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Primary Forest Products Industry and Timber Use, Iowa, 1980

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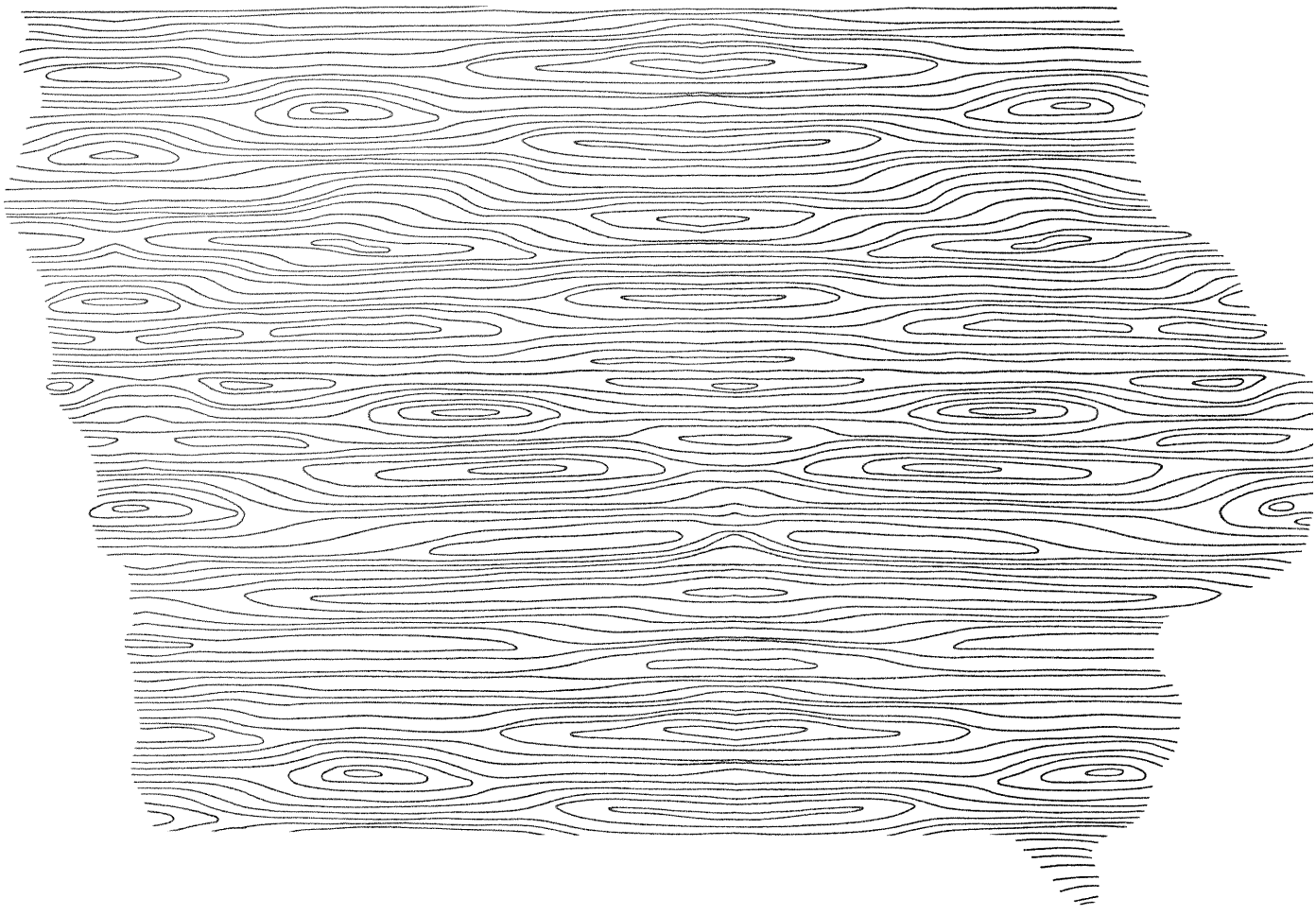

FOREWORD

This bulletin contains the results of a detailed study of forest industry, timber products output from roundwood, and associated primary mill wood and bark residue in Iowa in 1980. The last similar study was conducted in 1972. Detailed information such as this is necessary for intelligent planning and decision-making in wood procurement, forest resource management, and forest industry development. Similarly, researchers need current forest industry and timber products output information to plan projects.

We would like to give special thanks to the primary wood-using firms that supplied information for this study. We greatly appreciate their cooperation.

Quantities shown may vary slightly from one table to another because of rounding differences; however, these differences are insignificant.

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HIGHLIGHTS

- Since the early 1950's active (operating) sawmills have dropped from several hundred to 60 in 1972 and 41 in 1980.
- Industrial roundwood production rose 2 percent between 1972 and 1980 to 13.2 million cubic feet. Leading species cut were red oak, white oak, and cottonwood. Together they accounted for two-thirds of the industrial roundwood cut in 1980.
- The Northeastern Unit supplied 65 percent of all industrial roundwood.
- From a sustained yield basis, no species appear to have been overutilized, and all species, except walnut, appear to have been underutilized.
- Saw log production, 80 percent of industrial roundwood, was 63.5 million board feet—up 19 percent from 1972. Major harvest increases since 1972 were in white oak, red oak, and walnut.
- Elm losses to Dutch Elm disease during the 1970's caused elm saw log production to be nearly 5 million board feet lower in 1980 than in 1972.
- Saw log exports from Iowa to other States climbed from 2.9 million board feet in 1972 to 8.4 million board feet in 1980.
- Iowa sawmills depended less on other States for their log requirements in 1980 than in 1972. Total log receipts at Iowa sawmills were 63.0 million board feet in 1980.
- Coarse mill residue was in strong demand for manufacturing pulp and for household fuel.
- Great progress has been made since 1972 in finding markets for primary wood-using mill residue. However, additional markets for fine and bark residue are needed because more than one-half of the bark and more than one-fourth of the fine residue was not used in 1980.

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PRIMARY FOREST PRODUCTS INDUSTRY AND TIMBER USE, IOWA, 1980

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PRIMARY FOREST INDUSTRY—INDUSTRIAL ROUNDWOOD

Sawmills dominate the active (operating) primary wood-using mill population in Iowa. Out of the 45 known active mills in 1980, 41 were sawmills. All but 4 of the sawmills were in the two eastern Survey Units, which contain the major timber supply (fig. 1).

Active sawmills have dropped from several hundred in the early 1950's to 60 in 1972 and 41 in 1980. In addition, one veneer mill has closed since 1972. Average annual lumber output per sawmill increased from 0.994 million board feet in 1972 to 1.536 million board feet in 1980. The surviving and new sawmills are generally larger, better managed, and more financially sound than those in the 1950's.

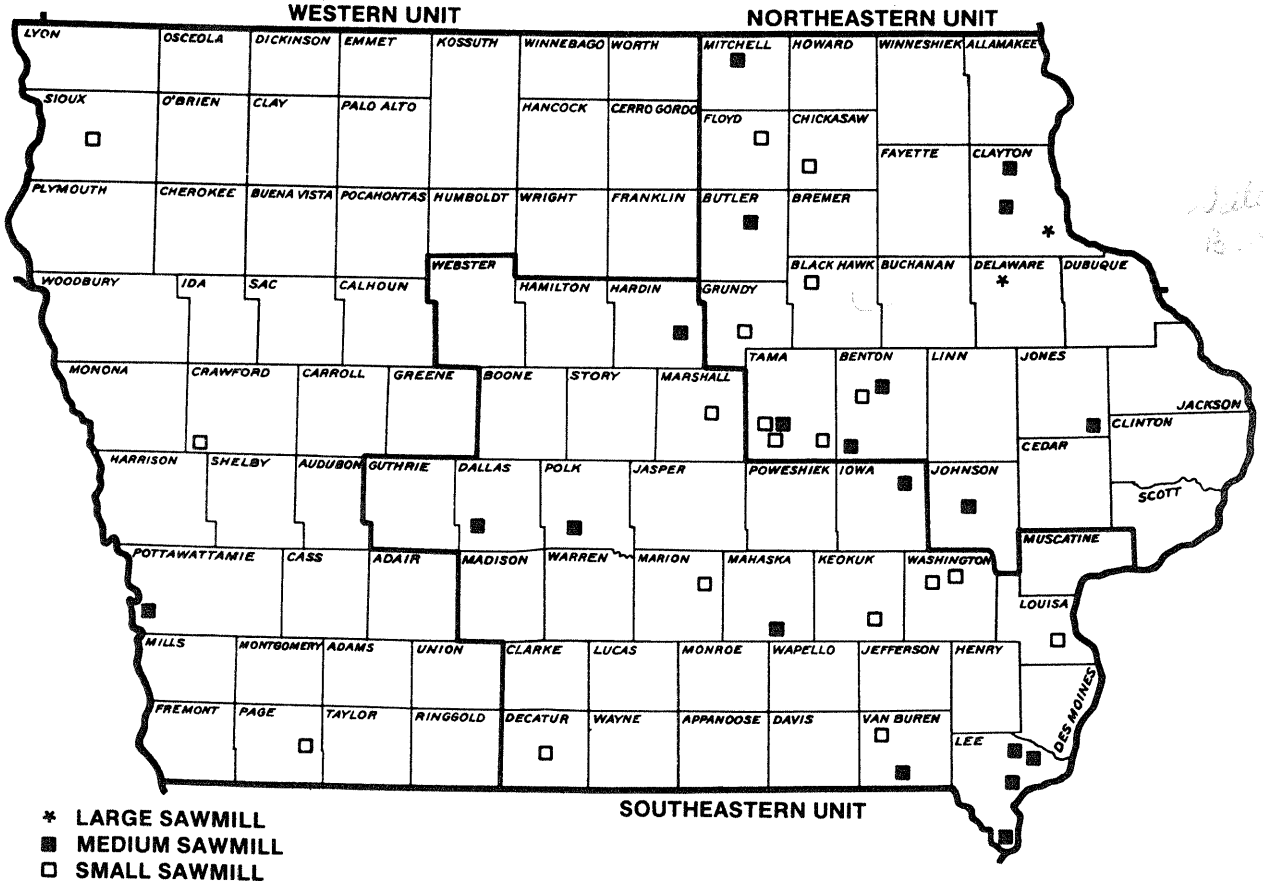

Figure 1.—*Active sawmills and Forest Survey Units in Iowa, 1980. Sawmills are classed by volume of lumber produced in 1980: large = 5 million or more board feet; medium = 1 to 4.999 million board feet; small = less than 1 million board feet. Forest Survey Units are the geographic areas used by the Forest Inventory and Analysis Project to report periodic inventories and use of the Nation's forest resources.*

Industrial roundwood production in 1980 was 2 percent higher than in 1972. A 21 percent increase in the Northeastern Unit offset declines in the Southeastern and Western Units:

Unit	Production 1972	1980	Change
	(Thousand cubic feet)		(Percent)
Northeastern	7,108	8,586	+21
Southeastern	4,668	3,903	-16
Western	1,160	726	-37
Total	12,936	13,215	+2

The Northeastern Unit increased its share of the industrial roundwood production from 55 percent in 1972 to 65 percent in 1980.

Principal species cut for industrial use were red oak (26 percent), white oak (25 percent), and cottonwood (16 percent). Other important species included walnut, soft maple, and hard maple.

TIMBER REMOVALS FOR INDUSTRIAL ROUNDWOOD

Estimated timber removals from growing stock on commercial forest land for industrial roundwood were 12.7 million cubic feet. Timber removals in each survey unit per thousand acres of commercial forest land[1] were:

Unit	Removals/thousand acres (Cubic feet)	(Cord equivalents)
Northeastern	14,190	180
Southeastern	5,625	71
Western	3,301	42
Average of all units	8,715	110

Cutting of growing stock (on a commercial forest area basis) was heaviest in the Northeastern Unit and lightest in the Western Unit. Harvesting of growing stock was light in all Units.

Timber removals for industrial roundwood in 1980 by species were compared with net annual growth determined during the previous Iowa forest inventory (1973). These comparisons roughly show which species may have been over or undercut in 1980 (in terms of sustained yield). No species was harvested at a rate greater than 75 percent of net annual growth:

Species	Removals (Percent of net annual growth)
Walnut	75
Red oak	64
Red pine	62
Hard maple	55
Cottonwood	52
White oak	45
Elm	38
Ash	19
Basswood	18
Soft maple	14
Hackberry	9
Aspen	6
Black cherry	5
Birch	3
Hickory	3
Willow	3

These indicators of possible over- or underutilization should be used cautiously because (1) wood procurement volumes fluctuate from year to year, (2) net annual growth used in the comparison was for 1973, (3) stand-age structure may mask the extent of under- or overutilization, and (4) apparent over- or undercutting may be a temporary timber management strategy to improve stand structure and species mix.

Allowing for these cautions, no species appear to have been overcut and all species, except walnut, seem to have been undercut in 1980.

SAW LOGS

Saw logs constituted 80 percent of all industrial roundwood harvested in 1980. Loggers cut 63.5 million board feet of saw logs in Iowa, up 19 percent from 1972. Principal species harvested were red oak, cottonwood, and white oak; together they comprised nearly two-thirds of the harvest.

Major harvest gains since 1972 were in white oak, red oak, and walnut. Elm output fell nearly 5 million board feet from 1972 to 1980 due to continuing losses from Dutch Elm disease.

During 1972, 2.9 million board feet of saw logs, mostly walnut, oak, and soft maple, were shipped to other States; Missouri, Minnesota, and Kansas were the primary recipients. In 1980, exports rose to 8.4 million board feet, 5.0 million board feet of which were shipped to Wisconsin. Primary exports continued to be oak and walnut.

Loggers cut two-thirds of the saw log volume in the Northeastern Unit as well as 98 percent of the elm, hard maple, and aspen. Twenty-six percent of the saw

[1] *Area of commercial forest land in 1974 at the time of the last forest inventory in Iowa.*

log volume was cut in the Southeastern Unit, including about one-half of the cottonwood and soft maple. The Western Unit provided only 7 percent of the saw log harvest but 44 percent of the walnut.

During 1980, Iowa sawmills received 63.0 million board feet of logs. Iowa was more self-sufficient in supplying logs to its sawmills in 1980 than in 1972. Iowa sawmills imported 15 percent (9.1 million board feet) of their log requirements in 1972 compared with 12 percent (7.9 million board feet) in 1980. Missouri was the chief source of imports in 1972; walnut was the principal import. Illinois, Missouri, and Minnesota each supplied more than 2.4 million board feet in 1980. Walnut was a minor import; cottonwood was the leading import. Southeast Unit mills were most dependent on imports, processing two-thirds of the logs received from other States.

OTHER PRODUCTS

Other industrial roundwood products harvested in 1980 included 3.8 million board feet of veneer logs[2], 3.4 million board feet of cooperage logs, and 16,800 cords of pulpwood. Compared to 1972 veneer log production was down 27 percent, pulpwood production from roundwood was off 46 percent, and cooperage log production was more than 5 times higher.

All of the cooperage logs cut were white oak, the only species acceptable for tight cooperage. Oak (red and white) was the chief pulpwood species and oak together with walnut were the primary veneer species.

PRIMARY MILL RESIDUE

During 1980, Iowa's primary wood-using mills (except pulpmills) generated 87,000 green tons of coarse residue, 53,000 green tons of fine residue, and 37,000 green tons of bark. Coarse residue is wood suitable for chipping such as slabs, edgings, and veneer cores. The Northeastern Unit generated the most residue: 62 percent of the coarse residue, 64 percent of the fine residue, and 63 percent of the bark.

[2]*Does not include log exports to other countries, except Canada.*

Excellent progress has been made in finding uses for residue since 1972:

Kind of residue	Percent used	
	1969	1980
Coarse	45	90
Fine	15	70
Bark	6	48

Principal uses in 1980 for coarse residue were for pulp manufacturing (fiber products) and for domestic (household) fuelwood. Fine residue was used mainly for livestock bedding, poultry litter, mulch, and similar products. Major bark uses were for domestic fuelwood and miscellaneous products such as mulch.

Finding markets for residue is usually not a problem for larger mills. Unused residue is most likely to be found at smaller mills and some medium-sized mills where residue storage may not be a problem and the volume available may be insufficient to attract customers. Unused residue is often piled, used for landfill, or burned as waste.

OUTLOOK

When economic activity turns up, demand for Iowa industrial roundwood should grow, especially saw log demand. As the economy grows, demand generally increases for wood pallets, crating, railroad ties, replacement furniture, and home remodeling supplies. If interest rates decline during an economic upturn, new home construction rises along with additional furniture purchases for these new homes. Increased demand for these intermediate or end use products leads to greater demand for industrial roundwood to produce them.

Sawmills will continue to dominate Iowa's forest industry. Overall demand for Iowa saw logs should continue to rise during the next decade. Average sawmill size is likely to continue increasing. The number of active sawmills may be nearing a period of stability—mills dropping out of production usually should be replaced by others.

Additional market outlets should become available for fine residue and bark. If current trends continue, more than 90 percent of the fine residue and bark will be used by 1990.

APPENDIX

STUDY METHODS

Data for this publication came from canvassing with a formal questionnaire all of the known primary wood-using mills that use Iowa logs and bolts. All canvassing in Iowa (except two pulpmills) was initially done by personal contact, telephone, and mail by the Iowa Conservation Commission (ICC). For a few Iowa mills that did not furnish complete data, ICC utilization and marketing specialists provided estimates based on prior knowledge and contacts. The North Central Forest Experiment Station (using formal questionnaires) contacted by mail two Iowa pulpmills and all out-of-State mills using Iowa roundwood; follow-up on nonrespondents was by mail and telephone. The Station edited and compiled the data.

Except for walnut cut for saw logs and veneer logs, logging utilization factors developed from a 1971-1972 study in Missouri were used to estimate growing stock and sawtimber removals for industrial roundwood in 1980. For walnut saw logs and veneer logs we used factors developed during a 1966 study in Indiana.

SAMPLING ERROR

Because all primary wood-using mills were canvassed, there is no sampling error for the roundwood products they use.

DEFINITION OF TERMS

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Commercial forest land.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Generally, this includes areas suitable for growing crops of industrial wood in excess of 20 cubic feet per acre annually.

Consumption.—The quantity of a commodity, such as pulpwood, utilized.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

Forest Survey Unit.—A geographic area (group of counties) used by the Forest Inventory and Analysis Project to report periodic inventories and use of the Nation's forest resources.

Growing-stock trees.—All live poletimber and sawtimber trees of commercial species except rough and rotten trees. Poletimber trees are from 5.0 to 8.9 inches d.b.h. for softwoods and from 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.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, commercial posts, cooperage logs, handle bolts, shaving bolts, charcoal bolts, and chips from roundwood. Does not include fuelwood or noncommercial posts.

Industrial roundwood receipts.—The quantity of industrial roundwood received in a geographic area regardless of the geographic source.

Primary wood-using mills.—Mills using roundwood products (including chips from roundwood).

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark not utilized for principal products at mills using roundwood. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

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 diameter outside bark for softwoods and 9.0 inches diameter outside bark for hardwoods.

Standard cord.—A stack of wood bolts (or the equivalent) encompassing 128 cubic feet of wood, bark, and air space.

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 poletimber and sawtimber growing-stock trees on commercial forest land removed annually for industrial roundwood products (including logging residues).

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED

SOFTWOODS

Eastern redcedar ..... *Juniperus virginiana*

Eastern white pine ..... *Pinus strobus*
Red pine ..... *Pinus resinosa*

HARDWOODS

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 laciniosa*
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 thomasii*
Black walnut ..... *Juglans nigra*
Black cherry ..... *Prunus serotina*
Hackberry ..... *Celtis occidentalis*
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 cineria*
Osage-orange ..... *Maclura pomifera*
Red mulberry ..... *Morus rubra*
Sycamore ..... *Platanus occidentalis*
Black locust ..... *Robinia pseudoacacia*

TABLE TITLES

Table 1.--Industrial roundwood production by type of product and species group, Iowa, 1980

Species group	All products	Product							
		Sawlogs		Veneer logs		Cooperage logs		Pulpwood	
	MCF[1]	MBF[2]	MCF[1]	MBF[2]	MCF[1]	MBF[2]	MCF[1]	Cords[3]	MCF[1]
Softwoods									
Red pine	4	--	--	--	--	--	--	61	4
Eastern redcedar	[4]	3	[4]	--	--	--	--	--	--
Total	4	3	[4]	--	--	--	--	61	4
Hardwoods									
Ash	339	1,636	279	57	13	--	--	586	47
Aspen	69	305	47	--	--	--	--	274	22
Basswood	440	2,185	347	84	19	--	--	936	74
Birch	36	152	26	--	--	--	--	127	10
Black cherry	36	132	21	--	--	--	--	194	15
Cottonwood	2,059	12,831	1,979	23	5	--	--	971	75
Elm	572	2,866	455	--	--	--	--	1,453	117
Hackberry	99	498	81	--	--	--	--	226	18
Hickory	77	447	77	--	--	--	--	--	--
Hard maple	621	3,367	575	14	4	--	--	547	42
Soft maple	950	5,089	809	24	5	--	--	1,720	136
Red oak	3,505	16,470	2,939	1,132	259	--	--	3,898	307
White oak	3,299	12,118	2,162	672	154	3,384	558	5,396	425
Walnut	1,022	5,025	769	1,795	253	--	--	--	--
Willow	69	233	37	--	--	--	--	395	32
Other hardwoods	18	118	18	--	--	--	--	--	--
Total	13,211	63,472	10,621	3,801	712	3,384	558	16,723	1,320
All species	13,215	63,475	10,621	3,801	712	3,384	558	16,784	1,324

[1] Thousand cubic feet.

[2] Thousand board feet, International 1/4-inch rule.

[3] Standard cords, unpeeled. A standard cord contains 128 cubic feet including wood, bark, and air space.

[4] Less than 500 cubic feet.

Table 2.--Number of active primary wood-using mills, Iowa, 1972 and 1980

Kind of mill	All Units 1972	All Units 1980	North-eastern Unit 1980	South-eastern Unit 1980	Western Unit 1980
Sawmills					
Large[1]	[2]	2	2	--	--
Medium[3]	48[4]	20	9	10	1
Small[5]	12	19	8	8	3
Subtotal	60	41	19	18	4
Veneer mills	2	1	1	--	--
Cooperage mills	1	1	1	--	--
Pulpmills	2	2	1	1	--
Total	65	45	22	19	4

[1]Annual lumber production of 5 million board feet or more.

[2]Included with medium sawmills.

[3]Annual lumber production of 1.000 to 4.999 million board feet.

[4]Includes large sawmills.

[5]Annual lumber production less than 1 million board feet.

Table 3.--Industrial roundwood production by species group and Forest Survey Unit, Iowa, 1980

(In thousand cubic feet)

Species group	All Units	North-eastern Unit	South-eastern Unit	Western Unit
Softwoods				
Red pine	4	4	--	--
Eastern redcedar	[1]	--	[1]	[1]
Total	4	4	[1]	[1]
Hardwoods				
Ash	339	240	89	10
Aspen	69	69	--	--
Basswood	440	379	51	10
Birch	36	20	16	--
Black cherry	36	30	6	--
Cottonwood	2,059	844	1,017	198
Elm	572	539	31	2
Hackberry	99	59	35	5
Hickory	77	39	38	--
Hard maple	621	602	19	--
Soft maple	950	431	504	15
Red oak	3,505	2,648	751	106
White oak	3,299	2,191	1,081	27
Walnut	1,022	442	227	353
Willow	69	42	27	--
Other hardwoods	18	7	11	--
Total	13,211	8,582	3,903	726
All species	13,215	8,586	3,903	726

[1]Less than 500 cubic feet.

Table 4.--Timber removals from growing stock on commercial forest land for industrial roundwood by species group and Forest Survey Unit, Iowa, 1980

(In thousand cubic feet)

Species group	All Units	North-eastern Unit	South-eastern Unit	Western Unit
Softwoods				
Red pine	5	5	--	--
Eastern redcedar	1/	--	1/	1/
Total	5	5	1/	1/
Hardwoods				
Ash	404	295	96	13
Aspen	61	61	--	--
Basswood	407	354	43	10
Birch	40	19	21	--
Black cherry	29	25	4	--
Cottonwood	2,336	958	1,151	227
Elm	519	493	24	2
Hackberry	89	54	31	4
Hickory	97	49	48	--
Hard maple	768	751	17	--
Soft maple	875	401	460	14
Red oak	3,068	2,348	627	93
White oak	2,996	2,028	945	23
Walnut	941	409	209	323
Willow	59	37	22	--
Other hardwoods	18	7	11	--
Total	12,707	8,289	3,709	709
All species	12,712	8,294	3,709	709

1/ Less than 500 cubic feet.

Table 5.--Timber removals from sawtimber on commercial forest land for industrial roundwood by species group and Forest Survey Unit Iowa, 1980

(In thousand board feet)[1/]

Species group	All Units	North-eastern Unit	South-eastern Unit	Western Unit
Softwoods				
Red pine	7	7	--	--
Eastern redcedar	3	--	2	1
Total	10	7	2	1
Hardwoods				
Ash	1,919	1,403	455	61
Aspen	336	333	3	--
Basswood	2,247	1,965	221	61
Birch	191	89	102	--
Black cherry	162	136	26	--
Cottonwood	13,693	5,619	6,737	1,337
Elm	2,888	2,766	112	10
Hackberry	496	314	155	27
Hickory	471	237	234	--
Hard maple	3,693	3,616	77	--
Soft maple	4,953	2,281	2,586	86
Red oak	11,857	9,035	2,467	355
White oak	12,422	8,370	3,958	94
Walnut	6,029	2,653	1,349	2,027
Willow	299	196	103	--
Other hardwoods	105	40	65	--
Total	61,761	39,053	18,650	4,058
All species	61,771	39,060	18,652	4,059

[1/] International 1/4-inch rule.

Table 6.--Saw log production by species group, Iowa, 1972 and 1980

(In thousand board feet)[1/]

Species	1972	1980	Change
Softwoods			
Red pine	2	--	-2
White pine	103	--	-103
Eastern redcedar	--	3	3
Total	105	3	-102
Hardwoods			
Ash	1,649	1,636	-13
Aspen	188	305	117
Basswood	2,205	2,185	-20
Birch	472	152	-320
Black cherry	113	132	19
Cottonwood	10,774	12,831	2,057
Elm	7,808	2,866	-4,942
Hackberry	568	498	-70
Hickory	783	447	-336
Hard maple	1,568	3,367	1,799
Soft maple	6,474	5,089	-1,385
Red oak	11,079	16,470	5,391
White oak	6,508	12,118	5,610
Walnut	2,669	5,025	2,356
Willow	438	233	-205
Other hardwoods	93	118	25
Total	53,389	63,472	10,083
All species	53,494	63,475	9,981

[1/] International 1/4-inch rule.

Table 7.--Saw log production by Survey Unit, species group, and state of destination, Iowa, 1980

(In thousand board feet)[1/]

Species group	All States	State				
		Iowa	Wisconsin	Minnesota	Indiana	Other States
ALL UNITS						
Eastern redcedar	3	3	--	--	--	--
Ash	1,636	1,617	19	--	--	--
Aspen	305	96	191	18	--	--
Basswood	2,185	2,000	167	18	--	--
Birch	152	152	--	--	--	--
Black cherry	132	132	--	--	--	--
Cottonwood	12,831	12,213	201	--	--	417
Elm	2,866	2,512	129	225	--	--
Hackberry	498	498	--	--	--	--
Hickory	447	427	20	--	--	--
Hard maple	3,367	3,158	182	27	--	--
Soft maple	5,089	5,078	11	--	--	--
Red oak	16,470	13,702	2,282	486	--	--
White oak	12,118	10,204	1,779	135	--	--
Walnut	5,025	2,977	31	18	752	1,247
Willow	233	233	--	--	--	--
Other hardwoods	118	118	--	--	--	--
All species	63,475	55,120	5,012	927	752	1,664
NORTHEASTERN UNIT						
Ash	1,232	1,213	19	--	--	--
Aspen	302	93	191	18	--	--
Basswood	1,944	1,759	167	18	--	--
Birch	56	56	--	--	--	--
Black cherry	114	114	--	--	--	--
Cottonwood	5,276	5,075	201	--	--	--
Elm	2,801	2,447	129	225	--	--
Hackberry	340	340	--	--	--	--
Hickory	225	205	20	--	--	--
Hard maple	3,336	3,127	182	27	--	--
Soft maple	2,383	2,372	11	--	--	--
Red oak	13,221	10,453	2,282	486	--	--
White oak	9,323	7,409	1,779	135	--	--
Walnut	1,797	1,323	31	18	425	--
Willow	171	171	--	--	--	--
Other hardwoods	45	45	--	--	--	--
All species	42,566	36,202	5,012	927	425	--

(Table 7 continued on next pa

[1/] International 1/4-inch rule.

(Table 7 continued)

Species group	All States	State				
		Iowa	Wisconsin	Minnesota	Indiana	Other States
SOUTHEASTERN UNIT						
Eastern redcedar	2	2	--	--	--	--
Ash	346	346	--	--	--	--
Aspen	3	3	--	--	--	--
Basswood	173	173	--	--	--	--
Birch	96	96	--	--	--	--
Black cherry	18	18	--	--	--	--
Cottonwood	6,301	6,301	--	--	--	--
Elm	53	53	--	--	--	--
Hackberry	128	128	--	--	--	--
Hickory	222	222	--	--	--	--
Hard maple	31	31	--	--	--	--
Soft maple	2,610	2,610	--	--	--	--
Red oak	2,654	2,654	--	--	--	--
White oak	2,642	2,642	--	--	--	--
Walnut	1,013	288	--	--	279	446
Willow	62	62	--	--	--	--
Other hardwoods	73	73	--	--	--	--
All species	16,427	15,702	--	--	279	446
WESTERN UNIT						
Eastern redcedar	1	1	--	--	--	--
Ash	58	58	--	--	--	--
Basswood	68	68	--	--	--	--
Cottonwood	1,254	837	--	--	--	417
Elm	12	12	--	--	--	--
Hackberry	30	30	--	--	--	--
Soft maple	96	96	--	--	--	--
Red oak	595	595	--	--	--	--
White oak	153	153	--	--	--	--
Walnut	2,215	1,366	--	--	48	801
All species	4,482	3,216	--	--	48	1,218

Table 8.--Saw log receipts by Survey Unit, species group, and state of origin, Iowa, 1980

(In thousand board feet)[1/]

Species group	All States	State				
		Iowa	Illinois	Missouri	Minnesota	Wisconsin
ALL UNITS						
Eastern redcedar	3	3	--	--	--	--
Ash	1,746	1,617	39	59	25	6
Aspen	96	96	--	--	--	--
Basswood	2,098	2,000	45	52	--	1
Birch	204	152	14	38	--	--
Black cherry	141	132	4	4	--	1
Cottonwood	15,501	12,213	652	399	2,236	1
Elm	2,584	2,512	14	33	25	--
Hackberry	535	498	8	29	--	--
Hickory	625	427	89	109	--	--
Hard maple	3,201	3,158	23	19	--	1
Soft maple	6,255	5,078	522	574	75	6
Red oak	14,857	13,702	523	540	75	17
White oak	11,607	10,204	670	666	50	17
Walnut	3,085	2,977	59	46	--	3
Willow	233	233	--	--	--	--
Other hardwoods	215	118	55	41	--	1
All species	62,986	55,120	2,717	2,609	2,486	54
NORTHEASTERN UNIT						
Ash	1,094	1,054	3	6	25	6
Aspen	93	93	--	--	--	--
Basswood	1,597	1,594	1	1	--	1
Black cherry	127	124	1	1	--	1
Cottonwood	7,250	5,011	1	1	2,236	1
Elm	2,449	2,424	--	--	25	--
Hackberry	165	165	--	--	--	--
Hickory	195	195	--	--	--	--
Hard maple	3,042	3,040	--	1	--	1
Soft maple	2,699	2,609	3	6	75	6
Red oak	10,261	10,142	10	17	75	17
White oak	7,713	7,619	10	17	50	17
Walnut	1,491	1,484	1	3	--	3
Willow	218	218	--	--	--	--
Other hardwoods	58	55	1	1	--	1
All species	38,452	35,827	31	54	2,486	54

(Table 8 continued on next page)

[1/] International 1/4-inch rule.

(Table 8 continued)

Species group	All States	State				
		Iowa	Illinois	Missouri	Minnesota	Wisconsin
SOUTHEASTERN UNIT						
Eastern redcedar	2	2	--	--	--	--
Ash	645	556	36	53	--	--
Aspen	3	3	--	--	--	--
Basswood	433	338	44	51	--	--
Birch	204	152	14	38	--	--
Black cherry	14	8	3	3	--	--
Cottonwood	7,621	6,572	651	398	--	--
Elm	123	76	14	33	--	--
Hackberry	366	329	8	29	--	--
Hickory	430	232	89	109	--	--
Hard maple	159	118	23	18	--	--
Soft maple	3,537	2,450	519	568	--	--
Red oak	4,078	3,042	513	523	--	--
White oak	3,818	2,509	660	649	--	--
Walnut	228	127	58	43	--	--
Willow	15	15	--	--	--	--
Other hardwoods	157	63	54	40	--	--
All species	21,833	16,592	2,686	2,555	--	--
WESTERN UNIT						
Eastern redcedar	1	1	--	--	--	--
Ash	7	7	--	--	--	--
Basswood	68	68	--	--	--	--
Cottonwood	630	630	--	--	--	--
Elm	12	12	--	--	--	--
Hackberry	4	4	--	--	--	--
Soft maple	19	19	--	--	--	--
Red oak	518	518	--	--	--	--
White oak	76	76	--	--	--	--
Walnut	1,366	1,366	--	--	--	--
All species	2,701	2,701	--	--	--	--

Table 9.--Pulpwood production in Iowa by species group, 1965, 1970, 1975, and 1980

(In standard cords, unpeeled)[1/]

Species group	1965	1970	1975	1980
Roundwood				
Softwoods	--	80	--	61
Soft hardwoods	12,596	16,321	15,809	6,169
Hard hardwoods	12,082	19,700	14,566	10,554
Total	24,678	36,101	30,375	16,784
Residue[2/]				
Softwood	--	10,227	4,666	4,986
Hardwood	6,401	11,353	15,457	22,539
Total	6,401	21,580	20,123	27,525
All material	31,079	57,681	50,498	44,309

[1/]A standard cord is a stack of logs and bolts (or the equivalent) encompassing 128 cubic feet including wood, bark, and air space.

[2/]Wood residue from wood-using mills such as chips from slabs and edgings generated at sawmills.

Table 10.--Veneer log production in Iowa by species group, 1966, 1970, 1976, and 1980

(In thousand board feet)[1/]

Species group	1966	1970	1976	1980
Ash	77	85	318	57
Basswood	587	301	301	84
Cottonwood	849	1,121	--	23
Elm	[2/]	483	32	--
Hard maple	245	292	123	14
Soft maple	320	97	264	24
Red oak	867	930	1,881	1,132
White oak	30	--	134	672
Walnut	3,138	785	1,841	1,795
Other hardwoods	797[3/]	500	349	--
All species	6,910	4,594	5,243	3,801

[1/]International 1/4-inch rule.

[2/]Included in other hardwoods.

[3/]Includes elm.

Table 11.--Veneer log production by species group and state of destination, Iowa, 1980

(In thousand board feet)[1/]

Species group	All States	State						
		Iowa	Indiana	Wisconsin	Illinois	Missouri	Ohio	Other states
Ash	57	--	--	57	--	--	--	--
Basswood	84	--	--	84	--	--	--	--
Cottonwood	23	--	--	--	--	--	--	23
Hard maple	14	--	11	3	--	--	--	--
Soft maple	24	--	--	24	--	--	--	--
Red oak	1,132	--	216	754	162	--	--	--
White oak	672	--	513	34	101	2	22	--
Walnut	1,795	979	563	--	41	174	38	--
All species	3,801	979	1,303	956	304	176	60	23

[1/] International 1/4-inch rule.

Table 12.--Residue produced at primary wood-using mills by type of material, type of use, and county, Iowa, 1980

(In thousand tons green weight)

NORTHEASTERN UNIT

County and type of use	Wood residue							
	Total		Coarse[1/]		Fine[2/]		Bark[3/]	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Benton								
Fiber products	--	3.23	--	3.23	--	--	--	--
Industrial fuel	--	.32	--	--	--	.32	--	--
Domestic fuel	--	2.93	--	2.93	--	--	--	1.25
Miscellaneous[4/]	--	2.38	--	--	--	2.38	--	.07
Not used	--	1.32	--	.27	--	1.05	--	1.43
Total	--	10.18	--	6.43	--	3.75	--	2.75
Black Hawk								
Domestic fuel	--	1.11	--	1.11	--	--	--	.47
Miscellaneous[4/]	--	.64	--	--	--	.64	--	--
Total	--	1.75	--	1.11	--	.64	--	.47
Butler								
Fiber products	--	3.70	--	3.70	--	--	--	--
Miscellaneous[4/]	--	1.08	--	--	--	1.08	--	.63
Not used	--	1.08	--	--	--	1.08	--	.94
Total	--	5.86	--	3.70	--	2.16	--	1.57
Chickasaw								
Domestic fuel	--	.05	--	.05	--	--	--	.02
Miscellaneous[4/]	--	.03	--	--	--	.03	--	--
Not used	--	.66	--	.42	--	.24	--	.18
Total	--	.74	--	.47	--	.27	--	.20
Clayton								
Fiber products	--	7.40	--	7.40	--	--	--	--
Domestic fuel	--	3.68	--	3.68	--	--	--	--
Miscellaneous[4/]	--	7.29	--	--	--	7.29	--	.56
Not used	--	1.44	--	1.44	--	--	--	4.77
Total	--	19.81	--	12.52	--	7.29	--	5.33
Delaware								
Fiber products	--	11.10	--	11.10	--	--	--	--
Miscellaneous[4/]	--	2.58	--	--	--	2.58	--	--
Not used	--	3.88	--	--	--	3.88	--	4.72
Total	--	17.56	--	11.10	--	6.46	--	4.72

(Table 12 continued on next page)

[1/] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2/] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3/] Does not include bark at pulpmills.

[4/] Livestock bedding, poultry litter, mulch, etc.

(Table 12 continued)

County and type of use	Wood residue							
	Total		Coarse[1]		Fine[2]		Bark[3]	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Floyd								
Domestic fuel	--	0.89	--	0.89	--	--	--	--
Miscellaneous[4]	--	.65	--	--	--	0.65	--	--
Not used	--	.22	--	.22	--	--	--	0.47
Total	--	1.76	--	1.11	--	.65	--	.47
Grundy								
Fiber products	--	1.82	--	1.82	--	--	--	--
Miscellaneous[4]	--	--	--	--	--	--	--	.71
Not used	--	1.84	--	--	--	1.84	--	.31
Total	--	3.66	--	1.82	--	1.84	--	1.02
Johnson								
Domestic fuel	--	2.56	--	2.56	--	--	--	1.09
Miscellaneous[4]	--	1.60	--	--	--	1.60	--	--
Not used	--	.35	--	.29	--	.06	--	.12
Total	--	4.51	--	2.85	--	1.66	--	1.21
Jones								
Fiber products	--	2.27	--	2.27	--	--	--	.63
Industrial fuel	--	1.85	--	1.85	--	--	--	.79
Domestic fuel	--	1.00	--	1.00	--	--	--	.16
Miscellaneous[4]	--	4.73	--	--	--	4.73	--	--
Not used	--	.16	--	.16	--	--	--	.97
Total	--	10.01	--	5.28	--	4.73	--	2.55
Mitchell								
Domestic fuel	--	3.70	--	3.70	--	--	--	--
Not used	--	2.15	--	--	--	2.15	--	1.57
Total	--	5.85	--	3.70	--	2.15	--	1.57
Tama								
Domestic fuel	--	3.74	--	3.74	--	--	--	1.60
Miscellaneous[4]	--	1.72	--	--	--	1.72	--	--
Not used	--	.55	--	.06	--	.49	--	.02
Total	--	6.01	--	3.80	--	2.21	--	1.62
All counties								
Fiber products	--	29.52	--	29.52	--	--	--	.63
Industrial fuel	--	2.17	--	1.85	--	.32	--	.79
Domestic fuel	--	19.66	--	19.66	--	--	--	4.59
Miscellaneous[4]	--	22.70	--	--	--	22.70	--	1.97
Not used	--	13.65	--	2.86	--	10.79	--	15.50
Total	--	87.70	--	53.89	--	33.81	--	23.48

(Table 12 continued on next page)

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Does not include bark at pulpmills.

[4] Livestock bedding, poultry litter, mulch, etc.

(Table 12 continued)

SOUTHEASTERN UNIT

County and type of use	Wood residue: Total		Coarse[1]		Fine[2]		Bark[3]	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Dallas								
Miscellaneous[4]	--	2.96	--	1.62	--	1.34	--	--
Not used	--	.69	--	.69	--	--	--	0.98
Total	--	3.65	--	2.31	--	1.34	--	.98
Decatur								
Domestic fuel	--	.02	--	.02	--	--	--	.01
Miscellaneous[4]	--	.12	--	--	--	.12	--	--
Not used	--	.21	--	.20	--	.01	--	.09
Total	--	.35	--	.22	--	.13	--	.10
Hardin								
Fiber products	--	2.53	--	2.53	--	--	--	1.08
Miscellaneous[4]	--	1.47	--	--	--	1.47	--	--
Total	--	4.00	--	2.53	--	1.47	--	1.08
Iowa								
Fiber products	--	2.22	--	2.22	--	--	--	--
Miscellaneous[4]	--	1.29	--	--	--	1.29	--	.94
Total	--	3.51	--	2.22	--	1.29	--	.94
Keokuk								
Domestic fuel	--	.02	--	.02	--	--	--	.01
Miscellaneous[4]	--	.02	--	--	--	.02	--	--
Not used	--	.15	--	.10	--	.05	--	.04
Total	--	.19	--	.12	--	.07	--	.05
Lee								
Fiber products	--	12.32	--	12.32	--	--	--	2.20
Miscellaneous[4]	--	4.16	--	--	--	4.16	--	3.04
Not used	--	3.02	--	--	--	3.02	--	--
Total	--	19.50	--	12.32	--	7.18	--	5.24
Louisa								
Fiber products	--	.83	--	.83	--	--	--	--
Domestic fuel	--	.09	--	.09	--	--	--	--
Miscellaneous[4]	--	.27	--	--	--	.27	--	.20
Not used	--	.27	--	--	--	.27	--	.20
Total	--	1.46	--	.92	--	.54	--	.40

(Table 12 continued on next page)

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

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[3] Does not include bark at pulpmills.

[4] Livestock bedding, poultry litter, mulch, etc.

(Table 12 continued)

County and type of use	Wood residue							
	Total		Coarse[1/]		Fine[2/]		Bark[3/]	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Mahaska								
Domestic fuel	--	0.87	--	0.87	--	--	--	--
Miscellaneous[4/]	--	1.01	--	--	--	1.01	--	--
Not used	--	.87	--	.87	--	--	--	0.74
Total	--	2.75	--	1.74	--	1.01	--	.74
Marion								
Domestic fuel	--	.60	--	.60	--	--	--	.25
Miscellaneous[4/]	--	.35	--	--	--	.35	--	--
Total	--	.95	--	.60	--	.35	--	.25
Marshall								
Domestic fuel	--	.05	--	.05	--	--	--	.02
Miscellaneous[4/]	--	.03	--	--	--	.03	--	--
Total	--	.08	--	.05	--	.03	--	.02
Polk								
Domestic fuel	--	2.20	--	1.39	--	.81	--	.59
Not used	--	2.20	--	1.39	--	.81	--	.59
Total	--	4.40	--	2.78	--	1.62	--	1.18
Van Buren								
Domestic fuel	--	.47	--	.47	--	--	--	--
Miscellaneous[4/]	--	.74	--	--	--	.74	--	--
Not used	--	2.40	--	1.81	--	.59	--	.97
Total	--	3.61	--	2.28	--	1.33	--	.97
Washington								
Domestic fuel	--	.98	--	.98	--	--	--	.42
Miscellaneous[4/]	--	.56	--	--	--	.56	--	--
Not used	--	.30	--	.19	--	.11	--	.08
Total	--	1.84	--	1.17	--	.67	--	.50
All counties								
Fiber products	--	17.90	--	17.90	--	--	--	3.28
Domestic fuel	--	5.30	--	4.49	--	.81	--	1.30
Miscellaneous[4/]	--	12.98	--	1.62	--	11.36	--	4.18
Not used	--	10.11	--	5.25	--	4.86	--	3.69
Total	--	46.29	--	29.26	--	17.03	--	12.45

(Table 12 continued on next page)

[1/] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2/] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3/] Does not include bark at pulpmills.

[4/] Livestock bedding, poultry litter, mulch, etc.

(Table 12 continued)

County and type of use	Wood residue							
	Total		Coarse[1]		Fine[2]		Bark[3]	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
WESTERN UNIT								
Crawford								
Domestic fuel	--	0.33	--	0.33	--	--	--	--
Miscellaneous[4]	--	.38	--	--	--	0.38	--	--
Not used	--	.33	--	.33	--	--	--	0.28
Total	--	1.04	--	.66	--	.38	--	.28
Page								
Domestic fuel	--	.04	--	.04	--	--	--	--
Miscellaneous[4]	--	--	--	--	--	--	--	--
Not used	--	.07	--	.03	--	.04	--	.03
Total	--	.11	--	.07	--	.04	--	.03
Pottawattamie								
Industrial fuel	--	4.46	--	2.82	--	1.64	--	--
Domestic fuel	--	--	--	--	--	--	--	.24
Miscellaneous[4]	--	--	--	--	--	--	--	.96
Total	--	4.46	--	2.82	--	1.64	--	1.20
Sioux								
Domestic fuel	--	.08	--	.08	--	--	--	--
Miscellaneous[4]	--	.04	--	--	--	.04	--	--
Not used	--	--	--	--	--	--	--	.03
Total	--	.12	--	.08	--	.04	--	.03
All counties								
Industrial fuel	--	4.46	--	2.82	--	1.64	--	--
Domestic fuel	--	.45	--	.45	--	--	--	.24
Miscellaneous[4]	--	.42	--	--	--	.42	--	.96
Not used	--	.40	--	.36	--	.04	--	.34
Total	--	5.73	--	3.63	--	2.10	--	1.54
ALL UNITS								
Total Iowa								
Fiber products	--	47.42	--	47.42	--	--	--	3.91
Industrial fuel	--	6.63	--	4.67	--	1.96	--	.79
Domestic fuel	--	25.41	--	24.60	--	.81	--	6.13
Miscellaneous[4]	--	36.10	--	1.62	--	34.48	--	7.11
Not used	--	24.16	--	8.47	--	15.69	--	19.53
Total	--	139.72	--	86.78	--	52.94	--	37.47

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Does not include bark at pulpmills.

[4] Livestock bedding, poultry litter, mulch, etc.

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Discusses recent Iowa forest industry trends, timber removals for industrial roundwood in 1980, production and receipts of saw logs in 1980, and production of other industrial roundwood products in 1980. Reports on wood and bark residue generated at primary mills and the disposition of this residue.

KEY WORDS: Saw logs, sawmills, mill residue, timber removals.