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Iowa Timber Industry— An Assessment of Timber Product Output and Use

2005

David E. Haugen and Dennis D. Michel

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Introduction

About the Authors:

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Iowa's wood products manufacturing industry employs more than 10,900 workers with an output of approximately \$1.4 billion (U.S. Census Bureau 2002). In this bulletin we discuss recent Iowa forest industry trends and report the results of a detailed study of the forest industry, industrial roundwood production, and associated primary mill wood and bark residue in Iowa in 2005. Such detailed information is useful for informed decisionmaking in wood procurement, forest resources management, and forest industry development. Furthermore, scientists use current forest industry and industrial roundwood information in economic and forest resource research initiatives.

The last published report from a detailed study of all industrial roundwood output in Iowa came out in 2000 (Piva and Michel 2003). Most comparisons in this report are with the 2000 results. When new surveys are completed, errors and omissions from previous surveys are corrected. As a result of our ongoing efforts to improve the survey's efficiency and reliability, changes may have been made to the previous survey's data. All comparisons and analysis in this report are based on the revised data from earlier surveys, which may not match earlier published data. Rows and columns of supporting tables may not sum due to rounding, but data in each table cell are accurately displayed.

Information about the forest land resource of Iowa is available at the Forest Inventory and Analysis Web site at: <http://nrs.fs.fed.us/fia/data-tools/state-reports/IA>.

Study Methods

This study was a cooperative effort between the Iowa Department of Natural Resources, Bureau of Forestry (IDNRBF) and the Northern Research Station (NRS) of the U.S. Forest Service. Using questionnaires supplied by NRS and designed to determine the size and composition of the State's primary wood-using industry, its use of roundwood, and its generation and disposition of wood residues, the IDNRBF mailed questionnaires to all known primary wood-using mills within the State of Iowa. The IDNRBF followed up on mills that did not respond to the first mailing by using additional mailings, telephone, and personal contacts until all known mills had responded. Completed questionnaires were sent to NRS to process and analyze.

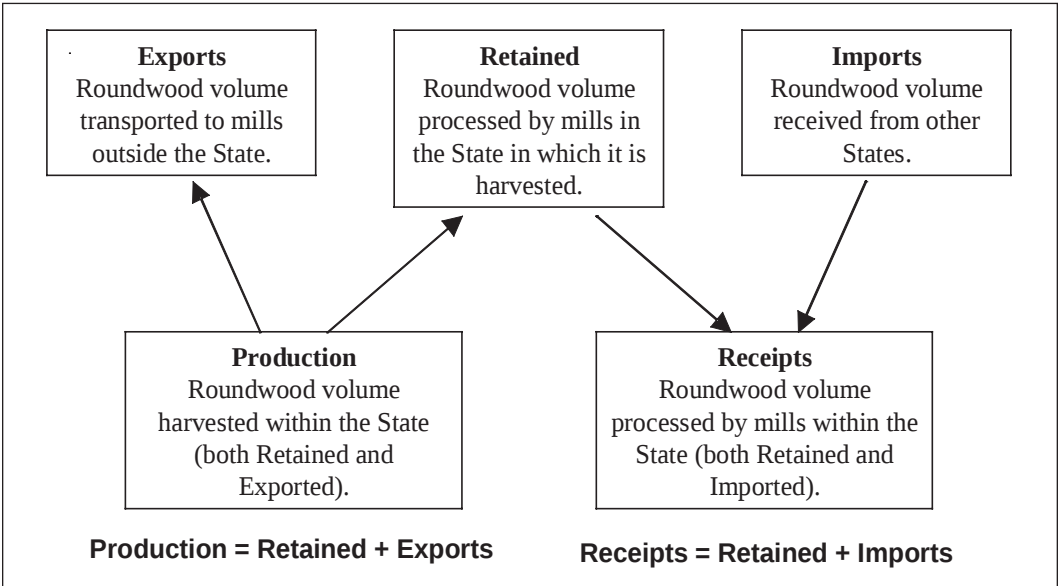
As part of data processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors (Table 1). Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from logging utilization studies previously conducted by NRS. Data on Iowa's industrial roundwood receipts were entered into a regional timber removals database where they were supplemented with data on out-of-state uses of Iowa roundwood to provide a complete assessment of Iowa's timber product output.

Table 1.—Conversion factors from reported unit of measure to International 1/4-inch rule

Product	Reported scale	
	Doyle scale	Scribner Decimal C scale
Saw logs	1.38	1.08
Veneer logs	1.14	1.04

Certain terms used in this report—retained, export, import, production, and receipts—have meanings and relationships unique to the Forest Inventory and Analysis Units across the county that deal with timber product output (TPO) (Fig. 1). All other terms are described in the Definition of Terms section.

Figure 1.—Diagram of the movement of industrial roundwood.



Primary Timber Industry In Iowa

INDUSTRIAL ROUNDWOOD

- Iowa's primary wood-using industry totaled 27 active mills in 2005, a decrease of 32 mills from 2000. Most of the mills not operating in 2005 were in the small mill category (Table 2). Iowa's primary wood-using industry was comprised of 25 sawmills, 1 veneer mill, and 1 cooperage mill.
- Most of the State's sawmills, along with the veneer mill and cooperage mill, were located in the two eastern Forest Inventory Units (Fig. 2).
- In 2005, Iowa's 27 wood-using mills had industrial roundwood product receipts totaling over 20 million cubic feet, an increase of more than 3 percent from the 2000 survey (Table 3).
- Just over 63 percent of the industrial roundwood processed in 2005 by the State's primary wood-using mills was cut from Iowa's forest lands. Illinois was the largest supplier of out-of-state wood for Iowa's forest products mills, with 36 percent of the total imports, followed by Wisconsin and Missouri with 27 and 24 percent, respectively. Minnesota, Kansas, Arkansas, and Nebraska also supplied minor amounts of industrial roundwood for processing in Iowa mills (Table 3).

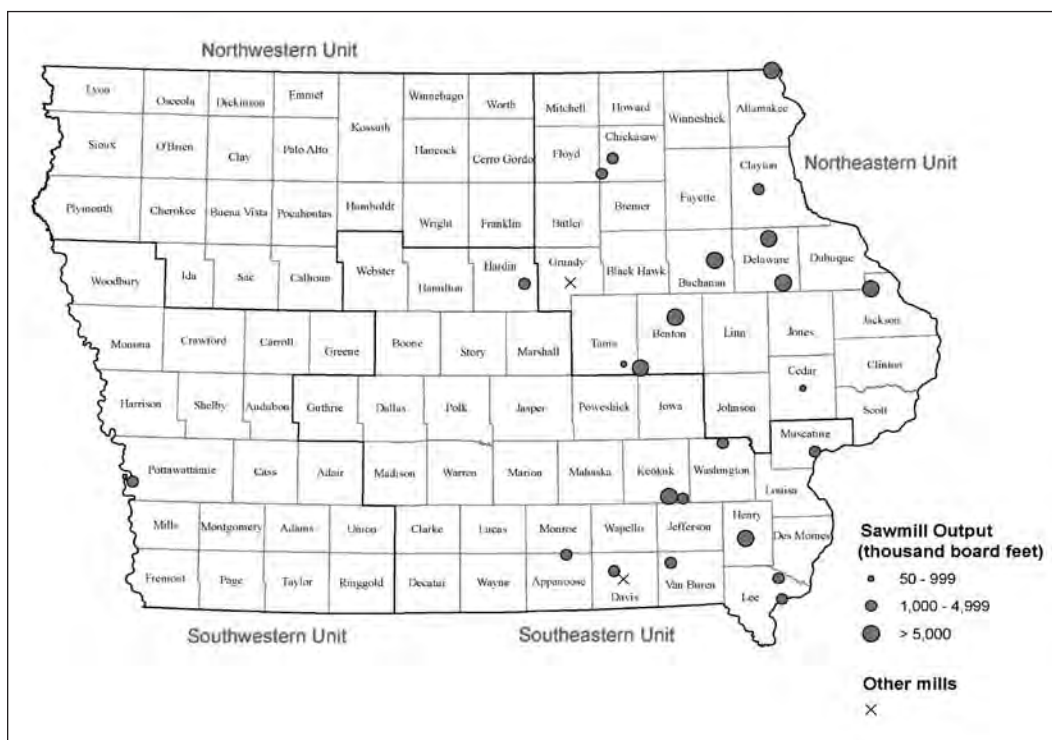


Figure 2.—Forest Inventory Units and location of wood-using mills, Iowa, 2005. (Figure created by Dale Gormanson.)

- Nearly all of the industrial roundwood processed by Iowa's primary wood-using mills came from hardwood species. Red and white oak accounted for 38 percent of the total volume processed (Table 3).
- While mill receipts of industrial roundwood increased by 3 percent in Iowa between 2000 and 2005, industrial roundwood production decreased by nearly 9 percent, from 17.4 million cubic feet to 16 million cubic feet (Table 4 and Fig. 3). This was mainly the result of fewer mills operating in Iowa.
- The production of saw logs accounted for more than 90 percent of the total industrial roundwood produced in 2005. Veneer mills, the second largest consumer of Iowa's industrial roundwood production, used nearly 6 percent (Table 5).
- In 2005, 8.6 million cubic feet were produced within the Northeastern Unit, or 54 percent of the total industrial roundwood produced in the State (Table 6). Between 2000 and 2005, production of industrial roundwood fell by an estimated 15 percent in the Northeastern Unit. The Southeastern and Southwestern Units each showed a modest increase of nearly 3 percent in each unit while production in the Northwestern Unit decreased by more than 50 percent.
- Four-fifths of the industrial roundwood harvested in Iowa was processed by primary wood processors in Iowa (Table 7). Wisconsin, Missouri, and Minnesota were the largest markets for industrial roundwood exported to other states, receiving 72 percent of the total exports. Other states that processed industrial roundwood harvested in Iowa were Nebraska, Indiana, Illinois, Michigan, Ohio, and South Dakota.
- Thirty-eight percent of the harvested industrial roundwood volume in 2005 was white and red oak species. Soft maple (17 percent), black walnut (15 percent), cottonwood (9 percent), and hard maple (8 percent) were the other major species harvested (Table 7 and Fig. 4).

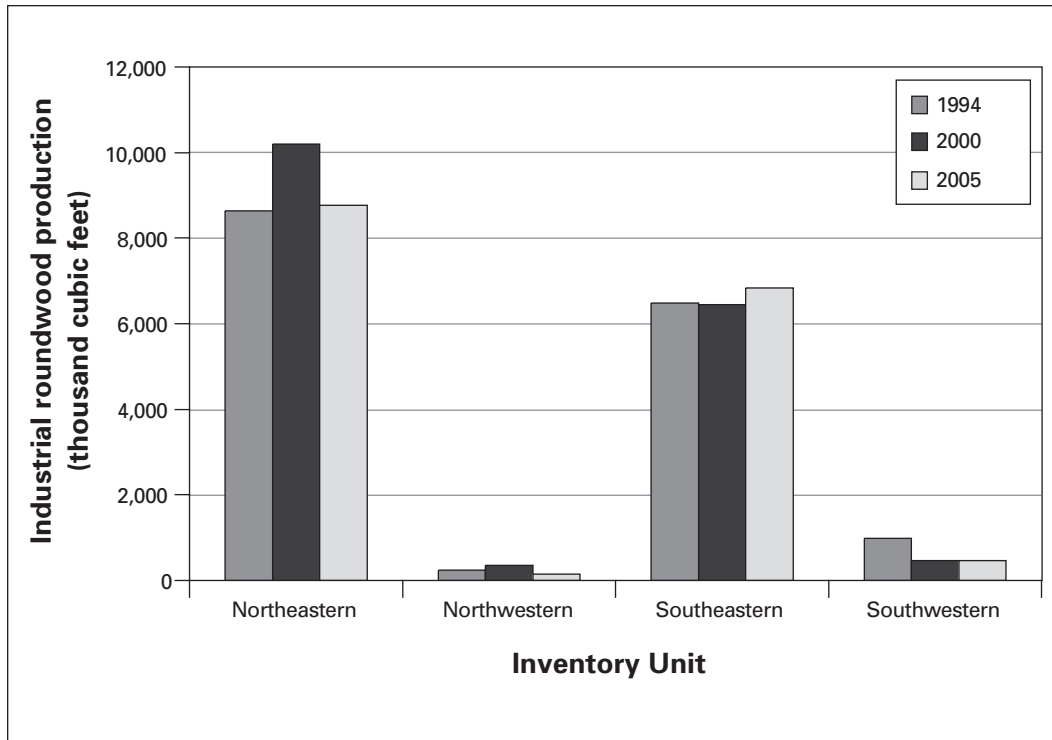


Figure 3.—Industrial roundwood production, Iowa, 1994, 2000, and 2005.

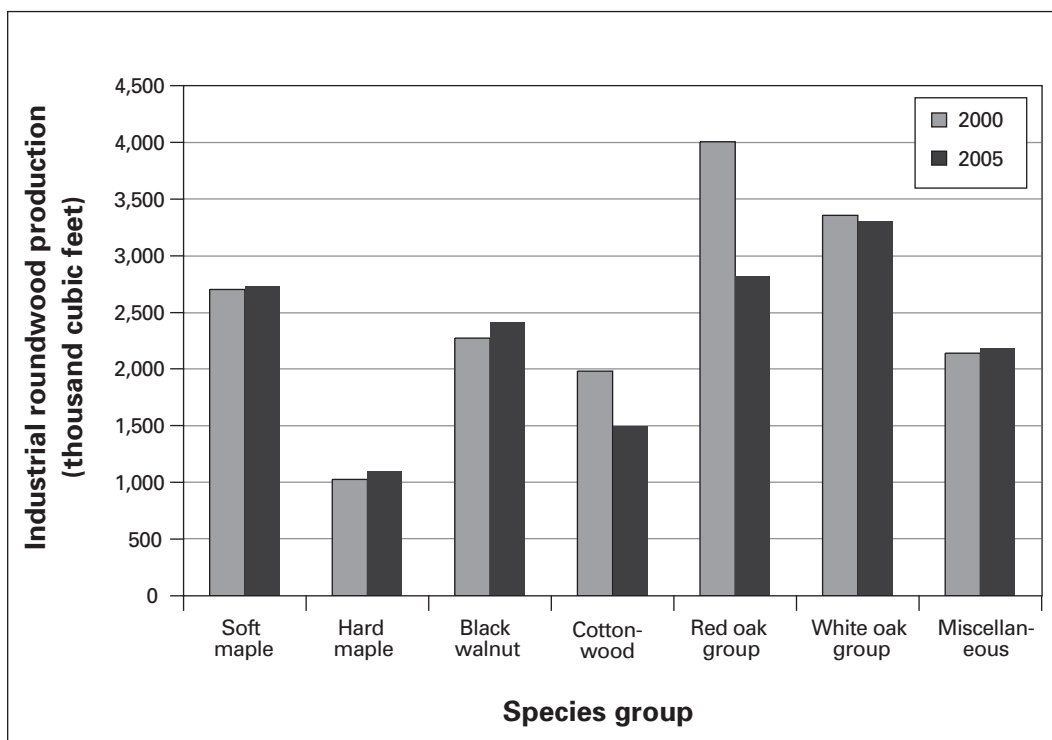


Figure 4.—Industrial roundwood production by species group, Iowa, 2000 and 2005.

SAW LOGS

- Iowa's sawmills processed 111.2 million board feet of saw logs in 2005, an increase of 13 percent from 2000 (Table 8).
- Saw log production decreased by 4 percent, from 88.6 million board feet in 2000 to 85.2 million board feet in 2005 (Table 8).
- Soft maple, red oak, white oak, black walnut, and cottonwood species groups accounted for more than 78 percent of the saw logs produced from Iowa's forest lands (Figure 5).
- The two eastern Forest Inventory Units accounted for 94 percent of the saw logs produced in the State.

OTHER PRODUCTS

- Iowa's veneer log production increased from 3.6 million board feet in 2000 to 5.1 million board feet in 2005, an increase of 40 percent (Table 5 and Fig. 6). Black walnut accounted for 50 percent of the veneer log production in 2005.
- In 2005, cooperage production increased by over 2 million board feet going from 433,000 board feet in 2000 to 2.4 million board feet in 2005. Most of the wood harvested for the cooperage industry came from within the Northeastern Unit.
- Industrial fuelwood harvest remained unchanged between surveys, with 43,000 board feet reported harvested in 2005.

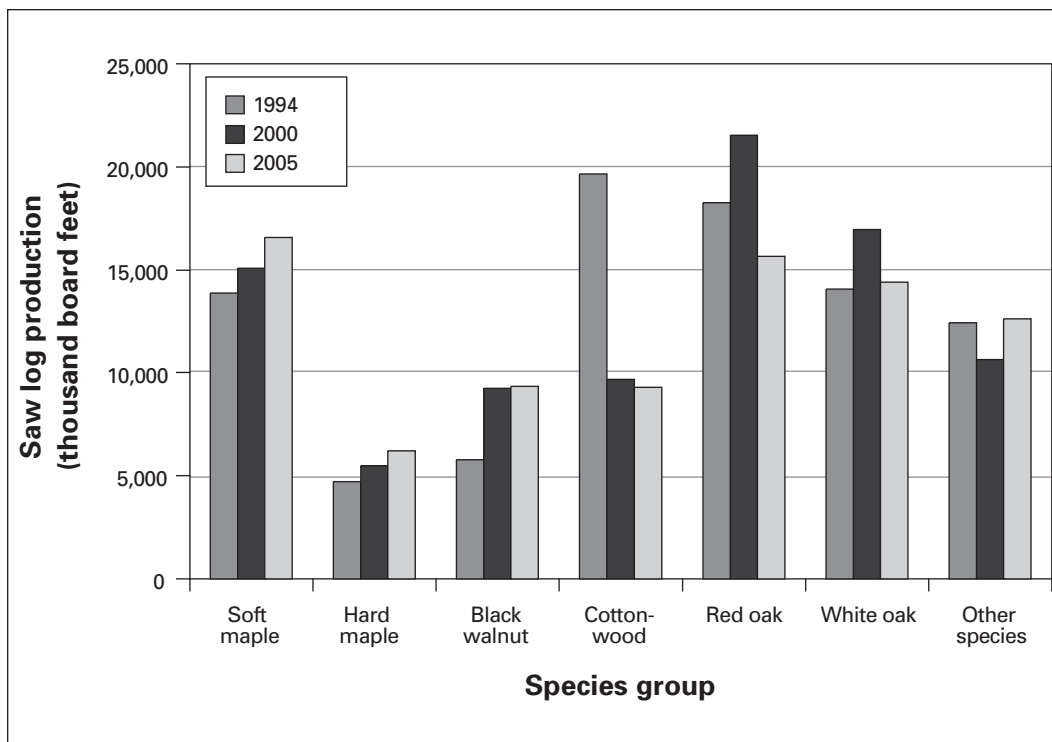


Figure 5.—Total saw log production by survey year, Iowa, 1994, 2000, and 2005.

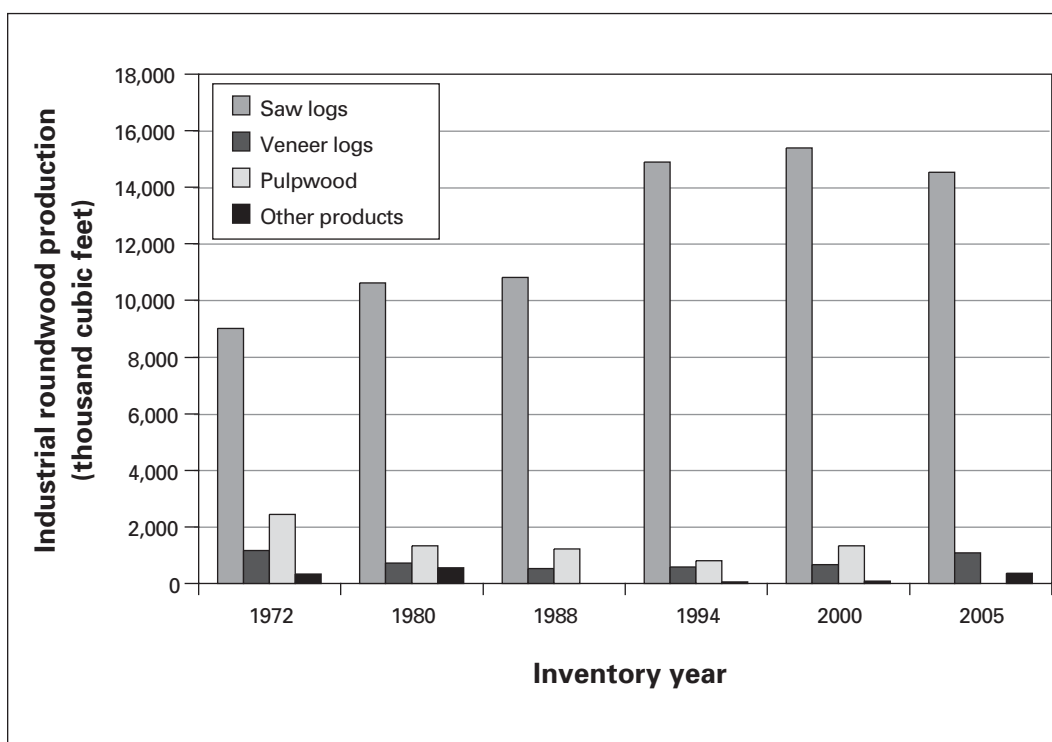


Figure 6.—Industrial roundwood production by product, Iowa.

TIMBER REMOVALS

- During the harvest of industrial roundwood from Iowa's forests in 2005, 58 percent of the 27.5 million cubic feet of wood material cut was used for primary wood products. The remainder was left on the ground as harvest residues (Fig. 7). Growing-stock sources, at 15.9 million cubic feet, were the largest component of removals for industrial roundwood production. Of the growing stock removed, 78 percent was used for products and 22 percent was left as harvest residue. Another 11.5 million cubic feet of non-growing-stock wood material was removed in the production of industrial roundwood, but only 31 percent of this material was used for products (Table 9).
- Cull trees (rough and rotten trees) and nonforest trees accounted for 56 and 34 percent, respectively, of the non-growing-stock sources of roundwood used for primary wood products. The rest of the non-growing-stock material used for industrial roundwood production came from dead trees, saplings, and limbwood.
- In 2005, 15.9 million cubic feet were removed from the growing-stock inventory on timberland and 65.7 million board feet were removed from the sawtimber inventory on timberland (Tables 10 and 11).

HARVEST INTENSITY

- The harvest intensity (volume of industrial roundwood harvested per acre of forest land) is relatively light. Only seven counties had more than 15 cubic feet of industrial roundwood production per acre of forest land (Fig. 8). For reference, a cord of roundwood contains about 80 cubic feet of wood.
- In 2005, Iowa had 2.8 million acres of forest land (Crocker et al. 2007). The net volume in live trees on forest land was 4.0 billion cubic feet. The average volume of live trees per acre in Iowa in 2005 was 1,428 cubic feet per acre or roughly 16 cords per acre (based on 90 cubic feet of wood and bark per cord). The 27.5 million cubic feet of total wood material removed due to harvesting (Table 9) is less than 1 percent of the total live volume of trees on forest land.

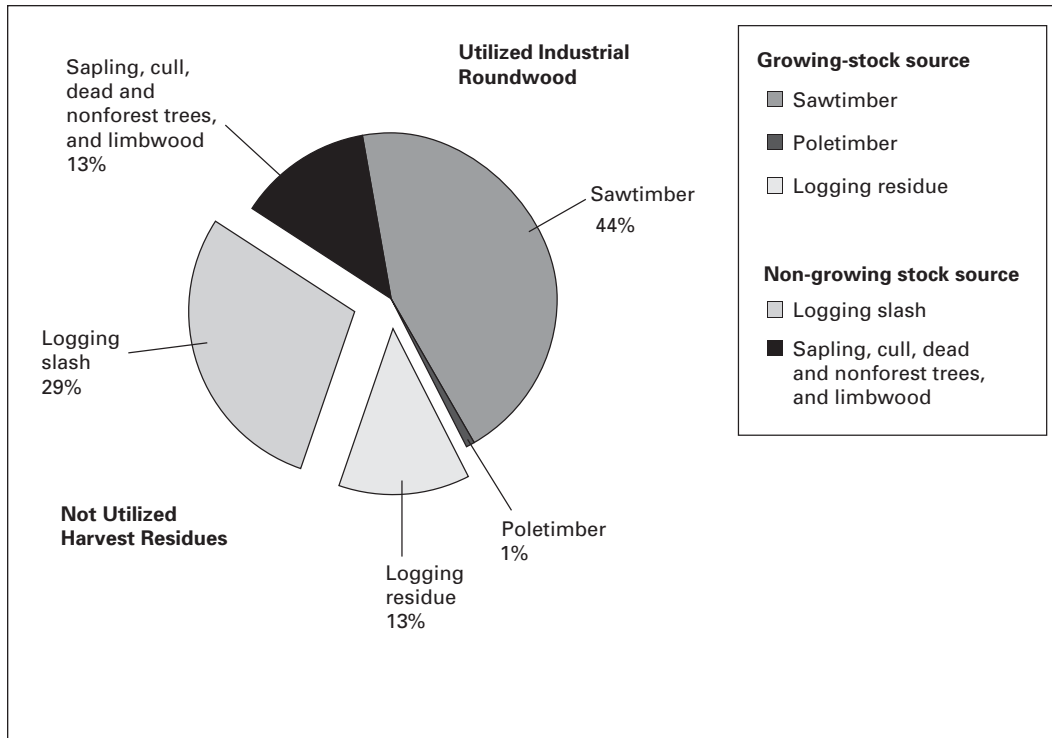


Figure 7.—

Distribution of timber removals for industrial roundwood by source of material, Iowa, 2005.

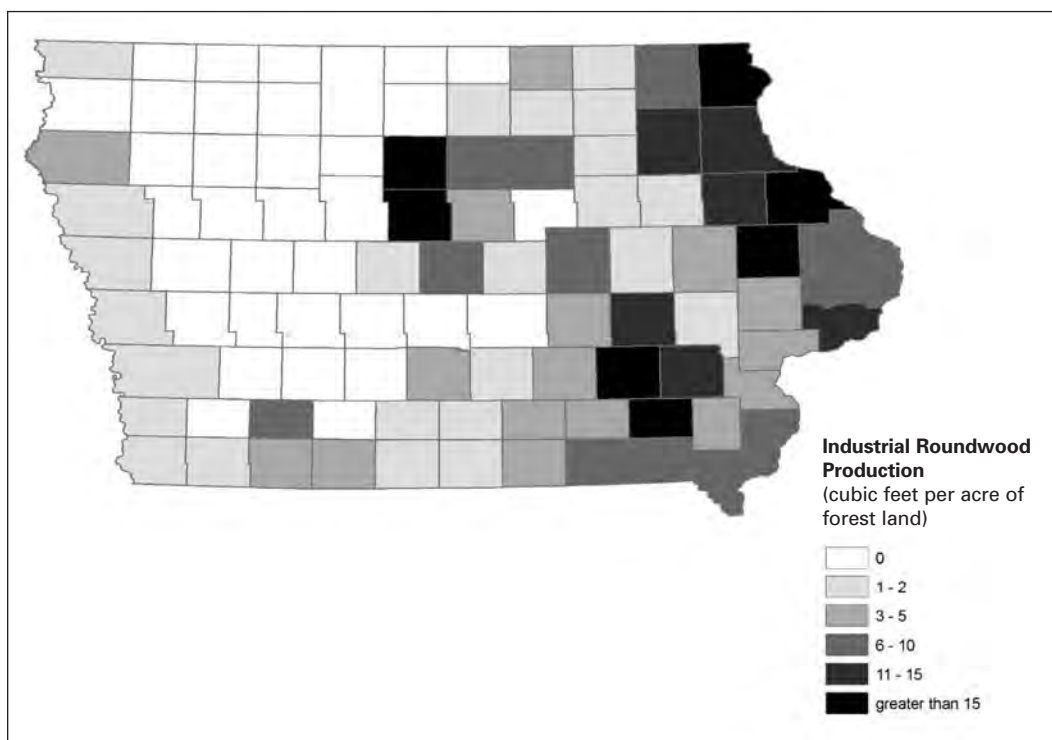


Figure 8.—

Harvest intensity for industrial roundwood production, Iowa, 2005. (Figure created by Dale Gormanson.)

HARVEST RESIDUES

- In 2005, harvesting of industrial roundwood products left 11.4 million cubic feet of harvest residues on the ground in Iowa (Table 12).
- Red and white oak species accounted for 33 percent of the volume of harvest residues generated in Iowa in 2005. Soft maple species made up another 24 percent of the volume of harvest residues.
- More than two-thirds of the wood material left on the ground after the harvest of Iowa's industrial roundwood came from non-growing-stock sources such as limbwood, dead trees, cull trees, nonforest trees, and saplings.

PRIMARY MILL RESIDUES

- In converting industrial roundwood into products, such as lumber, veneer and cooperage, Iowa's primary wood-using industries generated 301,000 green tons of wood residues (coarse and fine residues) and bark residues (Table 13).
- Fifty-four percent of the 2005 mill residues were in the form of coarse wood residues, such as slabs and edgings. Fine residues made up another 24 percent of the mill residues produced, and bark residue accounted for the remaining 22 percent (Fig. 9).
- Miscellaneous uses, such as livestock bedding, mulch, and small dimension lumber, consumed 83 percent of the total residues produced by Iowa's primary wood-using mills in 2005. Another 15 percent of the mill residues generated were used for industrial or domestic fuel. Less than 2 percent of the mill residues were used for fiber products and less than 1 percent of residues went unused (Fig. 10).
- In the 2005 production of miscellaneous products, 78 percent of the coarse residues, 79 percent of the fine residues, and 96 percent of the bark residues were used (Table 13).
- In 2005, less than 1 percent of the mill residues generated by Iowa's primary wood-using mills remained unused; in 2000, 4 percent of the mill residues went unused.

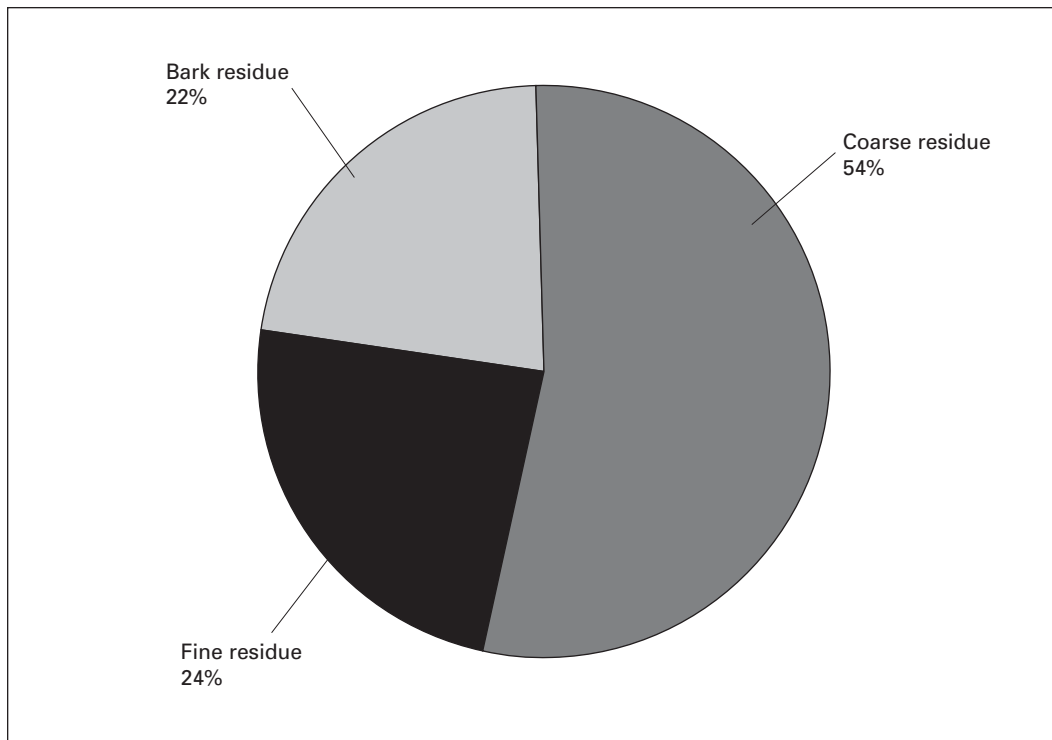


Figure 9.—

Distribution of residues generated by primary wood-using mills by type of residue, Iowa, 2005.

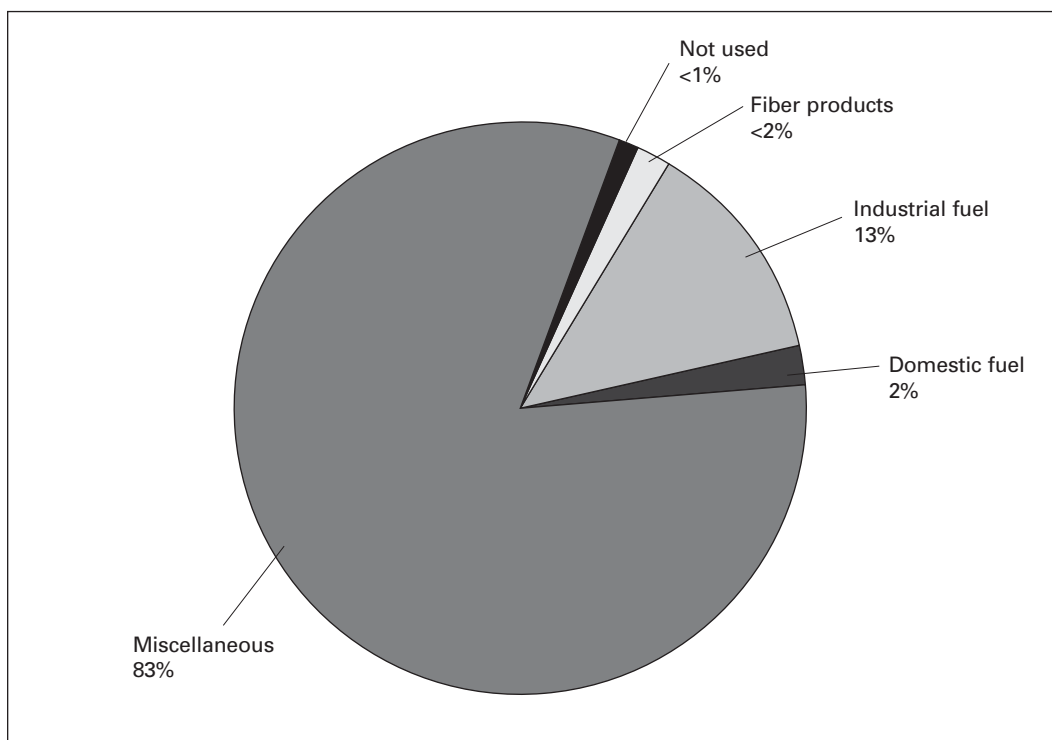


Figure 10.—

Distribution of residues generated by primary wood-using mills by method of disposal, Iowa, 2005.

Acknowledgments

Special thanks are given to the primary wood-using firms for supplying information for this study and to the Iowa Department of Natural Resources, Bureau of Forestry, for canvassing the respondents. Their cooperation is greatly appreciated.

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Definition of Terms

Board foot. Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, 1 foot wide, and 1 inch thick (or its equivalent).

Bolt. A short log no more than 8 feet long, to be sawn for lumber, peeled or sliced for veneer, shaved for excelsior, or converted into shingles, cooperage stock, dimension stock, blocks, blanks, or other products.

Central stem. The portion of a tree between a 1-foot stump and the minimum 4.0-inch top diameter outside bark, or point where the central stem breaks into limbs.

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

Commercial species. Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam, Osage-orange, and redbud.)

Cull removals. Net volume of rough and rotten trees plus the net volume in sections of the central stem of growing-stock trees that do not meet regional merchantability standards but are harvested for industrial roundwood products.

Dead removals. Net volume of dead trees harvested for industrial roundwood products.

Diameter at breast height (d.b.h.). The outside bark diameter at 4.5 feet above the forest floor on the uphill side of the tree. For determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

Doyle rule. A simple log rule or formula for estimating the board-foot volume of logs based on a 4-inch slabbing allowance to square the log. This rule is used in the Eastern and Southern United States.

Exports. The volume of roundwood utilized by mills outside the state where the timber was harvested.

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

Forest land. Land at least 10 percent stocked with trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is

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 or other bodies of water, or clearings in forest areas shall be classified as forest if less than 120 feet wide.

Growing-stock removals. The growing-stock volume removed from timberland by harvesting industrial roundwood products. (Note: Includes sawtimber removals, poletimber removals, and logging residues.)

Growing-stock tree. A live timberland tree of commercial species that meets specified standards of size, quality, and merchantability. (Note: Excludes rough, rotten, and dead trees.)

Growing-stock volume. Net volume of growing-stock trees 5.0 inches d.b.h. and larger, from 1 foot above the ground to a minimum 4.0-inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

Hardwoods. Dicotyledonous trees, usually broad-leaved and deciduous.

Harvest residues. The total net volume of unused portions of trees cut or killed by logging. (Note: Includes both logging residues and logging slash.)

Industrial fuelwood. A roundwood product, with or without bark, used to generate energy at manufacturing facilities and schools, correctional institutions, or electric generating plants.

Imports. The volume of roundwood delivered to a mill or group of mills in a specific state but harvested outside that state.

Industrial roundwood exports. The quantity of industrial roundwood harvested in a geographical area and transported to other geographical areas.

Industrial roundwood imports. The quantity of industrial roundwood received from other geographical areas.

Industrial roundwood products. Saw logs, pulpwood, veneer logs, poles, commercial posts, pilings, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

Industrial roundwood production. The quantity of industrial roundwood harvested in a geographic area plus all industrial roundwood exported to other geographical areas.

Industrial roundwood receipts. The quantity of industrial roundwood received by commercial mills in a geographic area plus all industrial roundwood imported from other geographical areas.

Industrial roundwood retained. The quantity of industrial roundwood harvested from and processed by commercial mills within the same geographical area.

International 1/4-inch rule. A log rule or formula for estimating the board-foot volume of logs, allowing 1/2-inch of taper for each 4-foot length, and assuming 1/4 inch of kerf. This rule is used as the U.S. Forest Service standard log rule in the Eastern United States.

Limbwood removals. Net volume of all portions of a tree other than the central stem (including forks, large limbs, tops, and stumps) harvested for industrial roundwood products.

Logging residue. The net volume of unused portions of the merchantable central stem of growing-stock trees cut or killed by logging.

Logging slash. The net volume of unused portions of the unmerchantable (non-growing-stock) sections of trees cut or killed by logging.

Merchantable sections. Refers to sections of the central stem of growing-stock trees that meet either pulpwood or saw log specifications.

Net volume. Gross volume less deductions for rot, sweep, or other defects affecting use for roundwood products.

Noncommercial species. Trees species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial roundwood products. Noncommercial species are listed in the volume tables as rough trees.

Nonforest land. Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, active Christmas tree plantations, orchards, nurseries, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 39.9-acre areas of water classified by the Bureau of the Census as land.) If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre to qualify as nonforest land.

Nonforest land removals. Net volume of trees on nonforest lands harvested for industrial roundwood products.

Poletimber. A growing-stock tree at least 5.0 inches d.b.h. but smaller than sawtimber size (9.0 inches d.b.h. for softwoods, 11.0 inches d.b.h. for hardwoods).

Poletimber removals. Net volume in the merchantable central stem of poletimber trees harvested for industrial roundwood products.

Primary wood-using mills. Mills receiving roundwood or chips from roundwood for processing into products such as lumber, veneer, pulp, etc.

Primary wood-using mill residue. Wood materials (coarse and fine) and bark generated at manufacturing plants that process industrial roundwood into principal products. These residues include wood products obtained incidental to production of principal products and wood materials not utilized for some product.

Production. The quantity of roundwood material harvested in a geographic area plus all roundwood material exported to other geographical areas.

Receipts. The quantity of roundwood material received by commercial mills in a geographic area plus all roundwood material imported from other geographical areas.

Retained. Roundwood volume harvested from and processed by mills within the same State.

Rotten tree. A tree that does not meet regional merchantability standards because of excessive unsound cull.

Rough tree. A tree that does not meet regional merchantability standards because of excessive sound cull, including noncommercial tree species.

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

Sapling. A live tree between 1.0 and 5.0 inches d.b.h.

Sapling removals. Net volume in saplings harvested for industrial roundwood products.

Saw log portion. That portion of the central stem of sawtimber trees between the stump and the saw log top.

Saw log top. The point on the central stem of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7.0 inches diameter outside bark for softwoods and 9.0 inches diameter outside bark for hardwoods.

Sawtimber removals. As used in Table 9, sawtimber removals refers to the net volume in the merchantable central stem of sawtimber-size trees harvested for industrial roundwood products. (Note: includes the saw log and upper stem portions of sawtimber-size trees.) When referring to the sawtimber volume removed from timberland as in Table 11, sawtimber removals refers to the net volume in the saw log portion of sawtimber-size trees harvested for roundwood products or left on the ground as harvest residue, and is usually expressed in thousands of board feet (International 1/4-inch rule).

Sawtimber tree. A growing-stock tree containing at least a 12 foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. and hardwoods must be at least 11.0 inches d.b.h.

Sawtimber volume. Net volume in the saw log portion of sawtimber trees.

Softwoods. Coniferous trees, usually evergreen, having needles or scale-like leaves.

Timber product output. The volume of roundwood products produced from an area's forests.

Timberland. Forest land that is producing, or is capable of producing, in excess of 20 cubic feet per acre per year of industrial roundwood products under natural conditions, is not withdrawn from timber utilization by statute or administrative regulation, and is not associated with urban or rural development.

Tree. A woody perennial plant, typically large, with a single well-defined stem carrying a more or less definite crown; sometimes defined as attaining a minimum diameter of 3 inches and a minimum height of 15 feet at maturity. For FIA, any plant on the tree list in the current field manual is measured as a tree.

Upper stem portion. That portion of the central stem of sawtimber trees between the saw log top and the minimum top diameter of 4.0 inches outside bark, or to the point where the central stem breaks into limbs.

Common and Scientific Names of Tree Species Mentioned in This Report

SOFTWOODS

Eastern redcedar	<i>Juniperus virginiana</i>
Spruce	
White spruce	<i>Picea glauca</i>
Red pine	<i>Pinus resinosa</i>
White pine	<i>Pinus strobus</i>

HARDWOODS

Hard maple	
Black maple	<i>Acer nigrum</i>
Sugar maple	<i>Acer saccharum</i>
Soft maple	
Boxelder	<i>Acer negundo</i>
Red maple	<i>Acer rubrum</i>
Silver maple	<i>Acer saccharinum</i>
Birch	
River birch	<i>Betula nigra</i>
Paper birch	<i>Betula papyrifera</i>
Hickory	
Bitternut hickory	<i>Carya cordiformis</i>
Shellbark hickory	<i>Carya laciniosa</i>
Shagbark hickory	<i>Carya ovata</i>
Mockernut hickory	<i>Carya tomentosa</i>
Pecan	<i>Carya illinoensis</i>
Northern catalpa	<i>Catalpa speciosa</i>
Hackberry	<i>Celtis occidentalis</i>
Ash	
White ash	<i>Fraxinus americana</i>
Black ash	<i>Fraxinus nigra</i>
Green ash	<i>Fraxinus pennsylvanica</i>

Honeylocust	<i>Gleditsia triacanthos</i>
Butternut	<i>Juglans cinerea</i>
Black walnut	<i>Juglans nigra</i>
Sycamore	<i>Platanus occidentalis</i>
Eastern cottonwood	<i>Populus deltoides</i>
Aspen	
Bigtooth aspen	<i>Populus grandidentata</i>
Quaking aspen	<i>Populus tremuloides</i>
Black cherry	<i>Prunus serotina</i>
Red oak group	
Northern pin oak	<i>Quercus ellipsoidalis</i>
Shingle oak	<i>Quercus imbricaria</i>
Pin oak	<i>Quercus palustris</i>
Northern red oak	<i>Quercus rubra</i>
Black oak	<i>Quercus velutina</i>
White oak group	
White oak	<i>Quercus alba</i>
Swamp white oak	<i>Quercus bicolor</i>
Overcup oak	<i>Quercus lyrata</i>
Bur oak	<i>Quercus macrocarpa</i>
Chinkapin oak	<i>Quercus muehlenbergii</i>
Post oak	<i>Quercus stellata</i>
Black willow	<i>Salix nigra</i>
American basswood	<i>Tilia americana</i>
Elm	
American elm	<i>Ulmus americana</i>
Siberian elm	<i>Ulmus pumila</i>
Slippery elm	<i>Ulmus rubra</i>

Table Titles

Table 1.—Conversion factors from reported unit of measure to International 1/4-inch rule (see page 5)

Table 2.—Number of active primary wood-using mills by survey year, Iowa

Table 3.—Industrial roundwood receipts by species group and state of origin, Iowa, 2005

Table 4.—Industrial roundwood production by product, softwoods and hardwoods, and survey year, Iowa

Table 5.—Industrial roundwood production by Forest Inventory Unit, species group, and product, Iowa, 2005

Table 6.—Industrial roundwood production by Forest Inventory Unit, county, and species group, Iowa, 2005

Table 7.—Industrial roundwood production by Forest Inventory Unit, species group, and state of destination, Iowa, 2005

Table 8.—Saw log receipts and production by species group, Iowa, 2000 and 2005

Table 9.—Wood material harvested for industrial roundwood by species group and source of material, Iowa, 2005

Table 10.—Growing-stock removals from timberland for industrial roundwood by Forest Inventory Unit, county, and species group, Iowa, 2005

Table 11.—Sawtimber removals from timberland for industrial roundwood by Forest Inventory Unit, county, and species group, Iowa, 2005

Table 12.—Harvest residue generated by industrial roundwood harvesting by Forest Inventory Unit, county, and species group, Iowa, 2005

Table 13.—Disposition of residues produced at primary wood-using mills by disposition, residue type, and softwoods and hardwoods, Iowa, 2005

Table 2.—Number of active primary wood-using mills by survey year, Iowa

Kind of mill and mill size	Survey Year			
	1988	1994	2000	2005
Sawmills ¹				
Large	3	5	6	9
Medium	27	22	17	13
Small	35	42	34	3
Total	65	69	57	25
Other products ²	2	2	2	2
All mills	67	71	59	27

¹ Annual lumber production in thousand board feet (mbf), International 1/4-inch rule.

² Includes plants producing veneer, shavings, cabin logs, posts, etc.

Table 3.—Industrial roundwood receipts by species group and State of origin, Iowa, 2005
(In thousand cubic feet)

Species group	Total	State of origin							
		Illinois	Iowa	Kansas	Minnesota	Missouri	Nebraska	Wisconsin	Arkansas
Hardwoods									
Soft maple	3,660	609	2,583	--	17	264	--	186	--
Hard maple	1,320	246	799	--	19	1	--	255	--
River birch	4	--	4	--	--	--	--	0	--
Hickory	483	51	342	--	15	10	--	65	--
Hackberry	99	0	98	--	--	--	--	1	--
Ash	326	31	269	--	3	14	--	10	--
Honeylocust	6	--	6	--	--	--	--	--	--
Butternut	1	--	0	--	--	--	--	0	--
Black walnut	3,934	384	1,885	197	4	950	44	415	55
Cottonwood	1,223	60	1,093	--	27	43	--	--	--
Aspen	24	0	8	--	12	--	--	4	--
Black cherry	582	107	344	--	11	10	--	109	--
Red oak group	3,732	401	2,239	--	478	257	--	357	--
White oak group	4,064	491	2,653	--	157	266	--	497	--
Black locust	2	--	2	--	--	--	--	--	--
Basswood	707	97	471	--	11	13	--	115	--
Elm	399	28	324	--	7	5	--	35	--
State total	20,566	2,505	13,120	197	761	1,833	44	2,049	55

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 4.—Industrial roundwood production by product, softwoods and hardwoods, and survey year, Iowa
(In thousand cubic feet)

Product	Survey year		
	1994	2000	2005
SOFTWOODS			
Saw logs	21	29	0
Veneer logs	--	--	--
Cooperage	--	--	--
Fuelwood ¹	--	--	--
Pulpwood	--	37	--
Total	21	66	0
HARDWOODS			
Saw logs	14,866	15,355	14,700
Veneer logs	572	672	929
Cooperage	69	71	404
Fuelwood ¹	--	3	3
Pulpwood	814	1,290	--
Total	16,321	17,391	16,036
All products	16,342	17,457	16,036

¹ Does not include residential fuelwood.

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 5.—Industrial roundwood production by Forest Inventory Unit, species group, and product, Iowa, 2005

Species group	All Units									
	All products			Saw logs			Product			
	MCF ²	MBF ¹	MCF ²	MBF ¹	MCF ²	MBF ¹	Veneer logs		Cooperage	
							MBF ¹	MCF ²	MBF ¹	MCF ²
Softwoods										
Eastern redcedar	0	0	0	0	0	0	0	0	0	0
Red pine	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Hardwoods										
Soft maple	2,731	16,573	2,730	5	1	0	0	0	0	0
Hard maple	1,096	6,368	1,049	207	47	0	0	0	0	0
White birch	2	10	2	0	0	0	0	0	0	0
River birch	5	31	5	1	0	0	0	0	0	0
Hickory	386	2,332	384	10	2	0	0	0	0	0
Hackberry	107	649	107	0	0	0	0	0	0	0
Ash	350	2,084	343	24	5	20	0	0	0	0
Honeylocust	6	35	6	0	0	0	0	0	0	0
Butternut	0	3	0	0	0	0	0	0	0	0
Black walnut	2,409	9,349	2,047	2,573	362	0	0	0	0	0
Sycamore	12	73	12	0	0	0	0	0	0	0
Cottonwood	1,489	10,532	1,489	0	0	0	0	0	0	0
Aspen	27	162	27	0	0	0	0	0	0	0
Black cherry	376	1,719	283	408	93	0	0	0	0	0
Red oak group	2,815	15,668	2,789	116	26	0	0	0	0	0
White oak group	3,307	14,124	2,514	1,692	387	23	2,454	404	0	0
Black locust	2	14	2	0	0	0	0	0	0	0
Basswood	538	3,269	538	0	0	0	0	0	0	0
Elm	377	2,269	374	16	4	0	0	0	0	0
Total	16,037	85,262	14,700	5,051	929	43	2,454	404	0	0
State total	16,037	85,262	14,700	5,051	929	43	2,454	404	0	0

Northeastern Unit									
Hardwoods									
Soft maple	470	2,844	468	5	1	---	---	---	---
Hard maple	1,040	6,030	993	204	47	---	---	---	---
White birch	2	10	2	---	---	---	---	---	---
River birch	2	10	2	0	0	---	---	---	---
Hickory	237	1,427	235	10	2	---	---	---	---
Hackberry	6	37	6	---	---	---	---	---	---
Ash	191	1,129	186	24	5	---	---	---	---
Butternut	0	1	0	---	---	---	---	---	---
Black walnut	1,641	6,111	1,338	2,153	303	---	---	---	---
Cottonwood	349	2,471	349	---	---	---	---	---	---
Aspen	27	162	27	---	---	---	---	---	---
Black cherry	285	1,283	211	321	73	---	---	---	---
Red oak group	1,766	9,773	1,740	113	26	---	---	---	---
White oak group	1,905	7,259	1,292	1,239	283	2,000	330	---	---
Basswood	452	2,743	452	---	---	---	---	---	---
Elm	294	1,765	291	15	3	---	---	---	---
Unit total	8,666	43,055	7,591	4,084	745	2,000	330	---	---

Northwestern Unit									
Softwoods									
Eastern redcedar	0	0	0	0	0	0	0	0	0
Red pine	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0
Hardwoods									
Soft maple	58	352	58	0	0	0	0	0	0
Hard maple	0	0	0	0	0	0	0	0	0
Ash	28	167	28	0	0	0	0	0	0
Cottonwood	52	369	52	0	0	0	0	0	0
White oak group	0	1	0	0	0	0	0	0	0

(Table 5 continued on next page)

Elm	10	62	10	--	--	--	--	--	--
Total	148	952	148	--	--	--	--	--	--
Unit total	148	953	148	--	--	--	--	--	--

Southeastern Unit

Hardwoods									
Soft maple	2,156	13,091	2,156	--	--	--	--	--	--
Hard maple	35	207	34	3	1	--	--	--	--
River birch	4	21	3	0	0	--	--	--	--
Hickory	149	905	149	--	--	--	--	--	--
Hackberry	96	584	96	--	--	--	--	--	--
Ash	124	752	124	--	--	--	--	--	--
Honeylocust	6	35	6	--	--	--	--	--	--
Butternut	0	1	0	--	--	--	--	--	--
Black walnut	697	2,916	638	420	59	--	--	--	--
Sycamore	12	73	12	--	--	--	--	--	--
Cottonwood	852	6,028	852	--	--	--	--	--	--
Black cherry	92	435	72	87	20	--	--	--	--
Red oak group	997	5,600	997	2	1	--	--	--	--
White oak group	1,372	6,704	1,193	453	104	454	75	--	--
Black locust	2	14	2	--	--	--	--	--	--
Basswood	86	523	86	--	--	--	--	--	--
Elm	73	442	73	1	0	--	--	--	--
Unit total	6,753	38,330	6,494	967	184	454	75	--	--

Southwestern Unit

Hardwoods									
Soft maple	47	287	47	--	--	--	--	--	--
Hard maple	22	131	22	--	--	--	--	--	--
Hackberry	5	28	5	--	--	--	--	--	--

Ash	7	36	6	--	--	--	20	1
Black walnut	70	322	70	--	--	--	--	--
Cottonwood	235	1,664	235	--	--	--	--	--
Red oak group	52	295	52	--	--	--	--	--
White oak group	30	159	28	--	--	--	23	2
Basswood	0	3	0	--	--	--	--	--
Unit total	469	2,925	466	--	--	--	43	3

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

² Thousand cubic feet.

³ Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 1/2 unit of measure.

Table may not sum due to rounding.

Table 6.—Industrial roundwood production by Forest Inventory Unit, county, and species group, Iowa, 2005
(In thousand cubic feet)

Forest Inventory Unit and county	All species	Softwoods			Hardwoods						
		Eastern redcedar	Red pine	Total softwoods	Soft maple	Hard maple	White birch	River birch	Hickory	Hackberry	Ash
Northeastern Unit											
Allamakee	2,710	--	--	--	131	262	2	1	91	1	61
Benton	56	--	--	--	2	19	--	--	--	--	2
Black Hawk	0	--	--	--	--	--	--	--	--	--	0
Bremer	3	--	--	--	--	2	--	--	0	1	--
Buchanan	5	--	--	--	--	--	--	--	--	--	--
Butler	64	--	--	--	10	--	--	--	--	--	--
Cedar	39	--	--	--	11	4	--	0	1	--	1
Chickasaw	2	--	--	--	--	--	--	--	--	--	2
Clayton	1,702	--	--	--	14	349	--	--	61	0	41
Clinton	161	--	--	--	82	--	--	--	0	--	0
Delaware	389	--	--	--	--	57	--	--	22	--	18
Dubuque	1,010	--	--	--	17	160	--	0	23	1	22
Fayette	174	--	--	--	--	25	--	--	2	--	13
Floyd	10	--	--	--	--	--	--	--	--	0	--
Howard	40	--	--	--	--	--	--	--	0	2	--
Jackson	745	--	--	--	31	84	--	0	18	--	11
Johnson	20	--	--	--	9	--	--	--	--	--	--
Jones	261	--	--	--	2	33	--	0	9	--	--
Linn	94	--	--	--	53	--	--	--	4	--	7
Mitchell	67	--	--	--	--	--	--	--	--	0	--
Scott	350	--	--	--	14	--	--	0	--	--	0
Tama	301	--	--	--	94	--	--	--	1	0	3
Winneshiek	462	--	--	--	0	46	--	--	4	--	10
Total	8,666	--	--	--	470	1,040	2	2	237	6	191
Northwestern Unit											
Cerro Gordo	0	--	--	--	--	--	--	--	--	--	--
Franklin	38	--	--	--	--	--	--	--	--	--	28
Lyon	4	0	0	0	--	0	--	--	--	--	0

Plymouth	49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wright	58	--	--	--	--	58	--	--	--	--	--	--	--	--	--	--	--
Total	148	0	0	0	0	58	0	--	--	--	--	--	--	--	--	--	28
Southeastern Unit																	
Appanoose	337	--	--	--	--	88	--	--	--	--	2	--	--	--	--	0	--
Boone	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clarke	9	--	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--
Davis	311	--	--	--	--	96	--	--	--	--	1	--	--	--	--	4	--
Decatur	154	--	--	--	--	25	--	--	--	--	2	3	--	--	--	4	--
Des Moines	363	--	--	--	--	4	--	--	--	--	2	1	--	--	--	5	--
Hamilton	205	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardin	63	--	--	--	--	--	--	--	--	--	--	12	--	--	--	--	--
Henry	201	--	--	--	--	22	1	--	--	--	2	--	--	--	--	13	--
Iowa	480	--	--	--	--	283	--	--	--	0	16	1	--	--	--	--	--
Jefferson	724	--	--	--	--	561	3	--	--	--	2	9	--	--	--	5	--
Keokuk	588	--	--	--	--	498	--	--	--	0	1	--	--	--	--	3	--
Lee	724	--	--	--	--	14	0	--	--	--	13	--	--	--	--	3	--
Louisa	80	--	--	--	--	46	--	--	--	--	--	0	--	--	--	0	--
Lucas	91	--	--	--	--	9	--	--	--	--	1	--	--	--	--	0	--
Mahaska	138	--	--	--	--	17	--	--	--	--	16	8	--	--	--	5	--
Marion	8	--	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--
Marshall	0	--	--	--	--	--	0	--	--	--	--	--	--	--	--	--	--
Monroe	286	--	--	--	--	77	--	--	--	--	15	--	--	--	--	2	--
Muscatine	116	--	--	--	--	31	0	--	--	--	0	1	--	--	--	13	--
Poweshiek	97	--	--	--	--	61	--	--	--	--	8	--	--	--	--	4	--
Story	262	--	--	--	--	--	--	--	--	--	--	56	--	--	--	7	--
Van Buren	649	--	--	--	--	43	--	--	--	3	8	--	--	--	--	22	--
Wapello	246	--	--	--	--	62	--	--	--	--	23	--	--	--	--	27	--
Warren	94	--	--	--	--	33	--	--	--	--	--	--	--	--	--	--	--
Washington	465	--	--	--	--	170	31	--	--	0	36	3	--	--	--	6	--
Wayne	62	--	--	--	--	5	--	--	--	--	1	1	--	--	--	1	--
Total	6,753	--	--	--	--	2,156	35	--	--	4	149	96	--	--	--	124	--

(Table 6 continued)

Southwestern Unit												
Adams	44	--	--	--	--	--	22	--	--	--	--	--
Fremont	44	--	--	--	--	--	--	--	--	--	--	--
Harrison	45	--	--	--	--	--	--	--	--	--	--	--
Mills	47	--	--	--	--	--	--	--	--	--	--	1
Monona	4	--	--	--	--	--	--	--	--	--	--	--
Page	18	--	--	--	--	--	--	--	--	--	--	--
Pottawattamie	62	--	--	--	--	--	--	--	--	--	--	--
Ringgold	100	--	--	--	27	--	--	--	--	--	2	3
Taylor	57	--	--	--	21	--	--	--	--	--	2	3
Woodbury	49	--	--	--	--	--	--	--	--	--	--	--
Total	469	--	--	--	47	22	22	--	--	--	5	7
State total	16,036	0	0	0	2,731	1,097	1,097	2	6	386	107	350

(Table 6 continued)

Forest Inventory Unit and county	Hardwoods											Total hardwoods
	Honey- locust	Butternut	Black walnut	Sycamore	Cotton- wood	Aspen	Black cherry	Red oak group	White oak group	Basswood	Elm	
Northeastern Unit												
Allamakee	--	--	400	--	163	8	73	826	491	114	87	2,710
Benton	--	--	--	--	--	--	2	25	4	1	3	56
Black Hawk	--	--	--	--	--	--	--	--	--	--	--	0
Bremer	--	--	--	--	--	--	--	--	--	--	0	3
Buchanan	--	--	--	--	--	0	--	--	5	--	--	5
Butler	--	--	--	--	--	--	--	--	53	--	0	64
Cedar	--	--	--	--	7	--	6	4	1	3	1	39
Chickasaw	--	--	--	--	--	--	--	--	--	--	--	2
Clayton	--	--	427	--	15	4	49	282	246	135	79	1,702
Clinton	--	--	--	--	10	--	11	15	40	0	2	161
Delaware	--	--	19	--	--	3	2	40	182	16	31	389
Dubuque	--	0	264	--	--	8	32	198	142	106	35	1,010
Fayette	--	--	22	--	4	--	1	44	26	21	16	174
Floyd	--	--	--	--	3	--	--	--	6	--	0	10
Howard	--	--	--	--	--	--	12	--	17	7	2	40
Jackson	--	--	268	--	--	4	26	118	131	37	18	745
Johnson	--	--	--	--	--	--	0	3	8	--	0	20
Jones	--	--	40	--	--	--	9	102	52	4	11	261
Linn	--	--	--	--	--	--	21	--	4	0	5	94
Mitchell	--	--	--	--	49	--	--	--	17	--	0	67
Scott	--	--	--	--	--	--	3	0	332	--	0	350
Tama	--	--	159	--	6	--	--	0	37	1	--	301
Winneshieki	--	--	42	--	92	--	38	108	110	5	5	462
Total	--	0	1,641	--	349	27	285	1,766	1,905	452	294	8,666
Northwestern Unit												
Cerro Gordo	--	--	--	--	--	--	--	--	0	--	--	0
Franklin	--	--	--	--	--	--	--	--	--	--	10	38
Lyon	--	--	--	--	3	--	--	--	--	--	0	4
(Table 6 continued on next page)												

(Table 6 continued on next page)

(Table 6 continued)

Plymouth	--	--	--	--	--	49	--	--	--	--	--	49
Wright	--	--	--	--	--	--	--	--	--	--	--	58
Total	--	--	--	--	--	52	--	--	--	0	--	148
Southeastern Unit												
Appanoose	--	--	58	--	--	67	--	--	34	87	0	337
Boone	--	--	--	--	--	--	--	--	--	0	--	0
Clarke	--	--	4	--	--	--	--	--	--	--	--	9
Davis	--	--	47	0	38	--	--	--	61	64	--	311
Decatur	--	--	54	1	20	--	1	29	16	--	--	154
Des Moines	--	--	37	1	16	--	15	157	120	--	4	363
Hamilton	--	--	--	--	195	--	--	--	2	--	8	205
Hardin	--	--	--	--	--	--	--	1	43	--	7	63
Henry	--	--	15	1	52	--	--	36	47	9	3	201
Iowa	--	--	17	--	82	--	13	28	36	1	3	480
Jefferson	--	--	15	0	6	--	--	89	24	2	6	724
Keokuk	--	--	11	--	51	--	--	--	21	--	2	588
Lee	6	--	114	3	86	--	5	214	252	5	7	724
Louisa	--	--	7	--	19	--	--	5	2	--	1	80
Lucas	--	--	4	--	14	--	--	8	56	--	--	91
Mahaska	--	--	9	--	52	--	--	15	10	--	6	138
Marion	--	--	2	--	--	--	--	--	--	--	--	8
Marshall	--	--	--	--	--	--	--	--	--	--	--	0
Monroe	--	--	66	--	20	--	--	12	95	--	--	286
Muscatine	--	--	56	--	14	--	--	--	--	--	0	116
Poweshiek	--	--	6	--	8	--	4	0	4	--	0	97
Story	--	--	--	--	--	--	--	109	35	45	10	262
Van Buren	--	--	76	4	11	--	28	123	328	2	2	649
Wapello	--	--	7	--	83	--	1	4	39	--	1	246
Warren	--	--	27	--	--	--	--	--	31	3	--	94
Washington	--	0	55	--	--	--	25	55	51	18	15	465
Wayne	--	--	12	1	20	--	--	15	7	--	--	62
Total	6	0	697	12	852	--	92	997	1,372	86	73	6,753

Southwestern Unit													
Adams	--	--	0	--	--	--	--	18	4	--	--	--	44
Fremont	--	--	--	--	44	--	--	--	--	--	--	--	44
Harrison	--	--	0	--	44	--	--	--	0	--	--	--	45
Mills	--	--	--	--	44	--	--	--	1	--	--	--	47
Monona	--	--	4	--	--	--	--	--	--	--	--	--	4
Page	--	--	18	--	--	--	--	--	--	--	--	--	18
Pottawattamie	--	--	18	--	44	--	--	--	--	--	--	--	62
Ringgold	--	--	22	--	10	--	--	21	14	0	--	--	100
Taylor	--	--	9	--	--	--	--	13	10	--	--	--	57
Woodbury	--	--	--	--	49	--	--	--	--	--	--	--	49
Total	--	--	70	--	235	--	--	52	30	0	--	--	469
State total	6	0	2,408	12	1,488	27	377	2,815	3,307	538	377	--	16,036

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 7.—Industrial roundwood production by Forest Inventory Unit, species group, and state of destination, Iowa, 2005
(In thousand cubic feet)

All Units

Species group	Total	State of destination											
		Illinois	Indiana	Iowa	Michigan	Minnesota	Missouri	Nebraska	South Dakota	Wisconsin	Ohio	Canada	Other foreign
Softwoods													
Redcedar	0	---	---	---	---	0	---	---	---	---	---	---	---
Red pine	0	---	---	---	---	0	---	---	---	---	---	---	---
Total	0	---	---	---	---	0	---	---	---	---	---	---	---
Hardwoods													
Soft maple	2,731	3	---	2,583	---	---	134	---	---	10	---	---	---
Hard maple	1,096	2	17	799	25	28	---	---	---	222	3	---	0
White birch	2	---	---	---	---	---	---	---	---	2	---	---	---
River birch	5	---	0	4	---	---	---	---	---	1	---	---	---
Hickory	386	---	2	342	---	3	8	---	---	31	---	---	---
Hackberry	107	---	---	98	---	---	9	---	---	---	---	---	---
Ash	350	2	5	269	---	2	17	1	0	53	---	---	---
Honeylocust	6	---	---	6	---	---	---	---	---	---	---	---	---
Butternut	0	---	---	0	---	---	---	---	---	---	---	---	---
Black walnut	2,409	35	91	1,885	1	8	191	2	---	122	13	8	53
Sycamore	12	---	---	---	---	---	12	---	---	---	---	---	---
Cottonwood	1,489	1	---	1,093	---	0	68	323	3	0	---	---	---
Aspen	27	---	---	8	---	---	---	---	---	19	---	---	---
Black cherry	376	6	10	344	3	2	---	---	---	11	---	---	0
Red oak group	2,815	77	12	2,239	12	54	199	---	---	222	---	---	0
White oak group	3,307	29	68	2,653	4	344	156	2	---	49	1	0	0
Black locust	2	---	---	2	---	---	---	---	---	---	---	---	---
Basswood	538	---	---	471	---	10	---	---	---	57	---	---	---
Elm	377	1	0	324	---	---	1	---	0	48	2	1	---
Total	16,037	156	207	13,120	46	452	795	328	3	847	19	9	53
State total	16,037	156	207	13,120	46	452	795	328	3	847	19	9	53

Northeastern Unit

Northeastern Unit												
Hardwoods												
Soft maple	470	--	--	459	--	--	--	--	--	10	--	--
Hard maple	1,040	1	17	766	24	7	--	--	--	222	2	0
White birch	2	--	--	--	--	--	--	--	--	2	--	--
River birch	2	--	0	0	--	--	--	--	--	1	--	--
Hickory	237	--	2	201	--	3	--	--	--	31	--	--
Hackberry	6	--	--	6	--	--	--	--	--	--	--	--
Ash	191	1	5	130	--	2	--	--	--	53	--	--
Butternut	0	--	--	0	--	--	--	--	--	--	--	--
Black walnut	1,641	1	78	1,382	1	4	--	--	--	122	11	7
Cottonwood	349	--	--	301	--	--	--	49	--	0	--	--
Aspen	27	--	--	8	--	--	--	--	--	19	--	--
Black cherry	285	1	8	259	2	2	--	--	--	11	--	0
Red oak group	1,766	15	12	1,469	12	36	--	--	--	222	--	0
White oak group	1,905	4	59	1,448	4	340	--	--	--	49	1	0
Basswood	452	--	--	385	--	10	--	--	--	57	--	--
Elm	294	--	0	243	--	--	--	--	--	48	2	1
Total	8,666	23	182	7,056	44	404	--	49	--	847	16	37

Northwestern Unit

Northwestern Unit												
Softwoods												
Redcedar	0	--	--	--	--	0	--	--	--	--	--	--
Red pine	0	--	--	--	--	0	--	--	--	--	--	--
Total	0	--	--	--	--	0	--	--	--	--	--	--
Hardwoods												
Soft maple	58	--	--	58	--	--	--	--	--	--	--	--
Hard maple	0	--	--	--	--	0	--	--	--	--	--	--
Ash	28	--	--	28	--	--	--	--	0	--	--	--
Cottonwood	52	--	--	--	--	0	--	49	3	--	--	--
White oak group	0	--	--	0	--	--	--	--	--	--	--	--

(Table 7 continued on next page)

(Table 7 continued)

Elm	10	--	--	10	--	--	--	--	0	--	--	--	--
Total	148	--	--	96	--	0	--	49	3	--	--	--	--
Unit total	148	--	--	96	--	0	--	49	3	--	--	--	--

Southeastern Unit

Hardwoods													
Soft maple	2,156	3	--	2,060	--	--	--	93	--	--	--	--	--
Hard maple	35	1	0	33	0	--	--	--	--	0	--	--	0
River birch	4	--	0	3	--	--	--	--	--	--	--	--	--
Hickory	149	--	--	141	--	--	--	8	--	--	--	--	--
Hackberry	96	--	--	92	--	--	--	5	--	--	--	--	--
Ash	124	1	--	112	--	--	--	11	--	--	--	--	--
Honeylocust	6	--	--	6	--	--	--	--	--	--	--	--	--
Butternut	0	--	--	0	--	--	--	--	--	--	--	--	--
Black walnut	697	34	14	451	0	--	--	178	--	--	2	1	16
Sycamore	12	--	--	--	--	--	--	12	--	--	--	--	--
Cottonwood	852	1	--	793	--	--	--	58	--	--	--	--	--
Black cherry	92	5	1	85	1	--	--	--	--	--	--	--	0
Red oak group	997	62	0	770	0	--	--	165	--	--	--	--	0
White oak group	1,372	26	9	1,204	0	--	--	132	--	--	0	0	0
Black locust	2	--	--	2	--	--	--	--	--	--	--	--	--
Basswood	86	--	--	86	--	--	--	--	--	--	--	--	--
Elm	73	1	0	71	--	--	--	1	--	--	0	0	--
Unit total	6,753	134	25	5,910	2	--	--	663	--	--	2	1	16

Southwestern Unit

Hardwoods													
Soft maple	47	--	--	6	--	--	--	41	--	--	--	--	--
Hard maple	22	--	--	--	--	--	22	--	--	--	--	--	--
Hackberry	5	--	--	--	--	--	--	5	--	--	--	--	--

Ash	7	--	--	--	--	--	6	1	--	--	--	--
Black walnut	70	--	--	--	52	4	13	2	--	--	--	--
Cottonwood	235	--	--	--	--	--	10	226	--	--	--	--
Red oak group	52	--	--	--	--	18	34	--	--	--	--	--
White oak group	30	--	--	--	--	4	24	2	--	--	--	--
Basswood	0	--	--	--	0	--	--	--	--	--	--	--
Unit total	469	--	--	--	58	48	133	231	--	--	--	--

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 8.—Saw log receipts and production by species group, Iowa, 2000 and 2005
(In thousand board feet)¹

Species group	Receipts			Production		
	2000	2005	Percent change	2000	2005	Percent change
Softwoods						
Spruce	--	--	--	0	--	--
Eastern redcedar	--	--	--	--	0	--
Red pine	--	--	--	--	0	--
White pine	167	--	--	167	--	--
Total	167	--	--	--	1	--
Hardwoods						
Soft maple	20,063	22,012	10%	15,069	16,573	10%
Hard maple	4,764	7,943	67%	5,476	6,368	16%
White birch	--	--	--	9	10	11%
River birch	38	23	-39%	38	31	-18%
Hickory	1,646	2,906	77%	1,283	2,332	82%
Hackberry	607	603	-1%	495	649	31%
Ash	2,668	1,978	-26%	2,197	2,084	-5%
Honeylocust	--	35	--	--	35	--
Butternut	--	4	--	2	3	50%
Black walnut	9,043	17,587	94%	9,259	9,349	1%
Sycamore	627	--	--	568	73	-87%
Cottonwood	11,664	8,588	-26%	9,673	10,532	9%
Aspen	229	141	-38%	330	162	-51%
Black cherry	1,636	2,807	72%	1,403	1,719	23%
Red oak group	20,353	21,016	3%	21,155	15,668	-26%
White oak group	17,802	18,909	6%	16,963	14,124	-17%
Black locust	--	14	--	--	14	--
Willow	145	--	--	47	--	--
Basswood	3,536	4,239	20%	3,303	3,269	-1%
Elm	1,150	2,407	109%	1,201	2,269	89%
Other hardwoods	28	--	--	1	--	--
Total	95,998	111,211	16%	88,471	85,262	-4%
State total	96,165	111,211	16%	88,639	85,263	-4%

¹ International 1/4-inch rule.

Table value of 0 indicates the volume rounds to less than 500 board feet.

All table cells without observations in the inventory sample are indicated by --.

Table may not sum due to rounding.

Table 9.—Wood material harvested for industrial roundwood by species group and source of material, Iowa, 2005¹
(In thousand cubic feet)

Species group	Source of material														
	Growing-stock					Non-growing-stock									
	Used for products			Logging residue (not used)	Total	Used for products			Logging slash (not used)		Total non-growing-stock		Total wood material		
	Saw-timber	Pole-timber	Limb-wood	Sap-lings	Cull trees	Dead trees	Nonforest trees	Logging slash (not used)	Total non-growing-stock	Total wood material used	Total wood material not used	Total wood material harvested			
Softwoods															
Eastern redcedar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Red pine	0.1	0.0	0.0	0.0	--	0	--	--	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.1	0.1	0.1	0.2	0.1	0.2
Hardwoods															
Soft maple	2,072.9	46.4	853.6	2,972.9	28.2	--	184.0	--	399.4	1,940.8	2,552.3	2,730.8	2,794.4	5,525.2	5,525.2
Hard maple	843.4	17.8	331.7	1,192.9	10.8	--	70.7	--	153.5	747.4	982.4	1,096.2	1,079.1	2,175.3	2,175.3
White birch	1.2	0.0	0.5	1.7	0.0	--	0.1	--	0.2	1.1	1.5	1.6	1.6	3.2	3.2
River birch	4.0	0.1	1.6	5.7	0.1	--	0.3	--	0.7	3.6	4.7	5.3	5.2	10.5	10.5
Hickory	293.8	6.5	120.3	420.6	4.0	--	25.9	--	56.2	273.2	359.3	386.4	393.5	779.9	779.9
Hackberry	81.1	1.8	33.4	116.3	1.1	--	7.2	--	15.6	76.0	99.9	106.8	109.4	216.2	216.2
Ash	266.5	6.2	107.8	380.5	3.9	0	23.3	--	50.2	244.3	321.7	350.1	352.0	702.1	702.1
Honeylocust	4.3	0.1	2	6.2	0	--	0	--	0.8	4	5	5.7	5.8	11.5	11.5
Butternut	0.3	0.0	0	0.5	0	--	0	--	0.1	0	0	0.5	0.5	0.9	0.9
Black walnut	1,165.1	--	150.9	1,316.0	--	--	876.0	--	367.9	488.6	1,732.5	2,409.0	639.5	3,048.5	3,048.5
Sycamore	9.1	0.2	3.8	13.1	0.1	--	0.8	--	1.8	9	11.3	12.0	12	24.4	24.4
Cottonwood	1,354.4	--	240.1	1,594.6	111.6	--	23.2	--	--	745.7	880.5	1,489.2	985.8	2,475.0	2,475.0
Aspen	20.2	0.5	8.3	29.0	0.3	--	1.8	--	3.9	18.9	24.9	26.6	27.3	53.9	53.9
Black cherry	308.2	4.8	95.9	408.9	2.9	--	19.1	--	41.4	204.5	267.9	376.4	300.4	676.8	676.8
Red oak group	2,315.5	62.7	584.9	2,963.2	39.2	--	343.1	54.8	--	1,357.7	1,794.9	2,815.3	1,942.7	4,758.0	4,758.0
White oak group	2,816.3	56.5	654.4	3,527.2	37	--	346.4	49.4	--	1,245.1	1,677.6	3,305.4	1,899.5	5,204.9	5,204.9
Black locust	1.7	0.0	0.7	2.5	0	--	0.2	--	0.3	1.6	2.1	2.3	2.3	4.6	4.6
Basswood	408.6	9.2	168.3	586.0	5.6	--	36.3	--	78.8	382.7	503.3	538.3	551.1	1,089.4	1,089.4
Elm	287.2	6.4	117.2	410.7	3.9	--	25.2	--	54.7	265.9	349.6	377.3	383.0	760.3	760.3
Total	12,253.9	219.2	3,475.4	15,948.5	248.4	0	1,983.9	104.3	1,225.6	8,009.9	11,572.1	16,035.3	11,485.3	27,520.7	27,520.7
State total	12,254.0	219.2	3,475.4	15,948.7	248.4	0.0	1,983.9	104.3	1,225.6	8,010.0	11,572.2	16,035.5	11,485.4	27,520.9	27,520.9

¹ Based on factors obtained from regional utilization studies.

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 50 cubic feet.

Table may not sum due to rounding.

Table 10.—Growing-stock removals from timberland for industrial roundwood by Forest Inventory Unit, county, and species group, Iowa, 2005
(In thousand cubic feet)

Forest Inventory Unit and county	All species	Softwoods			Hardwoods							
		Eastern redcedar	Red pine	Total softwoods	Soft maple	Hard maple	White birch	River birch	Hickory	Hack- berry	Ash	
Northeastern Unit												
Allamakee	2,700	--	--	--	142	285	2	2	99	1	67	
Benton	60	--	--	--	2	20	--	--	--	--	2	
Black Hawk	0	--	--	--	--	--	--	--	--	--	0	
Bremer	4	--	--	--	--	2	--	--	0	1	--	
Buchanan	5	--	--	--	--	--	--	--	--	--	--	
Butler	67	--	--	--	11	--	--	--	--	--	--	
Cedar	43	--	--	--	12	4	--	0	1	--	1	
Chickasaw	2	--	--	--	--	--	--	--	--	--	2	
Clayton	1,614	--	--	--	15	379	--	--	66	0	45	
Clinton	174	--	--	--	90	--	--	--	0	--	0	
Delaware	404	--	--	--	--	62	--	--	24	--	19	
Dubuque	940	--	--	--	18	174	--	0	25	1	24	
Fayette	174	--	--	--	--	28	--	--	2	--	14	
Floyd	10	--	--	--	--	--	--	--	--	0	--	
Howard	43	--	--	--	--	--	--	--	0	2	--	
Jackson	672	--	--	--	34	91	--	0	19	--	12	
Johnson	21	--	--	--	9	--	--	--	--	--	--	
Jones	255	--	--	--	2	35	--	0	10	--	--	
Linn	102	--	--	--	58	--	--	--	4	--	7	
Mitchell	71	--	--	--	--	--	--	--	--	0	--	
Scott	401	--	--	--	15	--	--	0	--	--	0	
Tama	229	--	--	--	103	--	--	--	1	0	3	
Winneshiek	477	--	--	--	0	50	--	--	5	--	11	
Total	8,469	--	--	--	511	1,131	2	2	258	7	208	
Northwestern Unit												
Cerro Gordo	0	--	--	--	--	--	--	--	--	--	--	
Franklin	41	--	--	--	--	--	--	--	--	--	30	
Lyon	4	0	0	0	--	0	--	--	--	--	0	

Plymouth	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wright	63	--	--	--	63	--	--	--	--	--	--	--	--	--	--	--	--
Total	161	0	0	0	63	0	--	--	--	--	--	--	--	--	--	30	
Southeastern Unit																	
Appanoose	327	--	--	--	96	--	--	--	--	2	--	--	--	--	--	0	
Boone	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Clarke	8	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--	
Davis	305	--	--	--	104	--	--	--	--	1	--	--	--	--	--	4	
Decatur	144	--	--	--	27	--	--	--	--	2	4	4	4	4	4	4	
Des Moines	362	--	--	--	4	--	--	--	--	2	1	6	6	6	6	6	
Hamilton	219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Hardin	67	--	--	--	--	--	--	--	--	--	13	--	--	--	--	--	
Henry	205	--	--	--	24	1	--	--	--	2	--	14	14	14	14	14	
Iowa	508	--	--	--	308	--	--	--	--	0	18	1	--	--	--	--	
Jefferson	775	--	--	--	611	3	--	--	--	2	9	5	5	5	5	5	
Keokuk	631	--	--	--	542	--	--	--	--	0	1	4	4	4	4	4	
Lee	703	--	--	--	16	0	--	--	--	14	--	4	4	4	4	4	
Louisa	82	--	--	--	50	--	--	--	--	--	0	0	0	0	0	0	
Lucas	94	--	--	--	10	--	--	--	--	1	--	0	0	0	0	0	
Mahaska	143	--	--	--	18	--	--	--	--	18	9	5	5	5	5	5	
Marion	7	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--	
Marshall	0	--	--	--	--	0	--	--	--	--	--	--	--	--	--	--	
Monroe	267	--	--	--	83	--	--	--	--	17	--	2	2	2	2	2	
Muscatine	101	--	--	--	33	0	--	--	--	0	1	14	14	14	14	14	
Poweshiek	104	--	--	--	67	--	--	--	--	0	9	4	4	4	4	4	
Story	280	--	--	--	--	--	--	--	--	--	61	7	7	7	7	7	
Van Buren	653	--	--	--	46	--	--	--	--	4	9	24	24	24	24	24	
Wapello	261	--	--	--	67	--	--	--	--	25	--	29	29	29	29	29	
Warren	85	--	--	--	36	--	--	--	--	--	--	--	--	--	--	--	
Washington	468	--	--	--	186	34	--	--	--	0	39	3	7	7	7	7	
Wayne	60	--	--	--	6	--	--	--	--	1	1	1	1	1	1	1	
Total	6,861	--	--	--	2,347	38	--	--	--	4	162	105	135	135	135	135	

(Table 10 continued)

Southwestern Unit												
Adams	47	--	--	--	--	24	--	--	--	--	--	--
Fremont	47	--	--	--	--	--	--	--	--	--	--	--
Harrison	47	--	--	--	--	--	--	--	--	--	--	--
Mills	49	--	--	--	--	--	--	--	--	--	--	1
Monona	2	--	--	--	--	--	--	--	--	--	--	--
Page	8	--	--	--	--	--	--	--	--	--	--	--
Pottawattamie	56	--	--	--	--	--	--	--	--	--	--	--
Ringgold	94	--	--	--	29	--	--	--	--	2	3	3
Taylor	56	--	--	--	23	--	--	--	--	2	3	3
Woodbury	52	--	--	--	--	--	--	--	--	--	--	--
Total	459	--	--	--	51	24	--	--	--	5	7	7
State total	15,949	0	0	0	2,973	1,193	2	6	421	116	380	380

(Table 10 continued)

Forest Inventory Unit and county	Hardwoods												
	Honey- locust	Butternut	Black walnut	Sycamore	Cotton- wood	Aspen	Black cherry	Red oak group	White oak group	Black locust	Bass- wood	Elm	Total hardwoods
Northeastern Unit													
Allamakee	--	--	233	--	175	8	79	869	519	--	125	94	2,700
Benton	--	--	--	--	--	--	2	26	4	--	1	3	60
Black Hawk	--	--	--	--	--	--	--	--	--	--	--	--	0
Bremer	--	--	--	--	--	--	--	--	--	--	--	0	4
Buchanan	--	--	--	--	--	0	--	--	5	--	--	--	5
Butler	--	--	--	--	--	--	--	--	56	--	--	0	67
Cedar	--	--	--	--	8	--	7	4	1	--	4	1	43
Chickasaw	--	--	--	--	--	--	--	--	--	--	--	--	2
Clayton	--	--	244	--	16	4	54	297	260	--	147	86	1,614
Clinton	--	--	--	--	11	--	12	16	42	--	0	2	174
Delaware	--	--	9	--	--	4	2	42	192	--	18	34	404
Dubuque	--	0	140	--	--	8	35	209	150	--	116	38	940
Fayette	--	--	12	--	4	--	1	46	27	--	23	17	174
Floyd	--	--	--	--	4	--	--	--	6	--	--	0	10
Howard	--	--	--	--	--	--	13	--	18	--	8	2	43
Jackson	--	--	160	--	--	4	28	124	140	--	40	19	672
Johnson	--	--	--	--	--	--	0	3	8	--	--	0	21
Jones	--	--	19	--	--	--	10	108	54	--	4	12	255
Linn	--	--	--	--	--	--	23	--	4	--	0	5	102
Mitchell	--	--	--	--	52	--	--	--	18	--	--	0	71
Scott	--	--	--	--	--	--	4	0	381	--	--	0	401
Tama	--	--	76	--	6	--	--	1	39	--	1	--	229
Winneshiek	--	--	29	--	98	--	41	114	117	--	5	5	477
Total	--	0	923	--	374	29	309	1,859	2,044	--	492	320	8,469
Northwestern Unit													
Cerro Gordo	--	--	--	--	--	--	--	--	0	--	--	--	0
Franklin	--	--	--	--	--	--	--	--	--	--	--	11	41
Lyon	--	--	--	--	4	--	--	--	--	--	--	0	4

(Table 10 continued on next page)

(Table 10 continued)

Plymouth	--	--	--	--	--	52	--	--	--	--	--	--	--	52
Wright	--	--	--	--	--	--	--	--	--	--	--	--	--	63
Total	--	--	--	--	--	56	--	--	--	0	--	--	11	160
Southeastern Unit														
Appanoose	--	--	27	--	--	72	--	--	36	93	--	0	--	327
Boone	--	--	--	--	--	--	--	--	--	0	--	--	--	0
Clarke	--	--	2	--	--	--	--	--	--	--	--	--	--	8
Davis	--	--	22	0	41	--	--	--	64	68	--	--	--	305
Decatur	--	--	37	1	21	--	--	1	30	17	--	--	--	144
Des Moines	--	--	18	1	17	--	--	17	165	126	--	--	4	362
Hamilton	--	--	--	--	209	--	--	--	--	2	--	--	8	219
Hardin	--	--	--	--	--	--	--	--	1	45	--	--	7	67
Henry	--	--	7	1	56	--	--	--	38	50	--	10	3	205
Iowa	--	--	8	--	88	--	--	14	30	38	--	1	3	508
Jefferson	--	--	7	0	7	--	--	--	94	25	2	2	6	775
Keokuk	--	--	5	--	54	--	--	--	--	22	--	--	2	631
Lee	6	--	55	4	92	--	--	6	226	269	--	5	7	703
Louisa	--	--	3	--	20	--	--	--	6	2	--	--	1	82
Lucas	--	--	2	--	15	--	--	--	8	59	--	--	--	94
Mahaska	--	--	4	--	56	--	--	--	16	10	--	--	7	143
Marion	--	--	1	--	--	--	--	--	--	--	--	--	--	7
Marshall	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Monroe	--	--	31	--	21	--	--	--	12	100	--	--	--	267
Muscatine	--	--	36	--	15	--	--	--	--	--	--	--	0	101
Poweshiek	--	--	6	--	8	--	--	4	1	5	--	--	0	104
Story	--	--	--	--	--	--	--	--	115	37	--	49	10	280
Van Buren	--	--	41	4	11	--	--	30	130	350	--	2	2	653
Wapello	--	--	3	--	88	--	--	1	5	41	--	--	1	261
Warren	--	--	13	--	--	--	--	--	--	33	--	3	--	85
Washington	--	0	26	--	--	--	--	27	58	54	--	20	16	468
Wayne	--	--	6	1	21	--	--	--	16	7	--	--	--	60
Total	6	0	360	13	913	--	--	100	1,049	1,453	2	94	79	6,861

Southwestern Unit													
Adams	--	--	0	--	--	--	--	19	4	--	--	--	47
Fremont	--	--	--	--	47	--	--	--	--	--	--	--	47
Harrison	--	--	0	--	47	--	--	--	0	--	--	--	47
Mills	--	--	--	--	47	--	--	--	1	--	--	--	49
Monona	--	--	2	--	--	--	--	--	--	--	--	--	2
Page	--	--	8	--	--	--	--	--	--	--	--	--	8
Pottawattamie	--	--	8	--	47	--	--	--	--	--	--	--	56
Ringgold	--	--	11	--	10	--	--	22	15	--	0	--	94
Taylor	--	--	4	--	--	--	--	14	10	--	--	--	56
Woodbury	--	--	--	--	52	--	--	--	--	--	--	--	52
Total	--	--	34	--	252	--	--	55	31	--	0	--	459
State total	6	0	1,316	13	1,595	29	409	2,963	3,528	2	586	411	15,949

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 11.—Sawtimber removals from timberland for industrial roundwood by Forest Inventory Unit, county, and species group, Iowa, 2005(In thousand board feet)¹

Forest Inventory Unit and county	All species	Softwoods			Hardwoods						
		Eastern redcedar	Red pine	Total softwoods	Soft maple	Hard maple	White birch	River birch	Hickory	Hackberry	Ash
Northeastern											
Allamakee	10,882	--	--	--	549	1,101	7	6	382	3	257
Benton	227	--	--	--	8	78	--	--	--	--	8
Black Hawk	0	--	--	--	--	--	--	--	--	--	0
Bremer	14	--	--	--	--	10	--	--	1	3	--
Buchanan	20	--	--	--	--	--	--	--	--	--	--
Butler	248	--	--	--	43	--	--	--	--	--	--
Cedar	179	--	--	--	46	16	--	0	4	--	3
Chickasaw	8	--	--	--	--	--	--	--	--	--	8
Clayton	6,521	--	--	--	58	1,467	--	--	256	2	173
Clinton	688	--	--	--	345	--	--	--	0	--	1
Delaware	1,521	--	--	--	--	238	--	--	92	--	74
Dubuque	3,716	--	--	--	70	671	--	1	98	5	93
Fayette	680	--	--	--	--	108	--	--	9	--	53
Floyd	46	--	--	--	--	--	--	--	--	2	--
Howard	163	--	--	--	--	--	--	--	1	9	--
Jackson	2,824	--	--	--	130	351	--	0	75	--	48
Johnson	79	--	--	--	36	--	--	--	--	--	--
Jones	963	--	--	--	8	137	--	0	40	--	--
Linn	392	--	--	--	224	--	--	--	16	--	29
Mitchell	371	--	--	--	--	--	--	--	--	1	--
Scott	2,017	--	--	--	57	--	--	0	--	--	2
Tama	936	--	--	--	396	--	--	--	3	2	11
Winneshiek	2,068	--	--	--	1	195	--	--	19	--	43
Total	34,563	--	--	--	1,970	4,371	7	7	996	26	804
Northwestern Unit											
Cerro Gordo	1	--	--	--	--	--	--	--	--	--	--
Franklin	158	--	--	--	--	--	--	--	--	--	115
Lyon	22	0	0	0	--	0	--	--	--	--	0

Plymouth	302	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wright	243	--	--	--	--	243	--	--	--	--	--	--	--	--	--	--	--
Total	726	0	0	0	0	243	0	--	--	--	--	--	--	--	--	--	116
Southeastern Unit																	
Appanoose	1408	--	--	--	--	371	--	--	--	--	9	--	--	--	--	--	1
Boone	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clarke	32	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--
Davis	1243	--	--	--	--	401	--	--	--	--	4	--	--	--	--	--	16
Decatur	664	--	--	--	--	105	--	--	--	--	8	14	--	--	--	--	17
Des Moines	1383	--	--	--	--	17	--	--	--	--	7	5	--	--	--	--	22
Hamilton	1247	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardin	250	--	--	--	--	--	--	--	--	--	--	51	--	--	--	--	--
Henry	891	--	--	--	--	91	3	--	--	--	7	--	--	--	--	--	53
Iowa	2119	--	--	--	--	1,185	--	--	--	--	0	68	6	--	--	--	--
Jefferson	2982	--	--	--	--	2,355	10	--	--	--	10	36	--	--	--	--	20
Keokuk	2535	--	--	--	--	2,088	--	--	--	--	0	6	--	--	--	--	14
Lee	2883	--	--	--	--	60	0	--	--	--	55	--	--	--	--	--	14
Louisa	356	--	--	--	--	195	--	--	--	--	--	1	0	--	--	--	0
Lucas	380	--	--	--	--	37	--	--	--	--	3	--	--	--	--	--	1
Mahaska	655	--	--	--	--	70	--	--	--	--	68	33	20	--	--	--	20
Marion	29	--	--	--	--	25	--	--	--	--	--	--	--	--	--	--	--
Marshall	1	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
Monroe	1077	--	--	--	--	321	--	--	--	--	65	--	--	--	--	--	8
Muscatine	482	--	--	--	--	129	1	--	--	--	1	6	53	--	--	--	53
Poweshiek	436	--	--	--	--	257	--	--	--	--	0	34	--	--	--	--	17
Story	1050	--	--	--	--	--	--	--	--	--	--	235	28	--	--	--	28
Van Buren	2567	--	--	--	--	178	--	--	--	--	14	33	--	--	--	--	92
Wapello	1173	--	--	--	--	259	--	--	--	--	--	95	--	--	--	--	112
Warren	329	--	--	--	--	139	--	--	--	--	--	--	--	--	--	--	--
Washington	1800	--	--	--	--	715	130	--	--	--	0	150	11	--	--	--	27
Wayne	269	--	--	--	--	22	--	--	--	--	--	5	5	--	--	--	5
Total	28,243	--	--	--	--	9,046	146	--	--	--	15	626	403	--	--	--	520

(Table 11 continued)

Southwestern Unit												
Adams	177	--	--	--	--	--	91	--	--	--	--	--
Fremont	273	--	--	--	--	--	--	--	--	--	--	--
Harrison	273	--	--	--	--	--	--	--	--	--	--	--
Mills	277	--	--	--	--	--	--	--	--	--	--	3
Monona	8	--	--	--	--	--	--	--	--	--	--	--
Page	38	--	--	--	--	--	--	--	--	--	--	--
Pottawattamie	312	--	--	--	--	--	--	--	--	--	--	--
Ringgold	381	--	--	--	--	112	--	--	--	--	10	12
Taylor	215	--	--	--	--	87	--	--	--	--	10	12
Woodbury	302	--	--	--	--	--	--	--	--	--	--	--
Total	2,256	--	--	--	--	198	91	--	--	--	19	28
State Total	65,787	0	0	0	0	11,457	4,608	7	22	1,621	448	1,467

(Table 11 continued on next page)

(Table 11 continued)

Forest Inventory Unit and county	Hardwoods												Total hardwoods
	Honey- locust	Butternut	Black walnut	Sycamore	Cotton- wood	Aspen	Black cherry	Red oak group	White oak group	Black locust	Bass- wood	Elm	
Northeastern Unit													
Allamakee	--	--	1,252	--	1,010	32	308	3,183	1,949	--	480	363	10,882
Benton	--	--	--	--	--	--	7	96	14	--	6	10	227
Black Hawk	--	--	--	--	--	--	--	--	--	--	--	--	0
Bremer	--	--	--	--	--	--	--	--	--	--	--	1	14
Buchanan	--	--	--	--	--	1	--	--	19	--	--	--	20
Butler	--	--	--	--	--	--	--	--	204	--	--	1	248
Cedar	--	--	--	--	46	--	27	15	5	--	14	4	179
Chickasaw	--	--	--	--	--	--	--	--	--	--	--	--	8
Clayton	--	--	1,288	--	94	16	210	1,091	969	--	567	331	6,521
Clinton	--	--	--	--	63	--	48	58	163	--	1	10	688
Delaware	--	--	42	--	--	14	7	153	702	--	68	130	1,521
Dubuque	--	1	696	--	--	33	135	765	555	--	446	147	3,716
Fayette	--	--	57	--	23	--	4	171	100	--	89	66	680
Floyd	--	--	--	--	21	--	--	--	23	--	--	1	46
Howard	--	--	--	--	--	--	50	--	66	--	30	8	163
Jackson	--	--	877	--	--	16	109	453	534	--	155	75	2,824
Johnson	--	--	--	--	--	--	1	10	30	--	--	1	79
Jones	--	--	86	--	--	--	38	395	199	--	15	47	963
Linn	--	--	--	--	--	--	87	--	16	--	1	20	392
Mitchell	--	--	--	--	302	--	--	--	67	--	--	1	371
Scott	--	--	--	--	--	--	14	1	1,941	--	--	1	2,017
Tama	--	--	341	--	36	--	--	2	142	--	3	--	936
Winneshiek	--	--	176	--	567	--	163	418	446	--	21	20	2,068
Total	--	1	4,815	--	2,162	112	1,208	6,811	8,145	--	1,895	1,235	34,563
Northwestern Unit													
Cerro Gordo	--	--	--	--	--	--	--	--	1	--	--	--	1
Franklin	--	--	--	--	--	--	--	--	--	--	--	43	158
Lyon	--	--	--	--	21	--	--	--	--	--	--	0	22

(Table 11 continued on next page)

(Table 11 continued)

Plymouth	--	--	--	--	--	302	--	--	--	--	--	--	--	--	302
Wright	--	--	--	--	--	--	--	--	--	--	--	--	--	--	243
Total	--	--	--	--	--	323	--	--	--	1	--	--	43	--	726
Southeastern Unit															
Appanoose	--	--	124	--	--	416	--	--	131	355	--	1	--	--	1,408
Boone	--	--	--	--	--	--	--	--	--	0	--	--	--	--	0
Clarke	--	--	8	--	--	--	--	--	--	--	--	--	--	--	32
Davis	--	--	100	1	235	--	--	--	235	250	--	--	--	--	1,243
Decatur	--	--	218	4	121	--	--	3	111	63	--	--	--	--	664
Des Moines	--	--	80	5	100	--	--	65	604	462	--	--	17	--	1,383
Hamilton	--	--	--	--	1,207	--	--	--	--	9	--	--	31	--	1,247
Hardin	--	--	--	--	--	--	--	--	5	165	--	--	29	--	250
Henry	--	--	32	5	323	--	--	--	140	186	--	38	12	--	891
Iowa	--	--	35	--	--	506	--	52	110	140	--	5	12	--	2,119
Jefferson	--	--	32	1	40	--	--	--	343	91	10	10	24	--	2,982
Keokuk	--	--	25	--	314	--	--	--	--	81	--	--	8	--	2,535
Lee	24	--	245	14	532	--	22	826	1,041	--	--	21	28	--	2,883
Louisa	--	--	14	--	115	--	--	--	21	8	--	--	3	--	356
Lucas	--	--	8	--	84	--	--	--	30	217	--	--	--	--	380
Mahaska	--	--	19	--	325	--	--	--	57	37	--	--	27	--	655
Marion	--	--	5	--	--	--	--	--	--	--	--	--	--	--	29
Marshall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Monroe	--	--	141	--	121	--	--	--	45	376	--	--	--	--	1,077
Muscatine	--	--	203	--	87	--	--	--	--	--	--	--	2	--	482
Poweshiek	--	--	40	--	48	--	17	2	2	19	--	--	2	--	436
Story	--	--	--	--	--	--	--	--	421	136	--	191	40	--	1,050
Van Buren	--	--	203	17	66	--	121	475	1,352	--	--	8	8	--	2,567
Wapello	--	--	15	--	511	--	5	17	157	--	--	--	3	--	1,173
Warren	--	--	58	--	--	--	--	--	--	120	--	12	--	--	329
Washington	--	1	118	--	--	--	104	211	196	--	--	76	61	--	1,800
Wayne	--	--	25	4	121	--	--	--	58	26	--	--	--	--	269
Total	24	1	1,748	51	5,273	--	388	3,840	5,486	10	361	306	--	--	28,243

Southwestern Unit													
Adams	--	--	1	--	--	--	71	15	--	--	--	--	177
Fremont	--	--	--	--	--	273	--	--	--	--	--	--	273
Harrison	--	--	0	--	--	273	--	0	--	--	--	--	273
Mills	--	--	--	--	--	274	--	--	--	--	--	--	277
Monona	--	--	8	--	--	--	--	--	--	--	--	--	8
Page	--	--	38	--	--	--	--	--	--	--	--	--	38
Pottawattamie	--	--	38	--	--	274	--	--	--	--	--	--	312
Ringgold	--	--	48	--	--	60	--	81	56	--	2	--	381
Taylor	--	--	18	--	--	--	--	50	38	--	--	--	215
Woodbury	--	--	--	--	--	302	--	--	--	--	--	--	302
Total	--	--	151	--	--	1,456	--	202	109	--	2	--	2,256
	24	2	6,714	51	1,596	9,212	112	10,853	13,742	10	2,259	1,584	65,787

¹ International 1/4-inch rule.

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 board feet.

Table may not sum due to rounding.

Table 12.—Harvest residue generated by industrial roundwood harvesting by Forest Inventory Unit, county, and species group, Iowa, 2005
(In thousand cubic feet)

Forest Inventory Unit and county	All species	Softwoods			Hardwoods						
		Eastern redcedar	Red pine	Total softwoods	Soft maple	Hard maple	White birch	River birch	Hickory	Hack- berry	Ash
Northeastern Unit											
Allamakee	1,873	--	--	--	134	259	2	1	93	1	62
Benton	48	--	--	--	2	19	--	--	--	--	2
Black Hawk	0	--	--	--	--	--	--	--	--	--	0
Bremer	3	--	--	--	--	2	--	--	0	1	--
Buchanan	4	--	--	--	--	--	--	--	--	--	--
Butler	48	--	--	--	10	--	--	--	--	--	--
Cedar	34	--	--	--	11	3	--	0	1	--	1
Chickasaw	2	--	--	--	--	--	--	--	--	--	2
Clayton	1,170	--	--	--	13	339	--	--	61	0	42
Clinton	127	--	--	--	84	--	--	--	0	--	0
Delaware	307	--	--	--	--	56	--	--	22	--	17
Dubuque	712	--	--	--	17	163	--	0	24	1	23
Fayette	128	--	--	--	--	20	--	--	2	--	11
Floyd	7	--	--	--	--	--	--	--	--	0	--
Howard	35	--	--	--	--	--	--	--	0	2	--
Jackson	429	--	--	--	32	85	--	0	18	--	12
Johnson	17	--	--	--	9	--	--	--	--	--	--
Jones	185	--	--	--	2	31	--	0	10	--	--
Linn	94	--	--	--	55	--	--	--	4	--	7
Mitchell	45	--	--	--	--	--	--	--	--	0	--
Scott	107	--	--	--	14	--	--	0	--	--	0
Tama	178	--	--	--	97	--	--	--	1	0	3
Winneshiek	289	--	--	--	0	43	--	--	4	--	10
Total	5,842	--	--	--	480	1,022	2	2	241	6	191
Northwestern Unit											
Cerro Gordo	0	--	--	--	--	--	--	--	--	--	--
Franklin	39	--	--	--	--	--	--	--	--	--	28
Lyon	3	0	0	0	--	0	--	--	--	--	0

Plymouth	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wright	59	--	--	--	59	--	--	--	--	--	--	--	--	--	--	--
Total	133	0	0	0	59	0	59	0	--	--	--	--	--	--	--	28
Southeastern Unit																
Appanoose	235	--	--	--	91	--	--	--	--	2	--	--	--	--	--	0
Boone	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clarke	7	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--
Davis	228	--	--	--	98	--	--	--	--	1	--	--	--	--	--	4
Decatur	92	--	--	--	26	--	--	--	--	2	3	4	4	4	4	4
Des Moines	247	--	--	--	4	--	--	--	--	2	1	5	5	5	5	5
Hamilton	138	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardin	50	--	--	--	--	--	--	--	--	--	13	--	--	--	--	--
Henry	147	--	--	--	22	1	--	--	--	2	--	13	13	13	13	13
Iowa	428	--	--	--	289	--	--	--	0	17	1	--	--	--	--	--
Jefferson	691	--	--	--	575	3	--	--	--	2	9	5	5	5	5	5
Keokuk	568	--	--	--	510	--	--	--	0	1	--	3	3	3	3	3
Lee	459	--	--	--	15	0	--	--	--	13	--	3	3	3	3	3
Louisa	68	--	--	--	47	--	--	--	--	--	0	0	0	0	0	0
Lucas	65	--	--	--	9	--	--	--	--	1	--	0	0	0	0	0
Mahaska	107	--	--	--	17	--	--	--	--	17	8	5	5	5	5	5
Marion	7	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--
Marshall	0	--	--	--	--	0	--	--	--	--	--	--	--	--	--	--
Monroe	200	--	--	--	78	--	--	--	--	16	--	2	2	2	2	2
Muscatine	69	--	--	--	31	0	--	--	--	0	1	13	13	13	13	13
Poweshiek	83	--	--	--	63	--	--	--	0	8	--	4	4	4	4	4
Story	221	--	--	--	--	--	--	--	--	--	57	7	7	7	7	7
Van Buren	376	--	--	--	44	--	--	--	3	8	--	22	22	22	22	22
Wapello	201	--	--	--	63	--	--	--	--	23	--	27	27	27	27	27
Warren	67	--	--	--	34	--	--	--	--	--	--	--	--	--	--	--
Washington	401	--	--	--	175	32	--	--	0	37	3	7	7	7	7	7
Wayne	41	--	--	--	5	--	--	--	--	1	1	1	1	1	1	1
Total	5,195	--	--	--	2,207	36	--	--	4	153	98	127	127	127	127	127

(Table 12 continued)

Southwestern Unit												
Adams	38	--	--	--	--	--	22	--	--	--	--	--
Fremont	29	--	--	--	--	--	--	--	--	--	--	--
Harrison	29	--	--	--	--	--	--	--	--	--	--	--
Mills	29	--	--	--	--	--	--	--	--	--	--	0
Monona	1	--	--	--	--	--	--	--	--	--	--	--
Page	5	--	--	--	--	--	--	--	--	--	--	--
Pottawattamie	35	--	--	--	--	--	--	--	--	--	--	--
Ringgold	71	--	--	--	--	27	--	--	--	--	2	3
Taylor	45	--	--	--	--	21	--	--	--	--	2	3
Woodbury	32	--	--	--	--	--	--	--	--	--	--	--
Total	314	--	--	--	--	48	22	--	--	--	5	6
State Total	11,485	0	0	0	0	2,794	1,079	2	393	109	352	

(Table 12 continued)

Forest Inventory Unit and county	Hardwoods												Total hardwoods
	Honey- locust	Butternut	Black walnut	Sycamore	Cotton- wood	Aspen	Black cherry	Red oak group	White oak group	Black locust	Bass- wood	Elm	
Northeastern Unit													
Allamakee	--	--	100	--	108	8	54	571	276	117	88	1,873	
Benton	--	--	--	--	--	--	2	17	3	1	3	48	
Black Hawk	--	--	--	--	--	--	--	--	--	--	--	0	
Bremer	--	--	--	--	--	--	--	--	--	--	0	3	
Buchanan	--	--	--	--	--	0	--	--	3	--	--	4	
Butler	--	--	--	--	--	--	--	--	37	--	0	48	
Cedar	--	--	--	--	5	--	7	2	1	3	1	34	
Chickasaw	--	--	--	--	--	--	--	--	--	--	--	2	
Clayton	--	--	109	--	10	4	38	191	145	138	80	1,170	
Clinton	--	--	--	--	7	--	6	10	17	0	2	127	
Delaware	--	--	5	--	--	3	1	26	127	17	31	307	
Dubuque	--	0	72	--	--	8	30	137	92	109	36	712	
Fayette	--	--	6	--	2	--	1	29	18	22	16	128	
Floyd	--	--	--	--	2	--	--	--	4	--	0	7	
Howard	--	--	--	--	--	--	12	--	12	7	2	35	
Jackson	--	--	65	--	--	4	16	82	60	38	18	429	
Johnson	--	--	--	--	--	--	0	2	5	--	0	17	
Jones	--	--	12	--	--	--	9	71	36	4	11	185	
Linn	--	--	--	--	--	--	21	--	3	0	4	94	
Mitchell	--	--	--	--	32	--	--	--	12	--	0	45	
Scott	--	--	--	--	--	--	3	0	89	--	0	107	
Tama	--	--	47	--	4	--	--	0	26	1	--	178	
Winneshiek	--	--	9	--	61	--	23	74	54	5	5	289	
Total	0	0	425	--	231	27	225	1,213	1,018	462	298	5,843	
Northwestern Unit													
Cerro Gordo	--	--	--	--	--	--	--	--	0	--	--	0	
Franklin	--	--	--	--	--	--	--	--	--	--	10	39	
Lyon	--	--	--	--	2	--	--	--	--	--	0	2	

(Table 12 continued on next page)

Plymouth	--	--	--	--	--	32	--	--	--	--	--	--	32
Wright	--	--	--	--	--	--	--	--	--	--	--	--	59
Total	--	--	--	--	--	35	--	--	--	--	0	11	133
Southeastern Unit													
Appanoose	--	--	17	--	--	45	--	--	24	57	--	0	235
Boone	--	--	--	--	--	--	--	--	--	0	--	--	0
Clarke	--	--	1	--	--	--	--	--	--	--	--	--	7
Davis	--	--	14	0	25	--	--	--	42	44	--	--	228
Decatur	--	--	11	1	13	--	0	20	11	--	--	--	92
Des Moines	--	--	11	1	11	--	16	109	83	--	--	4	247
Hamilton	--	--	--	--	129	--	--	--	--	2	--	8	138
Hardin	--	--	--	--	--	--	--	1	30	--	--	7	50
Henry	--	--	4	1	35	--	--	25	32	--	9	3	147
Iowa	--	--	5	--	54	--	13	20	25	--	1	3	428
Jefferson	--	--	4	0	4	--	--	62	16	2	2	6	691
Keokuk	--	--	3	--	34	--	--	--	15	--	--	2	568
Lee	6	--	34	3	57	--	5	149	161	--	5	7	459
Louisa	--	--	2	--	12	--	--	4	1	--	--	1	68
Lucas	--	--	1	--	9	--	--	5	39	--	--	--	65
Mahaska	--	--	3	--	35	--	--	10	7	--	--	7	107
Marion	--	--	1	--	--	--	--	--	--	--	--	--	7
Marshall	--	--	--	--	--	--	--	--	--	--	--	--	0
Monroe	--	--	19	--	13	--	--	8	64	--	--	--	200
Muscataine	--	--	13	--	9	--	--	--	--	--	--	0	69
Poweshiek	--	--	1	--	5	--	0	0	0	--	--	0	83
Story	--	--	--	--	--	--	--	76	25	--	47	10	221
Van Buren	--	--	21	4	7	--	15	86	162	--	2	2	376
Wapello	--	--	2	--	55	--	1	3	26	--	--	1	201
Warren	--	--	8	--	--	--	--	--	22	--	3	--	67
Washington	--	0	16	--	--	--	25	38	35	--	19	15	401
Wayne	--	--	3	1	13	--	--	10	5	--	--	--	41
Total	6	0	194	12	564	--	76	693	862	2	88	74	5,195

Southwestern Unit													
Adams	--	--	0	--	--	--	13	3	--	--	--	--	38
Fremont	--	--	--	--	--	29	--	--	--	--	--	--	29
Harrison	--	--	0	--	--	29	--	0	--	--	--	--	29
Mills	--	--	--	--	--	29	--	--	--	--	--	--	29
Monona	--	--	1	--	--	--	--	--	--	--	--	--	1
Page	--	--	5	--	--	--	--	--	--	--	--	--	5
Pottawattamie	--	--	5	--	--	29	--	--	--	--	--	--	35
Ringgold	--	--	7	--	--	6	15	10	--	0	--	--	71
Taylor	--	--	3	--	--	--	9	7	--	--	--	--	45
Woodbury	--	--	--	--	--	32	--	--	--	--	--	--	32
Total	--	--	21	--	--	156	36	20	--	0	--	--	314
	6	0	639	12	300	986	1,943	1,900	2	551	383		11,485

All table cells without observations in the inventory sample are indicated by --.

Table value of 0 indicates the volume rounds to less than 500 cubic feet.

Table may not sum due to rounding.

Table 13.—Disposition of residues produced at primary wood-using mills by disposition, residue type, and softwoods and hardwoods, Iowa, 2005
(In thousand green tons)

Forest Inventory Unit and disposition	Residue type									
	Wood residue									
	Total all residues		Total wood residue		Coarse ¹		Fine ²		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
All Units										
Fiber products	--	5.57	--	5.57	--	5.57	--	--	--	--
Industrial fuel-mill	--	37.06	--	34.94	--	19.46	--	15.49	--	2.12
Industrial fuel-sold	--	3.36	--	3.36	--	3.36	--	--	--	--
Domestic fuel	--	7.35	--	6.71	--	6.71	--	--	--	0.64
Miscellaneous ³	--	247.56	--	182.79	--	125.78	--	57.02	--	64.77
Not used	--	0.27	--	0.25	--	0.23	--	0.01	--	0.02
Total	--	301.17	--	233.62	--	161.11	--	72.52	--	67.55

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, specialty items, etc.

All table cells without observations in the inventory sample are indicated by --.

Table may not sum due to rounding.

Haugen, David E.; Michel, Dennis D.

2010. Iowa timber industry—an assessment of timber product output and use, 2005. Resour. Bull. NRS-38. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 62 p.

Reports findings of a survey of all primary wood-using mills in Iowa in 2005 and compares those findings with earlier surveys. Production and receipts of industrial roundwood are reported by product, species, and county. Also reports the quantity, type, and disposition of wood and bark residues generated by Iowa's primary wood-using industry.

KEY WORDS: Bark, mill, production, roundwood, residues, saw logs.

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