwood group			
Eastern cottonwood	91.7	6.1	436.4
Aspen group			
Bigtooth aspen	7.9	.8	14.8
Quaking aspen	9.5	1.6	22.8
Basswood group			
American basswood	57.7	11.9	199.4
Elm group			
American elm	58.5	32.7	145.9
Slippery elm	36.7	8.6	96.6
Rock elm	.2	.1	.7
Black walnut	31.8	6.3	88.3
Black cherry	11.5	8.1	23.6
Hackberry	15.9	4.7	43.2
Willow group			
Black willow	31.0	8.1	82.0
Birch group			
River birch	12.1	1.8	40.4
Paper birch	2.0	1.0	3.0
Other hardwoods			
Boxelder	5.0	17.0	7.9
Ohio buckeye	1.5	.3	4.0
Honeylocust	5.0	8.3	14.2
Kentucky coffeetree	.4	.4	.9
Butternut	2.6	1.3	7.1
Osage-orange	.3	.8	--
Red mulberry	.2	1.6	--
American sycamore	2.2	.4	9.0
Black locust	.6	1.1	--
Noncommercial species	--	6.0	--
Total hardwoods	1,048.9	304.0	3,475.0
Total all species	1,054.7	307.9	3,486.5

^{1/} International 1/4-inch rule.

Table 16.--*Net volume of growing stock, sawtimber, and rough and rotten trees on commercial forest land, by county, Iowa, 1974*

Survey Unit and county	: Growing stock :Thousand cubic feet	: Sawtimber :Thousand board feet	: Rough and rotten :Thousand cubic feet
Northeastern:			
Allamakee	85,128	283,378	28,269
Benton	11,170	37,602	4,268
Black Hawk	6,589	21,055	3,263
Bremer	10,695	37,506	3,778
Buchanan	7,383	23,745	2,990
Butler	5,683	19,557	2,642
Cedar	11,046	36,787	4,237
Chickasaw	6,083	20,654	2,117
Clayton	67,421	230,933	23,129
Clinton	17,187	56,678	7,467
Delaware	13,548	45,508	4,616
Dubuque	27,861	91,541	9,932
Fayette	21,968	74,766	7,245
Floyd	4,799	16,081	1,906
Grundy	379	1,169	188
Howard	5,094	17,285	1,676
Jackson	42,770	141,002	15,737
Johnson	15,075	51,854	5,582
Jones	20,337	66,261	7,745
Linn	21,343	69,850	8,379
Mitchell	3,821	13,692	1,268
Scott	7,292	24,284	3,136
Tama	14,875	50,692	5,579
Winneshiek	32,460	108,284	10,715
Total	460,007	1,540,164	165,884
Southeastern:			
Appanoose	16,092	50,925	4,219
Boone	13,170	44,573	2,940
Clarke	12,793	37,171	3,651
Dallas	13,277	44,109	2,926
Davis	16,707	52,222	4,390
Decatur	16,664	50,691	4,814
Des Moines	18,156	59,100	4,301
Guthrie	17,990	59,823	4,013
Hamilton	4,344	14,578	1,050
Hardin	6,412	20,846	1,464
Henry	13,606	41,337	3,519
Iowa	14,799	50,811	3,146
Jasper	8,819	30,483	1,936
Jefferson	12,166	39,385	2,917
Keokuk	12,227	40,642	2,628
Lee	32,950	101,413	8,127
Louisa	19,984	70,708	4,052
Lucas	19,873	62,011	4,883
Madison	16,529	52,500	4,314
Mahaska	12,637	43,064	2,648
Marion	10,945	34,993	2,992
Marshall	6,739	23,790	1,326
Monroe	22,009	68,379	5,579
Muscatine	14,633	49,747	3,164
Polk	7,525	26,300	1,849
Poweshiek	5,346	18,060	1,197
Story	4,151	14,058	874
Van Buren	22,760	71,624	6,036
Wapello	16,327	53,133	3,789
Warren	15,597	51,645	3,828
Washington	13,760	45,317	3,040
Wayne	9,830	31,234	2,436
Webster	12,920	42,888	2,845
Total	461,737	1,497,560	110,893

(Table 16 continued on next page)

(Table 16 continued)

Western:			
Adair	3,304	10,242	844
Adams	4,975	17,765	1,072
Audubon	541	1,601	165
Buena Vista	1,103	3,220	258
Calhoun	640	3,020	77
Carroll	634	2,770	81
Cass	1,636	6,039	393
Cerro Gordo	602	2,368	60
Cherokee	2,342	7,789	593
Clay	2,521	9,176	527
Crawford	2,445	7,381	601
Dickinson	111	211	66
Emmet	1,441	5,443	339
Franklin	2,320	9,224	403
Fremont	7,231	23,025	1,838
Greene	4,619	17,756	887
Hancock	211	542	86
Harrison	15,936	50,579	3,982
Humboldt	1,607	5,742	307
Ida	531	2,470	42
Kossuth	2,480	10,403	372
Lyon	1,118	4,017	224
Mills	7,331	24,308	1,773
Monona	12,006	37,022	3,170
Montgomery	3,007	10,970	620
O'Brien	911	3,776	168
Osceola	89	327	23
Page	4,438	14,591	1,005
Palo Alto	1,159	4,236	215
Plymouth	3,150	10,935	716
Pocahontas	436	1,035	105
Potawattamie	7,716	25,554	1,849
Ringgold	8,180	26,588	2,023
Sac	1,025	4,117	219
Shelby	1,231	4,806	254
Sioux	723	3,149	102
Taylor	5,718	19,164	1,381
Union	7,304	23,263	1,782
Winnebago	67	120	23
Woodbury	7,690	25,277	1,857
Worth	593	1,858	175
Wright	1,804	6,813	384
Total	132,926	448,692	31,061
State total	1,054,670	3,486,416	307,838

Table 17.--Annual growth of growing stock on commercial forest land, by species and Forest Survey Unit, Iowa, 1973

(In thousand cubic feet)

Species	All	North- eastern	South- eastern	Western
Softwoods:				
Eastern redcedar	287	84	113	90
Other softwoods	8	8	--	--
Total softwoods	295	92	113	90
Hardwoods:				
Select white oaks	6,859	1,976	4,010	873
Select red oaks	4,150	2,004	1,950	196
Other white oaks	53	7	46	--
Other red oaks	2,156	621	1,522	13
Hickory	3,610	874	2,419	317
Hard maple	1,407	1,270	137	--
Soft maple	6,232	2,212	3,785	235
Ash	2,292	1,009	918	365
Cottonwood	4,518	1,227	1,525	1,766
Aspen	1,000	956	44	--
Basswood	2,386	1,736	572	78
Elm	5,631	3,920	1,103	608
Black walnut	1,291	633	498	160
Black cherry	615	356	230	29
Hackberry	1,045	174	638	233
Willow	2,497	813	917	767
Birch	1,306	1,128	178	--
Other hardwoods	868	211	590	67
Total hardwoods	47,916	21,127	21,082	5,707
Total all species	48,211	21,219	21,195	5,797

Table 18.--Annual growth of sawtimber on commercial forest land, by species and Forest Survey Unit, Iowa, 1973

(In thousand board feet)¹

Species	All units	North- eastern	South- eastern	Western
Softwoods:				
Eastern redcedar	208	41	154	13
Total softwoods	208	41	154	13
Hardwoods:				
Select white oaks	18,502	6,217	10,529	1,756
Select red oaks	12,437	6,848	5,236	353
Other white oaks	117	37	80	--
Other red oaks	4,600	1,930	2,670	--
Hickory	3,024	1,287	1,496	241
Hard maple	3,387	3,054	333	--
Soft maple	16,681	5,112	10,763	806
Ash	2,912	1,801	798	313
Cottonwood	18,246	4,805	6,638	6,803
Aspen	1,152	989	163	--
Basswood	5,767	4,807	648	312
Elm	7,732	5,581	1,138	1,013
Black walnut	1,603	910	498	195
Black cherry	684	513	171	--
Hackberry	1,050	171	753	126
Willow	4,050	1,749	1,741	560
Birch	2,450	1,966	484	--
Other hardwoods	1,181	262	797	122
Total hardwoods	105,575	48,039	44,936	12,600
Total all species	105,783	48,080	45,090	12,613

¹/ International 1/4-inch rule.

Table 19.--Annual mortality of growing stock on commercial forest land, by species and Forest Survey Unit, Iowa, 1973

(In thousand cubic feet)

Species	All units	North- eastern	South- eastern	Western
Softwoods:				
Eastern redcedar	50	50	--	--
Total softwoods	50	50	--	--
Hardwoods:				
Select white oaks	225	119	106	--
Select red oaks	801	505	296	--
Other red oaks	729	586	143	--
Hickory	133	133	--	--
Ash	121	121	--	--
Aspen	45	45	--	--
Basswood	79	79	--	--
Elm	4,261	1,605	1,912	744
Black walnut	37	37	--	--
Willow	241	241	--	--
Birch	73	73	--	--
Other hardwoods	112	112	--	--
Total hardwoods	6,857	3,656	2,457	744
Total, all species	6,907	3,706	2,457	744

Table 20.--Annual mortality of sawtimber on commercial forest land, by species and Forest Survey Unit, Iowa, 1973.

(Thousand board feet)^{1/}

Species	All units	North- eastern	South- eastern	Western
Softwoods:				
Eastern redcedar	99	99	--	--
Total softwoods	99	99	--	--
Hardwoods:				
Select white oaks	290	--	290	--
Select red oaks	3,242	2,410	832	--
Other red oaks	3,179	2,152	1,027	--
Hickory	575	575	--	--
Ash	548	548	--	--
Basswood	391	391	--	--
Elm	16,017	5,966	6,497	3,554
Willow	986	986	--	--
Birch	348	348	--	--
Total hardwoods	25,576	13,376	8,646	3,554
Total all species	25,675	13,475	8,646	3,554

^{1/} International 1/4-inch rule.

Table 21.--Timber products output from roundwood, by
species and Forest Survey Unit, Iowa, 1972
(In thousand cubic feet)

Species	: All : units	: North- : eastern	: South- : eastern	: Western
Softwoods:				
White and red pine	37	16	--	21
Eastern redcedar	19	--	--	19
Total softwoods	56	16	--	40
Hardwoods:				
Select white oaks	2,121	1,296	787	38
Select red oaks	2,398	1,802	587	9
Other white oaks	13	5	8	--
Other red oaks	728	458	269	1
Hickory	721	435	285	1
Hard maple	348	343	--	5
Soft maple	1,573	363	969	241
Ash	3,720	395	121	3,204
Cottonwood	1,884	355	820	709
Aspen	198	100	93	5
Basswood	674	625	40	9
Elm	6,532	2,318	683	3,531
Black walnut	1,155	703	328	124
Black cherry	23	21	2	--
Hackberry	132	52	73	7
Willow	252	220	27	5
Birch	192	59	133	--
Other hardwoods	197	107	66	24
Total hardwoods	22,861	9,657	5,291	7,913
Total all species	22,917	9,673	5,291	7,953

Table 22.--Output of timber products, by source of material and softwoods and hardwoods, all Units, Iowa, 1972

Products and : species group :	Standard : unit 1/ :	Total :	Output from roundwood :				Output from plant byproducts			
			No. of units	M cu. ft.	No. of units	M cu. ft.	No. of units	M cu. ft.	No. of units	M cu. ft.
Saw logs and bolts:	M bd. ft.									
Softwood			105	17	105	17	--	--	--	--
Hardwood			53,389	8,987	43,021	7,145	10,368	1,842	--	--
Total			53,494	9,004	43,126	7,162	10,368	1,842	--	--
Veneer logs and bolts:	M bd. ft.									
Softwood			--	--	--	--	--	--	--	--
Hardwood			5,187	1,157	3,877	865	1,310	292	--	--
Total			5,187	1,157	3,877	865	1,310	292	--	--
Cooperage logs:	M bd. ft.									
Softwood			--	--	--	--	--	--	--	--
Hardwood			626	102	570	93	56	9	--	--
Total			626	102	570	93	56	9	--	--
Pulpwood	Std. cords									
Softwood			--	--	--	--	--	--	--	--
Hardwood			43,427	3,431	20,367	1,609	10,532	832	12,528	990
Total			43,427	3,431	20,367	1,609	10,532	832	12,528	990
Poles:	M pieces									
Softwood			--	--	--	--	--	--	--	--
Hardwood			--	--	--	--	--	--	--	--
Total			--	--	--	--	--	--	--	--
Mine timbers	M cu. ft.									
Softwood			--	--	--	--	--	--	--	--
Hardwood			10	10	8	8	2	2	--	--
Total			10	10	8	8	2	2	--	--
Posts:	M pieces									
Softwood			1	*	1	*	--	--	--	--
Hardwood			325	185	223	126	102	59	--	--
Total			326	185	224	126	102	59	--	--
Charcoal wood:	Std. cords									
Softwood			--	--	--	--	--	--	--	--
Hardwood			--	--	--	--	--	--	--	--
Total			--	--	--	--	--	--	--	--
Other ^{2/} :	Std. cords									
Softwood			3	3	--	--	--	--	3	3
Hardwood			1,377	1,377	222	222	--	--	1,155	1,155
Total			1,380	1,380	222	222	--	--	1,158	1,158
Fuelwood:	Std. cords									
Softwood			600	39	185	12	415	27	--	--
Hardwood			156,299	10,160	47,597	3,094	102,502	6,663	6,200	403
Total			156,899	10,199	47,782	3,106	102,917	6,690	6,200	403
All products	M. cu. ft.									
Softwood			59	59	29	29	27	27	3	3
Hardwood			25,409	25,409	13,162	13,162	9,699	9,699	2,548	2,548
Total			25,468	25,468	13,191	13,191	9,726	9,726	2,551	2,551

1/ M (meaning thousand) board feet by International 1/4-inch rule. Cords are on a roughwood, 128 cubic foot basis.

2/ Includes farm timbers, mulch, livestock bedding, poultry litter, etc.

* Less than 500 cubic feet.

Table 23.--Volume of primary plant residue, by source industry, kind of material, and type of use, Iowa, 1972
(In thousand cubic feet)

Source industry and kind of residue	Volume by type of use							
	Fiber 1/:		Fuel 2/:		Other 3/:		Not used 4/:	
	Hard- wood	Industrial: Hardwood	Domestic Softwood	Hardwood	Soft- wood	Hard- wood	Soft- wood	Hard- wood
Lumber:								
Coarse 5/	987.2	0.5	0.1	324.3	--	239.7	4.7	1,305.0
Fine 6/	--	0.1	--	9.8	2.8	847.3	--	809.5
Bark	129.4	--	0.1	225.1	--	79.0	3.0	1,411.6
Total	1,116.6	0.6	0.2	559.2	2.8	1,166.0	7.7	3,526.1
All other:								
Coarse 5/	2.5	--	--	--	--	50.0	--	27.7
Fine 6/	--	68.3	--	--	--	18.3	--	42.7
Bark	365.8	55.4	--	--	--	42.8	--	415.0
Total	368.3	123.7	--	--	--	111.1	--	485.4
All industries:								
Coarse 5/	989.7	0.5	0.1	324.3	--	289.7	4.7	1,332.7
Fine 6/	--	68.4	--	9.8	2.8	865.6	--	852.2
Bark	495.2	55.4	0.1	225.1	--	121.8	3.0	1,826.6
Total	1,484.9	124.3	0.2	559.2	2.8	1,277.1	7.7	4,011.5

1/ For manufacture of pulp, hardboard, or roofing felt.

2/ Includes fuel given away.

3/ Includes uses such as livestock bedding, mulch, small dimension, and speciality items.

4/ Includes residue burned as waste.

5/ Residue suitable for chipping.

6/ Residue not suitable for chipping.

Table 24.--Primary wood-using plants
operating in 1972, by Forest Survey
Unit, Iowa
(In number of plants)

Kind of mill ^{1/}	All units	North- eastern unit	South- eastern unit	Western unit
Sawmills:				
Large ^{2/}	21	13	6	2
Medium ^{3/}	27	12	12	3
Small ^{4/}	12	1	4	7
Total	60	26	22	12
Veneer mills	2	1	--	1
Cooperage mills	1	1	--	--
Pulpmills	2	1	1	--
Total	65	29	23	13

1/ Excludes idle mills.

2/ Annual output of more than 1 million board feet.

3/ Annual output of from 0.101 to 1.000 million board feet.

4/ Annual output of less than 0.101 million board feet.



Ostrom, Arnold J.

1976. Forest statistics for Iowa, 1974. USDA For. Serv. Resour.
Bull. NC-33, 25 p. North Cent. For. Exp. Stn., St. Paul, Minn.

Presents statistics of Iowa's forest area, timber volume,
growth, mortality, ownership, and use in 1974.

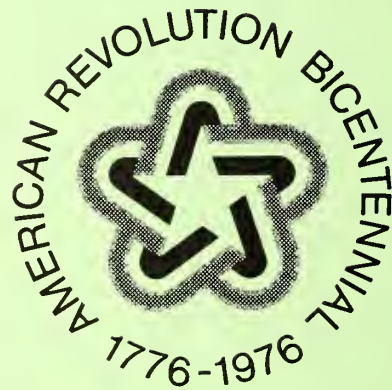
OXFORD: 524.61(777). KEY WORDS: forest areas, timber volume,
growth, timber products.

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PULPWOOD PRODUCTION

in the

NORTH CENTRAL REGION BY COUNTY 1975

JAMES E. BLYTH
JEROLD T. HAHN



**NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE**

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North Central Forest Experiment Station
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1977



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Jerold T. Hahn is a mensurationist for the Forest Evaluation Research Project at the Station. A graduate of the University of Illinois, Hahn holds both a Bachelor of Science and Master of Science in Forestry. Jerold spent his first 2 years with the North Central Station on a Forest Survey field crew and the last 8 as a mensuration and data-compilation expert specializing in computer analysis. He has authored several publications on volume and growth estimates, resource inventories, and forest products output.

We gratefully acknowledge the cooperation of pulpmills using North Central States timber in 1975. Thanks are also due the Michigan Department of Natural Resources for collecting data from Michigan pulpmills.

HIGHLIGHTS

Lake States

Lake States pulpwood production plummeted to 4.14 million cords in 1975, a drop of 24 percent following 3 years of record-high production. Lower pulpwood demand was the result of the closure of a major pulpmill during an employee strike, pulpwood inventory reductions at some mills, and a 14 percent decline in paper and paperboard production in the United States in 1975.

Lake States loggers cut 1.23 million fewer cords of hardwood pulpwood than in 1974. Principal declines were in aspen, hard maple, and elm.

The balsam fir harvest rose to the highest level since 1960. For the sixth consecutive year, use of Lake States softwood residue at pulpmills increased.

Minnesota produced more pulpwood than Michigan for the first time since 1958.

Central States

Pulpwood production fell 16 percent to 407,000 cords; two-thirds of the output came from hardwood residue. The harvest of soft hardwood pulpwood slipped to the lowest level in more than 2 decades and the hard hardwood harvest was at a 15-year low.

Exports increased to soften the production cutback. Nearly half of the output was shipped outside the Central States.

Pulpmill capacity sank to 1,215 tons per day, 200 tons below 1974. The decline was due to a pulpmill in Illinois switching from pulpwood to recycled wastepaper for pulping.

PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION, BY COUNTY, 1975

James E. Blyth and Jerold T. Hahn

This is the 17th annual report on the pulpwood harvest in Lake States counties and the 16th annual report on the Central States harvest. Pulpwood constitutes more than half of the timber products harvested annually in the Lake States (Michigan, Minnesota, and Wisconsin) and is an important product in the Central States (Illinois, Indiana, Iowa, and Missouri).

Current detailed pulpwood production¹ information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Also, researchers need current pulpwood information for planning projects.

Pulpmills using North Central States timber in 1975 reported their pulpwood receipts by species groups and counties of origin. This report presents the results of the survey, analyzes the data where appropriate, compares results with 1974 or earlier years, and discusses trends in pulpwood production and use.

The Lake States and Central States are discussed separately because the timber types in each area are different and less information can be released about the Central States (more detailed data on pulpwood production and receipts in the Central States would reveal the operations of individual mills).

Pulpwood production in Minnesota is completely and accurately shown. However, to prevent disclosure of confidential information about softwood pulpwood use by individual companies, the total quantity of softwood pulpwood imports in Minnesota from Canada and exports from Minnesota to Canada are not reported. Thus, some Minnesota

softwood shipped to Canada is shown as remaining and used in Minnesota and receipts of Canadian softwood in Minnesota are understated.

LAKE STATES

Production

Lake States pulpwood production dropped to 4.14 million cords in 1975, down 24 percent from 1974 (table 1). The steep plunge in output followed 3 years of record-high production. Lower pulpwood demand was the result of a major pulpmill closure during an employee strike, pulpwood inventory reductions at some mills, and the 14 percent decline in paper and paperboard production in the United States in 1975.

More than 95 percent of the pulpwood was consumed in the Lake States. Eighty-nine percent was roundwood (including chips from roundwood); the remainder was residue from local wood-using plants.² Residues are becoming more important for use as pulpwood at the expense of roundwood. In 1975 pulpwood output from residue dropped 9 percent compared to a 26 percent drop for roundwood.

The softwood harvest for pulping fell only 55,000 cords in 1975. Jack pine had the largest decline (88,000 cords) among softwoods. The balsam fir cut rose 41,000 cords to the highest level since 1960. Tamarack and spruce had small harvest gains.

Round pulpwood output from hardwood tumbled 1.23 million cords. Principal declines were in aspen (668,000 cords), hard maple (130,000 cords), and elm (95,000 cords).

¹Pulpwood production is defined as the annual pulpwood volume from timber land in a specified area that was received at all mills, whereas pulpwood receipts are defined as the volume of wood received by mills in a specified area regardless of the geographic source.

²Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping. Residue includes slabs, edgings, veneer cores, sawdust, wood flour, and chips manufactured from slabs, edgings, and veneer cores.

Table 1.--Production and imports of pulpwood, Lake States, 1975

(In standard cords, unpeeled)

Species and destination	Production by States ¹				Imports			Total receipts
	Michigan	Minnesota	Wisconsin	Regional total	Other U.S. ²	Canada	Total imports	
Balsam fir								
Michigan	17,341	0	686	18,027	0	0	0	18,027
Minnesota	0	115,873	0	115,873	0	0	0	115,873
Wisconsin	53,157	4,175	97,584	154,916	0	0	0	154,916
Exported ³	3,081	1,248	0	4,329	0	0	0	0
Total	73,579	121,296	98,270	293,145	0	0	0	288,816
Cedar								
Michigan	2,918	0	286	3,204	0	0	0	3,204
Total	2,918	0	286	3,204	0	0	0	3,204
Hemlock								
Michigan	19,830	0	2,596	22,426	0	0	0	22,426
Wisconsin	30,373	0	42,874	73,247	0	0	0	73,247
Total	50,203	0	45,470	95,673	0	0	0	95,673
Jack pine								
Michigan	134,477	0	1,349	135,826	0	0	0	135,826
Minnesota	0	138,988	0	138,988	14,117	1,650	15,767	154,755
Wisconsin	62,638	38,979	144,217	245,834	41,234	29	41,263	287,097
Exported ³	0	2,576	0	2,576	0	0	0	0
Total	197,115	180,543	145,566	523,224	55,351	1,679	57,030	577,678
Red pine								
Michigan	25,093	0	825	25,918	0	0	0	25,918
Minnesota	0	7,391	0	7,391	0	0	0	7,391
Wisconsin	5,504	3,399	80,751	89,654	0	0	0	89,654
Total	30,597	10,790	81,576	122,963	0	0	0	122,963
White pine								
Michigan	5,001	0	605	5,606	0	0	0	5,606
Minnesota	0	7,386	0	7,386	0	0	0	7,386
Wisconsin	2,225	0	12,253	14,478	0	0	0	14,478
Total	7,226	7,386	12,858	27,470	0	0	0	27,470
Spruce								
Michigan	6,465	0	54	6,519	0	0	0	6,519
Minnesota	0	162,771	0	162,771	180	0	180	162,951
Wisconsin	37,022	37,997	25,050	100,069	0	46,433	46,433	146,502
Exported ³	1,628	1,236	0	2,864	0	0	0	0
Total	45,115	202,004	25,104	272,223	180	46,433	46,613	315,972
Tamarack								
Michigan	710	0	91	801	0	0	0	801
Minnesota	0	31,578	0	31,578	0	0	0	31,578
Wisconsin	1,586	24,688	3,458	29,732	0	199	199	29,931
Total	2,296	56,266	3,549	62,111	0	199	199	62,310
Ash								
Michigan	8,151	0	16	8,167	0	0	0	8,167
Wisconsin	1,961	55	28,134	30,150	0	0	0	30,150
Exported ³	0	0	177	177	0	0	0	0
Total	10,112	55	28,327	38,494	0	0	0	38,317
Aspen								
Michigan	285,409	0	2,703	288,112	0	0	0	288,112
Minnesota	0	548,195	10,000	558,195	0	1,410	1,410	559,605
Wisconsin	150,120	65,885	574,847	790,852	0	98	98	790,950
Exported ³	0	1,915	16	1,931	0	0	0	0
Total	435,529	615,995	587,566	1,639,090	0	1,508	1,508	1,638,667
Balsam poplar								
Michigan	8,947	0	50	8,997	0	0	0	8,997
Minnesota	0	10,725	0	10,725	0	0	0	10,725
Total	8,947	10,725	50	19,722	0	0	0	19,722
Basswood								
Michigan	6,612	0	17	6,629	0	0	0	6,629
Wisconsin	320	0	9,320	9,640	0	0	0	9,640
Exported ³	0	0	9	9	0	0	0	0
Total	6,932	0	9,346	16,278	0	0	0	16,269

(Table 1 continued on next page)

(Table 1 continued)

Species and destination	Production by States ¹				Imports			Total receipts
	Michigan	Minnesota	Wisconsin	Regional total	Other U.S. ²	Canada	Total imports	
Beech								
Michigan	10,394	0	87	10,481	0	0	0	10,481
Wisconsin	573	0	1,573	2,146	0	0	0	2,146
Total	10,967	0	1,660	12,627	0	0	0	12,627
White birch								
Michigan	28,161	0	602	28,763	0	0	0	28,763
Minnesota	0	33,286	0	33,286	0	0	0	33,286
Wisconsin	1,933	2,188	70,051	74,172	0	0	0	74,172
Exported ³	0	0	8	8	0	0	0	0
Total	30,094	35,474	70,661	136,229	0	0	0	136,221
Yellow birch								
Michigan	4,116	0	209	4,325	0	0	0	4,325
Wisconsin	2,030	3	12,363	14,396	0	0	0	14,396
Total	6,146	3	12,572	18,721	0	0	0	18,721
Cottonwood								
Michigan	545	0	0	545	0	0	0	545
Exported ³	0	0	323	323	0	0	0	0
Total	545	0	323	868	0	0	0	545
Elm								
Michigan	2,884	0	78	2,962	0	0	0	2,962
Minnesota	0	692	0	692	0	0	0	692
Wisconsin	12,666	41	50,757	63,464	0	0	0	63,464
Exported ³	0	0	121	121	0	0	0	0
Total	15,550	733	50,956	67,239	0	0	0	67,118
Hickory								
Michigan	188	0	0	188	0	0	0	188
Wisconsin	115	0	551	666	0	0	0	666
Exported ³	0	0	266	266	0	0	0	0
Total	303	0	817	1,120	0	0	0	854
Hard maple								
Michigan	25,928	0	1,143	27,071	0	0	0	27,071
Wisconsin	25,680	200	58,762	84,642	0	0	0	84,642
Exported ³	0	0	516	516	0	0	0	0
Total	51,608	200	60,421	112,229	0	0	0	111,713
Soft maple								
Michigan	44,236	0	337	44,573	0	0	0	44,573
Wisconsin	6,020	79	38,843	44,942	0	0	0	44,942
Exported ³	0	0	323	323	0	0	0	0
Total	50,256	79	39,503	89,838	0	0	0	89,515
Red oak								
Michigan	51,507	0	199	51,706	0	0	0	51,706
Minnesota	0	9,703	0	9,703	0	0	0	9,703
Wisconsin	67	0	41,766	41,833	0	0	0	41,833
Exported ³	0	0	375	375	0	0	0	0
Total	51,574	9,703	42,340	103,617	0	0	0	103,242
White oak								
Michigan	7,743	0	24	7,767	0	0	0	7,767
Wisconsin	0	0	6,474	6,474	0	0	0	6,474
Exported ³	0	0	142	142	0	0	0	0
Total	7,743	0	6,640	14,383	0	0	0	14,241
Other hardwoods								
Michigan	2,129	0	0	2,129	0	0	0	2,129
Wisconsin	812	2	2,954	3,768	0	0	0	3,768
Exported ³	0	0	8	8	0	0	0	0
Total	2,941	2	2,962	5,905	0	0	0	5,897
Total roundwood								
Michigan	698,785	0	11,957	710,742	0	0	0	710,742
Minnesota	0	1,066,588	10,000	1,076,588	14,297	3,060	17,357	1,093,945
Wisconsin	394,802	177,691	1,302,582	1,875,075	41,234	46,759	87,993	1,963,068
Exported ³	4,709	6,975	2,284	13,968	0	0	0	0
Total	1,098,296	1,251,254	1,326,823	3,676,373	55,531	49,819	105,350	3,767,755
Residue softwood								
Michigan	8,160	0	302	8,462	0	0	0	8,462
Minnesota	0	43,266	0	43,266	1,533	5,838	7,371	50,637
Wisconsin	11,200	17	35,620	46,837	135,163	33,508	168,671	215,508
Exported ³	2,215	677	0	2,892	0	0	0	0
Total	21,575	43,960	35,922	101,457	136,696	39,346	176,042	274,607

(Table 1 continued on next page)

(Table 1 continued)

Species and destination	Production by States ¹					Imports		Total receipts
	Michigan	Minnesota	Wisconsin	Regional total	Other U.S. ²	Canada	Total imports	
Residue hardwoods								
Michigan	107,474	0	7,160	114,634	9,981	0	9,981	124,615
Minnesota	0	63,290	10,084	73,374	2,507	6,475	8,982	82,356
Wisconsin	43,021	348	121,426	164,795	268	0	268	165,063
Exported ³	9,856	0	3,568	13,424	0	0	0	0
Total	160,351	63,638	142,238	366,227	12,756	6,475	19,231	372,034
All wood material								
Michigan	814,419	0	19,419	833,838	9,981	0	9,981	843,819
Minnesota	0	1,173,144	20,084	1,193,228	18,337	15,373	33,710	1,226,938
Wisconsin	449,023	178,056	1,459,628	2,086,707	176,665	80,267	256,932	2,343,639
Exported ³	16,780	7,652	5,852	30,284	0	0	0	0
Total	1,280,222	1,358,852	1,504,983	4,144,057	204,983	95,640	300,623	4,414,396

¹Vertical columns of figures under box heading -production by States- present the amount of pulpwood cut in each State.

²Mostly western States.

³Pulpwood shipped to mills outside of region.

⁴Ponderosa pine.

Wisconsin.--Producers reduced their output to 1.51 million cords (from 2.05 million cords in 1974). Important declines were in aspen (210,000 cords) and elm (83,000 cords) among the hardwoods and jack pine (51,000 cords) among the softwoods. Production fell in all areas of the State, but the largest decline (in volume) was in northeast Wisconsin. Top-yielding counties were Oneida, Marinette, and Price.

Minnesota.--Minnesota outproduced Michigan for the first time since 1958, but output sank to 1.36 million cords. Leading the decline was aspen, down 188,000 cords. Northeastern Minnesota continued to supply more than half (59 percent) of the State's total production. St. Louis, Koochiching, and Itasca counties were the leading producers.

Michigan.--Production fell to 1.28 million cords, down 562,000 cords from 1974. Closure of a large pulpmill in Michigan for several months during a strike intensified the decline. Reductions in output were greatest in aspen, hard maple, and red oak. Eighty-seven percent of the decline in production was in the Upper Peninsula. Top-producing counties were Iron, Menominee, and Delta.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to the merchantable volume in major pulpwood species (fig. 1); and second, the amount of pulpwood cut relative to commercial forest area (fig. 2). Heaviest cutting pressure (per 1,000 cords of merchantable volume in principal pulpwood species) was in central Wisconsin and northern Lower Michigan.

Receipts

About 4.41 million cords of pulpwood were received at 41 Lake States pulp mills in 1975. Two more mills used oak and one more used birch than in 1974 (table 2). Aspen receipts were down 670,000 cords (29 percent) to the lowest level since 1962. Demand for hard maple and elm plunged more than 50 percent.

Softwood residue imports from Canada rose for the third successive year; the primary market was Wisconsin.

Imports from other States dropped 30 percent to 205,000 cords; western States supplied all but 6 percent. Two-thirds of these imports were softwood chips, mainly from South Dakota, Wyoming, Colorado, and Montana.

Wisconsin.--Pulpwood procurement dropped 791,000 cords, chiefly in aspen, jack pine, and elm. Balsam fir demand was the strongest since 1963. Thirty-eight percent of the wood came from out-of-State.

Michigan.--Wood deliveries sank 480,000 cords despite strong demand for jack pine. Markets were weak for aspen and mixed hardwoods. All but 3 percent of the wood came from Michigan sources.

Industry Trends and Analysis

Pulpmill capacity inched up from 10.2 to 10.6 thousand tons per day (table 3). No mills closed or changed ownership. Significant spending to control pollution, expand capacity, and improve productivity continued.

Aspen, the dominant pulpwood species, continued to decline in importance from 47 percent of the roundwood harvest in 1974 to 45 percent in 1975.

Balsam fir harvesting is on the up-trend, doubling since 1971. The smaller harvest of birch pulpwood in 1975 is probably a temporary setback from the long-term uptrend.

For the sixth year in a row, use of Lake States softwood residue at pulpmills increased, more than doubling since 1970.

CENTRAL STATES

Production

Central States producers reduced their pulpwood output 16 percent from 1974 to 407,000 cords. Demand for hardwood residue was strong, accounting for two-thirds of the output (table 4). Harvesting of soft hardwood pulpwood was at the lowest point in more than 2 decades. The pulpwood harvest from hard hardwoods was at a 15-year low.

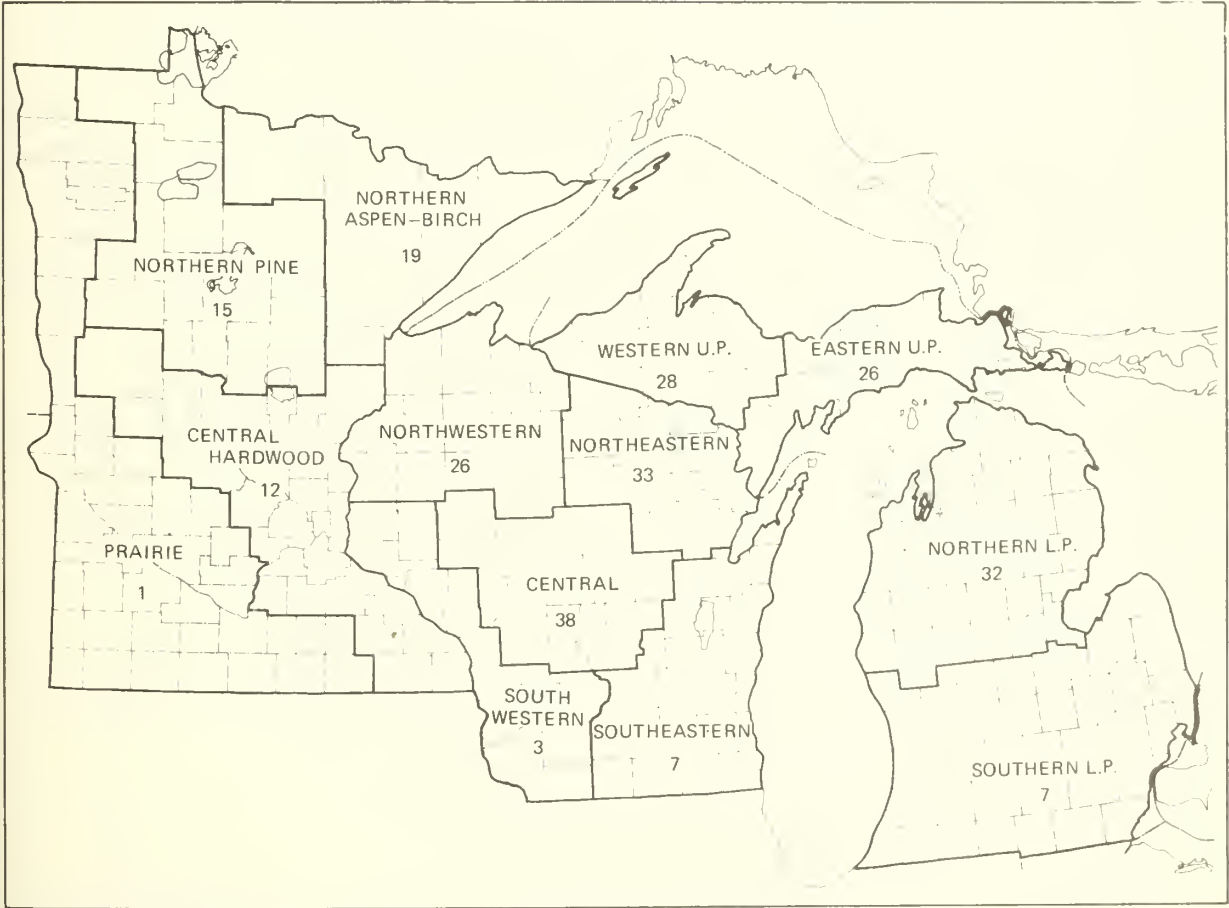


Figure 1.--Cords of pulpwood bolts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1975. (The heavy lines delineate the boundaries of the Forest Survey Units in each State.)

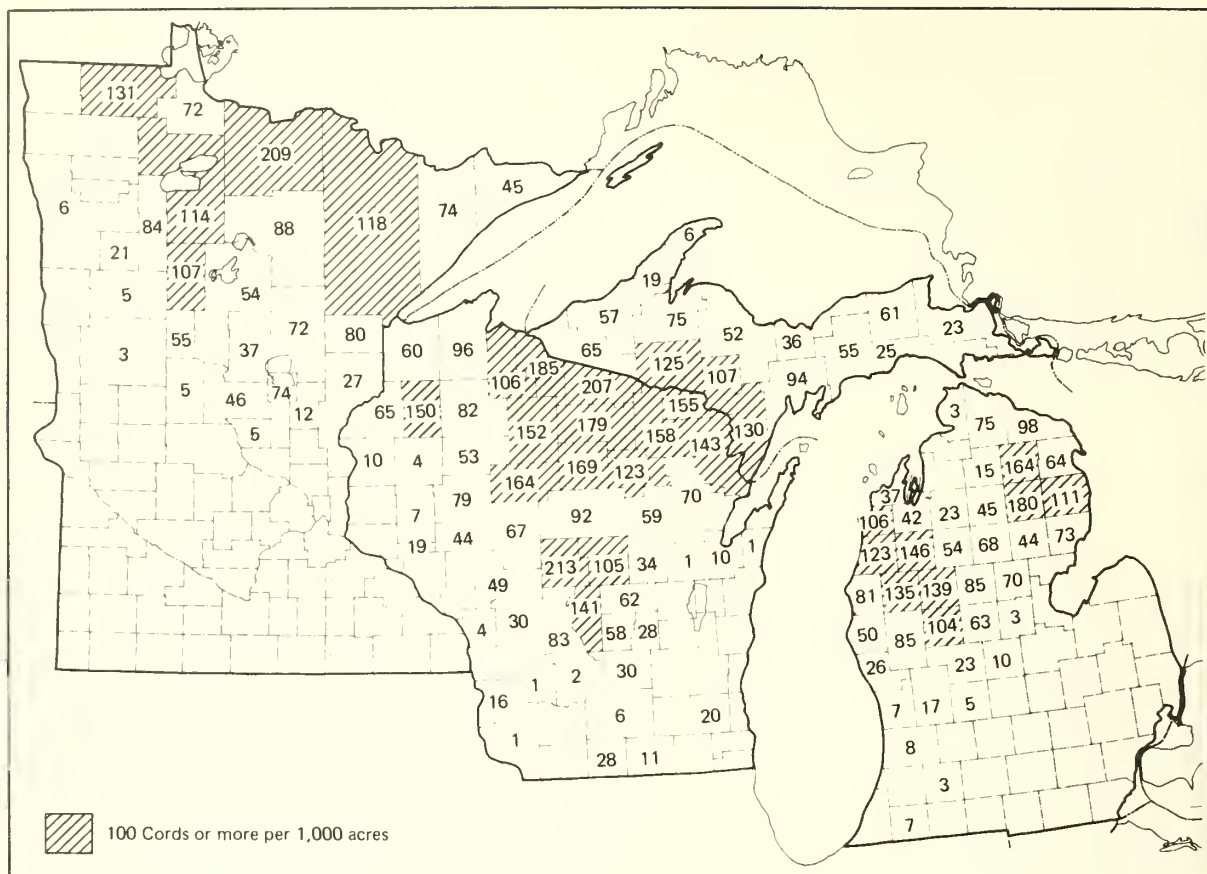


Figure 2.--Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1975. Acres of stocked commercial forest land were determined during the last forest survey in each State.

Table 2.--Plants using the different species of wood for pulping in 1975

(In numbers)

Species and kind of material	Lake States	Minnesota	Wisconsin	Michigan
Aspen	38	9	21	8
Balsam fir	18	5	10	3
Birch	22	3	12	7
Hemlock	10	--	9	1
Pine	11	2	6	3
Spruce	21	5	13	3
Tamarack	6	1	4	1
Maple	17	--	11	6
Oak	14	2	6	6
Other hardwoods	19	1	11	6
Wood chips (residue)	19	5	9	5
Slabwood and other residue	7	2	2	3
Total Plants/	41	9	24	8

1/ Some plants use more than one species, so numbers in columns cannot be added.

Table 3.--Active woodpulp mills in the Lake States by location, type of pulp produced, and capacity, 1975

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL

MICHIGAN:						
ABITIBI CORP.	ALPENA	430	0	0	430	0
CELOTEX CORP.	L ANSE	270	0	0	270	0
HOERNER WALDORF CORP.	ONTONAGON	220	0	0	0	220
MANISTIQUE PULP AND PAPER CO.	MANISTIQUE	90	0	0	90	0
MEAD CORP.	ESCANABA	750	0	600	150	0
MENASHA CORP.	OTSEGO	225	0	0	0	225
PACKAGING CORP.OF AMERICA	FILER CITY	600	0	0	0	600
WARREN CO., S.O.	MUSKEGON	240	0	240	0	0
TOTAL..... 8 PLANTS.....		2825	0	840	940	1045
=====						
MINNESOTA :						
BLANCOIN PAPER CO.	GRAND RAPIDS	400	0	0	170	230
HENNEPIN PAPER CO.	LITTLE FALLS	75	0	0	75	0
BOISE CASCADE CORP.	INTERNATIONAL FALLS	770	0	320	450	0
POTLATCH CORP.	CLOQUET	520	120	400	0	0
SUPERWOOD CORP.	BEMIDJIE	90	0	0	90	0
ST REGIS PAPER CO.	SARTELL	125	0	0	125	0
SUPERWOOD CORP.	DULUTH	350	0	0	350	0
HOERNER WALDORF CORP.	ST PAUL	300	0	0	0	300
CONWEO CORP.	CLOQUET	350	0	0	350	0
TOTAL..... 9 PLANTS.....		2980	120	720	1610	530
=====						
WISCONSIN :						
AMERICAN CAN CO.	GREEN BAY	210	150	0	60	0
WEYERHAEUSER CO.	ROTHSCHILD	200	200	0	0	0
BAUGER PAPER MILLS	PESHTIGO	110	110	0	0	0
NCR,APPLETON PAPER DIV.	COMBINED LOCKS	200	0	0	200	0
CONSOLIDATED PAPERS , INC.	APPLETON	175	175	0	0	0
CONSOLIDATED PAPERS , INC.	STEVENS POINT	100	0	0	100	0
CONSOLIDATED PAPERS , INC.	WISCONSIN RAPIDS	625	0	400	225	0
GREEN BAY PACKAGING, INC.	GREEN BAY	200	0	0	0	200
FLAMBEAU PAPER CO.	PARK FALLS	115	115	0	0	0
KIMBERLY-CLARK CORP.	KIMBERLY	115	0	0	115	0
PENTAIR INDUSTRIES	NIAGARA	170	0	0	170	0
MOSINEE PAPER MILLS CO.	MOSINEE	200	0	200	0	0
NEKOOSA PAPERS INC.	NEKOOSA	310	0	310	0	0
NEKOOSA PAPERS INC.	PORT EDWARDS	215	215	0	0	0
OWENS-ILLINOIS	TOMAHAWK	620	0	0	0	620
CHARMIN PAPER PRODUCTS CO.	GREEN BAY	2/	2/	2/	2/	2/
SCOTT PAPER CO.	OCONTO FALLS	110	110	0	0	0
ST REGIS PAPER CO.	RHINELANDER	120	120	0	0	0
FLINKOTE COMPANY	CORNELL	50	0	0	50	0
SUPERIOR FIBRE PRODUCTS CO.	SUPERIOR	180	0	0	180	0
THILMANY PULP AND PAPER CO	KAUKAUNA	400	0	400	0	0
TOMAHAWK PULP CO., INC.	TOMAHAWK	50	0	0	50	0
WAUSAU PAPER MILLS CO.	BROKAW	185	185	0	0	0
BOISE CASCADE CORP.	PHILLIPS	100	0	0	100	0
TOTAL..... 24 PLANTS.....		4760	1380	1310	1250	420
=====						
ALL STATES	41 PLANTS	10565	1500	2870	3800	2195

1/ LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1976, AND

1976 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.

2/ CAPACITY NOT AVAILABLE.

Pulpwood demand fell because the National demand for paper and paperboard was lower in 1975 and a major pulpmill using pulpwood in Illinois completely switched to recycled wastepaper for pulping.

Exports increased 26,000 cords to

soften the production cutback. Nearly half (48 percent) of the output was shipped outside the Central States to Kentucky, Michigan, Ohio, Minnesota, Wisconsin, Tennessee, and Louisiana. Hardwood residue was the principal export; it has increased in each of the last 10 years.

Table 4.--Production and imports of pulpwood, Central States, 1975

(In standard cords, unpeeled)¹

SPECIES AND ORIGIN	PRODUCTION BY STATES 2/					IMPORTS			TOTAL RECEIPTS
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
SOFTWOODS									
ILLINOIS	1796	0	0	194	1980	0	0	0	1980
EXPORTED 4/	62	0	0	3	65	0	0	0	0
TOTAL	1858	0	0	197	2045	0	0	0	1980
SOFT HARDWOODS									
ILLINOIS	5470	523	0	2814	8807	0	0	0	8807
IND., IOWA, MO. 3/	4625	9962	15809	9275	39671	808	0	808	40479
EXPORTED 4/	4659	3749	0	866	9274	0	0	0	0
TOTAL	14754	14234	15809	12955	57752	808	0	808	49286
HARD HARDWOODS									
ILLINOIS	1870	0	0	0	1870	0	0	0	1870
IND., IOWA, MO. 3/	5142	9909	14566	2225	31842	1476	0	1476	33319
EXPORTED 4/	8535	13567	0	7629	29731	0	0	0	0
TOTAL	15547	23476	14566	9854	63443	1476	0	1476	35198
TOTAL ROUNDWOOD									
ILLINOIS	9136	523	0	2998	12657	0	0	0	12657
IND., IOWA, MO. 3/	9767	19871	30375	11500	71513	2284	0	2284	73797
EXPORTED 4/	13256	17316	0	8498	39070	0	0	0	0
TOTAL	32159	37710	30375	22496	123240	2284	0	2284	86454
RESIDUE+SOFTWOOD									
ILLINOIS	1674	0	4666	4540	10880	2215	3659	5874	16754
IND., IOWA, MO. 3/	0	0	0	0	0	0	4800	4800	4800
EXPORTED 4/	2510	0	0	0	2510	0	0	0	0
TOTAL	4184	0	4666	4540	13390	2215	8459	10674	21554
RESIDUE+HARDWOODS									
ILLINOIS	31517	3442	0	2691	37650	9856	0	9856	47506
IND., IOWA, MO. 3/	8123	34210	13290	21519	77142	3568	0	3568	80710
EXPORTED 4/	29053	59592	2167	64572	155384	0	0	0	0
TOTAL	68693	97244	15457	88782	270176	13424	0	13424	128216
ALL WOOD MATERIAL									
ILLINOIS	42327	3965	4666	10229	61187	12071	3659	15730	76917
IND., IOWA, MO. 3/	17890	54081	43665	33019	148655	5852	4800	10652	159307
EXPORTED 4/	44819	76908	2167	73070	196964	0	0	0	0
TOTAL	105036	134954	50498	116319	406806	17923	8459	26382	236224

1/ FACTORS USED IN CONVERTING TO STANDARD GREEN CORDS (128 CU. FT.) WERE:

- 4,500 POUNDS OF SOFT HARDWOOD ROUNDWOOD;
- 5,000 POUNDS OF HARD HARDWOOD OR CONIFEROUS ROUNDWOOD;
- 4,100 POUNDS OF SOFTWOOD CHIPS (GREEN);
- 4,400 POUNDS OF HARDWOOD CHIPS (GREEN);
- 2,500 POUNDS OF CHIPS (ALL SPECIES, DRY).

2/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING "PRODUCTION BY STATES" REPRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

3/ COMBINED TO PREVENT DISCLOSURE OF INDIVIDUAL MILL RECEIPTS.

4/ PULPWOOD SHIPPED TO MILLS OUTSIDE THE REGION.

Indiana remained the leading producer. For the second year, Missouri led Illinois in production. Indiana and Missouri each exported more than 70,000 cords of pulpwood.

Receipts

Loggers cut pulpwood in 108 counties: 37 in Missouri, 28 in Illinois, 27 in Indiana, and 16 in Iowa (fig. 3). The pulpwood harvest area shrank in west-central Illinois and southern and north-western Indiana but increased in eastern Indiana.

Only 236,000 cords of pulpwood were received at the 12 Central States pulp-mills, less than in any year since 1963. More than half (54 percent) of the receipts were hardwood residue. Imports, 11 percent of the total, were chiefly residue. Illinois mills procured less than half as much wood as in 1974.

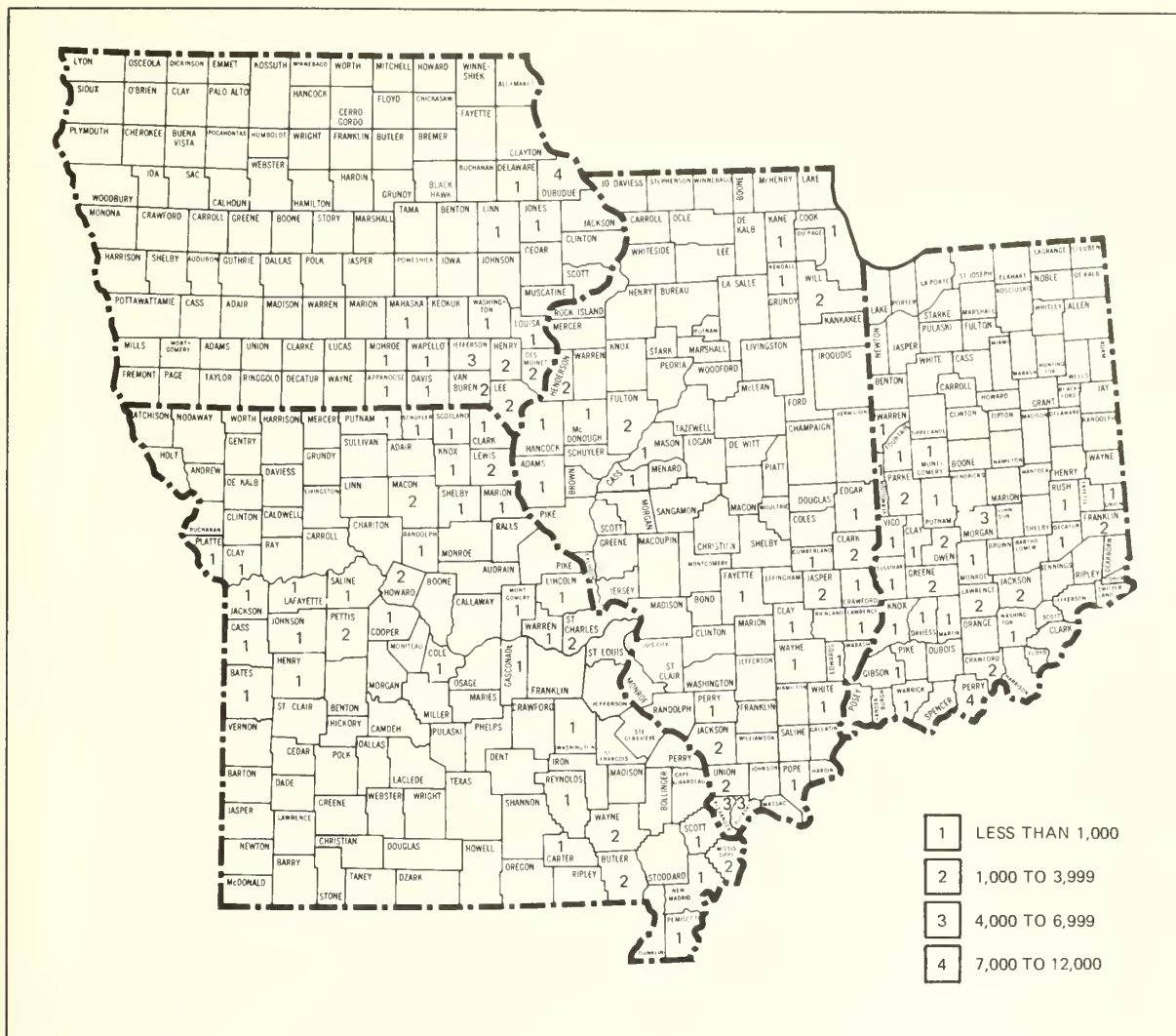


Figure 3.--Harvest of pulpwood bolts in the Central States by counties, in standard cords, 1975.

Industry Trends and Analysis

Pulpmill capacity plunged to 1,215 tons per day, 200 tons below 1974 (table 5). Only one mill has a capacity exceeding 200 tons per day.

Since 1965, sawmills and veneer mills in the Central States have found a fast-growing market for their hardwood residue at pulpmills. Central States annual pulpwood production from hardwood residue during the last decade was:

Year	Hardwood residue (Percent)
1966	12
1967	24
1968	36
1969	49
1970	44
1971	48
1972	49
1973	54
1974	58
1975	66

Pulpwood markets for hardwood residue are expected to continue to be excellent.

In 8 of the last 10 years, pulpwood exports from the Central States have risen. During this 10-year period, markets in adjacent States have become very important to pulpwood producers:

Year	Pulpwood exports	
	(Thousand cords)	(Percent of total production)
1966	12	4
1967	7	3
1968	17	5
1969	40	11
1970	87	21
1971	131	31
1972	158	34
1973	141	31
1974	170	35
1975	197	48

During the next few years, pulpwood market expansion is likely to be greater in surrounding States than in the Central States. Thus, export markets may become dominant for Central States pulpwood producers in 2 or 3 years.

Table 5.--Active woodpulp mills in the Central States by location, type of pulp produced, and capacity, 1975

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL
ILLINOIS:						
BIRD AND SON , INC.	CHICAGO	40	0	0	40	0
CELOTEX CORP.	PEORIA	190	0	0	190	0
CERTAIN-TEED PRODUCTS CORP.	EAST ST LOUIS	100	0	0	100	0
FLINTKOTE CO , THE	MT CARMEL	40	0	0	40	0
GAF CORP.	JOLIET	100	0	0	100	0
JOHNS-MANVILLE PRODUCTS CORP.	WAUKEGAN	65	0	0	65	0
CELOTEX CORP.	WILMINGTON	30	0	0	30	0
TOTAL..... 7 PLANTS.....		565	0	0	565	0
=====						
INDIANA :						
WESTON PAPER AND MFG. CO.	TERRE HAUTE	270	0	0	0	270
TOTAL..... 1 PLANT.....		270	0	0	0	270
=====						
IOWA :						
CELOTEX CORP.	DUBUQUE	90	0	0	90	0
CONSOLIDATED PACKAGING CORP.	FORT MADISON	140	0	0	0	140
TOTAL..... 2 PLANTS.....		230	0	0	90	140
=====						
MISSOURI :						
GAF CORP.	KANSAS CITY	90	0	0	90	0
HUEBERT FIBREBOARD, INC.	BOONEVILLE	60	0	0	60	0
TOTAL..... 2 PLANTS.....		150	0	0	150	0
=====						
ALL STATES	12 PLANTS	1215	0	0	805	410

1/ LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1976, AND 1976 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.

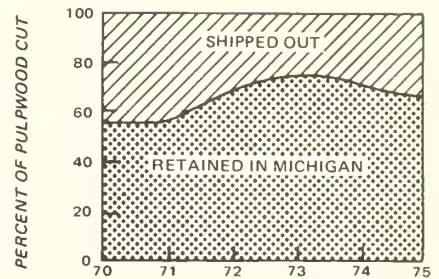
APPENDIX

Table 6.--Lake States pulpwood production by State of origin and destination, 1971-1975

(In thousand standard cords, roughwood basis)

Michigan

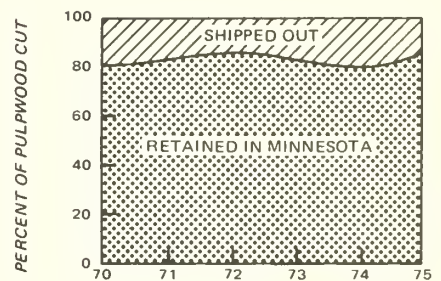
Year	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1971	1,267	--	567	688	12
1972	1,401	--	470	917	14
1973	1,585	--	418	1,131	36
1974	1,843	--	534	1,290	19
1975	1,280	--	449	814	17
5-Year average	1,475	--	488	968	19



Minnesota

Year	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1971	1,196	992	188	*	16
1972	1,354	1,168	166	--	20
1973	1,376	1,152	194	*	30
1974	1,578	1,297	262	*	19
1975	1,359	1,173	178	--	8
5-Year average	1,373	1,156	198	*	19

*Less than 500 cords.



Wisconsin

Year	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1971	1,552	35	1,502	*	15
1972	1,537	28	1,493	2	14
1973	1,758	14	1,671	55	18
1974	2,053	14	2,004	25	10
1975	1,505	20	1,460	19	6
5-Year average	1,681	22	1,626	20	13

*Less than 500 cords.

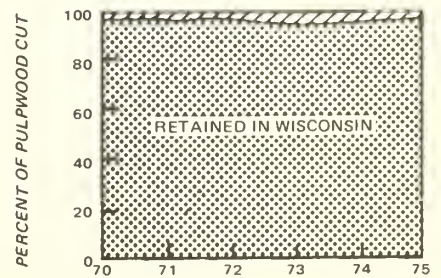


Table 7.--Lake States pulpwood production by Forest Survey Unit and destination by State, 1975

(In hundred standard cords, roughwood basis)

MICHIGAN					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	:	:	:	:
	TOTAL		MICHIGAN:	MINNESOTA:	WISCONSIN:
	CUT				OTHER
E. UPPER PENINSULA	2679		1055	0	1536
W. UPPER PENINSULA	4006		1182	0	2802
N. LOWER PENINSULA	5565		5366	0	152
S. LOWER PENINSULA	551		541	0	0
TOTAL	12801		8144	0	4490
					167
MINNESOTA					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	:	:	:	:
	TOTAL		MICHIGAN:	MINNESOTA:	WISCONSIN:
	CUT				OTHER
NORTHEASTERN	8072		0	6946	1049
CENTRAL PINE	5134		0	4443	695
RAINY RIVER	369		0	337	32
SOUTHEASTERN	10		0	5	5
TOTAL	13589		0	11731	1781
					77
WISCONSIN					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	:	:	:	:
	TOTAL		MICHIGAN:	MINNESOTA:	WISCONSIN:
	CUT				OTHER
NORTHEASTERN	6439		180	0	6259
NORTHWESTERN	5522		14	113	5395
CENTRAL	2577		0	16	2561
SOUTHWESTERN	322		0	72	191
SOUTHEASTERN	190		0	0	190
TOTAL	15050		194	201	14596
					59

Table 8.--Lake States pulpwood production by species, State, and Forest Survey Unit, 1971-1975

(In thousand standard cords, roughwood basis)

Michigan

Unit	Aspen					Balsam fir				
	Annual Production					Annual Production				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
E. 1/2 Upper Peninsula	125	89	93	119	68	26	33	41	40	36
W. 1/2 Upper Peninsula	177	188	225	294	138	25	24	26	32	34
N. 1/2 Lower Peninsula	242	241	275	282	228	1	3	2	2	4
S. 1/2 Lower Peninsula	3	11	10	11	1	--	--	--	--	--
Total	547	529	603	706	435	52	60	69	74	74
Minnesota										
Northern aspen-birch	328	373	407	460	357	20	40	37	52	76
Northern pine	249	264	228	282	236	20	26	28	41	45
Central hardwood	31	52	38	62	22	--	--	*	--	--
Prairie	--	--	--	--	--	--	--	--	--	--
Total	608	689	673	804	615	40	66	65	93	121
Wisconsin										
Northeastern	402	349	380	383	286	35	25	34	49	64
Northwestern	302	311	331	342	276	19	23	32	35	33
Central	31	23	46	71	25	*	1	1	1	1
Southwestern	--	1	3	1	--	--	--	--	--	--
Southeastern	1	*	1	*	1	--	--	--	--	--
Total	736	684	761	797	588	54	49	67	85	98
Lake States	1,891	1,902	2,037	2,307	1,638	146	175	201	252	293

*Less than 500 cords.

Michigan

Unit	Birch					Hemlock				
	Annual Production					Annual Production				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
E. 1/2 Upper Peninsula	1	10	19	24	6	8	17	22	13	16
W. 1/2 Upper Peninsula	3	7	16	35	8	34	33	36	39	34
N. 1/2 Lower Peninsula	19	19	25	25	22	--	--	--	*	--
S. 1/2 Lower Peninsula	--	--	--	*	*	--	--	--	--	--
Total	23	36	60	84	36	42	50	58	52	50
Minnesota										
Northern aspen-birch	9	16	18	15	16	--	--	--	--	--
Northern pine	26	26	23	24	18	--	--	--	--	--
Central hardwood	*	*	1	5	2	--	--	--	--	--
Prairie	--	--	--	*	*	--	--	--	--	--
Total	35	42	42	44	36	--	--	--	--	--
Wisconsin										
Northeastern	22	20	30	38	33	28	26	21	32	30
Northwestern	28	26	40	59	44	13	13	10	9	13
Central	1	*	1	5	6	1	2	1	3	3
Southwestern	--	1	1	*	*	--	--	--	--	--
Southeastern	--	--	--	*	*	--	--	*	1	*
Total	51	47	72	102	83	42	41	32	45	46
Lake States	109	125	174	230	155	84	91	90	97	96

*Less than 500 cords.

TABLE 8 CONTINUED ON NEXT PAGE

TABLE 8 CONTINUED

Michigan

Unit	Pine					Spruce				
	Annual Production					Annual Production				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
E. 1/2 Upper Peninsula	80	84	67	87	59	22	20	28	19	18
W. 1/2 Upper Peninsula	41	37	36	36	25	22	18	18	20	25
N. 1/2 Lower Peninsula	110	102	88	127	143	1	--	*	1	2
S. 1/2 Lower Peninsula	4	5	12	9	8	--	--	--	--	--
Total	235	228	203	259	235	45	38	46	40	45
Minnesota										
Northern aspen-birch	142	136	125	139	116	119	140	159	154	153
Northern pine	72	79	77	98	79	49	52	54	51	49
Central hardwood	*	1	3	2	4	--	--	*	*	--
Prairie	--	--	*	*	--	--	*	2	2	--
Total	214	216	205	239	199	168	192	215	207	202
Wisconsin										
Northeastern	68	53	43	62	46	9	9	10	13	18
Northwestern	105	99	100	100	64	3	4	6	6	7
Central	93	90	85	125	122	*	*	--	*	*
Southwestern	1	2	3	2	2	--	--	--	--	--
Southeastern	1	2	1	2	5	--	--	--	*	--
Total	268	246	232	291	239	12	13	16	19	25
Lake States	717	690	640	789	673	225	243	277	266	272

*Less than 500 cords.

Michigan

Unit	Tamarack					Miscellaneous hardwoods				
	Annual production					Annual Production				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
E. 1/2 Upper Peninsula	1	2	2	1	1	14	50	93	124	35
W. 1/2 Upper Peninsula	2	1	3	1	1	41	97	123	148	57
N. 1/2 Lower Peninsula	--	--	--	--	--	136	153	145	144	124
S. 1/2 Lower Peninsula	--	--	--	--	--	6	9	5	8	2
Total	3	3	5	2	2	197	309	366	424	218
Minnesota										
Northern aspen-birch	8	12	14	25	31	18	29	29	24	12
Northern pine	23	19	17	18	25	*	1	2	6	7
Central hardwood	--	--	1	--	*	12	--	5	6	3
Prairie	1	*	1	*	*	--	--	--	*	--
Total	32	31	33	43	56	30	30	36	36	22
Wisconsin										
Northeastern	2	2	1	1	2	105	128	150	183	89
Northwestern	1	1	*	1	1	67	84	104	140	81
Central	*	*	--	*	1	89	111	136	174	71
Southwestern	--	--	--	--	--	5	5	6	3	2
Southeastern	--	--	--	--	--	3	5	4	6	1
Total	3	3	1	2	4	269	333	400	506	244
Lake States	38	37	39	47	62	496	672	802	966	484

*Less than 500 cords

TABLE 8 CONTINUED ON NEXT PAGE

TABLE 8 CONTINUED

Michigan

Unit	Residue					All species**				
	Annual production					Annual production				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
E. 1/2 Upper Peninsula	40	36	35	36	27	317	344	400	466	268
W. 1/2 Upper Peninsula	36	54	80	85	78	381	460	563	692	401
N. 1/2 Lower Peninsula	12	20	21	33	34	521	538	556	614	557
S. 1/2 Lower Peninsula	35	33	40	42	43	48	58	67	70	54
Total	123	143	176	196	182	1,267	1,400	1,586	1,842	1,280
Minnesota										
Northern aspen-birch	***	***	***	48	46	***	***	***	917	807
Northern pine	***	***	***	44	55	***	***	***	564	514
Central hardwood	***	***	***	19	6	***	***	***	94	37
Prairie	***	***	***	1	1	***	***	***	3	1
Total	69	88	108	112	108	1,196	1,354	1,377	1,578	1,359
Wisconsin										
Northeastern	42	43	80	85	76	713	655	749	846	644
Northwestern	17	18	32	39	34	555	579	655	731	553
Central	24	20	31	34	28	239	247	301	413	257
Southwestern	26	27	22	32	28	32	36	35	38	32
Southeastern	8	13	12	16	12	13	20	18	25	19
Total	117	121	177	206	178	1,552	1,537	1,758	2,053	1,505
Lake States	309	352	461	514	468	4,015	4,291	4,721	5,473	4,144

*Less than 500 cords.

**Includes residue, and small quantity of cedar not shown in other parts of table.

***Not available.

Table 9.--Lake States pulpwood production from roundwood by county and species, 1975

(In standard cords, roughwood basis)

MICHIGAN

UNIT AND COUNTY 1/	BALSAM: FIR:	CEDAR:	HEMLOCK:	JACK: PINE:	RED: PINE:	WHITE: PINE:	SPRUCE:	TAMA: RACK:	ASH:	ASPEN:	BALSAM: POPLAR:	BASS: WOOD
E. UPPER PENINSULA												
ALGER	485	251	2260	9904	1618	816	157	44	16	978	188	63
CHIPPEWA	2413	161	689	4416	520	377	1223	303	15	5026	267	50
DELTA	12063	430	4427	8108	1688	759	4588	105	158	20450	348	124
LUCE	4208	239	1222	12724	1482	823	2751	130	89	2936	297	99
MACKINAC	1742	273	1143	2782	527	342	459	56	23	3140	245	81
MENOMINEE	10972	82	1814	988	204	96	5788	322	616	30913	161	59
SCHOOLCRAFT	3819	518	4479	8351	1453	1034	3328	165	49	5093	469	156
TOTAL	35702	1954	16034	47273	7492	4247	18294	1125	966	68536	1975	632
W. UPPER PENINSULA												
BARAGA	1019	128	5058	1355	261	325	854	78	133	23748	392	131
DICKINSON	4014	116	967	1409	187	261	2732	550	85	34976	225	78
GOGHEIC	1737	14	11932	736	101	39	1909	50	174	18026	0	80
HOUGHTON	1578	38	2252	736	88	70	643	6	47	3246	33	15
IRON	16230	97	3577	2518	1015	334	11633	156	856	28907	197	281
KEWEENAW	593	0	178	0	0	0	592	0	0	0	0	0
MARQUETTE	7682	478	6509	11608	1545	1617	6522	316	102	9894	809	274
ONTONAGON	684	93	3696	256	113	183	157	15	772	18981	14	6
TOTAL	33537	964	34169	18618	3310	2829	25042	1171	2169	137778	1670	865
N. LOWER PENINSULA												
ALCONA	391	0	0	378	0	0	130	0	440	18758	844	444
ALPENA	738	0	0	222	22	0	238	0	560	6405	355	559
BENZIE	0	0	0	0	0	0	0	0	104	6974	0	0
CHEBOYGAN	694	0	0	2779	0	0	326	0	500	14196	779	488
CLARE	0	0	0	2895	0	0	0	0	85	11329	25	68
CRAWFORD	0	0	0	11905	285	150	0	0	0	695	0	0
ENMET	0	0	0	474	0	0	0	0	0	0	0	0
GLADWIN	0	0	0	877	0	0	0	0	53	8037	148	0
GRAND TRAVERSE	0	0	0	757	0	0	0	0	42	3286	0	0
IOSCO	0	0	0	14559	0	0	0	0	20	1642	141	22
ISABELLA	0	0	0	0	0	0	0	0	59	5335	27	48
KALKASKA	0	0	0	1898	0	0	0	0	14	2487	0	0
LAKE	0	0	0	13186	0	0	0	0	784	9820	204	542
LEELANAU	0	0	0	0	444	0	0	0	104	2704	0	0
MANISTEE	0	0	0	3561	0	0	0	0	484	10545	75	81
MASON	0	0	0	0	939	0	0	0	328	5241	36	157
MECOSTA	0	0	0	0	2467	0	0	0	198	9208	79	236
MIDLAND	0	0	0	0	0	0	0	0	0	492	0	0
MISSAUKEE	0	0	0	0	738	0	0	0	208	8008	0	0
MONTMORENCY	977	0	0	14207	0	0	369	0	414	22626	734	430
NEWAYGO	0	0	0	0	4304	0	0	0	1040	8136	369	931
OCEANA	0	0	0	0	2196	0	0	0	9	3458	53	2
OGEMAW	0	0	0	6873	0	0	0	0	20	2355	44	22
OSCEOLA	0	0	0	0	2595	0	0	0	634	12289	268	791
OSCOUA	86	0	0	15889	0	0	22	0	323	25440	555	222
OTSEGO	0	0	0	2539	0	0	0	0	0	603	0	0
PRESQUE ISLE	1454	0	0	7568	0	0	694	0	320	11359	555	333
ROSCOMMON	0	0	0	6684	0	0	0	0	32	7970	0	0
WEXFORD	0	0	0	21406	0	0	0	0	28	8452	0	0
TOTAL	4340	0	0	128657	13994	150	1779	0	6803	227850	5291	5376
S. LOWER PENINSULA												
ALLEGAN	0	0	0	315	0	0	0	0	6	372	0	2
CASS	0	0	0	0	328	0	0	0	0	94	0	0
GRATIOT	0	0	0	322	0	0	0	0	5	104	0	2
IONIA	0	0	0	0	318	0	0	0	0	0	0	0
KALAMAZOO	0	0	0	0	0	0	0	0	22	40	1	6
KENT	0	0	0	1930	0	0	0	0	1	34	0	0
MONTCALM	0	0	0	0	744	0	0	0	138	707	10	49
MUSKEGON	0	0	0	0	3830	0	0	0	2	14	0	0
OTTAWA	0	0	0	0	581	0	0	0	0	0	0	0
TOTAL	0	0	0	2567	5801	0	0	0	174	1365	11	59
STATE TOTAL	73579	2918	50203	197115	30597	7226	45115	2296	10112	435529	8947	6932

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MICHIGAN

UNIT AND COUNTY 1/	BEECH:	WHITE: BIRCH:	YELLOW: BIRCH:	COTTON- WOOD:	ELM:	HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	OTHER: HARD- WOODS:	ALL SPECIES
E. UPPER PENINSULA												
ALGER	809	244	156	0	94	0	657	528	6	0	9	19283
CHIPPEWA	521	280	126	0	76	0	424	366	4	0	6	17263
DELTA	1047	835	327	0	381	0	1087	1031	51	0	24	58031
LUCE	1178	772	331	0	268	0	1426	938	37	1	13	31964
MACKINAC	756	528	204	0	127	0	686	585	8	0	10	13712
MENOMINEE	1017	481	159	0	5012	115	5319	1776	17	0	9	65920
SCHOOLCRAFT	1715	823	395	0	239	0	1385	1389	13	0	20	34893
TOTAL	7043	3963	1698	0	6192	115	10984	6613	136	1	91	241066
W. UPPER PENINSULA												
BARAGA	0	596	438	0	485	0	3397	1080	70	0	35	39583
OLCKINSON	0	465	202	0	219	0	892	431	17	0	7	47833
GOGHEIC	0	547	316	0	1307	0	2928	620	0	0	317	40833
HOUGHTON	0	250	189	0	75	0	1040	249	2	0	3	10560
IRON	0	744	1070	0	3907	0	11228	2306	13	0	452	85521
KEWEENAW	0	0	0	0	0	0	0	0	0	0	0	1363
MARQUETTE	2	972	695	0	483	0	4798	1663	72	0	17	56058
ONTONAGON	0	794	1016	0	2771	0	8775	2165	375	0	1	40867
TOTAL	2	4368	3926	0	9247	0	33058	8514	549	0	832	322618
N. LOWER PENINSULA												
ALCONA	20	1182	0	0	22	0	20	2554	9425	457	0	35065
ALPENA	52	671	6	4	45	0	124	1631	1299	49	6	12986
BENZIE	312	759	10	0	0	0	208	2600	1314	104	208	12593
CHEBOYGAN	20	2606	0	0	0	0	20	1976	73	0	0	24457
CLARE	89	739	10	8	0	1	135	1464	1908	148	15	18919
CRAWFORD	0	0	0	0	0	0	0	208	211	0	0	13454
EMMET	0	0	0	0	0	0	0	0	0	0	0	474
GLAOWIN	156	834	0	104	0	0	54	1059	1306	72	52	12752
GRAND TRAVERSE	42	529	0	0	0	0	208	520	1144	37	21	6586
IOSCO	0	402	0	0	0	0	0	408	45	0	0	17239
ISABELLA	31	163	9	8	0	1	97	102	21	32	12	5945
KALKASKA	52	221	0	0	0	0	3	803	633	21	0	6132
LAKE	490	1373	62	86	0	12	971	3956	4869	2405	241	39001
LEELANAU	104	219	15	0	0	0	104	156	104	0	42	3996
MANISTEE	477	903	63	9	0	2	777	3230	5200	688	384	26479
MASON	211	335	24	21	0	6	436	2809	1213	410	249	12415
MECOSTA	174	593	37	28	0	7	521	359	398	294	57	14656
MIOLOANO	0	0	0	0	0	0	0	0	0	0	0	492
MISSAUKEE	104	732	0	0	0	0	52	836	1053	2	104	11837
MONTMORENCY	88	939	25	14	22	3	327	1385	3639	146	32	46377
NEWAYGO	650	1151	140	123	0	27	1659	1922	3313	1615	273	25657
OCEANA	20	171	0	0	0	0	18	120	984	151	1	7183
OGEMAW	0	85	0	0	0	0	20	348	684	0	0	10451
OSCEOLA	557	1248	113	89	0	23	1540	1034	1805	351	180	23517
OSCOOA	67	2113	0	0	0	0	40	2559	6027	237	0	53580
OTSEGO	0	29	0	0	0	0	0	208	176	0	0	3555
PRESQUE ISLE	20	2943	0	0	22	0	20	1903	110	0	0	27301
ROSCOMMON	73	310	0	0	0	0	21	258	2620	41	0	18009
WEXFORD	52	471	0	0	0	0	35	337	630	70	26	31507
TOTAL	3861	21721	514	494	111	82	7410	34745	50204	7330	1903	522615
S. LOWER PENINSULA												
ALLEGAN	2	1	0	3	0	4	6	12	274	12	4	1013
CASS	0	0	0	0	0	0	0	1	6	2	0	431
GRATIOT	2	1	0	2	0	2	3	9	8	7	3	470
IONIA	0	0	0	0	0	0	0	0	0	0	0	318
KALAMAZOO	6	2	1	5	0	12	12	34	0	31	14	186
KENT	0	1	0	0	0	0	2	11	50	19	0	2048
MONTCALM	51	33	7	41	0	89	129	298	230	295	94	2914
MUSKEGON	0	4	0	0	0	0	4	19	117	46	0	4036
OTTAWA	0	0	0	0	0	0	0	0	0	0	0	581
TOTAL	61	42	8	51	0	106	156	384	685	412	115	11997
STATE TOTAL	10967	30094	6146	545	15550	303	51608	50256	51574	7743	2941	1098296

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MINNESOTA

UNIT AND COUNTY 1/	BALSAM: FIR:	CEDAR:	HEMLOCK:	JACK: PINE:	RED: PINE:	WHITE: PINE:	SPRUCE:	TAMA: RACK:	ASH:	ASPEN:	BALSAM: POPLAR:	BASS- WOOD
NORTHERN ASPEN-BIRCH												
CARLTON	524	0	0	1938	500	0	262	259	0	17338	0	0
COOK	1479	0	0	3780	74	0	8447	0	0	15915	0	0
KOOCHICHIING	39643	0	0	12558	1823	2540	75689	23458	0	126238	6107	0
LAKE	12009	0	0	21052	950	0	24670	68	0	13420	0	0
ST. LOUIS	22796	0	0	64191	3429	3688	43795	6842	0	184212	3701	0
TOTAL	76451	0	0	103519	6776	6228	152863	30627	0	357123	9808	0
NORTHERN PINE												
AITKIN	662	0	0	1333	0	0	1468	4113	0	34528	0	0
BECKER	0	0	0	925	0	0	0	69	0	760	0	0
BELTRAMI	12819	0	0	10865	843	404	8709	5027	0	48843	12	0
CASS	2509	0	0	14926	1291	12	1013	972	45	25038	0	0
CLEARWATER	1609	0	0	6639	139	0	4326	6747	10	6752	0	0
CROW WING	0	0	0	4554	500	0	0	300	0	9248	0	0
HUBBARD	286	0	0	8713	500	0	492	1010	0	31572	0	0
ITASCA	26057	0	0	7399	741	742	16055	5312	0	56522	220	0
LAKE OF THE WOODS	611	0	0	2397	0	0	11361	299	0	13218	662	0
MAHONOMEN	0	0	0	1184	0	0	29	152	0	760	0	0
ROSEAU	292	0	0	9970	0	0	5688	1069	0	7590	23	0
WAOENA	0	0	0	4600	0	0	0	0	0	1415	0	0
TOTAL	44845	0	0	73505	4014	1158	49141	25070	55	236246	917	0
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	129	0	0
KANABEC	0	0	0	0	0	0	0	0	0	916	0	0
MILLE LACS	0	0	0	0	0	0	0	85	0	7012	0	0
MORRISON	0	0	0	1139	0	0	0	0	0	6341	0	0
OTTERTAIL	0	0	0	570	0	0	0	0	0	0	0	0
PINE	0	0	0	1240	0	0	0	27	0	8228	0	0
TOON	0	0	0	570	0	0	0	0	0	0	0	0
TOTAL	0	0	0	3519	0	0	0	112	0	22626	0	0
PRAIRIE												
ROCK	0	0	0	0	0	0	0	457	0	0	0	0
TOTAL	0	0	0	0	0	0	0	457	0	0	0	0
STATE TOTAL	121296	0	0	180543	10790	7386	202004	56266	55	615995	10725	0

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MINNESOTA

UNIT AND COUNTY 1/	BEECH:	WHITE: BIRCH:	YELLOW: BIRCH:	COTTON- WOOD:	ELM:	HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	OTHER: HARD- WOODS:	ALL SPECIES
NORTHERN ASPEN-BIRCH												
CARLTON	0	3133	0	0	0	0	19	8	376	0	0	24357
COOK	0	0	0	0	0	0	0	0	0	0	0	29695
KOOCHICHING	0	2947	0	0	692	0	14	17	693	0	0	292419
LAKE	0	2036	0	0	0	0	0	0	0	0	0	74205
ST. LOUIS	0	7682	0	0	0	0	8	35	0	0	0	340379
TOTAL	0	15798	0	0	692	0	41	60	1069	0	0	761055
NORTHERN PINE												
AITKIN	0	2515	0	0	0	0	0	0	5541	0	0	50160
BECKER	0	0	0	0	0	0	0	0	0	0	0	1754
BELTRAMI	0	5989	0	0	0	0	57	3	0	0	0	93571
CASS	0	2915	3	0	24	0	34	8	0	0	2	48792
CLEARWATER	0	1002	0	0	17	0	44	3	0	0	0	27288
CROW WING	0	469	0	0	0	0	0	0	275	0	0	15346
HUBBARD	0	1371	0	0	0	0	0	0	0	0	0	43944
ITASCA	0	2614	0	0	0	0	24	5	0	0	0	115691
LAKE OF THE WOODS	0	0	0	0	0	0	0	0	0	0	0	28548
MAHONOMEN	0	460	0	0	0	0	0	0	0	0	0	2585
ROSEAU	0	500	0	0	0	0	0	0	0	0	0	25132
WADENA	0	320	0	0	0	0	0	0	0	0	0	6405
TOTAL	0	18225	3	0	41	0	159	19	5816	0	2	459216
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	0	0	129
KANABEC	0	173	0	0	0	0	0	0	690	0	0	1779
MILLE LACS	0	359	0	0	0	0	0	0	1432	0	0	8894
MORRISON	0	173	0	0	0	0	0	0	690	0	0	8343
OTTERTAIL	0	0	0	0	0	0	0	0	0	0	0	570
PINE	0	746	0	0	0	0	0	0	0	0	0	10241
TOTO	0	0	0	0	0	0	0	0	0	0	0	570
TOTAL	0	1451	0	0	0	0	0	0	2818	0	0	30526
PRAIRIE												
POLK	0	0	0	0	0	0	0	0	0	0	0	457
TOTAL	0	0	0	0	0	0	0	0	0	0	0	457
STATE TOTAL	0	35474	3	0	733	0	200	79	9703	0	2	1251254

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

WISCONSIN

UNIT AND COUNTY 1/	BALSAM: FIR	CEDAR: HEMLOCK	JACK: PINE	RED: PINE	WHITE: PINE	SPRUCE	TAMA: RACK	ASH	ASPEN	BALSAM: POPLAR	BASS- WOOD	
NORTHEASTERN												
FLORENCE	3033	5	974	1035	675	100	1715	29	101	28958	0	24
FOREST	12926	93	7483	1838	3076	362	2597	167	910	37790	10	274
LANGLADE	3198	0	1063	500	1046	89	660	298	1078	24569	0	404
LINCOLN	3659	0	1336	705	1074	154	802	498	3270	32492	0	1717
MARINETTE	10328	165	2990	2748	3662	727	2188	157	771	58860	40	21
OCONTO	1541	22	593	1509	1496	142	706	4	10	18383	0	0
ONEIDA	18177	1	1739	5193	6436	668	6148	467	1383	39700	0	589
SHAWANO 2/	130	0	9190	191	1010	75	20	0	608	7056	0	5
VILAS	10997	0	4991	7991	2922	838	3392	84	174	38414	0	90
TOTAL	63989	246	30359	21710	21397	3155	18228	1704	8305	246222	50	3124
NORTHWESTERN												
ASHLAND	9875	0	2053	5657	2009	412	2292	158	1354	20801	0	192
BARRON	0	0	0	154	30	12	46	0	41	0	0	4
BAYFIELD	3850	0	1252	5456	2976	346	615	0	728	45829	0	57
BURNETT	0	0	0	12053	2889	744	12	95	0	4320	0	0
DOUGLAS	340	0	145	11450	1606	231	52	0	74	18553	0	2
IRON	3177	0	2690	138	218	32	569	0	838	52632	0	652
POLK	0	0	0	1647	320	103	0	0	0	0	0	0
PRICE	7412	0	1958	1160	2001	255	1195	557	3689	44654	0	2418
RUSK	131	0	107	72	61	15	0	46	956	7942	0	679
SAWYER	5031	0	693	1313	1490	206	1353	127	2142	19640	0	514
TAYLOR	2847	0	3671	338	623	216	197	466	3178	22427	0	953
WASHBURN	705	0	0	5785	1740	287	227	0	171	39383	0	8
TOTAL	33368	0	12569	45223	15963	2859	6558	1449	13171	276181	0	5479
CENTRAL												
ADAMS	0	0	0	19728	8792	1471	0	0	227	64	0	14
CHIPPEWA	144	0	98	246	400	20	22	150	773	6542	0	451
CLARK	118	0	14	1837	1945	206	111	0	1033	1981	0	62
EAU CLAIRE	0	0	0	3942	2262	374	0	0	0	127	0	0
JACKSON	0	0	0	9167	4385	750	0	0	110	276	0	5
JUNEAU	0	0	0	10341	3671	755	54	24	329	408	0	1
MARATHON	606	0	2092	767	653	94	64	6	1623	8023	0	57
MARQUETTE	0	0	0	912	1619	151	0	105	227	15	0	9
MONROE	0	0	0	3379	1662	283	0	0	18	59	0	1
PORTAGE	41	0	212	2750	3180	499	47	88	605	2884	0	41
WAUPACA	4	0	4	365	1238	97	18	15	139	2351	0	7
WAUSHARA	0	0	5	2130	3744	341	0	0	59	50	0	3
WOOD	0	0	98	19834	6826	1378	2	8	1427	2176	0	81
TOTAL	913	0	2523	75398	40377	6423	318	396	6570	24956	0	732
SOUTHWESTERN												
BUFFALO	0	0	0	0	0	0	0	0	10	0	0	0
CRAWFORD	0	0	0	0	0	0	0	162	15	0	0	8
DUNN	0	0	0	285	547	52	0	0	0	0	0	0
GRANT	0	0	0	0	0	0	0	15	1	0	0	1
IOWA	0	0	0	0	0	0	0	0	26	0	0	0
LACROSSE	0	0	0	130	225	19	0	0	0	0	0	0
PEPIN	0	0	0	336	438	41	0	0	0	0	0	0
RICHLAND	0	0	0	30	42	4	0	0	0	0	0	0
SAUK	0	0	0	73	144	11	0	0	0	0	0	0
TREMPEALEAU	0	0	0	20	27	2	0	0	0	0	0	0
TOTAL	0	0	0	874	1423	129	0	0	177	52	0	9
SOUTHEASTERN												
BROWN	0	0	19	64	162	10	0	0	113	0	0	0
COLUMBIA	0	0	0	249	1548	82	0	0	66	0	0	2
DANE	0	0	0	197	57	14	0	0	0	0	0	0
GREEN	0	0	0	594	199	42	0	0	0	0	0	0
GREEN LAKE	0	0	0	309	215	27	0	0	38	0	0	0
KEWAUNEE	0	0	0	0	0	0	0	0	0	25	0	0
MANITOWOC	0	0	0	0	0	0	0	0	0	14	0	0
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	0	9	76	4	0	0	0	3	0	0
ROCK	0	0	0	182	115	38	0	0	0	0	0	0
WAUKESHA	0	0	0	757	44	75	0	0	0	0	0	0
TOTAL	0	0	19	2361	2416	292	0	0	104	155	0	2
STATE TOTAL	98270	246	45470	145566	81576	12858	25104	3549	28327	587566	50	9346

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.
2/ INCLUDES MENOMINEE COUNTY.

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TABLE 9 CONTINUED

WISCONSIN

UNIT AND COUNTY 1/	BEECH:	WHITE: BIRCH:	YELLOW: BIRCH:	COTTON- WOOD:	ELM:HICKORY:	HARO: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	OTHER: HARO-: WOODS:	ALL SPECIES
NORTHEASTERN											
FLORENCE	0	300	313	0	815	0	1706	199	103	0	58 40143
FOREST	32	1234	984	0	3160	0	7082	1042	237	0	403 81700
LANGLADE	175	1158	618	0	3584	0	5653	1748	380	0	412 46633
LINCOLN	0	4220	838	0	4377	24	5694	3888	1788	0	221 66757
MARINETTE	58	4880	342	0	636	0	998	1447	512	48	24 91602
OCONTO	7	16	3	0	64	0	70	30	24	0	0 24620
ONEIGA	0	7658	696	0	875	0	2561	3605	4005	0	167 100068
SHAWANO 2/	1370	196	47	0	6425	442	668	398	108	3	453 28395
VILAS	0	8117	1232	0	671	0	5140	1391	1741	66	102 88353
TOTAL	1642	27779	5073	0	20607	466	29572	13748	8898	117	1840 568271
NORTHWESTERN											
ASHLAND	0	3275	575	0	1023	0	2541	1657	592	64	54 54584
BARRON	0	28	9	0	44	0	72	43	56	11	2 552
BAYFIELD	0	7147	270	0	615	0	1427	880	1032	77	32 72589
BURNETT	0	49	0	0	0	0	0	0	0	0	0 20162
DOUGLAS	0	3178	21	0	63	0	98	75	23	6	4 35921
IRON	0	3032	309	0	752	0	1487	849	614	14	41 68044
POLK	0	0	0	0	0	0	0	0	0	0	0 2070
PRICE	0	7910	1507	0	2809	0	5664	3630	2192	61	149 89221
RUSK	0	1431	425	0	1554	0	1667	1217	782	16	47 17148
SAWYER	0	6168	715	0	1730	0	3612	2354	1882	182	103 49255
TAYLOR	0	4835	1481	0	5327	45	6345	3829	1536	48	139 58501
WASHBURN	0	1224	38	0	152	0	217	166	212	39	9 50363
TOTAL	0	38277	5350	0	14069	45	23130	14700	8921	518	580 518410
CENTRAL											
ADAMS	0	160	35	0	445	0	113	287	2470	620	28 34454
CHIPPEWA	7	1174	646	0	1863	0	1398	1667	362	40	7 16010
CLARK	1	693	285	0	2130	0	1095	1682	3577	886	111 17767
EAU CLAIRE	0	0	0	0	0	0	0	0	0	0	0 6705
JACKSON	0	149	29	0	210	0	110	211	838	193	20 16453
JUNEAU	0	185	48	0	596	0	105	280	2051	565	28 19441
MARATHON	0	943	706	0	5714	40	3019	3694	4589	543	104 33341
MARQUETTE	0	175	29	0	403	0	83	275	1163	346	28 5540
MONROE	0	31	4	0	35	0	20	39	627	123	0 6281
PORTAGE	0	252	121	0	1309	0	418	743	2299	695	48 16232
WAUPACA	0	112	22	0	234	0	65	150	370	115	10 5316
WAUSHARA	0	28	9	0	111	0	27	63	377	108	6 7061
WOOD	0	678	212	0	2483	0	677	1589	5252	1515	98 44334
TOTAL	8	4580	2146	0	15533	40	7130	10680	23975	5749	488 228935
SOUTHWESTERN											
BUFFALO	0	0	0	0	0	0	0	0	0	0	0 10
CRAWFORD	0	7	0	295	111	243	472	295	343	130	7 2088
OUNN	0	0	0	0	0	0	0	0	0	0	0 886
GRANT	0	1	0	28	10	23	44	28	32	12	1 196
IOWA	0	0	0	0	0	0	0	0	0	0	0 26
LACROSSE	0	0	0	0	0	0	0	0	0	0	0 374
PEPIN	0	0	0	0	0	0	0	0	0	0	0 815
RICHLAND	0	0	0	0	0	0	0	0	0	0	0 76
SAUK	0	0	0	0	0	0	0	0	0	0	0 228
TREMPEALEAU	0	0	0	0	0	0	0	0	0	0	0 49
TOTAL	0	8	0	323	121	266	516	323	375	142	8 4746
SOUTHEASTERN											
BROWN	0	0	0	0	0	0	0	0	0	0	0 368
COLUMBIA	0	8	1	0	43	0	37	29	171	114	24 2374
DADE	0	0	0	0	136	0	0	0	0	0	0 404
GREEN	0	0	0	0	0	0	0	0	0	0	0 835
GREEN LAKE	10	9	2	0	71	0	36	23	0	0	22 762
KEWAUNEE	0	0	0	0	0	0	0	0	0	0	0 25
MANITOWOC	0	0	0	0	0	0	0	0	0	0	0 14
MILWAUKEE	0	0	0	0	376	0	0	0	0	0	0 376
OUTAGAMIE	0	0	0	0	0	0	0	0	0	0	0 92
ROCK	0	0	0	0	0	0	0	0	0	0	0 335
WAUKESHA	0	0	0	0	0	0	0	0	0	0	0 876
TOTAL	10	17	3	0	626	0	73	52	171	114	46 6461
STATE TOTAL	1660	70661	12572	323	50956	817	60421	39503	42340	6640	2962 1326823

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1975.

2/ INCLUDES MENOMINEE COUNTY.

Table 10.--*Central States pulpwood production by State and destination, 1971-1975*

(In thousand standard cords, roughwood basis)

Year	Illinois				Indiana				Iowa				Missouri			
	: Destination :				: Destination :				: Destination :				: Destination :			
	Total	Central	Other	Total	Central	Other	Total	Central	Other	Total	Central	Other	Total	Central	Other	Total
	: States:	States:	States:	: States:	States:	States:	: States:	States:	States:	: States:	States:	States:	: States:	States:	States:	: States:
1971	133	99	34	139	77	62	53	52	1	97	62	35				
1972	139	103	36	152	71	81	55	54	1	117	78	39				
1973	146	124	22	148	80	68	48	46	2	112	63	49				
1974	131	98	33	159	84	75	59	57	2	137	77	60				
1975	105	60	45	135	58	77	50	48	2	116	43	73				

Table 11.--*Trends in receipts of roundwood and residue as pulpwood, Central States, 1971-1975*

(In thousand standard cords, roughwood basis)

Type of Material and Area	1971	1972	1973	1974	1975
Roundwood					
Illinois	57	67	70	56	13
Indiana, Iowa, Missouri	107	99	106	93	74
Total	164	166	176	149	86
Residue					
Illinois	107	116	122	104	64
Indiana, Iowa, Missouri	67	74	81	100	86
Total	174	190	203	204	150
All Material	338	356	379	353	236

Blyth, James E., and Jerold T. Hahn.

1977. Pulpwood production in the North Central Region by county, 1975. USDA For. Serv. Resour. Bull. NC-34, 22 p., illus. North Cent. For. Exp. Stn., St. Paul, Minn.

Dicusses 1975 pulpwood production and receipts and recent production trends in the Lake States and Central States. Gives pulpwood production in the Lake States by species for each county and compares production by Forest Survey Unit with that of previous years. Presents 1975 pulpwood and receipt data by State for the Central States, and shows four production classes by county.

OXFORD: 861.0(77):792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.

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OXFORD: 861.0(77):792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.



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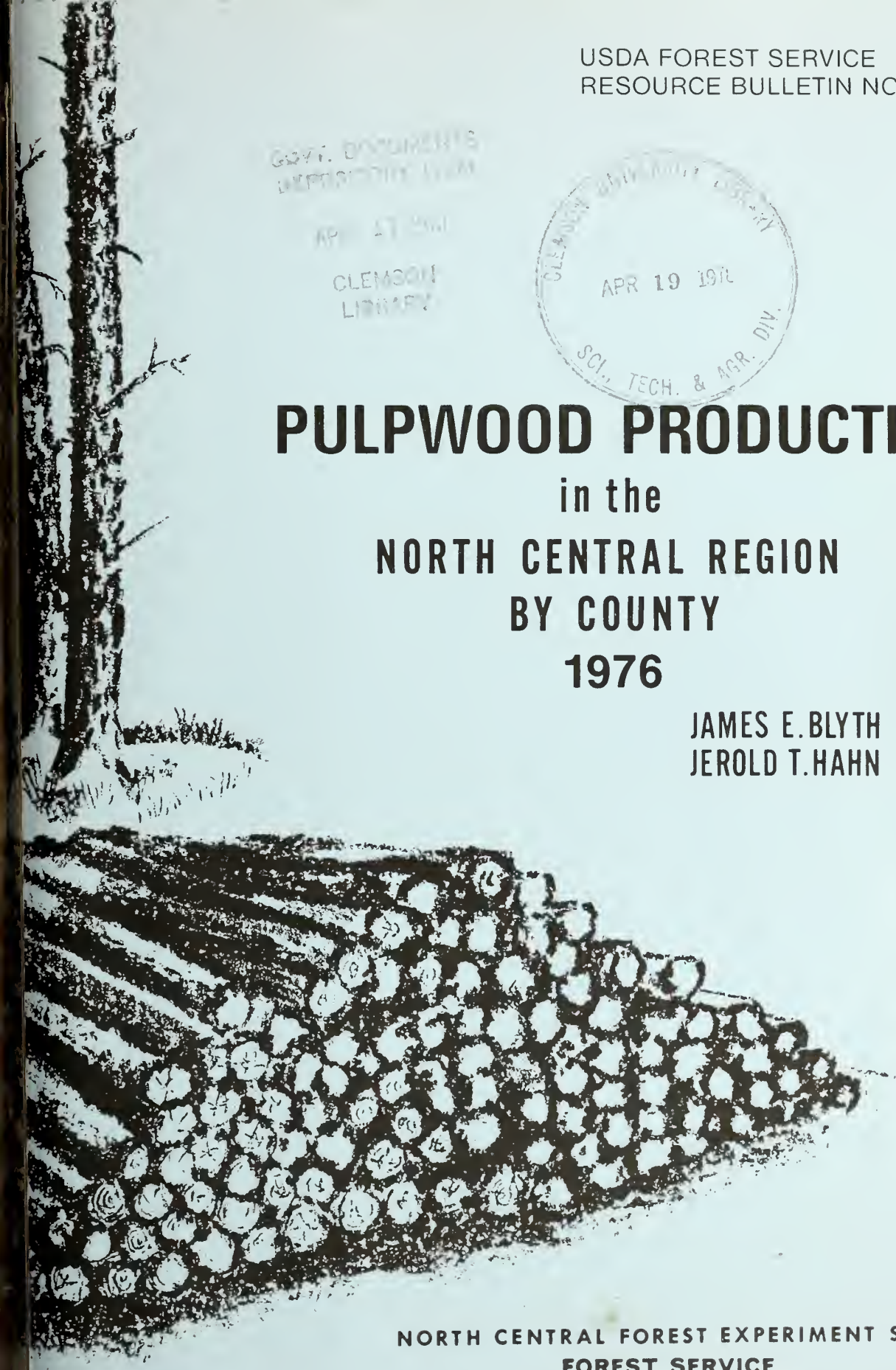


PULPWOOD PRODUCTION

in the
**NORTH CENTRAL REGION
BY COUNTY
1976**

**JAMES E. BLYTH
JEROLD T. HAHN**

**NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE**



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John H. Ohman, Director
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We gratefully acknowledge the cooperation of pulpmills using North Central States timber in 1976. Thanks are also due the Michigan Department of Natural Resources for collecting data from Michigan pulpmills.

HIGHLIGHTS

Lake States

Lake States pulpwood production climbed 13 percent from 1975 to 4.69 million cords in 1976. This higher pulpwood demand resulted in a 14-percent rise in United States paper and paperboard production in 1976 and the reopening of a large Lake States pulpmill after a long closure during an employee strike.

Lake States loggers cut 558,000 more cords of pulpwood in 1976 than in 1975. Major increases were in aspen, elm, and birch. Elm harvesting more than tripled the 1975 level.

Birch production reached new highs in Wisconsin and Minnesota. Pine harvesting advanced to a record in Michigan but fell in Minnesota to the lowest level since 1949.

Softwood residue imports from Canada rose for the fourth consecutive year. Imports from other States increased to 236,000 cords.

New pulping capacity in the Lake States will require at least 80,000 additional cords of pulpwood annually.

Central States

Pulpwood production increased 14 percent to 465,000 cords. Use of Central States hardwood residue for pulp exceeded 300,000 cords for the first time. Soft hardwood pulpwood output was the lowest ever recorded.

Exports to five nearby States rose for the third consecutive year and constituted almost half the total production.

Pulpwood receipts climbed 15 percent; about one-eighth was imported from 11 widely scattered States.

PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION BY COUNTY, 1976

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This is the 18th annual report on the pulpwood harvest in Lake States counties and the 17th annual report on the Central States harvest. Pulpwood constitutes more than half the timber products harvested annually in the Lake States (Michigan, Minnesota, and Wisconsin) and is an important product in the Central States (Illinois, Indiana, Iowa and Missouri).

Current detailed pulpwood production¹ information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Also, researchers need current pulpwood information for planning projects.

Pulpmills using North Central States timber in 1976 reported their pulpwood receipts by species groups and counties of origin. This report presents the results of the survey, analyzes the data where appropriate, compares results with 1975 or earlier years, and discusses trends in pulpwood production and use.

The Lake States and Central States are discussed separately because the timber types in each area are different and less information can

¹Pulpwood production is defined as the annual pulpwood volume harvested from timber land in a specified area that was received at all mills, plus the annual wood residue volume from sawmills, veneer mills, etc. in a specified area that was received at pulpmills. Pulpwood receipts are defined as the volume of wood received by mills in a specified area, regardless of the geographic source.

be released about the Central States (more detailed data on pulpwood production and receipts in the Central States would reveal the operations of individual mills).

Pulpwood production in Minnesota is completely and accurately shown. However, to prevent disclosure of confidential information about softwood pulpwood use by individual companies, the total quantity of softwood pulpwood imports in Minnesota from Canada and exports from Minnesota softwood shipped to Canada is shown as remaining and used in Minnesota, and receipts of Canadian softwood in Minnesota are understated.

LAKE STATES

Production

Lake States pulpwood production rose to 4.69 million cords in 1976 from 4.14 million cords in 1975 (table 1). Higher pulpwood demand resulted from a 14-percent rise in paper and paperboard production in the United States in 1976 and the reopening of a large pulpmill in the Lake States after a lengthy employee strike in 1975. Pulpwood inventories declined 6 percent in the Lake States during 1976.

Less than 5 percent of the Lake States pulpwood was shipped to other areas. Nine out of ten cords produced were roundwood (including chips from roundwood); the remainder was residue

Table 1. — Production and imports of pulpwood, Lake States, 1976
(In standards cords, unpeeled)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
CEAR								
MICHIGAN	5391	0	17	5408	0	0	0	5408
TOTAL	5391	0	17	5408	0	0	0	5408
HALSAM FIR								
MICHIGAN	20811	0	275	21086	0	0	0	21086
MINNESOTA	0	67700	0	67700	0	0	0	67700
WISCONSIN	44248	2243	84524	137055	0	0	0	137055
EXPORTED 3/	8057	3793	0	11850	0	0	0	0
TOTAL	75126	73776	84799	237701	0	0	0	225841
HFMLOCK								
MICHIGAN	54927	0	912	55839	0	0	0	55839
WISCONSIN	24128	0	41905	66033	0	0	0	66033
TOTAL	79055	0	42817	121872	0	0	0	121872
JACK PINE								
MICHIGAN	139756	0	3901	142657	0	0	0	142657
MINNESOTA	0	122044	0	122044	0	2075	2075	124119
WISCONSIN	64466	32040	165714	262220	4/47589	0	47589	309809
EXPORTED 3/	0	4265	0	4269	0	0	0	0
TOTAL	203222	158353	164615	531190	47589	2075	49664	576585
RED PINE								
MICHIGAN	57644	0	1172	58816	0	0	0	58816
MINNESOTA	0	7232	0	7232	0	0	0	7232
WISCONSIN	6431	3233	103092	112756	0	0	0	112756
TOTAL	64075	10465	104264	178804	0	0	0	178804
WHITE PINE								
MICHIGAN	11399	0	43	11433	0	0	0	11433
MINNESOTA	0	3014	0	3014	0	0	0	3014
WISCONSIN	2436	0	12314	14756	0	0	0	14756
TOTAL	13826	3026	12357	29203	0	0	0	29203
SPRUCE								
MICHIGAN	10465	0	46	10511	0	0	0	10511
MINNESOTA	0	142302	0	142302	0	0	0	142302
WISCONSIN	16872	31093	18634	66599	0	54331	54331	120930
EXPORTED 3/	4521	2252	0	6773	0	0	0	0
TOTAL	31858	175647	18680	226185	0	54331	54331	273743
TAMARACK								
MICHIGAN	166	0	0	166	0	0	0	166
MINNESOTA	0	7357	0	7357	0	0	0	7357
WISCONSIN	547	29038	3273	33498	0	0	0	33498
TOTAL	1153	36495	3273	41421	0	0	0	41421
ASH								
MICHIGAN	6501	0	34	6539	0	0	0	6539
WISCONSIN	4501	0	26201	30702	0	0	0	30702
EXPORTED 3/	0	0	226	226	0	0	0	0
TOTAL	11002	0	26465	37467	0	0	0	37241
ASPEN								
MICHIGAN	325544	0	1463	327007	0	0	0	327007
MINNESOTA	0	587758	10932	598690	0	546	546	599236
WISCONSIN	165165	75324	681007	925496	0	0	0	925496
EXPORTED 3/	0	6018	26	6046	0	0	0	0
TOTAL	490709	673160	693430	1857239	0	546	546	1851739
HALSAM POPLAR								
MICHIGAN	27667	0	543	28210	0	0	0	28210
MINNESOTA	0	22816	0	22816	0	0	0	22816
TOTAL	27667	22816	543	51026	0	0	0	51026
BASSWOOD								
MICHIGAN	6085	0	59	6144	0	0	0	6144
MINNESOTA	0	1101	0	1101	0	0	0	1101
WISCONSIN	119	0	10365	10484	0	0	0	10484
EXPORTED 3/	0	0	16	16	0	0	0	0
TOTAL	6204	1101	10440	17745	0	0	0	17729

TABLE 1 CONTINUED ON NEXT PAGE

TABLE 1 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
BEECH								
MICHIGAN	12115	0	269	12384	0	0	0	12384
WISCONSIN	315	0	7	322	0	0	0	322
TOTAL	12430	0	276	12706	0	0	0	12706
WHITE BIRCH								
MICHIGAN	45475	0	801	46276	0	0	0	46276
MINNESOTA	0	42696	0	42696	0	0	0	42696
WISCONSIN	5155	3390	98575	107120	0	0	0	107120
EXPORTED 3/	0	0	15	15	0	0	0	0
TOTAL	50630	46086	99381	196107	0	0	0	196092
YELLOW PITCH								
MICHIGAN	6678	0	202	6880	0	0	0	6880
WISCONSIN	11276	0	14342	25618	0	0	0	25618
TOTAL	17954	0	14544	32498	0	0	0	32498
CUTTONWOOD								
MICHIGAN	356	0	0	356	0	0	0	356
EXPORTED 3/	0	0	556	556	0	0	0	0
TOTAL	356	0	556	912	0	0	0	356
ELM								
MICHIGAN	15183	0	314	15497	0	0	0	15497
MINNESOTA	0	1036	0	1036	0	0	0	1036
WISCONSIN	18591	0	197496	216087	0	0	0	216087
EXPORTED 3/	0	0	209	209	0	0	0	0
TOTAL	33774	1036	198019	232829	0	0	0	232620
HICKORY								
MICHIGAN	104	0	0	104	0	0	0	104
WISCONSIN	0	0	988	988	0	0	0	988
EXPORTED 3/	0	0	340	340	0	0	0	0
TOTAL	104	0	1328	1432	0	0	0	1092
HARD MAPLE								
MICHIGAN	28364	0	657	29026	0	0	0	29026
MINNESOTA	0	1036	0	1036	0	0	0	1036
WISCONSIN	27564	410	65351	93329	0	0	0	93329
EXPORTED 3/	0	0	660	660	0	0	0	0
TOTAL	55937	1446	66019	124051	0	0	0	123391
SOFT MAPLE								
MICHIGAN	74571	0	988	75559	0	0	0	75559
MINNESOTA	0	1036	0	1036	0	0	0	1036
WISCONSIN	11578	283	49968	61829	0	0	0	61829
EXPORTED 3/	0	0	558	558	0	0	0	0
TOTAL	86149	1319	51514	138982	0	0	0	138424
RED OAK								
MICHIGAN	73404	0	49	73453	0	0	0	73453
MINNESOTA	0	4143	0	4143	0	0	0	4143
WISCONSIN	123	0	52613	52736	0	0	0	52736
EXPORTED 3/	0	0	478	478	0	0	0	0
TOTAL	73527	4143	53140	130810	0	0	0	130332
WHITE OAK								
MICHIGAN	7754	0	3	7757	0	0	0	7757
WISCONSIN	0	0	9516	9516	0	0	0	9516
EXPORTED 3/	0	0	181	181	0	0	0	0
TOTAL	7754	0	9790	17544	0	0	0	17273
OTHER HARDWOODS								
MICHIGAN	2375	0	7	2382	0	0	0	2382
WISCONSIN	2810	0	6575	9385	0	0	0	9385
EXPORTED 3/	0	0	14	14	0	0	0	0
TOTAL	5185	0	6596	11781	0	0	0	11767
TOTAL ROUNDWOOD								
MICHIGAN	931731	0	11754	943690	0	0	0	943690
MINNESOTA	0	1011271	16932	1022203	0	2621	2621	1024824
WISCONSIN	408764	181700	1646460	2276929	47589	54331	101920	2338844
EXPORTED 3/	12588	16332	3241	32201	0	0	0	0
TOTAL	1353688	1209303	1672432	4234823	47589	56952	104541	4307163

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TABLE 1 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
RESIDUE, SOFTWOOD								
MICHIGAN	13878	0	296	14174	0	2692	2692	16866
MINNESOTA	0	31772	0	31772	21567	8368	29935	61707
WISCONSIN	7674	0	38125	45799	155246	55319	210565	256364
EXPORTED 3/	2738	1765	0	4503	0	0	0	0
TOTAL	24290	33537	38421	96248	176813	66379	243192	334937
RESIDUE, HARDWOODS								
MICHIGAN	135280	0	11611	146891	7354	0	7354	154245
MINNESOTA	0	65617	12714	78331	4216	8464	12680	91011
WISCONSIN	17918	203	99209	117330	0	0	0	117330
EXPORTED 3/	10883	0	5547	16430	0	0	0	0
TOTAL	164081	65820	124081	358982	11570	8464	20034	362586
ALL WOOD MATERIAL								
MICHIGAN	1980889	0	23666	1104555	7354	2692	10046	1114601
MINNESOTA	0	1108660	23646	1132306	25783	19453	45236	1177542
WISCONSIN	434361	181903	1783794	2400058	202835	109650	312485	2712543
EXPORTED 3/	26209	18097	8828	53134	0	0	0	0
TOTAL	1541459	1308660	1839934	4690053	235972	131795	367767	5004686

^{1/} VERTICAL COLUMNS OF FIGURES UNDER BOX LABELING "PRODUCTION BY STATES" PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

^{2/} MOSTLY WESTERN STATES.

^{3/} PULPWOOD SHIPPED TO MILLS OUTSIDE OF REGION.

^{4/} PONDEROSA PINE.

from local wood-using plants.² Output from residue dipped slightly.

The roundwood harvest climbed 558,000 cords. The greatest increase was in aspen (218,000 cords), followed by elm (166,000 cords), birch (74,000 cords), pine (66,000 cords), and maple (61,000 cords). Harvest of elm was more than triple that in 1975 due to the increased use of trees with Dutch elm disease.

Wisconsin — Production increased 335,000 cords to 1.84 million cords. Wisconsin supplied 85 percent of the elm pulpwood harvested in the Lakes States as Dutch elm disease spread throughout the State. Other major harvest gains were in aspen (105,000 cords) and pine (46,000 cords). Birch output surpassed any previous year. Production from roundwood climbed in all areas of the State; the largest volume gain was in northeastern Wisconsin. Top-producing counties were Marinette, Oneida, and Price.

Michigan — Michigan supplied 1.35 million cords of pulpwood, up 261,000 cords from 1975.

²Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping. Residue includes slabs, edgings, veneer cores, sawdust, wood flour, and chips manufactured from slabs, edgings, and veneer cores.

Harvest increases were greatest for aspen (55,000 cords), pine (46,000 cords), and maple (40,000 cords). The pine harvest advanced to a new peak, but the spruce cut hit a new low. Harvesting intensified in all areas of Michigan; the largest volume increase was in the eastern Upper Peninsula. Marquette, Delta, and Iron counties were the leading producers.

Minnesota — Producers reduced their output for the second consecutive year to 1.31 million cords. Softwood production declined 130,000 cords while output from hardwoods rose 80,000 cords. Pine harvesting fell to the lowest level since 1949; but birch production reached 46,000 cords, a new high. Aspen output climbed 57,000 cords. All of the decline in pulpwood cutting was in the Northern Aspen-birch Unit. Even so, this Unit supplied 59 percent of all roundwood cut for pulpwood. Top-yielding counties were St. Louis, Koochiching, and Itasca.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to the merchantable volume in major pulpwood species (fig. 1); and second, the amount of pulpwood cut relative to commercial forest area (fig. 2). Cutting pressure was heaviest (per 1,000 cords of merchantable volume in principal pulpwood species) in central and northeastern Wisconsin and eastern Upper Michigan.

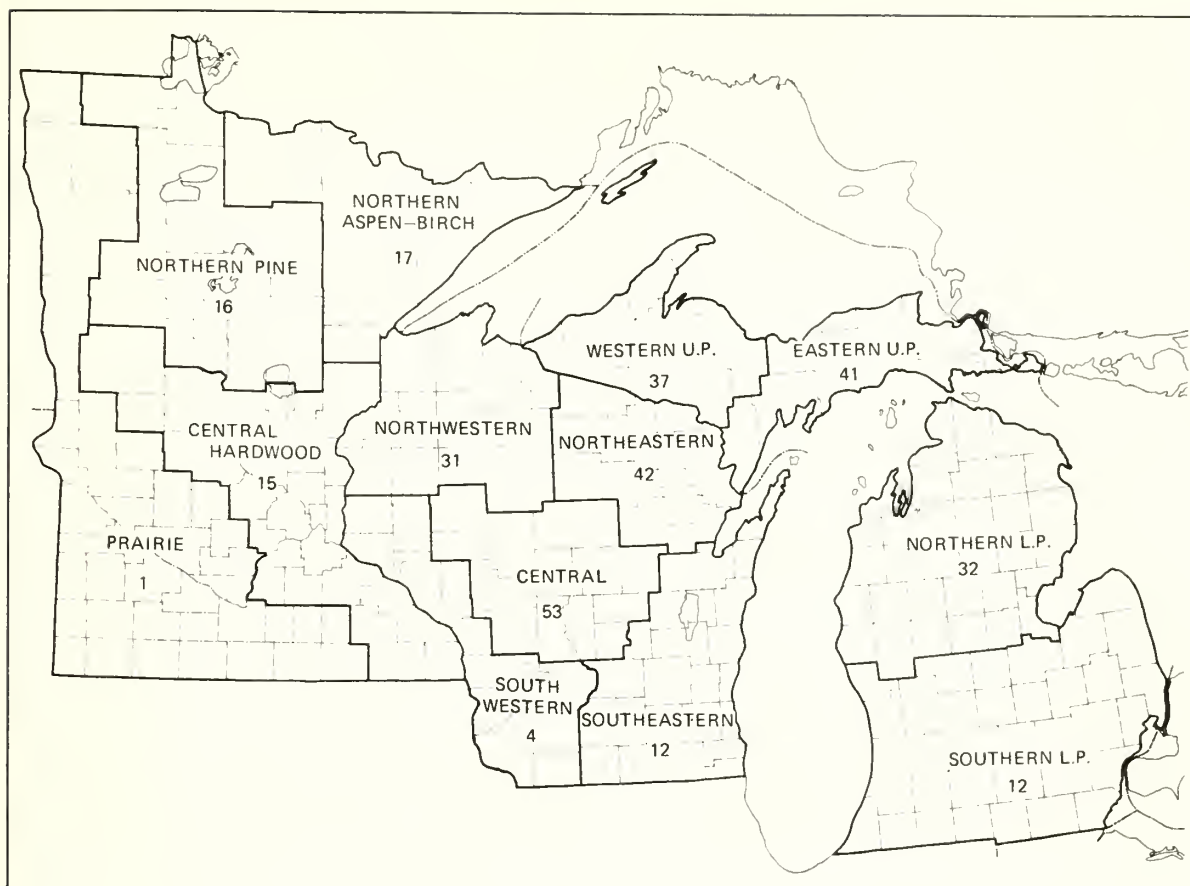


Figure 1. — Cords of pulpwood bolts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1976. (The heavy lines delineate the boundaries of the Forest Survey Units in each State.)

Receipts

Forty-one Lake States pulpmills received about 5 million cords of pulpwood in 1976. Thirty-seven of these mills used aspen and 20 used birch (table 2). Aspen receipts surged up by 213,000 cords. Demand for elm rose 166,000 cords and demand for birch increased 74,000 cords to a near record level.

Canada continued to increase shipments of softwood residue to the Lake States for the fourth consecutive year; Wisconsin was the primary market.

Imports from other States advanced 15 percent to 236,000 cords; western States furnished 95

percent. Three-fourths of these imports were softwood residue chips from South Dakota, Colorado, Montana, and Wyoming.

Wisconsin — Wood procurement shifted upward 369,000 cords after falling 791,000 cords in 1975. Birch demand reached a new high while spruce deliveries plunged to the lowest level recorded. Twelve percent of the wood came from outside the Lake States.

Michigan — Pulpwood procurement rose 271,000 cords and included many species. For the first time, pine demand exceeded 200,000 cords. Deliveries of softwood and hardwood residues for pulping were at new highs.

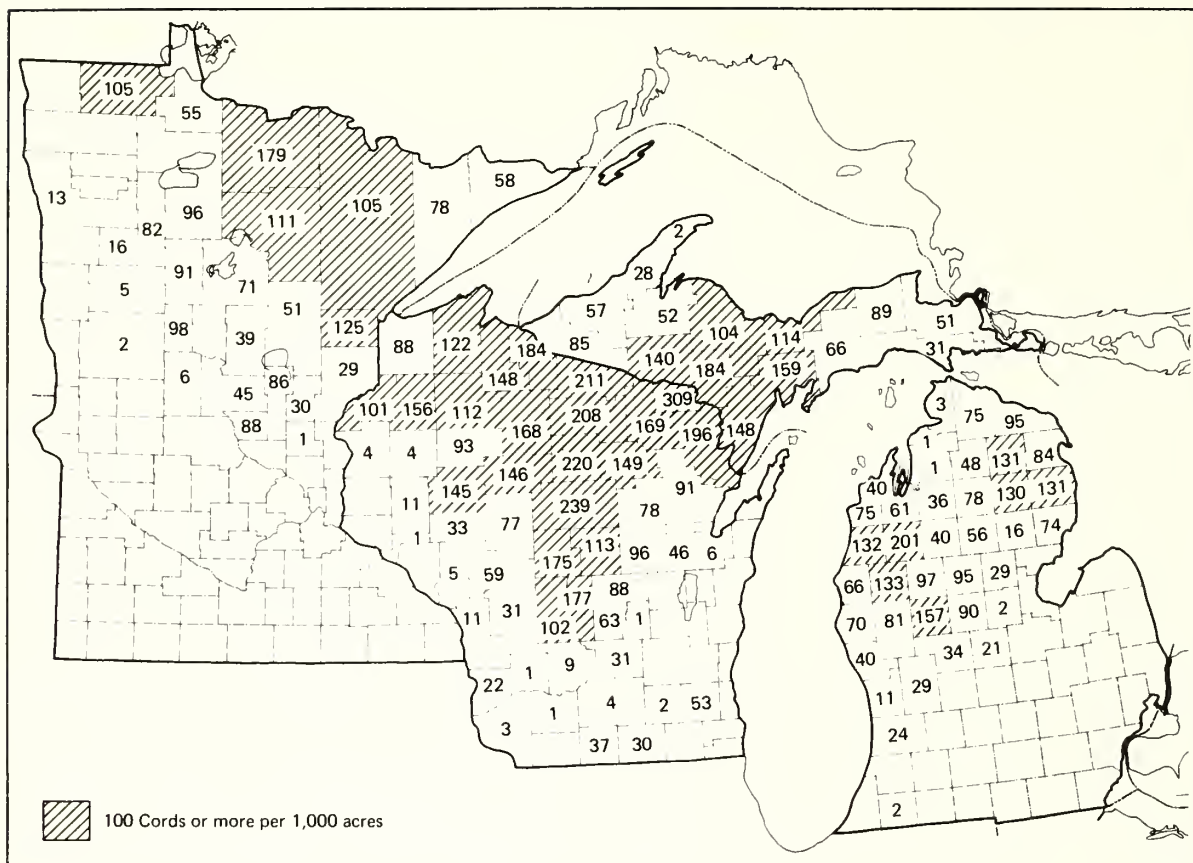


Figure 2. — Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1976. Acres of stocked commercial forest land were determined during the last forest survey in each State.

Table 2. — Industrial plants using the different species of wood for pulping in 1976 (In numbers)

Species and kind of material	Lake States	Minnesota	Wisconsin	Michigan
Aspen	37	9	20	8
Balsam fir	18	5	10	3
Birch	20	3	11	6
Hemlock	10	--	8	2
Pine	10	2	4	3
Spruce	19	4	12	3
Tamarack	7	1	5	1
Maple	15	--	10	5
Oak	11	1	5	5
Other hardwoods	17	2	10	5
Wood chips (residue)	19	5	8	6
Slabwood and other residue	7	2	3	2
Total Plants ^{1/}	41	9	24	8

^{1/} Some plants use more than one species, so numbers in columns cannot be added.

Industry Trends and Analysis

Average daily production was 10,600 tons per day (table 3). One mill changed ownership, but none closed. Strikes and work stoppages were less disruptive than in 1975. New pulping capacity in the Lake States will require at least 80,000 additional cords of pulpwood per year.

Aspen pulpwood production continued to decline slightly from 45 percent of the roundwood

harvest in 1975 to 44 percent in 1976. During the last decade the annual aspen cut has shown little upward movement while the annual birch output has tripled.

Demand for balsam fir continues strong. Balsam fir harvesting remained above 200,000 cords for the fourth successive year after averaging 158,000 cords annually from 1968 to 1972.

Table 3. — Active woodpulp mills in the Lake States by location, type of pulp produced, and average daily production, 1976

COMPANY	LOCATION	AVERAGE PRODUCTION IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD : AND OTHER : MECHANICAL	SEMI- CHEMICAL

MICHIGAN:						
ADITIMI CORP.	ALPENA	430	0	0	430	0
CELOTEX CORP.	L ANSE	270	0	0	270	0
HOERNER WALDOFF CORP.	ONTONAGON	220	0	0	0	220
MANISTIQUE PULP AND PAPER CO.	MANISTIQUE	90	0	0	90	0
MEAD CORP.	ESCANABA	750	0	600	150	0
MENASHA CORP.	OTSEGO	225	0	0	0	225
PACKAGING CORP. OF AMERICA	FILER CITY	600	0	0	0	600
WARREN CO., S.O.	MUSKEGON	250	0	250	0	0
TOTAL.....		2835	0	850	940	1045
=====						
MINNESOTA :						
BLANDIN PAPER CO.	GRAND RAPIDS	350	0	0	350	0
HENNEPIN PAPER CO.	LITTLE FALLS	75	0	0	75	0
HOISE CASCADE CORP.	INTERNATIONAL FALLS	880	0	340	540	0
POTLATCH CORP.	CLOQUET	520	120	400	0	0
SUPERWOOD CORP.	HEMLOCK	90	0	0	90	0
ST REGIS PAPER CO.	SARTELL	125	0	0	125	0
SUPERWOOD CORP.	DULUTH	350	0	0	350	0
HOERNER WALDOFF CORP.	ST PAUL	300	0	0	0	300
CONWEG CORP.	CLOQUET	350	0	0	350	0
TOTAL.....		3040	120	740	1860	300
=====						
WISCONSIN :						
AMERICAN CAN CO.	GREEN BAY	210	150	0	60	0
WEYERHAEUSER CO.	ROTHSCHILD	200	200	0	0	0
KADDER PAPER MILLS	PESHIGO	110	110	0	0	0
MCRAPPLETON PAPER DIV.	COMBINED LOCKS	200	0	0	200	0
CONSOLIDATED PAPERS, INC.	APPLETON	130	130	0	0	0
CONSOLIDATED PAPERS, INC.	STEVENS POINT	100	0	0	100	0
CONSOLIDATED PAPERS, INC.	WISCONSIN RAPIDS	640	0	345	245	0
GREEN BAY PACKAGING, INC.	GREEN BAY	200	0	0	0	200
FLAMBEAU PAPER CO.	PARK FALLS	115	115	0	0	0
MITEC PAPER CORP.	KIMBERLY	115	0	0	115	0
PENTAIR INDUSTRIES	NIAGARA	170	0	0	170	0
MUSINEP PAPER MILLS CO.	MOSINEP	200	0	200	0	0
NEKOOSA PAPERS INC.	NEKOOSA	310	0	310	0	0
NEKOOSA PAPERS INC.	PORT EDWARDS	215	215	0	0	0
OWENS-ILLINOIS	TOMAHAWK	620	0	0	0	620
PROCTER AND GAMBLE INC.	GREEN BAY	2/	2/	2/	2/	2/
SCOTT PAPER CO.	OCONTO FALLS	115	115	0	0	0
ST REGIS PAPER CO.	WHELANDEP	75	75	0	0	0
FLINKOTF COMPANY	CORNELL	100	0	0	100	0
SUPERIOR FIBRE PRODUCTS CO.	SUPERIOR	180	0	0	180	0
THILMANY PULP AND PAPER CO	PAUKAUNA	400	0	400	0	0
TOMAHAWK PULP CO., INC.	TOMAHAWK	50	0	0	50	0
KAUSAU PAPER MILLS CO.	SPOKAW	185	185	0	0	0
HOISE CASCADE CORP.	PHILLIPS	100	0	0	100	0
TOTAL.....		4740	1295	1305	1320	820
=====						
ALL STATES	41 PLANTS	10615	1415	2895	4140	2165

1/ LOGWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1977.
2/ CAPACITY NOT AVAILABLE.

CENTRAL STATES

pulpwood dropped to the lowest volume recorded.
Demand for hard hardwoods recovered.

Production

Pulpwood demand strengthened because paper and paperboard requirements expanded as part of the national business recovery. Central States producers increased their pulpwood output 14 percent to 465,000 cords (table 4). For the first time, Central States hardwood residue used for pulp exceeded 300,000 cords, two-thirds of the total production. The harvest of soft hardwood

Exports increased 29,000 cords, the third straight yearly gain. About half (49 percent) of the production was shipped beyond the Central States to Ohio, Kentucky, Michigan, Minnesota, and Wisconsin. More than three-fourths (78 percent) of the exports was hardwood residue. Export markets for hardwood residue are important revenue sources for sawmill operators in Indiana, Missouri, and Illinois.

Table 4. — *Production and imports of pulpwood, Central States, 1976*
(In standard cords, unpeeled)¹

SPECIES AND DESTINATION	PRODUCTION BY STATES 2/					IMPORTS			TOTAL
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	RECEIPTS
SOFTWOODS									
ILLINOIS	2322	0	0	184	2506	0	0	0	2506
EXPORTED 4/	1504	0	0	184	1688	0	0	0	0
TOTAL	3826	0	0	368	4194	0	0	0	2506
SOFT HARDWOODS									
ILLINOIS	6220	1480	0	6136	13836	0	0	0	13836
IND., IOWA, MO. 3/	5137	15544	9385	6544	36610	1396	0	1396	38006
EXPORTED 4/	4366	531	0	992	5889	0	0	0	0
TOTAL	15723	17555	9385	13672	56335	1396	0	1396	51842
HARD HARDWOODS									
ILLINOIS	1200	233	0	8	1441	0	0	0	1441
IND., IOWA, MO. 3/	8011	15453	15212	2819	41505	1885	0	1885	43390
EXPORTED 4/	7424	24683	0	9058	41165	0	0	0	0
TOTAL	16635	40379	15212	11885	64111	1885	0	1885	44831
TOTAL ROUNDWOOD									
ILLINOIS	9742	1713	0	6328	17783	0	0	0	17783
IND., IOWA, MO. 3/	13148	31007	24597	9363	78115	3281	0	3281	81396
EXPORTED 4/	13294	25214	0	10234	48742	0	0	0	0
TOTAL	36144	57934	24597	25925	144640	3281	0	3281	99179
RESIDUE, SOFTWOODS									
ILLINOIS	3120	0	378	5063	8561	3470	4653	8123	16684
IND., IOWA, MO. 3/	0	0	0	0	0	0	4800	4800	4800
TOTAL	3120	0	378	5063	8561	3470	9453	12923	21484
RESIDUE, HARDWOODS									
ILLINOIS	32657	6438	0	4154	43249	10916	0	10916	54165
IND., IOWA, MO. 3/	6756	39268	15623	29535	91182	5514	0	5514	96696
EXPORTED 4/	37591	68354	4216	67155	177316	0	0	0	0
TOTAL	77004	114060	19839	100844	311747	16430	0	16430	150861
ALL WOOD MATERIAL									
ILLINOIS	45519	8151	378	15545	69593	14386	4653	19039	88632
IND., IOWA, MO. 3/	19904	70275	40220	38898	169297	8795	4800	13595	182892
EXPORTED 4/	50885	93568	4216	77389	226058	0	0	0	0
TOTAL	116308	171994	44814	131832	466948	23181	9453	32634	271524

1/ FACTORS USED IN CONVERTING TO STANDARD GREEN COPOS (128 CU. FT.) WERE:

- 4.500 POUNDS OF SOFT HARDWOOD ROUNDWOOD;
- 5.000 POUNDS OF HARD HARDWOOD OR CONIFEROUS ROUNDWOOD;
- 4.100 POUNDS OF SOFTWOOD CHIPS (GREEN);
- 4.400 POUNDS OF HARDWOOD CHIPS (GREEN);
- 2.500 POUNDS OF CHIPS (ALL SPECIES, VARY).

2/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING "PRODUCTION BY STATES" PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

3/ COMBINED TO PREVENT DISCLOSURE OF INDIVIDUAL MILL RECEIPTS.

4/ PULPWOOD SHIPPED TO MILLS OUTSIDE THE REGION.

Indiana's position improved as the leading producer. Missouri, in second place, led Illinois in production for the third consecutive year. Contrary to the other States, Iowa's production dropped. Each of the Central States supplied more hardwood residue for pulping in 1976 than previously.

Loggers cut pulpwood in 94 counties: 31 in Illinois, 30 in Indiana, 23 in Missouri, and 10 in Iowa (fig. 3). Harvest areas expanded in southern and southeastern Illinois, southwestern Indiana, and Central Iowa; and contracted in western Illinois, western and northeastern Missouri, and eastern and southeastern Iowa.

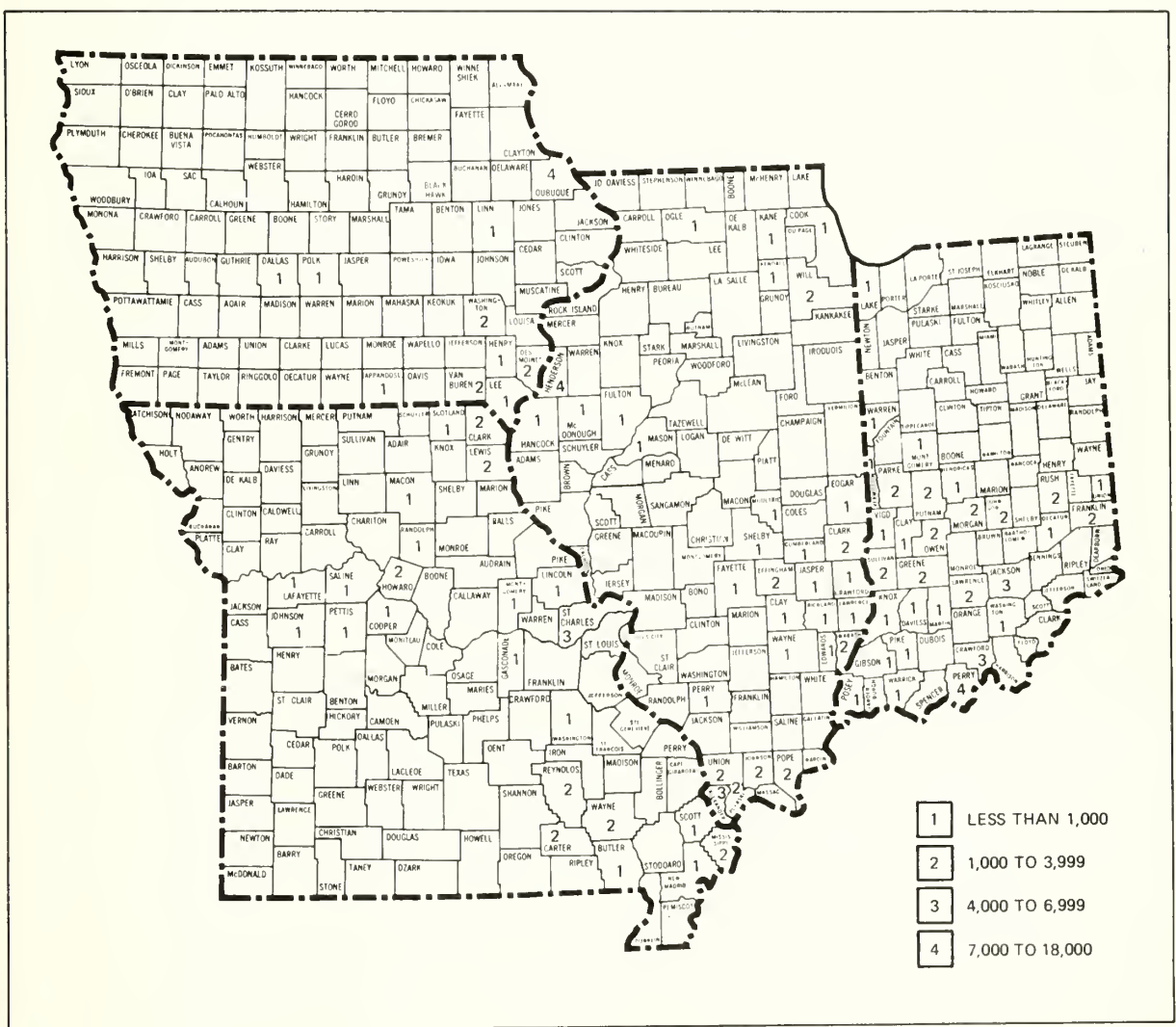


Figure 3. — Harvest of pulpwood bolts in the Central States by counties, in standard cords, 1976.

Receipts

Twelve Central States pulpmills received 272,000 cords of pulpwood, up 15 percent from 1975 when receipts dropped sharply. Nearly two-thirds was wood residue. Twelve percent of the receipts was imported from 11 widely scattered States.

Industry Trends and Analysis

Average daily pulp production was 1,100 tons (table 5). No mills changed owners and no significant changes in pulping capacity were announced.

In 1965 hardwood residue from Central States mills was initially used for pulp. Until 1969 more than 85 percent of this hardwood residue was used annually within the Central States. Then markets in nearby States grew rapidly; more than half of this residue is now exported:

Year

Hardwood residue exports

(Thousand cords) (Percent of total hardwood residue)

1965	2	8
1966	4	12
1967	5	8
1968	15	13
1969	28	15
1970	55	31
1971	82	41
1972	92	41
1973	97	40
1974	122	43
1975	155	57
1976	177	57

Pulpwood markets for hardwood residue are likely to remain excellent. Markets for roundwood are uncertain and will be affected by logging costs; availability of labor for logging; competing uses for roundwood such as saw logs, veneer logs, and fuelwood; and the degree of substitution of residue for roundwood.

Table 5. — *Active woodpulp mills in the Central States by location, type of pulp produced, and average daily production, 1976*

COMPANY	LOCATION	AVERAGE PRODUCTION IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI- CHEMICAL
ILLINOIS:						
BIRD AND SON, INC.	CHICAGO	40	0	0	40	0
CELOTEX CORP.	PEORIA	90	0	0	90	0
CERTAIN-TEED PRODUCTS CORP.	EAST ST LOUIS	100	0	0	100	0
FLINTKOTE CO. THE	MT CARMEL	40	0	0	40	0
GAF CORP.	JOLIET	100	0	0	100	0
JOHNS-MANVILLE PRODUCTS CORP.	WAUKEGAN	50	0	0	50	0
CELOTEX CORP.	WILMINGTON	30	0	0	30	0
TOTAL..... 7 PLANTS.....		450	0	0	450	0
INDIANA :						
WESTON PAPER AND MFG. CO.	TERRE HAUTE	270	0	0	0	270
TOTAL..... 1 PLANT.....		270	0	0	0	270
IOWA :						
CELOTEX CORP.	DUQUOE	90	0	0	90	0
CONSOLIDATED PACKAGING CORP.	FORT MADISON	140	0	0	0	140
TOTAL..... 2 PLANTS.....		230	0	0	90	140
MISSOURI :						
GAF CORP.	KANSAS CITY	90	0	0	90	0
HUEBERT FIERRODARD, INC.	BOONVILLE	60	0	0	60	0
TOTAL..... 2 PLANTS.....		150	0	0	150	0
ALL STATES 12 PLANTS		1100	0	0	690	410

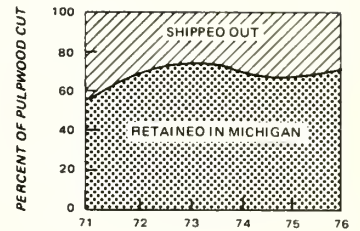
^{1/} LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1977.

APPENDIX

Table 6. — *Lake States pulpwood production by State of origin and destination, 1972-1976 (In thousand standard cords, roughwood basis)*

Michigan

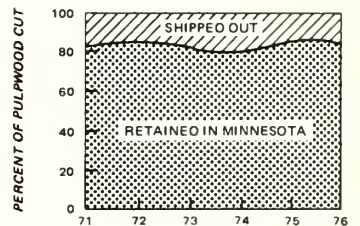
	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1972	1,401	--	470	917	14
1973	1,585	--	418	1,131	36
1974	1,843	--	534	1,290	19
1975	1,280	--	449	814	17
1976	1,541	--	434	1,081	26
5-Year average	1,530	--	461	1,047	22



Minnesota

	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1972	1,354	1,168	166	--	20
1973	1,376	1,152	194	*	30
1974	1,578	1,297	262	*	19
1975	1,359	1,173	178	--	8
1976	1,309	1,109	182	--	18
5-Year average	1,395	1,180	196	*	19

*Less than 500 cords.



Wisconsin

	:Total: : cut	Destination of pulpwood			
		:Minnesota:	Wisconsin:	Michigan:	Other
1972	1,537	28	1,493	2	14
1973	1,758	14	1,671	55	18
1974	2,053	14	2,004	25	10
1975	1,505	20	1,460	19	6
1976	1,840	23	1,784	24	9
5-Year average	1,739	20	1,683	25	11

*Less than 500 cords.

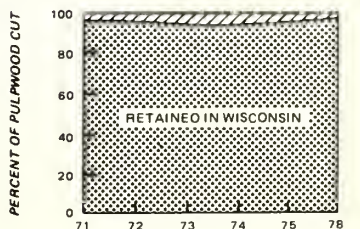


Table 7. — *Lake States pulpwood production from roundwood by Forest Survey Unit and destination by State, 1976 (In hundred standard cords, roughwood basis)*

MICHIGAN					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	TOTAL	:	:	:
	:	CUT	:	MICHIGAN:MINNESOTA:WISCONSIN:	OTHER
E. UPPER PENINSULA		3792		2358	0
W. UPPER PENINSULA		4275		1704	0
N. LOWER PENINSULA		5273		5064	0
S. LOWER PENINSULA		192		192	0
TOTAL		13532		9318	0
				4088	126
MINNESOTA					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	TOTAL	:	:	:
	:	CUT	:	MICHIGAN:MINNESOTA:WISCONSIN:	OTHER
NORTHEASTERN		7084		0	5930
CENTRAL PINE		4629		0	3835
RAINY RIVER		371		0	348
SOUTHEASTERN		9		0	0
TOTAL		12093		0	10113
				1817	163
WISCONSIN					
UNIT	:	:	DESTINATION OF PULPWOOD		
	:	TOTAL	:	:	:
	:	CUT	:	MICHIGAN:MINNESOTA:WISCONSIN:	OTHER
NORTHEASTERN		7125		110	0
NORTHWESTERN		6216		8	109
CENTRAL		3198		0	0
SOUTHWESTERN		80		0	0
SOUTHEASTERN		105		0	0
TOTAL		16724		118	109
				16464	33

Table 8. — *Lake States pulpwood production from roundwood by species, State, and Forest Survey Unit, 1972-1976* (In thousand standard cords, roughwood basis)

Michigan										
Unit	Aspen					Balsam fir				
	Annual Production					Annual Production				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
E. 1/2 Upper Peninsula	89	93	119	68	93	33	41	40	36	41
W. 1/2 Upper Peninsula	188	225	294	138	176	24	26	32	34	31
N. 1/2 Lower Peninsula	241	275	282	228	216	3	2	2	4	3
S. 1/2 Lower Peninsula	11	10	11	1	6	--	--	--	--	--
Total	529	603	706	435	491	60	69	74	74	75
Minnesota										
Northern aspen-birch	373	407	460	357	372	40	37	52	76	44
Northern pine	264	228	282	236	276	26	28	41	45	30
Central hardwood	52	38	62	22	25	--	*	--	--	*
Prairie	--	--	--	--	--	--	--	--	--	--
Total	689	673	804	615	673	66	65	93	121	74
Wisconsin										
Northeastern	349	380	383	286	345	25	34	49	64	61
Northwestern	311	331	342	276	308	23	32	35	33	26
Central	23	46	71	25	38	1	1	1	1	2
Southwestern	1	3	1	--	--	--	--	--	--	--
Southeastern	*	1	*	1	2	--	--	--	--	--
Total	684	761	797	588	693	49	67	85	98	89
Lake States	1,902	2,037	2,307	1,638	1,857	175	201	252	293	238

*Less than 500 cords.

Michigan										
Unit	Birch					Hemlock				
	Annual Production					Annual Production				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
E. 1/2 Upper Peninsula	10	19	24	6	20	17	22	13	16	35
W. 1/2 Upper Peninsula	7	16	35	8	29	33	36	39	34	44
N. 1/2 Lower Peninsula	19	25	25	22	20	--	--	*	--	*
S. 1/2 Lower Peninsula	--	--	*	*	*	--	--	--	--	--
Total	36	60	84	36	69	50	58	52	50	79
Minnesota										
Northern aspen-birch	16	18	15	16	21	--	--	--	--	--
Northern pine	26	23	24	18	23	--	--	--	--	--
Central hardwood	*	1	5	2	2	--	--	--	--	--
Prairie	--	--	*	*	--	--	--	--	--	--
Total	42	42	44	36	46	--	--	--	--	--
Wisconsin										
Northeastern	20	30	38	33	50	26	21	32	30	27
Northwestern	26	40	59	44	56	13	10	9	13	9
Central	*	1	5	6	8	2	1	3	3	7
Southwestern	1	1	*	*	--	--	--	--	--	--
Southeastern	--	--	*	*	*	--	*	1	*	--
Total	47	72	102	83	114	41	32	45	46	43
Lake States	125	174	230	155	229	91	90	97	96	122

*Less than 500 cords.

TABLE 8 CONTINUED ON NEXT PAGE

Michigan

TABLE 8 CONTINUED

Unit	Pine					Spruce				
	Annual Production					Annual Production				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
E. 1/2 Upper Peninsula	84	67	87	59	88	20	28	19	18	17
W. 1/2 Upper Peninsula	37	36	36	25	43	18	18	20	25	14
N. 1/2 Lower Peninsula	102	88	127	143	140	--	*	1	2	1
S. 1/2 Lower Peninsula	5	12	9	8	10	--	--	--	--	--
Total	228	203	259	235	281	38	46	40	45	32
Minnesota										
Northern aspen-birch	136	125	139	116	104	140	159	154	153	129
Northern pine	79	77	98	79	64	52	54	51	49	46
Central hardwood	1	3	2	4	4	--	*	*	--	*
Prairie	--	*	*	--	--	*	2	2	--	--
Total	216	205	239	199	172	192	215	207	202	175
Wisconsin										
Northeastern	53	43	62	46	55	9	10	13	18	14
Northwestern	99	100	100	64	96	4	6	6	7	4
Central	90	85	125	122	124	*	--	*	*	1
Southwestern	2	3	2	2	5	--	--	--	--	--
Southeastern	2	1	2	5	6	--	--	*	--	--
Total	246	232	291	239	286	13	16	19	25	19
Lake States	690	640	789	673	739	243	277	266	272	226

*Less than 500 cords.

Michigan

Unit	Tamarack					Miscellaneous hardwoods				
	Annual production					Annual production				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
E. 1/2 Upper Peninsula	2	2	1	1	*	50	93	124	35	82
W. 1/2 Upper Peninsula	1	3	1	1	1	97	123	148	57	88
N. 1/2 Lower Peninsula	--	--	--	--	0	153	145	144	124	147
S. 1/2 Lower Peninsula	--	--	--	--	0	9	5	8	2	3
Total	3	5	2	2	1	309	366	424	218	320
Minnesota										
Northern aspen-birch	12	14	25	31	19	29	29	24	12	19
Northern pine	19	17	18	25	17	1	2	6	7	7
Central hardwood	--	1	--	*	*	--	5	6	3	6
Prairie	*	1	*	*	1	--	--	*	--	--
Total	31	33	43	56	37	30	36	36	22	32
Wisconsin										
Northeastern	2	1	1	2	2	128	150	183	89	158
Northwestern	1	*	1	1	1	84	104	140	81	122
Central	*	--	*	1	*	111	136	174	71	140
Southwestern	--	--	--	--	--	5	6	3	2	3
Southeastern	--	--	--	--	--	5	4	6	1	2
Total	3	1	2	4	3	333	400	506	244	425
Lake States	37	39	47	62	41	672	802	966	484	777

TABLE 8 CONTINUED ON NEXT PAGE

Michigan

TABLE 8 CONTINUED

Unit	All species**				
	Annual production				
	: 1972	: 1973	: 1974	: 1975	: 1976
E. 1/2 Upper Peninsula	308	365	430	241	379
W. 1/2 Upper Peninsula	406	483	607	323	428
N. 1/2 Lower Peninsula	518	535	581	523	527
S. 1/2 Lower Peninsula	25	27	28	11	19
Total	1,257	1,410	1,646	1,098	1,353
Minnesota					
Northern aspen-birch	746	789	869	761	708
Northern pine	467	429	520	459	463
Central hardwood	53	48	75	31	37
Prairie	*	3	2	*	1
Total	1,266	1,269	1,466	1,251	1,209
Wisconsin					
Northeastern	612	669	761	568	712
Northwestern	561	623	692	519	622
Central	227	270	379	229	320
Southwestern	9	13	6	4	8
Southeastern	7	6	9	7	10
Total	1,416	1,581	1,847	1,327	1,672
Lake States	3,939	4,260	4,959	3,676	4,234

*Less than 500 cords.

**Includes small quantity of cedar not shown in other parts of table.

Table 9. — *Lake States pulpwood production from roundwood by county and species, 1976* (In standard cords, roughwood basis)

MICHIGAN												
UNIT AND COUNTY 1/	CEAR:	BALSAM: FIR:	HEMLOCK:	JACK: PINE:	RED: PINE:	WHITE: PINE:	SPPUCE:	TAMA: RACK:	ASH:	ASPEN:	BALSAM: POPLAR:	BASS: WOOD
E. UPPER PENINSULA												
ALGER	1135	2525	10811	11835	3845	2519	1080	36	119	6848	2857	160
CHIPPEWA	182	3708	3011	17843	1289	797	2997	6	124	5234	457	145
DELTA	463	10080	5906	7832	2231	1305	2468	15	664	32452	9187	120
LUCE	483	7102	5599	15574	1800	1701	3840	16	95	2349	1274	105
MACKINAC	161	3903	1098	2240	251	280	1198	3	102	2843	1049	122
MENOMINEE	200	11189	2936	1009	630	462	2122	487	2690	35323	1460	115
SCHOLCHRAFT	441	3180	5222	9062	4087	1175	2839	14	137	7720	1407	121
TOTAL	3005	41687	34563	65396	14173	8239	16544	577	3931	92769	17691	888
W. UPPER PENINSULA												
HAPACA	154	661	4144	3256	305	357	719	27	227	12621	17	203
DICKINSON	184	4078	2226	718	437	480	881	225	490	55904	2484	115
GUGENIC	17	2551	15429	456	464	47	174	1	121	23272	0	71
HOUGHTON	224	1436	3242	760	444	490	481	50	87	5471	6	59
IRON	126	11336	2583	4896	1199	438	6114	160	679	37141	222	204
Keweenaw	1	2	14	1	1	1	264	0	0	0	0	0
NAPUETTE	1497	9757	13234	20644	3372	3354	5117	96	376	24235	1873	265
ONTONAGON	183	772	3435	231	321	398	207	17	212	16792	5	38
TOTAL	2386	30593	44427	30967	6543	5565	13957	576	2192	175436	4607	955
N. LOWER PENINSULA												
ALCONA	0	214	22	2529	22	0	31	0	158	22507	1043	119
ALPENA	0	693	43	574	43	22	318	0	144	10102	546	148
ANTRIM	0	0	0	0	0	0	0	0	0	218	0	0
ARENAC	0	0	0	47	0	0	0	0	0	0	0	0
BENZIE	0	0	0	0	0	0	0	0	78	4824	0	78
CHARLEVOIX	0	100	0	0	0	0	53	0	0	0	0	0
CHEBOYGAN	0	485	0	1389	0	0	202	0	160	14630	795	178
CLARE	0	0	0	1301	0	0	0	0	53	15385	0	52
CRAWFORD	0	0	0	16757	0	0	0	0	27	2050	0	21
EMMET	0	112	0	312	0	0	65	0	0	0	0	0
GLADWIN	0	0	0	0	0	0	0	0	21	3827	0	21
GRAND TRAVERSE	0	0	0	215	2694	0	0	0	104	4389	0	52
ISOSU	0	0	0	14280	0	0	0	0	26	1635	44	26
ISABELLA	0	0	0	0	157	0	0	0	51	7264	23	40
KALKASKA	0	0	0	2759	1051	0	0	0	42	2920	0	42
LAKE	0	0	0	9466	0	0	0	0	1146	9066	285	863
LEELANAU	0	0	0	0	43	0	0	0	156	1196	0	126
MANISTEE	0	0	0	2456	2000	0	0	0	338	11123	9	239
MASON	0	0	0	0	362	0	0	0	115	4595	3	117
MECOSTA	0	0	0	0	4759	0	0	0	281	10263	111	333
MIDLAND	0	0	0	0	15	0	0	0	0	302	0	0
MISSAUKEE	0	0	0	125	1312	0	0	0	104	5096	0	52
MONTMORENCY	0	446	0	9871	0	0	263	0	150	17832	982	166
NLWAYGO	0	0	0	0	4024	0	0	0	671	6646	234	601
OCEANA	0	0	0	0	2784	0	0	0	184	2600	35	208
OGEMAW	0	0	0	434	0	0	0	0	0	2219	0	0
OSCEOLA	0	0	0	0	2061	0	0	0	396	8267	162	478
OSCEOLA	0	12	0	11444	0	0	2	0	184	17874	377	141
OTSEGO	0	21	0	9441	61	0	0	0	0	1256	0	21
PRESQUE ISLE	0	763	0	4803	22	0	423	0	80	13736	715	89
ROSCOMMON	0	0	0	3836	0	0	0	0	21	6666	0	21
WEXFORD	0	0	0	14776	12495	0	0	0	112	7645	1	108
TOTAL	0	2846	65	106608	33911	22	1357	0	4802	216133	5365	4340
S. LOWER PENINSULA												
ALLEGAN	0	0	0	851	1000	0	0	0	5	942	0	0
CASS	0	0	0	0	110	0	0	0	0	11	0	0
GRATIOT	0	0	0	0	19	0	0	0	0	890	0	0
KENT	0	0	0	0	1294	0	0	0	23	1674	1	8
MONTCALM	0	0	0	0	1091	0	0	0	41	2499	3	13
MUSKEGON	0	0	0	0	5058	0	0	0	8	355	0	0
OTTAWA	0	0	0	0	876	0	0	0	0	0	0	0
TOTAL	0	0	0	851	9448	0	0	0	77	6371	4	21
STATE TOTAL	5391	75126	79055	203222	64075	13826	31858	1153	11002	490709	27667	6204

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MICHIGAN

UNIT AND COUNTY 1/	REECH:	WHITE: BIRCH:	YELLOW: BIRCH:	COTTON- WOOD:	ELM: HICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	OTHER: HARD- WOODS:	ALL SPECIES
E. UPPER PENINSULA											
ALGER	2943	3346	795	0	1650	0	2731	5682	35	2	56 61011
CHIPPEWA	385	347	219	0	185	0	966	491	27	0	42 38455
DELTA	2061	6123	827	0	6188	0	3199	7115	31	1	161 98429
LUCE	1007	1785	312	0	576	0	998	2058	23	1	38 46736
MACKINAC	480	1270	144	0	319	0	485	1104	32	0	37 17101
MENOMINEE	926	1990	894	0	5196	0	3457	3777	47	2	445 75357
SCHOULCRAFT	900	1671	278	0	690	0	903	2193	27	3	43 42093
TOTAL	8702	16532	3469	0	14804	0	12739	22420	222	9	822 379182
W. UPPER PENINSULA											
HARAGA	0	246	671	0	653	0	2312	677	119	0	145 27514
DICKINSON	22	3455	765	0	3100	0	2908	3486	151	0	107 82156
GOGETIC	0	2008	1750	0	1881	0	3686	1347	10	0	355 53640
HOUGHTON	0	1021	254	0	314	0	940	264	107	0	86 15736
IRON	1	1666	4909	0	5977	0	11400	5127	183	0	1039 95400
KEWELNAW	0	0	0	0	0	0	0	0	0	0	404
MARQUETTE	5	6421	2358	0	3322	0	7525	8472	292	0	97 112317
ONTONAGON	0	188	3471	0	3457	0	7135	2637	126	0	737 40362
TOTAL	28	15905	14116	0	18704	0	35906	22010	988	0	2566 427529
N. LOWER PENINSULA											
ALCONA	92	1343	0	0	44	0	40	2342	10409	476	26 41417
ALPENA	68	913	4	3	67	0	86	2453	877	46	4 17154
ANTHIM	0	23	0	0	0	0	0	0	0	0	241
ARENAC	0	0	0	0	0	0	0	0	0	0	47
BENZIE	78	416	0	0	0	0	208	1936	1040	208	78 8944
CHARLEVOIX	0	0	0	0	0	0	0	0	0	0	153
CHEBOYGAN	80	3322	0	0	67	0	80	3130	110	0	0 24628
CLAWL	52	408	0	0	0	0	53	1255	2533	62	52 21206
CRAWFORD	52	217	0	0	0	0	28	634	3205	16	52 23059
EMMET	0	0	0	0	0	0	0	0	0	0	489
GLADWIN	41	216	0	0	0	0	21	520	659	21	0 5327
GRAND TRAVERSE	104	423	0	0	0	0	104	520	936	22	52 9615
IOSCO	0	395	0	0	0	0	0	818	211	0	0 17435
ISABELLA	26	467	8	7	0	1	83	160	168	47	10 8512
KALKASKA	42	374	0	0	0	0	42	1040	1040	52	42 9448
LAKE	748	832	87	121	0	18	1467	5038	7971	1005	367 38480
LEELANAU	104	45	0	0	0	0	156	1144	1040	208	104 4322
MANISTEE	336	728	4	4	0	1	519	3163	6342	1067	215 28546
MASON	114	148	2	2	0	0	237	2795	1353	231	107 10181
MECOSTA	255	761	53	40	0	10	746	544	2929	914	91 22090
MIDLAND	0	1	0	0	0	0	1	5	34	7	0 365
MISSAUKEE	164	261	0	0	0	0	104	1044	520	104	52 8878
MONTMORENCY	85	810	19	10	22	2	268	1134	5363	299	23 36945
NEWAYGO	396	553	89	78	0	17	1104	1450	7186	1238	163 24450
OLEANA	193	185	28	19	0	5	548	1486	1375	358	71 10083
OSHTAW	10	178	0	0	0	0	0	292	554	10	21 3718
OSCEOLA	332	404	69	54	0	14	956	820	1866	427	102 16408
OSCONA	72	1477	0	0	22	0	40	1919	4922	177	0 38663
OTSEGO	42	177	0	0	0	0	21	226	416	21	0 11703
PRESQUE ISLE	40	3645	0	0	44	0	40	1841	274	0	0 26515
RUSKUMON	21	177	0	0	0	0	21	520	3422	104	21 14830
WEXFORD	210	120	1	0	0	0	227	3192	4088	304	105 43375
TOTAL	3677	19019	364	338	266	68	7200	41421	70843	7424	1758 527227
S. LOWER PENINSULA											
ALLEGAN	0	4	0	0	0	0	9	47	325	69	0 3257
CASS	0	0	0	0	0	0	0	0	0	0	0 121
GRATIOT	0	1	0	0	0	0	1	4	24	5	0 944
KENT	9	31	1	7	0	12	25	57	186	52	13 3393
MONTCALM	14	17	2	11	0	24	41	109	299	73	26 4263
MUSKEGON	0	16	0	0	0	0	16	81	640	122	0 6296
OTTAWA	0	0	0	0	0	0	0	0	0	0	0 876
TOTAL	23	74	3	18	0	36	92	298	1474	321	39 19150
STATE TOTAL	12430	50630	17954	356	33774	104	55937	86149	73527	7754	5185 1353088

1/INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MINNESOTA

UNIT AND COUNTY 1/	CEDAR:	BALSAM: FIR:HEMLOCK:	JACK: PINE:	RED: PINE:	WHITE: PINE:	SPRUCE:	TAMA: HACK:	ASH:	ASPEN:	BALSAM: POPLAR:	BASS- WOOD
NORTHERN ASPEN-HIEM											
CARLTON	0	1999	0	3533	565	149	228	502	0	26701	0
COOK	0	3914	0	4751	18	0	10157	0	0	19310	0
KOOCHICHING	0	15306	0	17384	1227	787	64366	15329	0	122534	10103
LAKE	0	8535	0	20354	501	152	21816	64	0	24075	0
ST. LOUIS	0	13833	0	50397	3296	864	32794	3379	0	179684	8785
TOTAL	0	43587	0	96419	5607	1952	129361	19274	0	372304	18888
NORTHERN PINE											
AITKIN	0	1116	0	1219	59	67	1726	3415	0	24605	0
BECKER	0	0	0	1009	109	47	0	0	0	624	0
ELSTAMI	0	8512	0	5707	477	116	8268	2055	0	46211	4
CASS	0	2691	0	10293	1649	364	2041	1253	0	42031	0
CLEARWATER	0	322	0	3264	362	15	1423	4133	0	15891	4
CROW WING	0	6	0	4346	253	34	0	0	0	9234	0
HUBBARD	0	328	0	9083	150	27	384	1139	0	23560	0
ITASCA	0	16986	0	7161	1534	371	15732	3800	0	93528	3846
LAKE OF THE WOODS	0	90	0	4422	109	20	10524	412	0	6338	37
MAHNGMEN	0	0	0	828	21	1	0	24	0	520	0
ROSEAU	0	16	0	5353	76	0	6093	460	0	7640	37
WADENA	0	0	0	5514	40	4	33	0	0	5345	0
TOTAL	0	30067	0	58199	4839	1066	46224	16691	0	275527	3928
CENTRAL HARDWOOD											
BENTON	0	0	0	0	0	0	0	0	0	1196	0
ISANTI	0	0	0	0	0	0	0	0	0	16	0
KANABEE	0	0	0	0	0	0	0	0	0	2303	0
MILLE LACS	0	0	0	0	0	0	0	104	0	7450	0
MORRISON	0	8	0	1403	3	0	27	0	0	5796	0
OTTERTAIL	0	0	0	346	5	2	0	0	0	0	0
PINE	0	114	0	1287	6	0	0	0	0	8508	0
TODD	0	0	0	699	5	0	35	0	0	0	0
TOTAL	0	122	0	3735	19	2	62	104	0	25269	0
PRAIRIE											
POLK	0	0	0	0	0	0	0	926	0	0	0
TOTAL	0	0	0	0	0	0	0	926	0	0	0
STATE TOTAL	0	73776	0	158353	10465	3020	175647	36995	0	673100	22816

1/INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

MINNESOTA

UNIT AND COUNTY 1/	REFUG:	WHITE: BIRCH:	YELLOW: HIRCH:	COTTON: WOOD:	ELM: WICKORY:	HARD: MAPLE:	SOFT: MAPLE:	RED: OAK:	WHITE: OAK:	OTHER: HARD- WOODS:	ALL SPECIES
NORTHERN ASPEN-BIRCH											
CARLTON	0	4277	0	0	0	0	21	10	0	0	37985
COOK	0	0	0	0	0	0	0	0	0	0	38150
KOOCHICHIING	0	3469	0	0	0	0	104	124	0	0	250733
LAKE	0	3577	0	0	0	0	0	0	0	0	79074
ST. LOUIS	0	9304	0	0	0	0	29	122	0	0	302487
TOTAL	0	20627	0	0	0	0	154	256	0	0	708429
NORTHERN PINE											
AITKIN	0	1779	0	0	219	0	219	876	0	0	35751
BECKER	0	0	0	0	0	0	0	0	0	0	1789
ELSTHAM	0	7249	0	0	0	0	165	8	0	0	78772
CASS	0	4683	0	0	0	0	0	0	0	0	65005
CLEARWATER	0	1137	0	0	0	0	38	3	0	0	26592
CROW WING	0	1159	0	0	119	0	119	477	0	0	15993
HUBBARD	0	2528	0	0	0	0	0	0	0	0	37199
ITASCA	0	3281	0	0	0	0	53	16	0	0	146308
LAKE OF THE WOODS	0	0	0	0	0	0	0	0	0	0	21952
MAHANOMEN	0	520	0	0	0	0	0	0	0	0	1914
ROSEAU	0	520	0	0	0	0	0	0	0	0	20195
WADENA	0	520	0	0	0	0	0	0	0	0	11456
TOTAL	0	23376	0	0	338	0	594	365	1353	0	462926
CENTRAL HARDWOOD											
BENTON	0	100	0	0	100	0	100	398	0	0	2100
ISANTI	0	50	0	0	0	0	0	0	0	0	66
KANABEC	0	366	0	0	199	0	199	797	0	0	4275
MILLE LACS	0	427	0	0	299	0	299	1197	0	0	10393
MORRISON	0	100	0	0	100	0	100	398	0	0	8141
OTTERTAIL	0	0	0	0	0	0	0	0	0	0	353
PINE	0	1040	0	0	0	0	0	0	0	0	10955
TODD	0	0	0	0	0	0	0	0	0	0	739
TOTAL	0	2043	0	0	698	0	698	2790	0	0	37022
PRAIRIE											
PULK	0	0	0	0	0	0	0	0	0	0	926
TOTAL	0	0	0	0	0	0	0	0	0	0	926
STATE TOTAL	0	46086	0	0	1636	0	1446	1319	4143	0	1209303

1/INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

TABLE 9 CONTINUED ON NEXT PAGE

WISCONSIN

TABLE 9. CONTINUED

UNIT AND COUNTY 1/	CEDAR	BALSAM FIR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMA- RACK	ASH	ASPEN	BALSAM POPLAR	BASS- WOOD
NORTHEASTERN												
FLORENCE	0	3346	3246	596	1625	98	1334	123	73	44115	1	10
FOREST	0	13470	4362	660	2983	74	3420	252	1269	36176	54	193
LANGLADE	0	1746	1424	334	3186	131	362	95	1421	15421	0	569
LINCOLN	0	2606	2185	814	1297	321	1257	491	2759	39671	0	3045
MANITOWISH	17	7929	1421	5754	4626	171	1550	194	903	87326	488	11
ONTO	0	1176	366	1233	5359	275	197	68	57	21209	0	6
ONEIDA	0	20126	1570	4474	5742	883	4478	674	1508	46266	0	651
SHAWANO 2/	0	104	8240	143	1235	72	22	14	630	17029	0	2
VILAS	0	10819	4237	5902	5591	1599	1243	11	123	37899	0	177
TOTAL	17	61322	27451	19914	31644	3624	13863	1922	8743	345111	543	4664
NORTHWESTERN												
ASHLAND	0	9056	2294	4311	2746	538	1518	88	2421	34636	0	405
BAFFIN	0	0	0	415	54	24	0	0	1	0	0	0
HAYFIELD	0	2769	154	9571	3013	432	150	0	326	60131	0	0
BURNETT	0	0	0	23788	4348	758	0	0	10	2417	0	0
DOUGLAS	0	313	0	20142	2258	156	89	28	65	25635	0	0
IRON	0	2641	1358	486	228	124	649	0	779	48282	0	1172
POLK	0	0	0	704	94	19	0	0	0	0	0	0
PRICE	0	5525	1655	451	841	128	768	503	3673	44252	0	1596
RUSK	0	523	659	0	0	21	103	24	1286	9428	0	843
SAVYER	0	2994	420	2629	4935	214	408	2	2270	27941	0	198
TAYLOR	0	1579	1950	143	449	130	426	174	2131	17414	0	815
WASHINGTON	0	146	0	9370	2494	163	23	0	92	37740	0	0
TOTAL	0	25546	8995	72010	21459	2707	4134	819	13054	307876	0	5029
CENTRAL												
ADAMS	0	0	0	23034	12449	545	0	89	64	47	0	0
CHIPPEWA	0	9	202	350	187	10	0	171	1582	8812	0	504
CLARK	0	37	162	1613	1167	304	0	0	345	3782	0	59
EAU CLAIRE	0	0	0	3056	1654	51	0	0	1	217	0	0
JACKSON	0	0	0	10714	6421	99	0	133	94	76	0	0
JUNEAU	0	0	0	12199	4716	542	0	41	151	552	0	0
MANITOWISH	0	1659	5689	830	1949	256	638	6	1306	9323	0	101
MARQUETTE	0	0	0	911	1078	104	41	0	52	32	0	0
MUNROE	0	0	0	3464	2218	40	0	0	51	101	0	0
PORTAGE	0	16	46	4716	2632	1021	3	0	135	1934	0	0
WAUPACA	0	16	26	295	895	149	0	0	191	10489	0	0
WAUSHARA	0	0	5	2592	4257	673	0	68	32	894	0	0
WOOD	0	0	191	11546	4334	1450	1	24	346	2391	0	67
TOTAL	0	1931	6371	74660	43961	5244	683	532	4350	38650	0	731
SOUTHWESTERN												
BUFFALO	0	0	0	23	22	0	0	0	0	0	0	0
CRAWFORD	0	0	0	0	0	0	0	0	197	25	0	13
DURN	0	0	0	487	935	41	0	0	0	0	0	0
GRANT	0	0	0	14	14	0	0	0	29	3	0	3
IOWA	0	0	0	11	107	6	0	0	0	0	0	0
LACROSSE	0	0	0	376	462	215	0	0	0	0	0	0
PEPIN	0	0	0	26	23	0	0	0	0	0	0	0
RICHLAND	0	0	0	52	47	0	0	0	0	0	0	0
SAUK	0	0	0	385	774	194	0	0	0	0	0	0
TREMPEALEAU	0	0	0	255	244	0	0	0	0	0	0	0
TOTAL	0	0	0	1629	2628	456	0	0	226	28	0	16
SOUTHEASTERN												
BROWN	0	0	0	17	150	8	0	0	0	32	0	0
COLUMBIA	0	0	0	124	963	0	0	0	47	0	0	0
DADE	0	0	0	138	7	171	0	0	0	0	0	0
DODGE	0	0	0	0	0	0	0	0	0	0	0	0
GREEN	0	0	0	92	991	18	0	0	0	0	0	0
GREEN LAKE	0	0	0	8	2	0	0	0	0	0	0	0
JEFFERSON	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	0	35	316	18	0	0	45	1733	0	0
ROCK	0	0	0	776	129	0	0	0	0	0	0	0
WAUKESHA	0	0	0	212	2014	111	0	0	0	0	0	0
TOTAL	0	0	0	1402	4572	326	0	0	92	1765	0	0
STATE TOTAL	17	88799	42817	169615	104264	12357	18680	3273	26465	693430	543	10440

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

2/ INCLUDES MENOMINEE COUNTY.

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

WISCONSIN

UNIT AND COUNTY 1/	: BEECH:	: WHITE: BIRCH:	: YELLOW: BIRCH:	: COTTON: WOOD:	: ELM:	: HICKORY:	: HARD: MAPLE:	: SOFT: MAPLE:	: RED: OAK:	: WHITE: OAK:	: OTHER: HARD: WOODS:	: ALL SPECIES
NORTHEASTERN												
FLORENCE	0	533	332	0	22193	0	1516	788	4	0	80	80013
FOREST	62	3564	1464	0	7747	0	8328	1779	43	0	1775	87675
LANGLADE	0	1645	908	0	16905	188	7887	2511	502	0	1118	56357
LINCOLN	0	4295	764	0	17633	66	4436	3457	1618	0	250	86965
MAKINETTE	183	9109	137	0	2052	0	1045	1952	36	3	225	125532
OCONTO	26	1191	37	0	134	0	162	231	62	0	7	31796
ONEIDA	0	13750	901	0	3738	0	4098	5810	1686	0	394	116749
SHAWANO 2/	0	709	334	0	5072	514	2171	899	29	0	371	37589
VILAS	0	9315	920	0	5930	0	3964	1212	798	0	103	89843
TOTAL	271	44111	5797	0	81404	768	33607	18639	4778	3	4323	712519
NORTHWESTERN												
ASHLAND	0	3982	1113	0	4128	0	4683	3246	409	3	270	75852
BARRON	0	37	0	0	2	0	2	1	3	0	0	539
BAYFIELDO	0	11581	934	0	631	0	818	517	361	42	61	91491
BURNETT	0	12	4	0	38	0	30	27	0	0	5	31437
DOUGLAS	0	3588	83	0	108	0	118	91	0	0	14	52688
IRON	0	4361	304	0	4533	0	1432	919	518	0	72	67858
PULK	0	0	0	0	0	0	0	0	0	0	0	817
PRICE	0	8838	1387	0	18169	0	5495	3982	963	31	303	98560
RUSK	0	3908	551	0	7565	0	2296	1690	889	5	88	29879
SAWYER	0	7210	800	0	8781	0	4336	3017	626	11	388	67680
TAYLOR	0	4215	1000	0	13027	0	4413	3240	1027	13	137	52282
WASHINGTON	0	1671	182	0	223	0	134	236	19	4	29	52526
TOTAL	0	49403	6358	0	57205	0	23757	16966	4815	109	1367	621609
CENTRAL												
ADAMS	0	84	21	0	168	0	81	205	4938	1351	23	43099
CHIPPEWA	0	2538	914	0	2579	0	1891	3122	6491	0	162	29524
CLARK	1	432	163	0	772	0	575	1045	8603	2152	72	20684
EAU CLAIRE	0	3	2	0	4	0	5	14	8	0	0	5019
JACKSON	1	192	44	0	192	0	182	284	1088	295	20	19835
JUNEAU	1	171	48	0	309	0	161	402	3423	1008	39	23763
MAKATHON	0	1157	814	0	49840	66	3524	6673	2640	0	249	86920
MARQUETTE	1	214	6	0	1820	0	357	1142	178	53	20	6009
MUNROE	0	66	21	0	187	0	90	186	0	0	25	6389
PORTAGE	0	79	69	0	629	44	313	413	4029	1179	53	17361
WAUPACA	0	153	98	0	1290	110	547	380	36	8	161	14838
WAUSARA	0	130	27	0	163	0	133	151	716	209	4	9994
WOOD	1	362	98	0	999	0	423	1002	10346	2771	40	36392
TOTAL	5	5581	2325	0	58892	220	8282	15019	42496	9026	868	319827
SOUTHWESTERN												
HUFFALO	0	0	0	0	0	0	0	0	0	0	0	45
CHANDLER	0	12	0	484	187	295	573	485	416	158	12	2853
DUNN	0	0	0	0	0	0	0	0	0	0	0	1463
GRANT	0	3	0	72	26	45	87	73	62	23	2	456
IOWA	0	0	0	0	0	0	0	0	0	0	0	124
LACROSSE	0	0	0	0	0	0	0	0	0	0	0	1053
PEPIN	0	0	0	0	0	0	0	0	0	0	0	49
RICHMOND	0	0	0	0	0	0	0	0	0	0	0	99
SAUK	0	0	0	0	0	0	0	0	16	5	0	1374
THOMPSON	0	0	0	0	0	0	0	0	0	0	0	499
TOTAL	0	15	0	556	209	340	660	558	494	186	14	8015
SOUTHEASTERN												
BROWN	0	0	0	0	0	0	0	0	0	0	0	207
COLUMBIA	0	57	19	0	172	0	138	108	502	337	24	2491
OSAGE	0	0	0	0	0	0	0	0	0	0	0	316
ODGE	0	0	0	0	0	0	0	0	3	3	0	6
GREEN	0	0	0	0	0	0	0	0	0	0	0	1101
GREEN LAKE	0	0	0	0	0	0	0	0	18	11	0	39
JEFFERSON	0	0	0	0	0	0	0	0	34	25	0	59
OUTAGAMIE	0	224	45	0	137	0	224	224	0	0	0	3001
ROCK	0	0	0	0	0	0	0	0	0	0	0	905
WAUKESHA	0	0	0	0	0	0	0	0	0	0	0	2337
TOTAL	0	281	64	0	309	0	362	332	557	376	24	10462
STATE TOTAL	276	99391	14544	556	178019	1328	66668	51514	53140	9700	6596	1672432

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1976.

2/ INCLUDES MENOMINEE COUNTY.

Table 10. — *Central States pulpwood production by State and destination, 1972-1976* (In thousand standard cords, roughwood basis)

Year	Illinois			Indiana			Iowa			Missouri		
	: Destination :			: Destination :			: Destination :			: Destination :		
	Total	Central	Other	Total	Central	Other	Total	Central	Other	Total	Central	Other
	: States :	States :	States :	: States :	States :	States :	: States :	States :	States :	: States :	States :	States :
1972	139	103	36	152	71	81	55	54	1	117	78	39
1973	146	124	22	148	80	68	48	46	2	112	63	49
1974	131	98	33	159	84	75	59	57	2	137	77	60
1975	105	60	45	135	58	77	50	48	2	116	43	73
1976	116	65	51	172	78	94	45	41	4	132	55	77

Table 11. — *Trends in receipts of roundwood and residue as pulpwood Central States, 1972-1976* (In thousand standard cords, roughwood basis)

Type of Material and Area:1972:1973:1974:1975:1976					
Roundwood					
Illinois	67	70	56	13	18
Indiana, Iowa, Missouri	99	106	93	74	81
Total	166	176	149	86	99
Residue					
Illinois	116	122	104	64	71
Indiana, Iowa, Missouri	74	81	100	86	102
Total	190	203	204	150	173
All Material	356	379	353	236	272

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